

Low-voltage moulded-case
circuit-breakers

604050/012 en





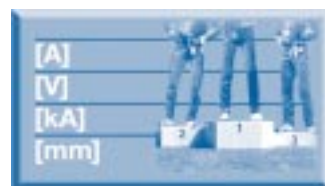
Contents

Presentation



1

Main features



2

Ranges



3

Accessories



4

Characteristic curves and technical information



5

Dimensions and circuit diagrams



6

Order codes



7



SACE Isomax S.

The greatest project for moulded-case circuit-breakers

A single series for all applications

SACE Isomax S is a project which evolves continually and is today the largest and most complete family of low voltage moulded-case circuit-breakers on the market, able to fulfil all installation requirements, from the small user up to large industrial electrical power distribution plants.

Innovation, Technology and Quality have always been the main guides for ABB SACE in developing products and are at their peak in the SACE Isomax S series – the moulded-case circuit-breakers characterised by high quality, reliability, and performance under all conditions, simplicity of installation and safety of operation. The continual and constant evolution of the series has led to further extending the range of products, thereby making the SACE Isomax S offer increasingly complete over time.

The series, which is divided rationally into eight basic sizes from S1 to S8, does, in fact, consist of different ranges destined to fulfil any installation need in a specific and optimal way.

The completeness of the series can also be noted in better rationalisation of use: the overall dimensions, methods of installation and possibility of applying accessories are all the same, regardless of the type of range the circuit-breaker is placed in.

Great importance is also put on the microprocessor-based electronic releases (mounted on the circuit-breakers starting from 160A): SACE PR211/P, PR212/P and SACE PR212/MP (International ABB SACE Patent), specifically designed to actuate dedicated functions for motor starting and protection.

Thanks to innovative and state-of-the-art protection functions, they ensure reliability and precision and are unaffected by electromagnetic interference. A basic characteristic of these types of releases is their ability to communicate and dialogue with the SACE SD-View 810 self-configuring software, thereby allowing full integration of the circuit-breakers in the management logics relative to electric network supervision and control systems.





The new series has been studied respecting the most modern ergonomic criteria. Witness to this is the prize awarded with the IF seal to the circuit-breakers at the Design Forum in Hannover.





A world of solutions for installation design engineering.

An answer to all requirements.

The SACE Isomax S family is divided into eight basic sizes, S1, S2, S3, S4, S5, S6, S7 and S8 with rated uninterrupted currents from 125 to 3200A.

The types of devices consist of: fixed, plug-in and withdrawable circuit-breakers with seven ultimate rated breaking capacity levels - from 16 to 200kA (380-415V) - identified by the letters:

B, N, S, H, L, V, X.

From this family, which is considered the common "nucleus", a series of dedicated ranges are configured, which keep the same installation characteristics and accessory application possibilities. Within the series there are therefore circuit-breakers available for alternating and direct current distribution, current-limiting circuit-breakers, circuit-breakers for motor protection, switch-disconnectors, circuit-breakers for applications with voltages up to 1000V, and residual current circuit-breakers, as well as specific ranges (for motor protection and switch-disconnectors) complying with the North American UL489 and CSA C22.2 Standards.

This means wider application possibilities both in industrial and civil sectors.

They can therefore be mounted in primary (Power Center) and secondary (Panel Board) distribution switchboards, for motor protection and control (Motor Control Center), in generators and for end users. Their performances are, however, of particular interest where critical situations arise (very high rated and fault currents), or where complex plant engineering solutions are needed (special coordination requirements and plant automation). They also guarantee total selectivity of the protections up to full breaking capacity of the circuit-breaker installed on the load side.

Centralised supervision and control systems

The reliability, efficiency and quality of a LV electrical power distribution service is considerably increased by constant supervision of users and all the parameters of the installation itself. The information regarding the installations is collected using microprocessor-based field components which can be mounted directly on board the apparatus, such as the SACE PR212/P release, or using the devices in the SACE SD family. Moreover, the use of the SACE SD-View 810 software allows a simple personal computer to be converted into a work station for supervising and controlling electrical power distribution plants.



GSIS9072

Thanks to its special construction characteristics, this range of circuit-breakers combines normal Isomax safety characteristics with very high performances. The breaking technique used (double interruption per pole) and the special shape of the breaking parts, allow very high value short-circuit currents (200kA) to be tripped extremely rapidly, making these circuit-breakers ideal wherever protection close to the power supply source is needed.

Alternating current



Circuit-breakers with thermomagnetic releases and circuit-breakers fitted with microprocessor-based SACE PR211/P, PR212/P releases are available for protection of alternating current networks. These feature an application field from 10 to 3200A and a rated voltage of 690V. Apart from the more generic applications, they are particularly suited to protection of generators, capacitors, transformers and machine tools.

Direct current



Pole connection in series allows applications in the most severe operating conditions and in any type of network (insulated, with earthed polarity, and with median point of the power supply earthed). The circuit-breakers for direct current with thermomagnetic releases are available for operating currents between 10A and 800 A, with rated voltages up to 750 V, with 3 poles in series, and 250 and 500V, with two poles in series.



GSIS9073

The range for applications at 1000V in alternating current and direct current extends the use of the moulded-case circuit-breakers even further and is a good example of the continual evolution of the SACE Isomax S series. They are particularly suitable for installation in special ambients, such as mines, petrochemical plants and for electric traction.



GSIS9074

ABB SACE proposes various solutions, which allow type 2 coordinations to be made for switching and protecting motors, from 0.37kW to 355kW. It is possible to select either circuit-breakers suited just to protection against short-circuit, or circuit-breakers fitted with the new SACE PR212/MP electronic release, which is technologically advanced and has been specifically studied for motor protection. The latter integrates protection functions on



**SACE Isomax S
current-limiting
circuit-breakers**



GSIS9091

The switch-disconnectors are derived from the corresponding circuit-breakers, keeping the overall dimensions, versions and accessories unchanged. They guarantee operation and isolation in maximum safety and their release device can be activated either by the undervoltage release or by the shunt opening release. They can also be fitted with residual current releases, thereby constructing "pure" residual-current circuit-breakers.



**SACE Isomax S
switch-disconnectors**

1



**SACE Isomax S
Power distribution**



GSIS9075



**SACE Isomax S
for applications
up to 1000V**

board the circuit-breaker which are normally carried out by other devices, thereby ensuring numerous installation and service advantages.



GSIS9093



**SACE Isomax S
according to UL/CSA
Standards**

Thanks to a specific range of SACE Isomax S circuit-breakers complying with the UL489 and CSA22.2 Standards, there are also greater possibilities for those customers operating on markets subject to the specifications defined in the North American standards. The range consists of seven sizes with rated uninterrupted current from 100A to 2500A and breaking capacities, at 480 V AC, which can reach 100kA. Within the basic series, there are circuit-breakers with magnetic only releases (MCP - Motor Control Protection) for motor protection, and switches (Moulded-Case Switch - MCS) for use as isolators or switching devices for lines, busbars or plant parts.



**SACE Isomax S
for motor protection
classical and advanced**



A world of success

The SACE Isomax S offer has been constantly renewed according to market requirements – and often even anticipating these – and is always to the fore from the technological viewpoint. Meanwhile, the quality and reliability have always remained at the maximum levels expected and the market has shown its appreciation of this.

1 Behind every reference lies a requirement fulfilled. It is facts which speak for SACE Isomax S. SACE Isomax S is a highly successful product of recognised quality, with many fields of application and it involves different sectors all over the world, with either standard or highly personalised products. There is nowhere electrical power is used where SACE Isomax S is not to be found: manufacturing industries, steelworks, refineries and chemical plants, drilling rigs, gas pipelines, water pipelines, hospitals, airports, trains, railway and underground railway stations, calculation centres, offices, congress centres, theatres, and skyscrapers, as well as the most prestigious buildings worldwide.

ABB SACE has, moreover, acquired knowledge which is practically unsurpassed in application areas where the highest degree of safety is required, and this has qualified it as the world leader in various sectors. Thousands of ships of all types – cruise ships, container ships, bulk carriers, tankers, etc. – and flying the flags of all nations – are equipped with ABB SACE products, which are also widely used in railway traction and are the favourite product in the depths of mines.

ABB SACE apparatus is also responsible for protection (sometimes also integrated with control functions) of plants of considerable economic and technological importance, constructed within the sphere of large infrastructure projects. Orders are processed which stand out both for their size (such as the pumping stations of gas pipelines thousands of kilometres long) and for their advanced context (astronomical observatories and international research centres). SACE Isomax S imposes itself on the markets worldwide. For example, apparatus has been supplied to some of the most important European and Middle Eastern electricity boards as well as to North American and Asian electrified transport companies.

Protection and control in installations for electric traction

Particularly severe environmental conditions such as mines and steelworks

Refineries and chemical plants as well as gas pipelines, water pipelines ...

Installation on board ships





Offices, theatres,
shopping malls and residential
complexes



Protection and control
of motors, generators...



Underground railway
stations



Off-shore drilling rigs



Selection and design engineering tools, management flexibility, services and consultancy: an all-round offer

With the aim of guiding and facilitating selection of its products, ABB SACE ensures 360° support, both before and after the sale. For this purpose, to design and size electrical installations, it makes various work tools available, which facilitate calculations, ensure compliance of the installation with the Standards and reduce the risks of any errors.

These are basically divided into calculation, design and estimate software, and manual tools.

1 – **D.O.C.** (Design Optimization & Computation) is a system which allows correct sizing of industrial low voltage electrical installations, able to propose the most suitable design selections regarding cables, busbars and protection devices. It allows the design engineer to develop clear and complete design documentation rapidly, based on the calculation models provided by the most recent standards.

– **C.A.T.** (Computer Aided Technical Selection) is both an electronic catalogue and a technical aid tool for selecting and applying accessories to each individual circuit-breaker.

By means of a guided pathway, it is possible to select, configure and order the most suitable apparatus for your own installation requirements.

Four **Slide rules** of different colours, which make up the ABB Kits, allow rapid sizing calculations of the electrical installation. The following can be carried out:

- Cable sizing and calculation of the short-circuit currents (yellow slide rule)
- Checking the protections against direct contact and short-circuit of the cables (orange slide rule)
- Selective and back-up co-ordination (green slide rule)
- Sizing of motor lines and transformer outgoing feeders (blue slide rule)

The calculation methods and data indicated on the slide rules are taken from the CEI, IEC and NFC Standards in force and from installation practice.

The **Guide to low voltage installations** is a brief collection of legal and technical regulations based on the current standards, regarding design, sizing and installation of an electrical plant.

The guide takes into consideration the user plant from the electric power delivery point (MV/LV substation) in 1st category systems.

Immediate ordering and management flexibility

Rapid ordering procedures have been provided for circuit-breakers in the SACE Isomax S series, and the configuration logic of the series enables efficient and flexible warehouse management.

An order file can be generated compatible with the EDIFACT (Metel or ABB) standard, ready to be converted into EDI format and transmitted electronically.





Using EDI (Electronic Data Interchange) to send orders rationalises the logistics chain, thereby reducing transit times and the risk of errors. EDI transmission allows the order to be loaded automatically at ABB SACE so that the request is immediately sent to production, together with the order acknowledgement to the customer.

The availability of standardised accessories for groups of circuit-breakers makes it possible to reduce the number kept in the warehouse and very short procurement times allow limited stocks to be kept as these can be rapidly replenished.

**Training:
an indispensable tool
for professionals**

By means of its technical training courses, ABB SACE is committed to putting its wealth of experience gained in over more than 60 years of operation at disposal. The courses are an opportunity for all operators in the sector to update their knowledge and compare

notes, under the guidance of experts. Information and training have always been success factors for professional growth and development.

Professional refresher training on both technical aspects and product developments, as well as on the standards and legislation, is essential, considering that these have such important implications for the safety of people and plants. The primary aim is to meet the information needs of professionals, especially by converting the technical-standard and legislative concepts into practical terms which can be applied directly to the various products and installations.

"ABB SACE Service"

Training courses are also provided for operators and maintenance personnel who work on ABB SACE apparatus and systems. For this purpose and to meet the need for evaluation and maintenance of existing electrical installations, the company has set up the "Service Division" within its own structure, which acts as a qualified interlocutor working in close collaboration with the managers/users of the plants, to carry out maintenance, repair and overhauling activities at ABB SACE and on the user's premises. The division also offers a spare parts, assembly and commissioning service for its own switchboards.



Just one product for everyone

SACE Isomax S is a product which has been thought up and constructed for all types of customers: the user, the design engineer, the switchboard builder, the installer, the maintenance technician and the wholesaler.

1 ABB SACE proposes technical solutions to the **user** which fulfil all requirements and are always up to date with technological innovations in the field of electrical power distribution. It offers high quality products, reliability and precision, which guarantee high performances under any conditions, safe products during service and, when necessary, simple replacement of any faulty parts.

The **design engineer** has products available which comply perfectly with the international technical standards and which are able to do the job simply, safely and reliably at the highest levels of performance. SACE Isomax S circuit-breakers offer the design engineer solutions for sizing, coordination and flexibility of application which allow him to draw up a state-of-the-art project, selecting from among well-known ranges and circuit diagrams to be integrated in a complete system, and satisfying all installation requirements and performances according to the standards.

The requirements of a **switchboard builder** are fully satisfied thanks to careful design of the product. The limited volumes of the pieces of apparatus allow the switchboard dimensions to be kept to a minimum and the modularity and compactness the ranges of products are conceived with allow



GSIS0902

simple installation inside the switchboard. The whole range of products is divided into eight sizes and constructed in only three depths, thereby allowing standardisation of the supporting structures and of the switchboards and installation in prefabricated structures. The dimensional uniformity and the possibilities of connection, thanks to the variety of terminal available, considerably facilitates connections by means of busbars or cables.

ABB SACE provides the **installer** with products for any type of plant, which are practical to install, simple to use, assemble and connect and easy to check, thanks also to the quality of the accessories supplied with the apparatus and the technical support documentation provided.



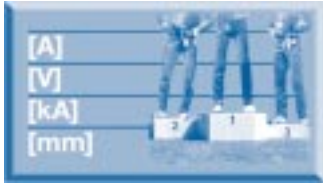
GSIS0909

SACE Isomax S circuit-breakers allow easy and safe maintenance to be carried out, enabling the accessories to be inserted conveniently on the front of the circuit-breaker. Construction rationality as well as modularity of the structure, allow the **maintenance technician** to carry out replacements without the need for any special adaptation, even when changing from one type of circuit-breaker to another (for example from an automatic



GSIS0900

to a current-limiting circuit-breaker). Standardisation of Isomax S circuit-breakers and their accessories means simple and economical management of the spare parts warehouse for the **wholesaler**. Furthermore, the clarity of product coding considerably helps product ordering, reduces procurement times and allows limited stocks to be kept in the warehouse since the products can be replenished rapidly.



Main characteristics

Index

Panorama of the SACE Isomax S family

A single series for all applications 2/2

Construction characteristics

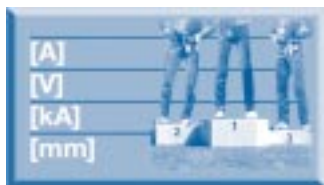
Distinctive features of the series 2/4

Conditions of use 2/8

Modularity of the series SACE Isomax S 2/10

Compliance with the Standards

Standards, Approvals, Certifications and company quality system 2/12



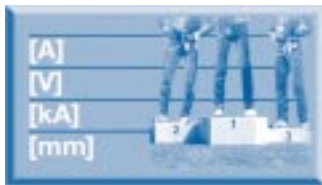
Panorama of the SACE Isomax S family

A single series for all applications

2

		SACE Isomax S1	SACE Isomax S2	
CIRCUIT-BREAKERS FOR AC / DC DISTRIBUTION		S1	S2	
	Poles	3 - 4	3 - 4	
	Iu	125	160	
	Ue (AC)	500	690	
	Icu (380/415V AC)			
				B
		16	16	
				N
		25	35	
				S
			50	
				H
				L
				V
	Ue (DC)	250	500	
CURRENT-LIMITING CIRCUIT-BREAKERS			S2X 100	
	Poles		3	
	Iu		100	
	Ue		690	
	Icu (380/415V)		70	
	Icu (690V)		10	
CIRCUIT-BREAKERS FOR MOTOR PROTECTION			S2X 80	
	Poles		3	
	Iu		80	
	In		1...80	
	Ue		690	
	Magnetic only release IEC 60947-2		■	
	Electronic release PR211/P (I), IEC 60947-2		-	
	Electronic release PR212/MP, IEC 60947-4-1		-	
CIRCUIT-BREAKERS FOR APPLICATIONS AT 1000 V AC				
	Poles			
	Iu			
	Icu (1000V AC)			
CIRCUIT-BREAKERS FOR APPLICATIONS AT 1000 V AC				
	Poles			
	Iu			
	Icu (1000V DC), 4 poles in series			
SWITCH-DISCONNECTORS according to IEC 60947-3 Standard			S2D	
	Poles		3 - 4	
	Ith		125 - 160	
	Ue		690	
	Icm		3,1	
	Icw		2,2	
Circuit-breakers according to UL 489 and CSA 22.2 Standards		S1N		
	Poles	3		
	Maximum continuous current (40 °C)	100		
	Maximum Ampere Breaking Capacity (480 V)	20		
	Thermal-magnetic trip unit	■		
	Microprocessor based trip unit	-		
	MCP	-		
	MCS	-		

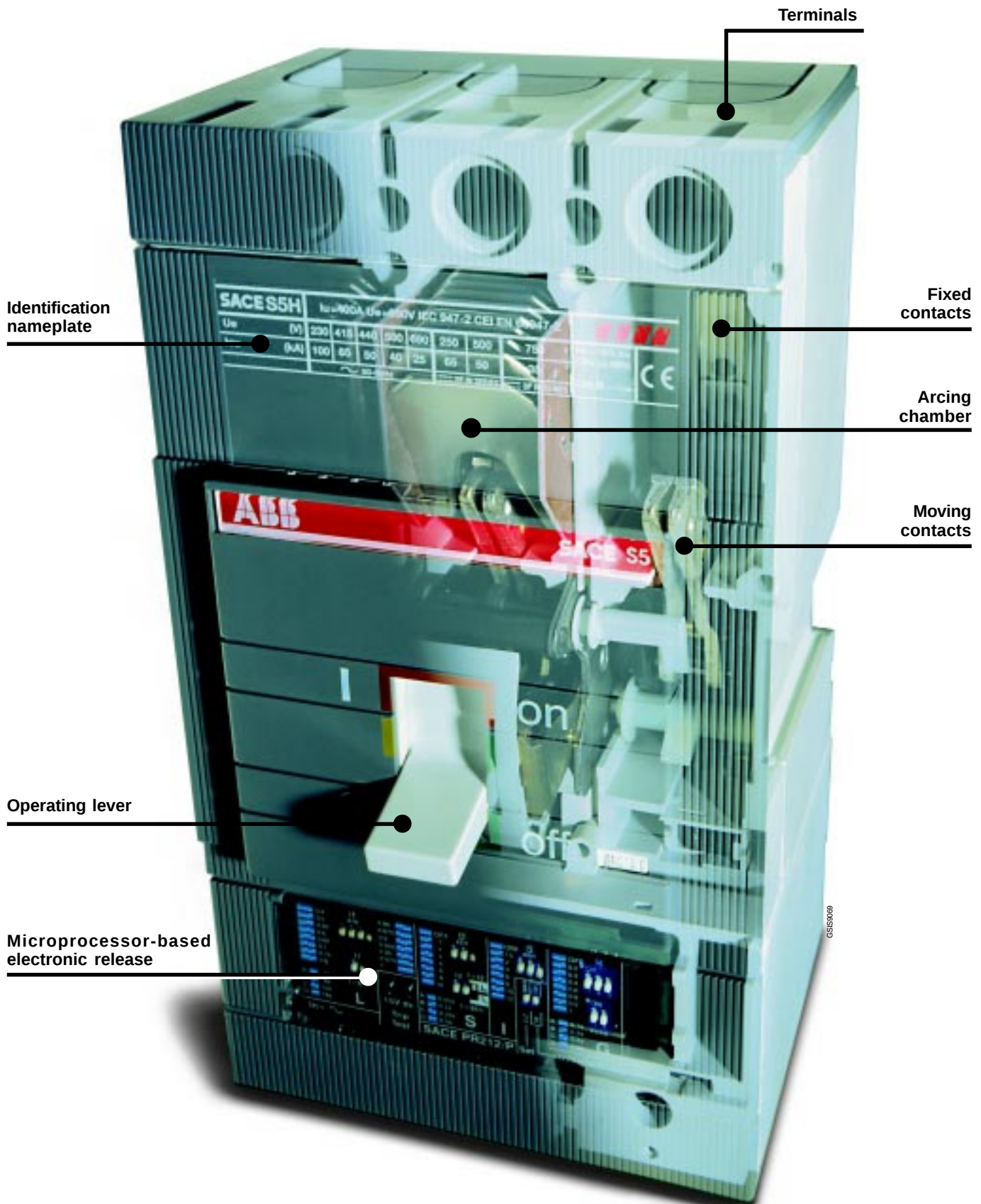
	SACE Isomax S3	SACE Isomax S4	SACE Isomax S5	SACE Isomax S6	SACE Isomax S7	SACE Isomax S8
	S3	S4	S5	S6	S7	S8
	3 - 4	3 - 4	3 - 4	3 - 4	3 - 4	3 - 4
	160-250	160-250	400-630	630-800	1250-1600	2000-2500-3200
	690	690	690	690	690	690
	35	35	35	35		
				50	50	
	65	65	65	65	65	85
	85	100	100	100	100	
						120
	750	-	750	750	-	-
	S3X	S4X		S6X		
	3 - 4	3 - 4		3 - 4		
	125-200	250		400-630		
	690	690		690		
	200	200		200		
	75	75		75		
	S3 / S3X	S4 / S4X	S5	S6 / S6X	S7	
	3	3	3	3	3	
	160-250 / 125-200	160-250 / 250	400-630	630-800 / 400-630	1250-1600	
	25...200	100...250	320...630	320..800	1000...1600	
	690	690	690	690	690	
	■	-	-	-	-	
	-	■	■	■	■	
	-	■	■	■	■	
	S3L / S3X	S4L / S4X	S5L	S6L / S6X		
	3	3	3	3		
	160 / 125	160-250 / 250	400	630-800 / 630		
	6 / 30	8 / 30	8	12 / 30		
	S3L		S5L	S6L		
	4		4	4		
	160-250		400	630 / 800		
	40		40	40 / 50		
	S3D			S6D	S7D	S8D
	3 - 4			3 - 4	3 - 4	3 - 4
	100 - 160 - 250 - 320			400 - 630 - 800	1000 - 1250 - 1600	2000-2500-3200
	690			690	690	690
	10			30	52,5	85
	6,5			15	25	40
	S3 B/N/H/L	S4 N/H/L	S5 N/H/L	S6 N/H/L	S7H	S8V
	2 - 3	2 - 3	2 - 3	2 - 3	2 - 3	3
	150 - 225	250	400	800	1200	1600-2000-2500
	85	100	100	100	65	100
	■	-	■	■	-	-
	-	■	■	■	■	■
	S3L	S4 N/H/L	S5 N/H/L	S6 N/H/L	S7H	S8V
	S3 H-D 150/225	S4 H-D	S5 H-D	S6 H-D	S7 H-D	S8 V-D

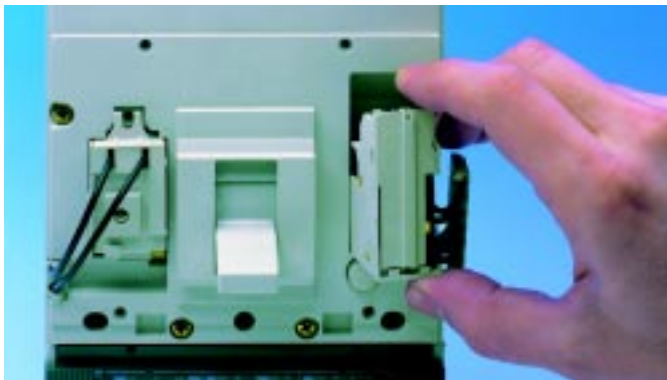


Construction characteristics

Distinctive features of the series

2





Double insulation

The double insulation technique consists of total separation between the power circuits and the auxiliary circuits and is a characteristic of all SACE Isomax S apparatus from size S3 up. The housing of each electrical accessory is completely segregated from the power circuit, thus avoiding all risk of contact with live parts, thereby increasing operator safety conditions during management and inspection of the installations. Moreover, the circuit-breaker has redundant insulation between the internal live parts, both regarding thickness of materials and the distances, which are greater than those required by the IEC Standards and are in accordance with American usage.

Positive operation

The operating lever always indicates the exact position of the circuit-breaker moving contacts, thereby guaranteeing safe and reliable indications (I = Closed; O = Open; yellow-green line = Open due to release trip). The circuit-breaker operating mechanism has free release, regardless of the pressure on the lever or the speed of operation. Release tripping automatically opens the moving contacts: to close them again, it is necessary to reset the operating mechanism by pushing the operating lever from the intermediate position to the lower limit of the open position.

For plug-in or withdrawable circuit-breakers, the moving part can only be detached from the fixed part with the circuit-breaker open (moving contacts separate from the relative fixed contacts).

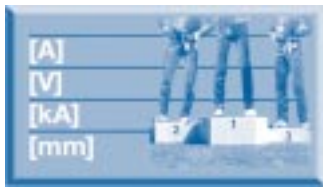


Selectivity

The complete range of releases means that the protection functions of the apparatus can be coordinated according to current-type, time-type, energy-type or residual-current selectivity chains. It is therefore possible to isolate only the areas affected by the fault, ensuring maximum service continuity. Circuit-breakers in category B are available from 400 A up.

Possibility of inspection

With the circuit-breaker out of service, it is possible to check the state of the internal parts and live components of the circuit-breaker directly. The arcing chambers and the fixed and moving contacts are accessible simply by removing the circuit-breaker cover. The operation, facilitated by the limited number of components, reduces maintenance times and ensures a higher degree of safety.



Construction characteristics

Distinctive features of the series



Isolation behaviour

In the open position, the circuit-breaker guarantees isolation of the circuit in compliance with the IEC 60947-2 Standard. For plug-in or withdrawable version circuit-breakers, in the racked-out or withdrawn position, the power and auxiliary circuits are isolated, ensuring that no parts are live. Under these conditions and by means of special connectors, it is possible to carry out blank tests, operating the circuit-breaker in complete safety. The redundant insulation distances guarantee the absence of leakage currents and dielectric strength in the event of any overvoltages between the input and output.

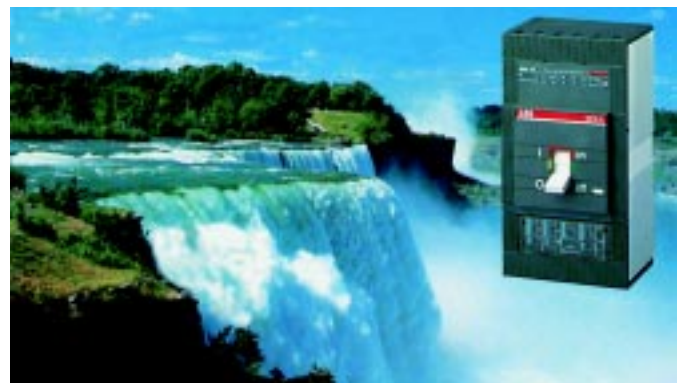
Racking-out with the door closed

This system, starting from 160 A, allows the circuit-breaker to be racked in and out with the compartment door closed, increasing operator safety and allowing construction of internal arc proof low voltage switchboards. Racking out can only take place with the circuit-breaker open, using a special racking-out crank handle supplied with the withdrawable version circuit-breaker.



Electromagnetic compatibility

By using SACE PR211/P, PR212/P, PR212/MP microprocessor-based overcurrent releases and SACE RC210, RC211, RC212 electronic residual-current releases, the absence of unwarranted trips is guaranteed even in the presence of interference caused by electronic equipment, atmospheric disturbance or discharges of electrical type. Furthermore, the apparatus does not generate interference with other electronic equipment in the vicinity of the installation. This is in compliance with the IEC 60947-2 Appendix F, IEC 1000-4, EN 61000-4, EN 50081-1, EN 50081-2, EN 50082-1, EN 50082-2 European Directive No. 89/336 specifications regarding electromagnetic compatibility EMC.



Tropicalisation

The SACE Isomax S series of circuit-breakers and accessories comply with the strictest regulations for use in hot-humid-saline climates (in compliance with climatograph 8 of the IEC 721-2-1 Standards), thanks to:

- insulating cases made of fibreglass-reinforced synthetic resins;
- anti-corrosion treatment on all main metal parts (C UNI 3564-65 environment);
- Fe/Zn 12 galvanisation (UNI ISO 2081), protected by a conversion layer consisting mainly of chromates (UNI ISO 4520).



Installation positions

The circuit-breaker can be installed in any position without any effect on its rated characteristics. In compliance with the IEC 60947-2 Standards, SACE Isomax S circuit-breakers can be supplied through either top or bottom terminals, without jeopardising operation of the apparatus. They can be installed in switchboards, mounted directly on the base plate or on Din rails up to size S5.



Mounting on DIN rail up to 630 A

The brackets for fixing onto standardised DIN EN 50022 rails for S1, S2 and DIN EN 50023 rails for S3, S4, S5 simplify assembly of the circuit-breakers up to 630 A in standard switchboards. This allows standardised supporting structures to be used and facilitates the stage for designing and constructing the switchboard metalwork structure.



Resistance to vibration

The circuit-breakers are unaffected by vibrations generated mechanically or due to electromagnetic effects, in compliance with the IEC 68-2-6 Standards and the strictest regulations of the major classification organisations:

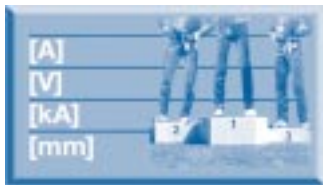
- RINA
- DET Norske Veritas
- Lloyd's Register of Shipping
- Germanischer Lloyd
- Bureau Veritas.



Degrees of protection

Different measures have been taken in SACE Isomax S circuit-breakers to achieve IP20 degree of protection for the fixed, plug-in and withdrawable version circuit-breaker, excluding the terminals, and IP30 for the front parts of the circuit-breakers installed in switchboards.

The fixed parts are always provided with IP20 degree of protection. It is possible to achieve IP54 degree of protection in accordance with the IEC 60529 Standard with the circuit-breaker installed in a switchboard fitted with rotary handle operating mechanism transmission on the compartment door and the special insulation gaskets which can be ordered separately.



Construction characteristics

Conditions of use

Degrees of protection (according to CEI EN 60529 Standard file 519)

Circuit-breaker

IP20



without terminal covers

IP30



with terminal covers

IP40



with terminal covers
and direct rotary handle

Circuit-breaker in switchboard

IP30



Direct operating mechanism

Front for lever operating mechanism

IP30



IP40 ⁽¹⁾



Direct rotary handle

Rotary handle transmission

IP50



IP54



Special IP54 protection

Motor operator

IP30 ⁽²⁾



⁽¹⁾ IP30 for withdrawable circuit-breakers

⁽²⁾ IP40 for S1-S2 and S6-S7 circuit-breakers

Operating temperature

SACE Isomax S circuit-breakers can be used in ambient conditions where the temperature in the surrounding atmosphere varies between -25 °C and +70 °C and stored in ambients with temperatures between -40 °C and +70 °C.

The circuit-breakers fitted with thermomagnetic overcurrent release have their thermal element set for a reference temperature of +40 °C.

For temperatures between +40 °C and +70 °C, with the same setting, there is lowering of the thermal trip threshold due to the temperature-related behaviour of the bimetallic strip of the release itself.

For temperatures lower than +40 °C, on the other hand, there is an increase in the thermal trip threshold as indicated in the table on page 5/39.

The electronic microprocessor-based overcurrent releases do not undergo any variations in performance with changes in

temperature but, in the case of temperatures higher than 40 °C, the maximum setting of the protection against overloads (function L) must be reduced to take into consideration inertial phenomena that occur in the copper parts of the circuit-breaker through which the phase current passes (moving and fixed contacts, and connection terminals) which cause a decrease in the rated uninterrupted current as indicated in the table on page 5/34.

The performances of the circuit-breaker cannot be guaranteed for temperatures above +70 °C.

To ensure service continuity of the installations, careful thought must be given as to how to keep the temperature within acceptable levels for operation of all the various devices and not only the circuit-breakers. For example, forced ventilation in the switchboards and in the areas where they are installed may be necessary.

Altitude

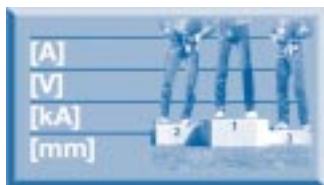
Up to an altitude of 2000 m SACE Isomax S circuit-breaker rated performances are unaffected.

As the altitude increases, the atmospheric properties change in terms of composition, dielectric strength, cooling capacity and pressure.

The circuit-breakers therefore undergo derating, which can basically be measured through the change in significant parameters such as the rated maximum operating voltage and

the rated uninterrupted current.

Altitude	[m]	2000	3000	4000
Rated service voltage, Ue	[V~]	690	600	500
Rated uninterrupted current, Iu	%Iu	100%	95%	90%



Construction characteristics

Modularity of the series SACE Isomax S

Starting from the fixed version circuit-breaker and by means of mounting the conversion kit, all the other versions which are used for the various requirements are obtained.

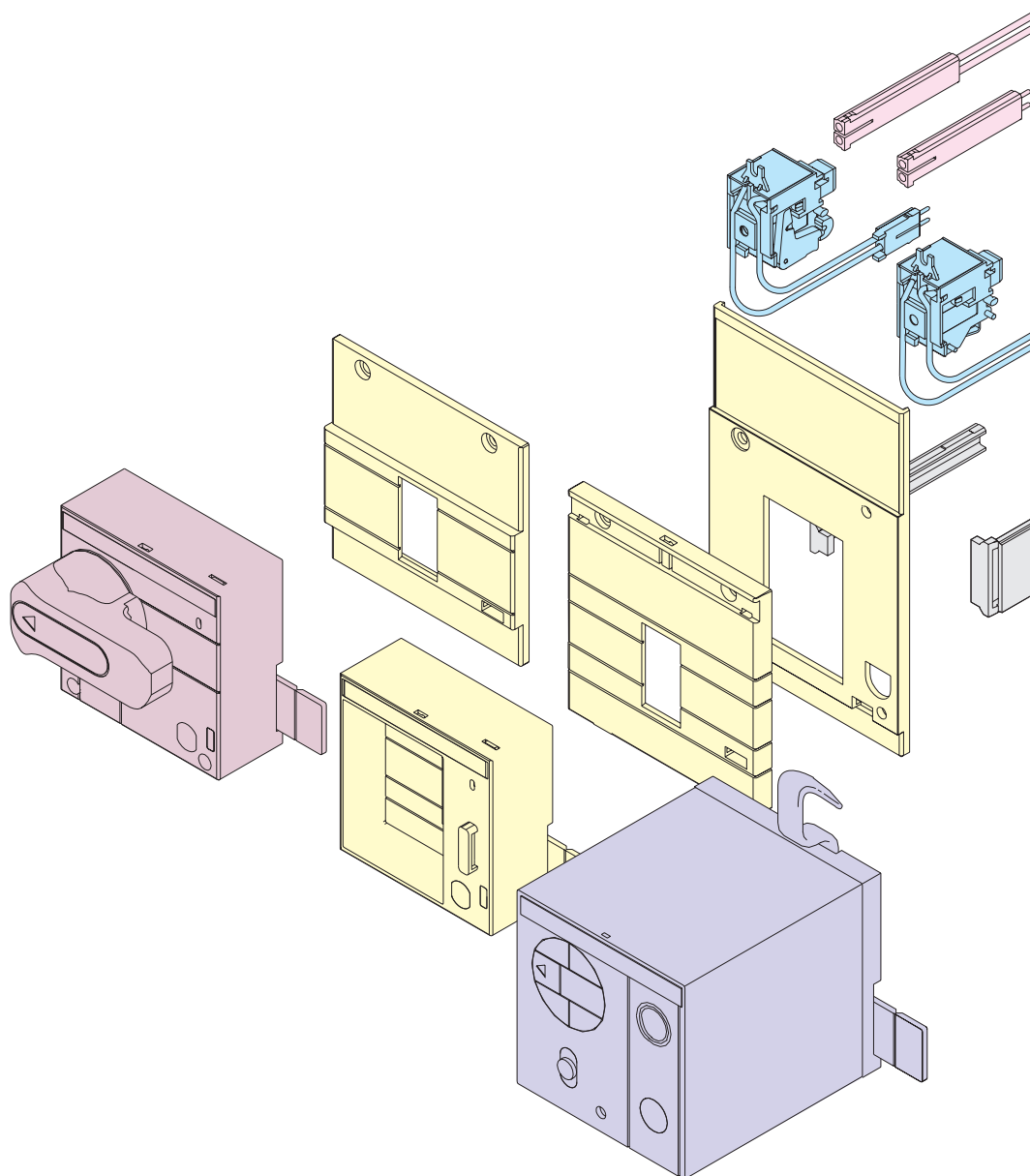
The following are available:

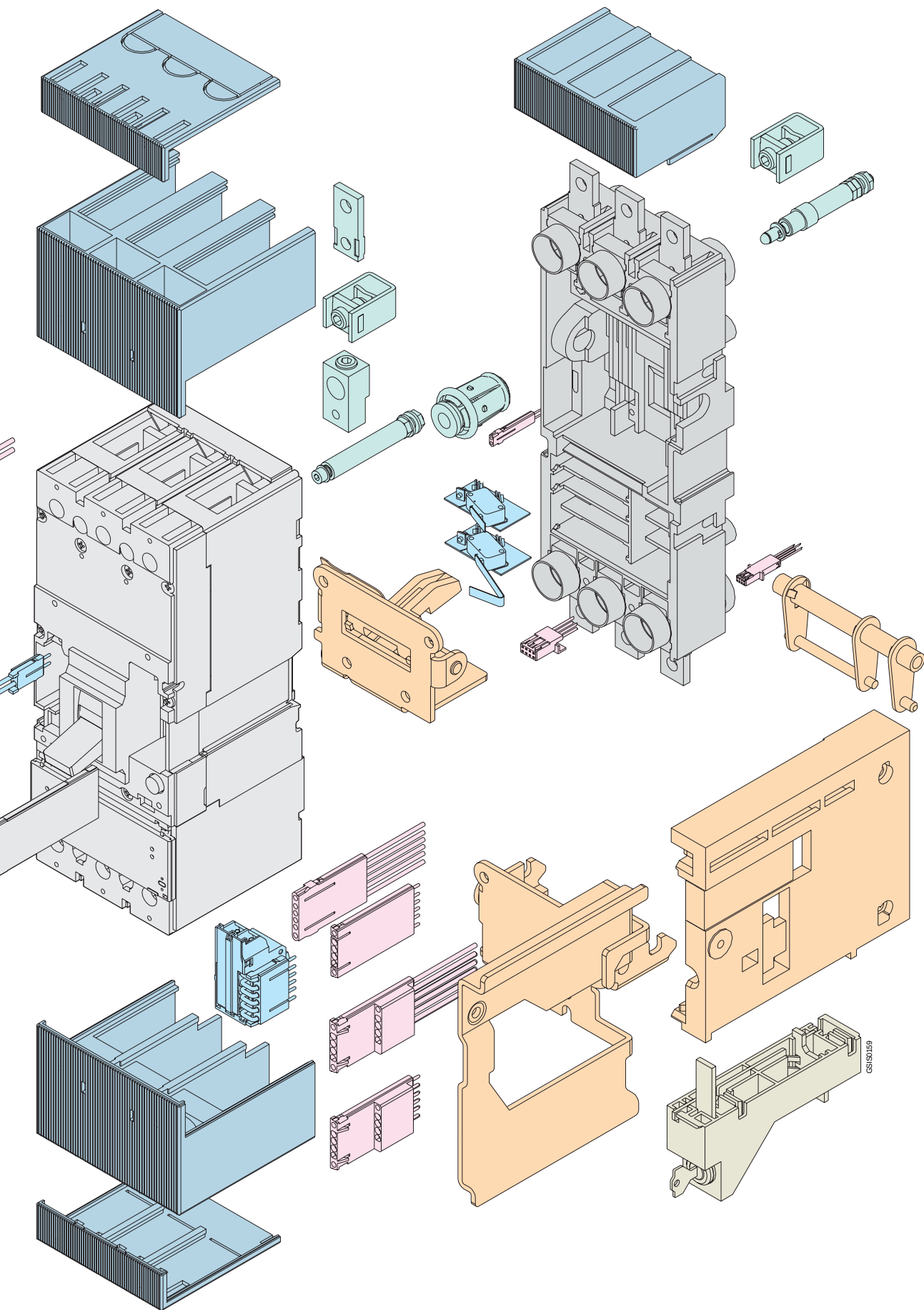
- kit for conversion from fixed circuit-breaker to moving part of a plug-in or withdrawable circuit-breaker
- conversion kit for the connection terminals which make it possible to obtain front and rear terminals for Copper or Aluminium cables, and front and rear terminals for flat bar terminals.

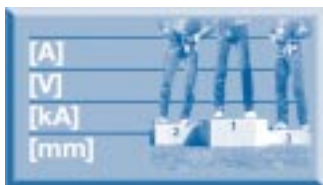
Various accessories are also available:

- shunt opening releases
- undervoltage releases
- auxiliary contacts
- position contacts

- the bracket for rear fixing onto DIN EN 50022 rail for S1-S2 circuit-breakers, DIN EN 50023 rail for S3-S4-S5 circuit-breakers
- direct action motor operator, with stored energy and with solenoid.
- rotary handle operating mechanisms directly on the circuit-breaker and with transmission on the compartment door
- residual-current releases
- accessories for microprocessor-based overcurrent releases such as the signalling, dialogue and actuation unit and external CTs.
- the fixed parts for plug-in or withdrawable circuit-breakers with front terminals for cables or for flat bars and rear terminals for flat bars.

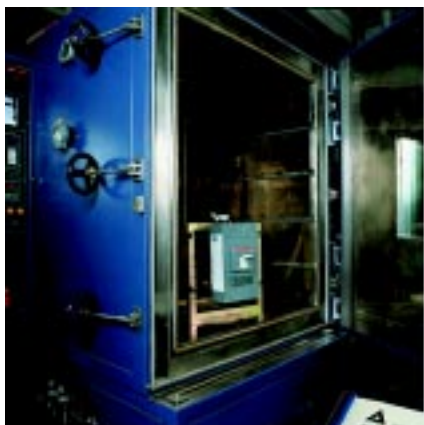






Compliance with the Standards

Standards, Approvals, Certifications and company quality system



SACE Isomax S circuit-breakers and their accessories comply with the IEC 60947-2, EN 60947-2 (unified in 17 countries of CENELEC), CEI EN 60947 and IEC 61000 international Standards and conform with the EC directive:

- “Low Voltage Directives” (LVD) no. 73/23 EEC
- “Electromagnetic Compatibility Directive” (EMC) no. 89/336 EEC.

Certification of compliance with the above-mentioned product Standards, is carried out, in respect of the European EN 45011 Standard, by the Italian certification organisation, ACAE (Association for Certification of Electrical Apparatus), - member of the European organisation LOVAG (Low Voltage Agreement Group).



The attention paid to protecting the environment is another important priority for ABB SACE, and as confirmation of this, the environmental management system has been certified by RINA.



ABB SACE was the first industrial company in the electro-mechanical sector in Italy to obtain this recognition, and, thanks to a revision of its production process with an eye to ecology, has managed to reduce consumption of raw materials, processing waste and the risk of accidents by 20%.

The attention paid to protecting the environment and to the safety of workers is a priority commitment of ABB SACE and as confirmation of this, the company developed the Environmental Management System in compliance with the International ISO 14001 Standard, certified in 1997, integrating this in 1999 with the Health and Safety in the Workplace Management System in accordance with BS 8800 (British Standards).

The prizes obtained by ABB SACE at the Forum Design in Hannover and at Electro in Paris bear witness to the consideration given to man and the respect for ergonomic criteria.

Please contact ABB SACE for information regarding the types of circuit-breakers approved, the performances approved and their relative validity.

ISO 9001



The ABB SACE Quality System complies with the International ISO 9001 Standard (model for assuring quality in design, development, construction, installation and assistance) and to the equivalent European EN ISO 9001 and Italian UNI EN ISO 9001 Standards.

The certification Organisation is RINA-QUACER.

ABB SACE obtained its first certification in 1990.

The ABB SACE Test Room is accredited by SINAL. The apparatus complies with the prescriptions for on-board installations and is approved by major Shipping Registers, such as: LLOYD'S REGISTER OF SHIPPING, GERMANISCHER LLOYD, BUREAU VERITAS, DET NORSKE VERITAS, POLSKI REIESTR STATKOW and the AMERICAN BUREAU OF SHIPPING.





Index

SACE Isomax S circuit-breakers for power distribution	3/3
Electrical characteristics IEC 60947-2	3/4
General characteristics	3/6
Thermomagnetic releases	3/8
Electronic releases	3/10
SACE Isomax S current-limiting circuit-breakers	3/15
Electrical characteristics IEC 60947-2	3/16
General characteristics	3/18
SACE Isomax S circuit-breakers for motor protection (protection against short-circuit)	3/23
Electrical characteristics IEC 60947-4	3/24
General characteristics	3/26
SACE Isomax S circuit-breakers for motor protection (integrated protection)	3/28
Electrical characteristics IEC 60947-2 and IEC 60947-4	3/28
General characteristics	3/30
SACE Isomax S circuit-breakers for applications up to 1000V	3/35
Electrical and general characteristics IEC 60947-2	3/36
SACE Isomax S switch-disconnectors	3/39
Electrical and general characteristics IEC 60947-3	3/40
SACE Isomax S circuit-breakers in accordance with UL489 and CSA C22.2 Standards	3/43
Electrical and general characteristics	3/44



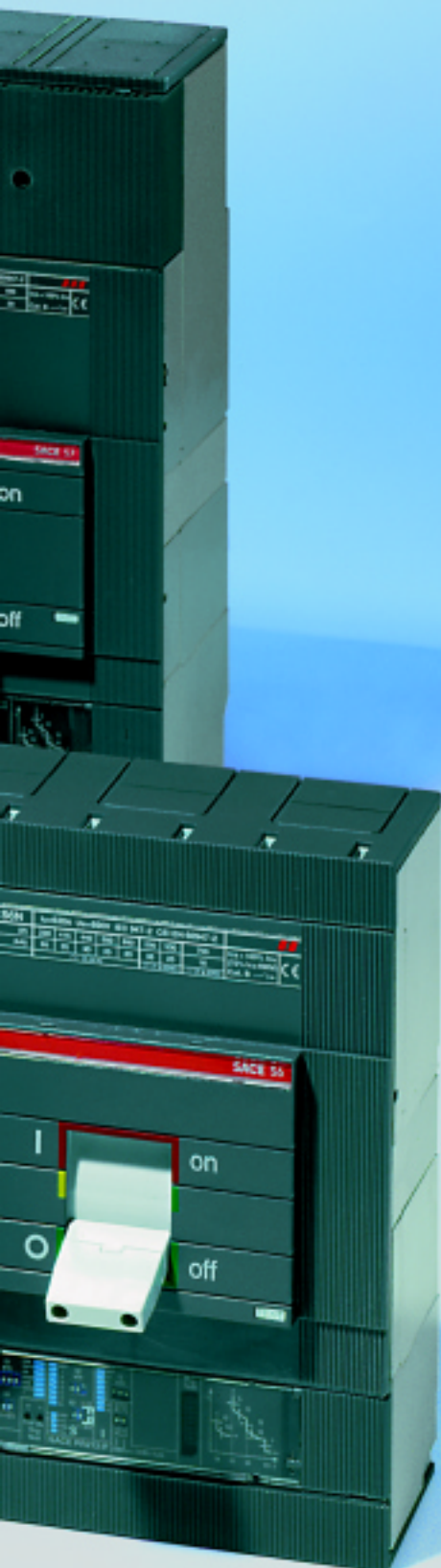


Circuit-breakers for power distribution



Eight sizes to optimise use for all plant and installation requirements

690V • 125-3200 A • 16-120 kA (380/415 V)





SACE Isomax S circuit-breakers for power distribution

Electrical characteristics IEC 60947-2



			SACE Isomax S1		SACE Isomax S2			SACE Isomax S3		
Rated uninterrupted current, I _u	[A]		125		160			160 - 250		
Poles	Nr.		3-4		3-4			3-4		
Rated service voltage, U _e	(AC) 50-60Hz	[V]	500		690			690		
	(DC)	[V]	250		500			750		
Rated impulse withstand voltage, U _{imp}	[kV]		6		6			8		
Rated insulation voltage, U _i	[V]		500		690			800		
Test voltage at industrial frequency for 1 min.	[V]		3000		3000			3000		
Rated ultimate short-circuit breaking capacity, I _{cu}			B	N	B	N	S	N	H	L
(AC) 50-60 Hz 220/230 V	[kA]		25	40	25	50	65	65	100	170
(AC) 50-60 Hz 380/415 V [kA]			16	25	16	35 (1)	50	35 (1)	65	85
(AC) 50-60 Hz 440 V	[kA]		10	16	10	20	25	30	50	65
(AC) 50-60 Hz 500 V	[kA]		8	12	8	12	15	25	40	50
(AC) 50-60 Hz 690 V	[kA]		-	-	6	8	10	14	18	20 (5)
(DC) 250 V - 2 poles in series	[kA]		16	25	16	35	50	35	65	85
(DC) 500 V - 2 poles in series	[kA]		-	-	-	-	-	35	50	65
(DC) 500 V - 3 poles in series	[kA]		-	-	16	35	50	-	-	-
(DC) 750 V - 3 poles in series	[kA]		-	-	-	-	-	20	35	50
Rated short-circuit service breaking capacity, I _{cs} (2)	[%I _{cu}]		50%	50%	100%	75%	75%	100%	75%	75%
Rated short-circuit making capacity (415 V)	[kA]		32	52,5	32	74	105	74	143	187
Opening time (415V at I _{cu})	[ms]		8	6	8	7	6	8	7	6
Rated short-time withstand current for 1 s, I _{cw}	[kA]									
Utilisation category (EN 60947-2)			A		A			A		
Isolation behaviour			■		■			■		
IEC 60947-2, EN 60947-2			■		■			■		
Releases: thermomagnetic	T fixed, M fixed 5 lth		■	■						
	T fixed, M fixed 10 lth		■	■						
	T adjustable, M fixed 3 lth							■	■	
	T adjustable, M fixed 5 lth				■	■		■	■	■
	T adjustable, M fixed 10 lth				■	■	■	■	■	■
	T adjustable, M adjustable									
magnetic only	M fixed			■		■	■	■	■	■
	with microprocessor									
	PR211/P (I-LI)									
	PR212/P (LSI-LSIG)									
Interchangeability										
Versions			F - P		F - P			F - P - W		
Terminals	fixed		FC-R		EF - FC - FC CuAl - R			F- EF - ES - FC FC CuAl - RC - R		
	plug-in		FC-R		FC - R			EF - FC - R		
	withdrawable (3)		-		-			EF - FC - R		
Fixing on DIN rail			DIN EN 50022		DIN EN 50022			DIN EN 50023		
Mechanical life	[No. operations / hourly operations]		25000/240		25000/240			25000/120		
Electrical life (at 415 V)	[No. operations / hourly operations]		8000/120		8000/120			10000(160A)-8000(250A)/120		
Basic dimensions, fixed	3/4 poles	L [mm]	78/103		90/120			105/140		
		D [mm]	70		70			103,5		
		H [mm]	120		120			170		
Weights fixed	3/4 poles	[kg]	0,9 / 1,2		1,1/1,5			2,6 / 3,5		
	plug-in	[kg]	1 / 1,4		1,3/1,7			3,1 / 4,1		
	withdrawable	[kg]	-		-			3,5 / 4,5		

(1) All the versions with I_{cu}=35kA are certified at 36kA

(2) For S3 N/H/L, S4 N/H/L, S5 N/H, and S6 N/S/H circuit-breakers the performance percentage of I_{cs} at 690V is reduced by 25%.

(3) The withdrawable version circuit-breakers must be fitted with the front flange for the lever operating mechanism or with its alternative accessories, such as the rotary handle or the motor operator

(4) For the S5 circuit-breaker, the plug-in version is only available for the version with 400 A rated current

(5) The SACE S3 circuit-breaker with breaking capacity L at 690 V can only be supplied from above



	SACE Isomax S4			SACE Isomax S5			SACE Isomax S6				SACE Isomax S7			SACE Isomax S8	
	160 - 250			400 - 630			630 - 800				1250 - 1600			2000 - 2500 - 3200	
	3-4			3-4			3-4				3-4			3-4	
	690			690			690				690			690	
	-			750			750				-			-	
	8			8			8				8			8	
	800			800			800				800			690	
	3000			3000			3000				3000			2500	
	N	H	L	N	H	L	N	S	H	L	S	H	L	H	V
	65	100	200	65	100	200	65	85	100	200	85	100	200	85	120
	35 (1)	65	100	35 (1)	65	100	35 (1)	50	65	100	50	65	100	85	120
	30	50	80	30	50	80	30	45	50	80	40	55	80	70	100
	25	40	65	25	40	65	25	35	40	65	35	45	70	50	70
	18	22	30	20	25	30	20	22	25	30	20	25	35	40	50
	-	-	-	35	65	100	35	50	65	100	-	-	-	-	-
	-	-	-	35	50	65	20	35	50	65	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	20	35	50	16	20	35	50	-	-	-	-	-
	100%	100%	75%	100%	100%	75%	100%	100%	100%	75%	100%	75%	50%	50%	50%
	74	143	220	74	143	220	74	105	143	220	105	143	220	187	264
	8	7	6	8	7	6	10	9	8	7	22	22	22	20	20
	5 (400A)			5 (400A)			7,6 (630A) - 10 (800A)				15 (1250A) - 20 (1600A)			35	
	A			B (400A) - A (630A)			B				B			B	
	■			■			■				■			■	
	■			■			■				■			■	

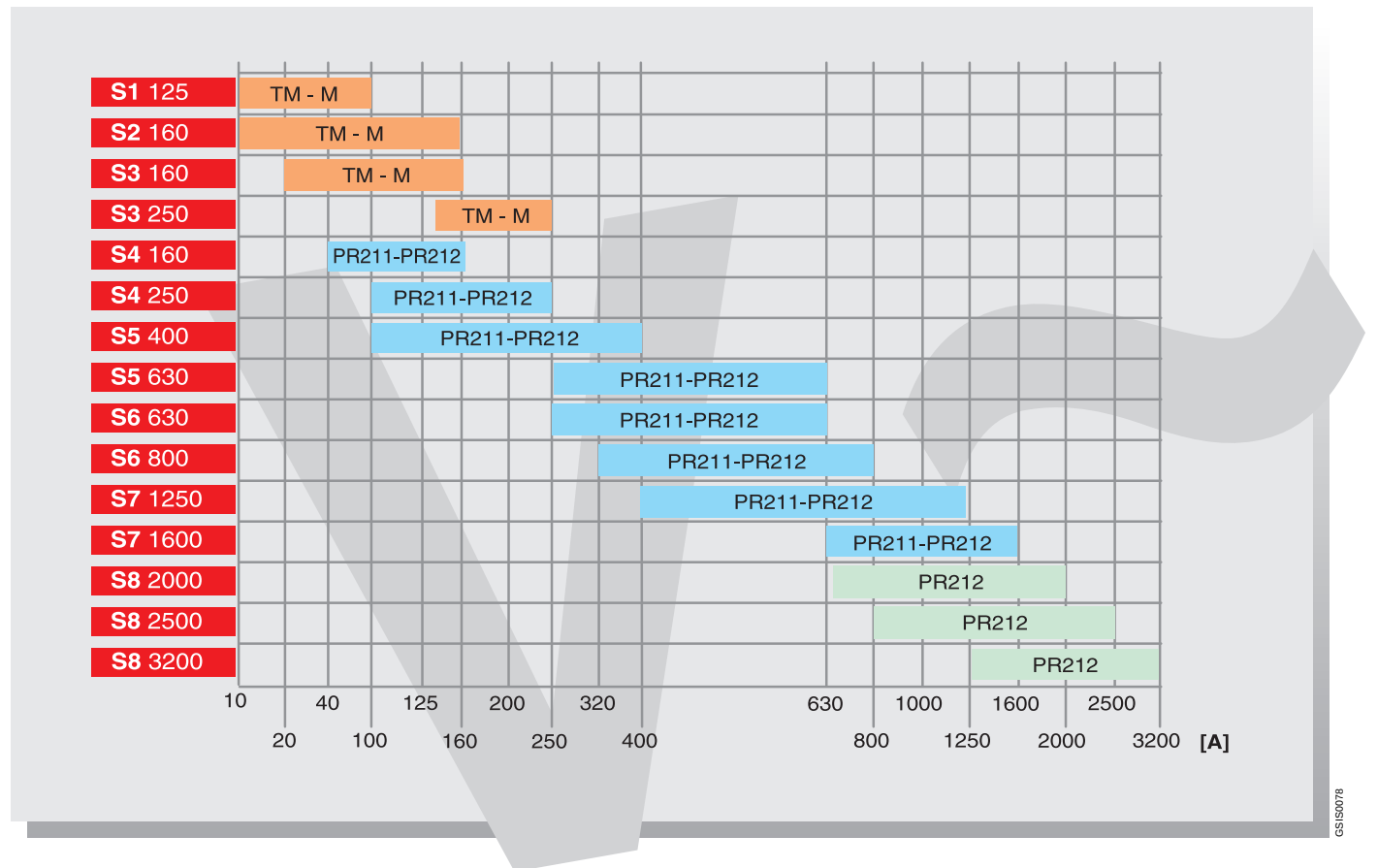


SACE Isomax S circuit-breakers for power distribution

General characteristics

The SACE Isomax S series of moulded-case circuit-breakers conforming to the IEC 60947-2 Standard, is divided into eight basic sizes, with rated uninterrupted currents from 125 to 3200 A and breaking capacities from 16 to 120 kA (380/415 V). Selection of the size allows the basic electrical characteristics to be identified simply and immediately, whereas selection of the overcurrent release depends on the type of application required.

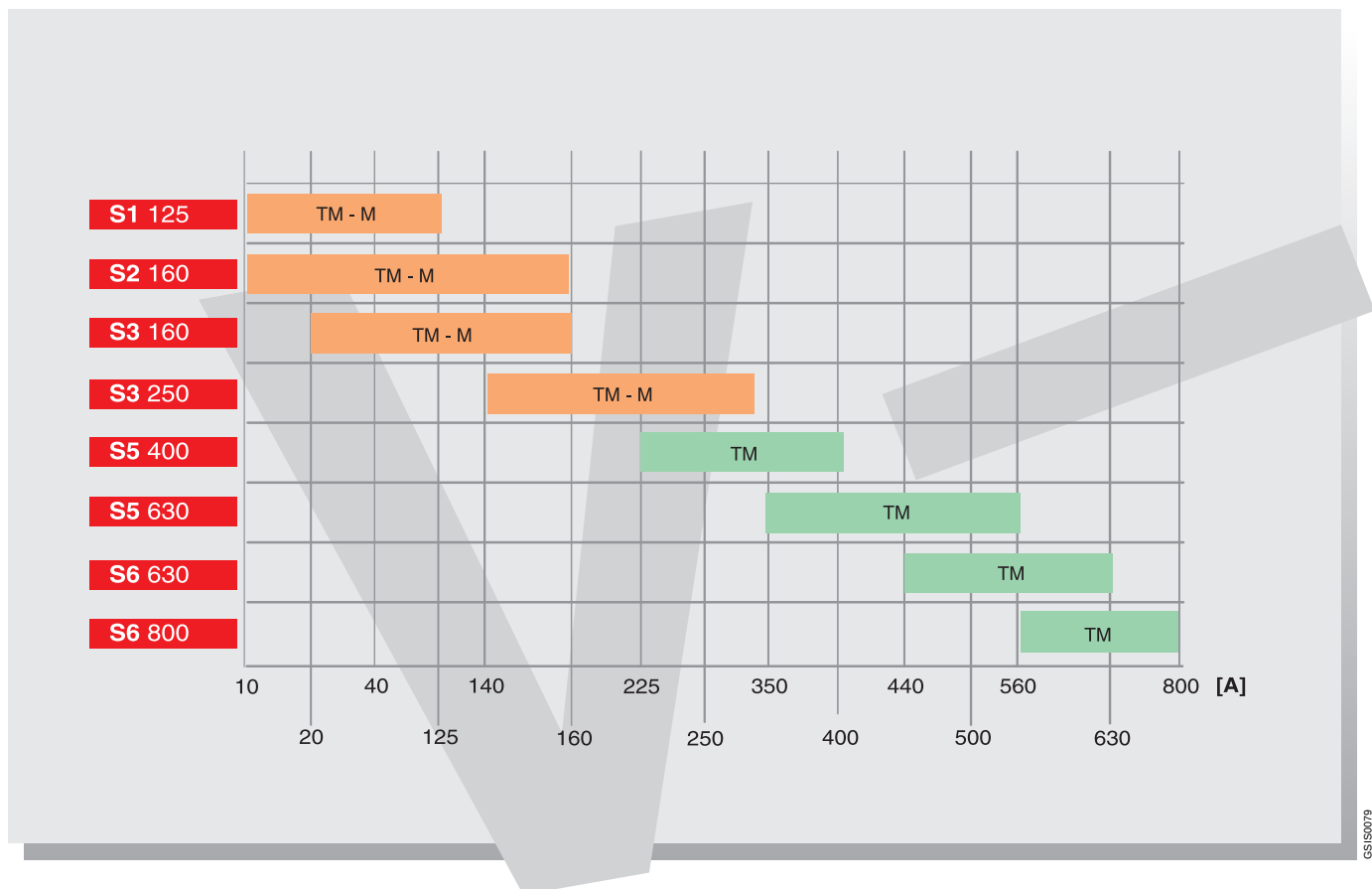
Range of application of the alternating current circuit-breakers



For protection of alternating current networks, SACE S1, S2, and S3 circuit-breakers fitted with thermomagnetic releases and SACE S4, S5, S6, S7, and S8 circuit-breakers fitted with SACE PR211/P or PR212/P electronic releases are available. These are characterised by an application range from 10 to 3200 A and by a rated voltage of 690 V.

KEY
TM = Thermomagnetic
M = Magnetic only
PR211-PR212 = Electronic releases

Range of application of the direct current circuit-breakers



SACE S1, S2, S3, S5, and S6 circuit-breakers fitted with thermomagnetic releases are used in protection of direct current networks, with an application range from 10 to 800 A and a minimum operating voltage of 24 V DC. With 2 poles in series, SACE Isomax S circuit-breakers can be used with rated voltage of 250 and 500 V and breaking

capacities up to 100 kA (250 V DC) and 65 kA (500 V DC); whereas the SACE S3, S5, and S6 circuit-breakers with 3 poles in series can reach 750 V and breaking capacities up to 50 kA.

The various possible wiring diagrams and the trip threshold correction factors are indicated on page 5/47.

KEY
 TM = Thermomagnetic
 M = Magnetic only



SACE Isomax S circuit-breakers for power distribution

Thermomagnetic releases

SACE Isomax S1, S2, S3, S5, and S6 circuit-breakers can be fitted with thermomagnetic releases and are used for protection of alternating current networks with the S1, S2, and S3 circuit-breakers (for applications from 10A to 250A) and in direct current with the S1, S2, S3, S5, and S6 circuit-breakers (from 10A to 800A). They allow protection against overloads using a thermal device (with fixed threshold for S1 and adjustable threshold for S2, S3, S5, and S6) carried out using the bimetallic strip technique, and protection against short-circuit using a magnetic device (with fixed threshold for S1, S2, and S3 and adjustable threshold for S5 and S6).

The four-pole circuit-breakers are always fitted with the neutral protected by the release.



3

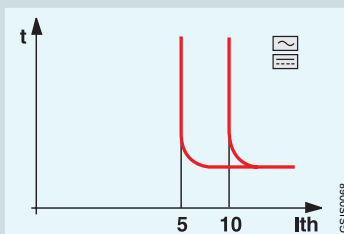
Thermomagnetic releases

L1 - L2 - L3	R10	R12,5	R16	R20	R25	R32	R32	R40	R50	R50	R63	R80	R100	R125	R125	
neutral	R10	R12.5	R16	R20	R25	R32	R32	R40	R50	R50	R63	R80	R100	R125	R80	
S1 125	■	■	■	■	■	■		■	■		■	■	■	■		
S2 160		■	■	■	■	■		■	■		■	■	■		■	
S3 160							■			■		■	■		■	
S3 250																
S5 400																
S5 630																
S6 630																
S6 800																
10 x lth L1-L2-L3	500	500	500	500	500	500	500	500	500	500	630	800	1000	1250	1250	
neutral	500	500	500	500	500	500	500	500	500	500	630	800	1000	1250	800	
5 x lth L1-L2-L3	160	160	160	200	200	200	300	200	250	300	320	400	500	630	630	
neutral	160	160	160	200	200	200	300	200	250	300	320	400	500	630	400	
3 x lth L1-L2-L3													300		375	
neutral													300		240	
TM adjustable																
L1-L2-L3																
neutral																

Magnetic only releases

L1 - L2 - L3	R16	R40	R50	R50	R63	R80	R100	R125	R125	R125	R160	R200	R250
neutral	R16	R40	R50	R50	R63	R80	R100	R125	R80	R80	R100	R125	R160
S1 125	■	■	■		■	■	■	■					
S2 160	■	■	■		■	■	■		■		■		
S3 160				■		■	■			■	■		
S3 250												■	■
10 x Ith L1-L2-L3			500	500	630	800	1000	1250	1250	1250	1600	2000	2500
neutral			500	500	630	800	1000	1250	800	800	1000	1250	1600
5 x Ith L1-L2-L3	160	200	250	300	320	400				630			
neutral	160	200	250	300	320	400				400			

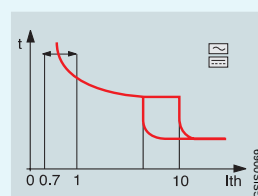
The magnetic only releases which equip the SACE S1, S2, and S3 circuit-breakers have a fixed trip threshold as indicated in the table. For S1, the magnetic only release is available in the version with breaking capacity N = 25 kA; for S2, breaking capacities N = 36 kA and S = 50 kA are available. The latter version is only available in the 10 x Ith version.



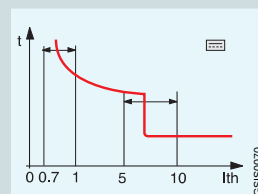
R160	R200	R250	R320	R400	R500	R630	R800
R100	R125	R160	R200	R250	R320	R400	R500
■							
■							
	■	■					
			■	■			
					■		
						■	
							■
1600	2000	2500					
1000	1250	1600					
800	1000	1250					
500	625	800					
480	600	750					
300	375	480					
			3200	4000	5000	6300	8000
			2000	2500	3200	4000	5000

The letter "R" identifies the setting current for phase (L1-L2-L3) and neutral protection (second line). The ones indicated are the combinations provided as standard. On request, circuit-breakers with neutral at 100% of the phase setting can be supplied.

The thermomagnetic releases which equip the SACE S2 and S3 circuit-breakers have the thermal element with threshold adjustable from $0.7 \div 1 \times I_n$. The regulated current value which is obtained by using the appropriate selector must be intended as the rated value at 40 °C. The magnetic element has fixed trip threshold, with trip values which vary according to the phase setting. The S2 circuit-breaker with breaking capacity S = 50 kA is only available in the 10 x Ith version.



The thermomagnetic releases which equip SACE S5 and S6 circuit-breakers have the thermal element with threshold adjustable from $0.7 \div 1 \times I_n$. The regulated current value which is obtained by using the appropriate selector must be intended as the rated value at 40 °C. The magnetic element can be adjusted from $5 \div 10 \times I_n$. The table gives the maximum magnetic trip values (10 x Ith) for protection of the phases (L1 - L2 - L3) and of the neutral.



The trip thresholds of the magnetic protection are a function of the setting used both for protection of the phases (L1 - L2 - L3) and of the neutral. The releases denominated 10 x Ith are indicated for all distribution applications, whereas the releases denominated 5 x Ith and 3 x Ith are used where a low magnetic trip threshold is required. With regard to this, the 3 x Ith are particularly suitable for protection of generators.



SACE Isomax S circuit-breakers for power distribution

Electronic releases

The SACE Isomax S4, S5, S6, S7 and S8 circuit-breakers for protection in alternating current can be fitted with SACE PR211/P or SACE PR212/P overcurrent releases, constructed using electronic microprocessor-based technology. This allows protection functions to be obtained which guarantee a high level of reliability and tripping precision and which are unaffected by the external ambient. The power supply needed for correct operation is supplied directly by the release current transformers, in the presence of a phase current higher than or equal to 18% of their rated current, even with a single phase supplied with voltage. There is only one adjustment for all the phases and the neutral and the release is simultaneous for all the circuit-breaker poles, with trip characteristics which are unaffected by the external ambient. The functions and settings of the release protections can be verified by means of the SACE TT1 and SACE PR010/T Test units.



SACE PR211/P

The SACE PR211/P release (available from S4 to S7) provides protection functions against overload L and instantaneous short-circuit I, and is available in the versions with functions I and LI. The wide range of adjustments make this release particularly suitable in all distribution where tripping reliability and precision is required and where magnetic only protection is needed (from 1.5 to 12 x I_n), using the SACE PR211/P version I release.

SACE PR212/P

The SACE PR212/P release (available from S4 to S8) provides protection functions against overload L, delayed short-circuit S and instantaneous short-circuit I, and against earth fault G. It is available in the versions PR212/P with functions LSI and LSI_G; both allow use of the PR010/K signalling unit, the PR212/D dialogue unit and the PR212/T actuator unit, which can be used either simultaneously or individually, except for the

PR212/T actuator unit which is always supplied when the dialogue unit is required. It is particularly suitable in applications with selective coordination requirements, for earthing protection against the risk of fire and evolutionary faults, and for remote control and parametrisation, network supervision and centralised load management.

In	100 A	160 A	250 A	320 A	
S4 160	■	■			
S4 250			■		
S5 400				■	
S5 630					
S6 630					
S6 800					
S7 1250					
S7 1600					
S8 2000					
S8 2500					
S8 3200					
L	40÷100	64÷160	100÷250	128÷320	
S	100÷1000	160÷1600	250÷2500	320÷3200	
I	150÷1200	240÷1920	375÷3000	480÷3840	
G	20÷100	32÷160	50÷250	64÷320	
neutral (50%)	20÷50	32÷80	50÷125	64÷160	
neutral (100%)	40÷100	64÷160	100÷250	128÷320	

For four-pole circuit-breakers fitted with SACE PR212/P release (LSI-LSIG), protection of the neutral can be set to 50% or 100% of the phase protection setting (by means of dip-switches on the front of the release).

For those with SACE PR211/P release (I-LI), protection of the neutral at 100% can be ordered by means of an additional code 1SDA037505R1.

With three-pole and distributed neutral circuit-breakers, external toroids can be used by connecting these directly either to the SACE PR211/P release, or to the SACE PR212/P release. On request, it is possible to obtain full protection of the neutral with setting equal to 100% of the protection.

The SACE PR211/P and SACE PR212/P microprocessor-based releases are self-supplied and ensure correct operation of the protection functions, even with only a single phase supplied with voltage, in the presence of a current higher than or equal to 18% of the rated phase value.

The protection release consists of current transformers (three or four according to the circuit-breaker polarity), the SACE PR211/P or SACE PR212/P protection unit and an OS demagnetising opening solenoid which acts directly on the circuit-breaker operating mechanism group.

The current transformers are housed inside the release box and supply the energy needed for correct operation of the protection and the signal required to determine the current. They are available with primary rated current as indicated in the table below.

When the protection intervenes, the circuit-breaker opens by means of the opening solenoid (OS), which changes over a contact for signalling release tripped. Resetting the signal is of mechanical type and takes place with resetting of the circuit-breaker operating lever.

It is possible to test the opening solenoid (OS) by means of the SACE TT1 test device. A positive result of the test

coincides with circuit-breaker opening. All the protection functions with relative trip times can be verified and tested using the SACE PR010/T accessory unit (only for PR212/P).

In the versions with SACE PR212/P - LSI/LSIG release, it is possible to set the adjustment parameters of the protection functions directly from the front (dip-switch positioned on MAN), or to set the parameters remotely (dip-switch positioned on ELT) thanks to the use of the SACE PR212/D dialogue units.

In case of any anomalies in remote parametrisation, the protection automatically uses the set of parameters set manually on the front of the circuit-breaker.

The PR010/K signalling or PR212/D dialogue units supply the PR212/P (24 VDC $\pm 20\%$) protection release continuously and this allows the adjustment parameters to be set even with the circuit-breaker open.

	400 A	630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A
	■								
		■							
		■							
			■						
				■	■				
						■			
						■			
							■		
								■	
									■
	160÷400	252÷630	320÷800	400÷1000	500÷1250	640÷1600	800÷2000	1000÷2500	1280÷3200
	400÷4000	630÷6300	800÷8000	1000÷10000	1250÷12500	1600÷16000	2000÷20000	2500÷25000	3220÷32000
	600÷4800	945÷7560	1200÷9600	1500÷12000	1875÷15000	2400÷19200	3000÷24000	3750÷30000	4800÷38400
	80÷400	126÷630	160÷800	200÷1000	250÷1250	320÷1600	400÷2000	500÷2500	640÷3200
	80÷200	126÷315	160÷400	200÷500	250÷625	320÷800	400÷1000	500÷1250	640÷1600
	160÷400	252÷630	320÷800	400÷1000	500÷1250	640÷1600	—	—	—



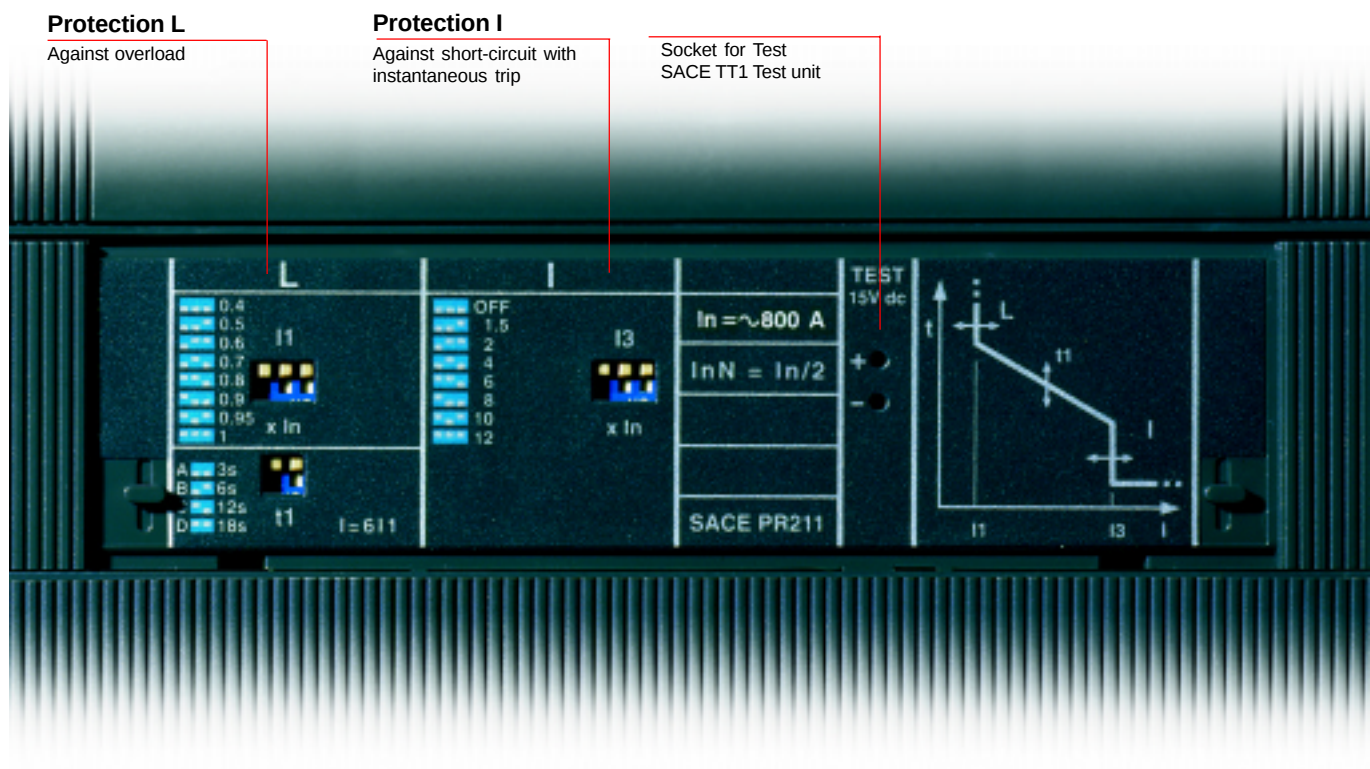
SACE Isomax S circuit-breakers for power distribution

Electronic releases

Protection functions and parametrisation of the SACE PR211/P, PR212/P releases

Protection function	Trip threshold
 Against overload with inverse long time delay and trip characteristic according to a time dependent curve ($I^2t = \text{constant}$)  CANNOT BE EXCLUDED	$I1 = 0,4 - 0,5 - 0,6 - 0,7 - 0,8 - 0,95 - 1 \times I_n$ PR211/P (I - LI) $I1 = 0,4 - 0,5 - 0,55 - 0,6 - 0,65 - 0,7 - 0,75 - 0,8 - 0,85 - 0,875 - 0,9 - 0,925 - 0,95 - 0,975 - 1 \times I_n$ PR212/P (LSI - LSIg) Release between 1,05 ... 1,30 x I1 (IEC 60947-2)
 Against short-circuit with inverse short time delay and trip characteristic with dependent time ($I^2t = \text{constant}$) or independent time  CAN BE EXCLUDED	$I2 = 1 - 2 - 3 - 4 - 6 - 8 - 10 \times I_n$ Tolerance $\pm 10\%$
 Against short-circuit with adjustable instantaneous trip  CAN BE EXCLUDED	$I2 = 1 - 2 - 3 - 4 - 6 - 8 - 10 \times I_n$ Tolerance $\pm 10\%$ $I3 = 1,5 - 2 - 4 - 6 - 8 - 10 - 12 \times I_n (*)$ Tolerance $\pm 20\%$ (*) For S5 630, I3 max = 8 x I _n
 Against earth fault with short inverse time delay and trip characteristic according to a dependent time curve ($I^2t = \text{constant}$)  CAN BE EXCLUDED	$I4 = 0,2 - 0,3 - 0,4 - 0,6 - 0,8 - 0,9 - 1 \times I_n$ Tolerance $\pm 20\%$

SACE PR211/P electronic release, functions I or LI



Characteristics of SACE PR211/P, SACE PR212/P electronic releases

Trip curves			
A	B	C	D
at $6 \times I_n$ $t_1 = 3s$ (tolerance: $\pm 10\%$ up to $2 \times I_n$; $\pm 20\%$ above $2 \times I_n$)	at $6 \times I_n$ $t_1 = 6s$	at $6 \times I_n$ $t_1 = 12s$	at $6 \times I_n$ $t_1 = 18s$
at $8 \times I_n$ $t_2 = 0,05s$ (tolerance: $\pm 20\%$)	at $8 \times I_n$ $t_2 = 0,1s$	at $8 \times I_n$ $t_2 = 0,25s$	at $8 \times I_n$ $t_2 = 0,5s$
$t_2 = 0,05s$ (tolerance: $\pm 20\%$)	$t_2 = 0,1s$	$t_2 = 0,25s$	$t_2 = 0,5s$
up to $3,25 \times I_4$ $t_4 = 100ms$ (tolerance: $\pm 20\%$)	up to $2,25 \times I_4$ $t_4 = 200ms$	up to $1,6 \times I_4$ $t_4 = 400ms$	up to $1,25 \times I_4$ $t_4 = 800ms$

Operating temperature	$-25\text{ }^{\circ}\text{C} \div +70\text{ }^{\circ}\text{C}$
Relative humidity	90%
Service frequency	45 ... 66 Hz able to measure harmonics up to 550 Hz
Electromagnetic compatibility (LF and HF)	IEC 60947-2 Annex F
Electrostatic discharges	IEC 61000-4-2
Radiated electromagnetic field	IEC 61000-4-3
Short-time transients	IEC 61000-4-4
Mean time between failure (MTBF)	15 years (at $45\text{ }^{\circ}\text{C}$)
Characteristics of the signalling contact	
Maximum interrupted current	0,5 A
Maximum interrupted voltage	24 VDC/AC
Breaking capacity	3 W/VA
Contact/contact insulation	500 VAC
Contact/coil insulation	1000 VAC

3

SACE PR212/P electronic release, functions LSI or LSIG

Protection L

Against overload

Protection S

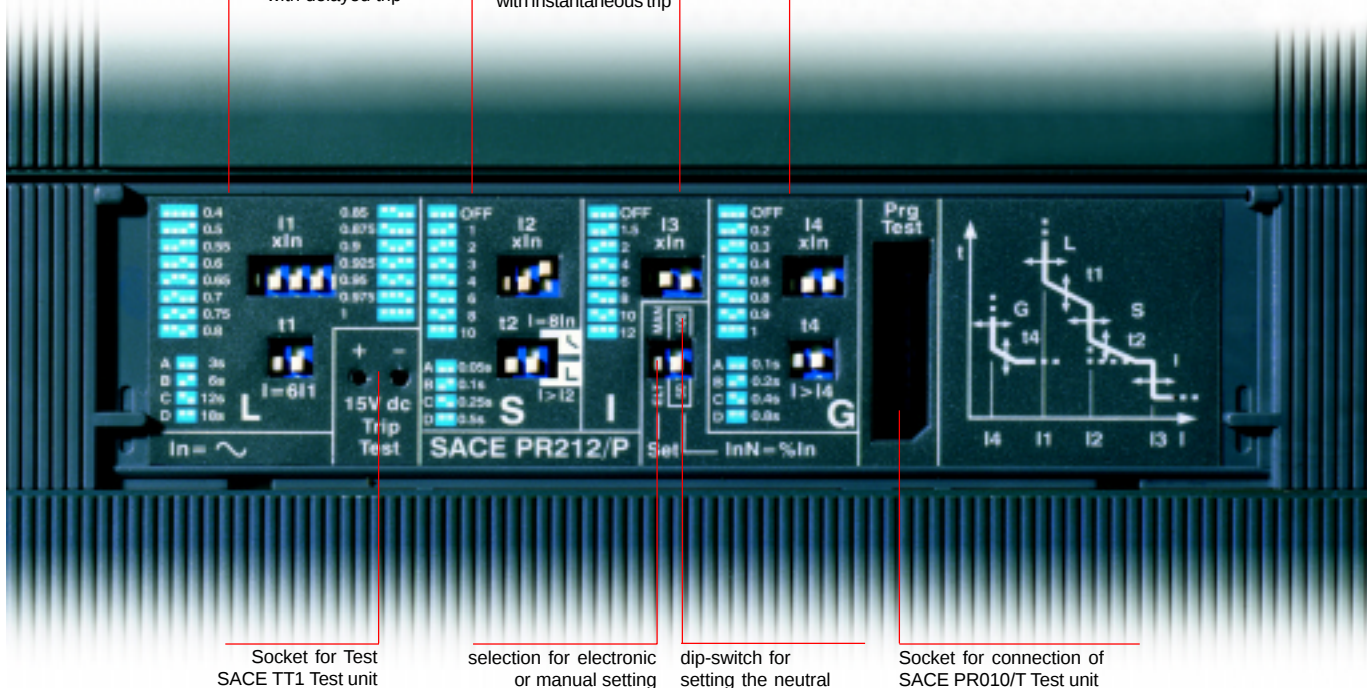
Against short-circuit
with delayed trip

Protection I

Against short-circuit
with instantaneous trip

Protection G

Against earth fault







SACE Isomax S current-limiting circuit-breakers



To interrupt and “limit” even
the worst faults

690V • 100-630A • 70-200kA (380/415 V)





SACE Isomax S current-limiting circuit-breakers

Electrical characteristics IEC 60947-2



			SACE Isomax S2X 100		
Rated uninterrupted current, I _u			100		
Poles			3		
Rated service voltage, U _e (AC) 50-60Hz			690		
Rated impulse withstand voltage, U _{imp}			6		
Rated insulation voltage, U _i			690		
Test voltage at industrial frequency for 1 min.			3000		
Rated ultimate short-circuit breaking capacity, I _{cu}			X		
(AC) 50-60 Hz 220/230 V			100		
(AC) 50-60 Hz 380/415 V			70		
(AC) 50-60 Hz 440 V			70		
(AC) 50-60 Hz 500 V			50		
(AC) 50-60 Hz 690 V			10		
Rated service short-circuit breaking capacity, I _{cs} (1)			75%		
Rated short-circuit making capacity (415 V)			154		
Opening time (415V at I _{cu})			3,5		
Utilisation category (EN 60947-2)			A		
Isolation behaviour			■		
IEC 60947-2, EN 60947-2			■		
Releases:			■		
thermomagnetic - T adjustable, M fixed 10 lth					
with microprocessor PR211/P (I-LI)					
with microprocessor PR212/P (LSI-LSIG)					
Interchangeability					
Versions			F-P		
Terminals			EF - FC - FC CuAl - R		
			FC-R		
			-		
Fixing on DIN rail			DIN EN 50022		
Mechanical life			25000/240		
Electrical life (at 415 V)			8000/120		
Basic dimensions, fixed			90/120		
			70		
			120		
Weights, 3/4 poles			1,1/1,5		
			1,3/1,7		
			-		

- (1) The value of I_{cs} at 500V and 690V for S3X, S4X and S6X is reduced by 25%
- (2) For S3X with R32 setting: I_{cu} (690V) = 50 kA and I_{cs} = 100% I_{cu}
I_{cu} (500V) = 75 kA and I_{cs} = 100% I_{cu}
- (3) S3X at 690V can only be supplied from above

KEY TO VERSIONS
F = Fixed
P = Plug-in
W = Withdrawable



	SACE Isomax S3X	SACE Isomax S4X	SACE Isomax S6X
	125-200	250	400-630
	3-4	3-4	3-4
	690	690	690
	8	8	8
	800	800	800
	3000	3000	3000
	X	X	X
	300	300	300
	200	200	200
	180	180	180
	150	150	150
	75 (2)(3)	75	75
	100%	100%	100%
	440	440	440
	3,5	3,5	3,5
	A	A	A
	■	■	■
	■	■	■
	■		
		■	■
		■	■
		■	■
	F-P-W	F-P-W	FW
	F - EF - ES - FC - FC CuAl - RC - R	F - EF - ES - FC - FC CuAl - RC - R	F - EF - ES - FC CuAl - RC - R
	EF - R	EF - R	-
	EF - R	EF - R	EF - HR - VR
	DIN EN 50023	DIN EN 50023	-
	25000/120	20000/120	20000/120
	10000(125A)-8000(200A) / 120	800 / 120	7000(630A)-5000(800A)/60
	105/140	105/140	210/280
	103,5	103,5	103,5
	255	339	268
	3,6 / 4,8	5 / 7	9,5 / 12
	6,3 / 8,7	8,2 / 10,7	-
	7,1 / 9,5	9 / 11,5	12,1 / 15,1

KEY TO TERMINALS

F = Front
EF = Extended front
ES = Extended spreaded front

FC = Front for copper cables
FC CuAl = Front for copper or aluminium cables
R = Rear threaded

RC = Rear for copper or aluminium cables
HR = Rear horizontal flat bar
VR = Rear vertical flat bar



SACE Isomax S current-limiting circuit-breakers

General characteristics

SACE Isomax S2X 100 - S3X - S4X - S6X current-limiting circuit-breakers

These pieces of apparatus are characterised by a rated voltage U_e of 690 V AC, by rated uninterrupted currents from 100 A to 630 A, by service currents from 1 to 630 A and by an ultimate short-circuit breaking capacity up to 200 kA at 380/415 V AC and 75 kA at 690 V AC.

The circuit-breakers, which comply with IEC 60947-2 Standards, are available in the three- and four-pole type (only three-pole for S2X 100) in the fixed, plug-in and withdrawable versions.

The function carried out by the current-limiting circuit-breakers is to “limit” the specific let-through energy to a maximum in the case of short-circuit, safeguarding the integrity of the circuits and of the apparatus located on the load side.

The breaking system used, which foresees double interruption per pole, allows very high value short-circuits to be interrupted extremely rapidly.

Moreover, the special shape of the interruptive parts allows the peak values of fault currents to be limited to figures considerably lower than those of the short-circuit current present at the point of installation.

For the circuit-breakers on the load side, the rapidity of opening notably reduces exposure to the electrodynamic stresses which occur in the case of a fault.



3 Integration with the SACE Isomax S family

The range of current-limiting circuit-breakers has been conceived as a product aimed at particularly severe requirements, but comes within the sphere of the general SACE Isomax S project in any case.

The user gains considerable advantages because it means being able to optimise stocks, standardise support and installation structures and rationalise circuit-breaker selection thanks to

application flexibility which allows all low voltage application requirements to be covered.

In the SACE Isomax S series, the current-limiting circuit-breakers offer the same benefits of modular construction. All the other versions can be made from the “basic” version of the current-limiting circuit-breaker by means of special conversion kits.

For S3X, S4X and S6X, conversion from the fixed circuit-breaker into the moving part of plug-in or withdrawable circuit-breaker is carried out by means of special kits listed under the chapter entitled “Ordering codes” (for S2X 100, the kit is the same as the corresponding S2 B/N/S one).

The fixed parts of current-limiting plug-in or withdrawable version circuit-breakers can, on the other hand, be used either for the current-limiting circuit-breakers themselves or for the corresponding SACE S2 - S3 - S4 and S6 automatic circuit-breakers.

With regard to accessories, too, the S2X 100, S3X, S4X and S6X current-limiting circuit-breakers use the same accessories provided for the corresponding automatic circuit-breakers and also keep the same electrical characteristics.



SACE Limitor	SACE Isomax S
LN A 32-63-100	S2X 100
LN 100 / LN 125	S3X 125
LN 160 / LN 200	S3X 200
LN 320 (setting 250 A)	S4X 250
LN 320	S6X 400
LN 500 / LN 630	S6X 630

The electrical characteristics of the SACE Isomax S current-limiting circuit-breakers allow a comparison with the circuit-breakers in the previous SACE Limitor series to be established, to determine any replacements in the case of installation upgrading.

Only the following are an exception:

- the mechanical interlocking plate for two superimposed circuit-breakers
- the bracket for fixing onto DIN rail (for S3X and S4X)

The wiring diagrams are those of the corresponding SACE S2, S3, S4 and S6 circuit-breakers.

Apart from S2X 100 which are identical to the corresponding S2 B/N/S, of the circuit-breakers, the S3X, S4X and S6X current-limiting circuit-breakers keep the standardised depth of 103.5 mm, standardised widths of 105 mm (S3X-S4X) / 210mm (S6X) for the three-pole versions and 140 mm (S3X-S4X) / 280mm (S6X) for the four-pole versions, identical drilled fixing holes for the plug-in and withdrawable versions and identical drilled holes for the compartment door in all the versions and for all the accessories.

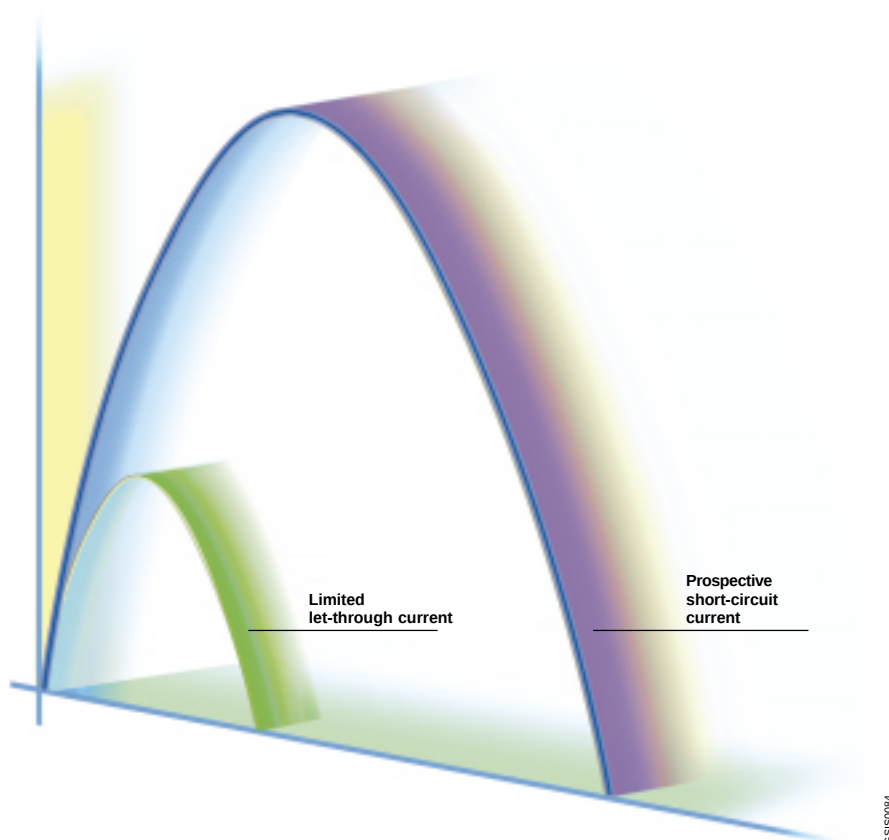
Applications

The current-limiting circuit-breakers are suitable for installation in all types of civil, industrial and service sector plants, as well as in electrical installations on board ships, in mines, on offshore oil rigs and, generally, wherever very high short-circuit currents can occur due to the high powers of the generators and transformers – up to 200 kA at 380/415 V AC, 180 kA at 440 V AC and 75kA at 690 V AC.

The circuit-breakers can be placed near the power supply source both for general protection (plants, user groups and electrical lines) and for protection of electric machines (motors, generators, transformers, capacitor banks).

They can also be inserted in plants where back-up protection is foreseen, which allows use on the load side of circuit-breakers with breaking capacity lower than the prospective short-circuit current at the point of installation.

The breaking capacities of the SACE Isomax S current-limiting circuit-breakers have exceeded the best performances achieved by other apparatus of this type.



The increased contact opening speed, the dynamic blast action produced by the magnetic field and the structure of the arcing chamber contribute to extinguishing the arc in the shortest possible time, limiting the specific let-through energy value I_t and the peak current.



SACE Isomax S current-limiting circuit-breakers

General characteristics

Thermomagnetic overcurrent releases

The table below summarises the size values for the different types of releases:

I_{th} - rated current of the thermomagnetic release, referred to an ambient temperature of 40 °C

I_m - magnetic trip current

I_n - rated current of the electronic release

Thermomagnetic overcurrent releases

Circuit-breaker			L1 - L2 - L3 phases			Neutral
S2X 100	S3X 125	S3X 200	Setting [A]	Thermal adjustment [A] 0.7 ... 1 x I _{th}	Magnetic trip [A] I _m = 10 x I _{th}	Setting [A]
■			R 1	0.7 ... 1	10	—
■			R 1,6	1.1 ... 1.6	16	—
■			R 2.5	1.75 ... 2.5	25	—
■			R 4	2.8 ... 4	40	—
■			R 6.3	4.4 ... 6.3	63	—
■			R 10	7 ... 10	100	—
■			R 12.5	8.7 ... 12.5	125	—
■			R 16	11 ... 16	160	—
■			R 20	14 ... 20	200	—
■			R 25	17.5 ... 25	250	—
■	■		R 32	22.5 ... 32	320 (S2X 100) - 500 (S3X)	R 32 (S3X)
■			R 40	28 ... 40	400	—
■	■		R 50	35 ... 50	500	R 100 (S3X)
■			R 63	44 ... 63	630	—
■	■		R 80	56 ... 80	800	R 80 (S3X)
■	■		R 100	70 ... 100	1000	R 100 (S3X)
	■	■	R 125	87.5 ... 125	1250	R 80
		■	R 160	112 ... 160	1600	R 100
		■	R 200	140 ... 200	2000	R 125



SACE S2X 100 and S3X circuit-breakers, with thermomagnetic overcurrent releases

Electronic overcurrent releases

SACE PR211/P - PR212/P electronic overcurrent releases

Circuit-breaker			Release current In [A]	L1 - L2 - L3 phases				Neutral (50% I _{th}) [A]	Neutral ⁽¹⁾ (100% I _{th}) [A]
S4X 250	S6X 400	S6X 630		L I1 [A]	S I2 [A]	I I3 [A]	G I4 [A]		
■			100	40 ... 100	100 ... 1000	150 ... 1200	20 ... 100	20 ... 50	40 ... 100
■			160	64 ... 160	160 ... 1600	240 ... 1920	32 ... 160	32 ... 80	64 ... 160
■			250	100 ... 250	250 ... 2500	375 ... 3000	50 ... 250	50 ... 125	100 ... 250
	■		320	128 ... 320	320 ... 3200	480 ... 3840	64 ... 320	64 ... 160	128 ... 320
	■		400	160 ... 400	400 ... 4000	600 ... 4800	80 ... 400	80 ... 200	160 ... 400
		■	630	252 ... 630	630 ... 6300	945 ... 7560	126 ... 630	126 ... 315	252 ... 630

L = Protection function against overload

S = Protection function against short-circuit with delayed trip

I = Protection function against short-circuit with instantaneous trip

G = Protection function against earth fault with delayed trip

⁽¹⁾ Only for PR212/P. Available on request for PR211/P, with additional ordering code 1SDA037505R1.

N.B. For more detailed information about the protection functions, please see page 3/12.



SACE S4X, S6X circuit-breakers, with microprocessor-based overcurrent releases





SACE Isomax S circuit-breakers for motor protection



Protection against short-circuit

Magnetic only and electronic circuit-breakers for classical switching coordinations and motor protection of any power

690V • 80-1600 A • 70-200 kA (380/415 V)



Integrated protection

The evolution of motor protection: intelligence on board the circuit-breaker to “design” protection around the motor, optimising space and time

690V • 160-1250 A • 35-200 kA (380/415 V)



SACE Isomax S circuit-breakers for motor protection (protection against short-circuit)

Electrical characteristics IEC 60947-2 and IEC 60947-4-1



		S2X 80	S3			S3X	
Rated uninterrupted current, I _u	[A]	80	160 / 250			125 / 200	
Rated service current, I _n	[A]	1...80	3...160 / 160...200			3... 125 / 125...200	
Poles	Nr.	3	3			3	
Rated service voltage, U _e (AC) 50-60Hz	[V]	690	690			690	
Rated impulse withstand voltage, U _{imp}	[kV]	6	8			8	
Rated insulation voltage, U _i	[V]	690	800			800	
Test voltage at industrial frequency for 1 min.	[V]	3000	3000			3000	
Rated ultimate short-circuit breaking capacity, I _{cu}		X	N	H	L	X	
(AC) 50-60 Hz 220/230 V	[kA]	100	65	100	170	300	
(AC) 50-60 Hz 380/415 V	[kA]	70	35 (1)	65	85	200	
(AC) 50-60 Hz 440 V	[kA]	70	30	50	65	180	
(AC) 50-60 Hz 500 V	[kA]	50	25	40	50	150	
(AC) 50-60 Hz 690 V	[kA]	10	14	18	20	75 (3)	
Rated service short-circuit breaking capacity, I _{cs} (2)	[%I _{cu}]	75%	100%	75%	75%	100%	
Rated short-circuit making capacity (415 V)	[kA]	154	74	143	187	440	
Opening time (415V at I _{cu})	[ms]	3,5	8	7	6	3,5	
Utilisation category (EN 60947-2)		A	A			A	
Isolation behaviour		■	■			■	
IEC 60947-2, EN 60947-2		■	■			■	
Releases: magnetic only, fixed 13xI _n		■	-			-	
magnetic only, adjustable 4...12xI _n		-	■			■	
microprocessor-based, PR211/P (I)		-	-			-	
Interchangeability		-	-			-	
Versions		F - P	F - P - W			F - P - W	
Terminals fixed		EF - FC FC CuAl - R	F - EF - ES - FC FC CuAl - RC - R			F - EF - ES - FC FC CuAl - R - RC	
plug-in		FC - R	EF - FC - R			EF - R	
withdrawable		-	EF - FC - R			EF - R	
Fixing on DIN rail		DIN EN 50022	DIN EN 50023			DIN EN 50023	
Mechanical life [No. operations / hourly operations]		25000/240	25000/120			25000/120	
Basic dimensions fixed, 3 poles	L [mm]	90	105			105	
	D [mm]	70	103,5			103,5	
	H [mm]	120	170			255	
Weights	fixed, 3 poles [kg]	1,1	2,6			3,6	
	plug-in, 3 poles [kg]	1,3	3,1			6,3	
	withdrawable, 3 poles [kg]	-	3,5			7,1	

(1) All the versions with I_{cu}=35kA are certified at 36kA

(2) For S3N/H/L, S4N/H/L, S5N/H, and S6N/H circuit-breakers, the percentage performance of I_{cs} at 690V is reduced by 25%

(3) S3X at 690V can only be supplied from above

KEY TO VERSIONS

F = Fixed

P = Plug-in

W = Withdrawable



	S4			S4X	S5			S6				S6X	S7			
	160 / 250			250	400 / 630			630 / 800				400 / 630	1250 / 1600			
	100, 160 / 250			100, 160, 250	320, 400 / 630			630 / 800				320, 400 / 630	1000, 1250 / 1600			
	3			3	3			3				3	3			
	690			690	690			690				690	690			
	8			8	8			8				8	8			
	800			800	800			800				800	800			
	3000			3000	3000			3000				3000	3000			
	N	H	L	X	N	H	L	N	S	H	L	X	S	H	L	
	65	100	200	300	65	100	200	65	85	100	200	300	85	100	200	
	35 (1)	65	100	200	35 (1)	65	100	35 (1)	50	65	100	200	50	65	100	
	30	50	80	180	30	50	80	30	45	50	80	180	40	55	80	
	25	40	65	150	25	40	65	25	35	40	65	150	35	45	70	
	18	22	30	75	20	25	30	20	22	25	30	75	20	25	35	
	100%	100%	75%	100%	100%	100%	75%	100%	100%	100%	75%	100%	100%	75%	50%	
	74	143	220	440	74	143	220	74	105	143	220	440	105	143	220	
	8	7	6	3,5	8	7	6	10	9	8	7	3,5	22	22	22	
	A			A	B(400A) / A(630A)			B				A	B			
	■			■	■			■				■	■			
	■			■	■			■				■	■			
	-			-	-			-				-	-			
	-			-	-			-				-	-			
	■			■	■			■				■	■			
	■			■	■			■				■	■			
	F - P - W			F - P - W	F - P(400A) - W			F - W				F - W	F - W			
	F - EF - ES - FC			F - EF - ES - FC	F - EF - ES - FC			F - EF - ES				F - EF - ES	F - EF - ES -			
	FC CuAl - R - RC			FC CuAl - R - RC	FC CuAl - R - RC(400A)			FC CuAl - R - RC				FC CuAl - R - RC	FC CuAl (1250A) - HR - VR			
	EF - FC - R			EF - R	EF - FC - R			-				-	-			
	EF - FC - R			EF - R	EF - FC - R - VR (630A)			EF - HR - VR				EF - VR - HR	EF - VR - HR			
	DIN EN 50023			DIN EN 50023	DIN EN 50023			-				-	-			
	20000/120			20000/120	20000/120			20000/120				20000/120	10000/120			
	105			105	140			210				210	210			
	103,5			103,5	103,5			103,5				103,5	138,5			
	254			339	254			268				406	406			
	4			5	5			9,5				15	17			
	4,5			8,2	6,1			-				-	-			
	4,9			9	6,4			12,1				25,4	21,8			

KEY TO TERMINALS
F = Front
EF = Extended front
ES = Extended spreaded front

FC = Front for copper cables
FC CuAl = Front for copper or aluminium cables
R = Rear threaded

RC = Rear for copper or aluminium cables
HR = Rear horizontal flat bar
VR = Rear vertical flat bar



SACE Isomax S circuit-breakers for motor protection (protection against short-circuit)

General characteristics IEC 60947-2 and IEC 60947-4-1

Magnetic and electronic overcurrent releases

Three-phase asynchronous motor starting, switching and protection are essential operations for its correct use. The traditional system used for this purpose has three different devices: a circuit-breaker for protection against short-circuit, a thermal relay for protection against overload and lack of or unbalanced phase, and a counter for the motor operations. Everything must necessarily take into account the problems which arise on start-up.

In particular, different factors must be taken into account when selecting these devices, such as:

- the motor power
- the starting diagram
- the type of motor: with cage rotor or with wound rotor
- the fault current at the point of motor installation in the network.

ABB SACE proposes a wide range of circuit-breakers, which by implementing the protection against short-circuit exclusively, are suitable for use inside protected starters of traditional type.

The new SACE S2X 80, with fixed magnetic protection at 13 times the rated service current, is an extremely compact circuit-breaker, which stands out for its exceptional performances in terms of breaking capacity and limitation of the specific let-through energy.

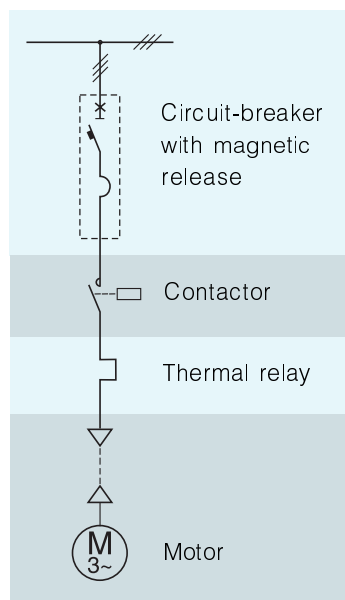
Extremely simple and rapid to install, it has the same possibility of mounting accessories and personalisation as the S2B/N/S circuit-breakers. It can be used in a vast range of start-ups, from 0.37kW to 37kW and from 400V-50kA up to 690V-50kA. SACE S3 N/H/L 160/250 circuit-breakers and the S3X 125/200 current-limiting circuit-breaker are fitted with a magnetic only release adjustable from 4 to 12 times the rated service current. They cover coordinations from 37 to 132kW and allow optimal motor protection thanks to their great flexibility due to the wide setting range of the magnetic threshold.

Finally, SACE S4 160/250, S5 400/630, S6 630/800, and S7 1250/1600, with different N-S-H-L breaking capacity levels, like the current-limiting S4X and S6X, can be fitted with the

3

Magnetic only fixed overcurrent releases

SACE Isomax S2X 80	
Phases L1 - L2 - L3	
Setting [A]	Magnetic trip $I_m = 13 \times I_n$ [A]
R1	13
R1.6	21
R2	26
R2.5	32
R3.2	42
R4	52
R5	65
R6.5	84
R8.8	110
R11	145
R12.5	163
R16	210
R20	260
R25	325
R32	415
R42	545
R52	680
R63	820
R80	1040



PR211/P (I) electronic microprocessor-based release. Above all, they are used for protection of high power motors and, thanks to adjustment of the protection against short-circuit from 1.5 to 12 times, allow the optimum trip value to be selected for any type of motor.



Magnetic only adjustable overcurrent releases

Circuit-breaker					Phases L1 - L2 - L3	
S3N 160	S3H 160 S3L 160	S3N 250 S3H 250 S3L 250	S3X 125	S3X 200	Setting [A]	Magnetic adjustment [A] $I_m = 4 \dots 12 \times I_{th}$
■					R 3	12 ... 36
■					R 5	20 ... 60
■					R 10	40 ... 120
■			■ (*)		R 25	100 ... 300
■	■		■		R 50	200 ... 600
■	■		■		R 100	400 ... 1200
■	■		■	■	R 125	500 ... 1500
■	■				R 160	640 ... 1600 (10 x I _{th})
		■		■	R 160	640 ... 1920
		■		■	R 200	800 ... 2400

(*) Only to be used in coordination with contactors

SACE PR211/P (I) electronic microprocessor-based overcurrent releases for motor protection

Circuit-breaker										Phases L1 - L2 - L3	
S4N 160 S4H 160 S4L 160	S4N 250 S4H 250 S4L 250	S5N 400 S5H 400 S5L 400	S6N 630 S6H 630 S6L 630	S6N 800 S6H 800 S6L 800	S7S 1250 S7H 1250 S7L 1250	S7S 1600 S7H 1600 S7L 1600	S4X 250	S6X 400	S6X 630	Rated current of release I _n [A]	I (*) I ₃ [A]
■							■			100	150 ... 1200
■							■			160	240 ... 1920
	■						■			250	375 ... 3000
		■						■		320	480 ... 3840
		■						■		400	600 ... 4800
			■						■	630	945 ... 7560
				■						800	1200 ... 9600
					■					1000	1500 ... 12000
					■					1250	1875 ... 15000
						■				1600	2400 ... 19200

(*) I = Protection function against short-circuit



SACE Isomax S circuit-breakers for motor protection (integrated protection)

Electrical characteristics IEC 60947-2 and IEC 60947-4



			S4			
Rated uninterrupted current, I _u	[A]		160 / 250			
Rated service current, I _n	[A]		100, 160 / 200			
Poles	Nr.		3			
Rated service voltage, U _e (AC) 50-60Hz	[V]		690			
Rated impulse withstand voltage, U _{imp}	[kV]		8			
Rated insulation voltage, U _i	[V]		800			
Test voltage at industrial frequency for 1 min.	[V]		3000			
Rated ultimate short-circuit breaking capacity, I _{cu}			N	H	L	
(AC) 50-60 Hz 220/230 V	[kA]		65	100	200	
(AC) 50-60 Hz 380/415 V	[kA]		35 (1)	65	100	
(AC) 50-60 Hz 440 V	[kA]		30	50	80	
(AC) 50-60 Hz 500 V	[kA]		25	40	65	
(AC) 50-60 Hz 690 V	[kA]		18	22	30	
Rated service short-circuit breaking capacity, I _{cs} (2)	[%I _{cu}]		100%	100%	75%	
Rated short-circuit making capacity (415 V)	[kA]		74	143	220	
Opening time (415V at I _{cu})	[ms]		8	7	6	
Utilisation category (EN 60947-2)			A			
Isolation behaviour			■			
IEC 60947-2, EN 60947-2, IEC 60947-4-1, EN 60947-4-1			■			
PR212/MP (LRIU) microprocessor-based releases			■			
Interchangeability			■			
Versions			F - P - W			
Terminals	fixed		F - EF - ES - FC			
			FC CuAl - R - RC			
	plug-in		EF - FC - R			
	withdrawable		EF - FC - R			
Fixing on DIN rail DIN EN 50023			■			
Mechanical life		[No. operations / hourly operations]	20000/120			
Basic dimensions, fixed 3 poles		L [mm]	105			
		D [mm]	103,5			
		H [mm]	254			
Weights	fixed, 3 poles	[kg]	4			
	plug-in, 3 poles	[kg]	4,5			
	withdrawable, 3 poles	[kg]	4,9			

(1) All the versions with I_{cu}=35kA are certified at 36kA

(2) For S4N/H/L, S5N/H, and S6N/H circuit-breakers the percentage performance of I_{cs} at 500V and 690V is reduced by 25%

KEY TO VERSIONS

F = Fixed

P = Plug-in

W = Withdrawable



GSIS9108



GSIS9109



GSIS9110



GSIS9111



GSIS9112

	S4X	S5	S6	S6X	S7
	250	400	630	400 / 630	1250
	100, 160, 200	320	630	320, 400 / 630	1000
	3	3	3	3	3
	690	690	690	690	690
	8	8	8	8	8
	800	800	800	800	800
	3000	3000	3000	3000	3000
	X	N H L	N H L	X	S H
	300	65 100 200	65 100 200	300	85 100
	200	35(1) 65 100	35(1) 65 100	200	50 65
	180	30 50 80	30 50 80	180	40 55
	150	25 40 65	25 40 65	150	35 45
	75	20 25 30	20 25 30	75	20 25
	100%	100% 100% 75%	100% 100% 75%	100%	100% 75%
	440	74 143 220	74 143 220	440	105 143
	3,5	8 7 6	9 8 7	3,5	22 22
	A	B	B	A	B
	■	■	■	■	■
	■	■	■	■	■
	■	■	■	■	■
	■	■	■	■	■
	F - P - W	F - P - W	F - W	F - W	F - W
	F - EF - ES - FC FC CuAl - R - RC	F - EF - ES - FC FC CuAl - R - RC	F - EF - ES FC CuAl - R - RC	F - EF FC CuAl - R - RC	F - EF - ES FC CuAl - HR - V
	EF - R	EF - FC - R	-	-	-
	EF - R	EF - FC - R	EF - HR - VR	EF - VR - HR	EF - VR - HR
	■	■	-	-	-
	20000/120	20000/120	20000/120	20000/120	10000/120
	105	140	210	210	210
	103,5	103,5	103,5	103,5	138,5
	339	254	268	406	406
	5	5	9,5	15	17
	8,2	6,1	-	-	-
	9	6,4	12,1	25,4	21,8

KEY TO TERMINALS

F = Front

EF = Extended front

ES = Extended spreaded front

FC = Front for copper cables

FC CuAl = Front for copper or aluminium cables

R = Rear threaded

RC = Rear for copper or aluminium cables

HR = Rear horizontal flat bar

VR = Rear vertical flat bar



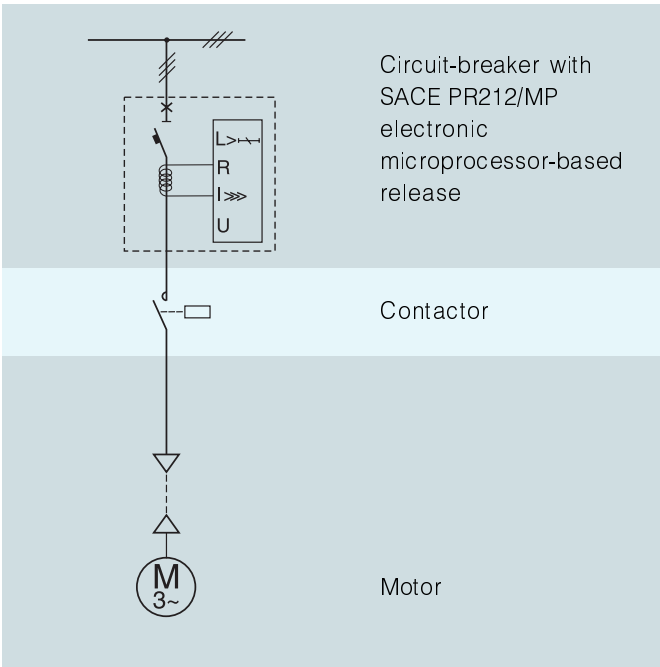
SACE Isomax S circuit-breakers for motor protection (integrated protection)

General characteristics

SACE PR212/MP electronic microprocessor-based releases

SACE Isomax S4N-H-L 160/250, S5N-H-L 400, S6N-H-L 800, S7S-H 1250 and S4X 250, S6X 400/630 circuit-breakers are fitted with SACE PR212/MP electronic releases constructed using microprocessor-based electronic technology. This allows functions to be obtained which guarantee high trip precision, utmost reliability and insensitivity to variations in the external temperature. The SACE PR212/MP electronic release guarantees complete motor protection as is fully integrated on board the circuit-breaker; moreover, it is able to control contactor opening in the case of a fault (except for short-circuit), by means of the SACE PR212/CI contactor accessory operating mechanism unit. Furthermore, the PR010/T unit for testing the release and checking the protection functions, the PR010/K signalling unit and the PR212/D dialogue unit are available. The electronic microprocessor-based releases are self-supplied and consist of three current transformers, the SACE PR212/MP protection unit and an opening solenoid which acts directly on the circuit-breaker operating mechanism unit. The current transformers – housed inside the release box, supply the energy and the signal required for correct operation of the protection.

The release is temperature-compensated and sensitive to lack of phase according to Table IV of the 60947-4-1 7.2.1.5.2 Standard.



SACE PR212/MP electronic microprocessor-based releases for motor protection

Circuit-breaker								Phases L1 - L2 - L3				
S4N 160	S4N 250	S5N 400	S6N 800	S7S 1250	S4X 250	S6X 400	S6X 630	Release rated current In [A]	L I1 [A]	R I5 [A]	I I3 [A]	U Iu [A]
S4H 160	S4H 250	S5H 400	S6H 800	S7H 1250								
S4L 160	S4L 250	S5L 400	S6L 800									
■					■			100	40 ... 100	3 ... 10 x I1	600 ... 1300	0.4 x I1
■					■			160	64 ... 160		960 ... 2080	
	■				■			200	80 ... 200		1200 ... 2600	
		■				■		320	128 ... 320		1920 ... 4160	
							■	400	160 ... 400		2400 ... 5200	
			■				■	630	252 ... 630		3780 ... 8190	
				■				1000	400 ... 1000		6000 ... 13000	

- L = Protection function against overload with relative setting current ($I1 = 0.4 \dots 1 \times In$, with 0.01 steps - Class = 10A, 10, 20, 30)
- R = Protection function against rotor block with relative setting current and time ($I5 = 3-4-5-6-7-8-10 \times I1$ - $t5 = 1-4-7-10$ s)
- I = Protection function against short-circuit with relative setting current ($I3 = 6-7-8-9-10-11-12-13 \times In$)
- U = Protection function against lack of or unbalance of phase with relative setting current and time ($Iu = 0.4 \times I1$ - $t = 4$ s)

The SACE Isomax S range of moulded-case circuit-breakers for motor protection is perfectly coordinated with the new ABB line of contactors. The latter, defined as A-Line, together with the line of overload thermal relays and SACE Isomax S moulded-case circuit-breakers, is the basis for the new generation of apparatus specially designed to guarantee a system of products which can be integrated according to the applications required. All this is done with the aim of not only continuously improving the products, but above all to provide designers, installers and end users with the best solutions in terms of performance and reliability, combined with simplicity of the system.

In particular, SACE Isomax S circuit-breakers and the "A" series of contactors are an extraordinary solution in terms of compactness, since they share the same width and design characteristics,

thereby saving space, assembly material, installation time and relative cabling operations.

The circuit-breaker-contactor group enhances this characteristic even further with the SACE PR212/MP electronic overcurrent release, which allows construction of an extremely compact protected starter, implementing protection against overload in accordance with the IEC 60947-4-1 Standard.

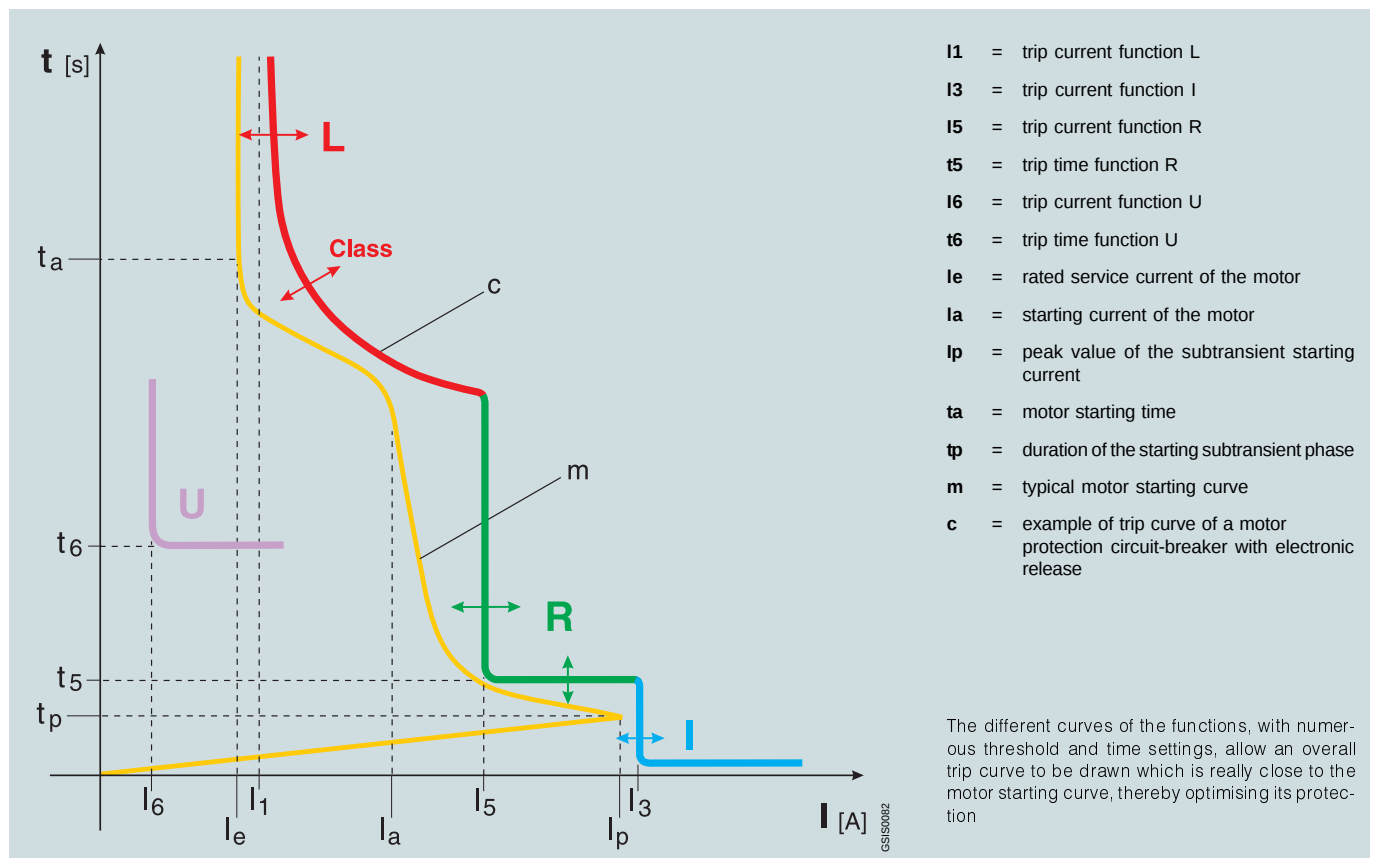
SACE Isomax S moulded-case circuit-breakers and the new A series contactors share the same width and depth and have been designed to construct a single compact unit



10059001

3

Typical operating characteristic of an asynchronous motor





SACE Isomax S circuit-breakers for motor protection (integrated protection)

General characteristics

Protection functions and parametrisation of the SACE PR212/MP release

Function L

Protection against overload

Function L protects the motor against undesired overloads according to the indications and classes defined in the IEC 60947-4-1 Standards.

Protection is based on a pre-established thermal model (ABB SACE International Patent) which, by simulating the copper and iron overtemperatures inside the motor, allows precise safeguarding of the machine. The protection intervenes when the preset overtemperature is reached. The trip time is fixed by selecting the trip class defined in the above-mentioned Standards.

The function is temperature-compensated and sensitive to phase missing/unbalance in accordance with the IEC 60947-4-1 Standard. In the case of auxiliary power supply, the thermal memory function is guaranteed, which allows the release to continue calculating the motor temperature even after an opening operation.

Parametrisation of protection L

$I1 = 0,4 \dots 1 \times I_n$ with $0.01 \times I_n$ steps

where $I1$ is the rated service current of the circuit-breaker, which must be the same or higher than that of the motor to be protected ($I1 \geq I_e$), and I_n is the rated current of the current transformers.

$t1 = 4 - 8 - 16 - 24 \text{ s}$

where $t1$ is the trip at $7.2 \times I1$ cold, depending on the class selected

Class 10A - 10 - 20 - 30

are the motor starting classes which determine the trip times for overload according to the IEC 60947-4-1 4.7.3 Table II Standards.

Release of the contactor: in normal operating mode

Tolerances: in accordance with the IEC 60947-4-1 Standard.

Function R

Protection against rotor block

Function R protects the motor against any rotor block during operation. This protection is automatically disabled for the whole of the motor starting phase and is then re-activated.

The protection already provides its function from low current increases (from 3 times the $I1$ service current of the circuit-breaker) and can also be disabled.

Both the current level to be tripped and the trip time delay can be selected.

The protection intervenes when at least one of the phase currents exceeds the preset value and remains above that threshold for the set $t5$ time.

Parametrisation of protection R

$I5 = \text{OFF} - 3 - 4 - 5 - 6 - 7 - 8 - 10 \times I1$

where $I5$ is the current at which the rotor is considered to be blocked and $I1$ is the rated service current of the circuit-breaker selected for function L.

$t5 = 1 - 4 - 7 - 10 \text{ s}$

where $t5$ is the preset time threshold above which the release trips.

Release of the contactor: in normal operating mode

Tolerances: $\pm 10\%$ of the trip thresholds
 $\pm 20\%$ of the trip times

Function I

Protection against short-circuit

This protection function intervenes in the case of a short-circuit between phases. It is sufficient for a single phase to exceed the set threshold to cause immediate opening of the circuit-breaker (the protection cannot be excluded).

The trip current can be adjusted up to 13 times the rated current of the release, whereas the time is fixed.

To prevent unwarranted trips during starting, the protection recognises whether the motor to be protected is in the starting phase or whether there is a short-circuit. This is to allow starting under completely safe conditions.

Parametrisation of protection I

$I3 = 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 \times I_n$

where $I3$ is the instantaneous trip current for short-circuit and I_n is the rated current of the current transformers.

To prevent unwarranted trips during the inrush phase of the motor, instantaneous tripping of protection I takes place at $1.5 \times I3$ (for $I3 \leq 9 \times I_n$), whereas for higher values ($I3 > 9 \times I_n$) tripping takes place at $13.5 \times I_n$.

Tolerances: $\pm 20\%$ of the trip thresholds
 $\pm 20\%$ of the trip times

Function U

Protection against lack of and/or unbalance of a phase

Function U can be used in those cases where particularly precise control is needed regarding lack of and/or unbalance of phase currents. This function can be excluded and intervenes if the effective value of one or two currents drops below the level of 0.4 of the $I1$ current set with function L and remains there for more than 4 seconds.

Parametrisation of protection U

On, (with $I6 = 0.4 \times I1$ and $t6 = 4 \text{ s}$).

Off, in the Off position, the release remains sensitive to the lack of phase according to the IEC 60947-4-1 Standard, modifying the trip curves for protection L.

Release of the contactor: in normal operating mode

Tolerances: $\pm 20\%$ of the trip thresholds
 $\pm 20\%$ of the trip times

Parametrisation of the release

By means of the microswitch located on the front, the release can be fitted for parametrisation:

Man. (manual), thresholds and times are adjusted by using the microswitches on the front of the relay

Elt. (electronic), thresholds and times are adjusted remotely by means of the SACE PR212/D dialogue unit.

Operating methods

Normal mode: in the case of a fault detected by functions L-R-U, contactor opening can be controlled by means of the accessory SACE PR212/CI module or directly, without the need for external modules, with an ABB contactor fitted with an electronic interface with the circuit-breaker.

Heavy duty mode: the circuit-breaker opens for any type of L-R-I-U fault.

Back-up protection

The electronic release verifies whether the circuit-breaker or the contactor is effectively in the open or relay tripped position following an opening command. If this is not so, after a delay set to long or short time, the command for circuit-breaker opening is given again.

Protection L

against motor overload

luminous signalling of overload:
fixed for $I > 0.9 \times I_1$;
flashing for $I > 1.05 \times I_1$

Protection R

against blocked rotor

Protection I

against instantaneous short-circuit

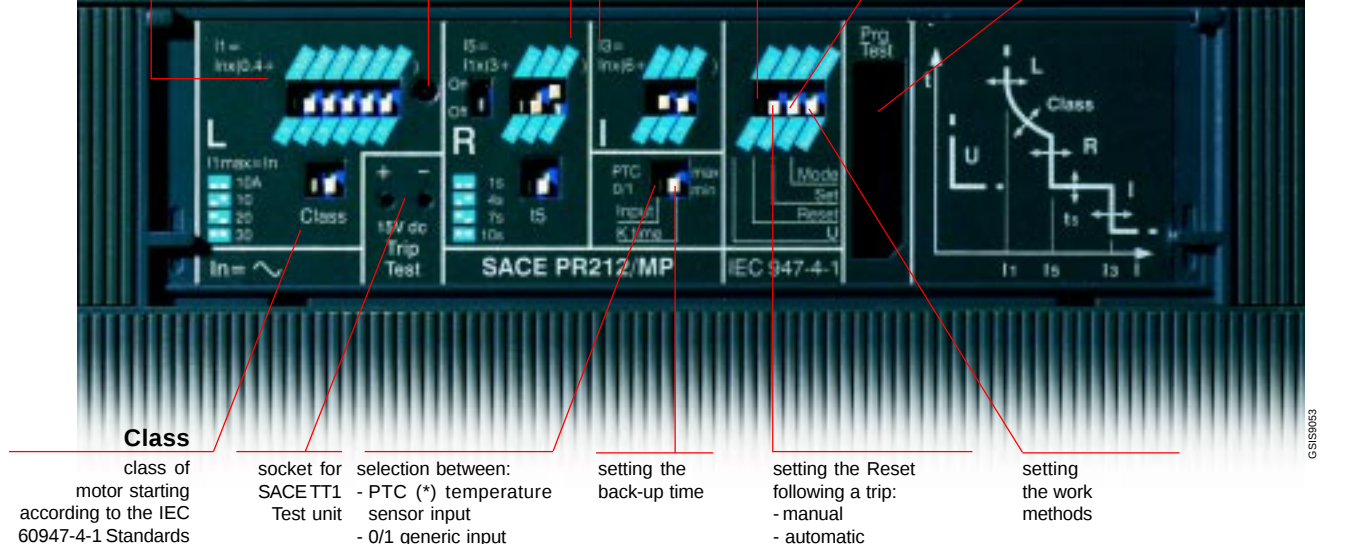
Protection U

against the lack and/or unbalance of a phase

Man. / Elt.

release parametrisation methods

socket for connection of SACE PR010/T Test unit



(*) A special input is available to connect a PTC temperature probe, inserted in the motor to be protected

Characteristics of the SACE PR212/MP electronic microprocessor-based release

Overloading capacity	2 x I_n continuously, 7.2 x I_n for 35 s at 45 °C
Operating temperature	- 25 °C ... + 70 °C
Maximum relative humidity percentage	90% without condensation
Rated service frequency	45 - 66 Hz, able to measure harmonics up to 550 Hz
Current measurement methods	r.m.s. up to 3 x I_n (functions L, R, U) peak value for values over 3 x I_n (functions L, R, U) peak value for function I
Electromagnetic compatibility	According to: IEC 60947-2 Standard Annex F
Electrostatic discharges	According to: IEC 61000-4-2 Standard
Radiated electromagnetic field	According to: IEC 61000-4-3 Standard
Short-time transients	According to: IEC 61000-4-4 Standard
Mean time between failure (MTBF)	15 years (at 45 °C)





SACE Isomax S circuit-breakers for applications up to 1000V



Taking the SACE Isomax S limits higher and higher

1000 V • 160-800 A • 6-50 kA



SACE Isomax S circuit-breakers for applications up to 1000V

Electrical and general characteristics IEC 60947-2

Within the panorama of Isomax proposals, there is also the range of circuit-breakers and switch-disconnectors for direct current and alternating current applications up to 1000V.

The typical application sectors are installations in mines, road or railway tunnels, traction and industrial applications in general.

The circuit-breakers for direct current (connection diagrams on page 5/47) are available in the four-pole version, whereas those for alternating current are available in the three-pole version, with adjustable or electronic thermomagnetic releases and have the same dimensions as the standard versions.

They can also be combined with all the accessories available for the Isomax series.

Range at 1000 V in a.c.

		S3	
Rated uninterrupted current, Iu	[A]	160	
Poles	Nr.	3	
Rated service voltage, Ue (AC) 50-60Hz	[V]	1000	
Rated impulse withstand voltage, Uimp	[kV]	8	
Rated insulation voltage, Ui	[V]	1000	
Test voltage at industrial frequency for 1 min.		3000	
Rated ultimate short-circuit breaking capacity, Icu (AC) 50-60 Hz 1000 V	[kA]	L	
		6	
Rated short-circuit making capacity	[kA]	9,2	
Opening time	[ms]	20	
Rated short-time withstand current for 1 s, Icw	[kA]		
Utilisation category (EN 60947-2)		A	
Isolation behaviour		■	
IEC 60947-2, EN 60947-2		■	
Thermomagnetic releases T adjustable, M fixed 10 lth		■	
PR211/P (LI only) microprocessor-based releases			
PR212/P (LSI-LSIG) microprocessor-based releases			
Versions		F	
Terminals		F	
Fixing on DIN rail		DIN EN 50023	
Mechanical life	[No. operations / hourly operations]	25000/120	
Dimensions			
	L [mm]	105	
	D [mm]	103,5	
	H [mm]	170	
Weights	[kg]	2,6	

Range at 1000 V in d.c.

		S3	S5	S6	S6
Rated uninterrupted current, Iu	[A]	160-250	400	630	800
Poles	Nr.	4	4	4	4
Rated service voltage, Ue	[V -]	1000	1000	1000	1000
Rated impulse withstand voltage, Uimp	[kV]	8	8	8	8
Rated insulation voltage, Ui	[V]	1000	1000	1000	1000
Test voltage at industrial frequency for 1 min.		3000	3000	3000	3000
Ultimate rated short-circuit breaking capacity, Icu (4 poles in series)	[kA]	L	L	L	L
		40	40	40	50
Rated short-circuit making capacity	[kA]	40	40	40	50
Opening time	[ms]	25	35	45	50
Rated short-time withstand current for 1 s, Icw	[kA]	-	5	7,6	10
Utilisation category (EN 60947-2)		A	B	B	B
Isolation behaviour		■	■	■	■
IEC 60947-2, EN 60947-2		■	■	■	■
Thermomagnetic releases, T adjustable - M fixed 10 lth		■	-	-	-
Thermomagnetic releases, T adjustable - M adjustable		-	■	■	■
Versions		F	F	F	F
Terminals		F	F	F	F
Fixing on DIN rail		DIN EN 50023	DIN EN 50023	-	-
Mechanical life	[No. operations / hourly operations]	25000/120	20000/120	20000/120	20000/120
Basic dimensions, fixed					
	L [mm]	140	184	280	280
	D [mm]	103,5	103,5	103,5	103,5
	H [mm]	170	254	268	268
Weights, fixed	[kg]	3,5	7	12	12

	S3X	S4	S4X	S5	S6	S6X
	125	160-250	250	400	630-800	630
	3	3	3	3	3	3
	1000	1000	1000	1000	1000	1000
	8	8	8	8	8	8
	1000	1000	1000	1000	1000	1000
	3000	3000	3000	3000	3000	3000
	X	L	X	L	L	X
	30	8	30	8	12	30
	63	13,6	63	13,6	24	63
	10	30	20	30	30	25
				5	7,6 (630A)-10 (800A)	
	A	A	A	B	B	A
	■	■	■	■	■	■
	■	■	■	■	■	■
	■	■	■	■	■	■
	F	F	F	F	F	F
	F	F	F	F	F	F
	DIN EN 50023	DIN EN 50023	DIN EN 50023	DIN EN 50023	—	—
	25000/120	20000/120	20000/120	20000/120	20000/120	20000/120
	105	105	105	140	210	210
	103,5	103,5	103,5	103,5	103,5	103,5
	255	254	254	254	268	406
	3,6	4	4	5	9,5	15

Circuit-breakers with electronic release for alternating current

	In100	In250	In400	In630	In800
S4L 160	■	—	—	—	—
S4L 250	—	■	—	—	—
S4X 250	—	■	—	—	—
S5L 400	—	—	■	—	—
S6L 630	—	—	—	■	—
S6X 630	—	—	—	■	—
S6L 800	—	—	—	—	■
$I_m = 1,5 \dots 12 \times I_n$ [A]	150...1200	375...3000	600 ... 4800	945...7560	1200...9600

Circuit-breakers with thermomagnetic release for alternating current

(thermal threshold adjustable from 0.7 to 1 x I_n ; fixed magnetic threshold)

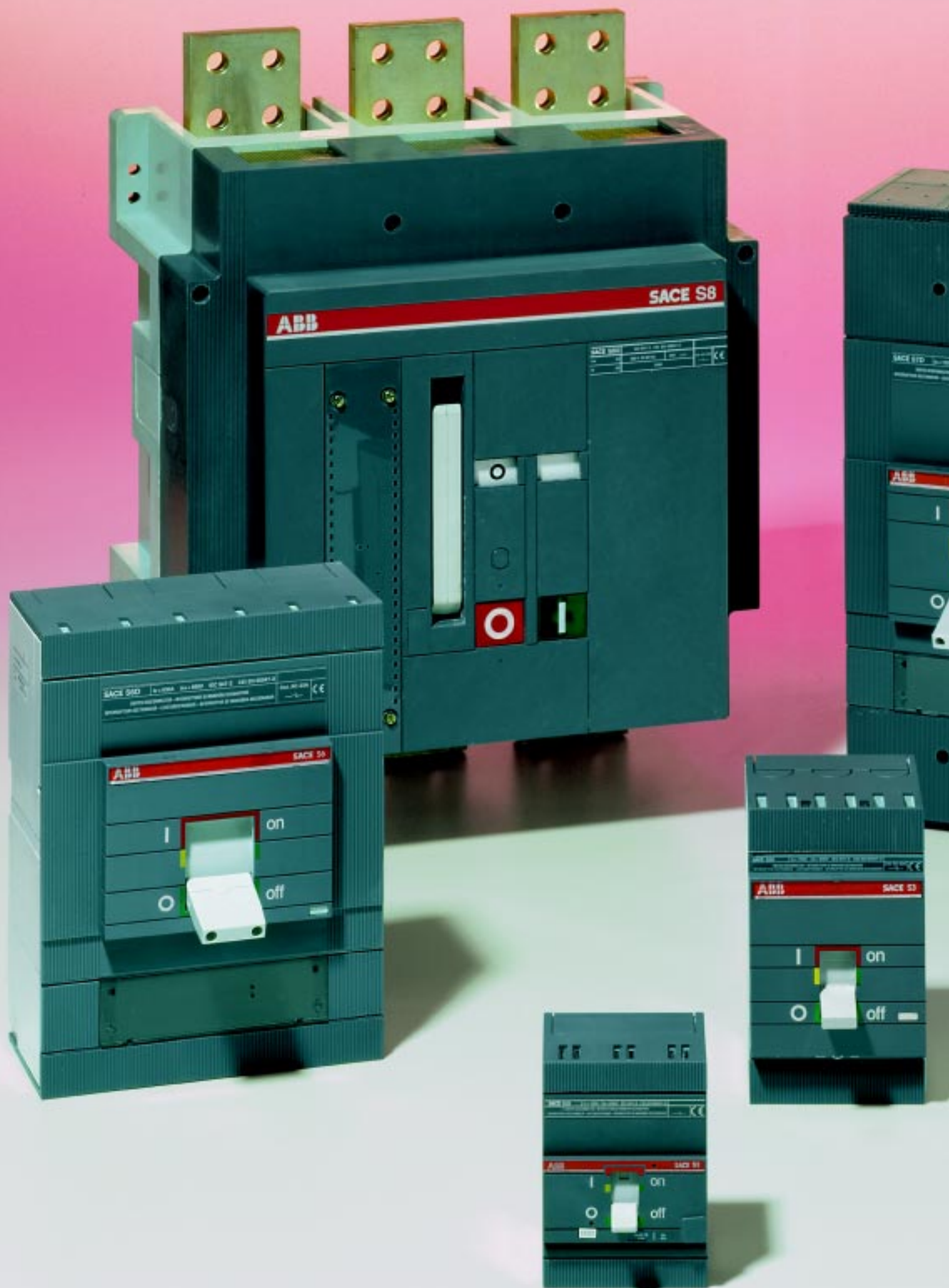
	R32	R50	R80	R100	R125	R160	R200	R250
S3L 160	■	■	■	■	■	■	—	—
S3X 125	■	■	■	■	■	—	—	—
I_m AC (10x I_n) [A]	500	500	800	1000	1250	1600	2000	2500

Circuit-breakers with thermomagnetic release for direct current

	R32 (1)	R50 (1)	R80 (1)	R100 (1)	R125 (1)	R160 (1)	R200 (1)	R250 (1)	R400 (2)	R630 (2)	R800 (2)
S3L 160	■	■	■	■	■	■	—	—	—	—	—
S3L 250	—	—	—	—	—	—	■	■	—	—	—
S5L 400	—	—	—	—	—	—	—	—	■	—	—
S6L 630	—	—	—	—	—	—	—	—	—	■	—
S6L 800	—	—	—	—	—	—	—	—	—	—	■
I_m DC (10x I_n) [A]	500	500	800	1000	1250	1600	2000	2500	—	—	—
I_m DC (5-10x I_n) [A]									2000-4000	3150-6300	4000-8000

(1) Thermal threshold adjustable from 0.7 and 1 x I_n ; fixed magnetic threshold

(2) Thermal threshold adjustable from 0.7 and 1 x I_n ; magnetic threshold adjustable between 5 and 10 x I_n .





SACE Isomax S switch-disconnectors



Close, carry and isolate.
The certainty of operating in complete safety.

690 V • 125-3200 A • 3,1-85 KA (Icm) • 2,2-40 kA (Icw)



SACE Isomax S switch-disconnectors

Electrical and general characteristics IEC 60947-3



			S2D	S3D	
Conventional thermal current at 60 °C, I_{th}	[A]		125 / 160	100 / 160 / 250 / 320	
Number of poles	Nr.		3/4	3/4	
Rated service voltage, U_e	(AC) 50-60Hz	[V~]	690	690	
	(DC)	[V-]	500	750	
Rated current, I_n	[A]		125-160	100-160-250-320	
Rated impulse withstand voltage, U_{imp}	[kV]		6	8	
Rated insulation voltage, U_i	[V]		690	800	
Test voltage at industrial frequency for 1 min.	[V]		3000	3000	
Rated short-circuit making capacity (415 V~), I_{cm}	[kA]		3,1	10	
Rated short-time withstand current for 1 s, I_{cw}	[kA]		2,2	6,5	
Isolation behaviour			■	■	
IEC 60947-3			■	■	
Versions			F - P	F - P - W	
Terminals	fixed		EF - FC - FC CuAl	F - EF - FC	
			R - RC	FC CuAl - R - RC	
	plug-in		FC - R	F - FC - R	
	withdrawable		-	F - FC - R	
Mechanical life	[No. of operations / hourly operations]		25000/240	25000/120	
Basic dimensions, fixed	L (3/4 poles)	[mm]	90/120	105/140	
	D	[mm]	70	103,5	
	H	[mm]	120	170	
Weights, fixed	3/4 poles	[kg]	1,1/1,5	2,6/3,5	

Coordination with the circuit-breakers (kA at 380-415 V AC)

		LOADSIDE ⇒									
		S2D 125	S2D 160	S3D 100	S3D 160	S3D 250	S3D 320	S6D 400	S6D 630	S6D 800	S7D 1000
SUPPLY SIDE	S1B	16		16							
	S1N	25		25							
	S2B	16	16	16	16						
	S2N	35	35	35	35						
	S2S	50	50	50	50						
	S3N			35	35	35	35				
	S3H			65	65	65	65				
	S5N							35	35	35	
	S5H							35	35	35	
	S6N							35	35	35	
	S6S							50	50	50	
	S6H							65	65	65	
	S7S										50
	S7H										65
	S8H										
	S8V										



CSIS9145

GS/S9146

Applications

3

The main function carried out by these circuit-breakers consists of isolating the circuit they are inserted in.

Protection

Making capacity

Endurance in the closed position

3/41





SACE Isomax S circuit-breakers according to UL489 and CSA C22.2 Standards



SACE Isomax S quality to conquer “New worlds”

480/600 V • 100-2500 A • 25-100 kA (480V)





SACE Isomax S circuit-breakers according to UL489 and CSA C22.2 Standards

Electrical and general characteristics

Circuit-breaker type		S1	S3 150			S3 225			
Maximum frame continuous current 40 °C	[A]	100	150			225			
Number of poles	Nr.	3	2 - 3			2 - 3			
Rated operational voltage (AC) 50-60 Hz	[V]	277/480	600			240 (B); 480 (N/H/L)			
(DC)	[V]		600			500			
Test voltage (1min.) 50-60 Hz	[V]	3000	3000			3000			
UL/CSA short-circuit interrupting capacity	[kA rms]	N	N	H	L	B	N	H	L
240 V AC	[kA rms]	50	65	100	150	150	65	100	150
480 V AC	[kA rms]	14 (R15) 20 (R20-R100)	65 (R15, R30)			-	25	50	65
600 V AC	[kA rms]	-	14	14	25	-	-	-	-
500 V DC (2 poles in series)	[kA rms]	-	35	50	65	50	20	35	50
600 V DC (3 poles in series)	[kA rms]	-	20	35	50	-	-	-	-
Overcurrent trip relays									
Thermal-magnetic		■	■			■			
Microprocessor based		-	-			-			
Interchangeability		-	-			-			
Dimensions H	[in/mm]	4,72 / 120	6,70 / 170			6,70 / 170			
fixed version W	[in/mm]	3,07 / 78	4,13 / 105			4,13 / 105			
D	[in/mm]	2,75 / 70	4,07 / 103,5			4,07 / 103,5			
Mechanical duration	[op./ frequency]	25000 / 240	25000 / 120			25000 / 120			
Weights (fixed - 3P)	[lbs.]	2,42	6,75			6,75			

3

In the field of moulded-case circuit-breakers, complying with the UL489 and CSA22.2 standards, the SACE Isomax S offer is enriched by the following ranges:

- circuit-breakers for power distribution (fitted with thermomagnetic or electronic releases)
- circuit-breakers with magnetic only releases for motor protection (Motor Control Protection – MCP)
- switch-disconnectors for use as isolators or switching devices for lines, busbars or parts of a plant circuit-breakers (Moulded Case Switch – MCS).

The SACE Isomax S offer in compliance with UL/CSA Standards is completed with the introduction of three new sizes. There are therefore increasing possibilities for those customers who also operate on markets subject to the standards defined in the UL/CSA Standards, with a whole range of moulded-case circuit-breakers available, with rated currents which go from 100A to 2500A and breaking capacities, at 480 V AC, which can reach 100kA.

Apart from lowering the range of rated currents, introduction of

the S1 size allows all those applications typical of power sub-distribution where a circuit-breaker characterised by limited dimensions, but guaranteeing great versatility of application of accessories and installation, is particularly convenient.

They further increase the possibility of selection, thanks to the introduction of the new rating for S3, Iu=225A, with three levels of breaking capacity (N/H/L), up to service voltage values of Ue=480V AC and 500 V DC.

Finally, the S8 circuit-breaker according to the UL/CSA Standard also allows completion towards higher rated currents. Isomax S8V 1600, 2000 and 2500 are suited to installation immediately to the load side of power supply sources of low voltage systems and can operate safely under the most severe service conditions required by modern installations. Their high performances, great flexibility in mounting accessories, simple coordination with the devices on the load side and the possibility of limiting the depth of the switchboards thanks to their compact overall dimensions, make Isomax S8 a particularly advantageous choice.

	S4			S5			S6			S7	S8
	250			400			800			1200	1600-2000-2500
	2 - 3			2 - 3			2 - 3			2 - 3	3
	600			600			600			600	600
	-			600			600			-	-
	3000			3000			3000			3000	3000
	N	H	L	N	H	L	N	H	L	H	V
	65	150	200	65	150	200	65	150	200	100	120
	25	65	100	35	65	100	50	65	100	65	100
	18	22	35	22	22	35	25	35	42	50	85
	-	-	-	35	50	65	35	50	65	-	-
	-	-	-	20	35	50	20	35	50	-	-
	-	-	-	-	-	-	-	-	-	-	-
	■	■	■	■	■	■	■	■	■	■	■
	10,00 / 254			10,00 / 254 (300A); 13,62 / 346 (400A)			14,25 / 268			16 / 406	15,75 / 400
	4,13 / 105			5,51 / 140			8,27 / 210			8,27 / 210	15,98 / 406
	4,07 / 103,5			4,07 / 103,5			4,07 / 103,5			5,45 / 138,5	9,25 / 235
	20000 / 120			20000 / 120			20000 / 120			10000 / 120	10000 / 20
	8,8			11			22			37,5	135

Motor Control protection - MCP

Type	S3L		S4 N/H/L			S5 N/H/L			S6 N/H/L			S7H	S8V
Poles	3		3			3			3			3	3
Trip Unit													
Adjustable magnetic only (4...12xIn)	■												
PR211/P - I			■			■			■			■	■
Rating [A]	3...25	50...150	100-250			400	400	400	600-800	600-800	600-800	1000-1200	1600-2000-2500
Interrupting capacity	L	L	N	H	L	N	H	L	N	H	L	H	V
240 V AC	50	150	65	150	200	65	150	200	65	150	200	100	120
480 V AC	25	85	25	65	100	35	65	100	50	65	100	65	100
600 V AC	10	25	18	22	35	22	22	35	25	35	42	50	85
500 V DC	65 ⁽¹⁾	65	-	-	-	-	-	-	-	-	-	-	-
600 V DC	50 ⁽¹⁾	50	-	-	-	-	-	-	-	-	-	-	-

⁽¹⁾ Performance available only for the 25 A rating version

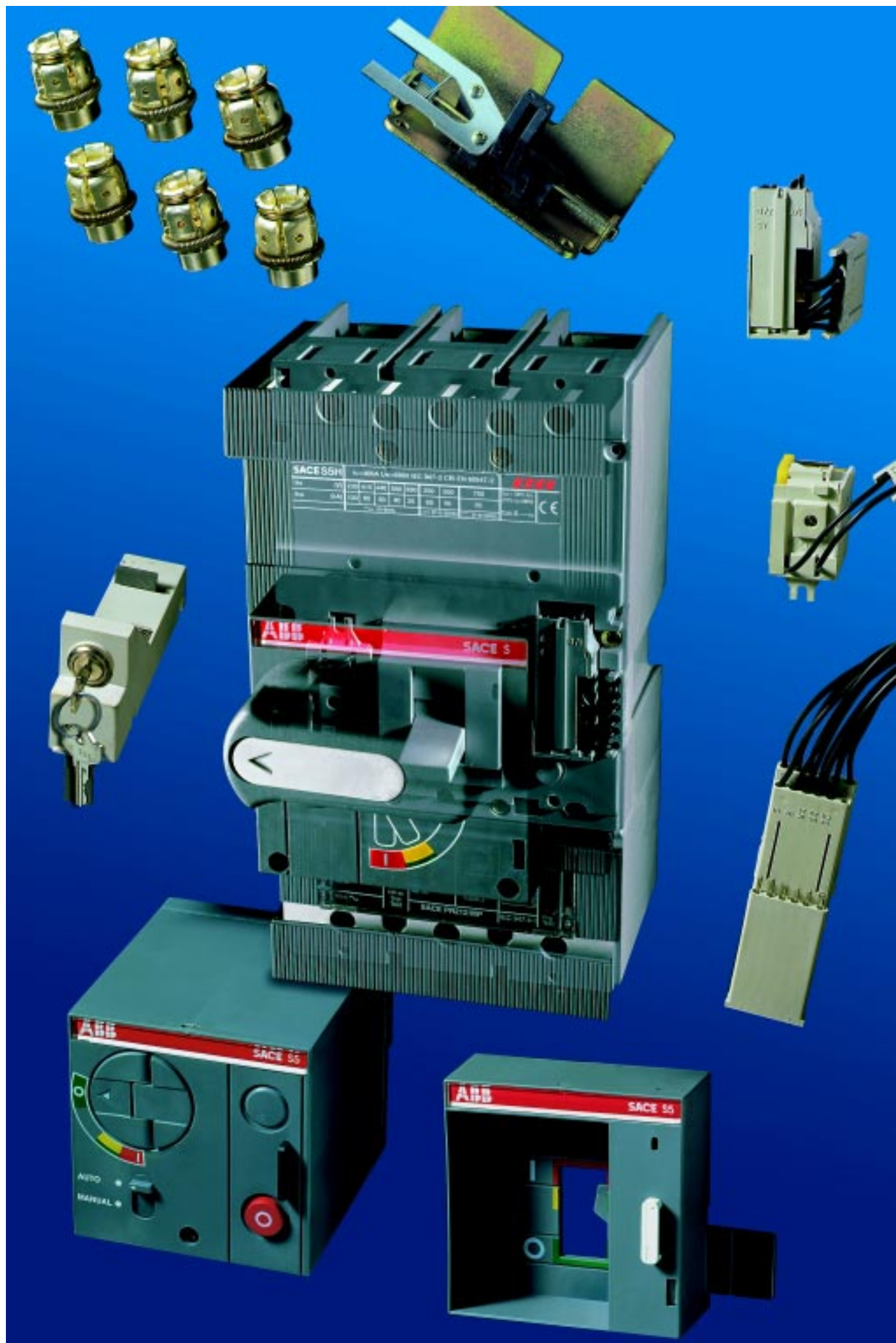
Moulded Case Switches - MCS

Type	S3 H-D 150	S3 H-D 225	S4 H-D	S5 H-D	S6 H-D	S7 H-D	S8 V-D
Rating [A]	150	225	250	400	800	1200	2500
Poles	3	3	3	3	3	3	3
Magnetic trip [A]	1500	2250	3000	5000	10000	20000	35000
Rated voltage							
(AC) 50-60 Hz [V~]	600	480	600	600	600	600	600
(DC) 3 poles in series [V-]	600	500	600	600	600	600	600



Index

Versions	4/3
Connection terminals	4/6
Service releases	4/10
Electric signals	4/14
Remote controls	4/17
Operating mechanisms and locks	4/22
Residual current releases	4/26
Accessories for electronic releases	4/30
Installation accessories and spare parts	4/35





Accessories

Versions

SACE Isomax S circuit-breakers are available in the FIXED, PLUG-IN or WITHDRAWABLE, three-pole or four-pole versions.



F

FIXED

The FIXED version circuit-breaker with three or four-poles has:

- the same upper and lower terminals
- lever operating mechanism
- thermomagnetic or electronic release
- flange for the front door of the switch-board
- possibility of assembly on base plate or on DIN rail (up to 630A)
- circuit-breakers featuring only four depths (70mm for S1-S2, 103.5 for S3...S6, 138.5 for S7 and 242 for S8)
- standardised front for groups of circuit-breakers (45mm for S1...S5, 105mm for S3...S7).



P

PLUG-IN

The PLUG-IN version circuit-breaker consists of:

- fixed part to be installed directly on the base plate of the cubicle
- moving part obtained from the fixed circuit-breaker with the addition of the isolating contacts in correspondence with the connection terminals, of the rear frame for fixing to the fixed part and of the terminal covers.

Circuit-breaker racking out is carried out by unscrewing the top and bottom fixing screws. A special lock prevents the circuit-breaker from being racked in and out with the contacts in the closed position.



W

WITHDRAWABLE

The WITHDRAWABLE version circuit-breaker is made up of:

- fixed part, to be installed directly on the base plate of the cubicle with the side group mounted on the fixed part to allow the racking-out/racking-in movement
- moving part obtained from the fixed circuit-breaker with the addition of the isolating contacts in correspondence with the connection terminals, of the rear frame (which is coupled with the side piece provided on the fixed part for sliding) for fixing to the fixed part, and of the terminal covers.
- accessory to be applied on the front of the circuit-breaker with selection between front for lever operating mechanism, motor operator and rotary handle operating mechanism; application of one of these accessories allows the circuit-breaker lock to be made in the withdrawn position.

Racking-in/out of the moving part is carried out by means of the special operating lever supplied with the circuit-breaker in the moving part for withdrawable version or with the conversion kit of the fixed circuit-breaker into moving part of withdrawable circuit-breaker. The special mechanism allows the circuit-breaker to be put into the isolated position (with power and auxiliary circuits disconnected) with the compartment door closed, providing increased operator safety. The lever can only be inserted with the circuit-breaker open.

Once racked out or withdrawn, the circuit-breaker can be operated in the open/closed position and, by means of the special connection extensions, blank operating tests of the auxiliary control circuits can be carried out.

	F	P	W
	Fixed	Plug-in	Withdrawable
S1 125	■	■	–
S2 160	■	■	–
S3 160	■	■	■
S3 250	■	■	■
S4 160	■	■	■
S4 250	■	■	■
S5 400	■	■	■
S5 630	■	–	■
S6 630	■	–	■
S6 800	■	–	■
S7 1250	■	–	■
S7 1600	■	–	■
S8 2000	■	–	–
S8 2500	■	–	–
S8 3200	■	–	–



Accessories

Versions

Starting from the fixed version with front terminals, SACE Isomax S circuit-breakers can be converted into the various versions using the Conversion kits. This makes management of the product, its versions and stocks as a whole highly flexible. It is, in any case, always possible to ask for the circuit-breaker in the required version fully prepared in the factory.

Conversion kit into moving part for plug-in circuit-breaker

This allows the fixed circuit-breaker with front terminals to be converted into the moving part of a plug-in circuit-breaker.

The kit consists of:

- tulip isolating contacts
- frame
- assembly screws and nuts.

The fixed part is needed to complete the circuit-breaker.



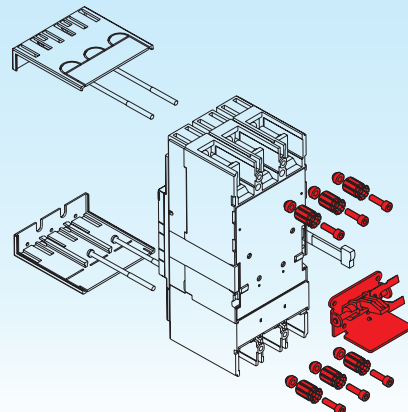
GSIS9006

S1-S2



GSIS0101

S3-S4



GSIS0102

Fixed part

The fixed part allows the circuit-breaker to be constructed in the plug-in or withdrawable version. It can also be provided in the switchboard as a reserve power supply to be completed with a circuit-breaker at the appropriate time. For plug-in or withdrawable version circuit-breakers, different circuit-breaker positions are possible:

- Plug-in: racked-in – racked-out
- Withdrawable: racked-in – racked-out
- withdrawn.

The fixed part for withdrawable version circuit-breaker is fitted with a guide for supporting the moving part during the isolation or withdrawal operations of the moving part. For SACE S6-S7 circuit-breakers, there are two guides.



GSISB123



GSIS9124

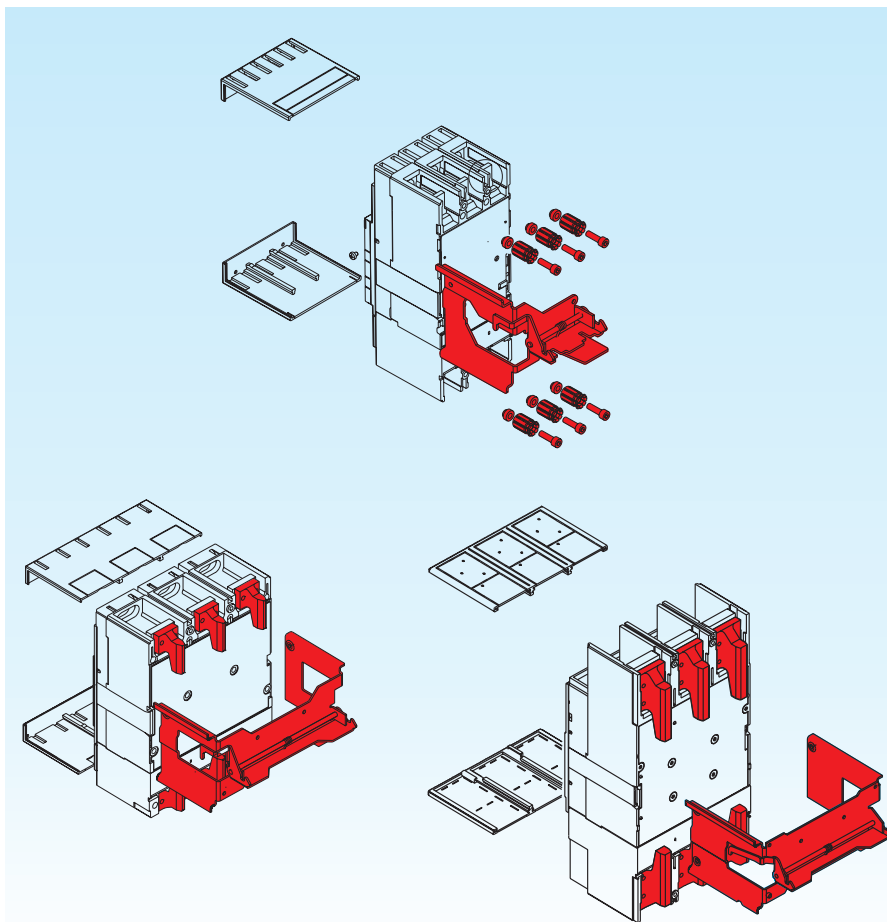
Conversion kit into moving part for withdrawable circuit-breaker

This allows the fixed circuit-breaker with front terminals to be converted into the moving part of a withdrawable circuit-breaker. The kit consists of isolating contacts, frame, assembly screws and nuts. The circuit-breakers in the withdrawable version must always be completed, alternatively, with one of the following accessories:

- front for lever operating mechanism
- rotary handle operating mechanism
- motor operator,

in order to make the racking-out lock if necessary.

The fixed part is needed to complete the circuit-breaker.



4

Conversion kit for fixed part of plug-in into fixed part of withdrawable

A guide for converting the fixed part of a plug-in version circuit-breaker into the fixed part of a withdrawable version circuit-breaker is available for SACE S3-S4-S5 circuit-breakers.



Racking-out handle

This allows racking-out and racking-in – even with the door closed – of the circuit-breaker in the fixed part.

The handle is the same for the whole range of circuit-breakers and is supplied as standard with the Conversion kit or with the circuit-breakers supplied in the withdrawable version.





Accessories

Connection terminals

The basic version of the circuit-breaker is supplied with:

- front terminals for SACE S3, S4, S5, S6, S7, and S8 circuit-breakers
- front terminals for copper cables for SACE S1, and S2 circuit-breakers.

Different types of terminals are available, which can be combined in different ways (upper of one type, lower of another type), allows the circuit-breaker to be connected to the plant in the most suitable way for installation requirements.

The following distinctions can be made between:

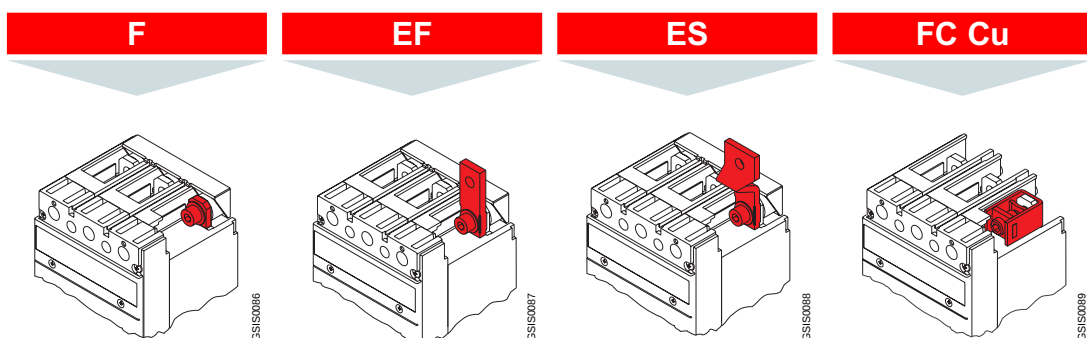
- **front terminals** which allow connection of cables or busbars by acting directly from the front of the circuit-breaker.
- **rear terminals** which allow installation of the circuit-breakers in switchboards with rear access to both cable and busbar connections.

Terminals for connection of busbars or cables terminated with cable terminals and terminals for direct connection of bare cable are available.

The information needed to make the connections is summarised for each type of terminal on pages 4/8-9. Flat bars of different dimensions and composition are recommended for connection with busbars. Furthermore, the minimum depth the flat bar to be connected must have is also indicated, if it is of a different composition to the one recommended. The minimum and maximum cross-section of the cables which can be tightened in the terminals and the diameter of the terminal are indicated for connection with bare cables

The torque values to be applied to the tightening screws of the terminals for cable and to the screws used for connecting the busbars to the flat bar terminals are given.

The circuit-breakers can be ordered complete with the terminals required, mounted directly in the factory, or the terminals can be ordered individually in packs of 3 - 4 - 6 - 8 pieces. Codes for ordering circuit-breakers directly in the configuration with upper / lower terminals of the same type are available.



	Front terminals	Front extended terminals	Front extended spreaded terminals	Front terminals for copper cables
S1 125	—	—	—	F - P
S2 160	—	F	—	F - P
S2X 80, S2X 100	—	F	—	F - P
S3 160 / 250	F	F - P - W	F	F - P - W
S3X 125 / 200	F	F - P - W	F	F - P - W
S4 160 / 250	F	F - P - W	F	F - P - W
S4X 250	F	F - P - W	F	F - P - W
S5 400 / 630	F	F(400A)-P(400A)-W(400A)	F - W(630A)	F - P(400A) - W(400A)
S6 630 / 800	F	F - W	F	—
S6X 400 / 630	F	F - W (only at the bottom)	F	—
S7 1250 / 1600	F	F - W	F	—
S8 2000 / 2500 / 3200	F (2000A / 2500A)	—	—	—

F = Fixed

P = Plug-in

W = Withdrawable

Insulating terminal covers

The terminal covers are applied to the terminals of the circuit-breaker to prevent accidental contacts with live parts and thereby guarantee protection against indirect contacts. The following are available:

- **lower terminal covers**, which guarantee IP40 degree of protection for fixed circuit-breakers with rear terminals and for moving parts of plug-in or withdrawable circuit-breakers.
- **upper terminal covers** for fixed circuit-breakers with front terminals, front terminals for cables and rear terminals, which guarantee IP40 degree of protection.
- **terminal covers for fixed parts** of plug-in or withdrawable circuit-breakers, guarantee IP40 degree of protection on the front with moving part connected. They are available in a single version.

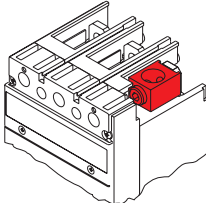
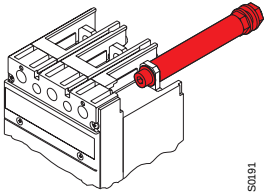
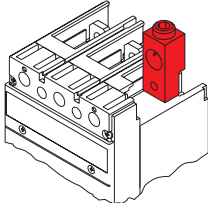
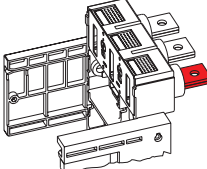
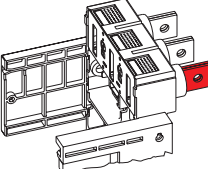
The degrees of protection indicated are valid for circuit-breakers installed in switchboards.



GSIS9002

Screws for sealing the terminal covers

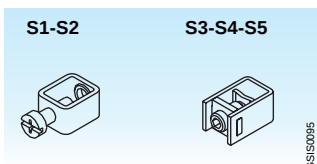
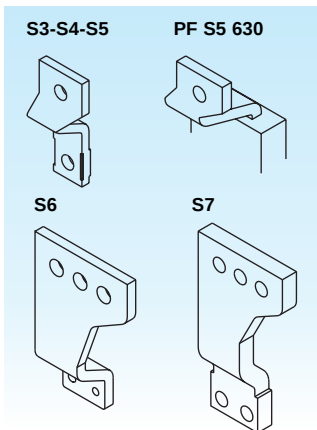
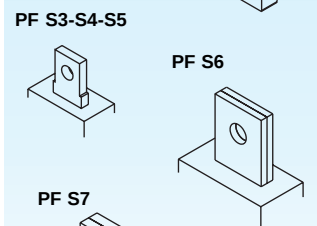
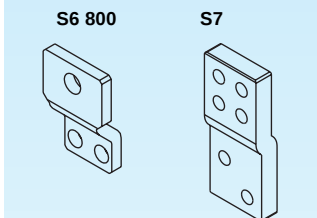
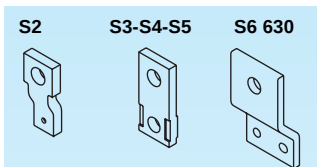
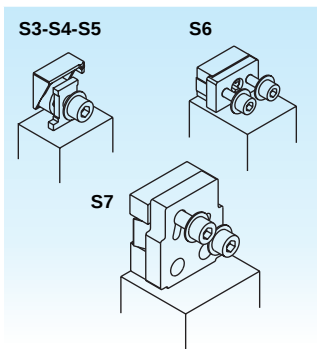
These are applied to the terminal covers of fixed circuit-breakers or to the moving parts of plug-in or withdrawable circuit-breakers. They prevent removal of the upper or lower terminal covers, and can be locked with wire and a lead seal.

	FC CuAl	R	RC	HR	VR
					
	GSIS0190	GSIS0191	GSIS0192	GSIS0193	GSIS0194
	Front terminals for Cu/Al cables	Rear threaded terminals	Rear terminals for Cu/Al cables	Rear terminals in horizontal flat bar	Rear terminals in vertical flat bar
	—	F - P	—	—	—
	F	F - P	—	—	—
	F	F - P	—	—	—
	F	F - P - W	F	—	—
	F	F - P - W	F	—	—
	F	F - P - W	F	—	—
	F	F - P - W	F	—	—
	F(400A)	F - P(400A) - W	F(400A)	—	W(630A)
	—	F	F	W	W
	F	F	F	W	W
	F(1250A)	—	—	F - W	F - W
	—	—	—	—	F



Accessories

Connection terminals



Front terminals

These allow busbars or cables terminated with a cable terminal to be connected

Type	version	pieces	busbars [mm]				tightening B [Nm]	terminal covers		
			L	H	P	hole		upper	lower	fixed part
S3 160, S3X 125	F	1	20	10	4	9	9	R	R	
S3 250, S3X 200	F	1	20	10	6	9	9	R	R	
S4 160	F	1	20	10	4	9	9	R	R	
S4 250, S4X 250	F	1	20	10	6	9	9	R	R	
S5 400	F	2	25	12	5	11	18	R	R	
S5 630	F	2	25	12	8	11	18	R	R	
S6 630, S6X 400-630	F	2	40	12	5	2 x 7	9	R	R	
S6 800	F	2	50	12	5	2 x 7	9	R	R	
S7 1250	F	2	50	20	8	2 x 11	18		R	
S7 1600	F	2	50	20	10	2 x 11	18		R	
S8 2000	F	3	100		5	4 x 15	70 ⁽²⁾		R	
S8 2500	F	4	100		5	4 x 15	70 ⁽²⁾		R	

Front extended terminals

These allow busbars or cables terminated with a cable terminal to be connected

Type	version	pieces	busbars [mm]			cable term. [mm]		tightening [Nm]		terminal covers		
			L	P	hole	L	hole	A	B	upper	lower	fixed p.
S2 160	F	1	20	4	8	20	8	5	9	R	R	
S3 160, S3X 125	F-P-W	1	20	4	8.5	20	8.5	9	9	R	R	R
S3 250, S3X 200	F-P-W	1	20	6	8.5	20	8.5	9	9	R	R	R
S4 160	F-P-W	1	20	4	8.5	20	8.5	9	9	R	R	R
S4 250, S4X 250	F-P-W	1	20	6	8.5	20	8.5	9	9	R	R	R
S5 400	F-P-W	2	25	5	11	25	11	18	18	R	R	R
S6 630, S6X 400-630	F-W	2	40	5	11	40	11	9	18		R	
S6 800	F-W	2	50	5	14	50	14	9	30		R	
S7 1250	F-W	2	50	8	4x11 ⁽⁴⁾			45	18		R	
S7 1600	F-W	2	50	10	4x11 ⁽⁴⁾			45	18		R	

Front extended spreaded terminals

These allow busbars or cables terminated with a cable terminal to be connected

Type	version	pieces	busbars [mm]			cable term. [mm]		tightening [Nm]		terminal covers		
			L	P	hole	L	hole	A	B	upper	lower	fixed p.
S3	F	1	30	4	8.5	30	8.5	9	9		S	
S4	F	1	30	4	8.5	30	8.5	9	9		S	
S5 400	F	2	40	5	11	40	11	18	18		S	
S5 630	F-W	2	40	5	11	40	11	18	18		S	
S6	F	2	50	5	3 x 13	4 x 45	13	9	30			
S7 1600	F	2	50	10	3 x 13	4 x 45	13	45	20			

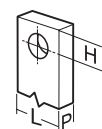
Front terminals for copper cables

These allow bare copper cables to be connected directly to the circuit-breaker. They are not suitable for tube cable terminals

Type	version	pieces	cable [mm ²]	busbars L [mm]	cable term. L [mm]	tightening B [Nm]	Ø clamps [mm]	terminal covers		
								upper	lower	fixed p.
S1 125	F-P	1	1.5...50	max.10	max.10	2.5-5 ⁽¹⁾	11	R	R	
S2 160	F-P	1	1.5...70	max.12	max.12	2.5-5 ⁽¹⁾	12.5	R	R	
S3 160, S3X 125	F-P-W	1	6...185			16	18	R	R	S
S3 250, S3X 200	F-P-W	1	6...185			16	18	R	R	S
S4 160	F-P-W	1	6...185			16	18	R	R	S
S4 250, S4X 250	F-P-W	1	6...185			16	18	R	R	S
S5 400	F-P-W	1	16...240			25	24	R	R	S
S5 630	F-W	2	50...185			31	20	S		

Key

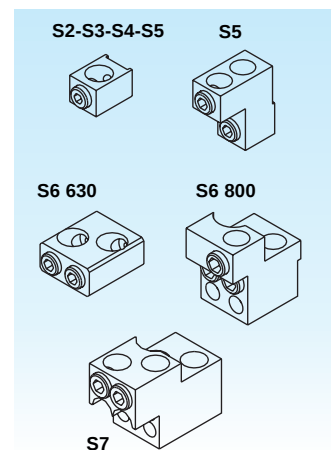
- (1) Tightening torque of 2.5 Nm for < 10 mm² cable cross-section
 - (2) M12 class 8.8 screws
 - (3) M16 class 8.8 screws
 - (4) Only use two holes diagonally
- A = Tightening of the terminal onto the circuit-breaker
B = Tightening the cable/busbar or cable terminal onto the terminal
R = On request
S = Standard



Front terminals for copper or aluminium cables

These allow copper or aluminium cables to be connected directly to the circuit-breaker (it is not possible to use solid aluminium cables). For the SACE S2 circuit-breaker, these terminals must be connected to the front extended terminals, which are supplied if the circuit-breaker is ordered fitted directly in the factory, whereas the front extended terminal kit must be specified if they are ordered as loose parts..

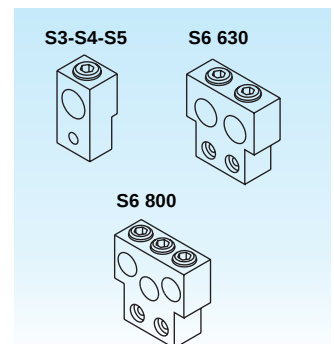
Type	version	pieces	cable [mm ²]	tightening		Ø clamps [mm]	terminal covers		
				A [Nm]	B [Nm]		upper	lower	fixed p.
S2 160	F	1	2.5...50	9	5.6	9.5	S		
	F	1	35...95	9	13.5	13.5	S		
S3 160 (R100A)	F	1	2.5...50	9	5.6	10	R		
S3 160, S3X 125	F	1	35...95	9	13.5	14.2	R		
S3 250, S3X 200	F	1	25...150	9	31	17	R		
S4 160	F	1	35...95	9	13.5	14.2	R		
S4 250, S4X 250	F	1	25...150	9	31	17	R		
S5 400	F	2	95...120	18	31	15.5	S		
	F	1	120...240	18	43	21.5	R		
S6 630, S6X400-630	F	2	120...240	5	31	21.5	R		
S6 800	F	3	70...185	9	43	19	S		
S7 1250	F	4	95...240	37	43	21.5	S		



Rear terminals for copper or aluminium cables

These allow copper or aluminium cables to be connected directly to the circuit-breaker.

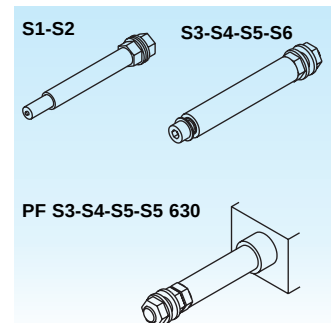
Type	version	pieces	tightening		Ø clamps [mm]	terminal covers		
			A [Nm]	B [Nm]		upper	lower	fixed p.
S3 160, S3X 125	F	1	9	31	16	S		
S3 250, S3X 200	F	1	9	31	16	S		
S4 160	F	1	9	31	16	S		
S4 250, S4X 250	F	1	9	31	16	S		
S5 400	F	1	18	43	21	S		
S6 630, S6X400-630	F	2	9	43	21	S		
S6 800	F	3	9	31	17.5	S		



Rear threaded terminals

These allow rear connection of busbars.

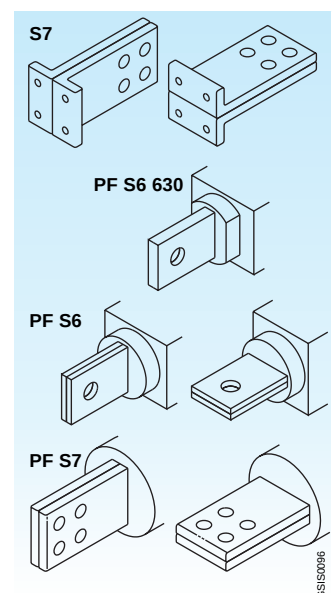
Type	version	pieces	busbars [mm]			cable term. [mm]		tightening		terminal covers		
			L	P	hole	L	hole	A	B	upper	lower	fixed p.
S1 125	F	1	16	3				5	8		S	
	P	1	16	3					8			
S2 160	F	1	18	4				5	8		S	
	P	1	18	4					8			
S3 160, S3X 125	F	1	20	4	12.5	20	12.5	10	20		S	
	P-W	1	20	4	12.5	20	12.5	10	20			
S3 250, S3X 200	F	1	20	6	12.5	20	12.5	10	20		S	
	P-W	1	20	6	12.5	20	12.5	10	20			
S4 160	F	1	20	4	12.5	20	12.5	10	20		S	
	P-W	1	20	4	12.5	20	12.5	10	20			
S4 250, S4X 250	F	1	20	6	12.5	20	12.5	10	20		S	
	P-W	1	20	6	12.5	20	12.5	10	20			
S5 400	F	2	25	5	16.5	25	16.5	18	40		S	
	P-W	2	25	5	16.5	25	16.5	18	40			
S5 630	F	2	40	5	25	40	25	18	100		S	
	P-W	2	40	5	25	40	25	18	100			
S6 630, S6X 400-630	F	2	40	5	25	40	25	18	100		S	
S6 800	F	2	50	5	25	50	25	18	100		S	



Rear terminals in horizontal and vertical flat bar

These allow rear connection of busbars.

Type	version	pieces	busbars [mm]			cable term. [mm]		tightening	terminal covers		
			L	P	hole	L	hole	B [Nm]	upper	lower	fixed p.
S5 630	W	2	40	5	11	40	11	20			
S6 630, S6X 400-630	W	2	40	5	14	40	14	30			
S6 800	W	2	50	5	14	50	14	30			
S7 1250	F-W	2	50	8	4x11 ⁽⁴⁾			20		S	
S7 1600	F-W	2	50	10	4x11 ⁽⁴⁾			20		S	
S8 2000	F	3	100	5	4x15			70 ⁽²⁾			
S8 2500	F	4	100	5	4x15			70 ⁽²⁾			
S8 3200	F	6	100	5	4x18			100 ⁽³⁾			





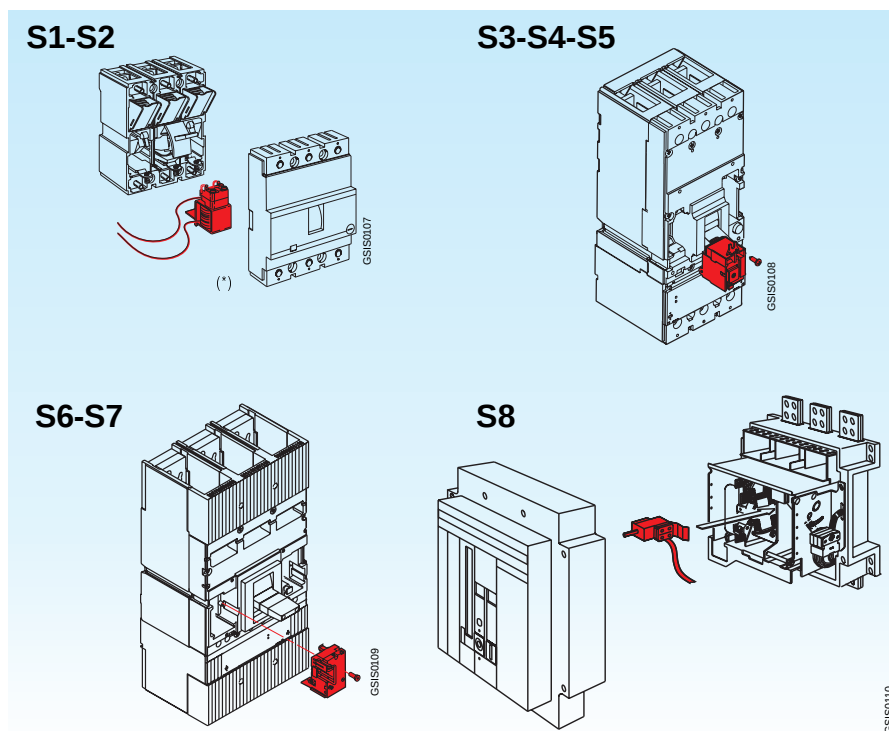
Accessories

Service releases

The service releases, shunt opening and undervoltage releases, housed and fixed in a slot in the left part of the circuit-breaker are always alternative to each other. The power supply is made by means of special connectors for sizes S3 to S7, whereas for S1-S2, it is made by means of free wires 0.6 m long or with plug-socket connectors which can be supplied on request. Assembly is carried out by pressure into the appropriate housing in the left part of the circuit-breaker.

Shunt opening release

This allows circuit-breaker opening by means of an electric command. Release operation is guaranteed for a voltage between 70% and 110% of the rated power supply voltage U_n , both in AC and in DC. It is always fitted with an auxiliary limit contact.



(*) For the SACE S1-S2 circuit-breakers, the service releases are fixed to the circuit-breaker cover

Power supply voltages

S1 - S2		S3 -S4 - S5		S6 - S7		S8	
50-60 Hz [V~]	DC [V-]	50-60 Hz [V~]	DC [V-]	50-60 Hz [V~]	DC [V-]	50-60 Hz [V~]	DC [V-]
24 ... 30			12		12		24
48	60	24	24	24	24	24	30
100 ... 130		48	48	48	48	48	48
220 ... 250		60	60 ... 72	60	60		60
380 ... 440		110 ... 120	110 ... 125	110 ... 120	110 ... 125	100 ... 127	100 ... 27
	24	220 ... 240	220 ... 250	220 ... 240	220 ... 250	127 ... 150	
	48	380 ... 400		380 ... 400		150 ... 180	160
	110	480		480		200 ... 255	200 ... 250
	220					380 ... 500	
	250						

Powers absorbed on inrush

S1...S5		S6...S7		S8	
AC [VA]	DC [W]	AC [VA]	DC [W]	AC [VA]	DC [W]
100	120	150	150	200	150

Circuit-breaker opening times

S3	S4...S7	S8
[ms]	[ms]	[ms]
≤ 15	≤ 15	≤ 20

Number of operations

S3-S4	S5	S6-S7
[nr.]	[nr.]	[nr.]
10000	7500	2500

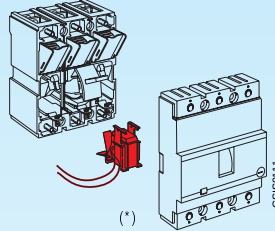
Undervoltage release

This opens the circuit-breaker due to a power supply failure to the release, or voltage drops to minimum values of $0.7 \times U_n$ with a trip range from 0.7 to $0.35 \times U_n$.

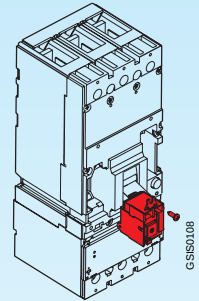
After tripping, the circuit-breaker can be closed again, starting with a voltage higher than $0.85 \times U_n$. With the undervoltage release de-energised, neither circuit-breaker nor main contact closure is possible.



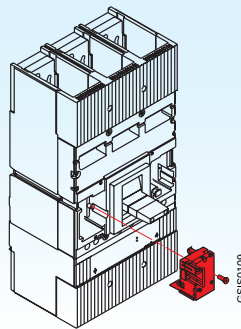
S1-S2



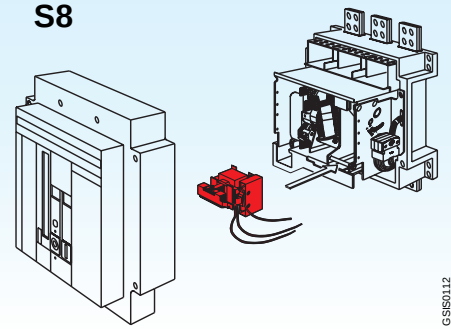
S3-S4-S5



S6-S7



S8



GSI50112

(*) For the SACE S1-S2 circuit-breakers, the service releases are fixed to the cover of the circuit-breaker

Power supply voltages

S1 - S2			S3 -S4 - S5		S6 - S7		S8		
50 Hz [V~]	60 Hz [V~]	DC [V-]	50-60 Hz [V~]	DC [V-]	50-60 Hz [V~]	DC [V-]	50 Hz [V~]	60 Hz [V~]	DC [V-]
24			24		24		24		
48	48		48		48				24
110			60		60		30		
	110		110 ... 127		110 ... 127				30
220			220 ... 250		220 ... 250		48		
380	380 ... 440		380 ... 440		380 ... 440				48
			480		480		60		
		24		24		24			60
		48		48		48	100	110...115	
		60		60		60	110...115	125 .. 127	
		110		110 ... 125		110 ... 125			110...125
							120		
		220		220 ... 250		220 ... 250	127...130		
								208...220	
									220...250
							220		
							230...240	277	
								240	
									310
								380	
							380...400	440	
							415...440	480	
							500		

Powers absorbed during continuous service

S1...S5		S6 - S7		S8	
AC [VA]	DC [W]	AC [VA]	DC [W]	AC [VA]	DC [W]
6	3	10	4	30	15

Circuit-breaker opening times

S1...S2	S3	S4...S7	S8
[ms]	[ms]	[ms]	[ms]
≤ 15	≤ 18	≤ 25	≤ 25

Number of operations

S3-S4	S5	S6-S7
[nr.]	[nr.]	[nr.]
10000	7500	2500



Accessories

Service releases

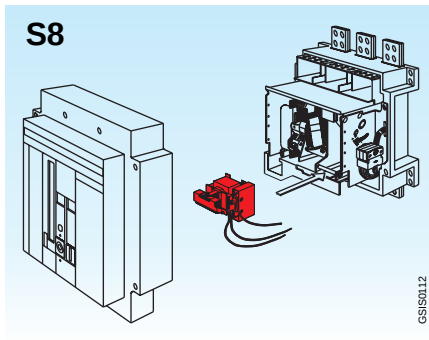
Time-delayed undervoltage release

The undervoltage release can be combined with an external electronic power supply time-delay device, which allows circuit-breaker opening to be delayed in the case of a power cut to the release itself, according to fixed time-delays of 0.5-1-2-3 [s], so as to avoid unwarranted trips caused by temporary malfunctions. It is available for the SACE S3, S4, S5, S6, and S7 circuit-breakers with power supply voltages at 110-220 V (50-60 Hz) only coupled with an undervoltage release at 310 V DC. Different power supply voltages are possible for S8.



Shunt closing release

This allows circuit-breaker closure by means of an electric command. Operation of the release is guaranteed for a voltage between 80% and 110% of the rated power supply voltage U_n , both in AC and in DC.



Power supply voltages

S8		
50 Hz [V~] 24	60 Hz [V~] 24	DC [V~] 24 30
30		48
48		60
60		110...125
100	110...115	110...125
110...115	125...127 120	
127...130 220		
	208...220	220...250
230...240	277 240	310
380...400	440 380	
415 ... 440	480	
500		

Powers absorbed on inrush

S8	
AC [VA] 200	DC [W] 220

Circuit-breaker closing times

S8
[ms] ≤ 55

Connectors for service releases

These allow the shunt opening release or the undervoltage release to be connected to the power supply circuit. They are available in the following versions:

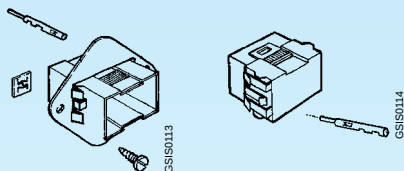
- plug-socket for S1-S2 circuit-breakers (free cables always supplied)
- for fixed S3 ... S7 circuit-breakers
- for plug-in/withdrawable S3 ... S7 circuit-breakers.

Assembly is by means of pressure into special slots in the left side of the circuit-breaker.

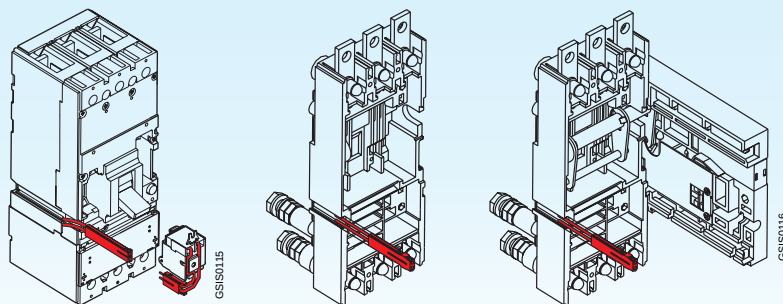
Cables of different lengths are available.



S1 - S2



S3 ... S7



Extension for testing service releases

Available for SACE S3, S4, S5, S6, and S7 circuit-breakers, this allows supply to the service releases with the circuit-breaker in the racked-out position. It is therefore possible to carry out blank operating tests of the circuit-breaker with the circuit-breaker in safe conditions, i.e. isolated in relation to the power circuits.





Accessories

Electric signals

These allow information relative to the circuit-breaker state of operation to be taken outside the circuit-breaker. Installation of these accessories is carried out directly from the front of the circuit-breaker in special slots, completely segregated from the live parts, with increased operator safety.

Auxiliary contacts

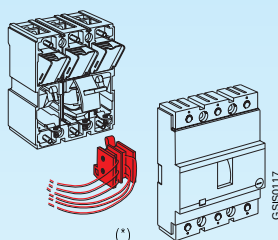
These carry out electrical signalling of the operating state of the circuit-breaker:

- Open/closed: indicates the position of the circuit-breaker contacts.
- Release trip: signals circuit-breaker opening because the overcurrent release has tripped (for an overload or short-circuit), the residual current, shunt opening or undervoltage release has tripped, or the emergency opening pushbutton of the motor operator or the test pushbutton has been pressed. Signalling is reset when the circuit-breaker is reset (recovery).

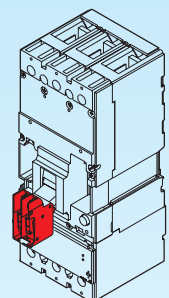
For SACE S3, S4, S5, S6, and S7 circuit-breakers the auxiliary contacts of the circuit-breaker are also available in the gold-plated version for digital signals, also suitable for use with voltages $U_n < 24$ V with the same type of signalling and versions.

The signals indicated in the table are available:

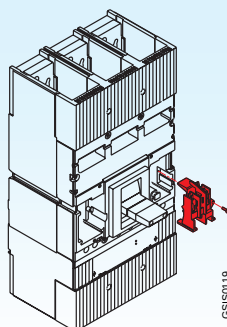
S1-S2



S3-S4-S5



S6-S7



(*) For SACE S1-S2 circuit-breakers the auxiliary contacts are fixed to the cover of the circuit-breaker



Signals

2 contacts during open/closed changeover
1 contact during open/closed changeover + 1 contact during release tripped changeover
1 circuit-breaker open signal + 1 circuit-breaker closed signal + 1 release tripped signal
3 NO or NC contacts
release tripped signal
microswitch for signalling closing springs charged

S1...S2	S3	S4...S7	S8
■	■	■	—
■	■	■	—
—	—	■	—
—	—	—	■
—	—	—	■
—	—	—	■

S1-S2			
Rated voltage U_n V ~ (50-60 Hz)		ohmic load In [A]	
—	30	4	—
127	—	4	2A ($\cos\phi = 0,3$)
220	—	4	2A ($\cos\phi = 0,3$)

S3-S4-S5-S6-S7			
Rated voltage U_n V ~ (50-60 Hz)		ohmic load In [A]	
—	125	0,3	
—	250	0,15	
250		6	
400		3	

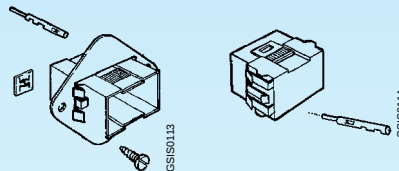
S8			
Rated voltage U_n V ~ (50-60 Hz)		ohmic load In [A]	
—	220	1	
380		6	
500		3	

Connectors for auxiliary contacts

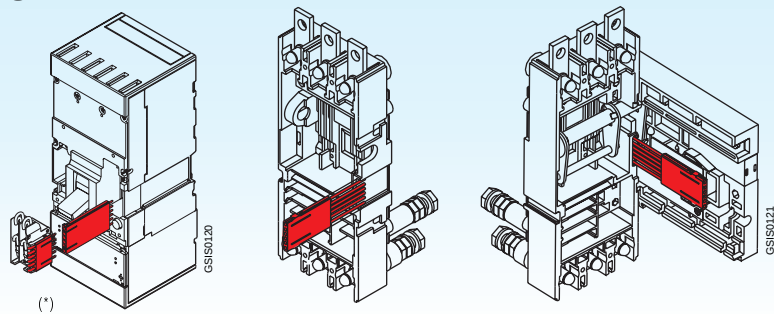
These allow the auxiliary contacts to be connected to the relative power supply circuit. For S1, S2 circuit-breakers, the power supply is made by means of free wires or with mobile plug-socket connectors. For SACE S3, S4, S5, S6, and S7 circuit-breakers, the auxiliary contacts (fitted with plug connector) can only be supplied by means of the specific connection connectors to be ordered specifying the size and version of the circuit-breaker (fixed or plug-in/withdrawable). Assembly is carried out by pressure into special slots in the right side of the circuit-breaker.



S1 - S2



S3 ... S7



(*) Connectors for auxiliary contacts, for fixed, plug-in or withdrawable circuit-breakers

Extension for testing auxiliary contacts

Available for SACE S3, S4, S5, S6, and S7 circuit-breakers, this allows the auxiliary contacts to be connected to the relative power supply circuit with the circuit-breaker in the racked-out position. With the circuit-breaker in safe conditions, i.e. isolated in relation to the power circuits, blank tests of circuit-breaker operation can be carried out.





Accessories

Electric signals

Early auxiliary contact for undervoltage release

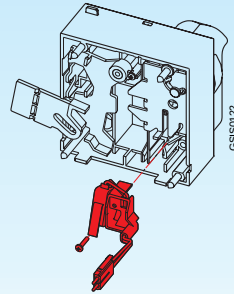
The early auxiliary contact for the undervoltage release, interlocked with the rotary handle operating mechanism, keeps the release de-energised with the circuit-breaker open.

It is supplied complete with socket connector of the type with double slide for simultaneous connection of the undervoltage release and the accept contact.

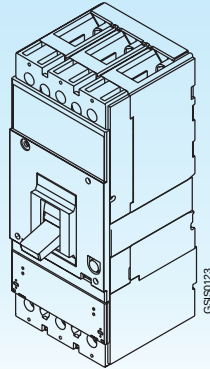
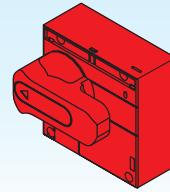


GSIS0038

S3 ... S7



GSIS0122



GSIS0123

Circuit-breaker position contacts

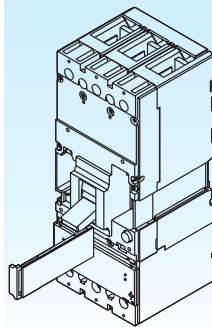
For the fixed part of the SACE S2, S3, S4, S5, S6, and S7 circuit-breakers, these carry out electrical position signalling of the circuit-breaker in relation to the fixed part: racked-in, racked-out. They can only be connected by means of free wires and are available in the following versions:

- Contacts for signalling circuit-breaker racked in
- Contacts for signalling circuit-breaker racked out.

A maximum of three contacts for S2, two contacts for S3, three contacts for S4-S5 and five contacts for S6-S7 can be installed on the fixed part, in any combination.

The circuit-breaker position contacts are also available in the gold-plated version for digital signals also suitable for use with voltages $U_n < 24\text{ V}$ with the same type of signals and combinations.

S3 ... S7



GSIS0180



GSIS0006

S2

Rated voltage U_n V ~ (50-60 Hz)		ohmic load In [A]	
	V –		inductive In [A]
–	30	4	–
127	–	4	2A ($\cos\varphi = 0,3$)
220	–	4	2A ($\cos\varphi = 0,3$)

S3-S4-S5-S6-S7

Rated voltage U_n V ~ (50-60 Hz)		ohmic load In [A]	
	V –		inductive In [A]
–	125	0,3	
–	250	0,15	
250	–	6	
400	–	3	



Accessories

Remote controls

These allow remote control of circuit-breaker opening and closing and are particularly suitable for use in electrical network supervision and control systems. They are complete with manual operating lever and emergency opening pushbutton (starting from S3). A selector allows changeover from automatic to manual operation. They are always fitted with a padlock and, on request, can be fitted with a key lock in the open position.

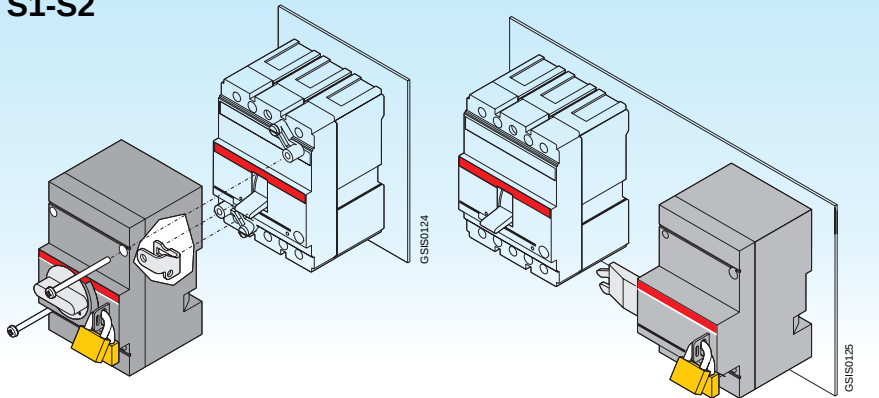
Solenoid operating mechanism for SACE S1-S2 circuit-breakers

This operates both opening and closing of the circuit-breaker, acting directly on its lever.

There are two versions available, one placed “beside” the circuit-breaker (for installation on a panel or DIN EN 50022 rail), the other on the “front”, suitable for being installed directly on the front of the circuit-breaker.

Both versions can be used either for S1 or for S2 and in the three- and four-pole version.

S1-S2



Rated voltage, Un		AC	DC
[V]		—	48
[V]		110	60
[V]		220 ... 230	110
[V]		—	220
Operating voltage		85 ... 110% Un	85 ... 110% Un
Inrush power absorption, Ps		2300-2500 [VA]	700-900 [W]
Duration	opening [s]	< 0.1	
	closing [s]	< 0.1	
Mechanical life	[no. operations]	25000	
Degree of protection, on the front		IP 30	
Minimum duration of the opening and closing command impulse		[ms] ≥ 100	



Accessories

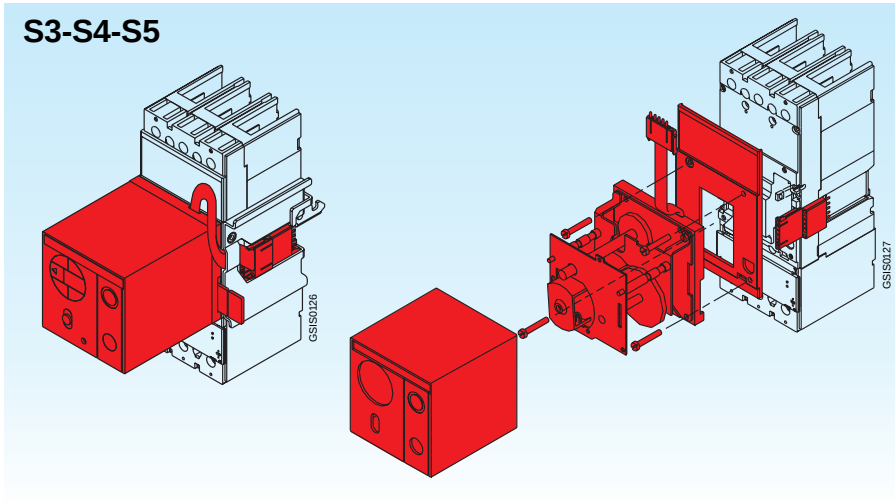
Remote controls

Direct action motor operator for SACE S3-S4 and S5 circuit-breakers

Both the opening and closing command is controlled by the motor, which acts directly on the circuit-breaker lever. The table shows the power supply voltage values U_n [V].



S3-S4-S5



Rated voltage, Un		AC	DC
		—	24
		—	48-60
		110-127	110-125
		220-240	220-250
		380	—
		440	—
Operating voltage		85 ... 110% Un	85 ... 110% Un
Inrush power absorption, Ps		500 [VA]	500 [W]
Service power absorption, Pc		350 [VA]	350 [W]
Operating frequency	[Hz]	50-60	
Time constant	[ms]	18	
Duration	opening [s]	0.1	
	closing [s]	0.1	
Mechanical life	[no. operations]	15000 (S3-S4) / 10000 (S5)	
Degree of protection, on the front		IP 30	
Minimum duration of the opening and closing command impulse		[ms]	≥ 150

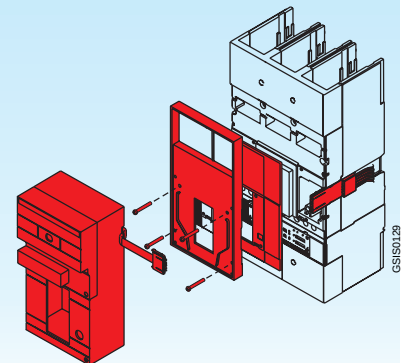
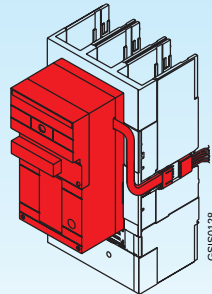
Stored energy motor operator for SACE S6-S7 circuit-breakers

With the stored energy operating mechanism, during circuit-breaker opening the release mechanism automatically pre-charges a system of springs: the stored energy is exploited for closing the circuit-breaker. It is supplied complete with shunt closing release ($P_s=100VA\sim/100W-$) and flange for the compartment door. The table shows the power supply voltage values U_n [V].

In the case of interlocked circuit-breakers, the key lock against manual operation is necessary.



S6-S7



Rated voltage, U_n		AC	DC
	[V]	—	24
	[V]	—	48
	[V]	—	60
	[V]	110	110
	[V]	120-127	120-127
	[V]	220-250	220-250
	[V]	380	—
	[V]	—	—
Operating voltage		85 ... 110% U_n	85 ... 110% U_n
Inrush power absorption, P_s		660 [VA]	600 [W]
Service power absorption, P_c		180 [VA]	180 [W]
Operating frequency	[Hz]	50-60	
Time constant	[ms]	22	
Duration	closing	0.09	
	opening	1.2	
	resetting	2	
Mechanical life	[no. operations]	10000 (S6) / 5000 (S7)	
Degree of protection, on the front		IP 30	
Minimum duration of the opening and closing command impulse		≥ 100	



Accessories

Remote controls

Geared motor for SACE S8 circuit-breaker

This allows the springs of the circuit-breaker closing mechanism to be charged automatically, immediately following an closing operation. It includes a limit microswitch for electrical signalling of closing springs charged.

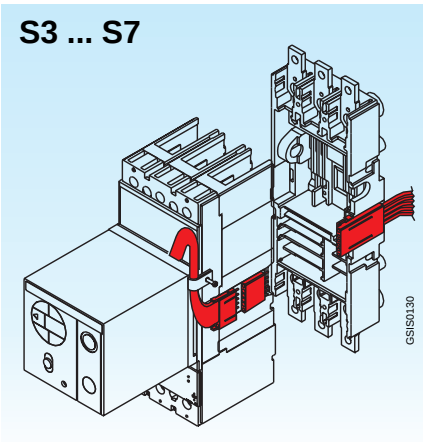
Rated voltage, Un	AC		DC	
	[V]	–		24-30
	[V]	–		48-60
	[V]	100-130		100-130
	[V]	220-250		220-250
Inrush power absorption, Ps		1000 [VA]		1000 [W]
Service power absorption, Pc		230 [VA]		230 [W]
Charging time	[s]	7 ... 10		
Mechanical life	[no. operations]	5000		



GSIS9007

Connectors for motor operators

The motor operators, from S3 to S7, can only be supplied by means of the specific connection connectors. They are of the slide type and allow simultaneous connection of both the motor operator and the auxiliary contacts to the relative power supply circuit. They are an alternative to the corresponding connectors for the auxiliary contacts only since they are housed in the same seat. They must be ordered specifying the size and version of the circuit-breaker (fixed or plug-in/withdrawable).



S3 ... S7

GSIS0130



GSIS9014

Extension for testing motor operators

For the SACE S3, S4, S5, S6, and S7 circuit-breakers, this allows both motor operators and the auxiliary contacts to be connected to the relative power supply circuit with the circuit-breaker in the racked-out position. With the circuit-breaker in safe conditions, i.e. isolated in relation to the power circuits, blank operating tests of the circuit-breaker can be carried out. It must be ordered specifying the size and version of the circuit-breaker (fixed or plug-in/withdrawable) and automatically excludes the corresponding extension for testing the auxiliary contacts

S3 ... S7



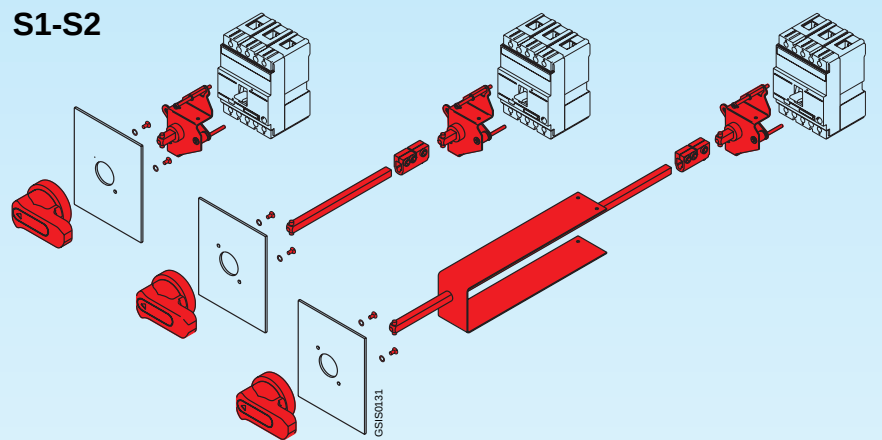
GSIS9016

Rotary handle operating mechanism

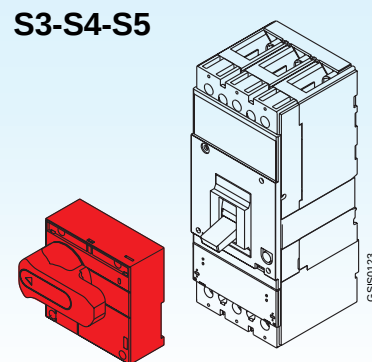
The rotary handle operating mechanism facilitates operation thanks to its ergonomic handle. It is always fitted with a padlock in the open position, which prevents the circuit-breaker being closed. The lock slot can take up to 3 padlocks – stem Ø 6 mm (not supplied). On request it can be fitted with a compartment door lock or a key lock in the open position. For SACE S2, S3, S4, S5, S6, and S7 circuit-breakers, application of the rotary handle operating mechanism is an alternative to the front flange for the lever operating mechanism and for the motor operator. Different types of rotary handle operating mechanism are available. The position of the rotary handle indicates with certainty the position of the contacts: open, closed, relay tripped. The release settings and the nameplate data remain accessible to the user. For the SACE S6, S7 circuit-breakers, the direct rotary handle operating mechanism on the circuit-breaker is always supplied complete with flange for the compartment door.

The rotary handle operating mechanism in the emergency version, complete with red-yellow handle and yellow plate, suitable for machine tool control, is also available for all the circuit-breakers.

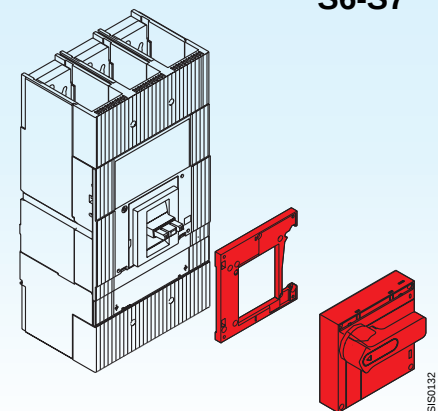
S1-S2



S3-S4-S5



S6-S7



	S1-S2		S3-S4-S5		S6-S7	
	F / P		F / P	W	F	W
Direct	–		●	●	●	●
Direct emergency	–		●	–	●	–
Transmitted with fixed distance	119,5 mm		–	–	–	–
Transmitted with fixed emergency distance	119,5 mm		–	–	–	–
Transmitted with adjustable distance	–		300 mm	300 mm	500 mm	500 mm
Transmitted with adjustable emergency distance	–		300 mm	–	500 mm	–
Extension for transmitted handle	180/500 mm		500 mm	–	–	–



Accessories

Operating mechanisms and locks

Front flange for lever operating mechanism

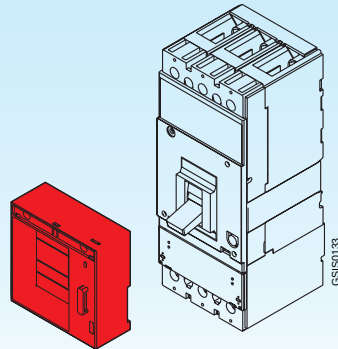
This can be installed on SACE S3, S4, S5, S6, and S7 fixed, plug-in or withdrawable circuit-breakers. In the case of withdrawable circuit-breakers installed in compartments, it allows the IP40 degree of protection to be kept for the whole isolation run of the circuit-breaker. It is always fitted with a padlock in the open position (stem $\varnothing$ 6 mm - up to three padlocks - not supplied) which prevents closing of the circuit-breaker. On request, it can be fitted with a key lock in the open position for one or more circuit-breakers and with the compartment door lock.

It is available in the following versions:

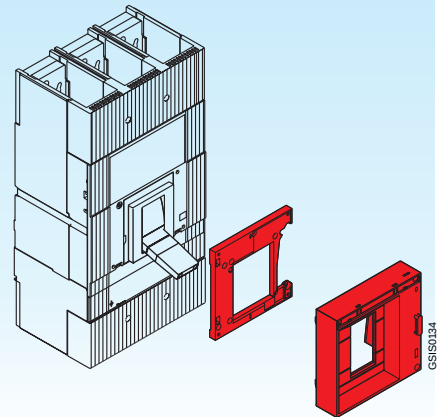
- for fixed or plug-in circuit-breaker.
- for withdrawable circuit-breaker.

For the SACE S6, S7 circuit-breakers, it is always supplied complete with flange for the compartment door, whereas for the SACE S3, S4, and S5 circuit-breakers the flange supplied with the circuit-breaker can be used.

S3-S4-S5



S6-S7



Key lock in open position

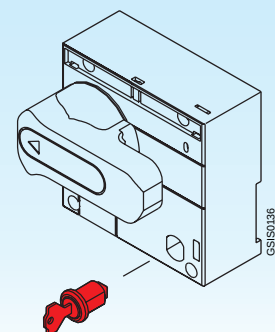
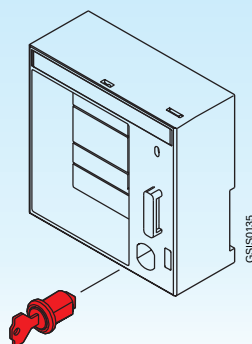
This allows the mechanical closing operation of the circuit-breaker to be locked.

The following versions are available:

- lock with different key for each circuit-breaker
- lock with the same key for groups of circuit-breakers.

Different locks are supplied for direct action motor operator, for stored energy motor operator, and for rotary handle or front flange for lever operating mechanism. The circuit-breaker lock in the open position ensures circuit isolation in compliance with the IEC 947-2 Standard.

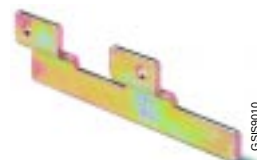
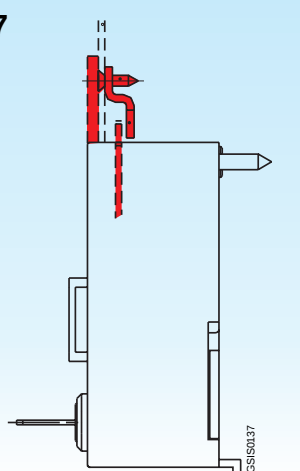
S3 ... S7



Compartment door lock

This prevents the compartment door being opened with the circuit-breaker closed. It can be used with the SACE S3, S4, S5, S6, and S7 circuit-breakers in the fixed, plug-in or withdrawable version and fitted with rotary handle operating mechanism or front flange for lever operating mechanism. It consists of two elements: one applied to the rotary handle operating mechanism or to the front flange for the lever operating mechanism, the other, consisting of a metal striker, to be applied onto the compartment door. For the SACE S1-S2 circuit-breakers it is an integral part of the rotary handle operating mechanism.

S3...S7

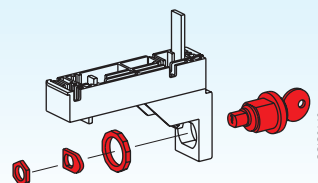
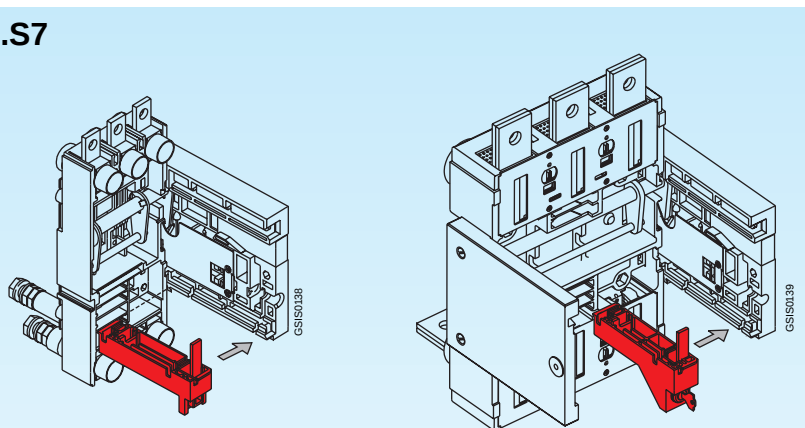


Lock for fixed part of withdrawable circuit-breaker

Key locks or padlocks are available to be applied to the guide of the fixed part of a withdrawable circuit-breaker to prevent the moving part from being racked-in. The following different versions are available:

- Padlock, which can take up to three padlocks with stem Ø 6 mm (not supplied).
- Key lock in the open position with different key for each circuit-breaker
- Key lock in the open position between two or more circuit-breakers with the same key for groups of circuit-breakers
- Key lock of Ronis type (without key).

S3...S7





Accessories

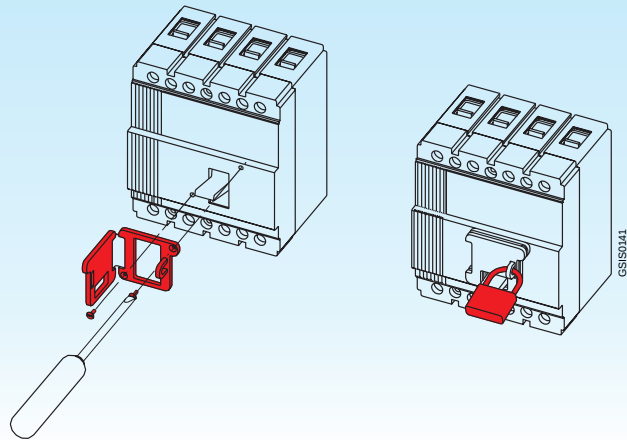
Operating mechanisms and locks

Padlock for operating lever

This is applied on the cover of the SACE S1-S2 circuit-breakers to prevent the operating lever movement. If activated, the circuit-breaker remains locked in the open position, guaranteeing circuit isolation in compliance with the IEC 947-2 Standard.



S1-S2

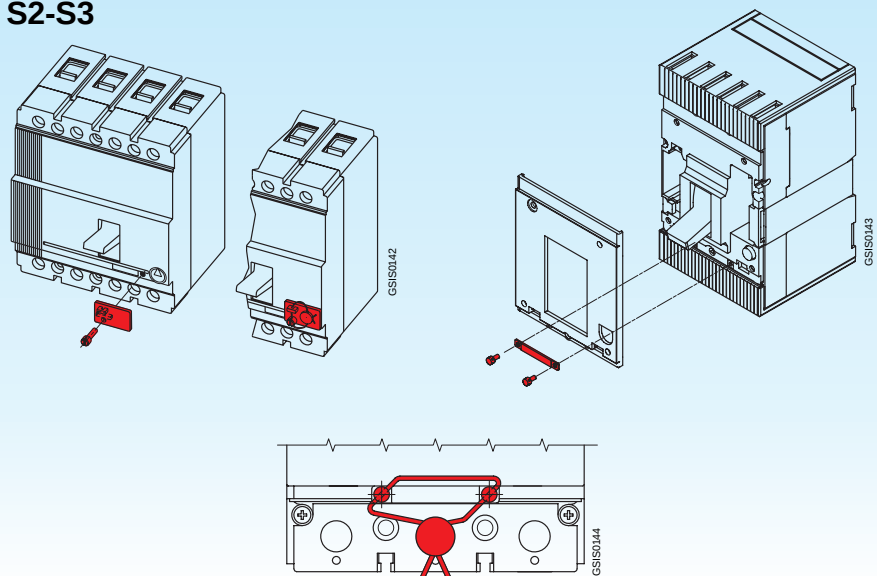


Anti-tampering lock

This is applied on the cover of the SACE S2, S3 circuit-breakers in correspondence with the regulator of the thermal element of the thermomagnetic release and prevents it being tampered with.



S2-S3



Mechanical interlock between two circuit-breakers

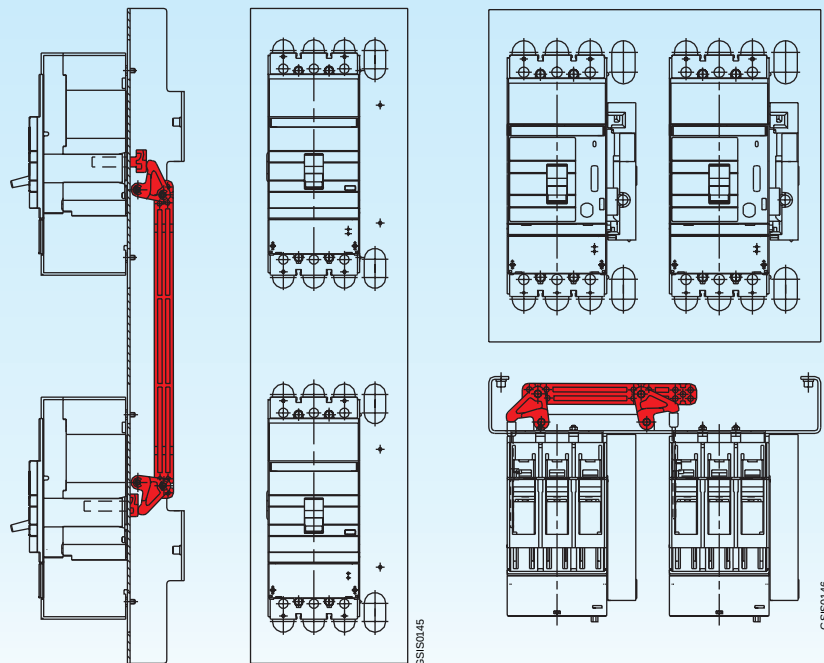
This allows installation of two circuit-breakers on a single support and, by means of special lever mechanism, makes them mechanically inter-dependent. It prevents operation in parallel of two power supply sources (e.g.: normal - emergency). It consists of a kit with levers and assembly accessories and a metallic support.

The circuit-breakers and any operating mechanism accessories must be ordered separately. The mechanical interlock is available for SACE S3, S4, S5, S6, and S7 circuit-breakers in side by side and superimposed versions.

To be able to take the circuit-breakers mounted directly on the interlocking plate, the code "1SDA050093R1" must be specified as an accessory of the second circuit-breaker (or fixed part) which is to be interlocked.

N.B. for the S3X, S4X, S6X circuit-breakers, only the version side by side can be used.

S3 ... S7





Accessories

Residual current releases

All the circuit-breakers in the SACE Isomax S series are preset for combined assembly with residual current releases. In particular, the SACE S1, S2, and S3 circuit-breakers can be combined with residual current releases in the SACE RC210, RC211 or RC212 series, in the version side by side or underneath the circuit-breaker.

Apart from the protection against overloads and short-circuits typical of circuit-breakers, the residual current circuit-breakers which are derived from them also guarantee protection against earth fault currents, thereby ensuring protection against the risk of fire. The residual current releases can also be mounted on the SACE S2D and S3D switch-disconnectors. In that case, the derived apparatus is a “pure” residual-current circuit-breaker, which therefore guarantees only residual current protection and not the protections typical of circuit-breakers. The “pure” residual-current circuit-breakers are only sensitive to the earth fault current and are generally applied as main isolators in small distribution switchboards towards end users.

The use of “pure” and “non-pure” residual-current circuit-breakers allows continuous monitoring of the state of insulation of the installation, ensuring effective protection against the risk of fire and explosion and, in the case of devices with $I_{\Delta n} \leq 30\text{mA}$, they guarantee protection of people against indirect and direct contacts to integrate the compulsory measures foreseen by the standards and by the accident prevention regulations.

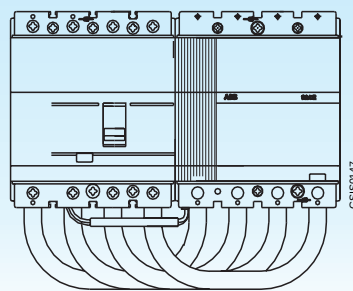
The residual-current releases are constructed in compliance with the following standards:

- IEC 947-2 appendix B
- IEC 255-3 and IEC 1000: for protection against unwarranted trips.

SACE RC210 polarised residual-current release

The SACE RC210/1 polarised residual-current release is available for four-pole SACE Isomax S1 circuit-breakers for assembly side by side on DIN 50022 rail. The release is constructed using polarised type technology and acts directly on the release operating mechanism of the circuit-breaker, by means of a small piston which passes through a pre-cut window on the side of the circuit-breaker. It is fitted with a test button for periodically checking the circuit-breaker.

S1



SACE RC211, RC212 electronic residual current releases

The SACE RC211 and RC212 residual current releases can be installed both on the SACE S1, S2 and S3 circuit-breakers and on the SACE S2D and S3D switch-disconnectors, in the fixed four-pole version, and can be supplied in two versions as follows:

- for assembly in position beside the circuit-breaker
- for assembly in position under the circuit-breaker.

The following releases are available:

- SACE RC211/1, RC212/1 for S1 circuit-breakers

- SACE RC211/2, RC212/2 for S2 circuit-breakers
- SACE RC211/3, RC212/3 for S3 circuit-breakers.

They are constructed using analogue technology and act directly on the circuit-breaker by means of an opening solenoid, supplied with the release, to be housed in the special slot made in the area of the third pole.

They do not require an auxiliary power supply since they are supplied directly from the network and their operation is guaranteed even with only a single phase supplied with voltage and in the

presence of one-direction pulsating currents with continuous components.

The operating conditions of the apparatus can be controlled constantly by means of the test pushbutton of the electronic circuit and the residual current trip magnetic indicator.

The circuit-breaker complete with residual current release can be fitted with the electrical accessories normally available for the circuit-breaker. The opening and undervoltage releases are housed in the special slot made in the fourth pole.

Residual current release beside the four-pole version circuit-breaker

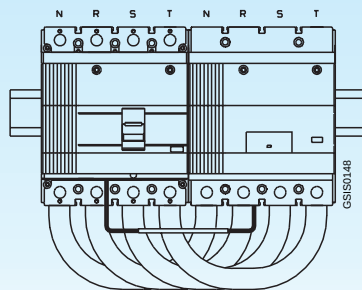
This is supplied complete with:

- power cables for connection to the lower terminals of the circuit-breaker (respecting correspondence with the neutral and phases)
- an opening solenoid to be housed in the area of the third pole, complete with plug-socket connector for connection to the residual current release
- 2 brackets for fixing on DIN rail (one for the circuit-breaker and one for the residual current release)
- plug connector to make the connection of the remote opening pushbutton (to be provided by the customer).

For SACE S1-S2 circuit-breakers the residual current release is fitted with front terminals for cables.

For the SACE S3 circuit-breaker, the residual current release is fitted with front terminals and is also supplied with a front flange H= 45 mm for the circuit-breaker.

S1-S2-S3



beside

On request, the front terminals for cables can be mounted, using the standard circuit-breaker kit.

Residual current release under the four-pole version circuit-breaker

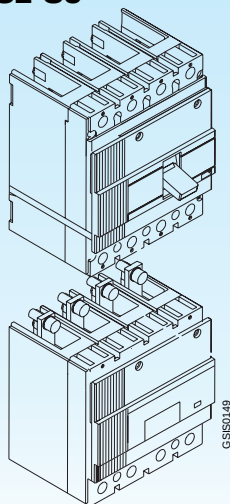
This is supplied complete with:

- an opening solenoid to be housed in the area of the third pole, complete with plug-socket connector for connection to the residual current release
- plug connector to make the connection of the remote opening pushbutton (to be provided by the customer) with the SACE RC212 residual current release
- flange for compartment door (one for SACE S1, S2; two for SACE S3)
- protection for assembly in the area between the circuit-breaker and residual current release.

For SACE S1, S2 circuit-breakers, the residual current release is supplied with front terminals for cables. On request, the rear threaded terminals can be mounted, using standard kit of the circuit-breaker.

For SACE S3 circuit-breakers, the residual current release is supplied with front terminals (together with a front flange H= 45mm for circuit-breaker). On request, using the standard kit of the circuit-breaker, front terminals for cables, extended front terminals, or rear terminals for cables can be mounted.

S1-S2-S3



under

nals for cables can be mounted or the rear terminals using the kit with 4 pieces for the circuit-breaker can be mounted (code 1SDA023365R1) and the kit for residual current release (code 1SDA025543R1).



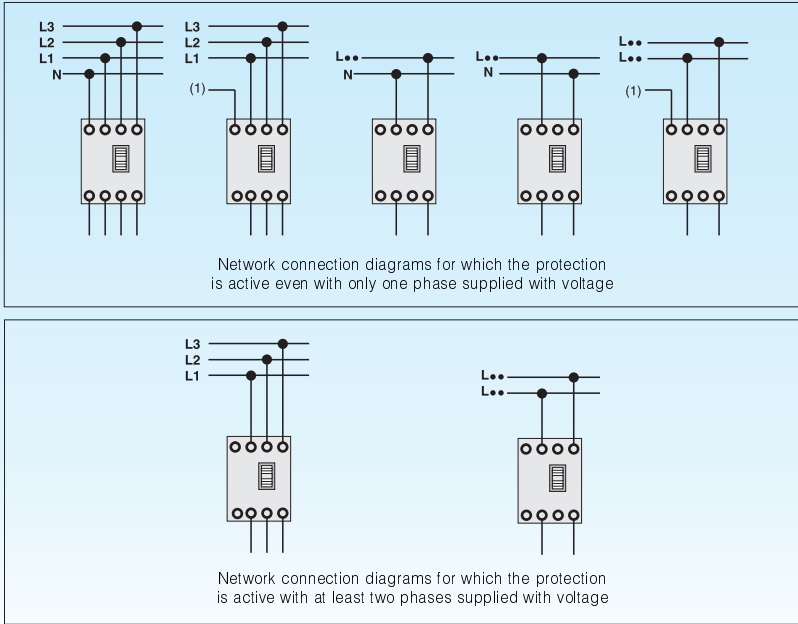
Accessories

Residual current releases

Technical characteristics

Residual current releases		SACE RC210	SACE RC211	SACE RC212
Technology		polarised type	electronic	electronic
Action		direct	with solenoid	with solenoid
Primary operating voltage	[V]	up to 500	220 ... 500	50 ... 500
Operation frequency	[Hz]	50 ÷ 60 Hz ± 10%	50 ÷ 60 Hz ± 10%	50 ÷ 60 Hz ± 10%
Range of test operation	[V]	230 ... 500	220 ... 500	50 ... 500
Rated service current	[A]	up to 125	up to 250	up to 250
Trip thresholds I _{Δn}	[A]	0,3 - 0,5	0,03 - 0,1 - 0,3	0,03 - 0,1 - 0,3 - 0,5 - 3
Tolerance for I _{Δn}	[%]		+0, -25	+0, -20
Trip times	[s]	instantaneous	instantaneous	0 - 0,1 - 0,25 - 0,5 - 1 - 1,5
Tolerance over trip times	[%]			± 20
Trip signalling		■	■	■
Self-supply		■	■	■
Input for remote opening				■
Indication of pre-alarm at 50%				■
AC type only for alternating current		■	■	■
Type A for alternating current, pushbutton			■	■
Low sensitivity		■	■	■
High sensitivity			■	■
Mounting under the circuit-breaker			■	■
Mounting beside the circuit-breaker		■	■	■
Dimensions (L x H x P)	[mm]	103 x 120 x 70	120 x 120 x 70	140 x 170 x 108

Connection to the residual current circuit-breaker network



(1) Terminal to be connected to the neutral or to the earthing conductor.

GSIS0077

SACE RCQ switchboard residual-current relays

The SACE Isomax S4, S5, S6, and S7 circuit-breakers can be combined with the SACE RCQ switchboard residual-current relay with separate toroid (to be installed externally on the line conductors) and satisfies requirements with trip thresholds up to 30 A and times up to 5 s or where the installation conditions are particularly restrictive, such as circuit-breakers already installed, limited space in the circuit-breaker compartment.

Thanks to its wide setting range, the SACE RCQ switchboard residual-current relay is suitable for applications where a coordinated residual current protection system is to be constructed at the various distribution levels, from the main switchboard to the end user. It is particularly suitable where low sensitivity residual current protection is required, for example in partial (current-type) or total (time-type) selective chains, and for high sensitivity applications (with physiological sensitivity) to realise protection of people against direct contacts.

On a drop in the auxiliary power supply voltage, the opening command intervenes after a minimum time of 100 ms and after the time set plus 100 ms.

The SACE RCQ relay is suitable for use in the presence of earth currents of alternating type only (AC Type), for alternating current and/or pushbutton with continuous components (Type A) and is suitable for carrying out residual current selectivity.

The SACE RCQ relay is of the type with indirect action and acts on the release mechanism of the circuit-breaker by means of the circuit-breaker shunt opening release (to be ordered by the user) to be housed in the special slot made on the third pole of the circuit-breaker.



Residual-current relay		SACE RCQ
Power supply voltage	AC [V]	80 ... 500
	DC [V]	48 ... 125
Operation frequency	[Hz]	50 ÷ 60 Hz ± 10%
Trip threshold adjustment $I_{\Delta n}$		
- 1 st range of adjustments	[A]	0,03 - 0,05 - 0,1 - 0,3 - 0,5
- 2 nd range of adjustments	[A]	1 - 3 - 5 - 10 - 30
Trip time adjustment	[s]	0 - 0,1 - 0,2 - 0,3 - 0,5 - 0,7 - 1 - 2 - 3 - 5
Pre-alarm threshold adjustment	[%] x $I_{\Delta n}$	25 ... 75% x $I_{\Delta n}$
Range of use of the closed transformers $I_{\Delta n}$		
- Toroidal transformer Ø 60 [mm]	[A]	0,03 ... 30
- Toroidal transformer Ø 110 [mm]	[A]	0,03 ... 30
- Toroidal transformer Ø 185 [mm]	[A]	0,1 ... 30
Range of use of the transformers which can be opened $I_{\Delta n}$		
- Toroidal transformer Ø 110 [mm]	[A]	0,3 ... 30
- Toroidal transformer Ø 180 [mm]	[A]	0,3 ... 30
- Toroidal transformer Ø 230 [mm]	[A]	1 ... 30
Alarm pre-threshold signalling		Yellow flashing LED 1 N.O. changeover contact 6 A - 250 V AC 50/60 Hz
Residual-current relay trip signalling		Yellow flashing LED 2 changeover contacts (N.O. N.C.; N.O.) 6 A - 250 V AC 50/60 Hz
Remote opening command		N.O. Contact Trip time 15 ms
Connection to the toroidal transformer		By means of 4 twisted conductors Maximum length 5 m
Dimensions L x H x D	[mm]	96 x 96 x 131,5
Drilling for assembly on door	[mm]	92 x 92



Accessories

Accessories for electronic releases

SACE PR212/D-M Modbus and SACE PR212/D-L Lon dialogue unit

The dialogue unit is a device which allows two-way communication from the circuit-breaker to the outside and vice versa. ABB SACE has built two distinct dialogue units able to support two different standard market protocols: SACE PR212/D-M (Modbus RTU protocol) and SACE PR212/D-L (LonTalk protocol by Echelon). Both units are housed in external modules, which can be installed on DIN rails, and can be used with the S4, S5, S6, and S7 circuit-breakers fitted with SACE PR212/P electronic release, both in the LSI and LSIG versions, or SACE PR212/MP release. They must be supplied with a stabilised voltage of 24 VDC ($\pm 20\%$ with maximum ripple $\pm 5\%$) and be earthed. Communication towards the outside is generally addressed to a supervision and control unit, which has the task of collecting and storing the information regarding the part of the plant controlled.

In the case of an error in the serial communication due to a fault in the dialogue unit or lack of auxiliary power supply, the SACE PR212/P protection unit works according to the last parameters set and,

in any case, in accordance with what has been set manually. The SACE PR212/D-M and SACE PR212/D-L dialogue units are always fitted in combination with the SACE PR212/T actuator unit, which allows remote closing or opening operation of the circuit-breaker (Remote Control) by means of two digital outputs which can be disabled thanks to the dip-switch (LOC/REM) positioned on LOC.

Information available

- State of the circuit-breaker: open; closed; tripped
- Installation alarms: pre-alarm L; tripped L-S-I-G-R-V-PTC
- Measurements: currents; N° operations; N° trips
- Reading and writing curves and trip thresholds: only manual reading (MAN), electronic reading and writing (ELT)
- Circuit-breaker commands: opening; closing; reset.

	PR212/D-M	PR212/D-L
Protocol	Modbus RTU	LonTalk
Physical means of transmission	EIA RS485	TP (Twisted Pair)
Speed	9600 – 19200 bit/s	78Kbit/s
Architecture	bus	bus

SACE PR212/T actuator unit

The SACE PR212/T actuator unit allows circuit-breaker opening and closing by means of the motor operator mounted on the circuit-breaker. It is always supplied in combination with the SACE PR212/D dialogue unit. An auxiliary power supply with a stabilised voltage of 24 VDC ($\pm 20\%$, with maximum ripple $\pm 5\%$) and earthed is required for operation of the unit.

The PR212/D dialogue unit sends the digital opening and closing commands, received from the supervision and control system, to the inputs of the SACE PR212/T actuator unit, which carries out circuit-breaker closing and opening by means of a power relay. The motor operator of the circuit-breaker (use the versions with power supply voltage at 110 V AC/DC or 220 V AC) must be connected to these relays.



GSIS9043

SACE TT1 Test unit

This allows control of tripping of the SACE PR211/P, SACE PR212/P, and SACE PR212/MP electronic releases and the trip test of the opening solenoid OS. The device is supplied by means of a 12 V replaceable battery and is fitted with a two-pole polarised connector-tracer point housed on the bottom of the box, which allows connection of the device to the test

input bushings located on the front of the SACE PR211/P, SACE PR212/P, or SACE PR212/MP releases.

The limited dimensions of the accessory make it practically pocket-type. The trip test device can be used on the SACE Isomax S4, S5, S6, S7, and S8 circuit-breakers.



GSIS9031

SACE PR212/K signalling unit

The SACE PR212/K signalling unit, only available for S8, is able to convert the digital signals supplied by the SACE PR212/P - (LSIG) protection unit into electric signals by means of normally open electrical contacts. An auxiliary power supply is needed to operate the unit. It is connected to the internal bus of the protection unit by means of a dedicated serial line over which the information re-

garding the state of activation of the protection functions passes, on the basis of which the relative power contacts are closed to signal:

- pre-alarm for protection function L ($I > 0.9 \times I_1$)
- protection function L, S, I, G trip
- release trip
- communication error with protection unit.



GSIS9041

	PR212/K
Auxiliary power supply	24 V DC $\pm 20\%$ maximum ripple 5%
Maximum current interrupted	5 A
Maximum voltage interrupted	250 V AC / 130 V DC
Breaking capacity – resistive load	50 W / 800 VA (48 V DC and 220 V AC)
Breaking capacity - inductive load	25 W / 500 VA (48 V DC and 220 V AC)
Contact/contact insulation	1000 Veff
Contact/coil insulation	2000 Veff



Accessories

Accessories for electronic releases

SACE PR010/K signalling unit

The SACE PR010/K signalling unit can convert the signals received via the bus from the SACE PR212/P (LSI or LSIg) and SACE PR212/MP (LRIU) protection units into electric signals by means of normally open electrical power contacts.

An auxiliary power supply with a voltage stabilised at 24V DC ($\pm 20\%$ with maximum ripple - $\pm 5\%$) and earthed is needed to operate the unit.

It is connected to the Internal Bus of the protection unit by means of a dedicated serial line over which the information regarding the state of activation of the protection functions passes, on the basis of which the relative power contacts are closed.

In particular, the following signals are available:

Alarm signalling remains active for the whole duration of the overload up to any release trip.

The protection trip signals remain active during the timing phase and remain that way even after release trip.

A Reset pushbutton on the front of the unit allows the state of all signals to be reset.

There are also two LEDs available on the unit for visually signalling the following information:

- “Power ON”: auxiliary power supply present
- “TX (Int Bus)”: flashing synchronised with the communication activity with the Internal Bus

The table below shows the characteristics of the signalling relays available in the SACE PR010/K unit.



K51	PR212/P (LSI-LSIG)
1	Protection L alarm
2	Protection S alarm
3	Protection I alarm
4	Protection G alarm
5	Bus K.O.
7	Release trip
8	Protection L pre-alarm

K51	PR212/MP (LRIU)
1	Protection L alarm
2	Protection R alarm
3	Protection I alarm
4	Protection U alarm Welded contactor alarm contacts
5	Bus K.O.
6	PTC alarm (temperature sensor on motor) (*) Generic input 0/1
7	Release trip
8	Protection L pre-alarm Back-up protection alarm

(*) alternatively by means of dip-switch

	PR010/K
Auxiliary power supply	24 V DC $\pm 20\%$ maximum ripple 5%
Maximum current interrupted	5 A
Maximum voltage interrupted	250 V AC / 130 V DC
Breaking capacity – resistive load	50 W / 800 VA (48 V DC and 220 V AC)
Breaking capacity – inductive load	25 W / 500 VA (48 V DC and 220 V AC)
Contact/contact insulation	1000 Veff
Contact/coil insulation	2000 Veff

SACE PR010/T Test and Configuration Unit

The SACE PR010/T unit is an instrument able to carry out the Test, programming and parameter readout functions for the protection units which equip the SACE Isomax S moulded-case circuit-breakers and the SACE Emax air circuit-breakers. In particular, for circuit-breakers fitted with SACE PR212/P or SACE PR212/MP releases, the test, programming and readout parameter functions are available.

All the functions mentioned can be carried out ON BOARD by connection of the SACE PR010/T unit to the multipin front flange connector on the protection unit; connection is guaranteed by means of special interfacing cables supplied as standard with the unit.

The man-machine interface is guaranteed by using a membrane keyboard and a multi-line alphanumeric display.

There are also two LEDs on the unit which signal the following respectively:

- POWER-ON and STAND BY situation
- situation of the battery charging state.

Two different types of Test are provided: automatic and manual.

By means of connection to the PC (with software provided by ABB SACE), it is

possible to upgrade the SW of the SACE PR010/T unit to allow adaptation of the Test unit to evolution of new products.

The results of most importance regarding the test can also be stored in the unit itself and sent to the Personal Computer on explicit request for "issue of report". Both in automatic and manual mode, the SACE PR010/T unit is able to test the following:

- protection functions L, S, I, G;
- protection functions LRIU for SACE PR212/MP;
- monitoring of correct operation of the microprocessor.

The SACE PR010/T unit is of the portable type and operates with rechargeable batteries and/or with an external power supply.

In its standard supply, the unit includes:

- SACE PR010/T Test unit complete with rechargeable batteries
- SACE TT1 Test unit
- 100...240 V AC/12 V DC external power supply
- connection cables between the unit and the multipin connector present on the ranges of releases which equip the SACE Isomax S and the SACE Emax series



GSI59045

- connection cable between the unit and the PC (serial RS232)
- power supply cable
- instruction manual and diskette with application SW
- plastic container.

SACE PR212/CI contactor control unit

The SACE PR212/CI accessory unit can be associated with all the circuit-breakers fitted with SACE PR212/MP electronic release for motor protection. When the appropriate dip-switch on the front of the release is positioned on the "Normal mode", it allows the contactor to be opened in the case of fault for overload L, blocked rotor R or phase missing/unbalance U.

The SACE PR212/CI unit can always be installed both on a DIN rail and on the rear of the door.



GSI59040



Accessories

Accessories for electronic releases

CT for external neutral

This is applied to the neutral conductor and allows protection against earth faults with three-pole circuit-breakers to be realised. The circuit-breaker must be fitted with SACE PR212/P – LSIG release. The transformer must be connected to the release by means of the specific X3-X4 connectors, selected according to the version of the circuit-breaker and the type of protection release used.

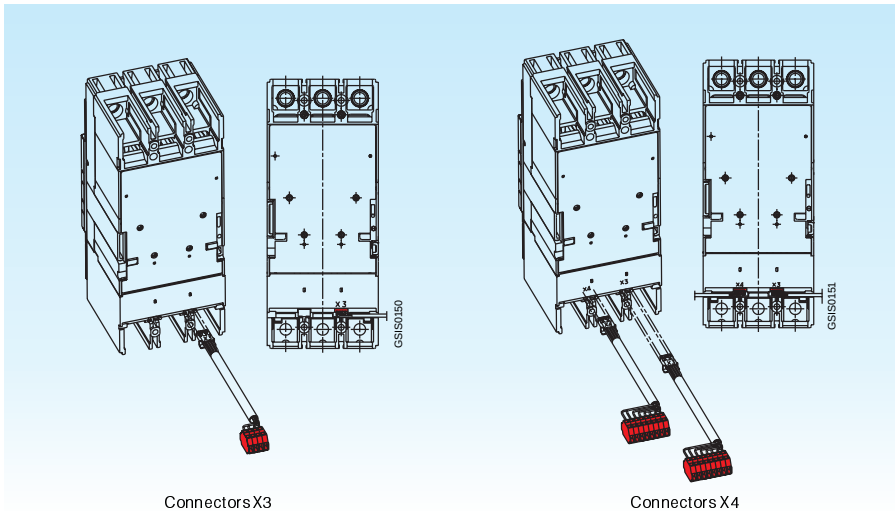
S4	S5	S6	S7	S8
[A]	[A]	[A]	[A]	[A]
100	320	630	1000	1600
160	400	800	1250	2000
250	630		1600	2500
				3200



Connectors

These allow connection of the microprocessor-based release to units or components of external plants. They are, in fact, used to make the relay tripped signal available outside and to connect the protection transformer of the neutral conductor outside the circuit-breaker or to the actuator, dialogue and signalling units, if these are provided.

- Connector X3 for circuit-breaker fixed fitted with releases SACE PR211/P
- Connector X3 for plug-in/withdrawable circuit-breaker (to be applied in the fixed part) fitted with SACE PR211/P release
- Connectors X3-X4 for fixed circuit-breaker fitted with SACE PR212/P release
- Connectors X3-X4 for plug-in/withdrawable circuit-breaker fitted with SACE PR212/P release





Accessories

Installation accessories and spare parts

Bracket for fixing on DIN rail

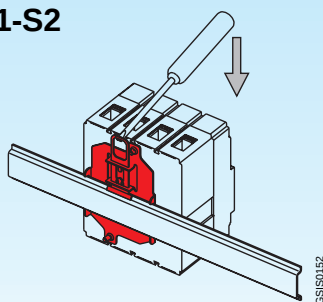
This is applied to the fixed circuit-breaker and allows installation on standardised DIN rails. It simplifies assembly of circuit-breakers up to 630 A in standard switch-boards.

- Bracket for fixing on DIN EN 50022 rail for SACE S1-S2 circuit-breakers.
- Bracket for fixing on DIN EN 50023 rail for SACE S3-S4-S5 circuit-breakers.

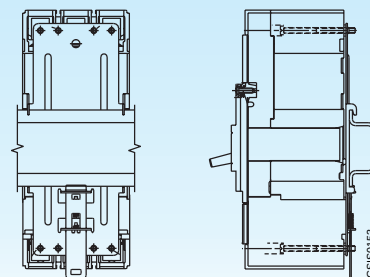
The fixing bracket kit for SACE S3-S4-S5 circuit-breakers also includes the front flange H = 45mm.



S1-S2



S3-S4-S5

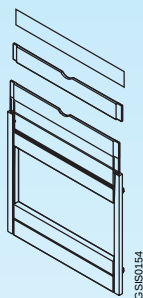


Flange for compartment door

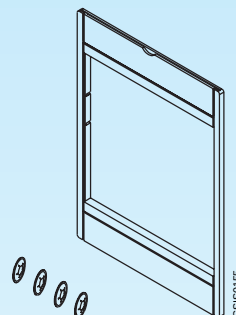
This is always supplied with the circuit-breaker and can also be used with the rotary handle operating mechanism for the SACE S3, S4, S5, S6, and S7 circuit-breakers, the front flange for lever operating mechanism and the motor operator. In case of use of these accessories with SACE S6, S7 circuit-breakers, a flange is supplied to be used instead of the one supplied with the circuit-breaker. It is not supplied for SACE S1, S2, and S3 circuit-breakers which are complete with SACE RC210, RC211, RC212 residual current releases in the version beside the circuit-breaker.



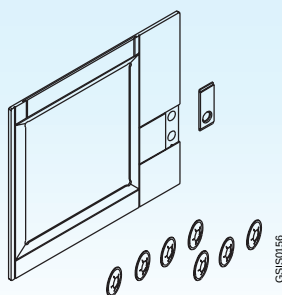
S1-S2



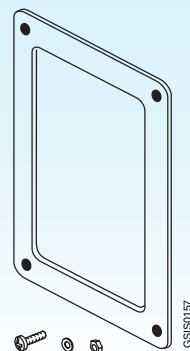
S3 ... S7 fixed



S3 ... S7 withdrawable



S8





Accessories

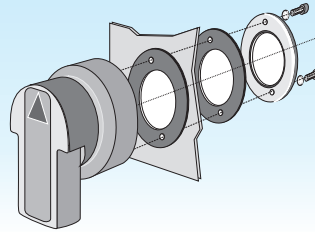
Installation accessories and spare parts

IP54 protection for rotary handle

This allows IP54 degree of protection to be attained. It is available in the following versions:

- for rotary handle operating mechanism on compartment door with fixed distance for SACE S1-S2 circuit-breakers
- for rotary handle operating mechanism on compartment door with adjustable distance for circuit-breakers SACE S3-S4-S5-S6 and S7 circuit-breakers.

S1-S2



Spare parts

The following spare parts are available:

- operating lever
- cover group
- arcing chambers
- isolating contacts
- opening solenoid for the SACE RC211 and RC212 residual current releases

- kit with washers, screws and dowels for assembly of the connection terminals.

For further details, please ask the Service Division of ABB SACE for the spare parts catalogue.



Characteristic curves and technical information

Index

Characteristic curves

Trip curves for distribution

Circuit-breakers with thermomagnetic releases	5/2
Circuit-breakers with SACE PR211/P, SACE PR212/P electronic releases	5/7

Trip curves for motor protection

Circuit-breakers with magnetic only releases	5/9
Use of the trip curves of circuit-breakers with SACE PR212/MP electronic release	5/10
Circuit-breakers with electronic release SACE PR212/MP	5/12

Limitation curves

230 V	5/14
400-440 V	5/17
500 V	5/20
690 V	5/21

Specific let-through energy curves

230 V	5/24
400-440 V	5/27
500 V	5/30
690 V	5/31

Technical information

Temperature performance

Circuit-breakers with electronic releases	5/34
Circuit-breakers with thermomagnetic releases	5/39

Power loss values

5/40

Operation and protection of the low-voltage side of three-phase transformers..

5/42

Operation and protection of three-phase AC capacitors

5/44

Protection of three-phase AC generators

5/46

Applications in direct current

5/47

Backup protection (backup table)

5/50

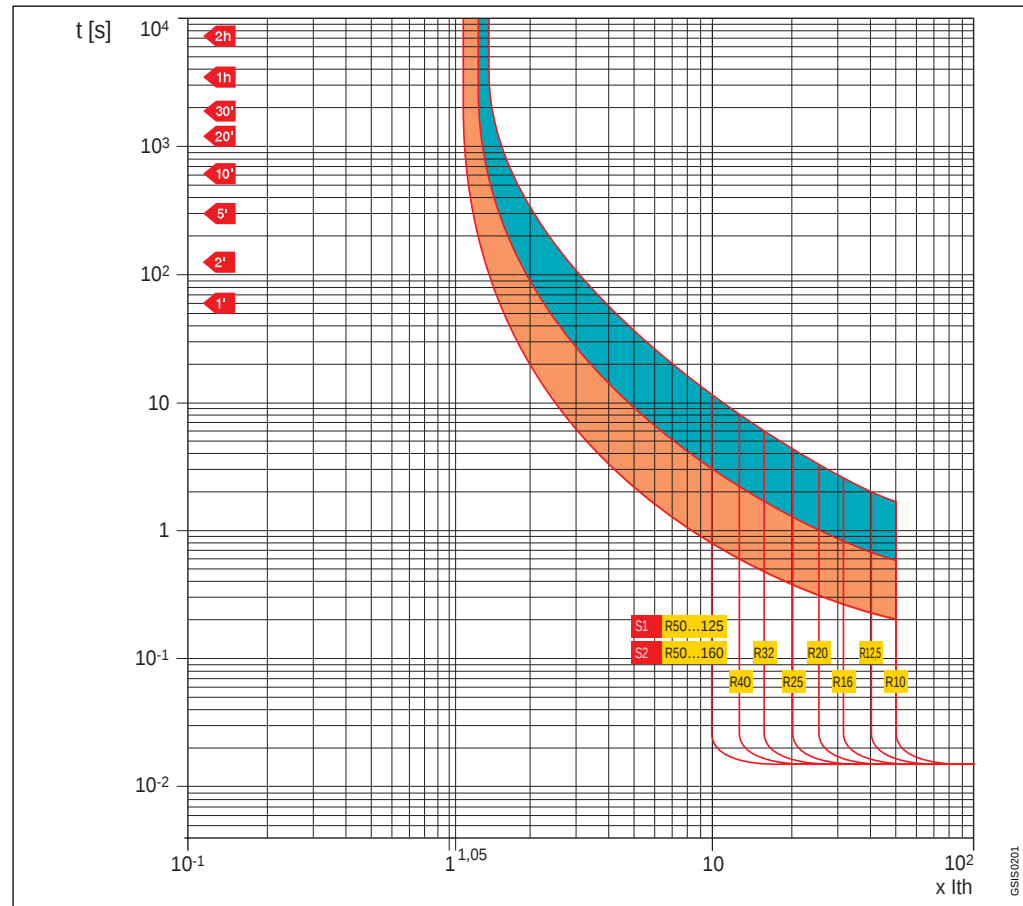


Trip curves for distribution

Circuit-breakers with thermomagnetic releases

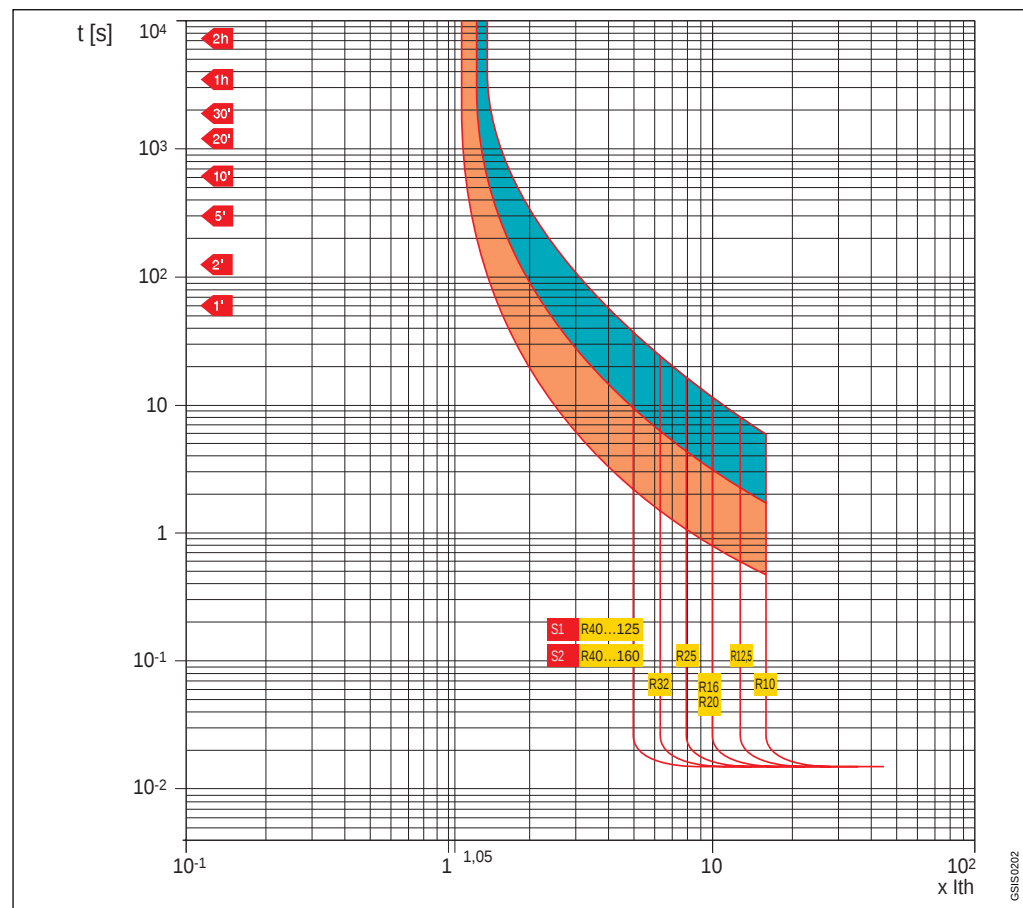
SACE
S1 125 - S2 160

Magnetic tripping threshold
 $I_m = 10 \times I_{th}$



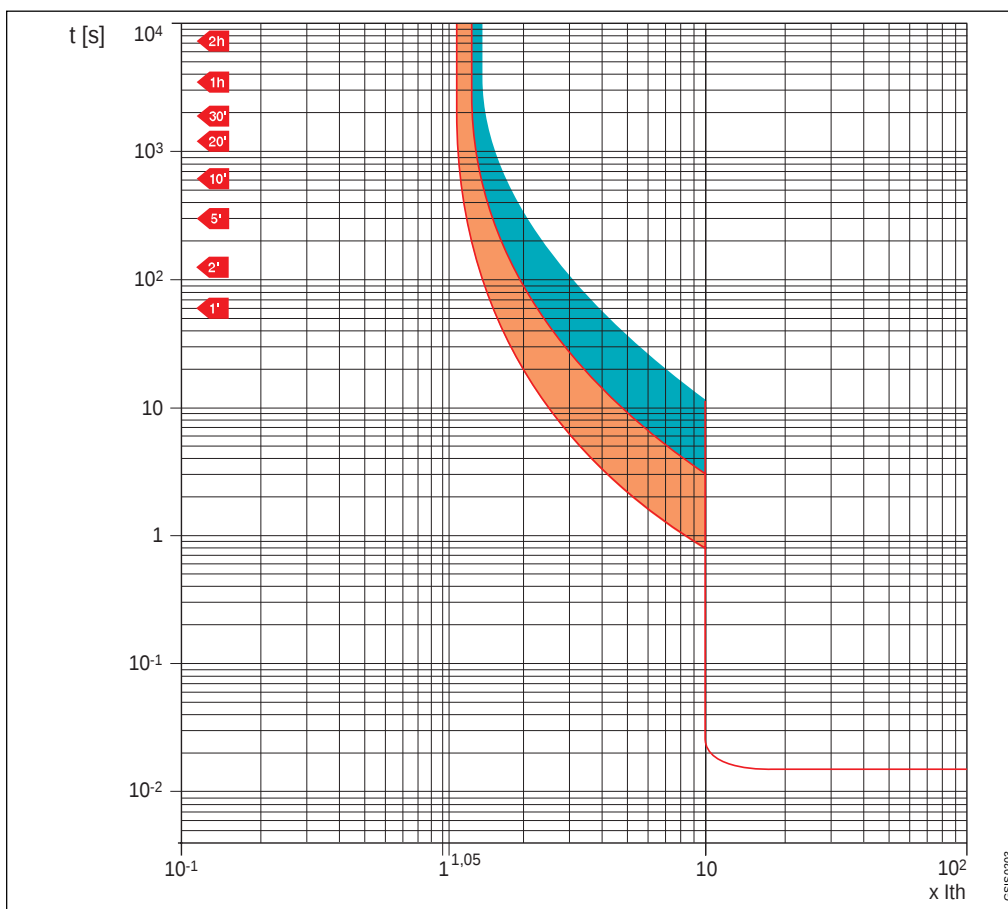
SACE
S1 125 - S2 160

Magnetic tripping threshold
 $I_m = 5 \times I_{th}$



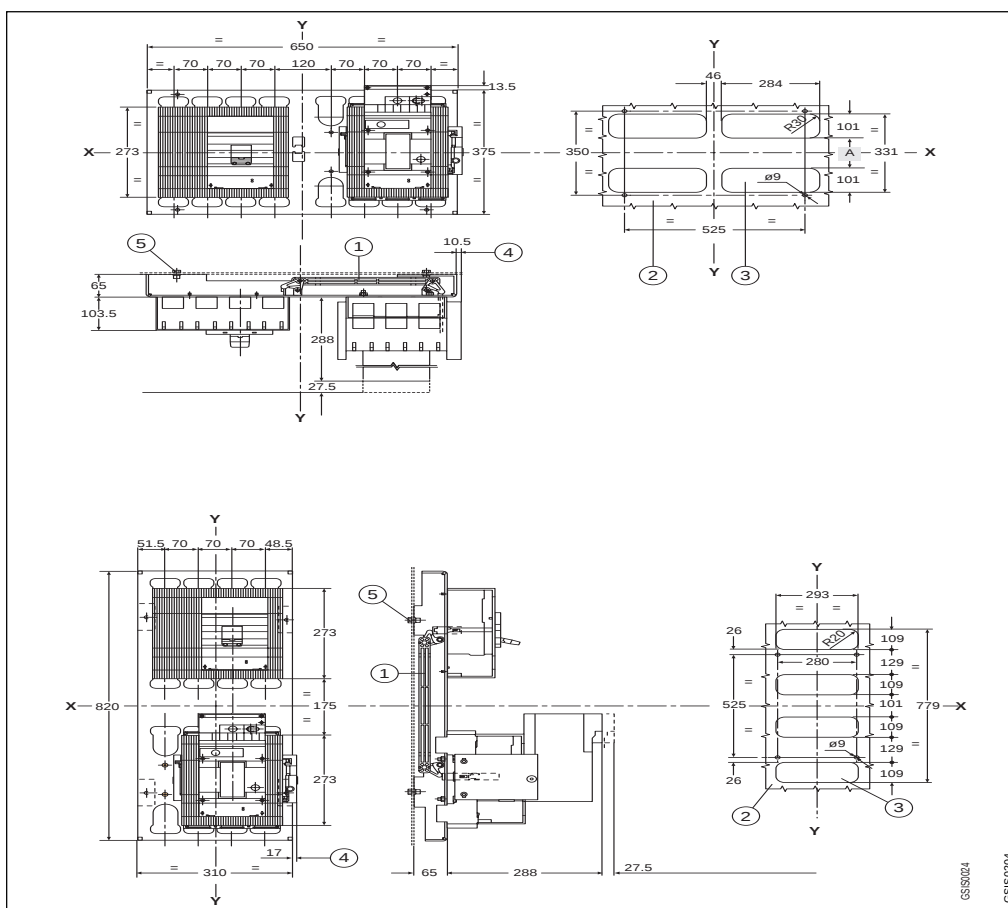
SACE S2X 100

Magnetic tripping threshold
 $I_m = 10 \times I_{th}$



SACE S3 160

Magnetic tripping threshold
 $I_m = 10 \times I_{th}$



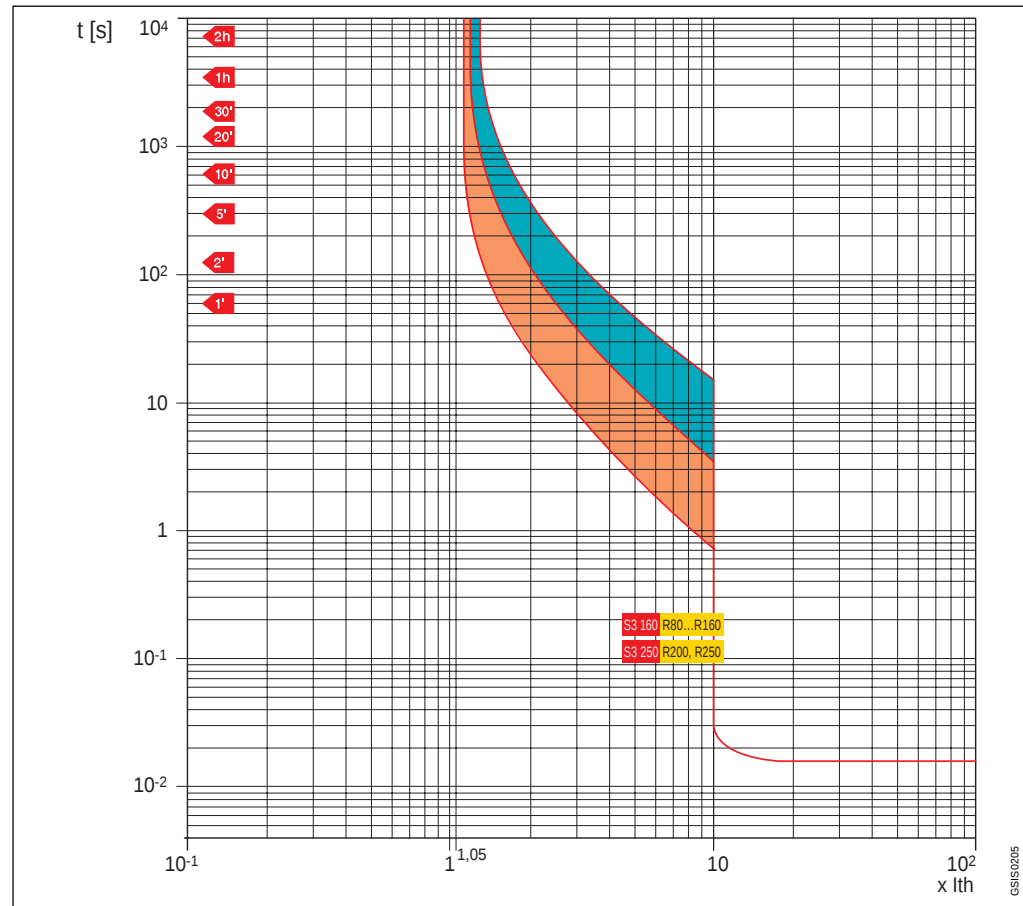


Trip curves for distribution

Circuit-breakers with thermomagnetic releases

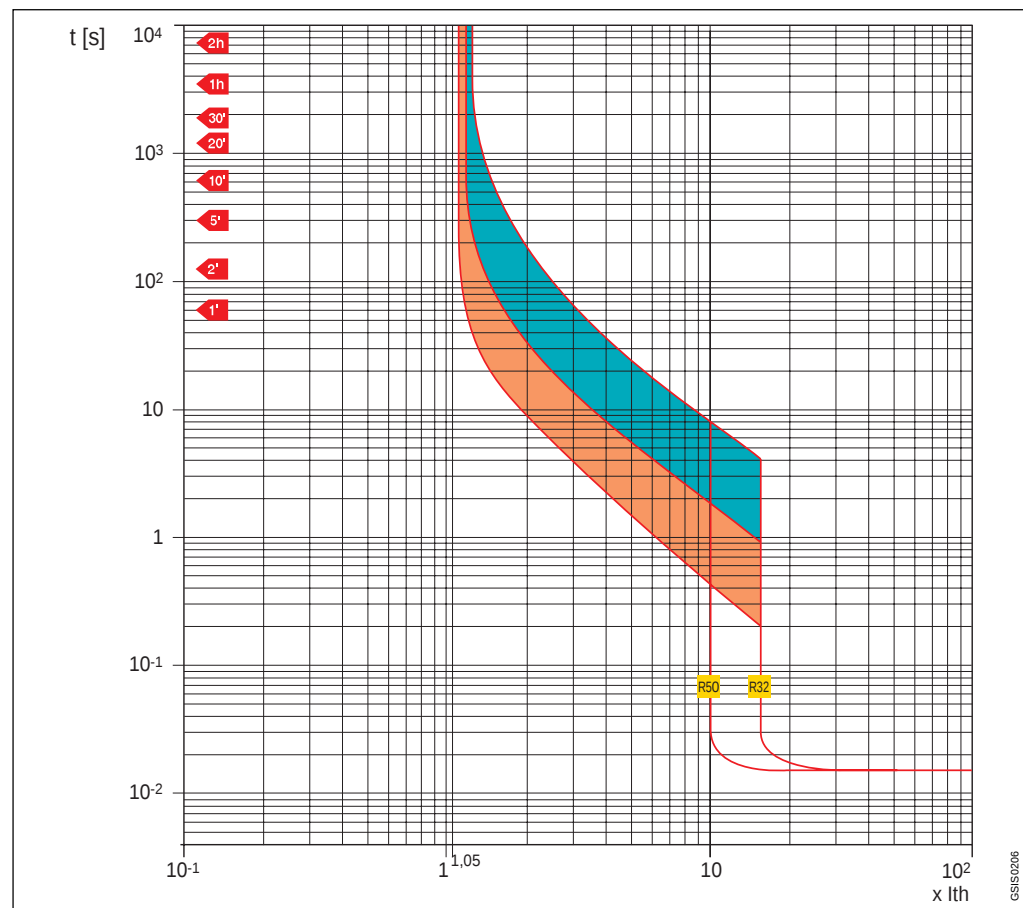
SACE S3 160 - S3 250

Magnetic tripping threshold
 $I_m = 10 \times I_{th}$



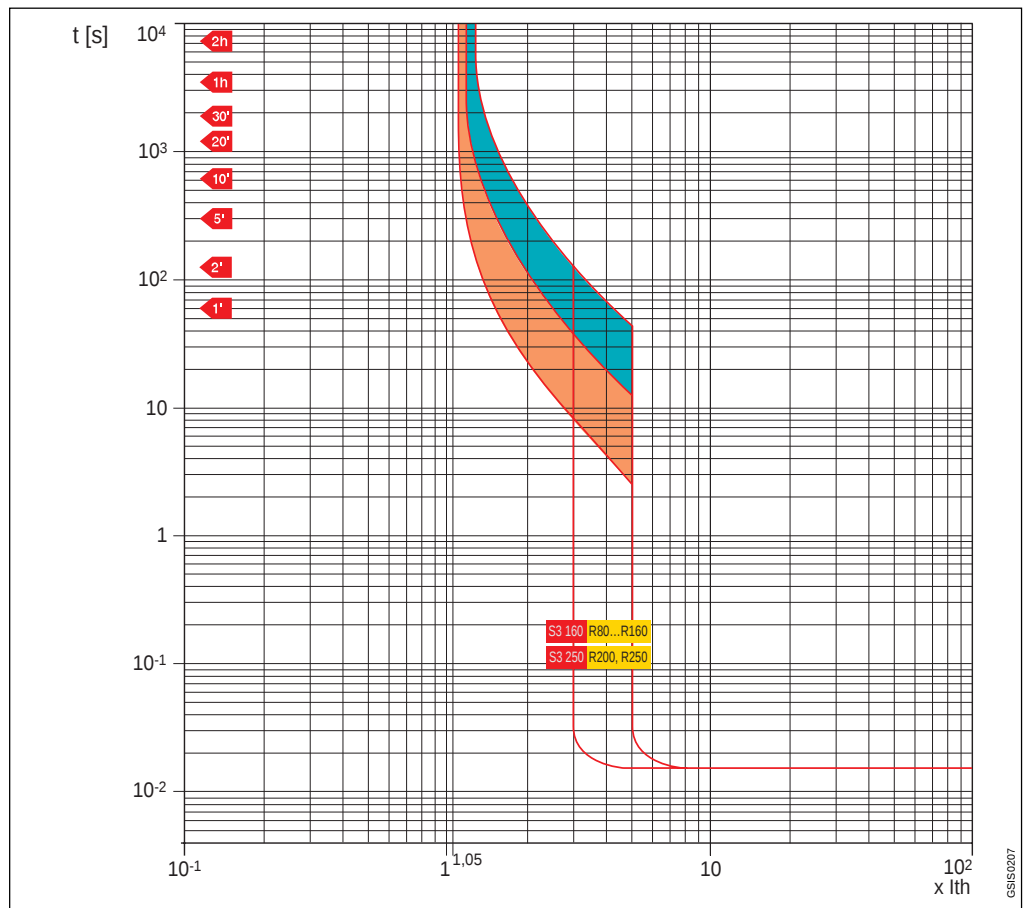
SACE S3 160

Magnetic tripping threshold
 $I_m = 5 \times I_{th}$



SACE S3 160 - S3 250

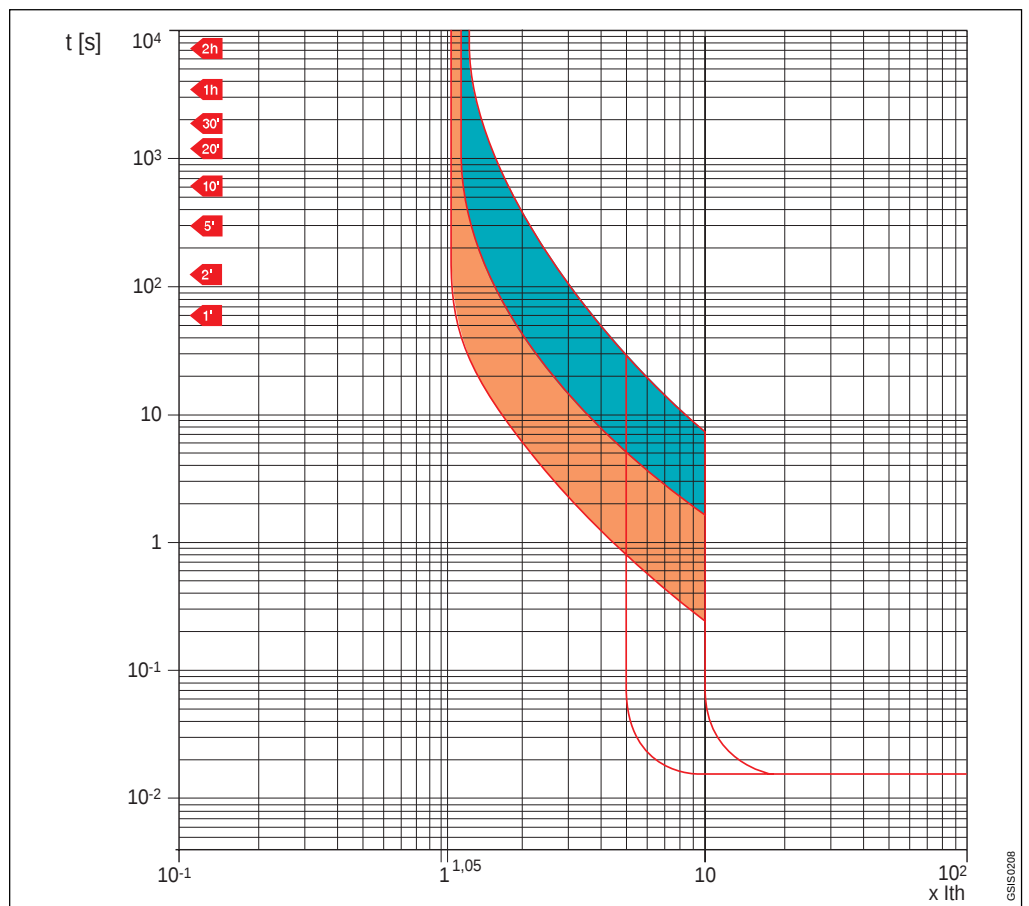
Magnetic tripping threshold
 $I_m = 3 \times I_{th}$
 Magnetic tripping threshold
 $I_m = 5 \times I_{th}$



SACE S5 400 (R320-400)

SACE S5 630 (R500)

Thermal tripping threshold
 $I_n = 0,7 \div 1 \times I_{th}$
 Magnetic tripping threshold
 $I_m = 5 \div 10 \times I_{th}$



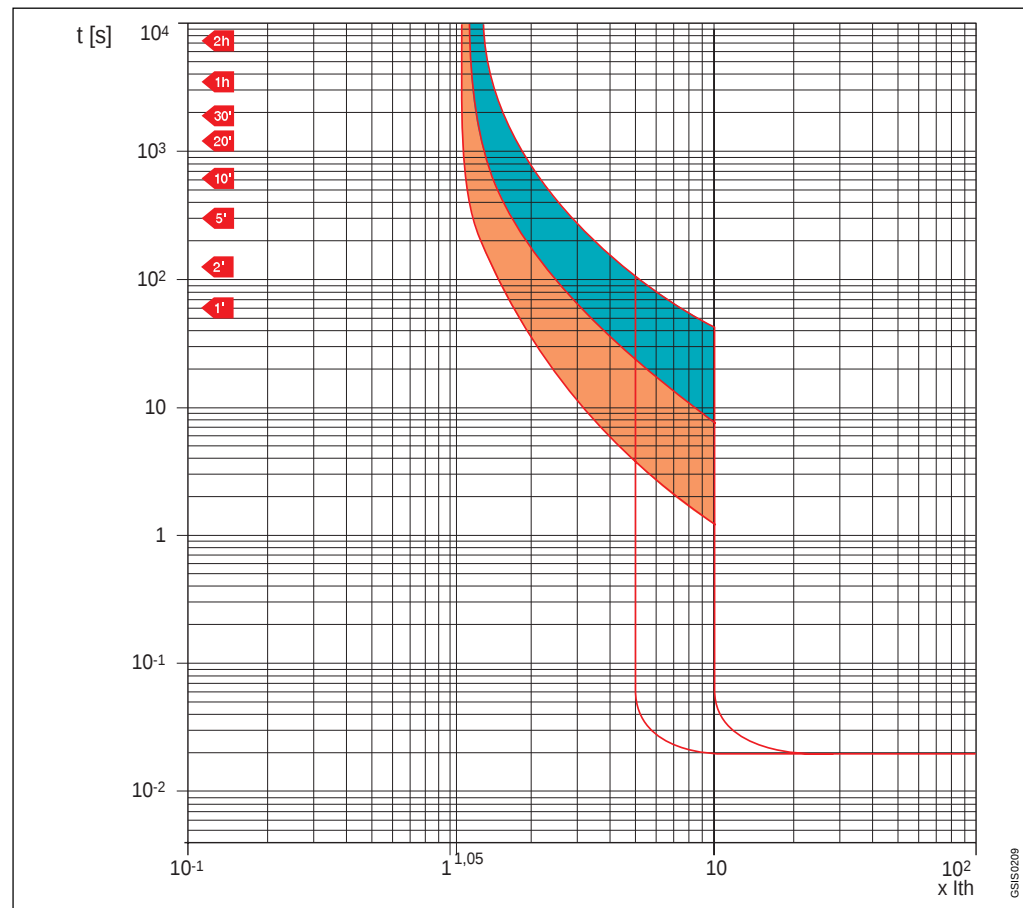


Trip curves for distribution

Circuit-breakers with thermomagnetic releases

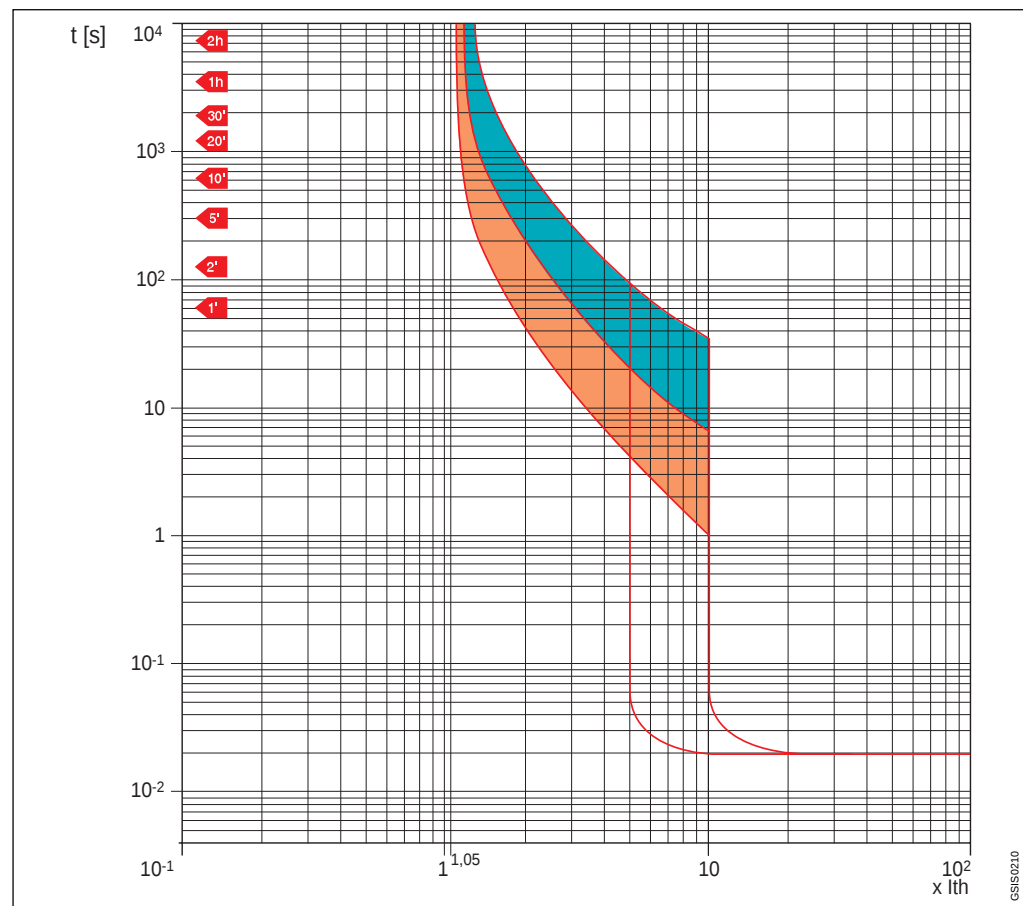
SACE S6 630 (R630)

Thermal tripping threshold
 $I_n = 0,7 \div 1 \times I_{th}$
 Magnetic tripping threshold
 $I_m = 5 \div 10 \times I_{th}$



SACE S6 800 (R800)

Thermal tripping threshold
 $I_n = 0,7 \div 1 \times I_{th}$
 Magnetic tripping threshold
 $I_m = 5 \div 10 \times I_{th}$





Trip curves for distribution

Circuit-breakers with electronic releases

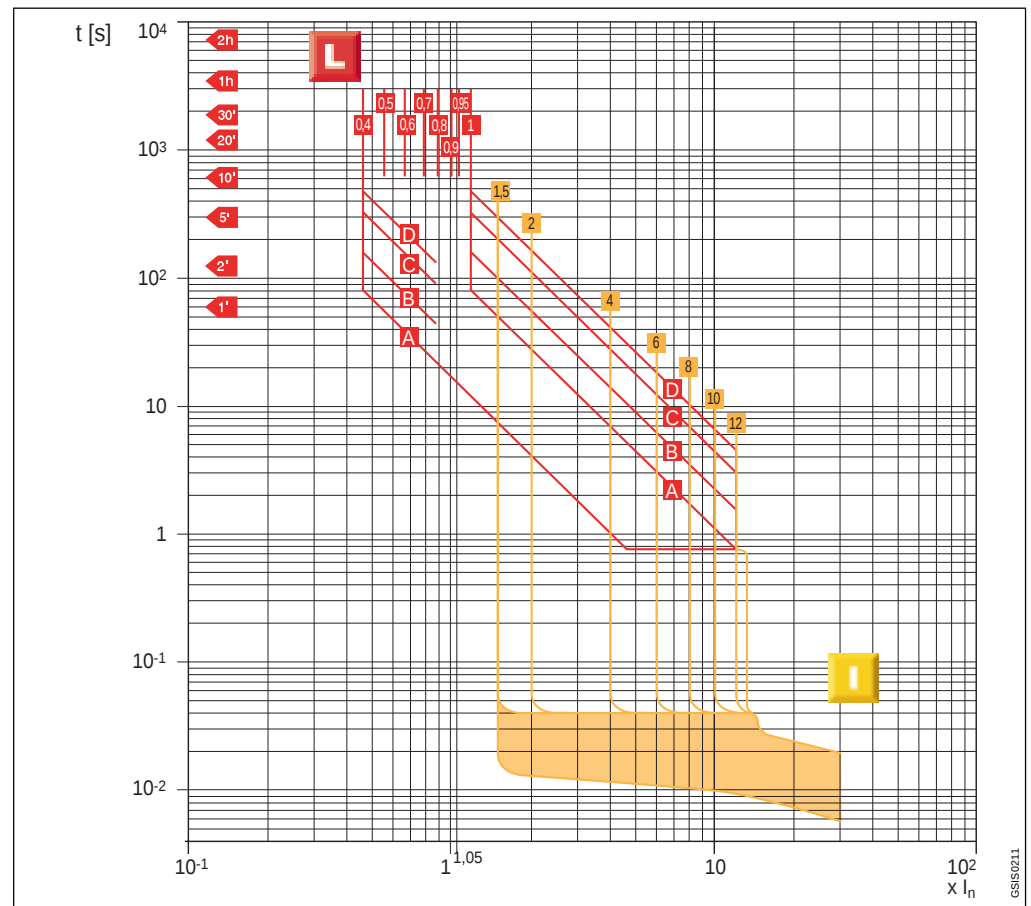
SACE S4-S5-S6-S7

SACE PR211/P

Functions LI - I

N.B. For S5 630

The maximum threshold that can be set for the I function is $8 \times I_n$



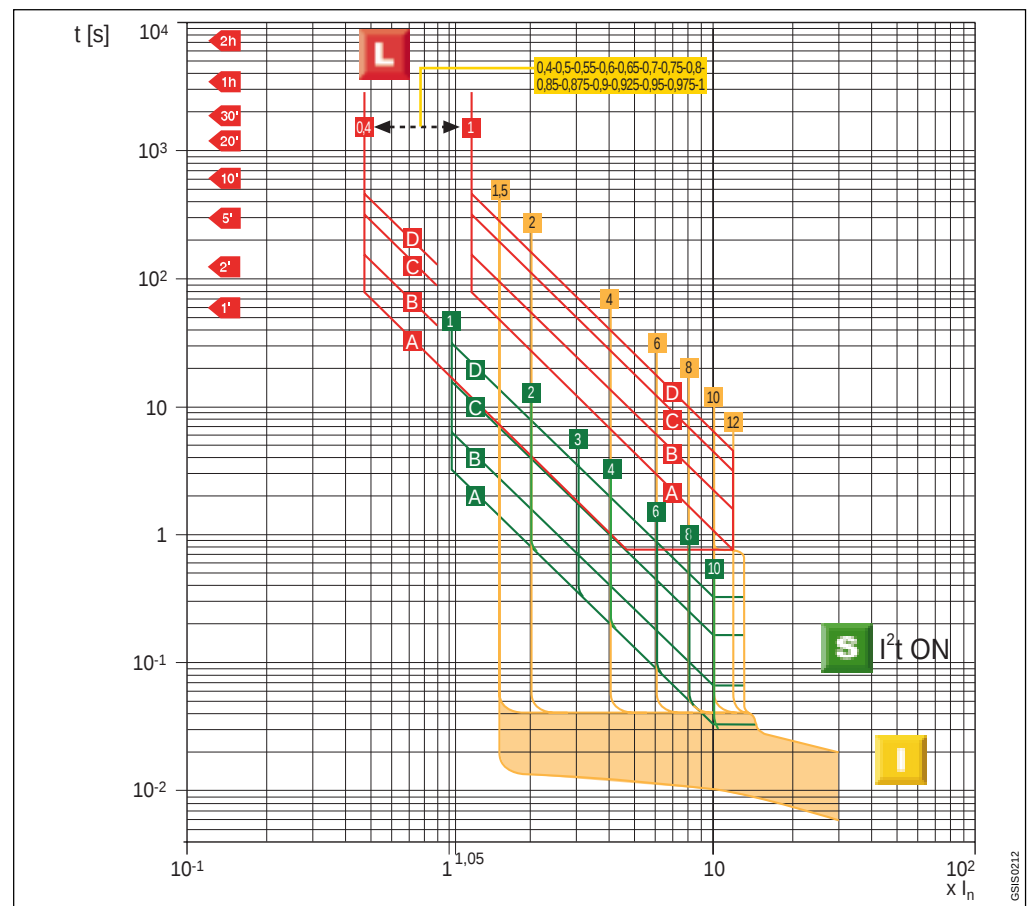
SACE S4-S5-S6-S7-S8

SACE PR212/P

Function LSI,
S inverse short delay
($I^2t = \text{constant ON}$)

N.B. For S5 630

The maximum threshold that can be set for the I function is $8 \times I_n$





Trip curves for distribution

Circuit-breakers with electronic releases

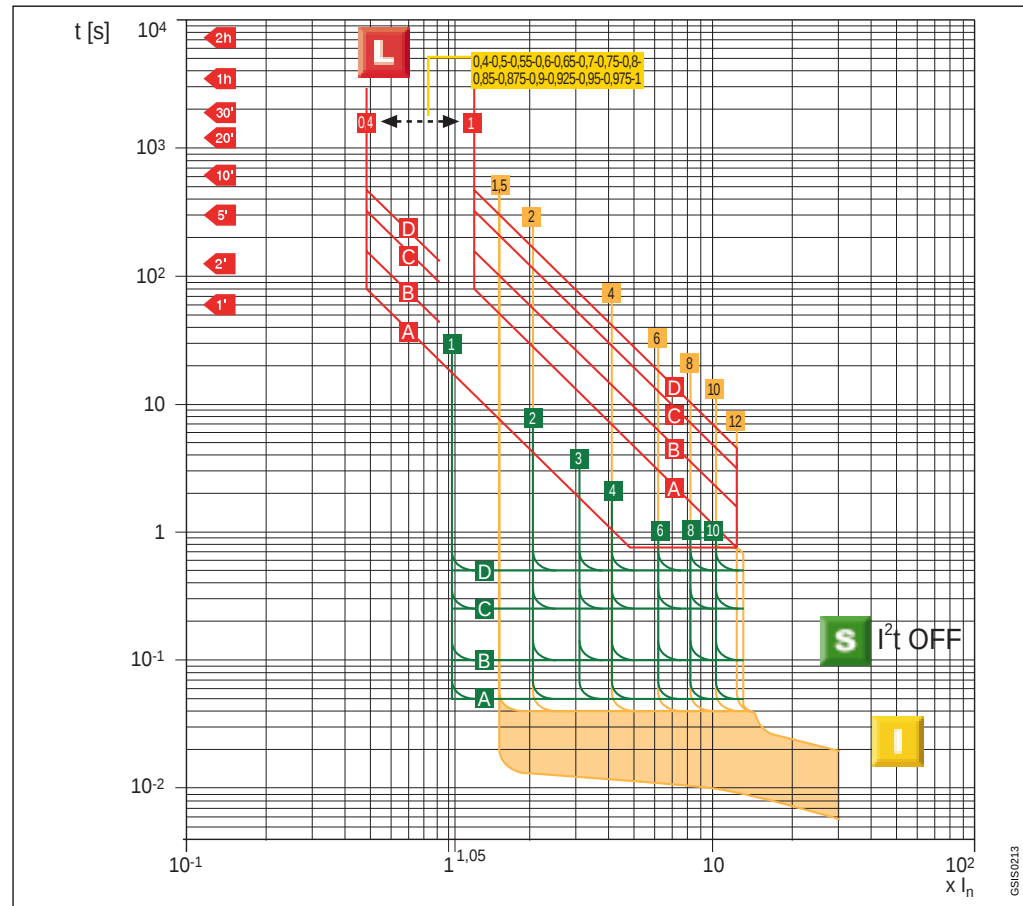
SACE
S4-S5-S6-S7-S8

SACE PR212/P

Function LSI,
S definite short delay
($I^2t = \text{constant}$ OFF)

N.B. For **S5** 630

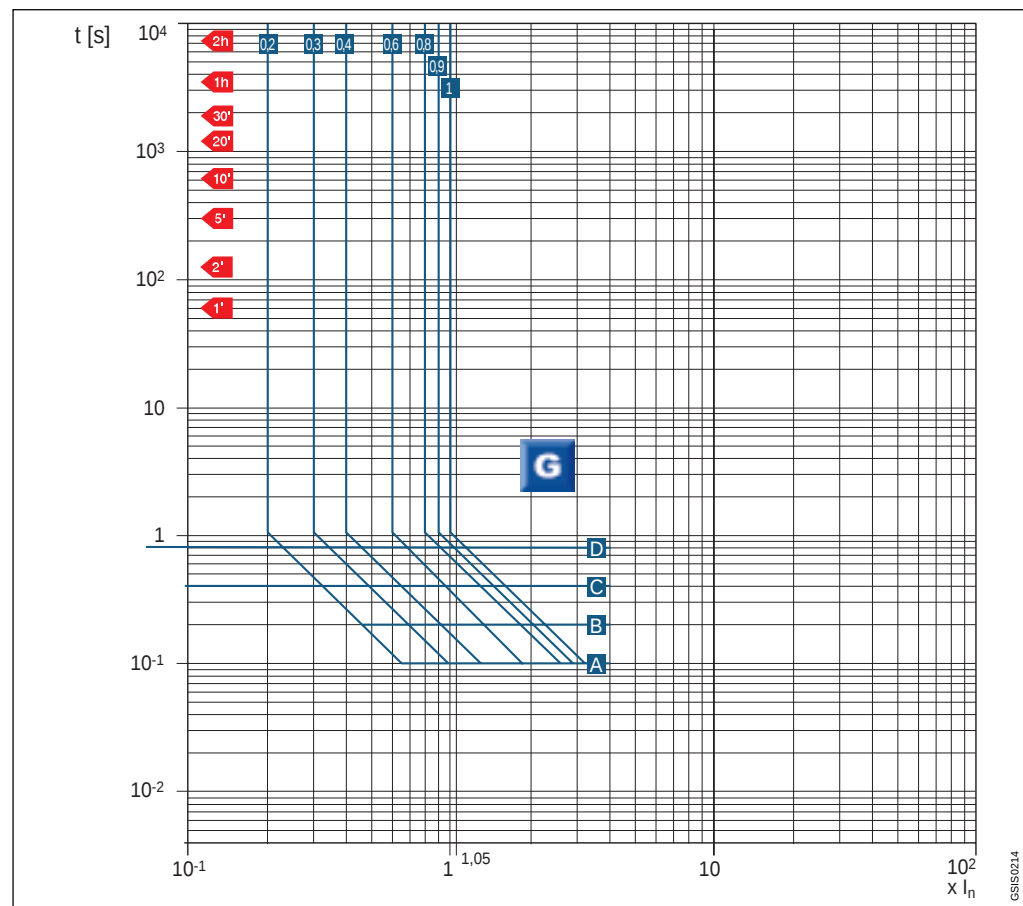
The maximum threshold that
can be set for the I function is
 $8 \times I_n$



SACE
S4-S5-S6-S7-S8

SACE PR212/P

Function G





Trip curves for motor protection

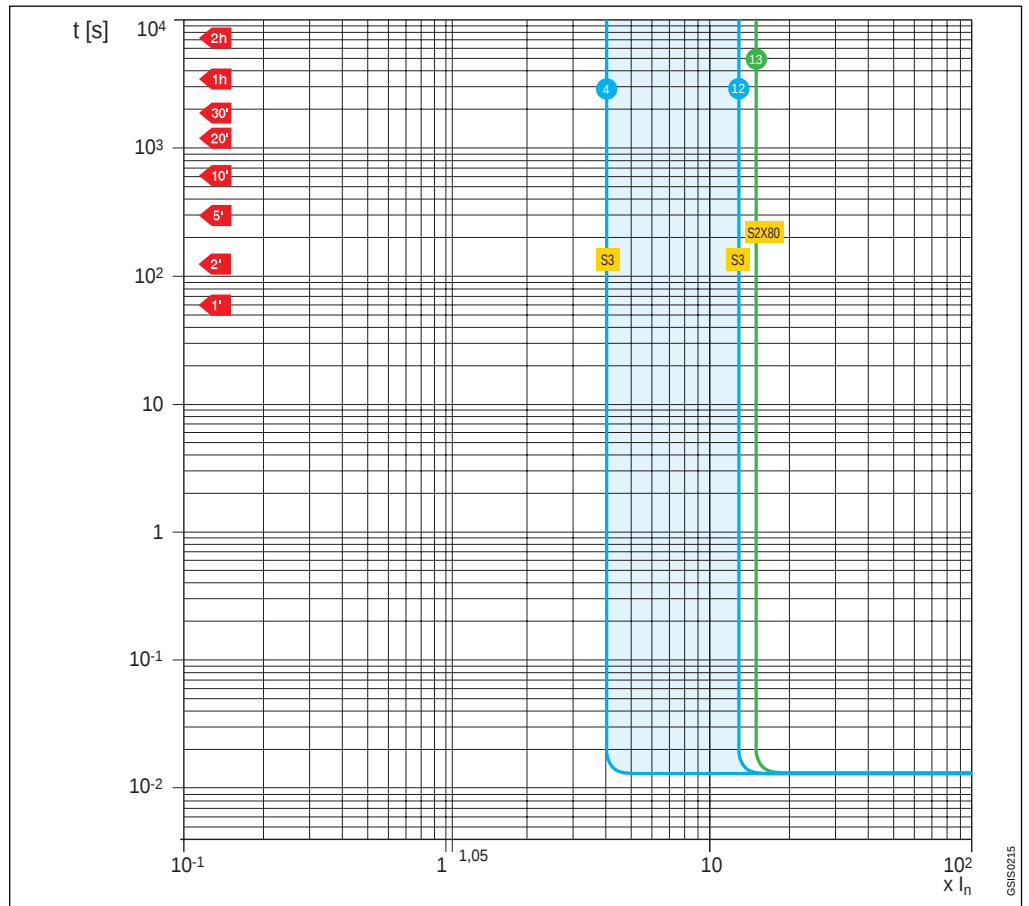
Circuit-breakers with magnetic only releases

SACE S2X 80

Fixed magnetic tripping
threshold
 $I_m = 13 \times I_{th}$

SACE S3

Adjustable magnetic tripping
threshold
 $I_m = 4 \div 12 \times I_{th}$





Trip curves for motor protection

Use of the trip curves of circuit-breakers with SACE PR212/MP electronic release

For correct parameter setting of the SACE PR212/MP electronic release, it may be useful to compare the overall circuit-breaker curve with the motor starting curve.

For this purpose, with the protection function graphics shown on the following pages, it is possible to draw the overall curve required for the circuit-breaker fitted with SACE PR212/MP release simply and immediately.

N.B. For function L, as for all the other functions, make sure you place a glossy tracing sheet over the curve so that the time t on the axis of the co-ordinates coincide.

- **Function L (cannot be excluded) - Protection against overload**

To protect the motor against any overloads, as a first step it is necessary to adjust function L to a current **I_l** higher than or equal to the rated current of the motor **I_e**: **I_l ≥ I_e**.

For example, if **I_e = 135 A**, an S4H160 circuit-breaker can be selected with **I_n = 160 A** and the following adjustment carried out: **I_l = 0.85 × I_n = 136 A**.

The second step is to select the trip class according to the motor starting time **t_a**. For a motor with a start-up overload of 6 seconds, class 10 can be selected, with a trip time of 8s at **7.2 × I_l**.

To trace the curve correctly on the glossy sheet, according to **I/I_n**, simply place the glossy sheet over the graph of function L so that **I/I_n = 0.85** (on the glossy sheet) corresponds to **I/I_l = 1** (on the graph) and draw the curve relative to class 10.

- **Function R (can be excluded) - Protection against rotor blockage**

Protection against rotor blockage can be set both with regard to the trip current **I₅ = 3 ... 10 × I_l** (in this case **I₅ = 3 ... 10 × 0.85 × 160**), and with regard to the trip time **t₅**.

To trace the curve correctly on the glossy sheet, simply place the glossy sheet over the graph of function R so that **I/I_n = I_l/I_n** (on the glossy sheet) corresponds to **I/I_l = 1** (on the graph). In this case **I/I_n = I_l/I_n = 0.85**, and draw the desired curve.

- **Function I (cannot be excluded) - Protection against short-circuit**

This protection function against short-circuit recognises whether the motor is in the starting phase, thereby avoiding unwarranted trips; the trip threshold can be set from **6 × I_n** to **13 × I_n**.

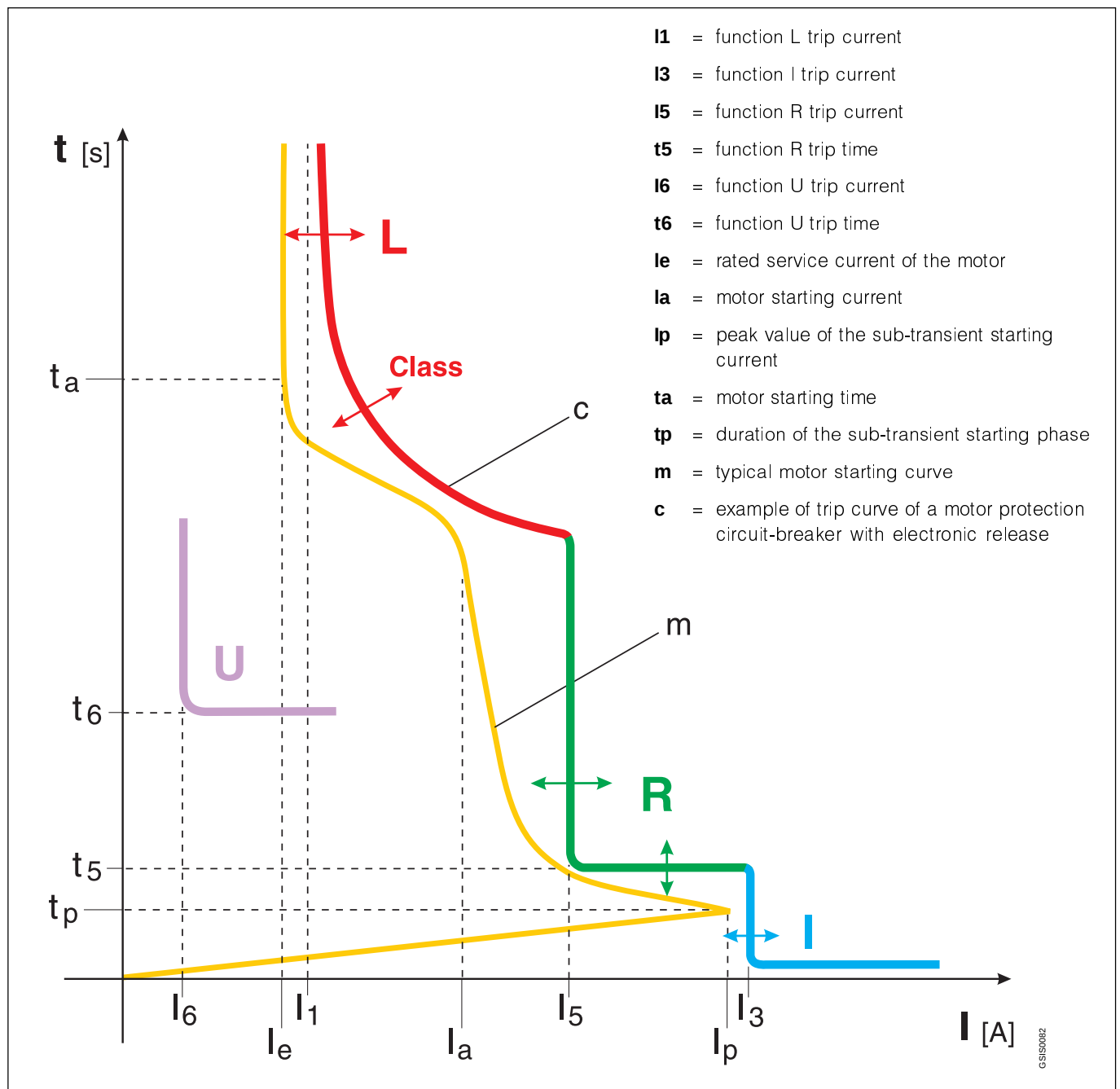
To trace the curve correctly on the glossy sheet, simply place the glossy sheet over the graph of function I so that **I/I_n = 1** (on the glossy sheet) corresponds to **I/I_n = 1** (on the graph) and draw the desired curve.

- **Function U (can be excluded) - Protection against loss and/or unbalance of a phase**

Protection against loss or unbalance of a phase, if set to ON, intervenes when one or two phases have a current lower than **0.4 × I_l** (**0.4 × 0.85 × I_n = 0.4 × 0.85 × 160 A = 54.4 A** in this case).

To trace the curve correctly on the glossy sheet, simply place the glossy sheet over the graph of function U so that **I/I_n = I_l/I_n** (on the glossy sheet) corresponds to **I/I_l = 1** (on the graph). In this case **I/I_n = I_l/I_n = 0.85**, and draw the desired curve.

Typical operating characteristic of an asynchronous motor





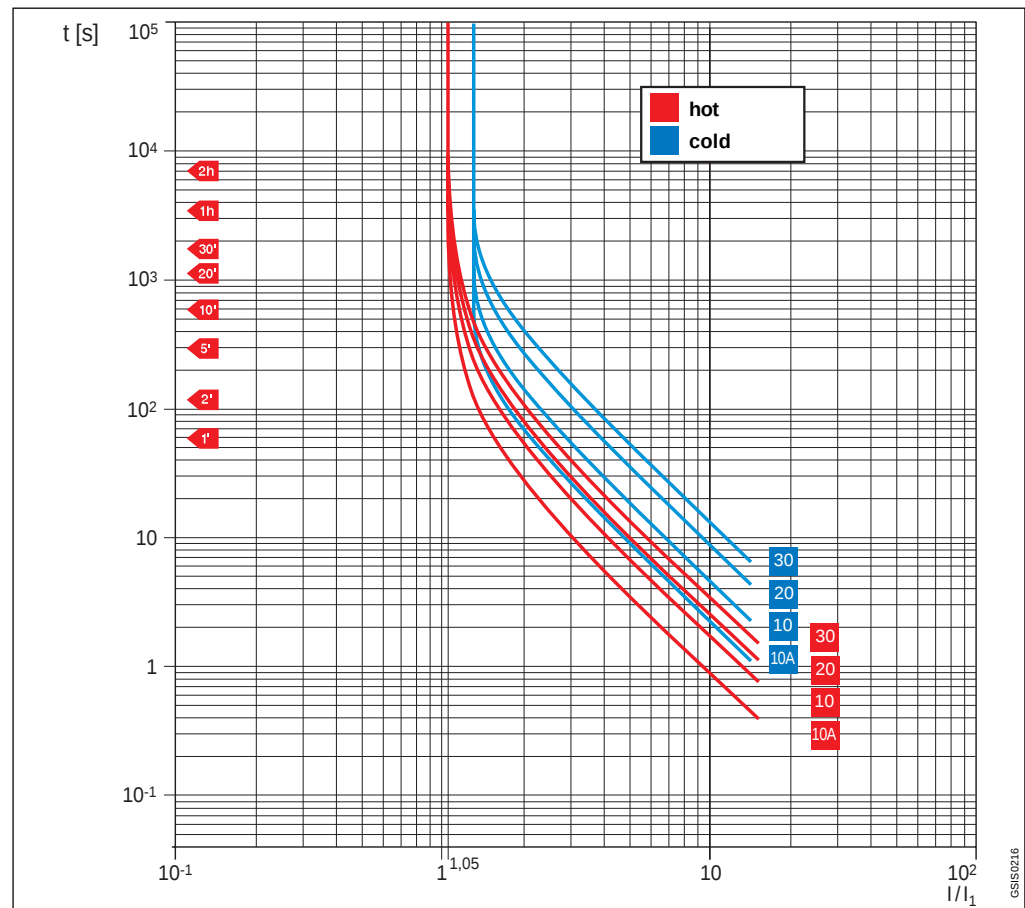
Trip curves for motor protection

Circuit-breakers with electronic releases SACE PR212/MP

SACE S4-S5-S6-S7

SACE PR212/MP

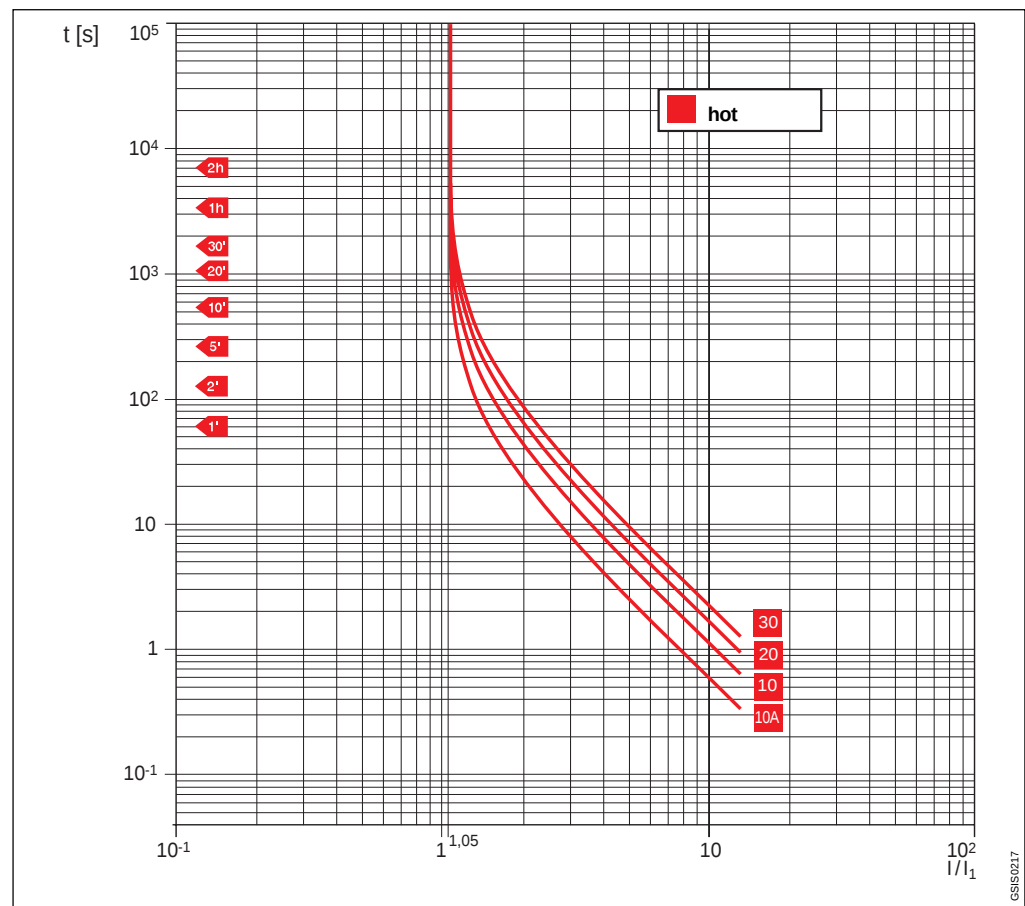
Function L (hot and cold trip)



SACE S4-S5-S6-S7

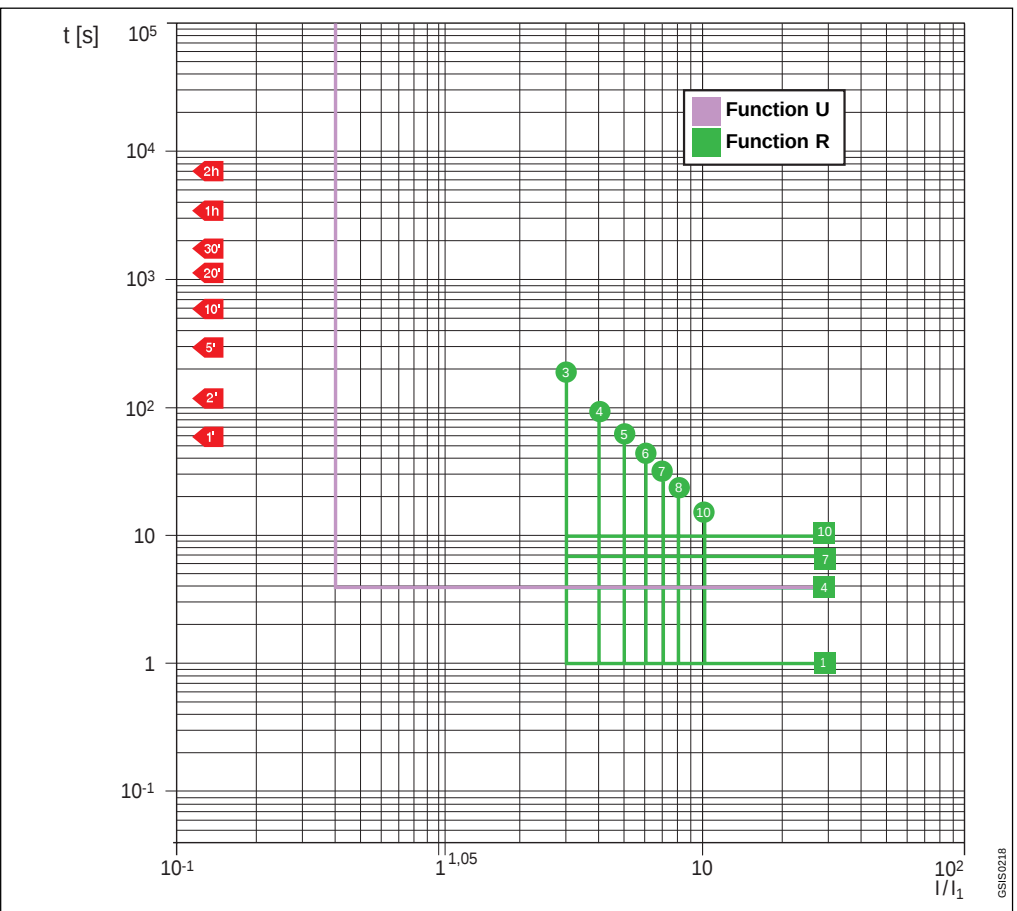
SACE PR212/MP

Function L (hot trip with 1 or 2 phases supplied)



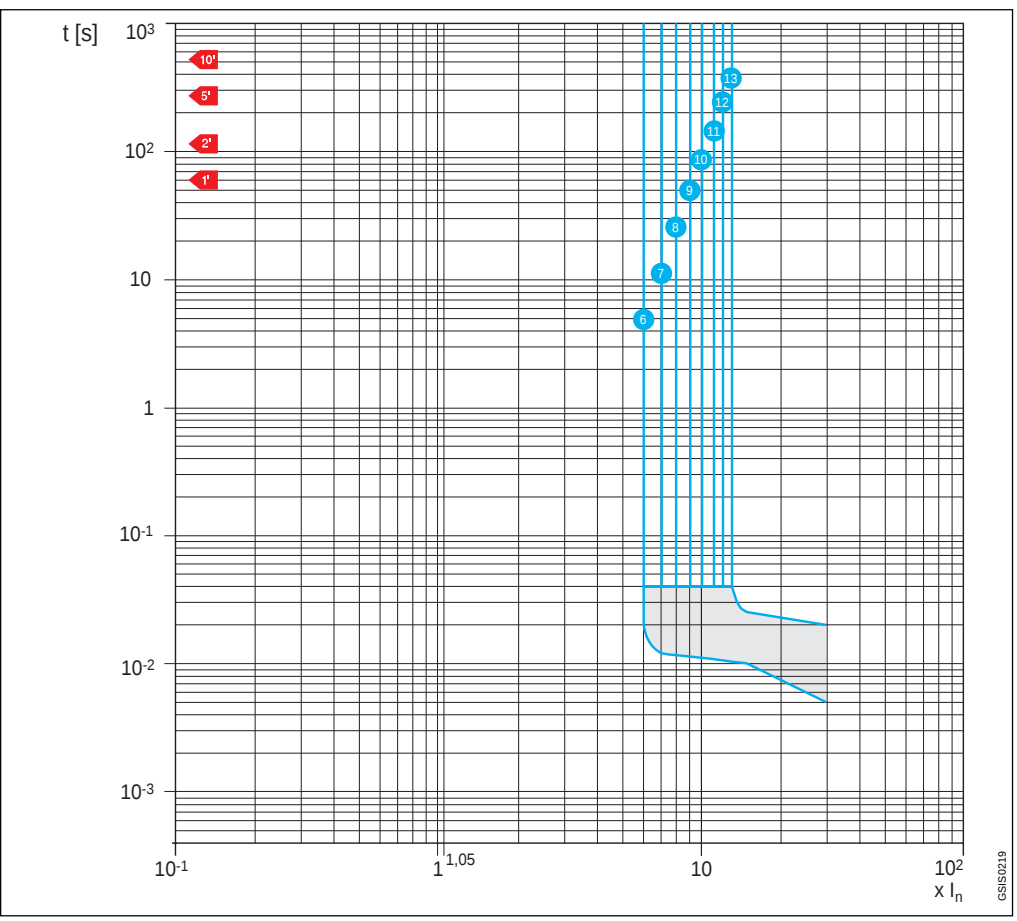
SACE S4-S5-S6-S7

SACE PR212/MP
Function R - U



SACE S4-S5-S6-S7

SACE PR212/MP
Function I

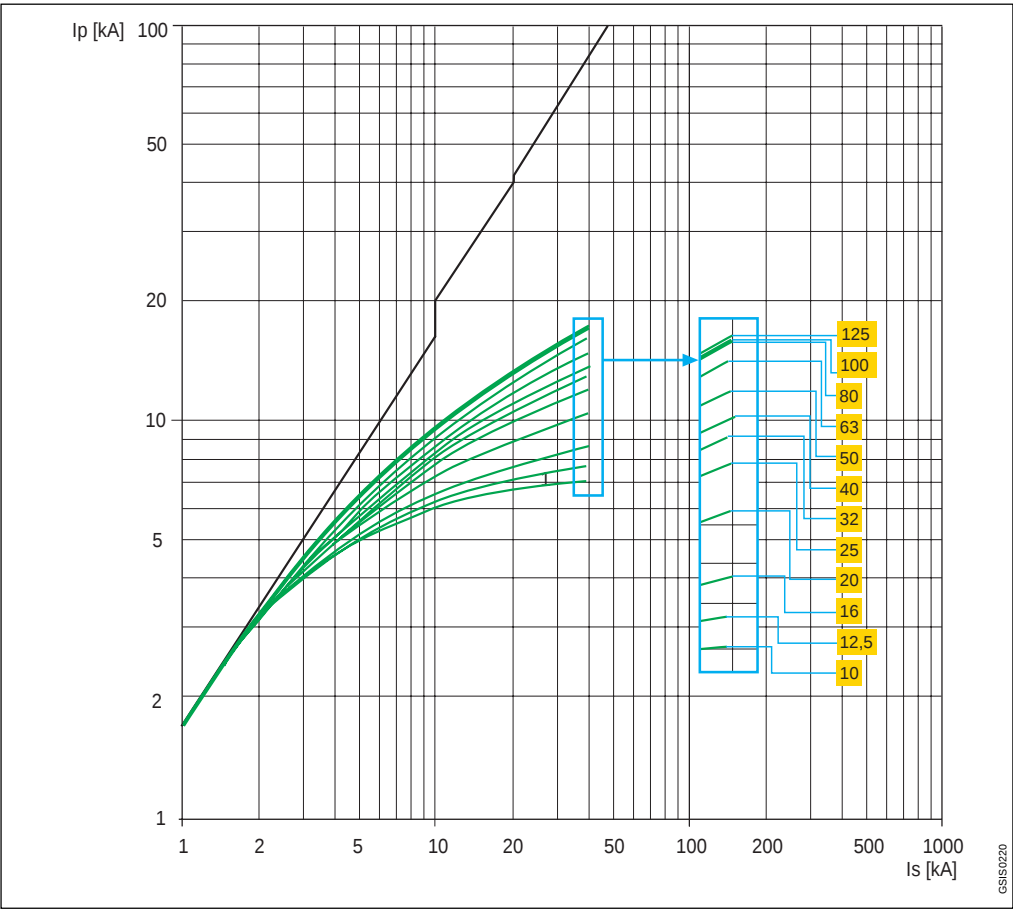




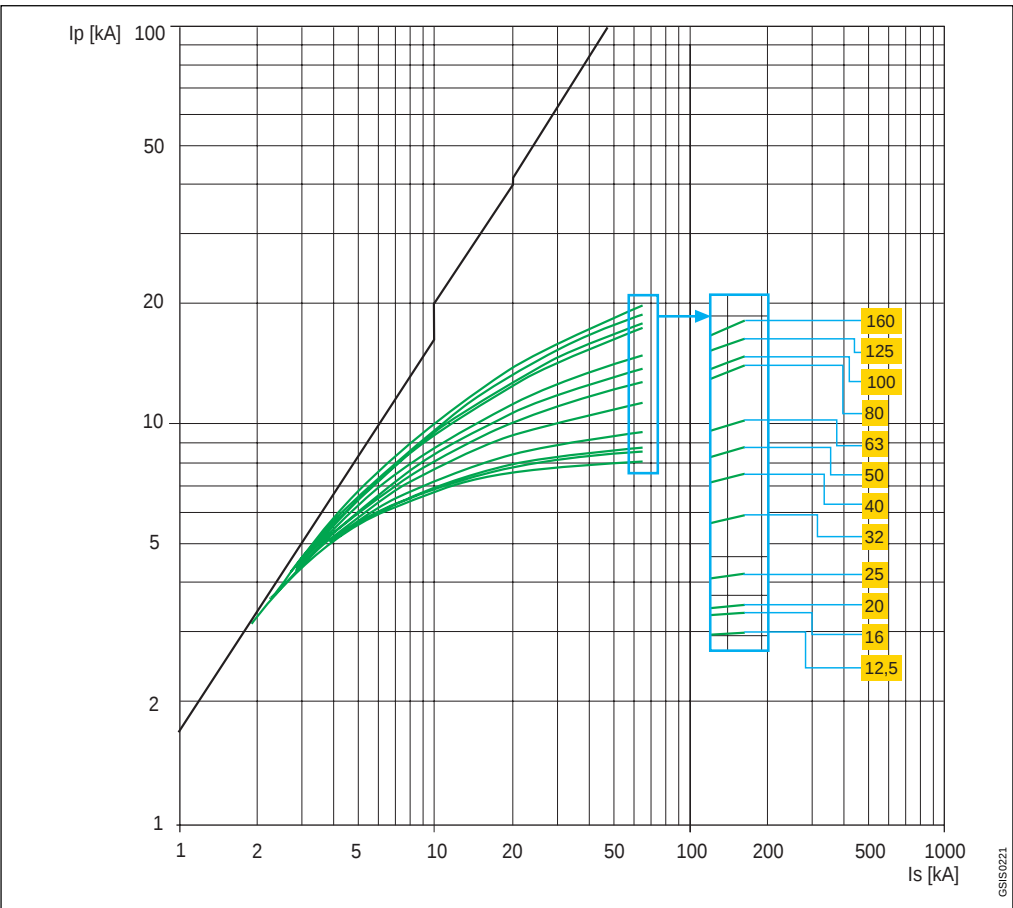
Limitation curves

230 V

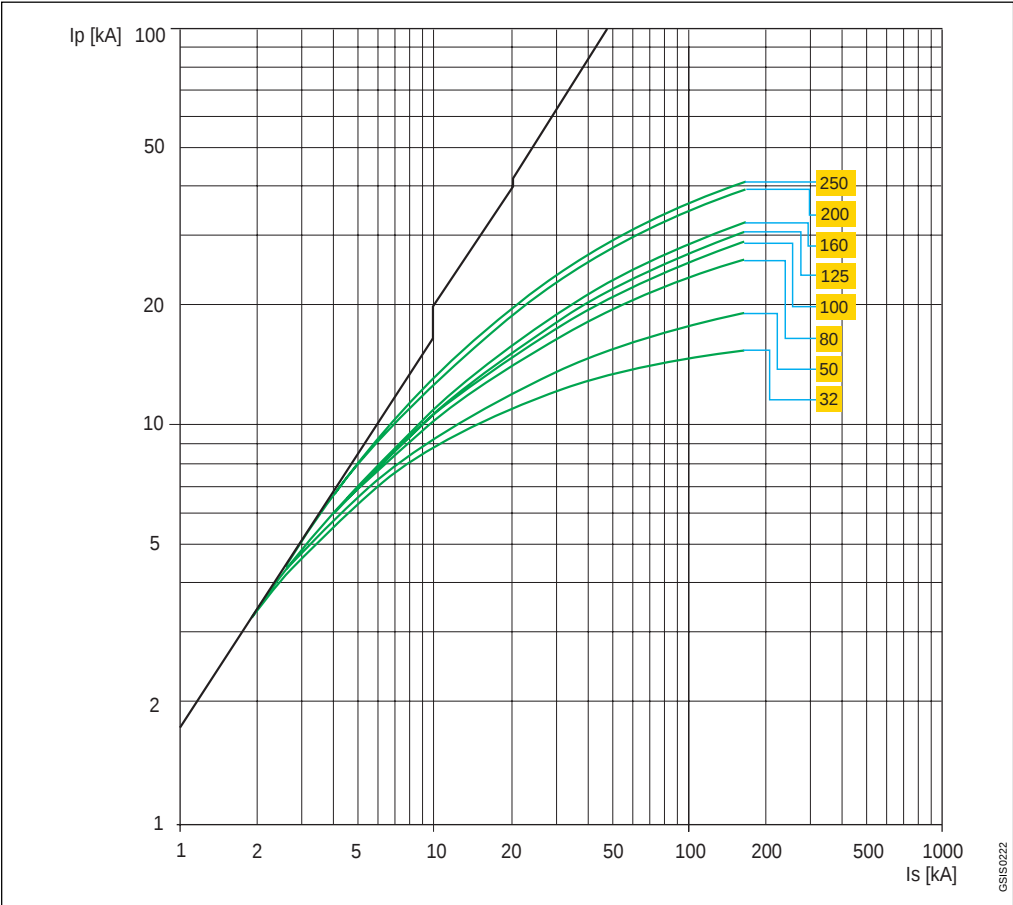
SACE S1



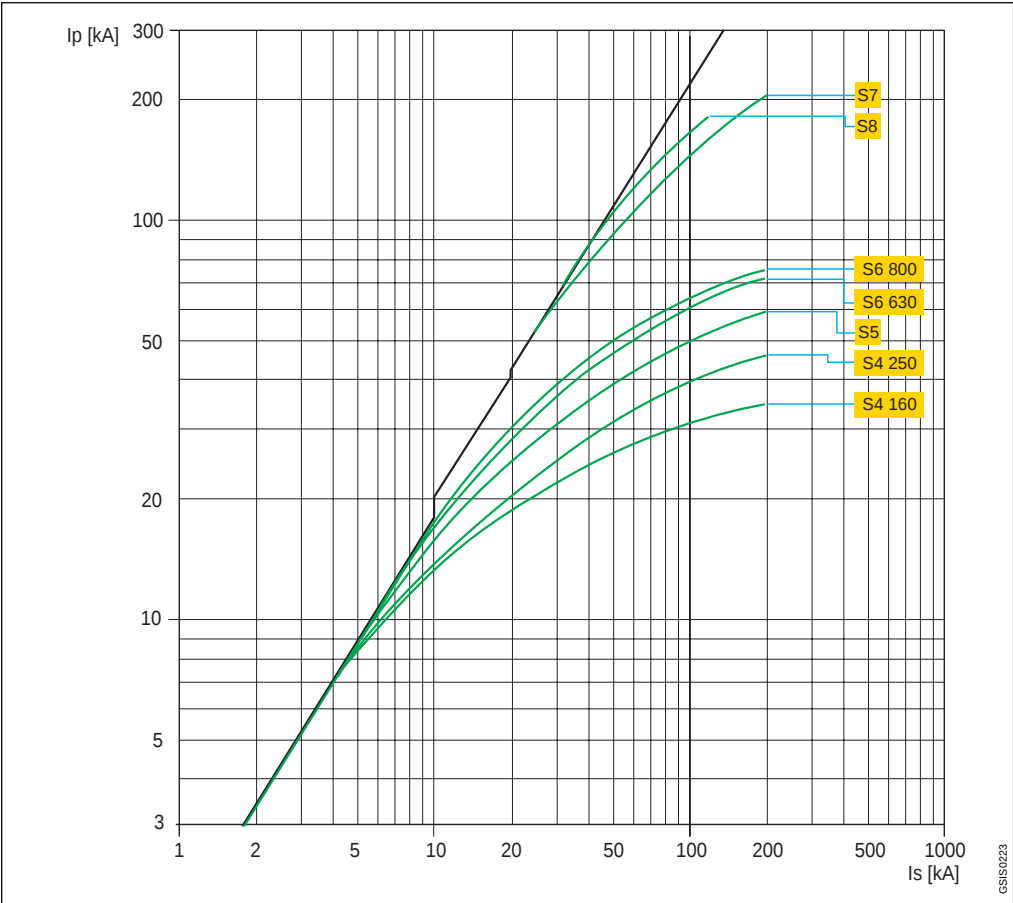
SACE S2



**SACE S3 160,
S3 250**



**SACE S4 160,
S4 250, S5, S6 630,
S6 800, S7, S8**

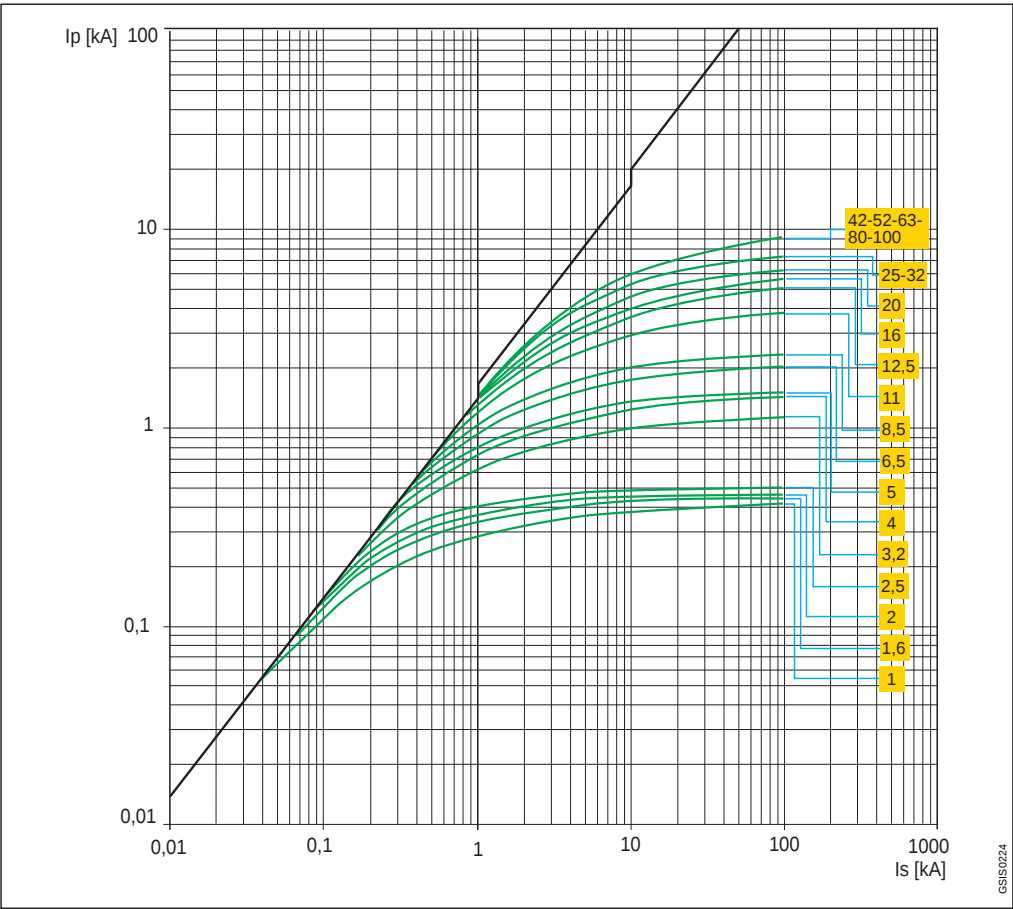




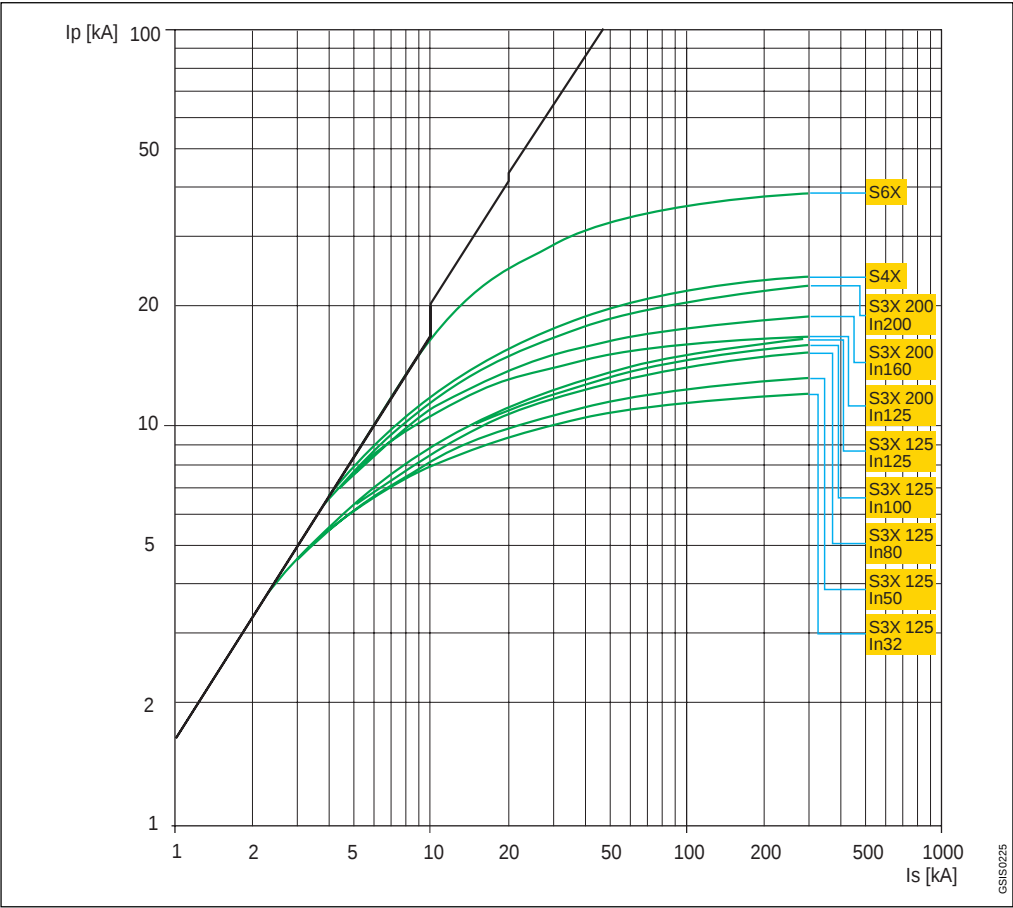
Limitation curves

230 V

SACE S2X 80,
S2X 100



SACE S3X 125,
S3X 200, S4X, S6X

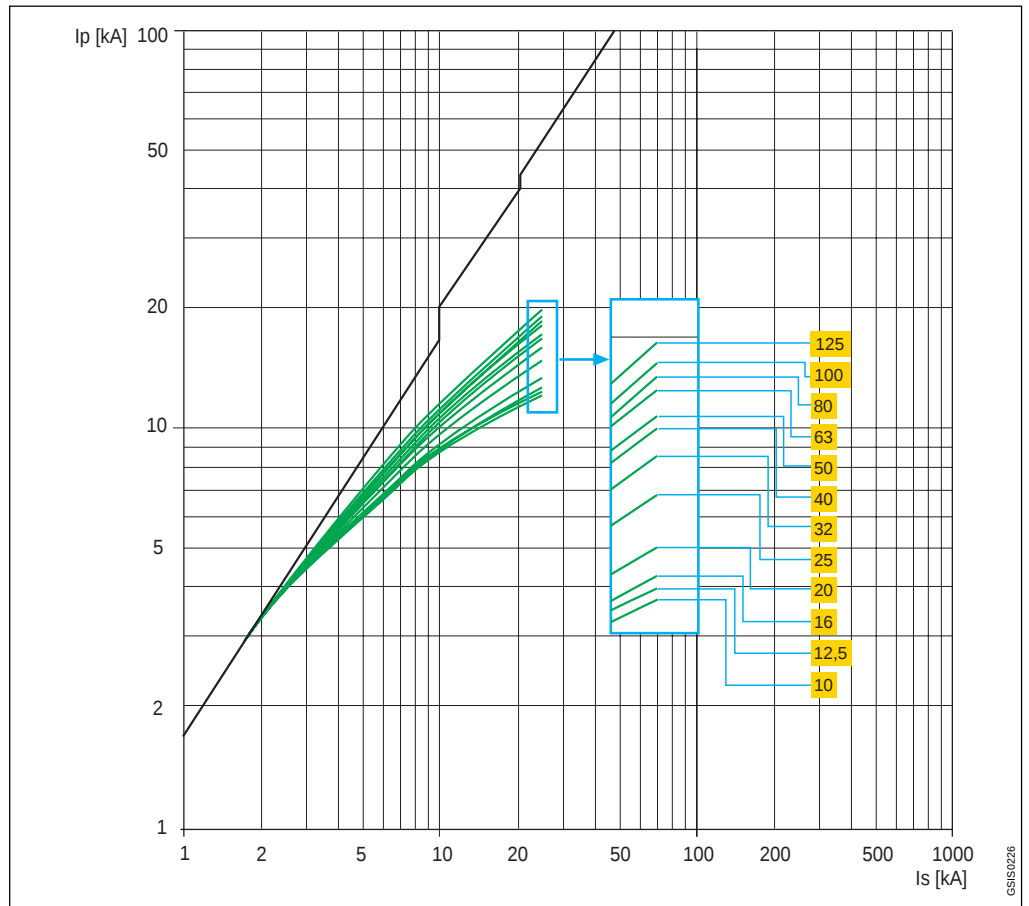




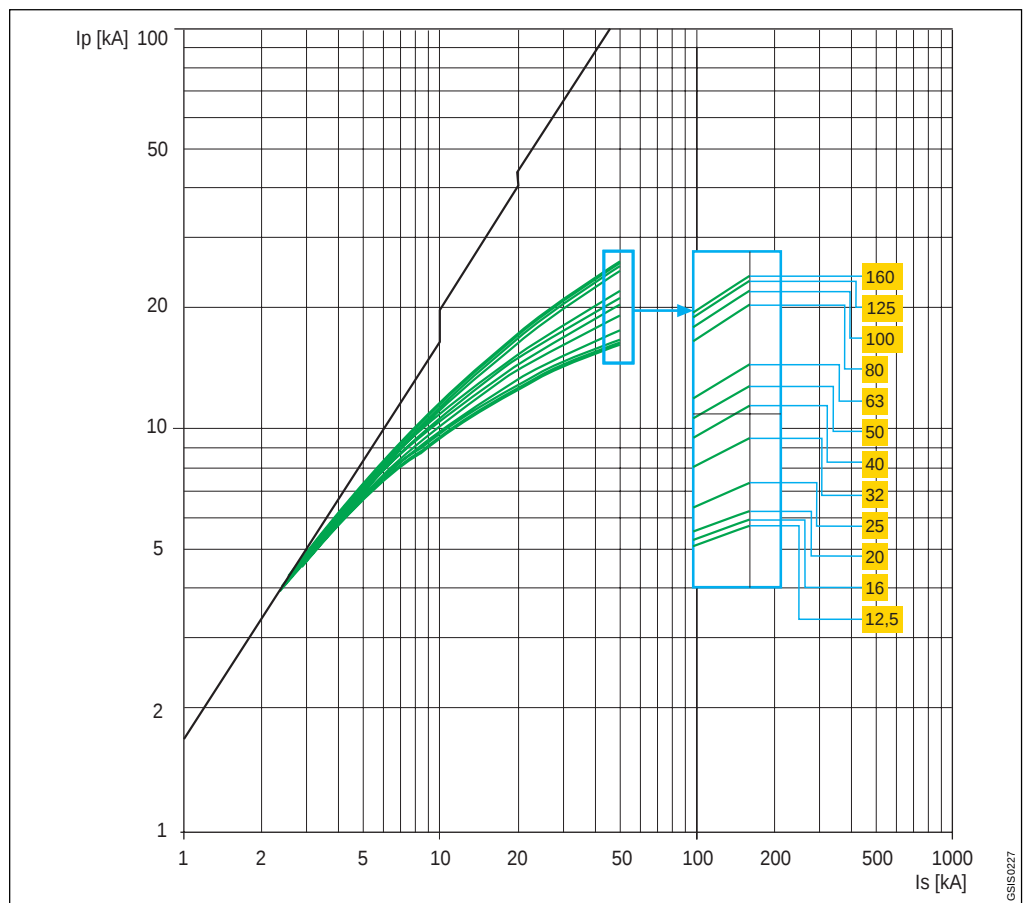
Limitation curves

400-440 V

SACE S1



SACE S2

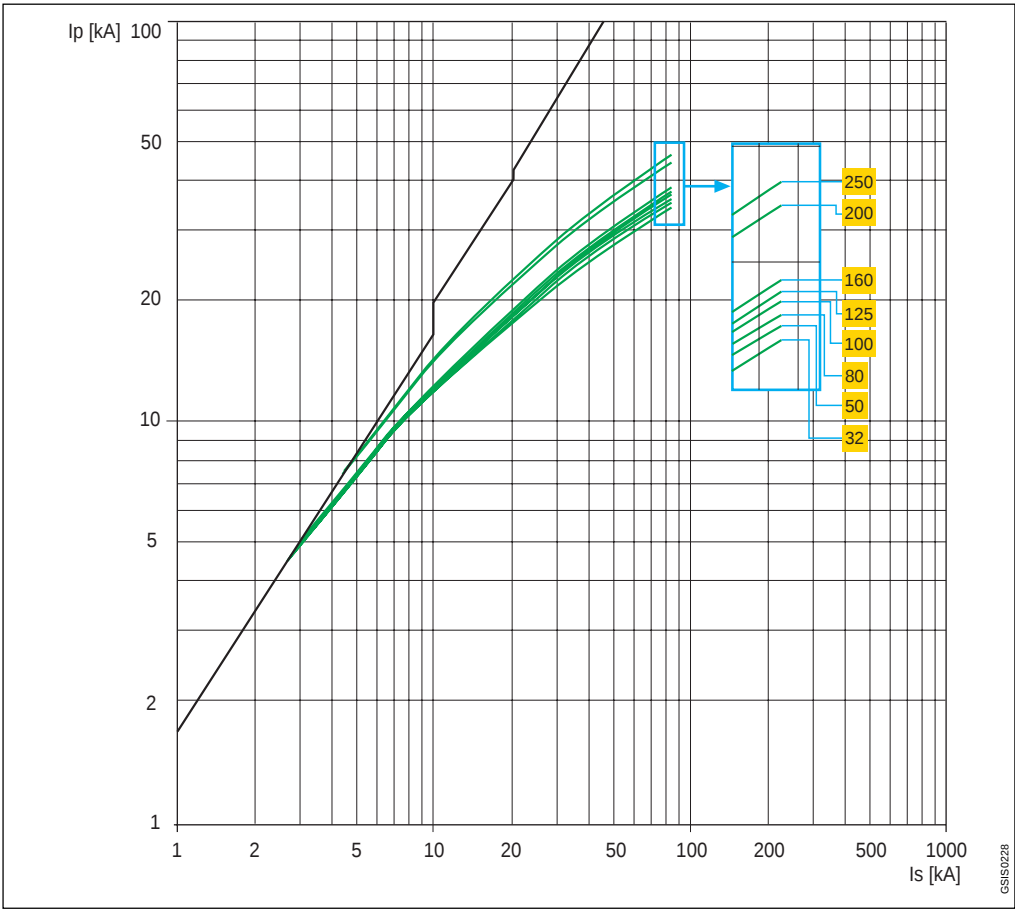




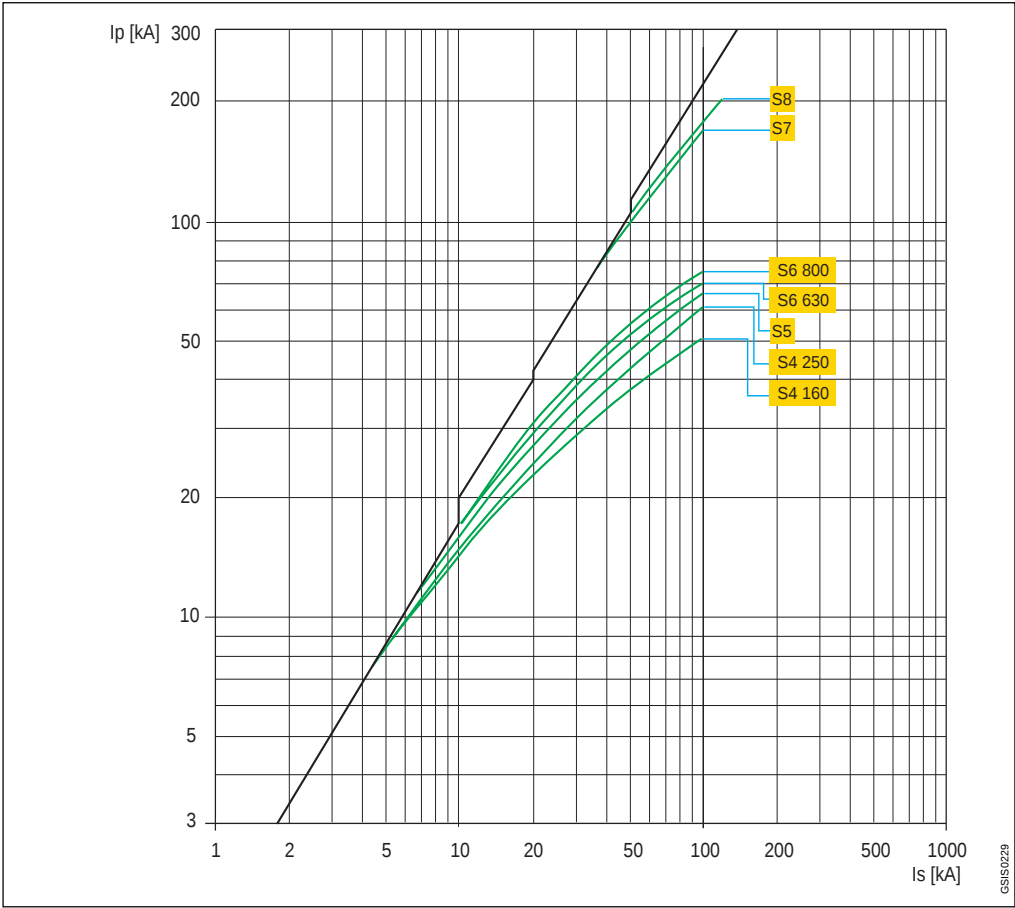
Limitation curves

400-440 V

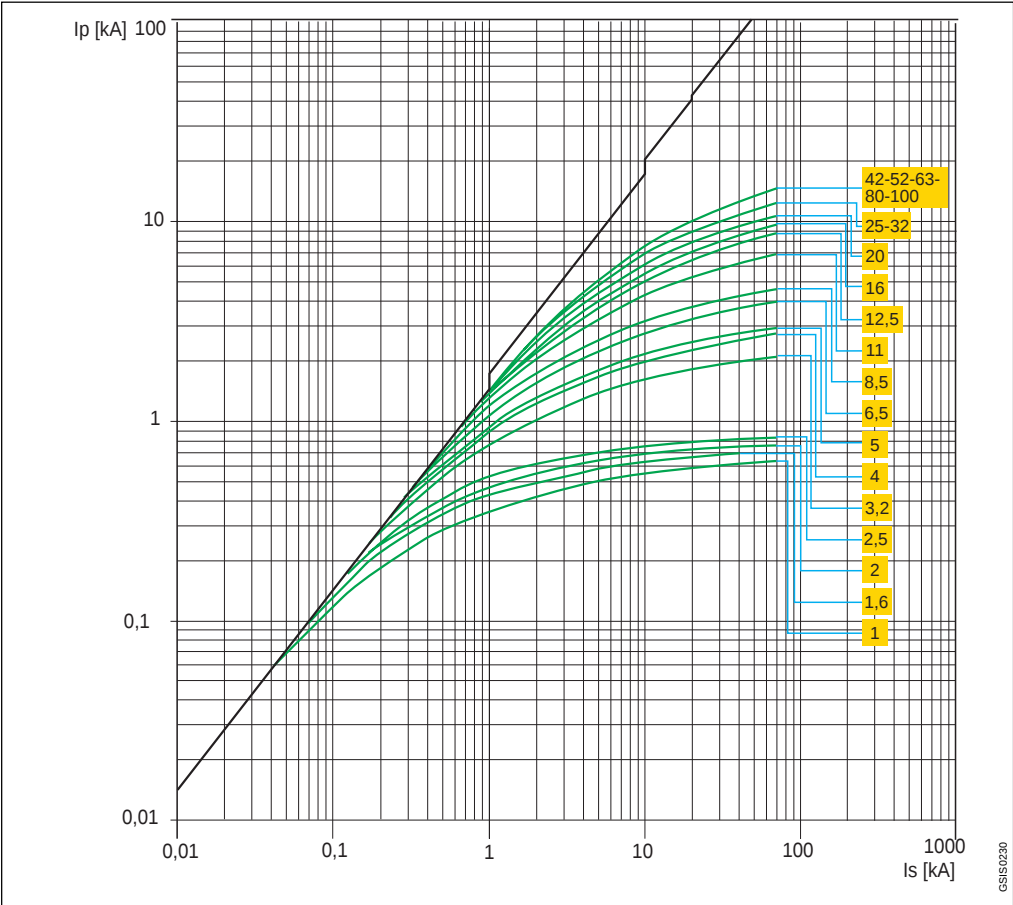
SACE S3 160,
S3 250



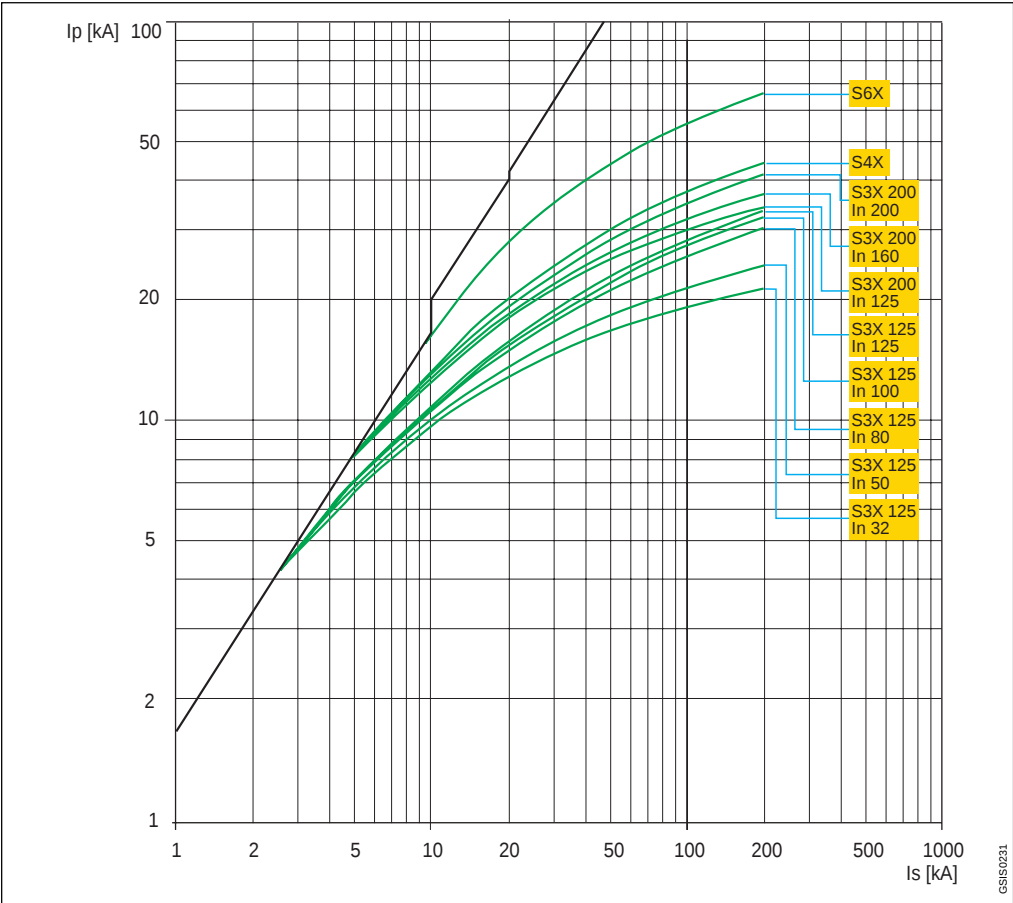
SACE
S4 160, S4 250,
S5, S6 630, S6 800,
S7, S8



**SACE S2X 80,
S2X 100**



**SACE S3X 125,
S3X 200, S4X, S6X**

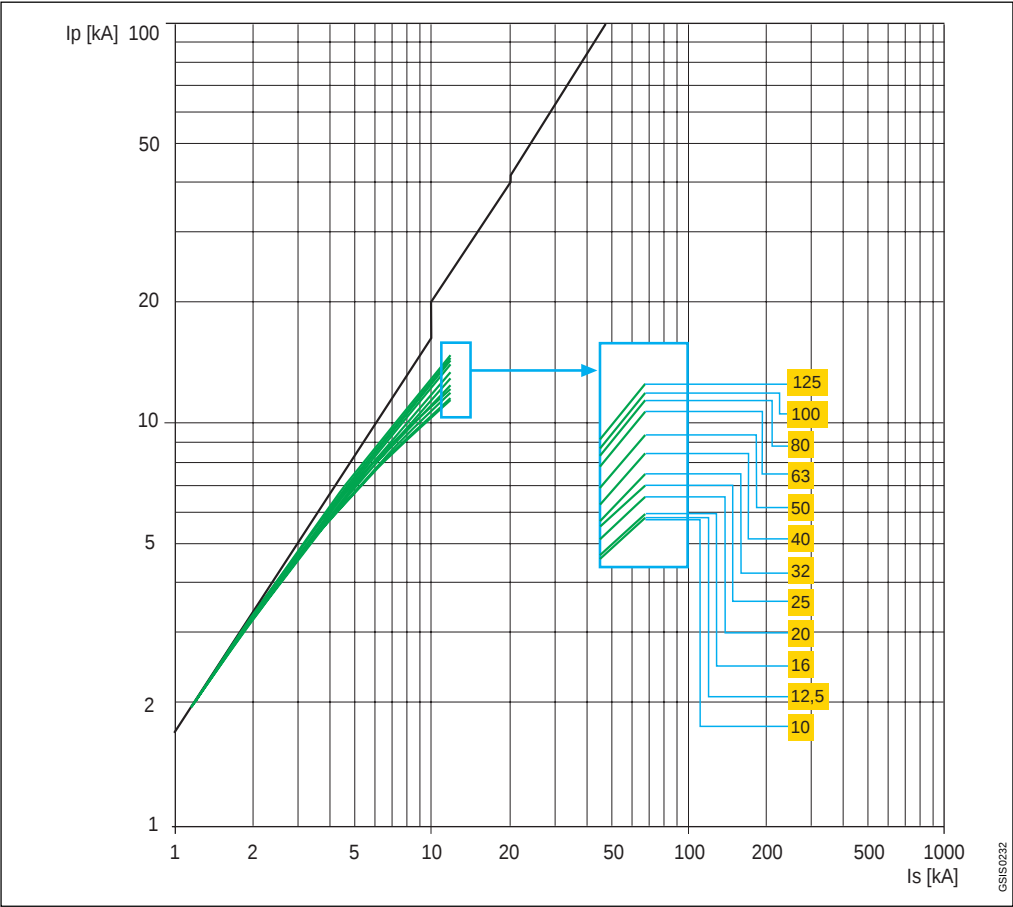




SACE S1

Limitation curves

500 V

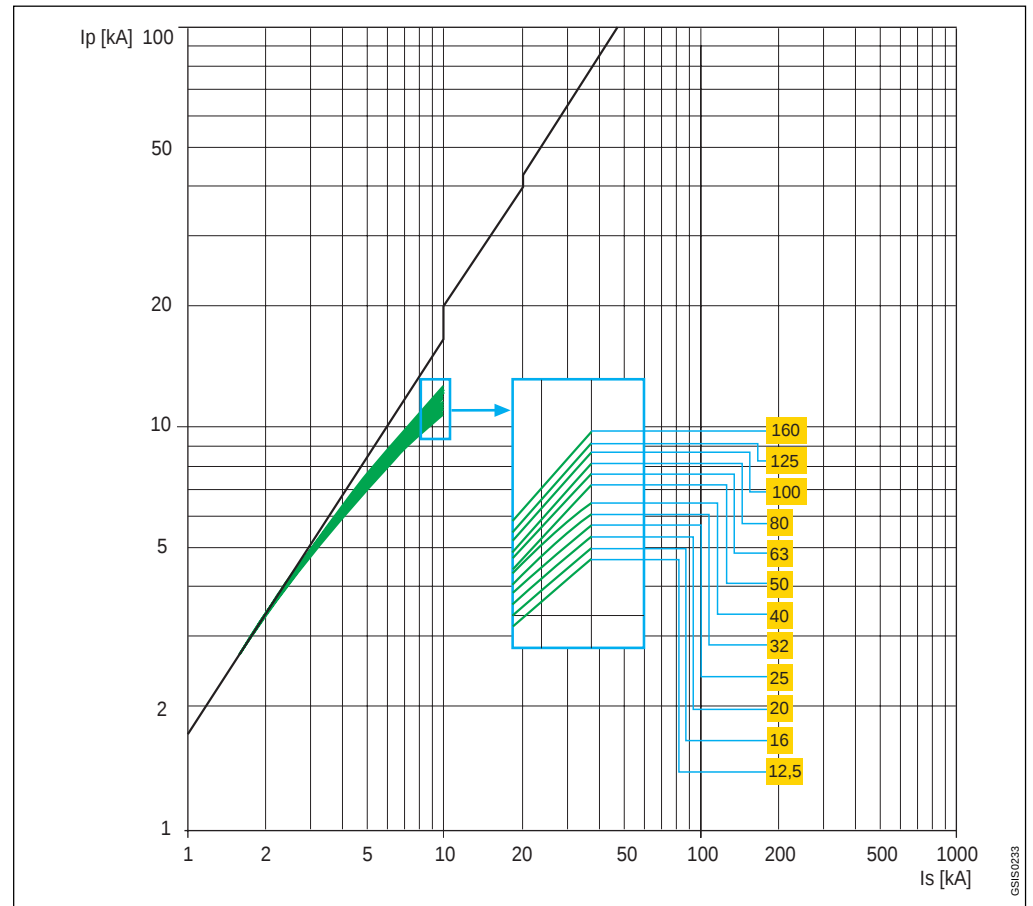




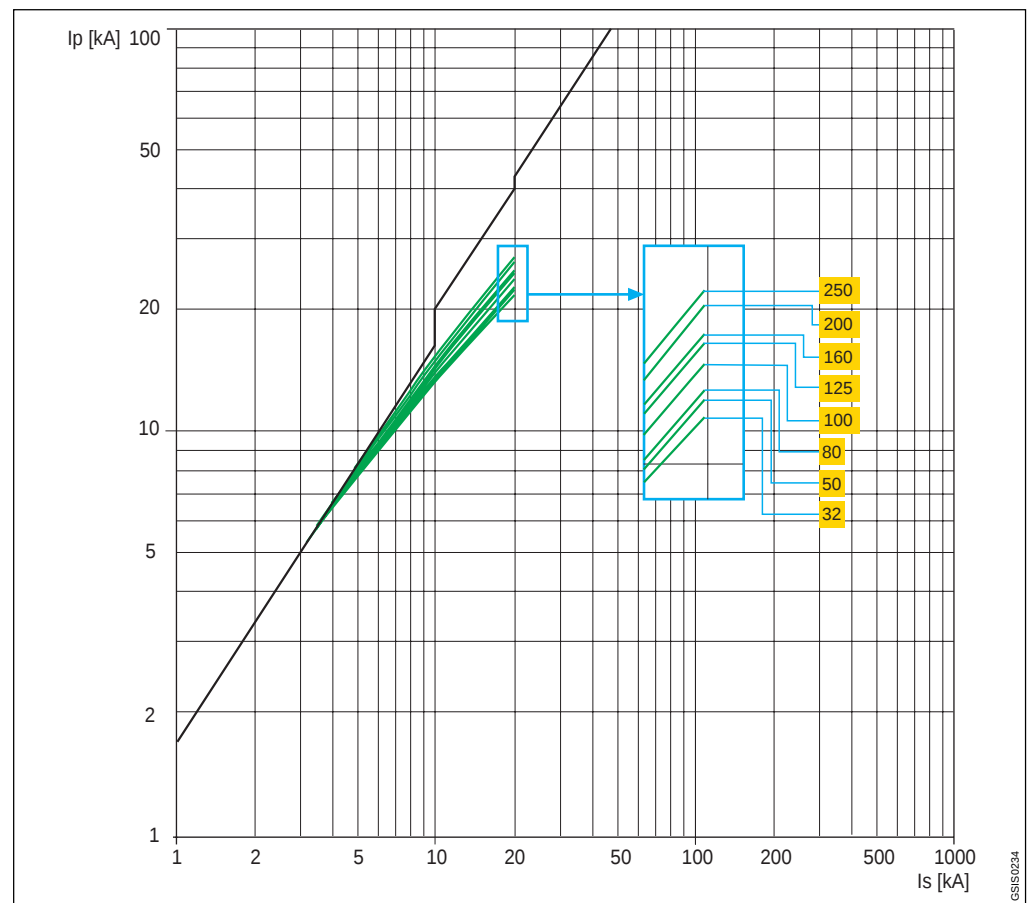
Limitation curves

690 V

SACE S2



SACE S3 160, S3 250

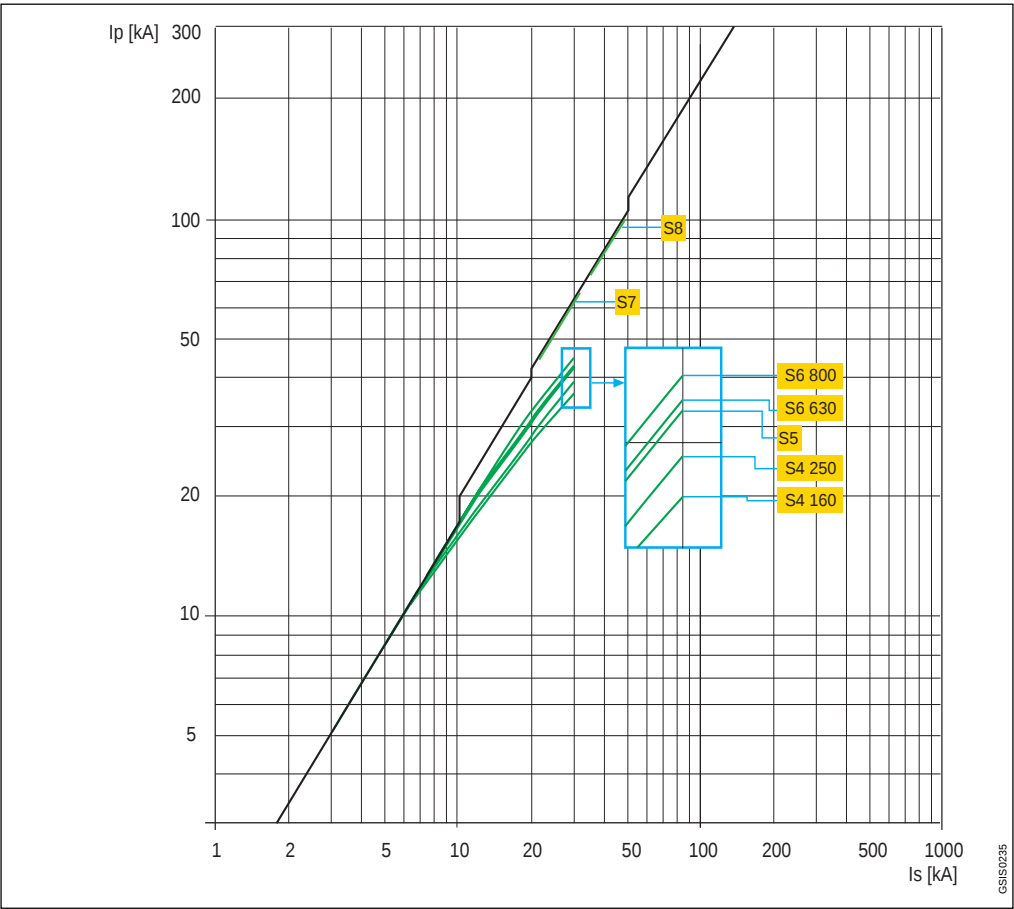




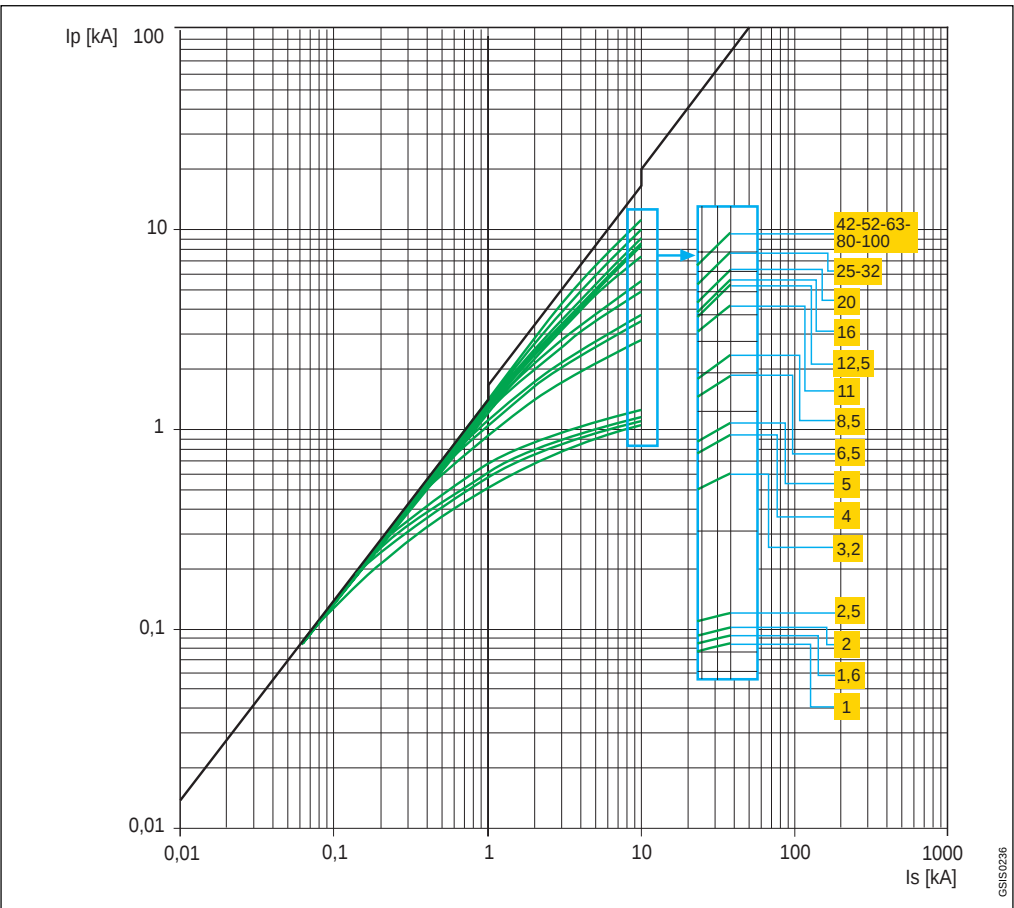
Limitation curves

690 V

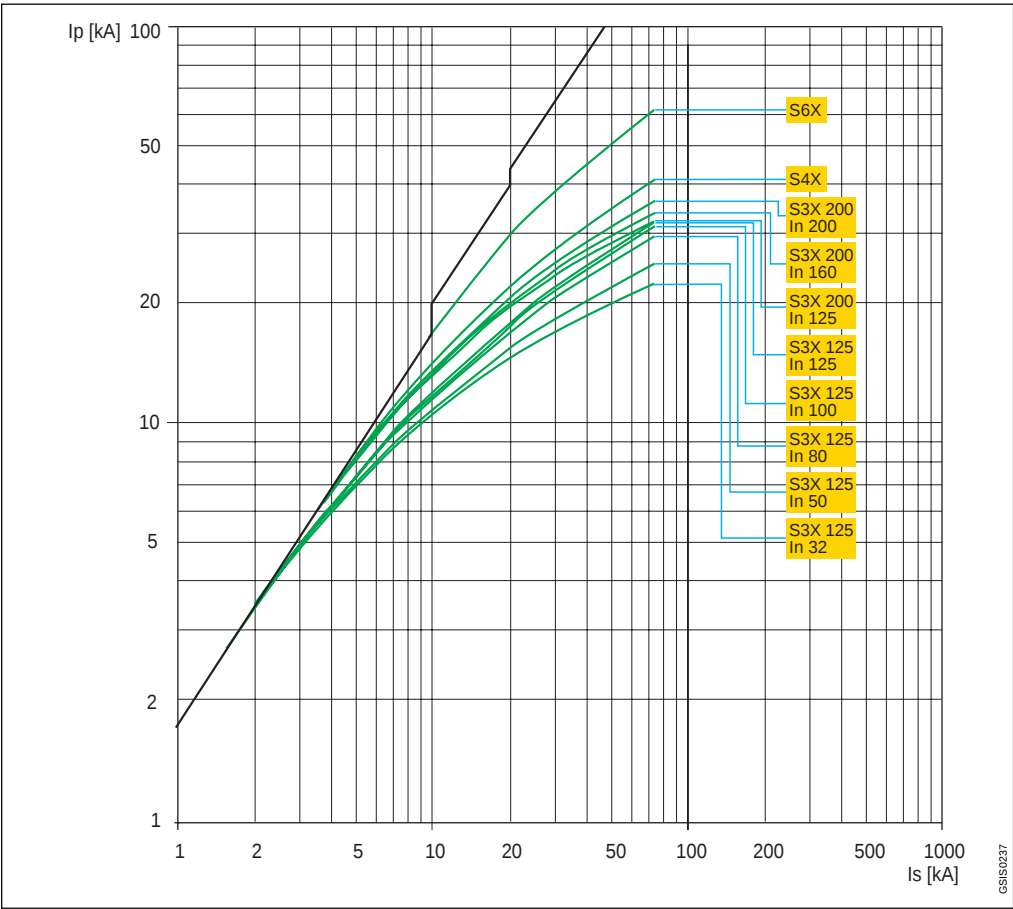
SACE
S4 160, S4 250, S5,
S6 630, S6 800, S7,
S8



SACE S2X 80,
S2X 100



**SACE S3X 125,
S3X 200, S4X, S6X**

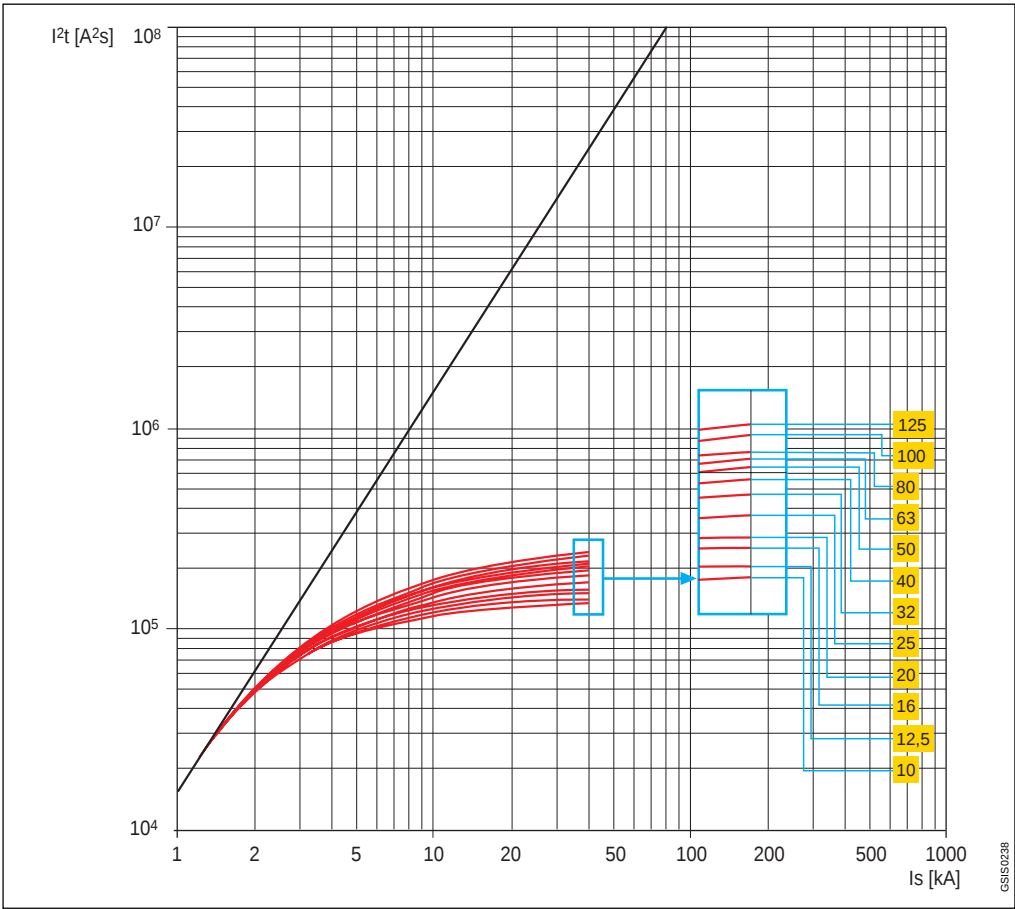




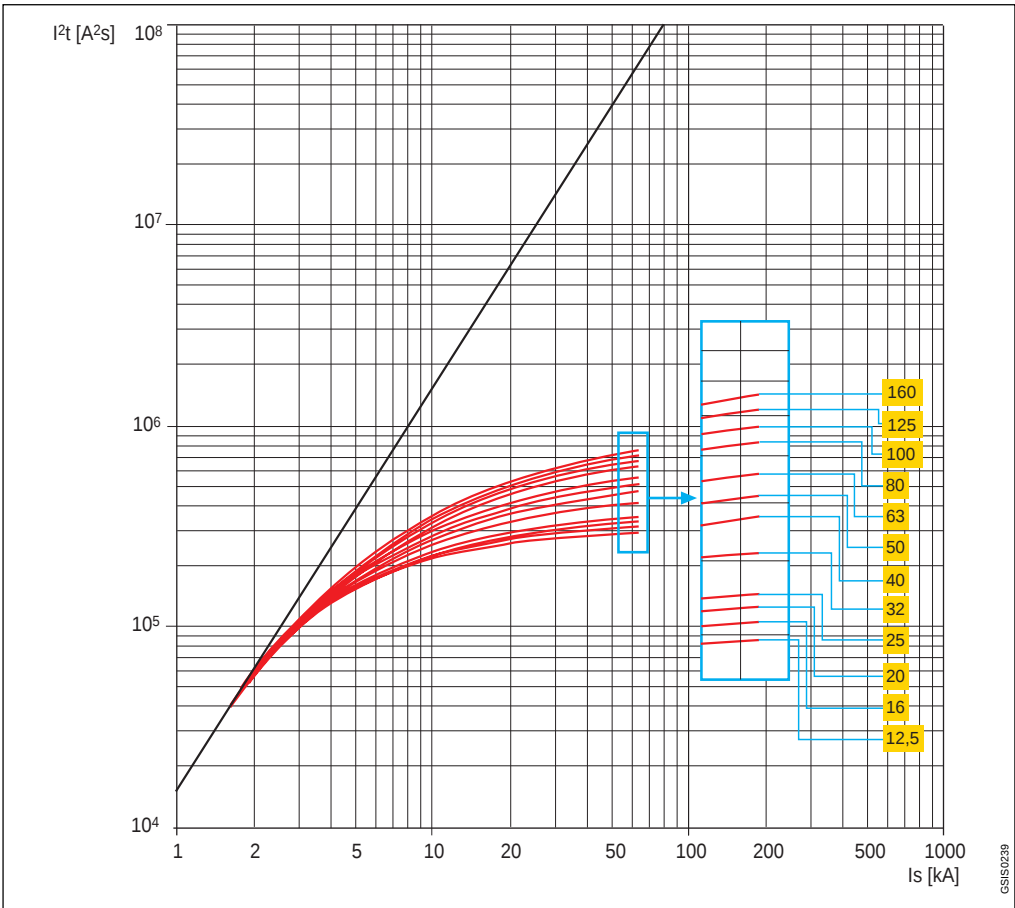
Specific let-through energy curves

230 V

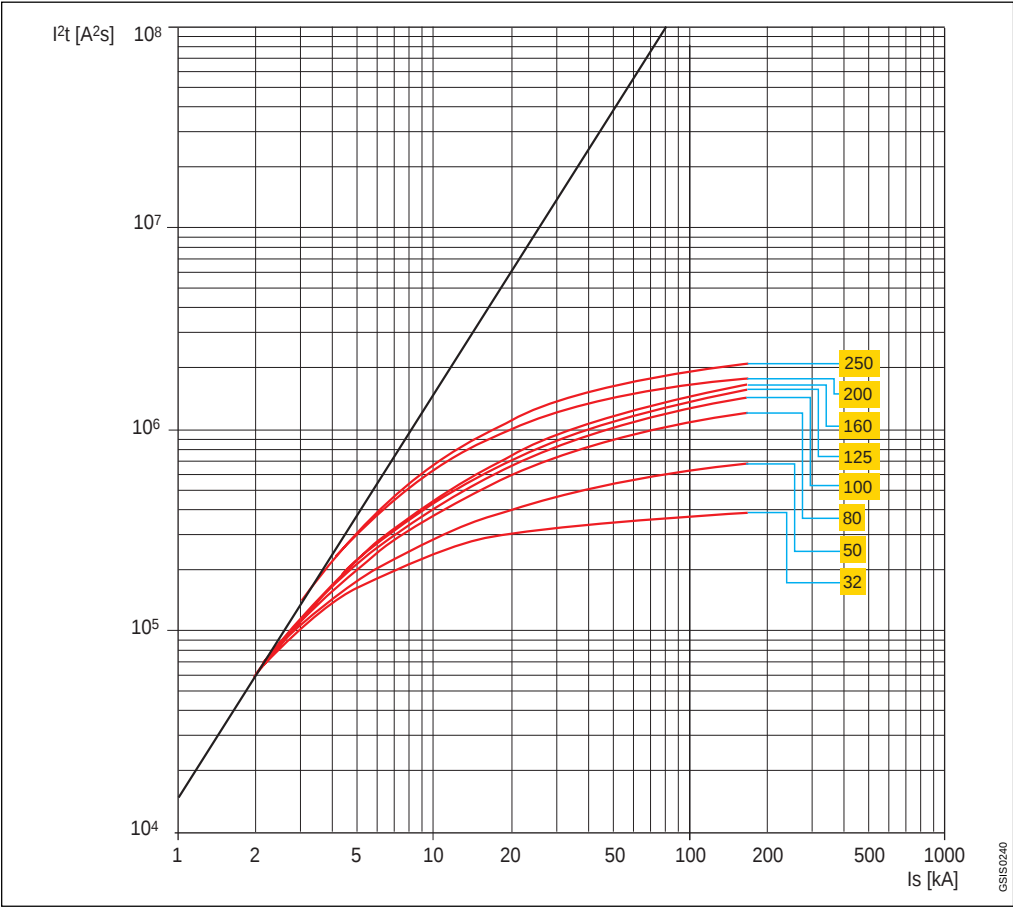
SACE S1



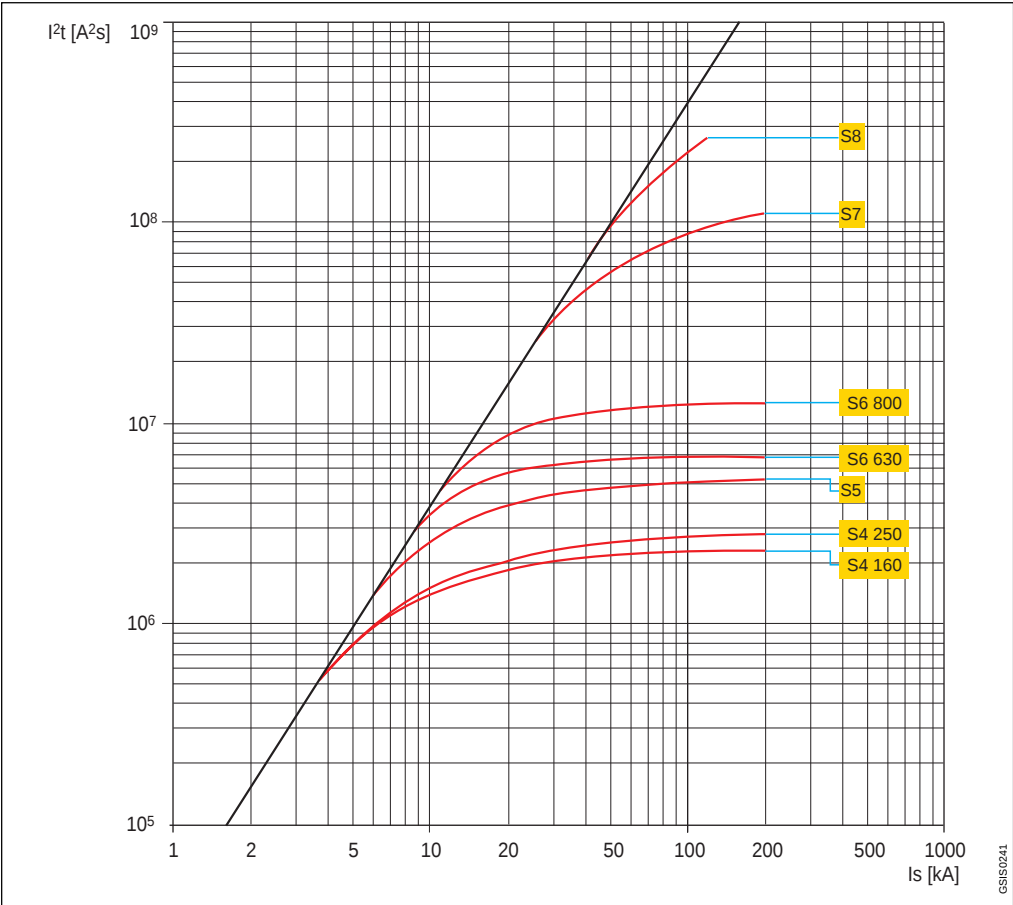
SACE S2



**SACE S3 160,
S3 250**



**SACE S4 160,
S4 250, S5, S6 630,
S6 800, S7, S8**

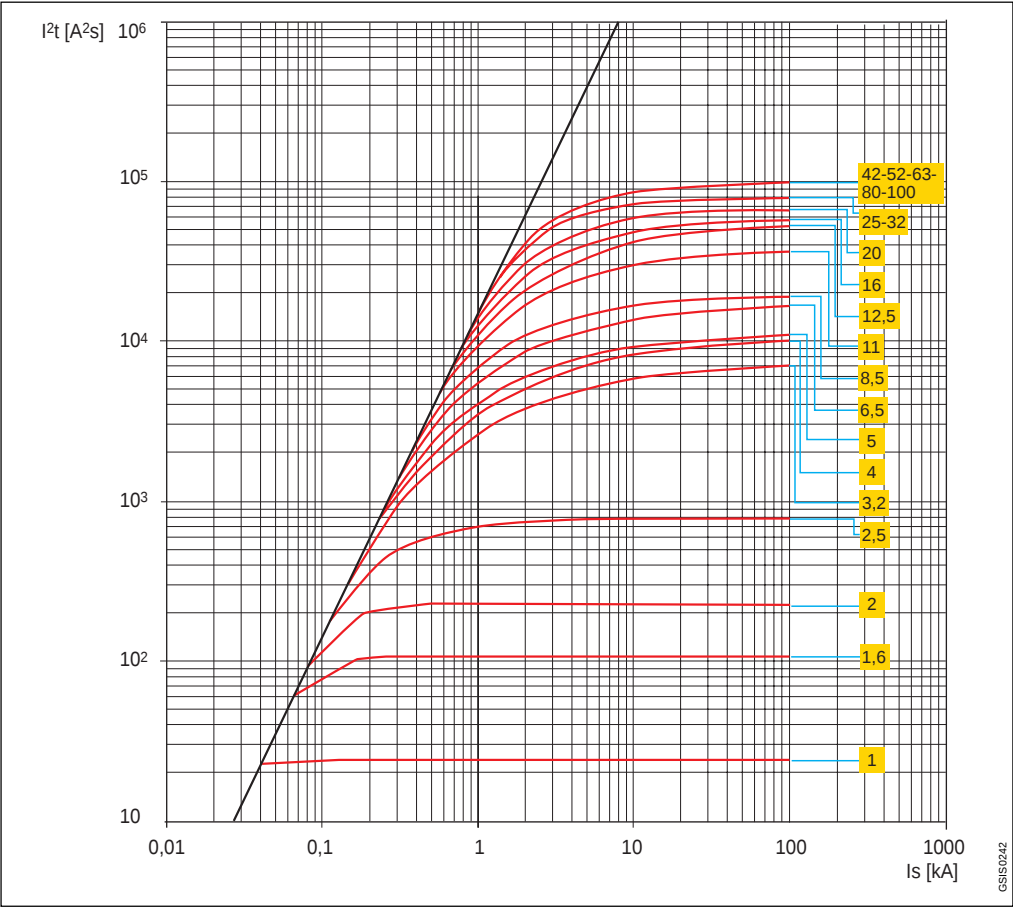




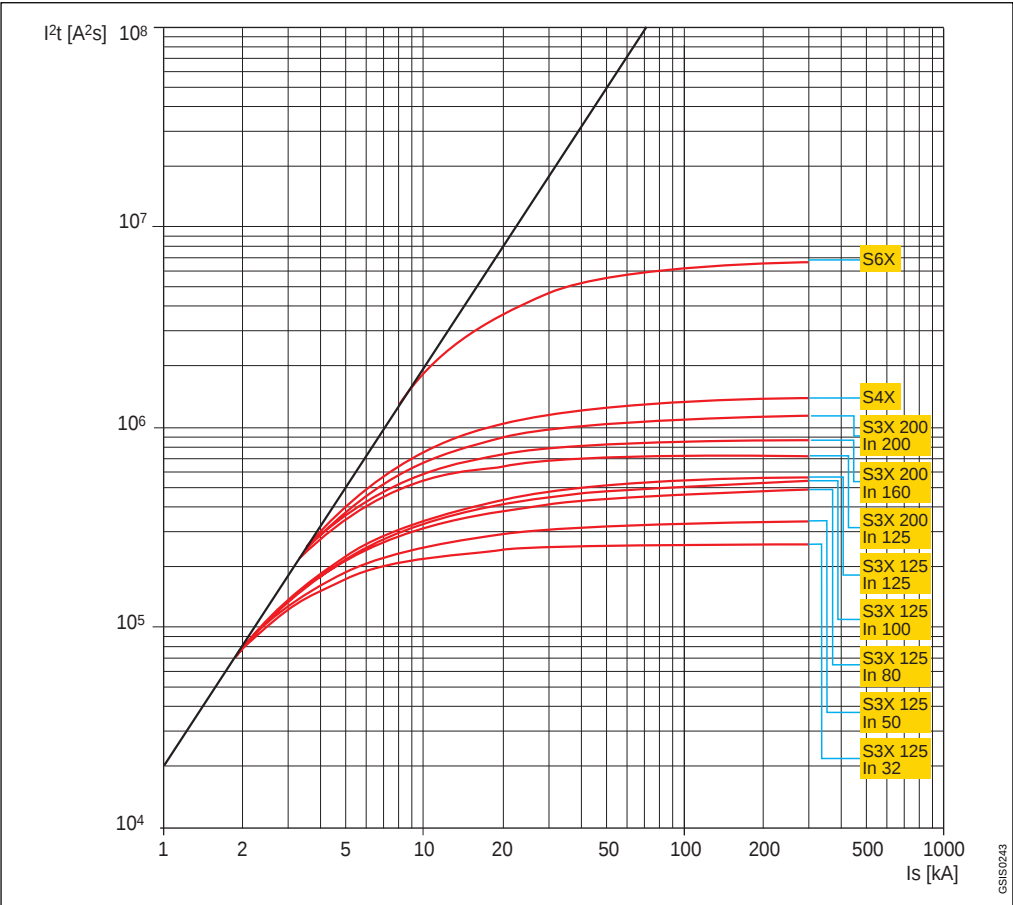
SACE S2X 80,
S2X 100

Specific let-through energy curves

230 V



SACE S3X 125,
S3X 200, S4X, S6X

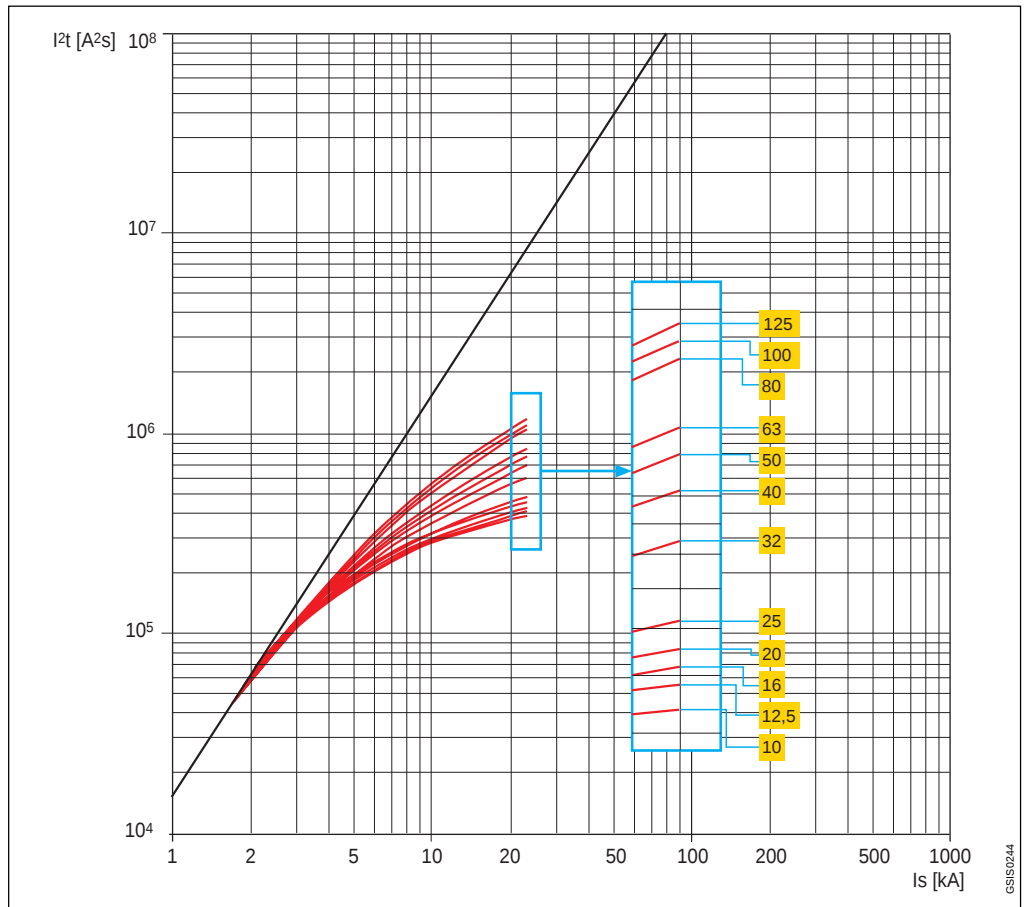




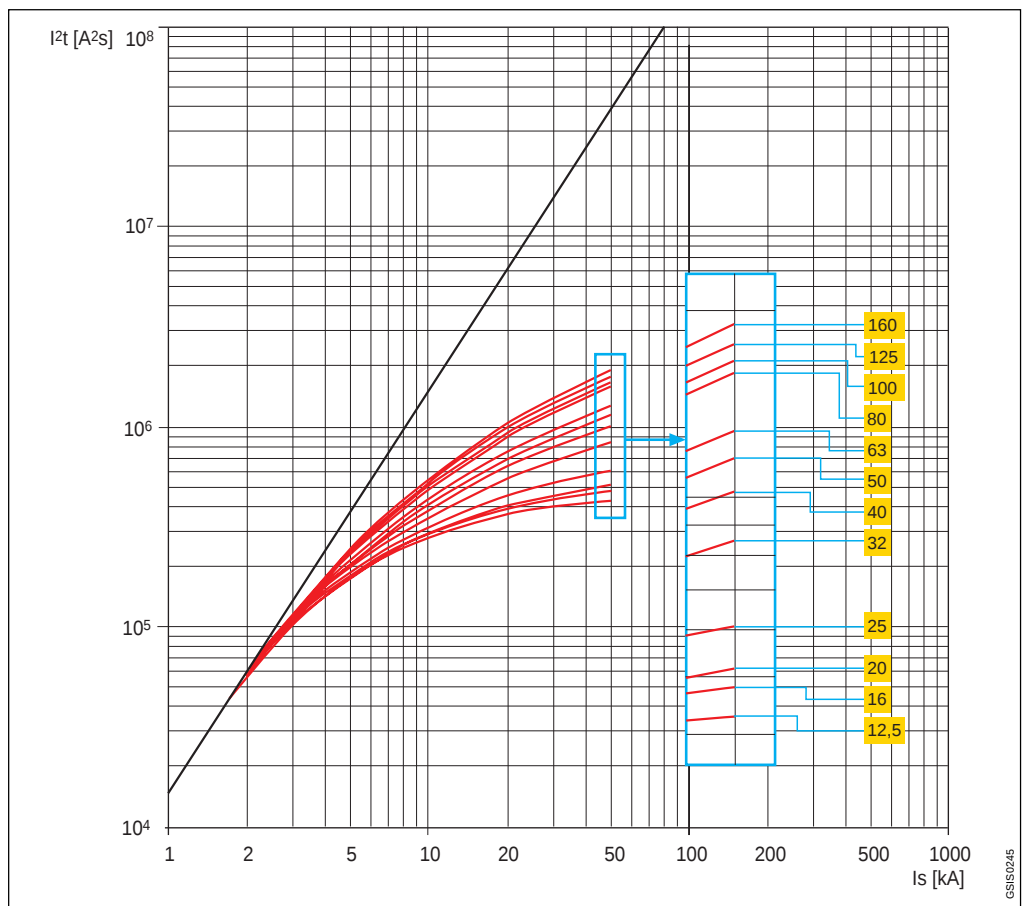
Specific let-through energy curves

400-440 V

SACE S1



SACE S2

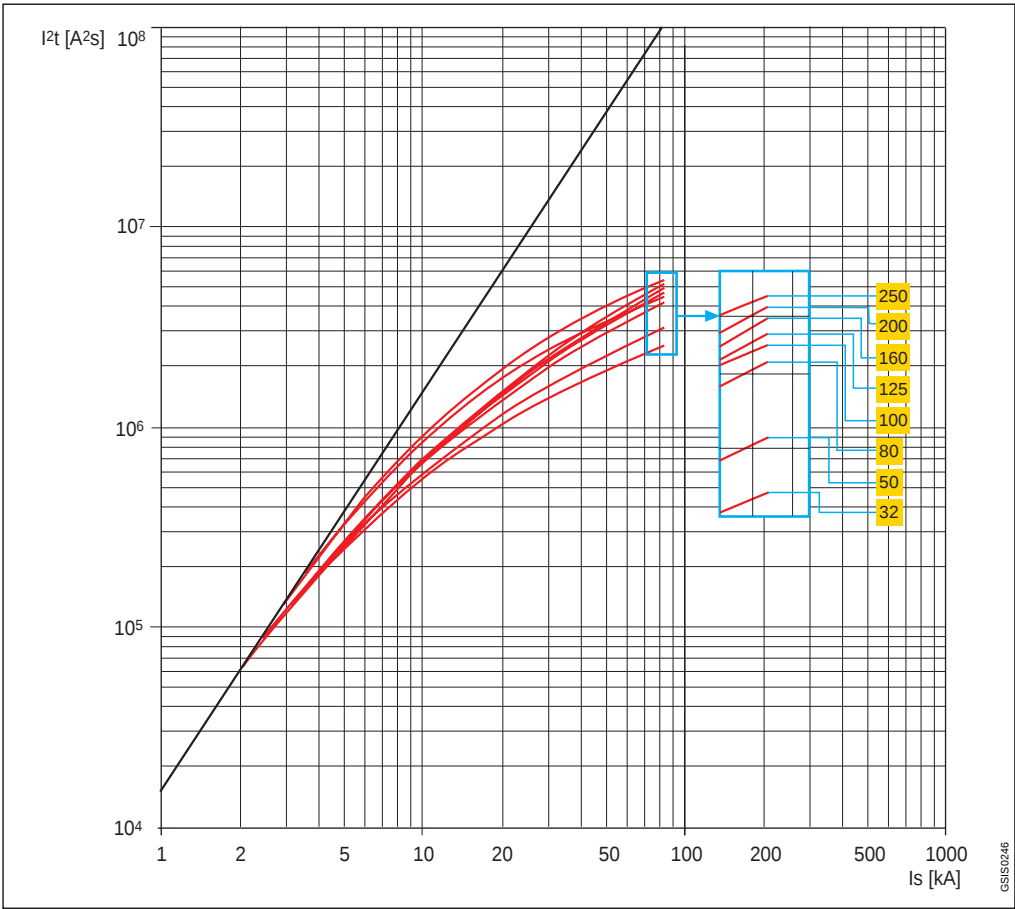




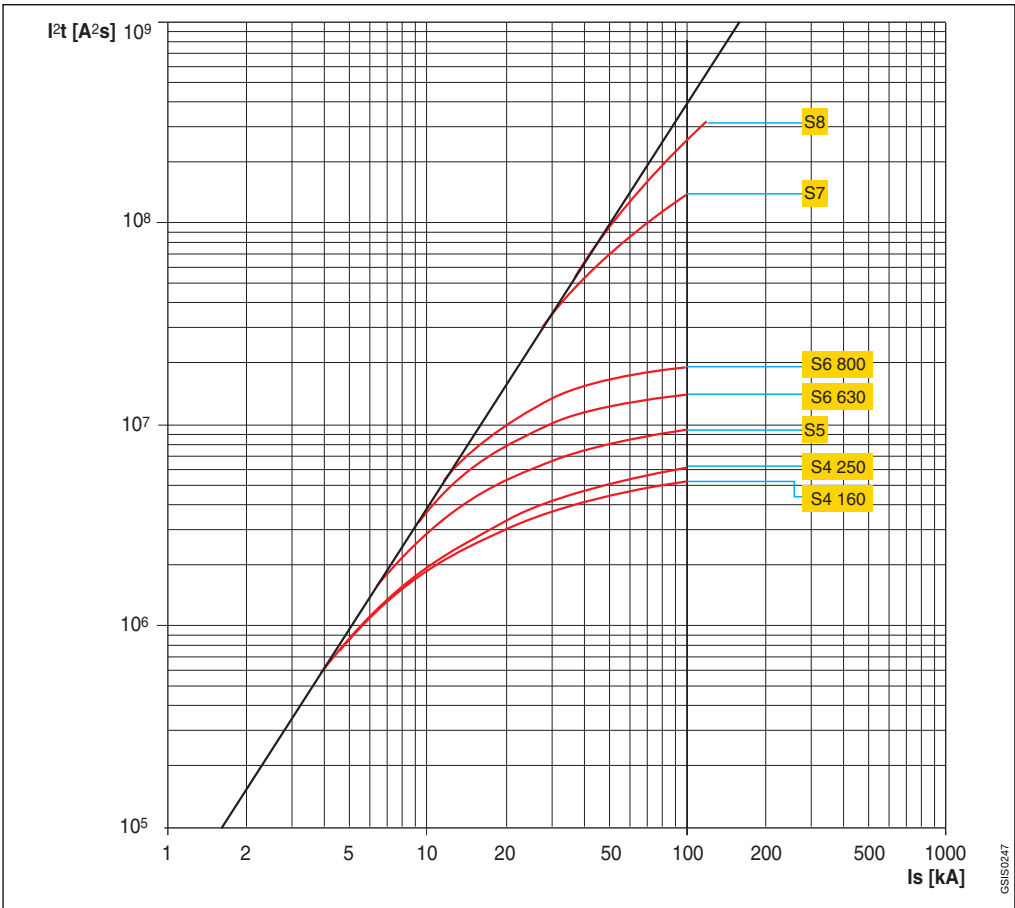
Specific let-through energy curves

400-440 V

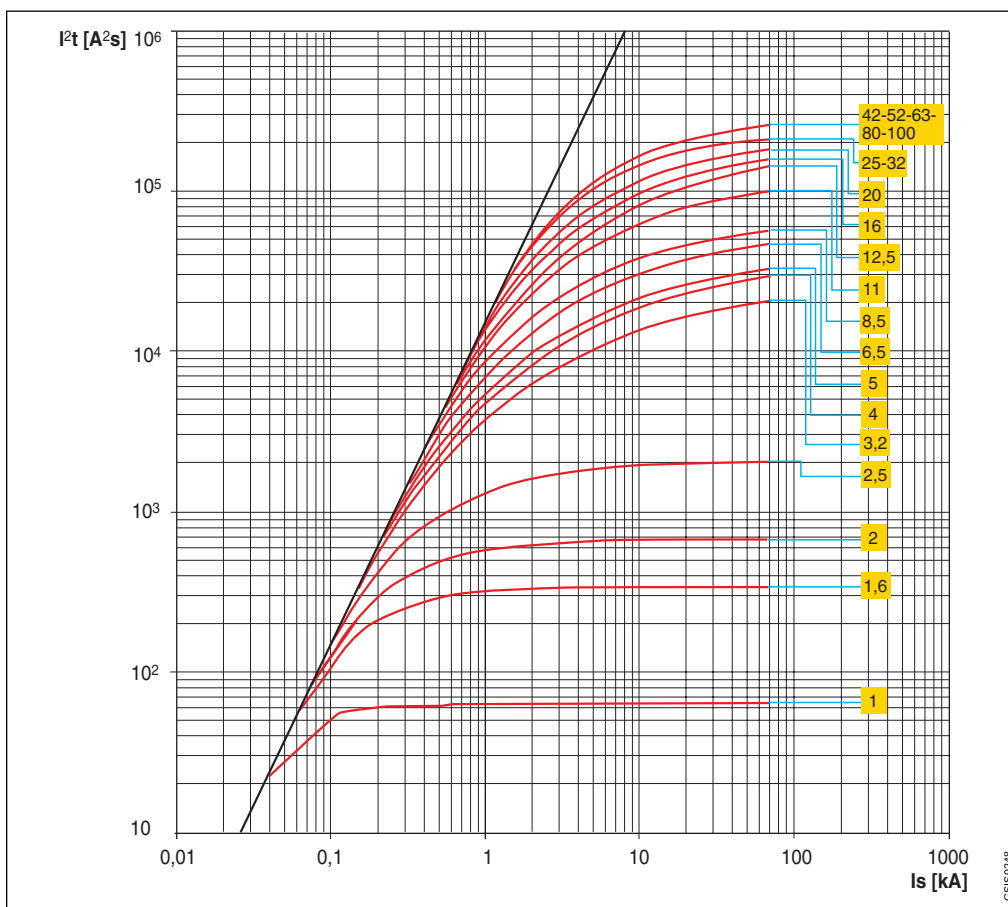
SACE S3 160,
S3 250



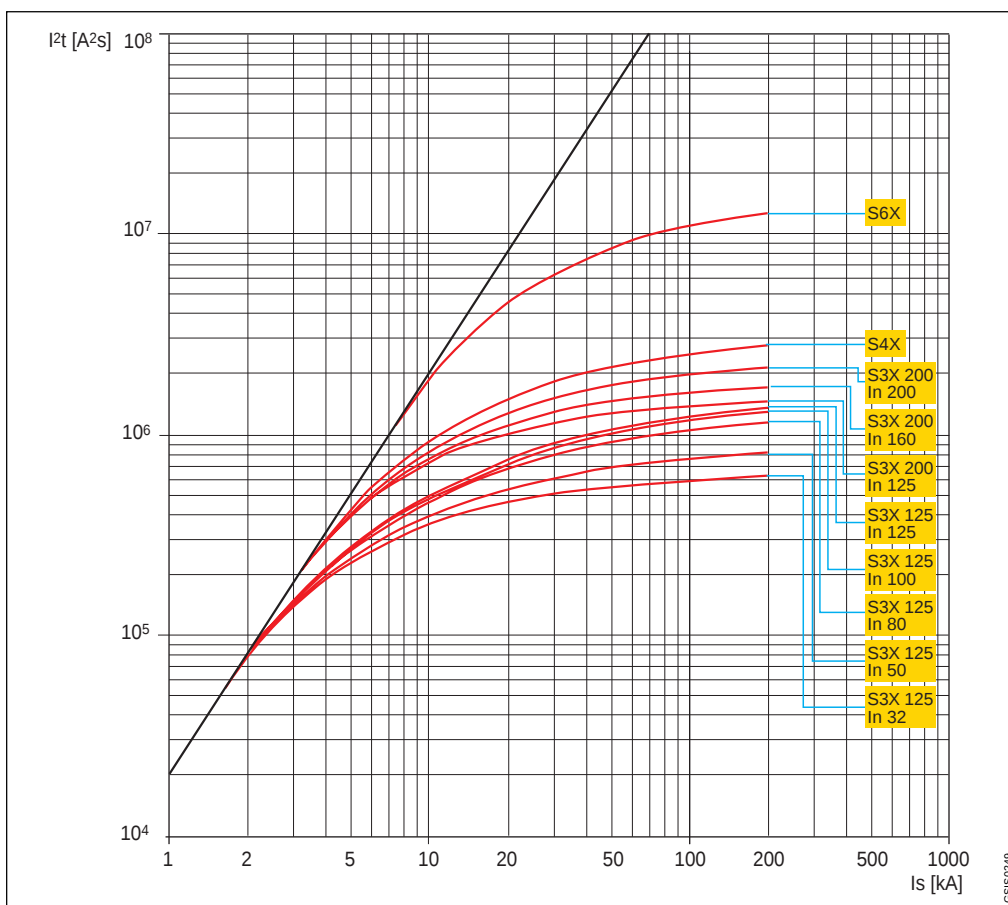
SACE S4 160,
S4 250, S5, S6 630,
S6 800, S7, S8



**SACE S2X 80,
S2X 100**



**SACE S3X 125,
S3X 200, S4X, S6X**

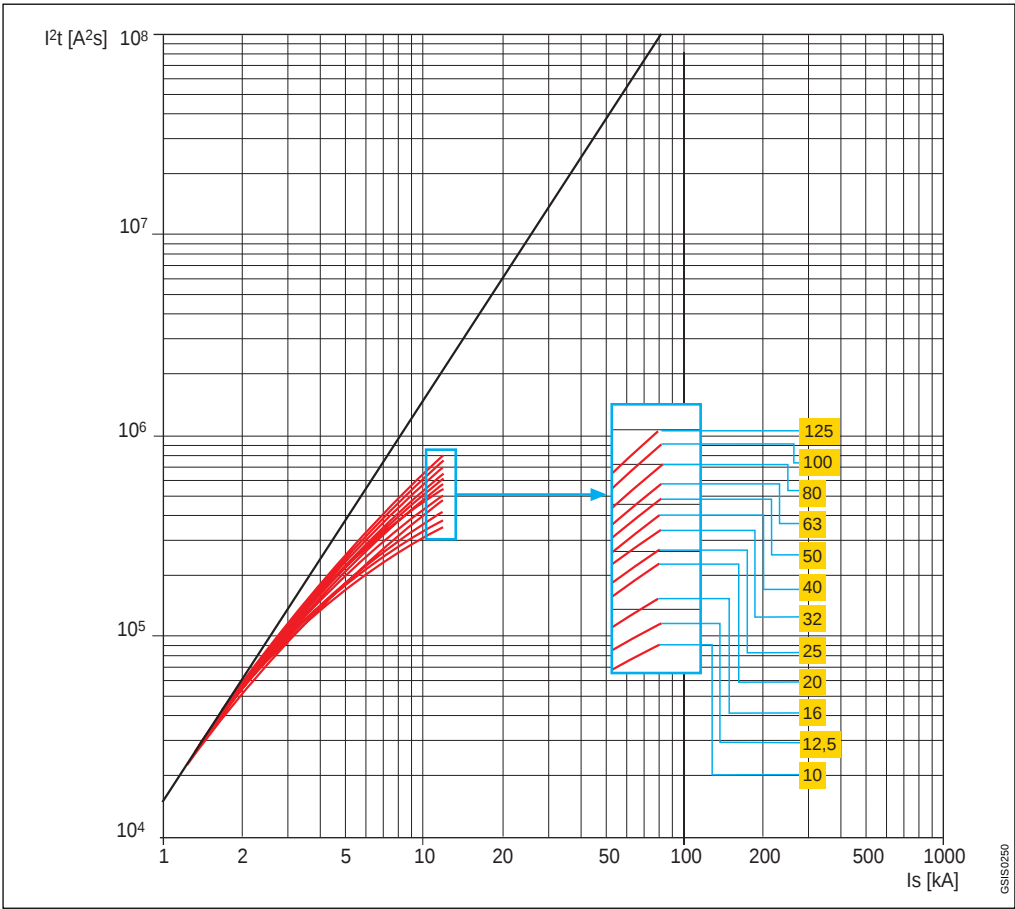




SACE S1

Specific let-through energy curves

500 V

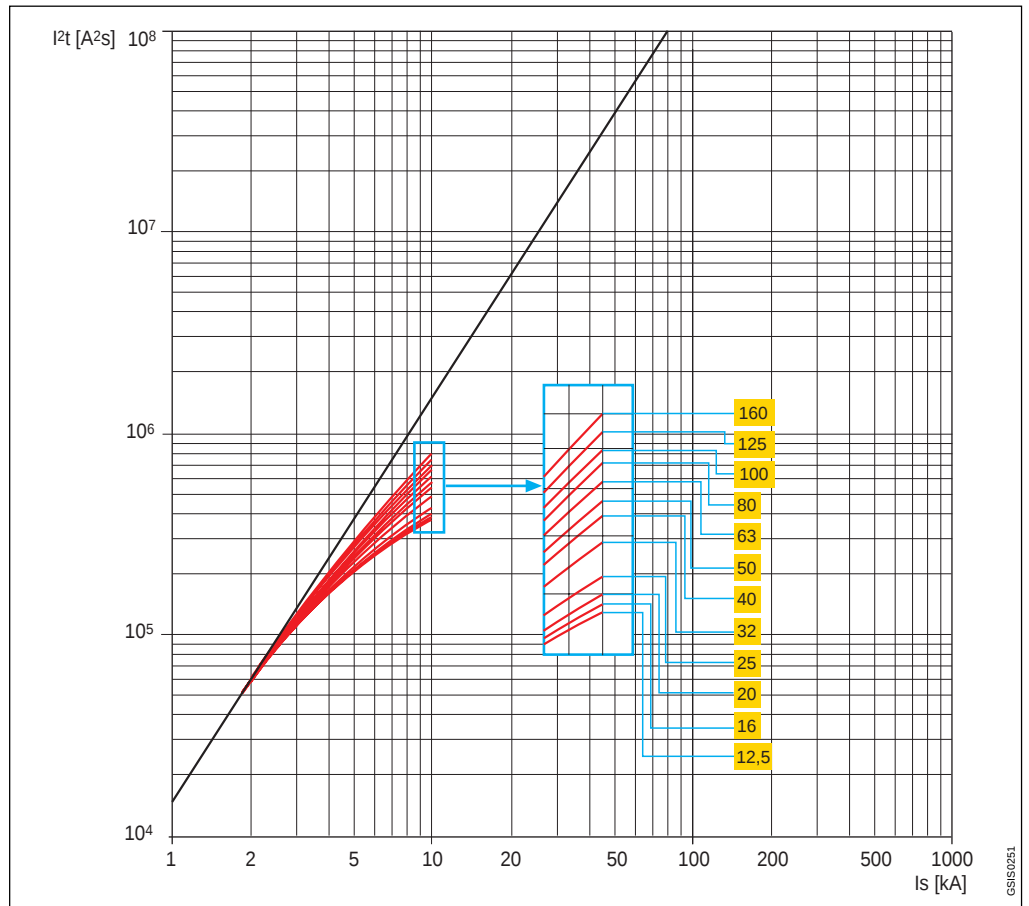




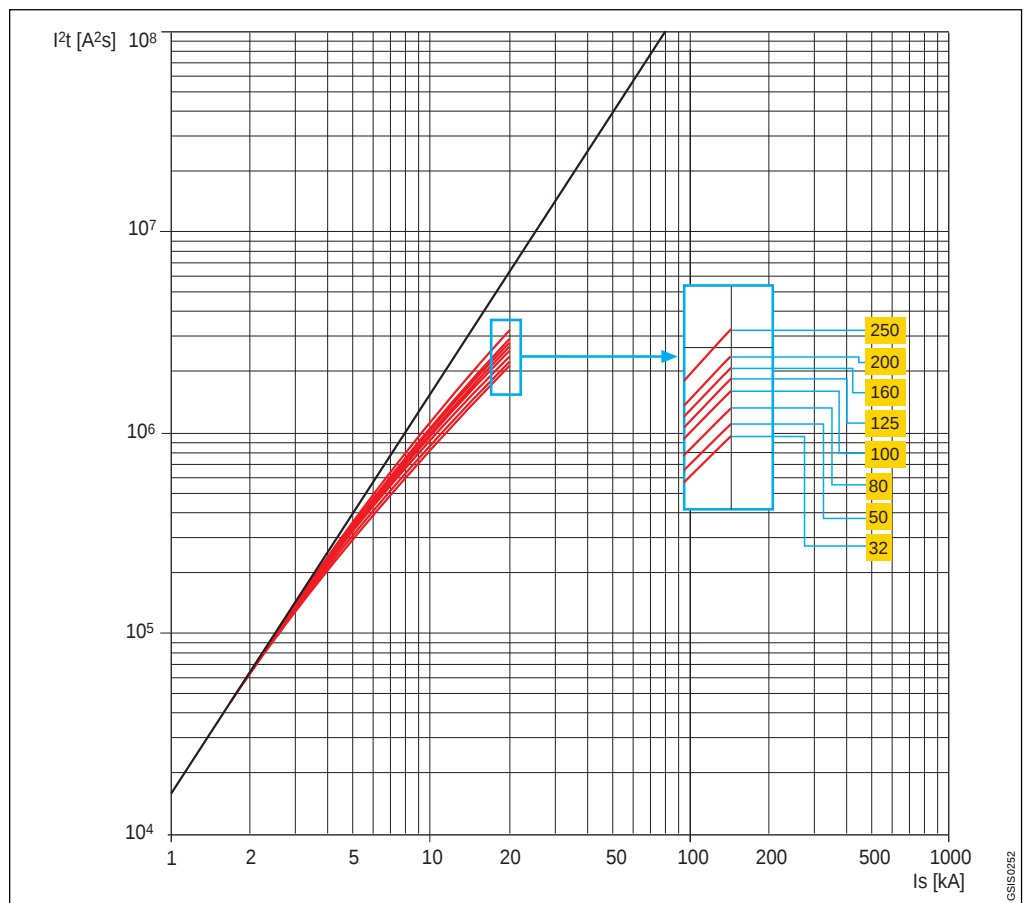
Specific let-through energy curves

690 V

SACE S2



SACE S3 160, S3 250

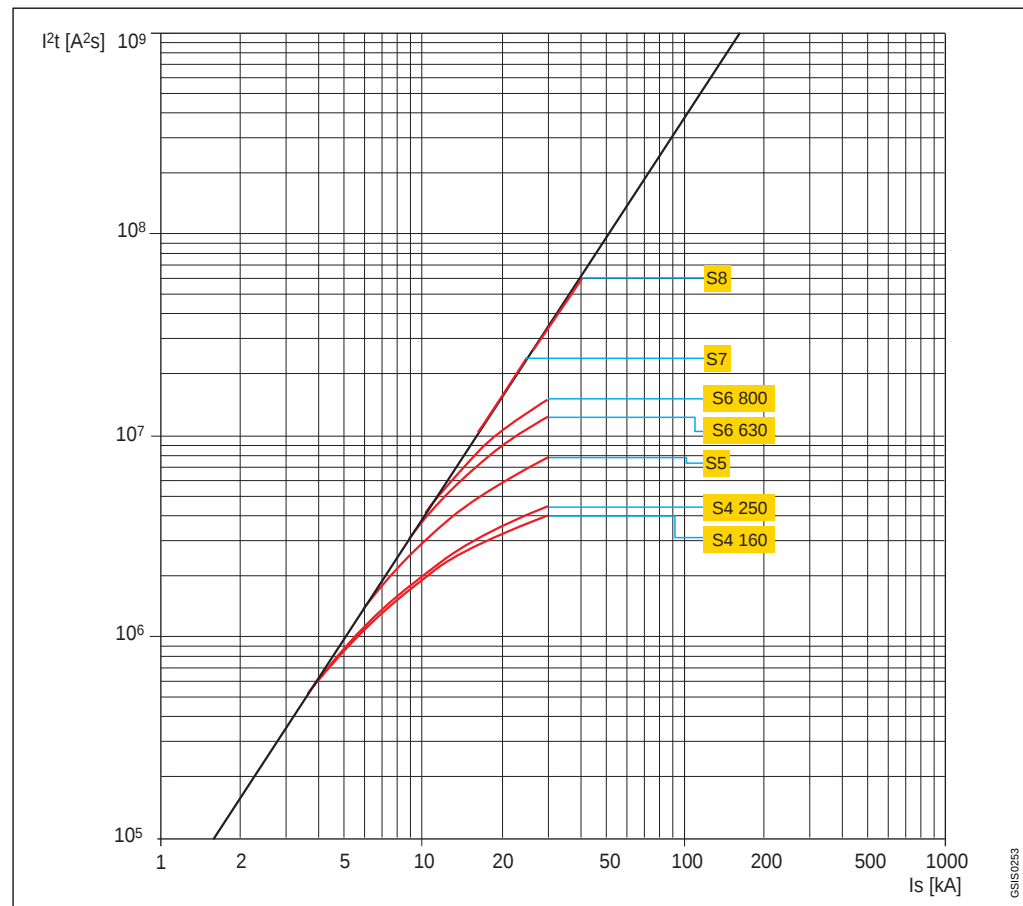




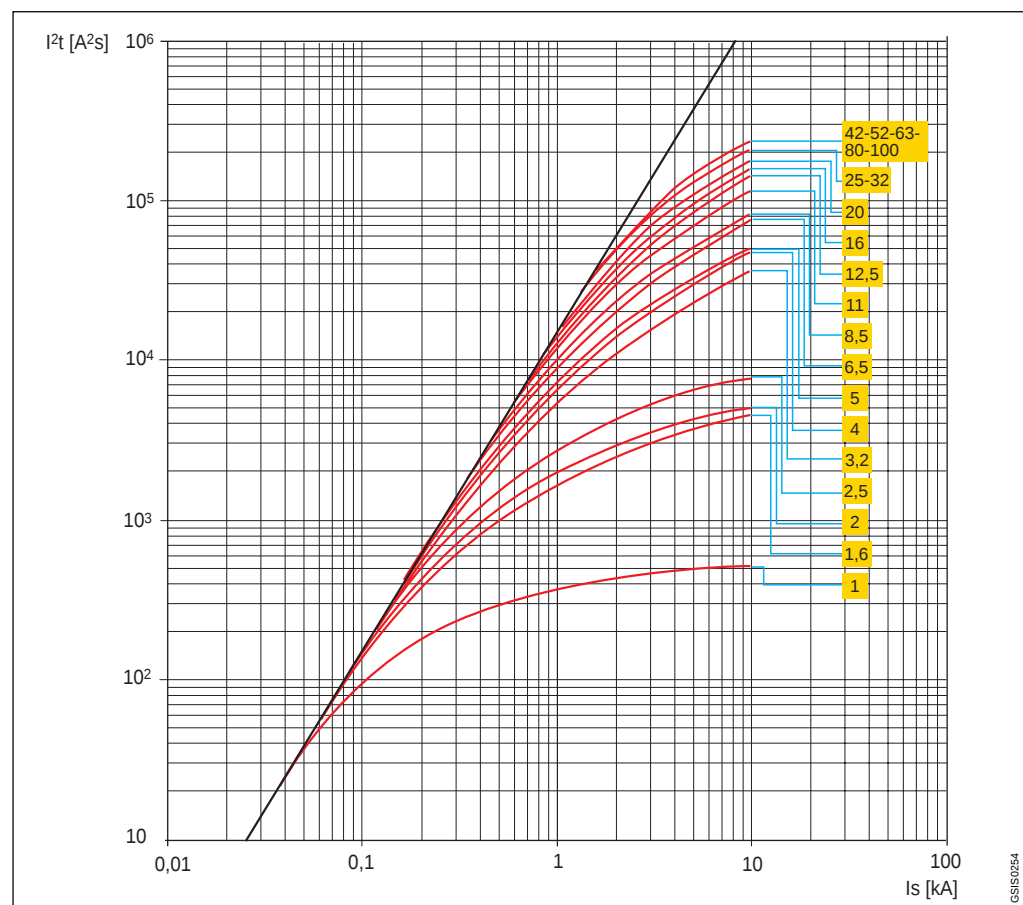
Specific let-through energy curves

690 V

**SACE S4 160,
S4 250, S5, S6 630,
S6 800, S7, S8**

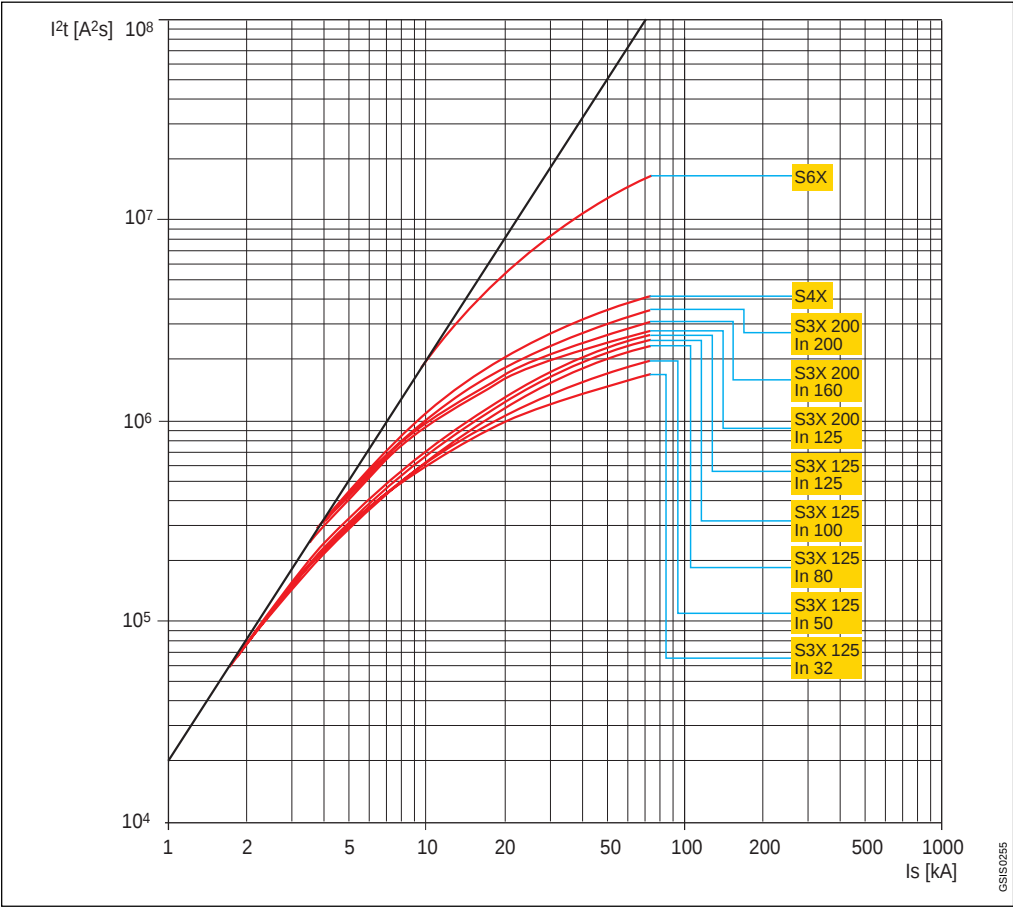


**SACE S2X 80,
S2X 100**





**SACE S3X 125,
S3X 200, S4X, S6X**





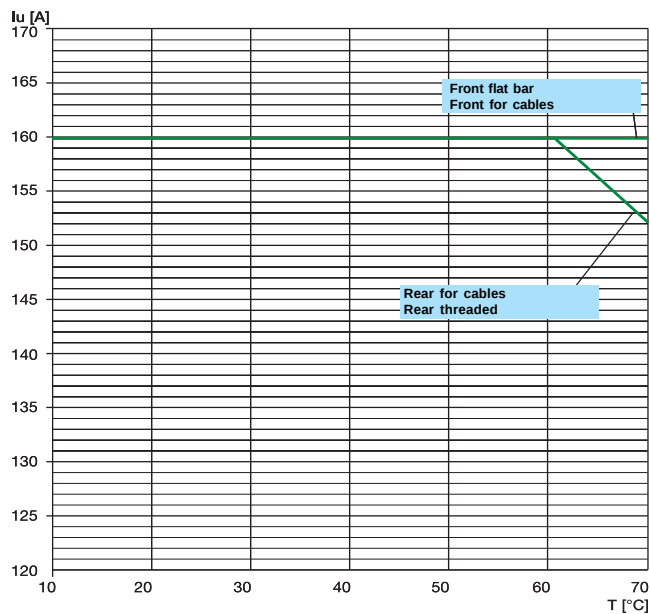
Temperature performance

Circuit-breakers with electronic releases

SACE S4 160

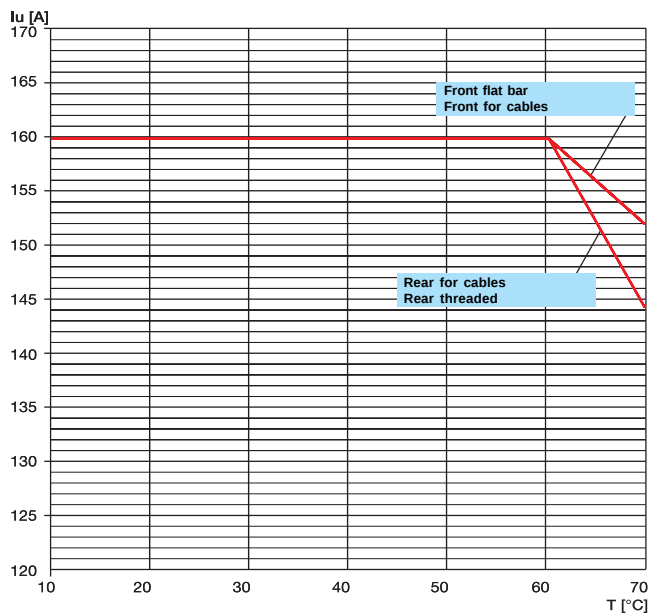
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	160	1	160	1	160	1	160	1
Front for cables	160	1	160	1	160	1	160	1
Rear for cables	160	1	160	1	160	1	152	0.95
Rear threaded	160	1	160	1	160	1	152	0.95



Plug-in - Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	160	1	160	1	160	1	152	0.95
Front for cables	160	1	160	1	160	1	152	0.95
Rear for cables	160	1	160	1	160	1	144	0.9
Rear threaded	160	1	160	1	160	1	144	0.9

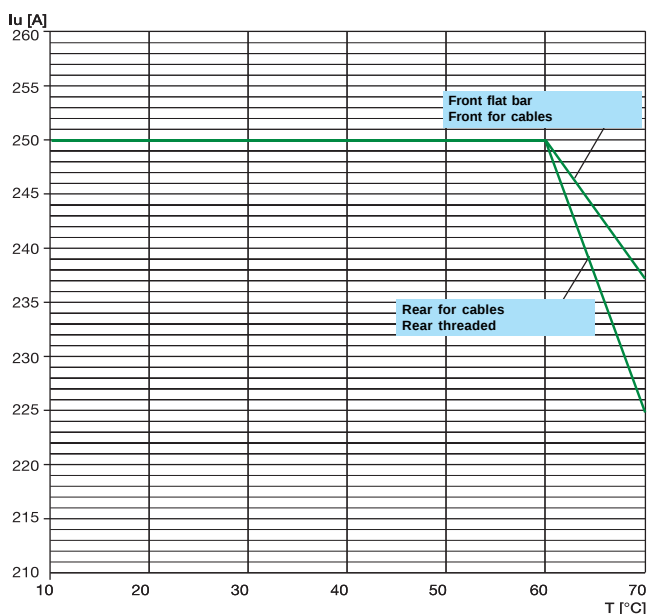


GSIS0256

SACE S4 250

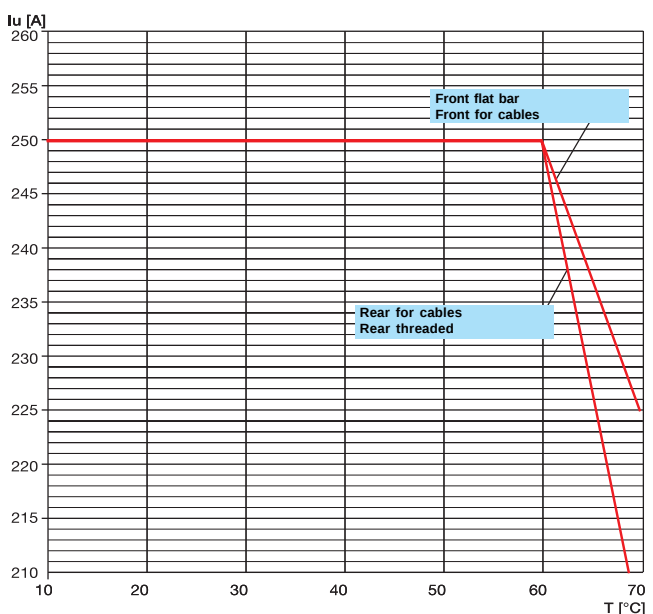
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	250	1	250	1	250	1	237.5	0.95
Front for cables	250	1	250	1	250	1	237.5	0.95
Rear for cables	250	1	250	1	250	1	225	0.9
Rear threaded	250	1	250	1	250	1	225	0.9



Plug-in - Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	250	1	250	1	250	1	225	0.9
Front for cables	250	1	250	1	250	1	225	0.9
Rear for cables	250	1	250	1	250	1	200	0.8
Rear threaded	250	1	250	1	250	1	200	0.8

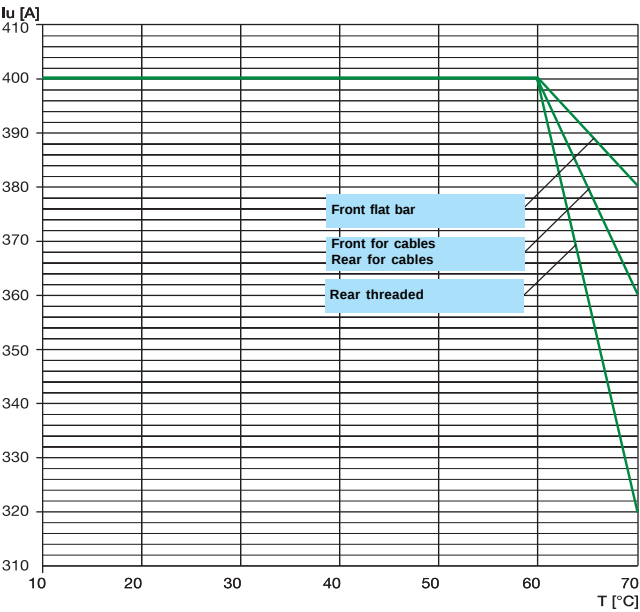


GSIS0257

SACE S5 400

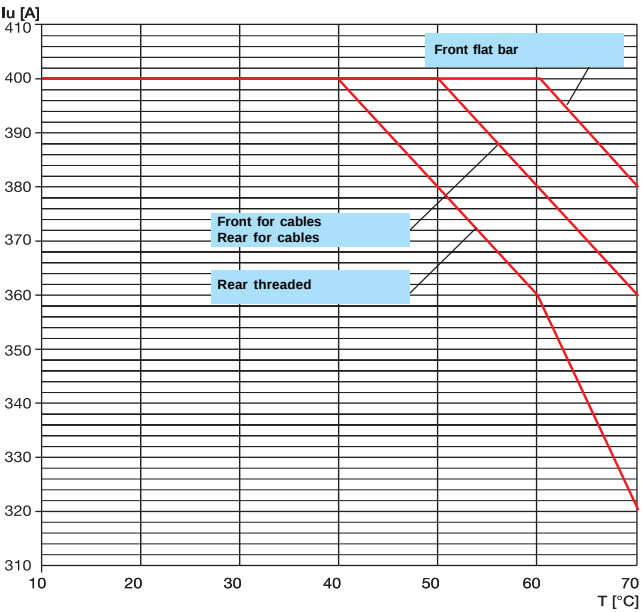
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I _{max} [A]	I ₁	I _{max} [A]	I ₁	I _{max} [A]	I ₁
Front flat bar	400	1	400	1	400	1	380	0.95
Front for cables	400	1	400	1	400	1	380	0.9
Rear for cables	400	1	400	1	400	1	360	0.9
Rear threaded	400	1	400	1	400	1	320	0.8



Plug-in - Withdrawable

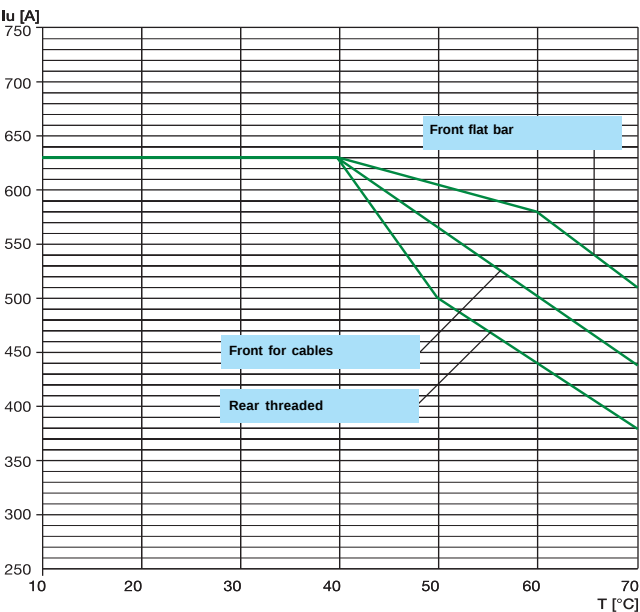
	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I _{max} [A]	I ₁	I _{max} [A]	I ₁	I _{max} [A]	I ₁
Front flat bar	400	1	400	1	400	1	380	0.95
Front for cables	400	1	400	1	380	0.95	360	0.9
Rear for cables	400	1	400	1	380	0.95	360	0.9
Rear threaded	400	1	380	0.95	360	0.9	320	0.8



SACE S5 630

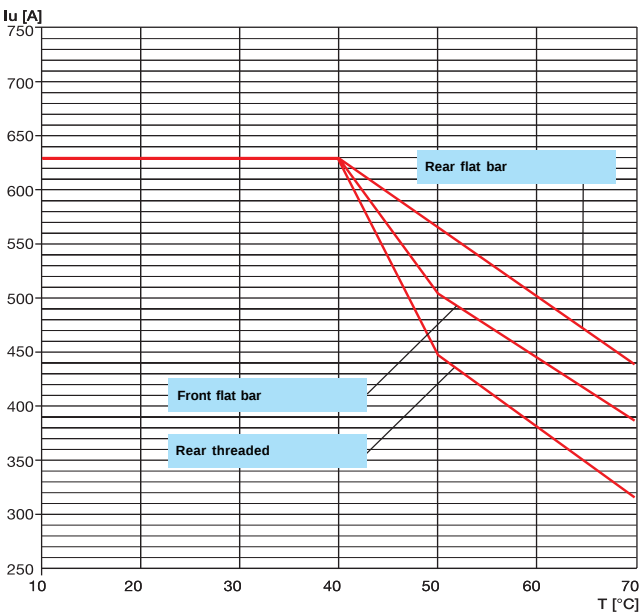
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I _{max} [A]	I ₁	I _{max} [A]	I ₁	I _{max} [A]	I ₁
Front flat bar	630	1	598.5	0.95	567	0.9	504	0.8
Front for cables	630	1	567	0.9	504	0.8	441	0.7
Rear threaded	630	1	504	0.8	441	0.7	378	0.6



Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I _{max} [A]	I ₁	I _{max} [A]	I ₁	I _{max} [A]	I ₁	I _{max} [A]	I ₁
Front flat bar	630	1	504	0.8	441	0.7	378	0.6
Rear flat bar	630	1	567	0.9	504	0.8	441	0.7
Rear threaded	630	1	441	0.7	378	0.6	315	0.5





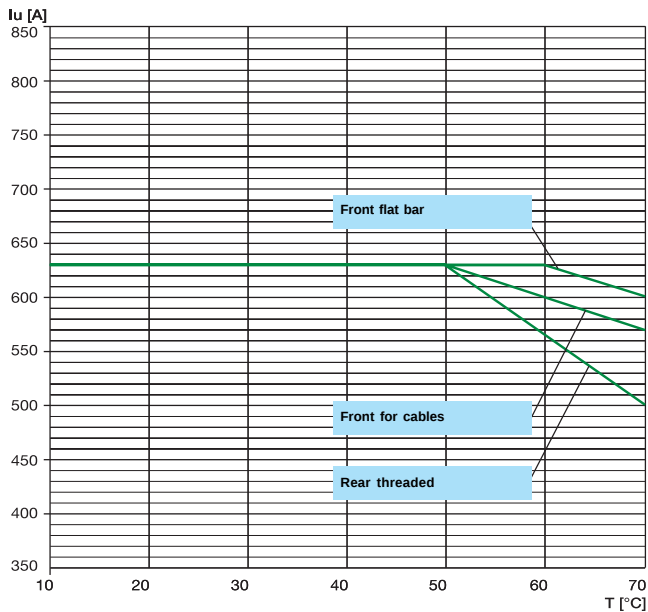
Temperature performance

Circuit-breakers with electronic releases

SACE S6 630

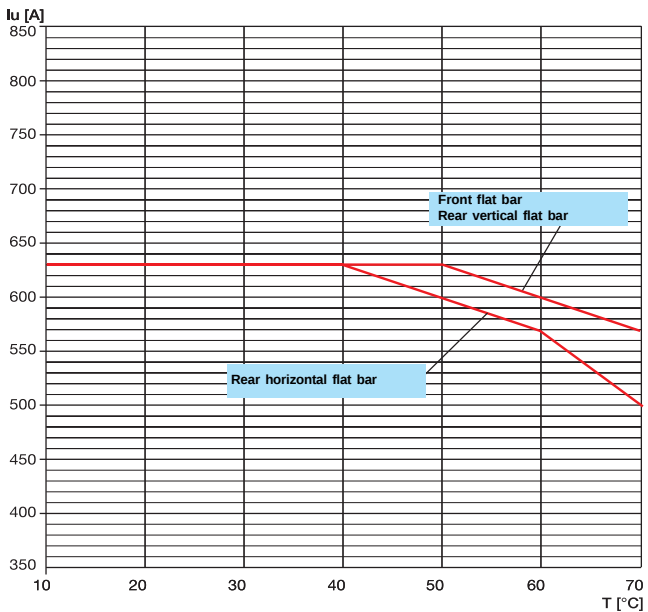
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	630	1	630	1	630	1	598.5	0.95
Front for cables	630	1	630	1	598.5	0.95	567	0.9
Rear for cables	630	1	630	1	598.5	0.95	567	0.9
Rear threaded	630	1	630	1	567	0.9	504	0.8



Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	630	1	630	1	598.5	0.95	567	0.9
Rear vertical flat bar	630	1	630	1	598.5	0.95	567	0.9
Rear horizontal flat bar	630	1	598.5	0.95	567	0.9	504	0.8

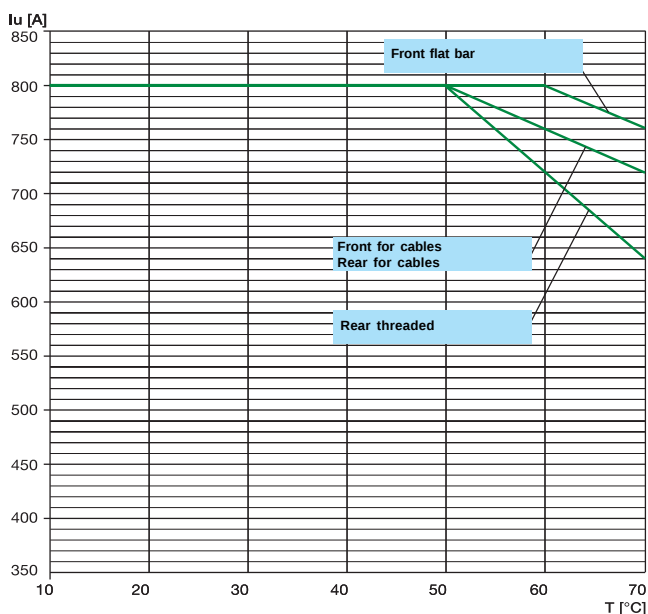


GSIS02160

SACE S6 800

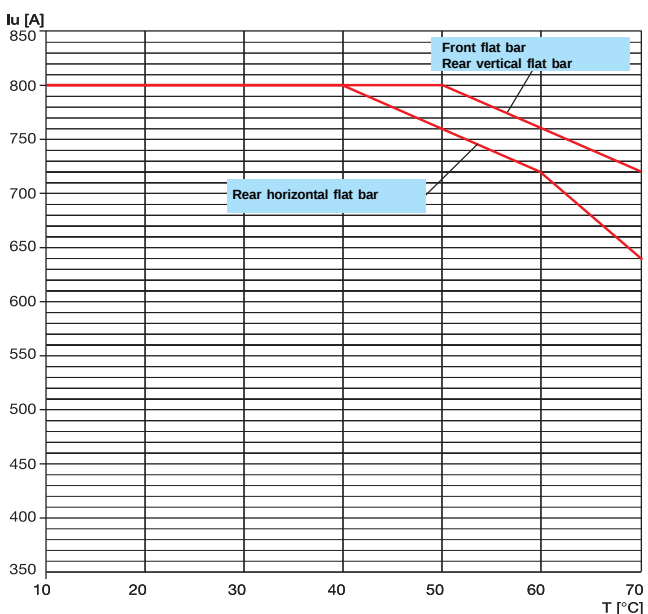
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	800	1	800	1	800	1	760	0.95
Front for cables	800	1	800	1	760	0.95	720	0.9
Rear for cables	800	1	800	1	760	0.95	720	0.9
Rear threaded	800	1	800	1	720	0.9	640	0.8



Plug-in - Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	800	1	800	1	760	0.95	720	0.9
Rear vertical flat bar	800	1	800	1	760	0.95	720	0.9
Rear horizontal flat bar	800	1	760	0.95	720	0.9	640	0.8

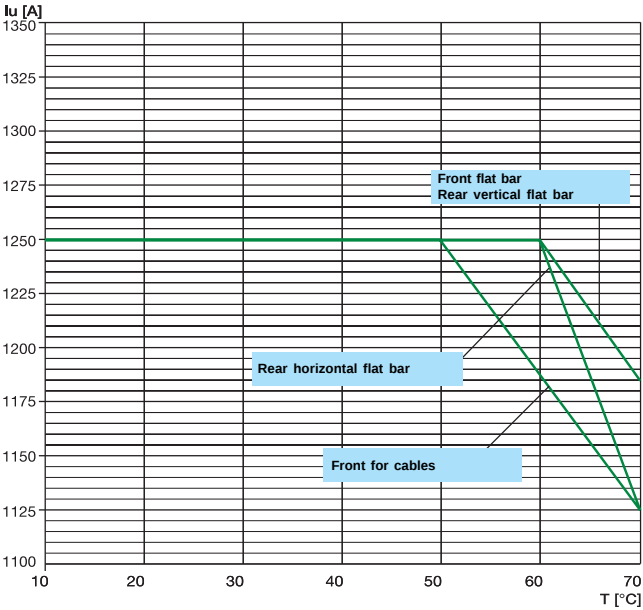


GSIS02161

SACE S7 1250

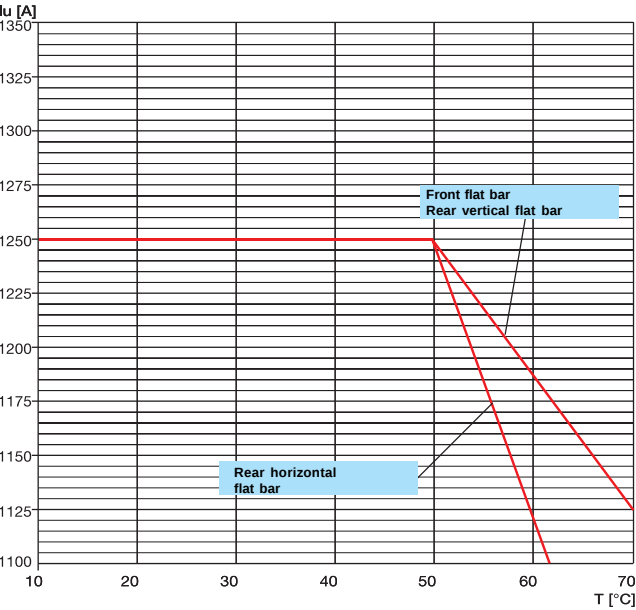
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	1250	1	1250	1	1250	1	1187.5	0.95
Rear vertical flat bar	1250	1	1250	1	1250	1	1187.5	0.95
Front for cables	1250	1	1250	1	1187.5	0.95	1125	0.9
Rear horizontal flat bar	1250	1	1250	1	1250	1	1125	0.9



Withdrawable

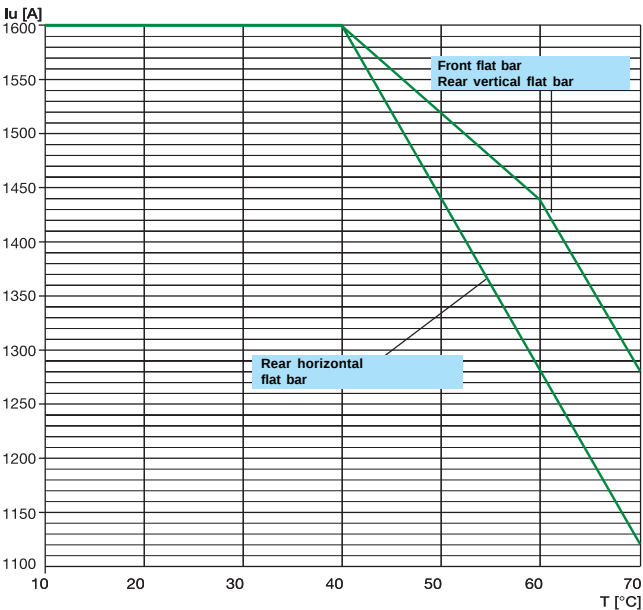
	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	1250	1	1250	1	1187.5	0.95	1125	0.9
Rear vertical flat bar	1250	1	1250	1	1187.5	0.95	1125	0.9
Rear horizontal flat bar	1250	1	1250	1	1125	0.9	1000	0.8



SACE S7 1600

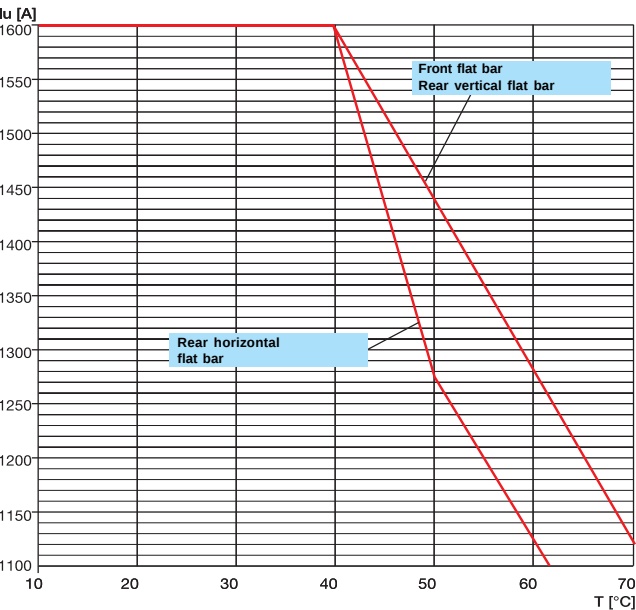
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	1600	1	1520	0.95	1440	0.9	1280	0.8
Rear vertical flat bar	1600	1	1520	0.95	1440	0.9	1280	0.8
Rear horizontal flat bar	1600	1	1440	0.9	1280	0.8	1120	0.7



Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	1600	1	1440	0.9	1280	0.8	1120	0.7
Rear vertical flat bar	1600	1	1440	0.9	1280	0.8	1120	0.7
Rear horizontal flat bar	1600	1	1280	0.8	1120	0.7	906	0.6





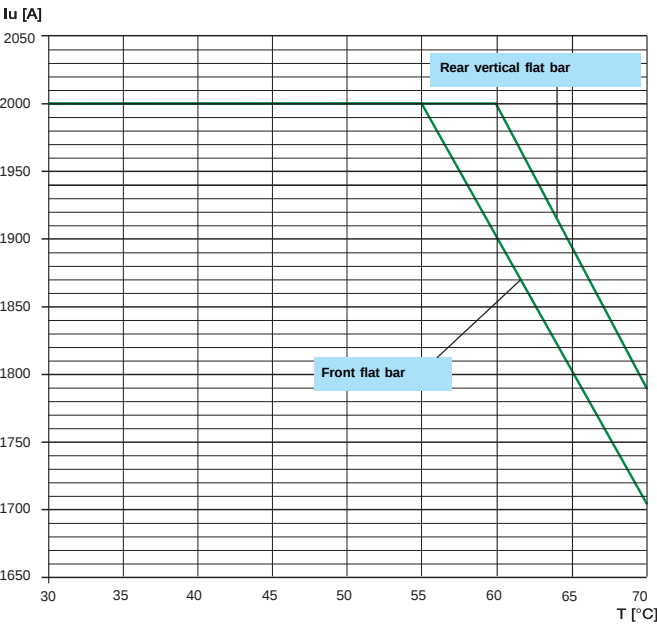
Temperature performance

Circuit-breakers with electronic releases

SACE S8 2000

Fixed

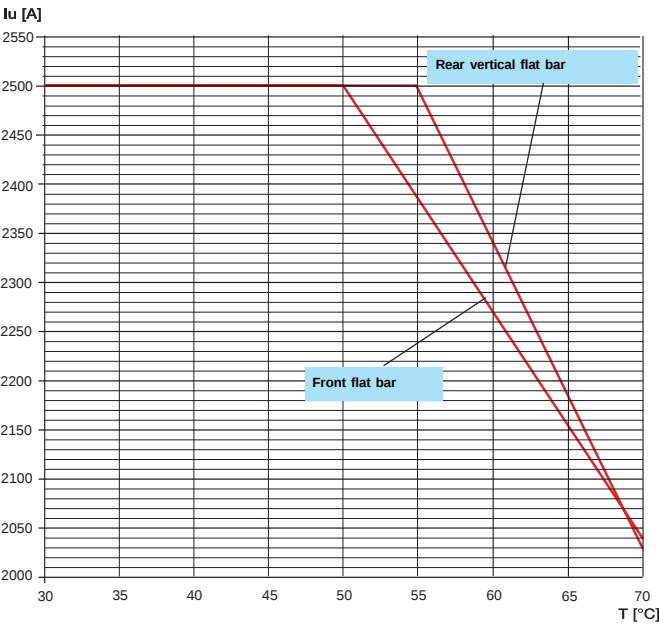
	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	2000	1	2000	1	1900	0,95	1715	0,85
Rear vertical flat bar	2000	1	2000	1	2000	1	1785	0,9



SACE S8 2500

Fixed

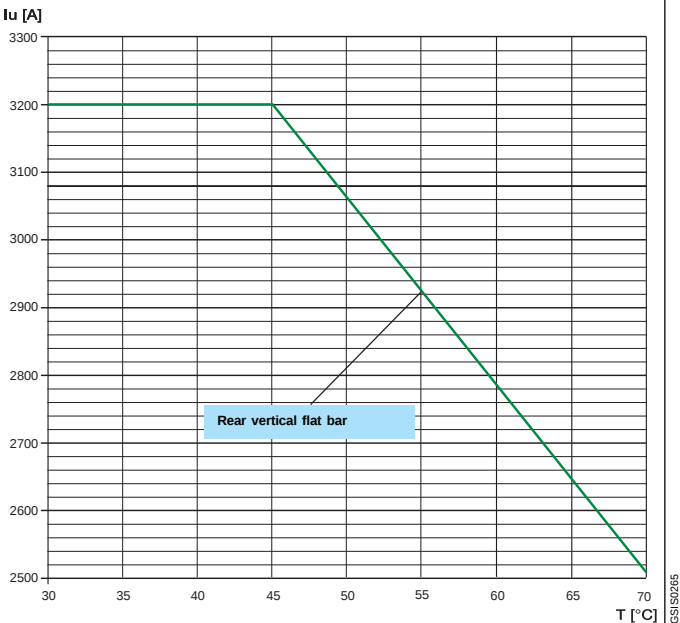
	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	2500	1	2500	1	2270	0,9	2040	0,8
Rear vertical flat bar	2500	1	2500	1	2375	0,95	2130	0,85



SACE S8 3200

Fixed

	up to 45 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Rear vertical flat bar	3200	1	3060	0,95	2780	0,85	2510	0,8





Temperature performance

Circuit-breakers with thermomagnetic releases

SACE S1

	10 °C	20 °C	30 °C	40 °C	50 °C	60 °C	70 °C
R 10	13	12	11	10	9	8	7
R 12,5	13	12	11	10	9	8	7
R 16	20	18,5	17	16	15	14	13
R 20	24	22,5	21	20	19	18	17
R 25	30	28	26,5	25	23	21	19
R 32	38	36	34	32	30	28	26
R 40	49	45	43	40	37	35	34
R 50	60	56	53	50	47	44	41
R 63	75	71	67	63	59	55	51
R 80	96	91	86	80	74	68	62
R 100	120	114	108	100	94	88	82
R 125	145	138	132	125	120	112	104

SACE S2

R 12,5	11...15,5	10...14,5	9,5...13	9...12,5	8...11,5	7,5...10,5	6,5...9,5
R 16	14...19	13...18	11,5...17	11...16	10,5...15	9,5...14	8,5...13
R 20	18...24,5	16,5...23	15...21,5	14...20	13...18	12...17	11...16
R 25	21...30	19,5...28	18,5...26,5	17,5...25	16,5...23	15...21	13...19
R 32	28...38	25,5...36	24...34	22,5...32	20,5...29	19...27	17...25
R 40	33...47	32...45	30...42	28...40	26...37	24...34	21...31
R 50	44...58	39...56	38...53	35...50	33...47	30...43	27...40
R 63	53...74	50...70	47...66	44...63	42...60	38...56	34...52
R 80	66...94	63...90	59...85	56...80	52...75	49...70	44...65
R 100	84...118	80...112	76...106	70...100	65...94	59...85	49...75
R 125	102...145	100...140	93...133	88...125	81...116	75...108	58...101
R 160	130...184	125...176	120...168	112...160	106...150	100...140	90...130

SACE S3

R 32	26...43	24...39	22...36	19...32	16...27	14...24	11...21
R 50	37...62	35...58	33...54	30...50	27...46	25...42	22...39
R 80	59...98	55...92	52...86	48...80	44...74	40...66	32...58
R 100	83...118	80...113	74...106	70...100	66...95	59...85	49...75
R 125	103...145	100...140	94...134	88...125	80...115	73...105	63...95
R 160	130...185	124...176	118...168	112...160	106...150	100...104	90...130
R 200	162...230	155...220	147...210	140...200	133...190	122...175	107...160
R 250	200...285	193...275	183...262	175...250	168...240	160...230	150...220

SACE S5 400/630

R 320	260...368	245...350	234...335	224...320	212...305	200...285	182...263
R 400	325...465	310...442	295...420	280...400	265...380	250...355	230...325
R 500	435...620	405...580	380...540	350...500	315...450	280...400	240...345

SACE S6 630/800

R 630	520...740	493...705	462...660	441...630	405...580	380...540	350...500
R 800	685...965	640...905	605...855	560...800	520...740	470...670	420...610



Power loss values

Power [W]		S1		S2		S3		S4		S5		S6		S7		S8
Setting	Iu [A]	F	P	F	P	F	P-W	F	P-W	F	P-W	F	W	F	W	F
R 10	10	4	4,5													
R 12,5	12,5	6	6,5	6	6,5											
R 16	16	8	8,5	7,5	8,5											
R 20	20	8	8,5	8	9											
R 25	25	9	9,5	10	11											
R 32	32	13	14	14	15	12	13									
R 40	40	11	12	10	11											
R 50	50	13	14	13	14	16	18									
R 63	63	15	16	16	17											
R 80	80	19	20	21	23	18	21									
R 100	100	16	17	18	20	21	25									
R 125	125	20	22	24	26	20	26									
R 160	160			30	35	30	40									
R 200	200					36	46									
R 250	250					50	65									
R 320	320									60	90					
R 400	400									65	96					
R 500	500									–	–					
R 630	630											92	117			
R 800	800											93	119			
In= 100	100							5	8							
In= 160	160							15	22							
In= 250	250							40	55							
In= 320	320									45	65					
In= 400	400									60	90					
In= 630	630									170	200	90	115			
In= 800	800											96	125			
In= 1000	1000													102	140	
In= 1250	1250													160	220	
In= 1600	1600													260	360	
In= 2000	2000															200
In= 2500	2500															315
In= 3200	3200															500

The values indicated in the table refer to balanced loads, with a current flow equal to the Iu and to both three-pole and fourpole fixed version apparatus. For the latter, the current of the neutral is nil by definition.

Power [W]		S2X 80		S2X 100		S3X		S4X		S6X	
Setting	Iu [A]	F	P	F	P	F	P-W	F	P-W	F	W
R 1	1	8	8,2	8	8,2						
R 1,6	1,6	8	8,2	8	8,2						
R 2,5	2,5	11	11,2	11	11,2						
R 4,3	4,3	11	11,2	11	11,2						
R 6,3	6,3	11	11,2	11	11,2						
R 10	10	16	16,3	16	16,3						
R 12,5	12,5	20	20,3	20	20,3						
R 16	16	10	10,6	10	10,6						
R 20	20	13	13,6	13	13,6						
R 25	25	13	13,7	13	13,7						
R 32	32	26	26,6	26	26,6						
R 40	40	26	26,9	26	26,9						
R 50	50	22	23,3	22	23,3						
R 63	63	22	24,1	22	24,1						
R 80	80	26	29,1	26	29,1						
R 100	100			30	34,4						
R 125	125					30,8	37,8				
R 200	200					48	58				
In= 250	250							60	75		
In= 400	400									80,4	101
In= 630	630									126,6	151,6

The values indicated in the table refer to balanced loads, with a current flow equal to the Iu and to both three-pole and four-pole fixed version apparatus. For the latter, the current of the neutral is nil by definition.

Shock resistance

Tests according to IEC 60068-2-27

	Shock value [g]
S1 **	12
S2 **	12
S3-S3X *	12
S4X-S4X *	12
S5 *	12
S6-S6X *	12
S7 *	12

* for fixed/plug-in/withdrawable circuit-breakers with motor operator, undervoltage release and auxiliary contacts

** for fixed/plug-in circuit-breakers with undervoltage release and auxiliary contacts

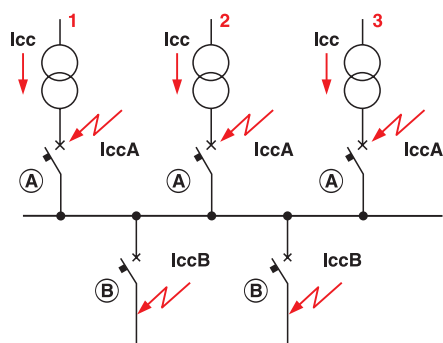


Operation and protection of the low-voltage side of three-phase transformers

In order to choose the SACE Isomax S circuit-breakers to install both on the transformer risers and on the lines branching downstream of them, reference can be made to the following table dealing with transformers with no-load voltage on the secondary equal to 400 V which is the most common condition

of use. The table has been drawn up considering infinite power upstream and the most unfavourable case has been assumed, that is, that the short circuit occurs on the transformer clamps. As regards users, the short circuit is considered downstream of the user circuit-breaker clamps.

Power supply transformers				Circuit-breaker "A"(secondary of transformer)			
P [kVA]	U _{cc} %	I _b riser [A]	I _b total [A]	I _{cc} riser [kA]	SACE Isomax S type	Release TM / PR211-212	
						type	settings
1 x 63	4	91	91	2,2	S1B125	R100	0,95
2 x 63		91	182	2,2	S1B125	R100	0,95
1 x 100	4	144	144	3,6	S2B160	R160	0,95
2 x 100		144	288	3,6	S2B160	R160	0,95
1 x 125	4	180	180	4,5	S3N/S4N250	R200/I _n = 250 A	0,95/0,8
2 x 125		180	360	4,5	S3N/S4N250	R200/I _n = 250 A	0,95/0,8
1 x 160	4	231	231	5,8	S3N/S4N250	R250/I _n = 250 A	0,95/0,95
2 x 160		231	462	5,8	S3N/S4N250	R250/I _n = 250 A	0,95/0,95
1 x 200	4	289	289	7,2	S5N400	I _n = 320 A	0,95
2 x 200		289	578	7,2	S5N400	I _n = 320 A	0,95
1 x 250	4	361	361	9	S5N400	I _n = 400 A	0,95
2 x 250		361	722	9	S5N400	I _n = 400 A	0,95
1 x 315	4	455	455	11,3	S6N630	I _n = 630 A	0,8
2 x 315		455	910	11,3	S6N630	I _n = 630 A	0,8
1 x 400	4	577	577	14,4	S6N630/S6N800	I _n = 630/800 A	0,95/0,8
2 x 400		577	1154	14,4	S6N630/S6N800	I _n = 630/800 A	0,95/0,8
1 x 500	4	722	722	18	S6N800/S7S1250	I _n = 800/1000 A	0,95/0,8
2 x 500		722	1444	18	S6N800/S7S1250	I _n = 800/1000 A	0,95/0,8
1 x 630	4	909	909	23	S7S1250	I _n = 1000 A	0,95
2 x 630		909	1818	23	S7S1250	I _n = 1000 A	0,95
3 x 630		909	2727	46	S7S1250	I _n = 1000 A	0,95
1 x 800	5	1155	1155	23	S7S1250/S7S1600	I _n = 1250/1600 A	0,95/0,8
2 x 800		1155	2310	23	S7S1250/S7S1600	I _n = 1250/1600 A	0,95/0,8
3 x 800		1155	3465	46	S7S1250/S7S1600	I _n = 1250/1600 A	0,95/0,8
1 x 1000	5	1443	1443	29	S7S1600	I _n = 1600 A	0,95
2 x 1000		1443	2886	29	S7S1600	I _n = 1600 A	0,95
3 x 1000		1443	4329	58	S7H1600	I _n = 1600 A	0,95
1 x 1250	5	1804	1804	36	S8H2000	I _n = 2000 A	0,95
2 x 1250		1804	3608	36	S8H2000	I _n = 2000 A	0,95
3 x 1250		1804	5412	72	S8H2000	I _n = 2000 A	0,95
1 x 1600	6,25	2309	2309	37	S8H2500	I _n = 2500 A	0,95
2 x 1600		2309	4618	37	S8H2500	I _n = 2500 A	0,95
3 x 1600		2309	6927	74	S8H2500	I _n = 2500 A	0,95
1 x 2000	6,25	2887	2887	46	S8H3200	I _n = 3200 A	0,95
2 x 2000		2887	5774	46	S8H3200	I _n = 3200 A	0,95
3 x 2000		2887	8661	92	S8V3200	I _n = 3200 A	0,95



GS/S0272

Circuit-breaker "B" (user outgoing)

I_{cu} user [kA]	User rated current and type of circuit-breaker									
	32 A	63 A	125 A	160 A	250 A	400 A	630 A	800 A	1250 A	1600 A
2,2	S250	S250								
4,4	S250	S250	S1B125							
3,6	S250	S250	S1B125							
7,2	S250	S250	S1B125							
4,5	S250	S250	S1B125	S2B160						
9	S250	S250	S1B125	S2B160						
5,8	S250	S250	S1B125	S2B160						
11,6	S1B125	S1B125	S1B125	S2B160	S3N250					
7,2	S250	S250	S1B125	S2B160	S3N250					
14,4	S1B125	S1B125	S1B125	S2B160	S3N250	S5N400				
9	S250	S250	S1B125	S2B160	S3N250	–				
18	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400				
11,3	S1B125	S1B125	S1B125	S2B160	S3N250	S5N400				
22,6	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630			
14,4	S1B125	S1B125	S1B125	S2B160	S3N250	S5N400	–			
28,8	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N / S6N630			
18	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630			
36	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N / S6N630	S6N800		
23	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630	S6N800		
46	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H / S6S630	S6S800	S7S1250	
69	S2X100	S2X100	S3L160	S3L160	S3L250	S5L400	S5L / S6L630	S6L800	S7L1250	
23	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630	S6N800	–	
46	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H / S6S630	S6S800	S7S1250	
69	S2X100	S2X100	S3L160	S3L160	S3L250	S5L400	S5L / S6L630	S6L800	S7L1250	
29	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N / S6N630	S6N800	S7S1250	
58	S2X100	S2X100	S3H160	S3H160	S3H250	S5H400	S5H / S6H630	S6H800	S7H1250	S7H1250
87	S4L160	S4L160	S4L160	S4L160	S4L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1250
36	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N/S6N630	S6N800	S7S1250	S7S1600
72	S3L160	S4L160	S3L160	S3L160	S3L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1250
108	S3X125	S3X125(R80)	S3X125	S3X200	S4X250	S6X400	S6X630	S8V2000	S8V2000	S8V2000
37	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H/S6S630	S6S800	S7S1250	S7S1600
74	S3L160	S3L160(R80)	S3L160	S3L160	S3L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1600
111	S3X125	S3X125(R80)	S3X125	S3X200	S4X250	S6X400	S6X630	S8V2000	S8V2000	S8V2000
46	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H/S6S630	S6S800	S7S1250	S7S1600
92	S4L160	S4L160	S4L160	S4L160	S4L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1600
138	S3X125	S3X125(R80)	S3X125	S3X200	S4X250	S6X400	S6X630	–	–	–



Operation and protection of three-phase AC capacitors

Table for choosing SACE Isomax S circuit-breakers in relation to the rated current of the bank and the power of the transformer installed.

Circuit-breaker Type	Icu 380/415 V [kA]	Rated current of release [A]	Rated current of capacitor [A]	Max electronic/ magnetic release setting PR... / TM	Maximum rating of capacitor bank in kVAR-50 Hz				Mechanical endurance		Electrical endurance	
					400 [V]	440 [V]	500 [V]	690 [V]	man	man/h	man	man/h
S1 B/N 125	16 / 25	125	83	- / Im=10 In	58	64	72	100	25000	240	8000	120
S2 B/N/S 160	16 / 35 / 50	160	107	- / Im=10 In	74	81	92	127	25000	240	8000	120
S3 N/H/L 160	35 / 65 / 85	160	107	- / Im=10 In	74	81	92	127	25000	120	10000	120
S3 N/H/L 250	35 / 65 / 85	250	167	- / Im=10 In	115	127	144	199	25000	120	8000	120
S4 N/H/L 160	35 / 65 / 100	160	107	I ₃ =OFF / -	74	81	92	127	20000	120	10000	120
S4 N/H/L 250	35 / 65 / 100	250	167	I ₃ =OFF / -	115	127	144	199	20000	120	8000	120
S5 N/H/L 400	35 / 65 / 100	400	267	I ₃ =OFF / Im=10 In	185	203	231	319	20000	120	7000	60
S5 N/H/L 630	35 / 65 / 100	500/630	333	I ₃ =OFF / Im=10 In	231	254	288	398	20000	120	5000	60
S6 N/S/H/L 630	35/50/65/100	630	420	I ₃ =OFF / Im=10 In	291	320	364	502	20000	120	7000	60
S6 N/S/H/L 800	35/50/65/100	800	533	I ₃ =OFF / Im=10 In	369	406	462	637	20000	120	5000	60
S7 S/H/L 1250	50 / 65 / 100	1250	833	I ₃ =OFF / -	577	635	722	996	10000	120	7000	20
S7 S/H/L 1600	50 / 65 / 100	1600	1067	I ₃ =OFF / -	739	813	924	1275	10000	120	5000	20
S8 H/V 2000	85 / 120	2000	1333	I ₃ =OFF / -	924	1016	1155	1593	10000	120	3000	20
S8 H/V 2500	85 / 120	2500	1667	I ₃ =OFF / -	1155	1270	1443	1992	10000	120	2500	20
S8 H/V 3200	85 / 120	3200	2133	I ₃ =OFF / -	1478	1626	1847	2550	10000	120	1500	10

Coefficient for calculating capacitor bank power in kVAR/kW
to increase the $\cos\phi$ value.

	Cos ϕ to be obtained												
Initial Cos ϕ	0,81	0,85	0,9	0,91	0,92	0,93	0,94	0,95	0,96	0,97	0,98	0,99	1
0,60	0,584	0,714	0,849	0,878	0,905	0,939	0,971	1,005	1,043	1,083	1,131	1,192	1,334
0,61	0,549	0,679	0,815	0,843	0,870	0,904	0,936	0,970	1,008	1,048	1,096	1,157	1,299
0,62	0,515	0,645	0,781	0,809	0,836	0,870	0,902	0,936	0,974	1,014	1,062	1,123	1,265
0,63	0,483	0,613	0,749	0,777	0,804	0,838	0,870	0,904	0,942	0,982	1,030	1,091	1,233
0,64	0,450	0,580	0,716	0,744	0,771	0,805	0,837	0,871	0,909	0,949	0,997	1,058	1,200
0,65	0,419	0,549	0,685	0,713	0,740	0,774	0,806	0,840	0,878	0,918	0,966	1,007	1,169
0,66	0,388	0,518	0,654	0,682	0,709	0,743	0,775	0,809	0,847	0,887	0,935	0,996	1,138
0,67	0,358	0,488	0,624	0,652	0,679	0,713	0,745	0,779	0,817	0,857	0,905	0,966	1,108
0,68	0,329	0,459	0,595	0,623	0,650	0,684	0,716	0,750	0,788	0,828	0,876	0,937	1,079
0,69	0,299	0,429	0,565	0,593	0,620	0,654	0,686	0,720	0,758	0,798	0,840	0,907	1,049
0,70	0,270	0,400	0,536	0,564	0,591	0,625	0,657	0,691	0,729	0,769	0,811	0,878	1,020
0,71	0,242	0,372	0,508	0,536	0,563	0,597	0,629	0,663	0,701	0,741	0,783	0,850	0,992
0,72	0,213	0,343	0,479	0,507	0,534	0,568	0,600	0,634	0,672	0,712	0,754	0,821	0,963
0,73	0,186	0,316	0,452	0,400	0,507	0,541	0,573	0,607	0,645	0,685	0,727	0,794	0,936
0,74	0,159	0,289	0,425	0,453	0,480	0,514	0,546	0,580	0,618	0,658	0,700	0,767	0,909
0,75	0,132	0,262	0,398	0,426	0,453	0,487	0,519	0,553	0,591	0,631	0,673	0,740	0,882
0,76	0,105	0,235	0,371	0,399	0,426	0,460	0,492	0,526	0,564	0,604	0,652	0,713	0,855
0,77	0,079	0,209	0,345	0,373	0,400	0,434	0,466	0,500	0,538	0,578	0,620	0,687	0,829
0,78	0,053	0,182	0,319	0,347	0,374	0,408	0,440	0,474	0,512	0,552	0,594	0,661	0,803
0,79	0,026	0,156	0,292	0,320	0,347	0,381	0,413	0,447	0,485	0,525	0,567	0,634	0,776
0,80		0,130	0,266	0,294	0,321	0,355	0,387	0,421	0,459	0,499	0,541	0,608	0,750
0,81		0,104	0,240	0,268	0,295	0,329	0,361	0,395	0,433	0,473	0,515	0,582	0,724
0,82		0,078	0,214	0,242	0,269	0,303	0,335	0,369	0,407	0,447	0,489	0,556	0,698
0,83		0,052	0,188	0,216	0,243	0,277	0,309	0,343	0,381	0,421	0,462	0,530	0,672
0,84		0,026	0,162	0,190	0,217	0,251	0,283	0,317	0,355	0,395	0,437	0,504	0,645
0,85			0,136	0,164	0,191	0,225	0,257	0,291	0,329	0,369	0,417	0,478	0,620
0,86			0,109	0,140	0,167	0,198	0,230	0,264	0,301	0,343	0,390	0,450	0,593
0,87			0,083	0,114	0,141	0,172	0,204	0,238	0,275	0,317	0,364	0,424	0,567
0,88			0,054	0,085	0,112	0,143	0,175	0,209	0,246	0,288	0,335	0,395	0,538
0,89			0,028	0,059	0,086	0,117	0,149	0,183	0,230	0,262	0,309	0,369	0,512
0,90				0,031	0,058	0,089	0,121	0,155	0,192	0,234	0,281	0,341	0,484



Protection of three-phase AC generators (U_e = 400 V)

Power generator	In	S1 125	S2 160	S3 160	S3 250	S4 160	S4 250	S5 400	S5 630	S6 630	S6 800	S7 1250	S7 1600	S8 2000	S8 2500	S8 3200
[kVA]	[A]	R	R	R	R	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]
40						100										
50						100										
63	91	100	100	100		100										
100	144,5		160	160	200	160	250	320								
160	231,2				250		250	320								
200	289							320	630	630						
250	361							400	630	630	800					
315	455								630	630	800	1000				
400	578								630	630	800	1000				
500	723										800	1000	1600			
630	910											1000	1600			
800	1156											1250	1600			
1000	1445												1600			
1120	1617												1600			
1250	1804													2000		
1400	2021														2500	
1600	2309														2500	
2000	2887															3200



Applications in direct current

Connection diagrams

Suitable connection arrangements must be adopted to obtain the number of poles in series necessary to guarantee the

breaking capacity required at the various operating voltages.

Circuit protection and isolation with three-pole circuit-breakers

Diagram A: breaking with 1 pole per polarity

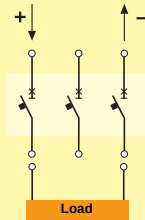


Diagram B: breaking with 2 poles in series per polarity and 1 pole for the other polarity

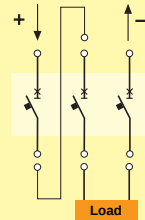
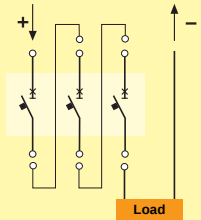


Diagram C: breaking with 3 poles in series per polarity



Poles in parallel

Diagram D: breaking with 2 poles in parallel per polarity

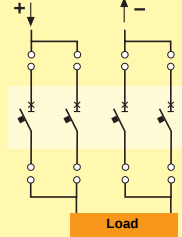
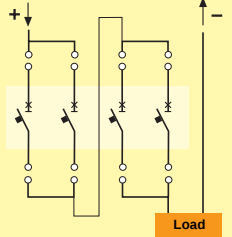


Diagram E: breaking with series of 2 poles in parallel per polarity



Use at 1000 V DC with four-pole circuit-breakers

Diagram F: breaking with 4 poles in series for one polarity

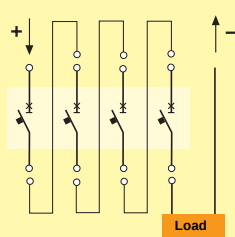


Diagram G: 3+1 poles in series

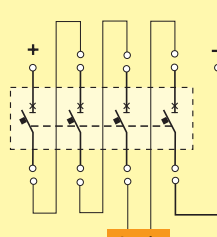
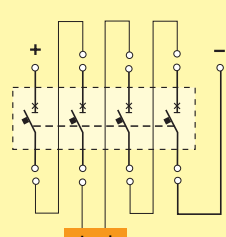


Diagram H: 2+2 poles in series



GS150271

5

The following table shows which connection arrangement to adopt according to the number of poles to connected in series

to obtain the required breaking capacity for the type of distribution network.

Rated voltage	Function		Distribution network		
	Protection	Isolation	isolated from earth	with one polarity* to earth	with median point to earth
≤ 250	■	■	A, D	A, D	A, D
	■		-	E	-
≤ 500	■	■	A, D	B	A, D
	■		-	C, E	-
≤ 750	■	■	B	G	H
	■		-	C	-
≤ 1000	■	■	G, H	-	H
	■		-	F	-

* The negative pole is assumed to be earthed.

Notes
 1) The risk of a double fault to earth being sufficient for the fault current to affect only one side of the circuit breaking poles is considered negligible.
 2) For rated voltages greater than 750V the 1000 VDC range is required.
 3) Diagram D and diagram E only for S6.



Applications in direct current

Connection diagrams

Example of tripping threshold adjustment in DC - diagram A

Setting	S1 125			S2 160			S3 160			S3 250		
	I_{th}	$I_m=10 I_{th}$	$I_m=5 I_{th}$	I_{th}	$I_m=10 I_{th}$	$I_m=5 I_{th}$	I_{th}	$I_m=10 I_{th}$	$I_m=5 I_{th}$	I_{th}	$I_m=10 I_{th}$	$I_m=5 I_{th}$
R 10	10		208									
R 12.5	12,5		208	9÷12,5		208						
R 16	16		208	11,2÷16		208						
R 20	20	650	260	14÷20	650	260						
R 25	25	650	260	17,5÷25	650	260						
R 32	32	650	260	22,5÷32	650	260	19÷32	650	390			
R 40	40	650	260	28÷40	650	260						
R 50	50	650	325	35÷50	650	325	30÷50	650	390			
R 63	63	819	416	44÷63	819	416						
R 80	80	1040	520	56÷80	1040	520	48÷80	1040	520			
R 100	100	1300	650	70÷100	1300	650	70÷100	1300	650			
R 125	125	1625	819	87,5÷125	1625	819	87,5÷125	1625	819			
R 160				112÷160	2080	1040	112÷160	2080	1040			
R 200										140÷200	2600	1300
R 250										175÷250	3250	1625

N.B. For the lower settings R10, R12.5, R16 only the version $I_m=5 I_{th}$ can be used

The correction value to adopt for the protection thresholds of each circuit-breaker is shown in the following table.

Circuit-breaker	Diagram A	Diagram B	Diagram C	Diagram F	Diagram G	Diagram H
S1	$k_m = 1$	$k_m = 1$	$k_m = 1$	—	—	—
S2	$k_m = 1$	$k_m = 1$	$k_m = 1$	—	—	—
S3	$k_m = 1$	$k_m = 1,15$	$k_m = 1,15$	$k_m = 1$	$k_m = 1$	$k_m = 1$
S5	$k_m = 1,1$	$k_m = 1$	$k_m = 1$	$k_m = 1,1$	$k_m = 1,1$	$k_m = 1,1$
S6	$k_m = 1,1$	$k_m = 1$	$k_m = 1$	$k_m = 0,9$	$k_m = 0,9$	$k_m = 0,9$

Setting	S5 400		S5 630		S6 630		S6 800	
	$I_{th}=0,7\div1I_n$	$I_m=5\div10I_n$	$I_{th}=0,7\div1I_n$	$I_m=5\div10I_n$	$I_{th}=0,7\div1I_n$	$I_m=5\div10I_n$	$I_{th}=0,7\div1I_n$	$I_m=5\div10I_n$
R 320	225÷320	1760÷3520						
R 400	280÷400	2200÷4400						
R 500			350÷500	2750÷5500				
R 630					440÷630	3065÷6930		
R 800							560÷800	4400÷8800

Using these the correction factors means that the tripping current values will be higher for the same tripping threshold, or, vice versa, that having identified the tripping value one needs to set the tripping threshold following the reclassified scale range.

Example

- Operating current: $I_b = 600$ A
- Magnetic protection required: $I_m = 5000$ A
- Magnetic protection required to set:

$$\text{set} = \frac{I_m}{k_m \times I_n}$$

therefore in this specific case, having chosen circuit-breaker S6 R630 ($I_n = 630$ A), the magnetic threshold setting value will be:

$$\text{set} = \frac{5000}{1,1 \times 630} \approx 7$$



Backup protection

(backup table with Ue = 400 V~)

The table below shows the backup protection available, with the related breaking capacities for the rated voltage Ue=400V~, between ABB moulded-case and air low voltage

circuit-breakers (SACE Isomax S, SACE Limitor LNA and SACE Emax) and pro M system modular circuit-breakers.

CIRCUIT-BREAKER UPSTREAM																	
In [A] ≤	S270	S280/20	S280/20	S290	S500	S1B 125	S2B 160	S1N 125	S2N 160	S3N 250	S4N 250	S5N 630	S6N 800	S2S 160	S6S 800	S7S 1600	
Icu [kA]	15	20	25	15	50	16	16	25	35	35	35	35	35	50	50	50	
CIRCUIT-BREAKER DOWNSTREAM																	
10						S240	S240	S240	S240					S240			
15	S240 S250			S240 S250													
16						S250	S250			S250	S250						
20		S240 S250 S270						S250	S250		S270	S1B S2B	S1B S2B	S250	S1B S2B		
25			S240 S250 S270					S270 S280/20 S280/25 S1B	S270	S270 S280/20	S280/20 S1B S2B			S270			
30					S240				S280/20	S280/25	S280/25			S280/20			
35									S280/25 S1B S1N S2B	S1B S1N S2B	S1N	S1N	S1N	S280/25			
40					S250										S1N	S3N S4N S5N S6N	
50					S270 S280/20 S280/25 S1B S1N									S1B S1N S2B S2N	S2N S3N S4N S5N		
65																	
85																	
100																	
130																	
150																	
170																	
200																	

S250: S250, S260, S270K
S270: S270 (B-C-D), S280 (ln = 3 ... 8 A),
 S280 (ln = 50 ... 63 A), S290
S280/20: S280 (ln = 32 ... 40 A)
S280/25: S280 (ln = 10... 25 A)

5



Overall dimensions and circuit diagrams

Index

Overall dimensions

SACE Isomax S1-S2

Fixed circuit-breaker	6/2
Plug-in circuit-breaker	6/3
Circuit-breaker with SACE RC210-RC211-RC212 residual current releases	6/4
Accessories	6/5

SACE Isomax S3-S4-S5-S3X-S4X

Fixed circuit-breaker	6/7
Mounting parts for fixed circuit-breaker	6/9
Plug-in circuit-breaker - withdrawable circuit-breaker	6/10
Mounting parts for plug-in circuit-breaker - withdrawable circuit-breaker	6/11
SACE S3 circuit-breaker with SACE RC211/3 - RC212/3 residual current releases	6/12
Accessories	6/14

SACE Isomax S6-S6X

Fixed circuit-breaker	6/18
Mounting parts for fixed circuit-breaker	6/20
Withdrawable circuit-breaker	6/22
Mounting parts for withdrawable circuit-breaker	6/23
Accessories	6/24

SACE Isomax S7

Fixed circuit-breaker	6/28
Mounting parts for fixed circuit-breaker	6/29
Withdrawable circuit-breaker	6/30
Mounting parts for withdrawable circuit-breaker	6/31
Accessories	6/32

SACE Isomax S8

Fixed circuit-breaker	6/36
Mounting parts for fixed circuit-breaker	6/37

Distances to be respected	6/38
--	-------------

Minimum distance between centres	6/39
---	-------------

Circuit diagrams

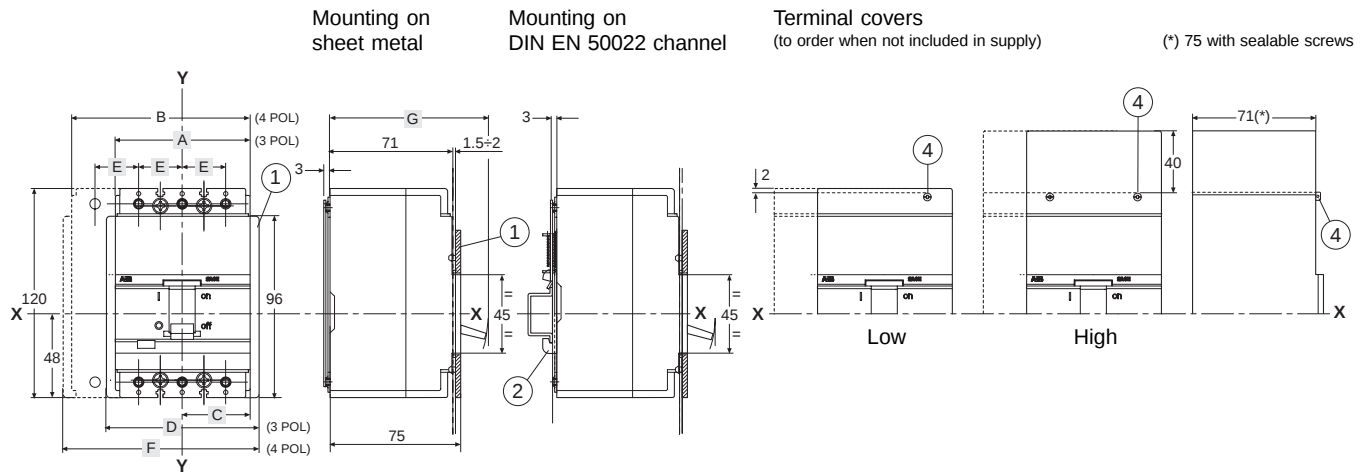
Index	6/41
--------------------	-------------



Overall dimensions

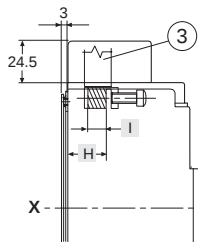
SACE S1-S2

Fixed circuit-breaker

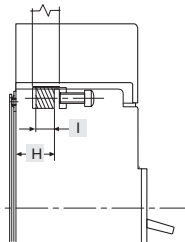


Terminals

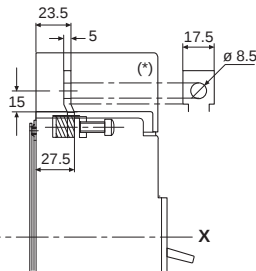
Front for Cu cables or flat bars
(with separator plates between the phases)



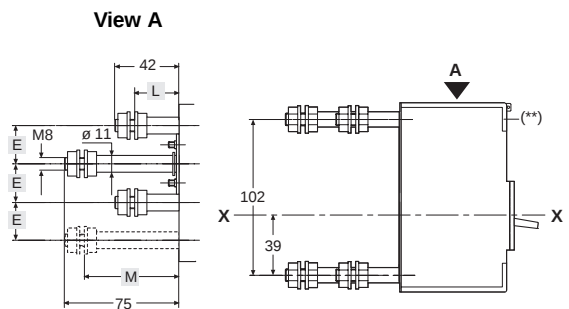
Front for Cu cables or flat bars
(with high or low terminal covers)



Extended front for S2
(*) high terminal covers included in supply



Threaded rear
(**) low terminal covers included in supply (protection class IP20)

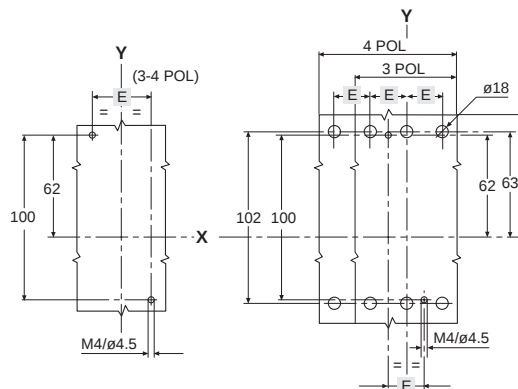


Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)

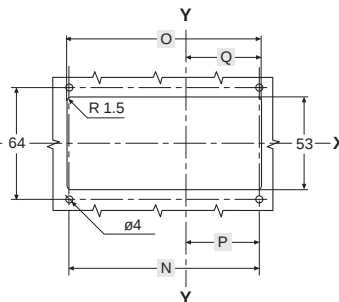
For front terminals

For threaded rear terminals



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 1.5 - 2 mm)



Key

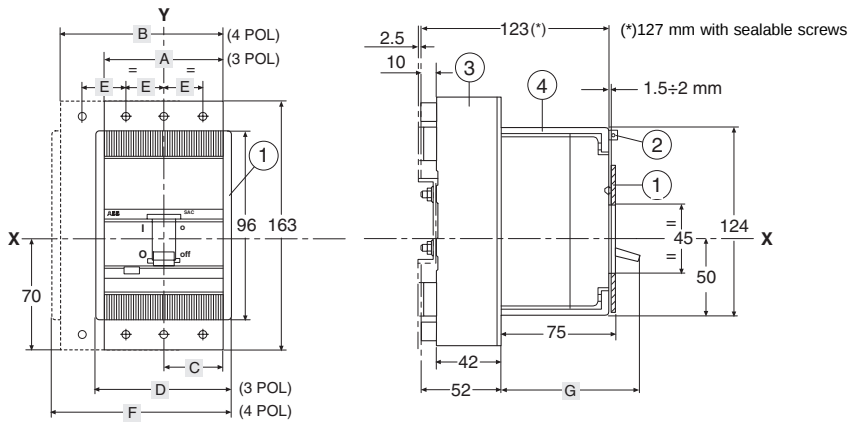
- ① Flange for compartment door
- ② Bracket for fitting circuit-breaker on DIN channel (to order)
- ③ Separator plate
- ④ Sealable screws

GSIS0001

	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	...	...	...
	3 POL	4 POL	3 POL	4 POL	3 POL	4 POL	3 POL	4 POL	3 POL	4 POL	3 POL	4 POL	3 POL	4 POL	3 POL	4 POL	3 POL	4 POL
S1	78	103	39	91	25	116	91	25.5	10.5 x 11	29	62	83.5	108.5	86	111	42	43	...
S2	90	120	45	103	30	133	93	27.5	12.5 x 12.5	27	60	95.5	125.5	98	128	48	49	...

Plug-in circuit-breaker

Fixed parts mounted on sheet metal or channel
(terminal covers for mobile part with IP20 always included in supply)

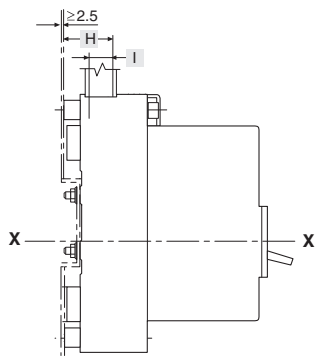


Key

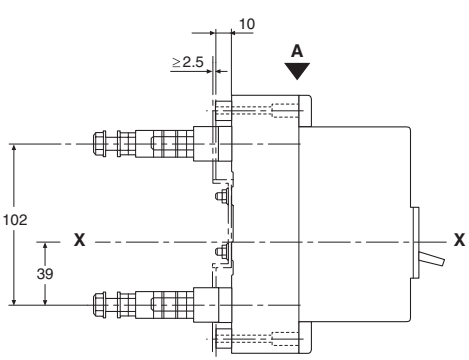
- ① Flange for compartment door
- ② Sealable screws
- ③ Fixed part
- ④ Moving part complete with terminal covers

Terminals

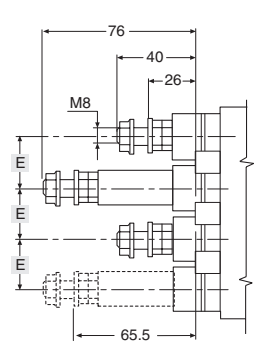
Front



Threaded rear



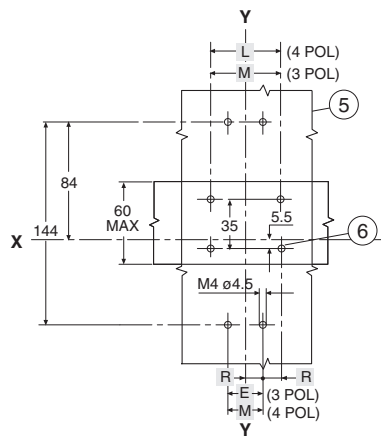
View A



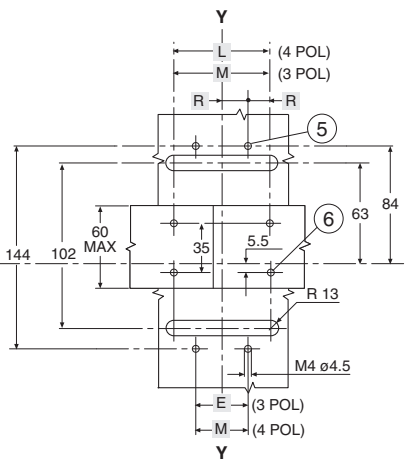
Drilling template for support (5) or channel (6)

(minimum thickness of sheet metal: 2.5 mm)

For front terminals

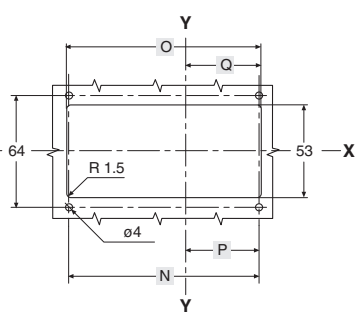


For threaded rear terminals



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 1.5 - 2 mm)



	A	B	C	D	E	F	G	H	I	L	M	N		O		P	Q	R	...	...
												3 POL	4 POL	3 POL	4 POL					
S1	78	103	39	91	25	116	91	28	10.5 x 11	75	50	83.5	108.5	86	111	42	43	12.5	...	...
S2	90	120	45	103	30	133	93	28	12.5 x 12.5	90	60	95.5	125.5	98	128	48	49	15	...	...

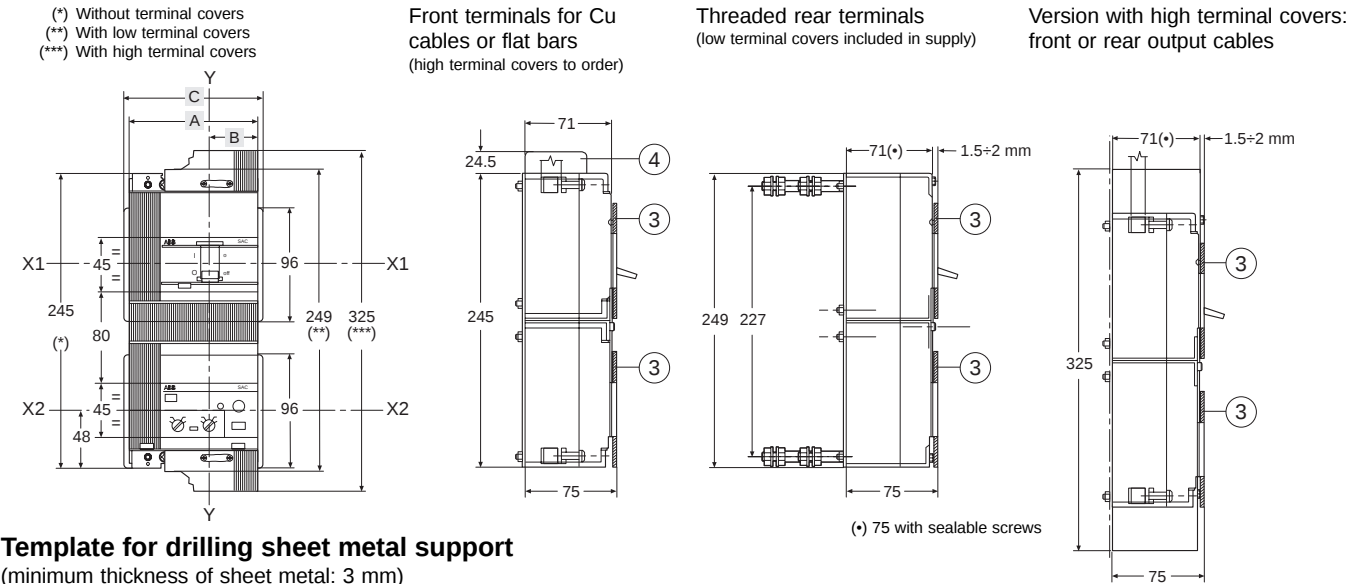


Overall dimensions

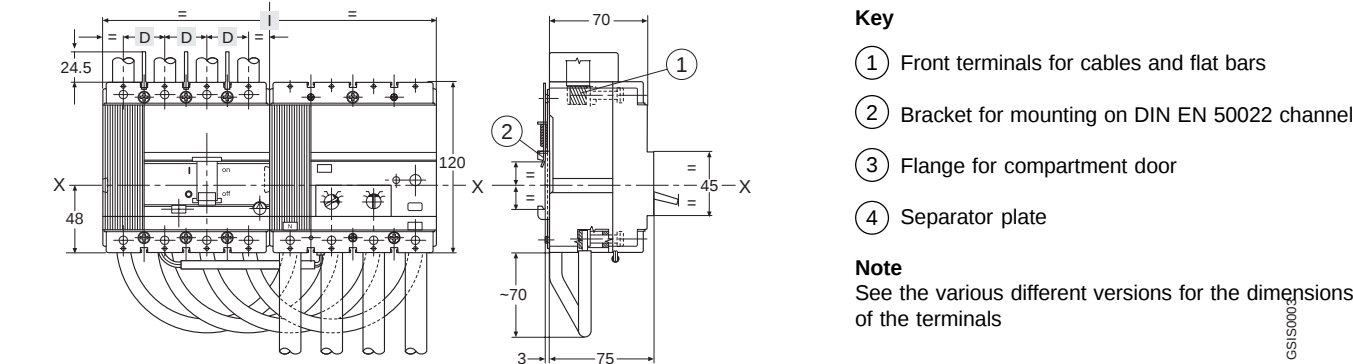
SACE S1-S2

Circuit-breaker with SACE RC210-RC211-RC212 residual current release

Vertical installation RC211-RC212 (mounting on sheet metal)



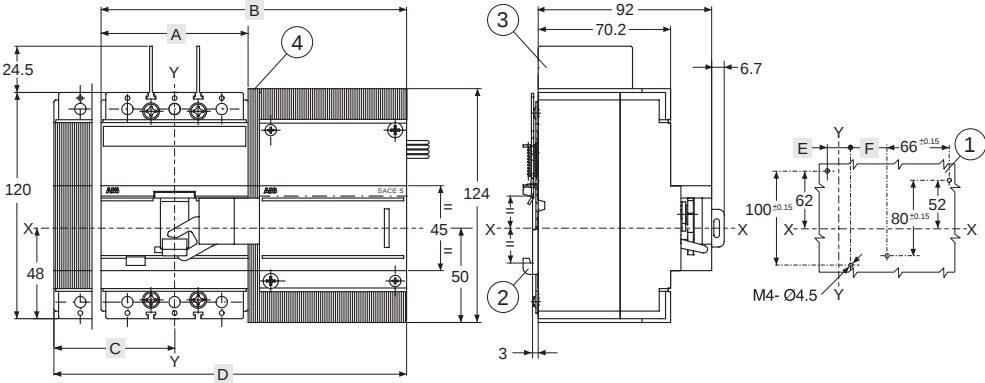
Horizontal installation SACE RC210-RC211-RC212



	A	B	C	D	E	F	G	H	I
S1 - RC210	—	—	—	25	—	—	—	—	206
S1 - RC211/RC212	103	39	116	25	43	41.7	111	108.5	206
S2 - RC211/RC212	120	45	133	30	49	47.7	128	125.5	240

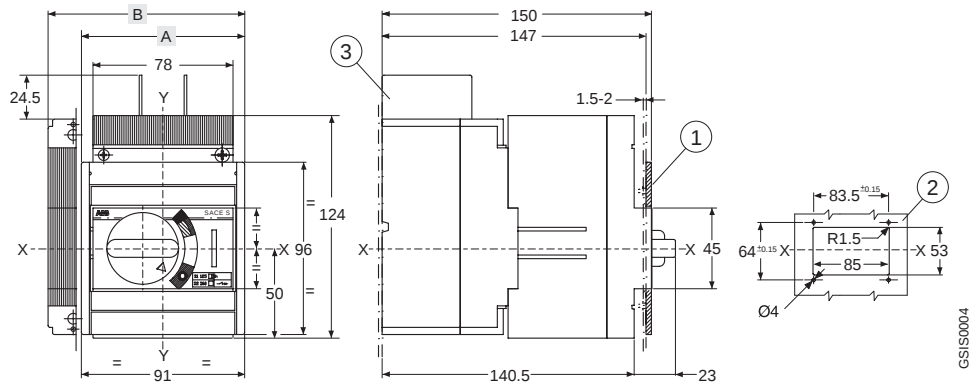
Accessories

Solenoid operator at the side of the circuit-breaker



	A 3 POL	B 3 POL	C 4 POL	D 4 POL	E	F
S1	78	162	64	187	25 ± 0.15	38.5 ± 0.2
S2	90	168	75	198	30 ± 0.1	36 ± 0.2

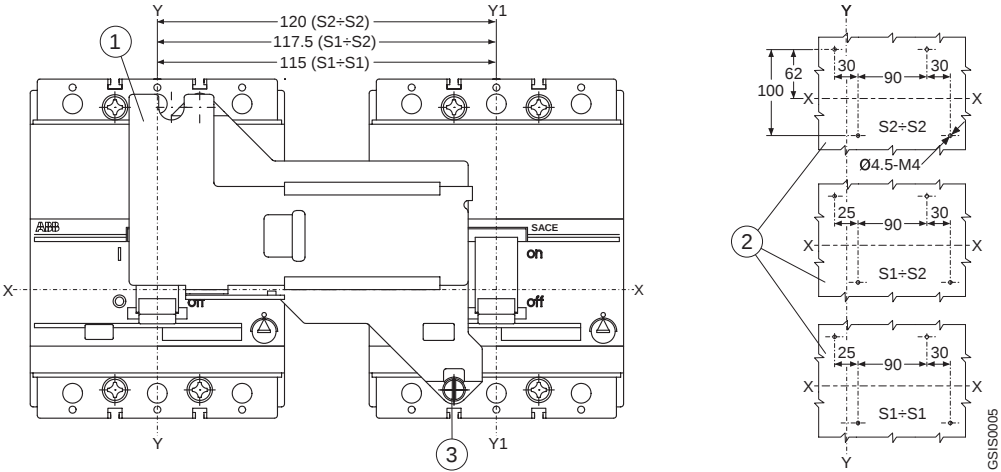
Solenoid operator on the front of the circuit-breaker



- Key**
- 1 Flange for compartment door
 - 2 Template for drilling compartment door and fitting flange
 - 3 Separator plates between the phases

	A 3 POL	B 4 POL
S1	78	103
S2	90	120

Interlock across two horizontally-installed circuit-breakers



Note
See the various different versions for the dimensions of the circuit-breakers



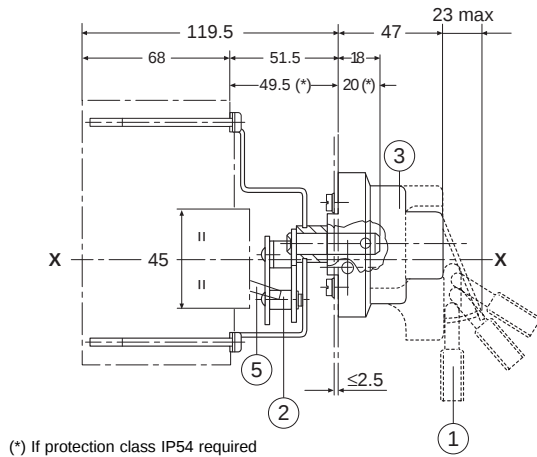
Overall dimensions

SACE S1-S2

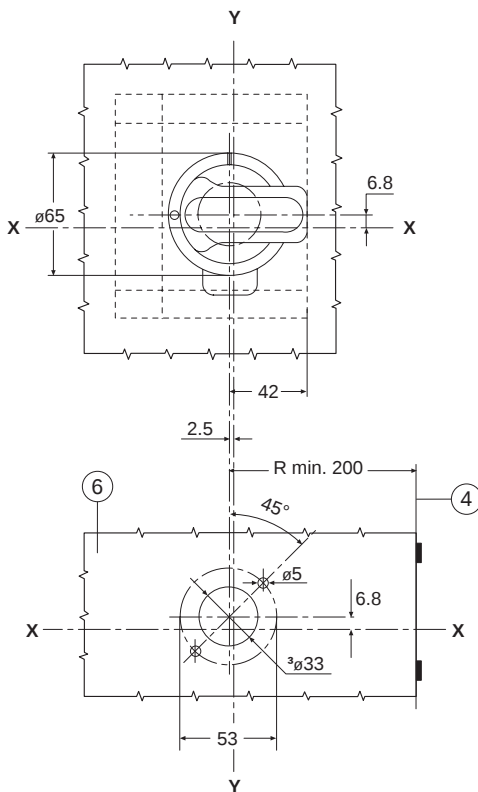
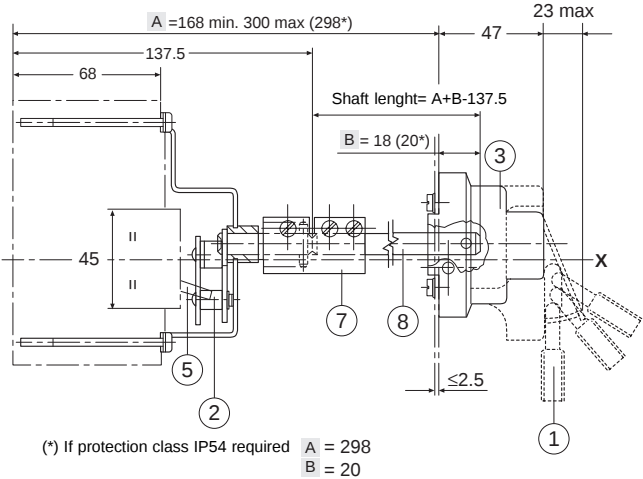
Accessories

Compartment door-mounted rotary handle operating mechanism for fixed or plug-in circuit-breakers

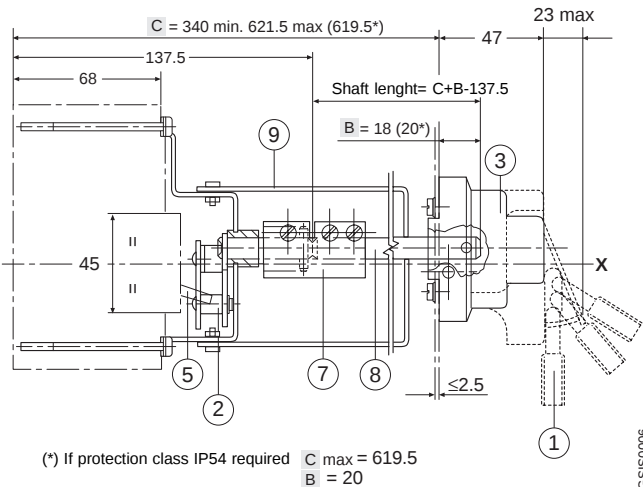
Fixed depth



Adjustable depth (max 300 mm)



Adjustable depth (max 621,5 mm)



Key

- ① Padlock device for open position (max 3 padlocks with $\varnothing$ 6 to be provided by customer)
- ② Transmission assembly
- ③ Rotary handle assembly
- ④ Minimum radius of rotation for fulcrum of compartment door
- ⑤ Circuit-breaker operating lever
- ⑥ Drilling of compartment door
- ⑦ Joint
- ⑧ Shaft
- ⑨ Support

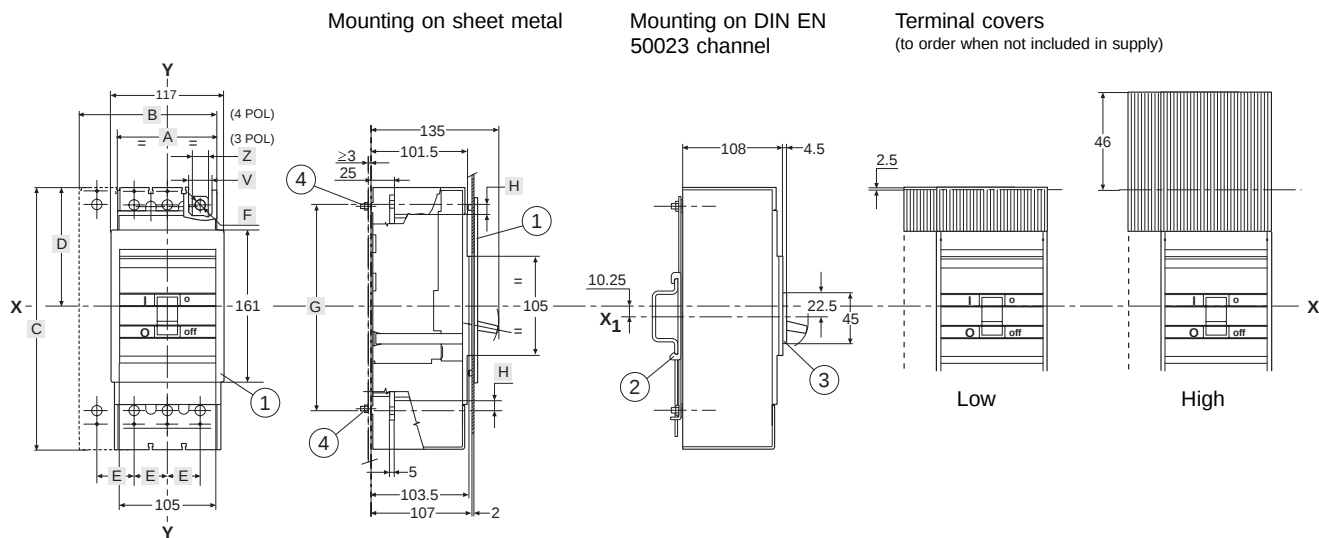
Note
See the various different versions for the circuit-breaker mounting holes



Overall dimensions

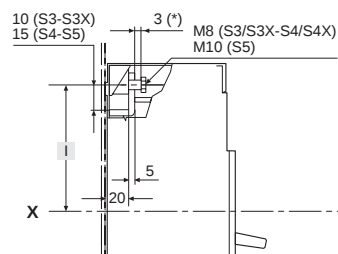
SACE S3-S4-S5-S3X-S4X

Fixed circuit-breaker



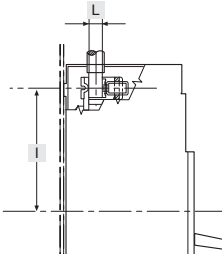
Terminals

Front for flat bars

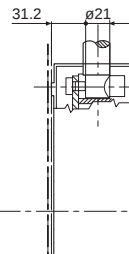


(*) 3 mm = minimum admissible thickness for S5 400

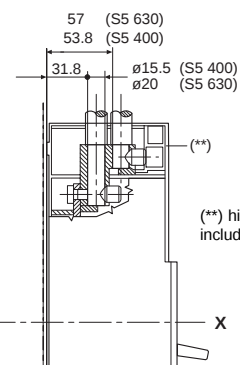
Front for cables



For SACE S3 - S4
S5 400 - S3X - S4X only



1 x 240 mm² (S5 400)



2 x 120 mm²

(**) high terminal covers included in the supply

GS/IS0007

Key

- ① Flange for compartment door
- ② Bracket for mounting on DIN EN 50023 channel
- ③ 45 mm front flange
- ④ Tightening torque 2 Nm

	A	B	C	D	E	F	G	H	I	L	V	Z
S3	105	140	170	87.25	35	Ø 8	143	10	73.75	18x18	24	17.5
S4	105	140	254	125.25	35	Ø 8	218	11	107.25	18x18	24	17.5
S5 400	140	183.75	254	125.25	43.75	Ø 10	218	12	107.25	24x24	31	19.5
S5 630	140	183.75	254	125.25	43.75	Ø 10	218	12	107.25	—	31	19.5
S3X	100	140	255	175.25	35	Ø 8	228	10	158.75	18x18	24	17.5
S4X	105	140	359	210.25	35	Ø 8	307.5	11	196.75	18x18	24	17.5



Overall dimensions

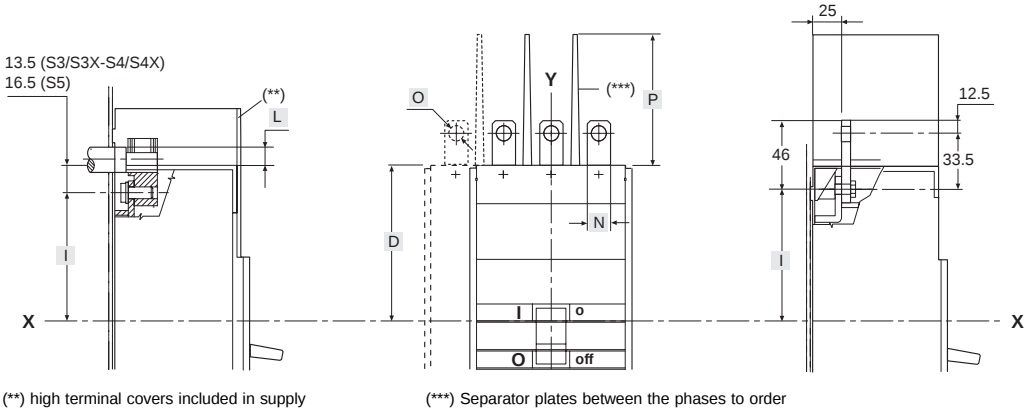
SACE S3-S4-S5-S3X-S4X

Fixed circuit-breaker

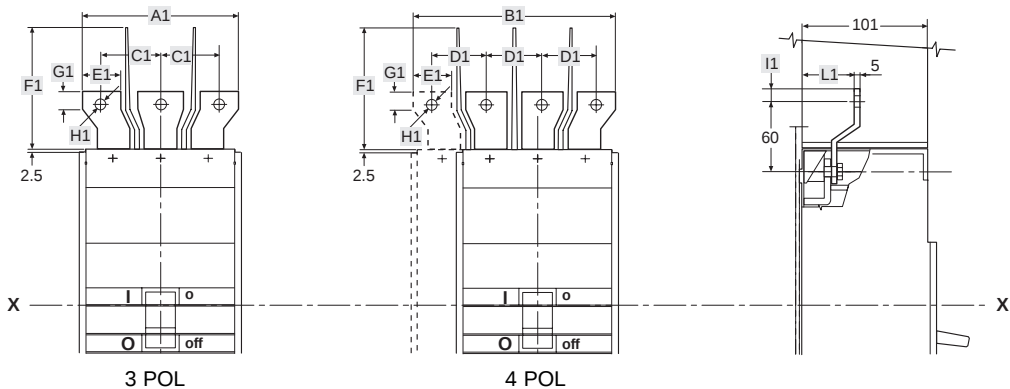
Terminals

For rear Cu/Al cables

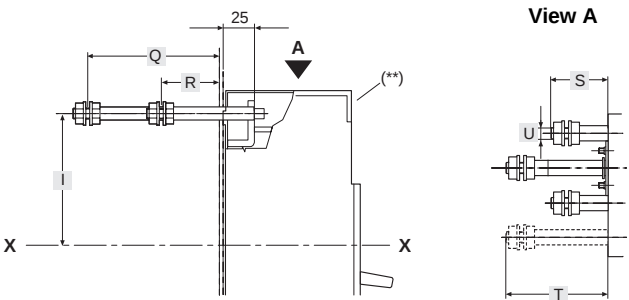
Extended front



Extended front spreaded



Threaded rear



GSIS0008

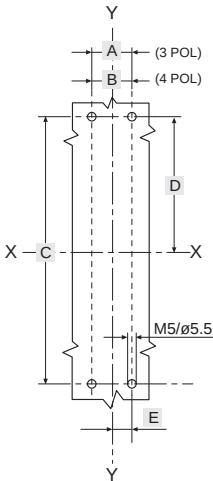
	D	I	L	N	O	P	Q	R	S	T	U	A1	B1	C1	D1	E1	F1	G1	H1	I1	L1
S3	87.25	73.75	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45
S4	125.25	107.25	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45
S5 400	125.25	107.25	Ø 21	25	Ø 11	100	86.5	39.5	62	108	M 16	...	...	...	...	...	...	...	...	...	...
S5 630	125.25	107.25	-	-	-	-	106	41	70	135	M 24	158	202	59	54	40	189 max	...	Ø 11	15	49
S3X	175.25	158.75	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45
S4X	210.25	196.75	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45

Mounting parts for fixed circuit-breaker

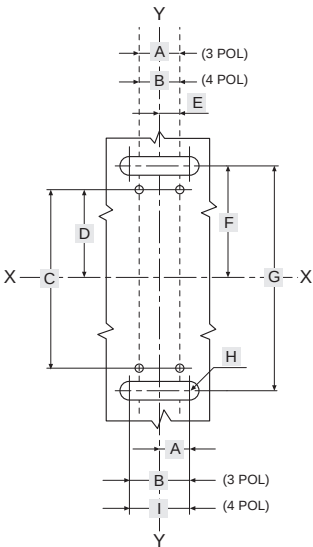
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)

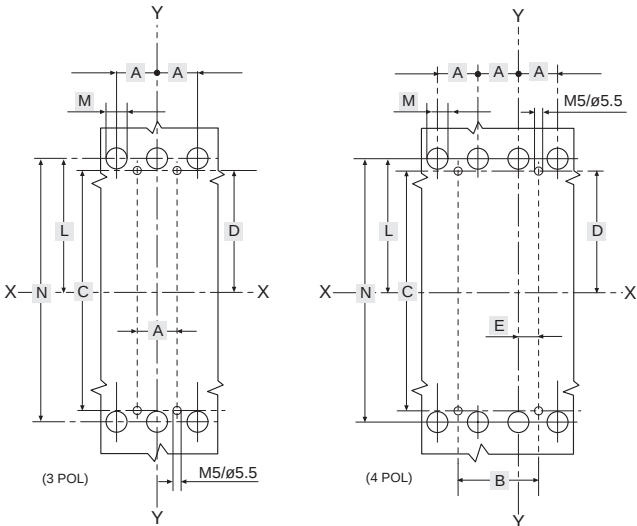
For terminals:
Front for flat bars
Extended front
Front for cables



For terminals for rear
Cu/Al cables

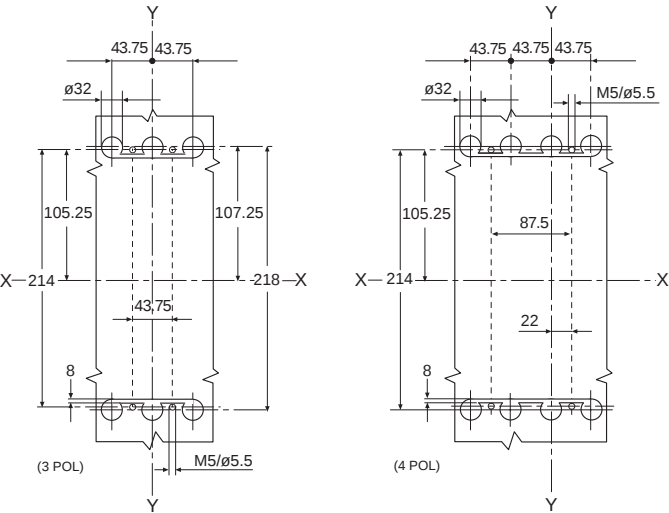


For threaded rear terminals



For SACE S3 - S4 - S5 400 -S3X - S4X only

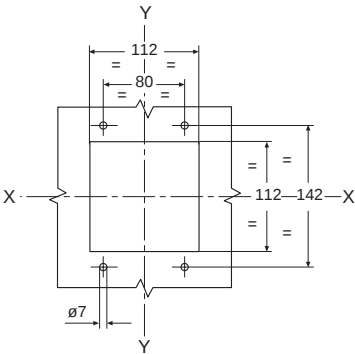
For threaded rear
terminals



For SACE S5 630 only

Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



	A	B	C	D	E	F	G	H	I	L	M	N
S3	35	70	139	71.75	17.5	94.75	185	R15	105	73.75	Ø 24	143
S4	35	70	214	105.25	17.5	128.25	260	R15	105	107.25	Ø 24	218
S5	43.75	87.5	214	105.25	22	134.25	272	R20	131.25	107.25	Ø 30	218
S3X	35	70	224	156.75	17.5	179.75	270	R15	105	158.5	Ø 24	228
S4X	35	70	303.5	194.75	17.5	218	350	R15	105	196.75	Ø 24	307.5



Mounting parts for plug-in circuit-breaker - withdrawable circuit-breaker

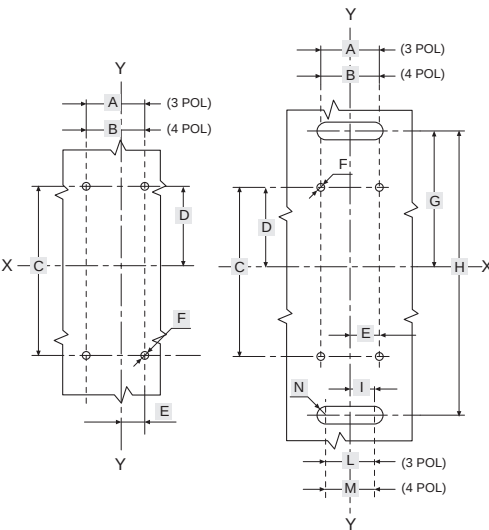
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)

SACE S3-S4-S5 400-S3X-S4X

For terminals:
Front for flat bars
Front for cables

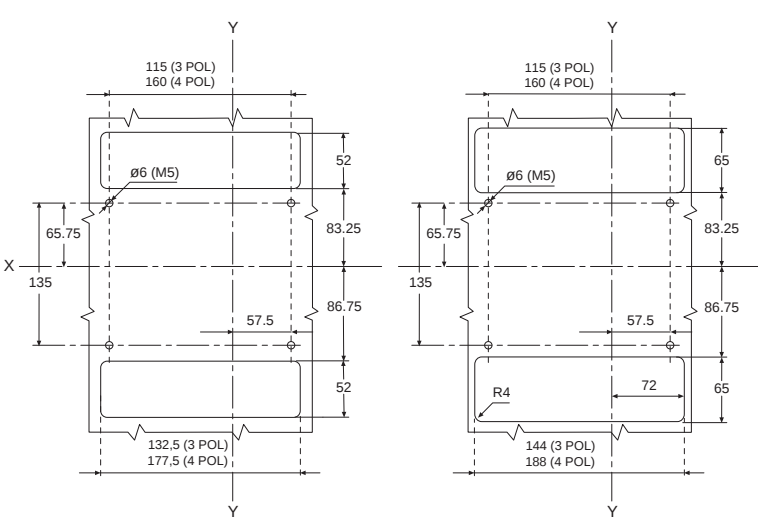
For terminals:
Threaded rear



SACE S5 630

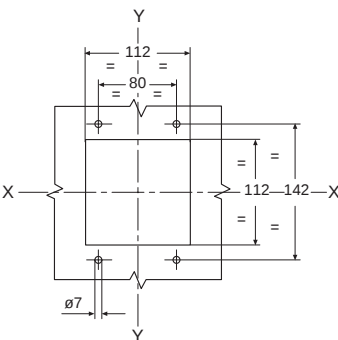
For terminals:
Vertical flat bar rear terminals
Threaded rear

For terminals:
Front
Front for Cu cables
Front spreaded

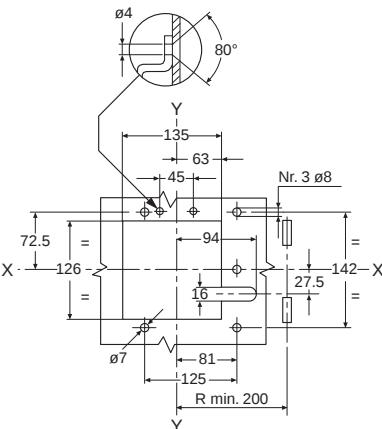


Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



For plug in circuit-breaker



For withdrawable circuit-breaker

	A	B	C	D	E	F	G	H	I	L	M	N
S3 - S3X	70	105	100	52.25	25	M4-Ø5	73.75	143	35	70	105	R14
S4 - S4X	82	117	135	65.75	41	M4-Ø5	107.25	218	35	70	105	R14
S5	115	160	135	65.75	58	M5-Ø6	107.25	218	43.75	87.5	131.25	R18



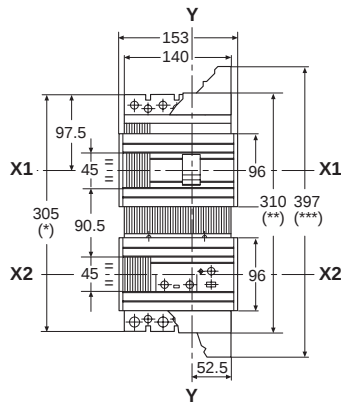
Overall dimensions

SACE S3-S4-S5-S3X-S4X

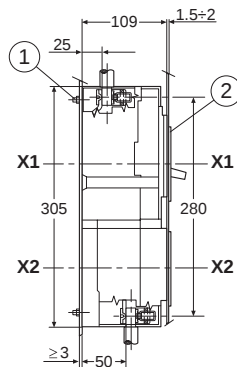
SACE S3 circuit-breaker with SACE RC211/3 - RC212/3 residual current release

Vertical installation (mounting on sheet metal)

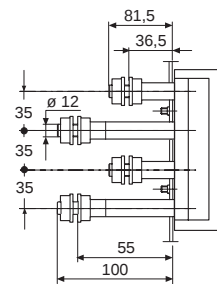
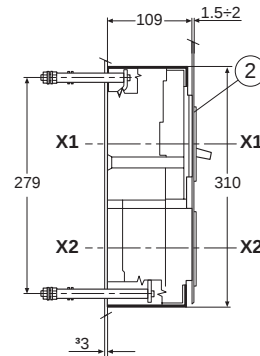
(*) Without terminal covers
 (**) with low terminal covers
 (***) with high terminal covers



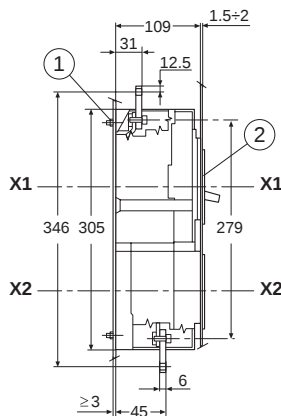
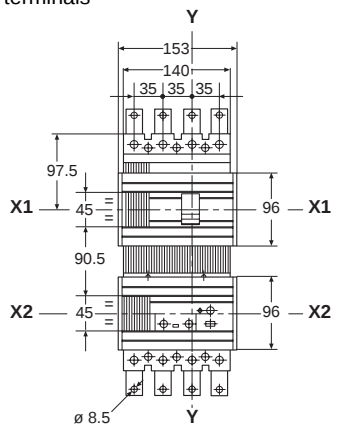
Front terminals for cables
 (terminal covers to order)



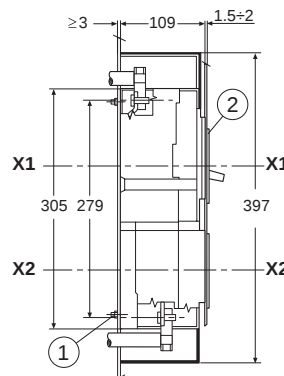
Rear terminals
 (low terminal covers included in supply)



Version with extended front terminals



Terminals for rear Cu/Al cables
 (high terminal covers included in supply)



Key

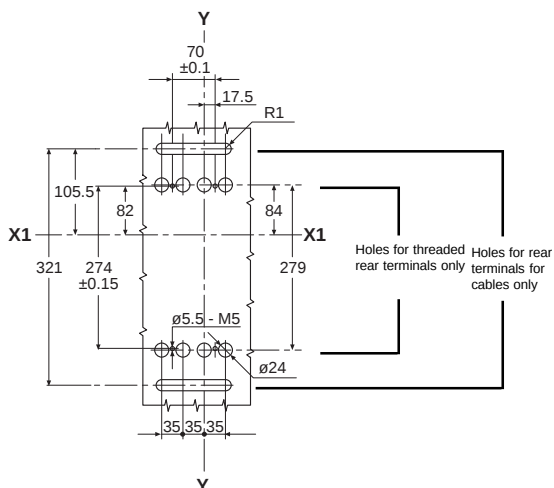
- ① Tightening torque 2 Nm
- ② Flange for compartment door

Note

See the various different versions for the dimensions of the terminals

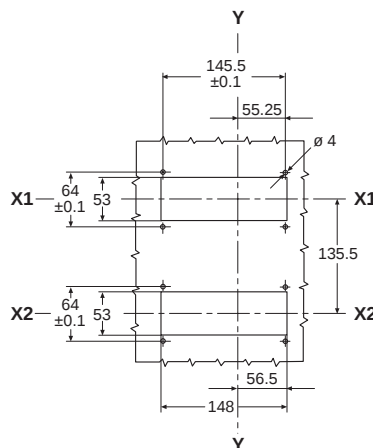
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 1.5 - 2 mm)



GS/S0012

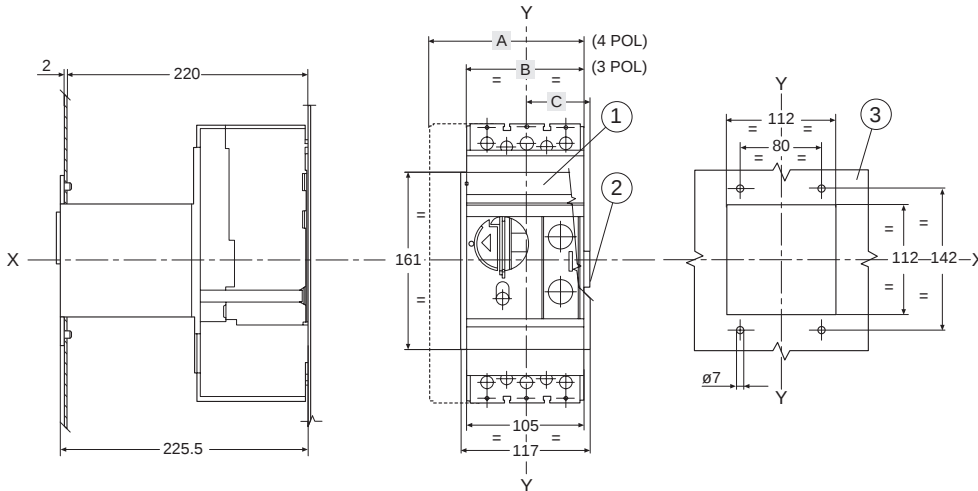


Overall dimensions

SACE S3-S4-S5-S3X-S4X

Accessories

Motor operator for fixed circuit-breaker



Key

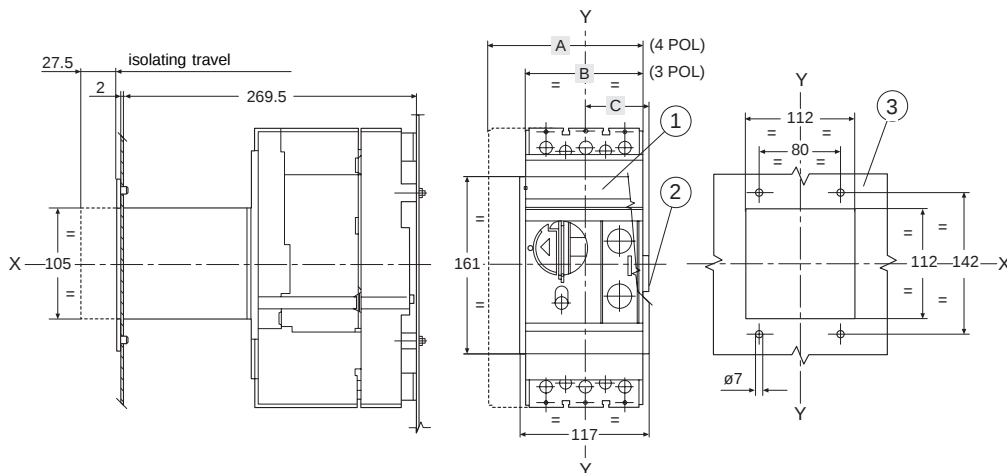
- ① Flange for compartment door (included in supply)
- ② Dimensions with connectors
- ③ Drilling of compartment door

Note

See the various different versions for the circuit-breaker mounting holes

	A	B	C
S3-S4 S3X-S4X	140	105	58
S5	183.75	140	75.5

Motor operator for plug in circuit-breakers



Key

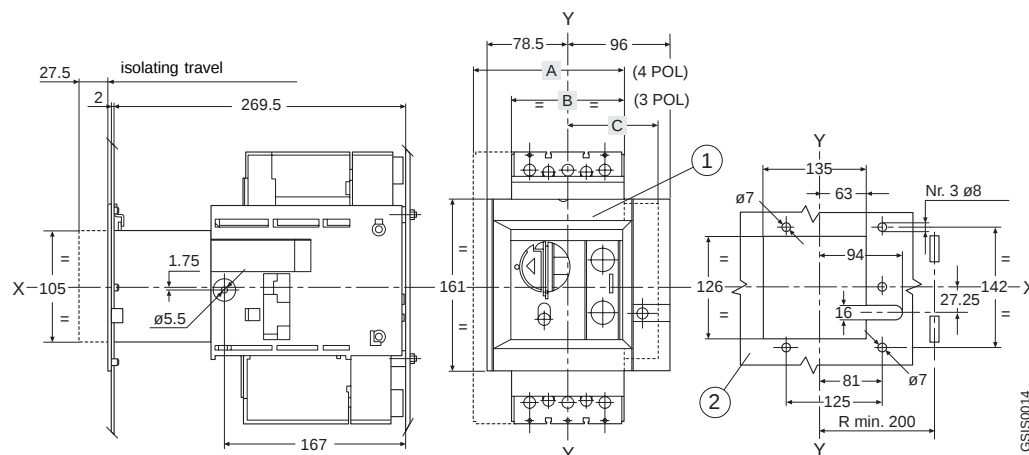
- ① Flange for compartment door (included in supply)
- ② Dimensions with connectors
- ③ Drilling of compartment door

Note

See the various different versions for the circuit-breaker mounting holes

	A	B	C
S3-S4 S3X-S4X	140	105	58
S5	183.75	140	75.5

Motor operator for withdrawable circuit-breaker



Key

- ① Flange for compartment door (included in supply)
- ② Drilling of compartment door

Note

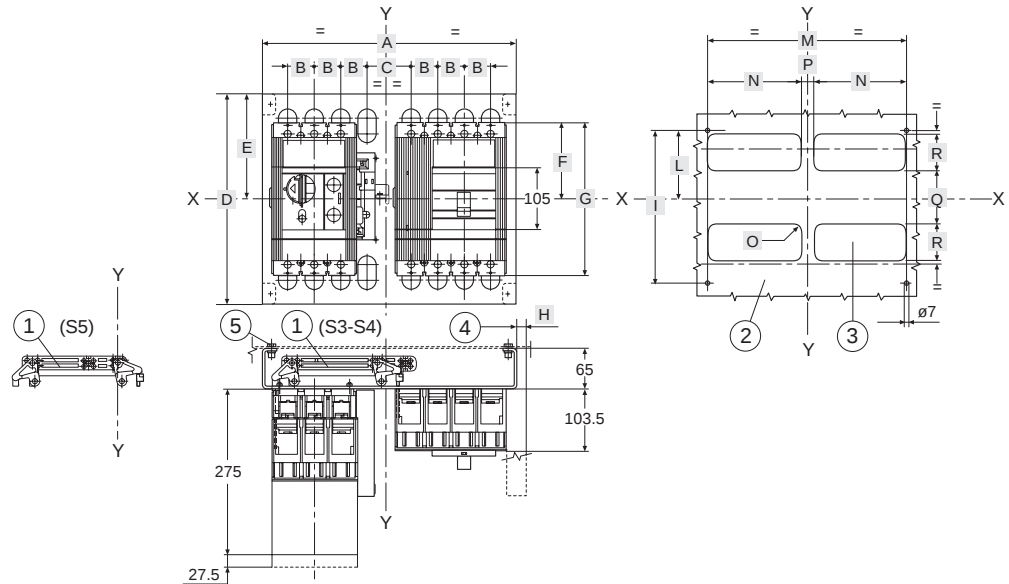
See the various different versions for the circuit-breaker mounting holes

	A	B	C
S3-S4 S3X-S4X	140	105	58
S5	183.75	140	101.5

GS/S0014

Accessories

Interlock across two horizontally-installed circuit-breakers



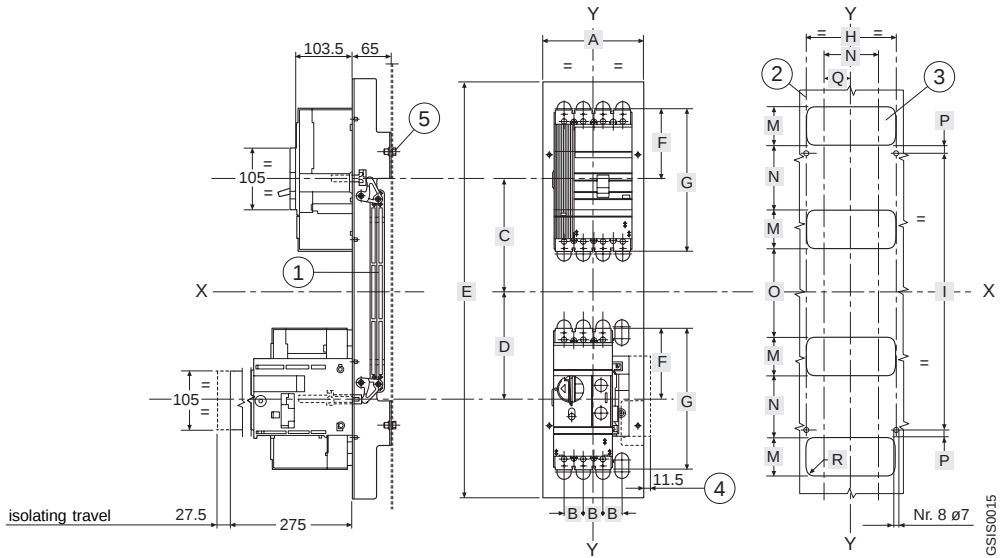
- Key**
- ① Interlock device
 - ② Template for drilling mounting holes in sheet metal
 - ③ Drilling template for all versions with rear terminals
 - ④ Dimensions with four-pole withdrawable version mounted on right
 - ⑤ Tightening torque 3,7 Nm

Note
See the various different versions for the dimensions of the circuit-breakers

	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R
S3	350	35	66	265	134.5	87.2	170	12	227.5	116	324	155	R15	16	68	75
S4	350	35	66	350	173.5	125.3	254	12	315	156	324	155	R15	16	143	75
S5	500	43.75	119	350	173.3	125.3	254	16	315	156	472	202	R15	48	114	117
S3X	350	35	66	265	135	172	255	12	227.5	116	324	155	R15	16	68*, 153**	75
S4X	350	35	66	350	173.3	210	339	12	315	156	324	155	R15	16	143*, 232.5**	75

* Per interruttore estraibile con terminals posteriori
** Per interruttore fisso con terminals posteriori (uscita posteriore)

Interlock across two vertically-installed circuit-breakers (S3-S4-S5)



- Key**
- ① Interlock device
 - ② Drilling template for mounting circuit-breakers on sheet metal
 - ③ Drilling template for all versions with rear terminals
 - ④ Dimensions with four-pole withdrawable version
 - ⑤ Tightening torque 3,7 Nm

Note
See the various different versions for the dimensions of the circuit-breakers

	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R
S3	180	35	152.5	157.5	578	87.5	170	157.5	350	155	75	68	92	14	77.5	R15
S4	180	35	198.5	195.5	750	125.3	254	157.5	490	155	75	143	101	23.5	77.5	R15
S5	220	43.75	198.5	195.5	750	125.3	254	201	490	202	107	114	66	9	98.5	R15

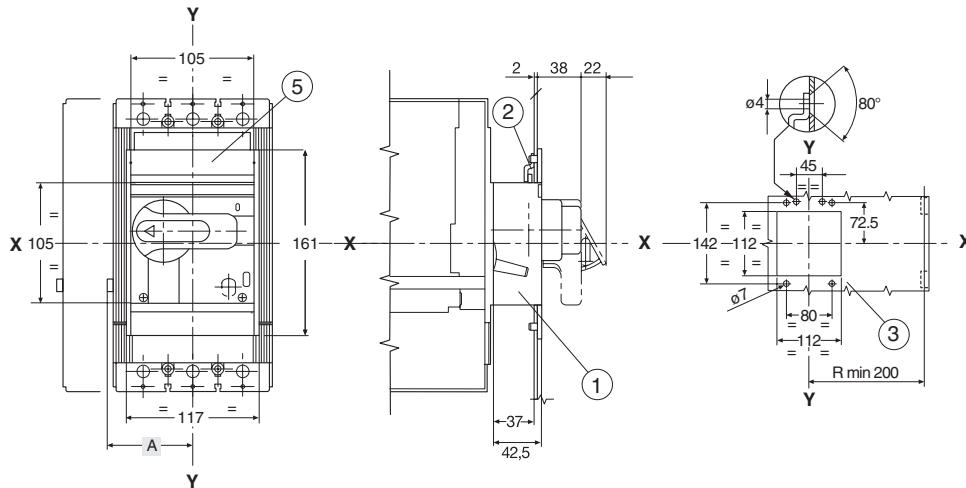


Overall dimensions

SACE S3-S4-S5-S3X-S4X

Accessories

Rotary handle operating mechanism on fixed or plug in circuit-breaker



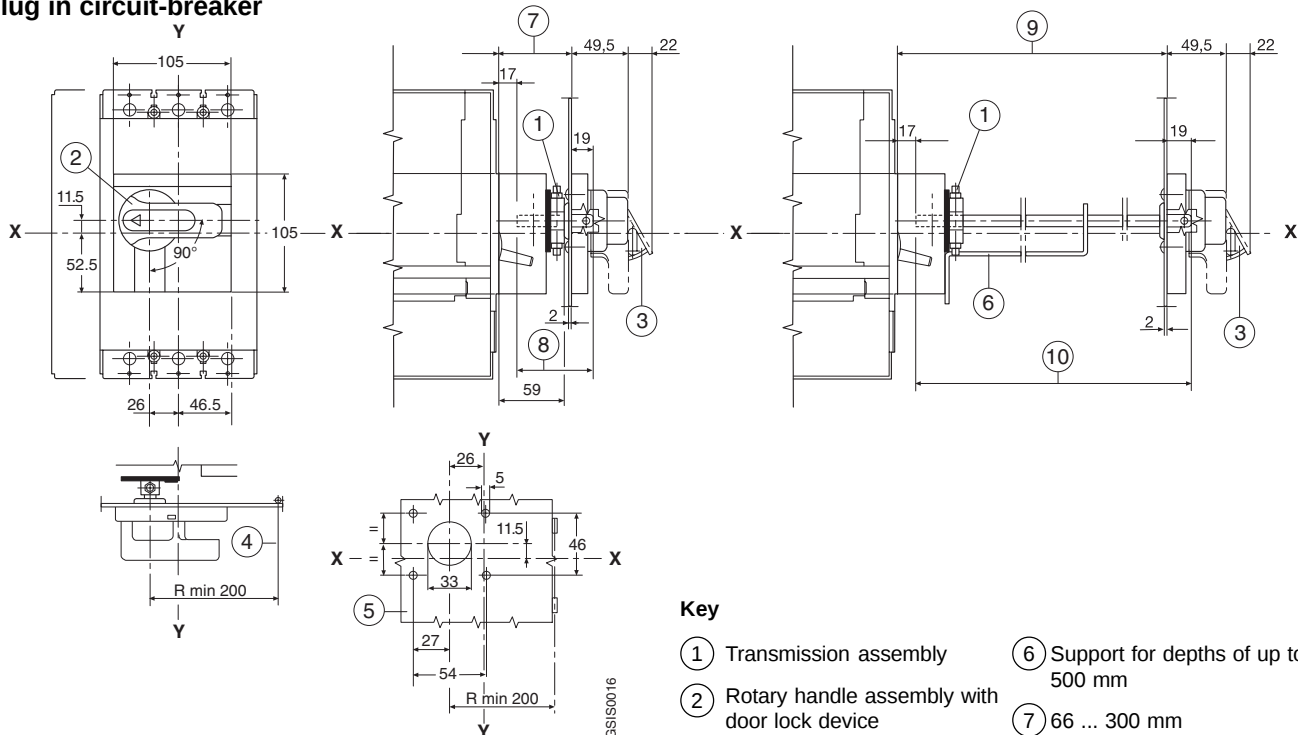
Key

- ① Rotary handle operating mechanism
- ② Lock for compartment door (to order)
- ③ Drilling of compartment door
- ④ Dimensions for connector for early contact for undervoltage release
- ⑤ Flange for compartment door (included in supply)

	A	④
S3-S4 S3X-S4X III	58	
S3-S4 S3X-S4X IV	93	
S5 III	75.5	
S5 IV	119.25	

Note
See the various different versions for the circuit-breaker mounting holes

Compartment door-mounted rotary handle operating mechanism with adjustable depth for fixed or plug in circuit-breaker



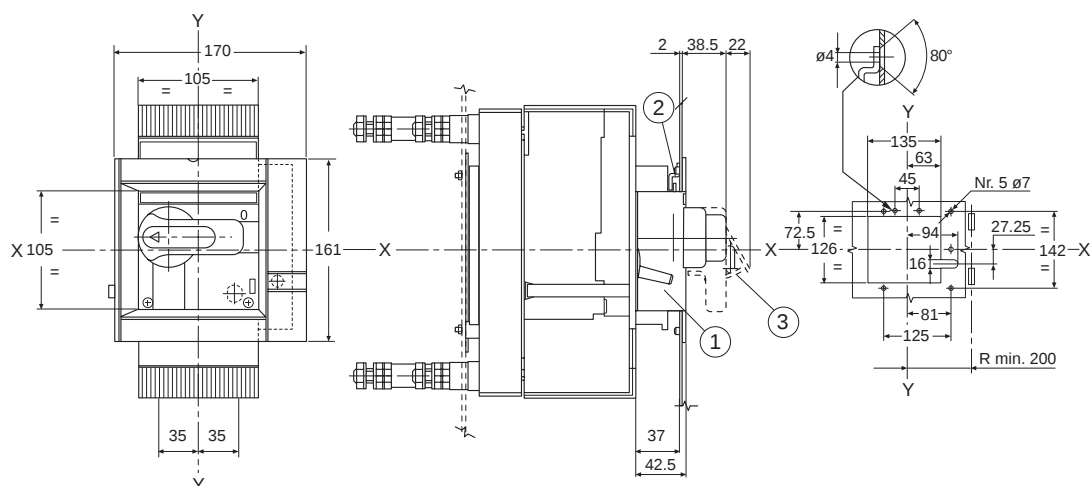
Key

- ① Transmission assembly
- ② Rotary handle assembly with door lock device
- ③ Padlock device for open position (maximum 3 padlocks with max ø6mm to be provided by customer)
- ④ Minimum radius of rotation for fulcrum of door
- ⑤ Drilling of door
- ⑥ Support for depths of up to 500 mm
- ⑦ 66 ... 300 mm (with IP54 protection min. 90)
- ⑧ Distance ⑦ + 2 mm (shaft length)
- ⑨ 301...500 mm (with IP54 protection min.325)
- ⑩ Distance ⑨ + 2 mm (Shaft length)

Note
See the various different versions for the circuit-breaker mounting holes

Accessories

Rotary handle operating mechanism on withdrawable circuit-breaker



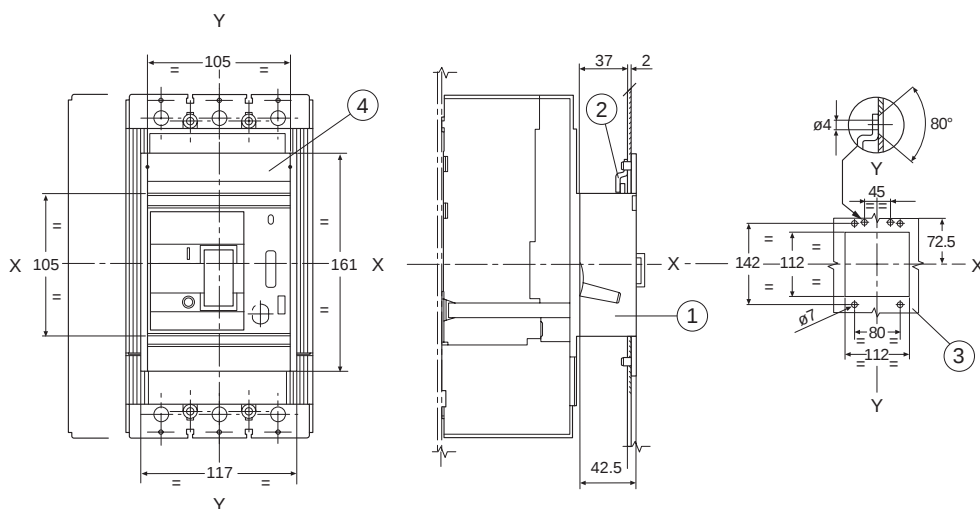
Key

- ① Rotary handle operating mechanism
- ② Lock for compartment door (to order)
- ③ Padlock device for open position (maximum 3 padlocks max. $\varnothing$ 6 mm to be provided by user)

Note

See the various different versions for the circuit-breaker mounting holes

Front flange for operating lever mechanism



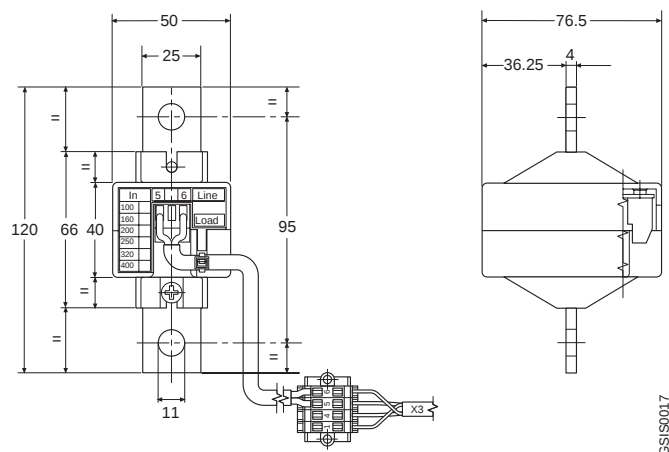
Key

- ① Front flange for lever operating mechanism
- ② Lock for compartment door (to order)
- ③ Drilling of compartment door
- ④ Flange for compartment door (included in supply)

Note

See the various different versions for the circuit-breaker mounting holes

External neutral for SACE S4-S5 circuit-breakers

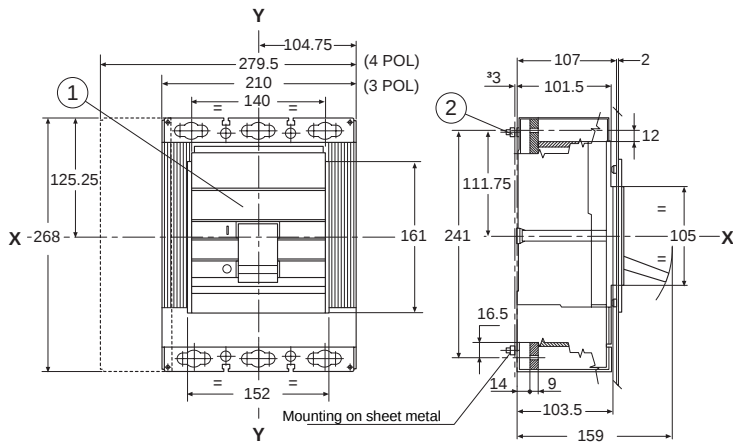




Overall dimensions

SACE S6 - S6X

Fixed circuit-breaker (S6)

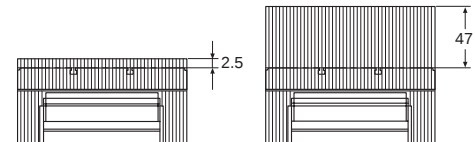


Terminal covers

(to order when not included in the supply)

low

high

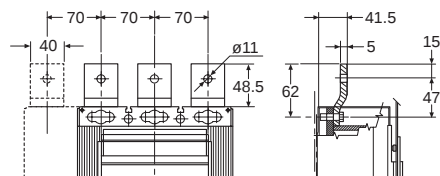


Key

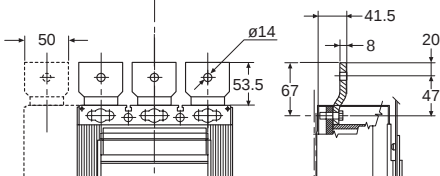
- ① Flange for compartment door (included in supply)
- ② Tightening torque 2 Nm

Terminals

Front extended

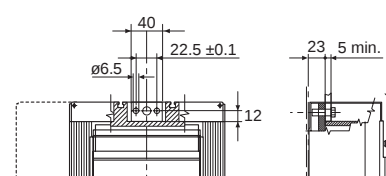


S6 630



S6 800

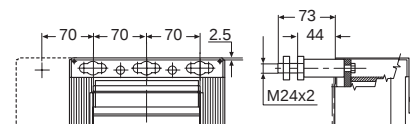
Front



S6 630 - S6 800

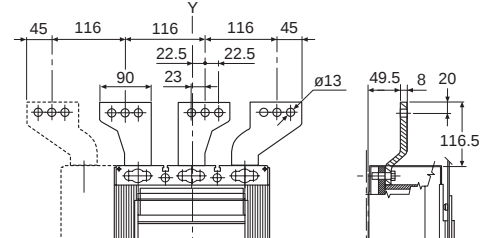
Threaded rear

(low terminal covers included in supply)



S6 630 - S6 800

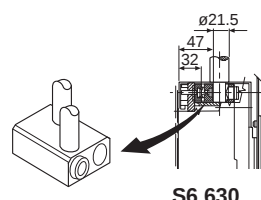
Front extended spreaded



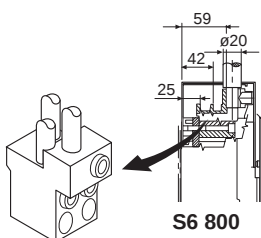
S6 630 - S6 800

Front for Cu/Al cables

(IP20 high terminal covers included in the supply for S6 800)



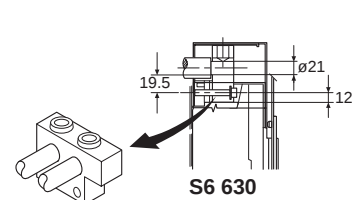
S6 630



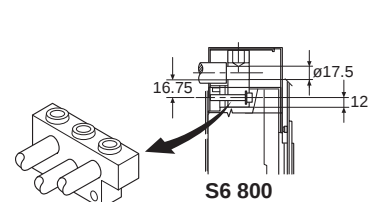
S6 800

For rear Cu/Al cables

(IP20 high terminal covers included in the supply)



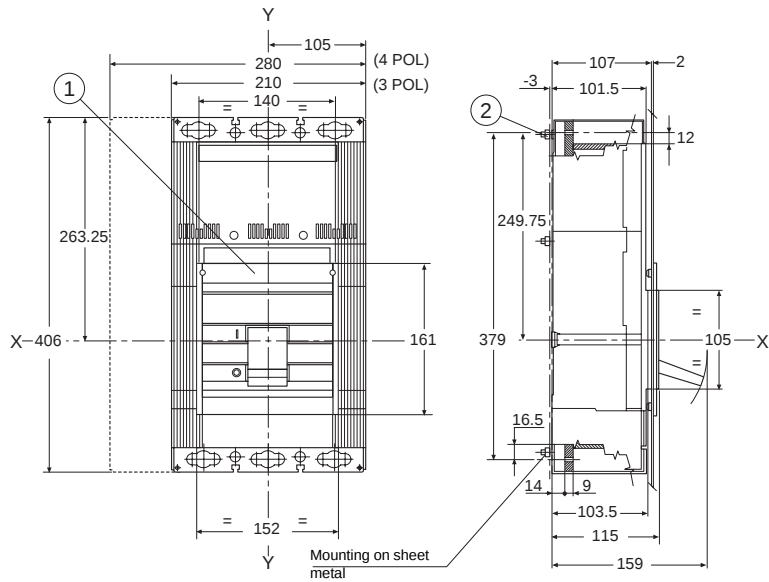
S6 630



S6 800

GSIS0018

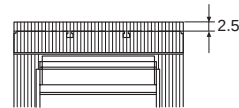
Fixed circuit-breaker (S6X)



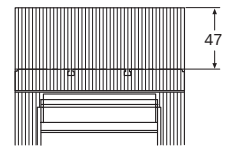
Terminal covers

(to order when not included in the supply)

low



high

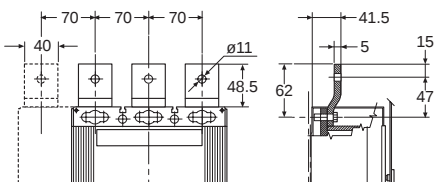


Key

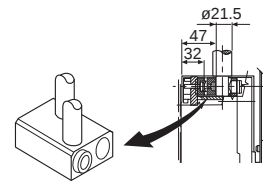
- ① Flange for compartment door (included in supply)
- ② Tightening torque 2 Nm

Terminals

Extended front

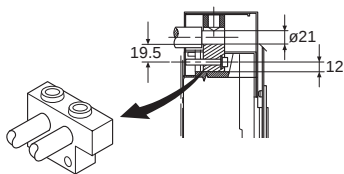


Front for Cu/Al cables

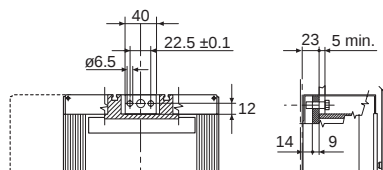


For rear Cu/Al cables

(IP54 high terminal covers included in the supply)

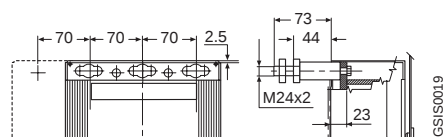


Front



Threaded rear

(low terminal covers included in supply)





Overall dimensions

SACE S6 - S6X

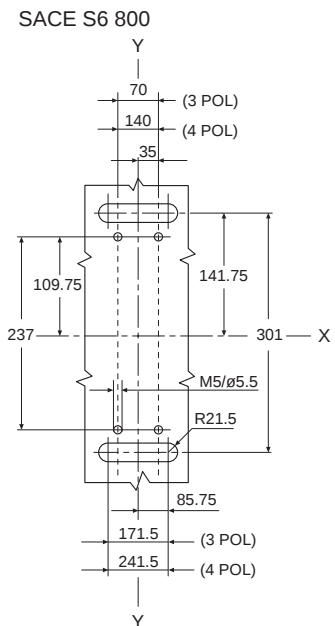
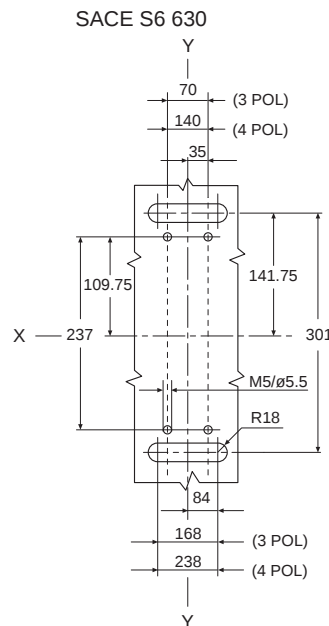
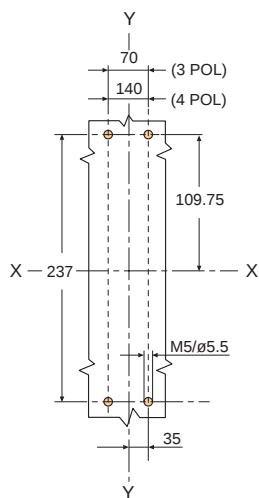
Mounting parts for fixed circuit-breaker (S6)

Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)

For terminals:
Front for flat bars
Front extended
Front for cables

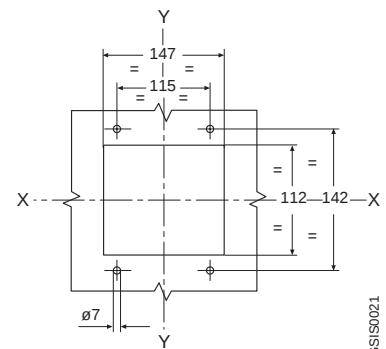
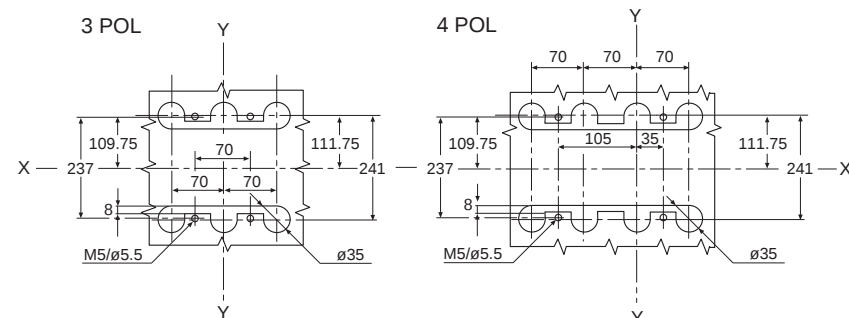
For terminals for rear Cu/Al cables



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)

For terminals threaded rear



GSIS0021

Mounting parts for fixed circuit-breaker (S6X)

Template for drilling sheet metal support

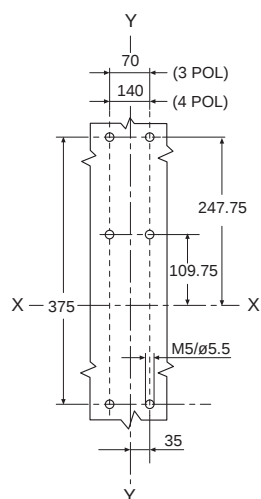
(minimum thickness of sheet metal: 3 mm)

For terminals:

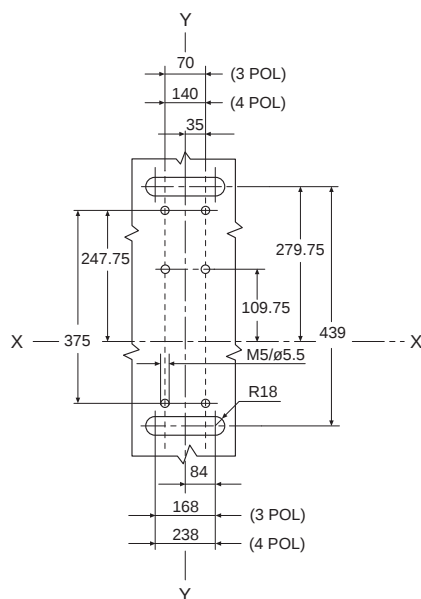
Front for flat bars

Front extended

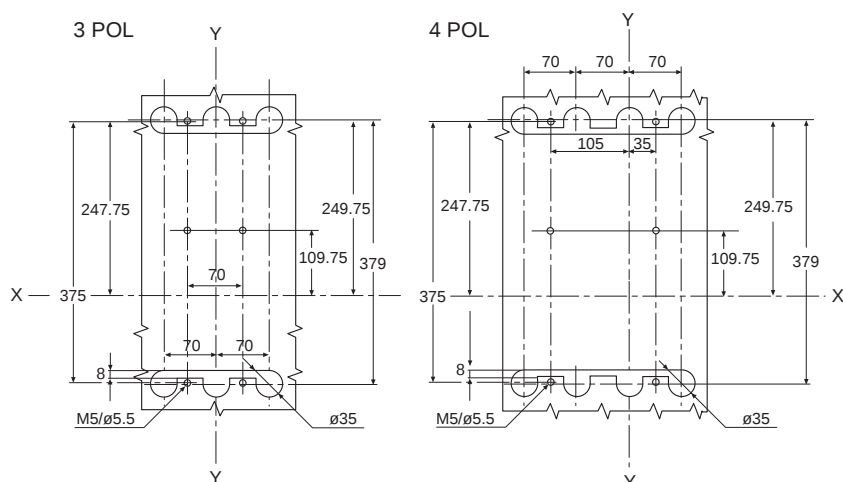
Front for cables



For terminals for rear Cu/Al cables

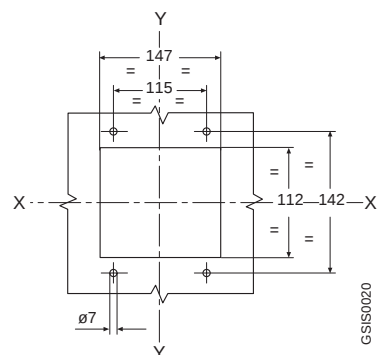


For terminals threaded rear



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)

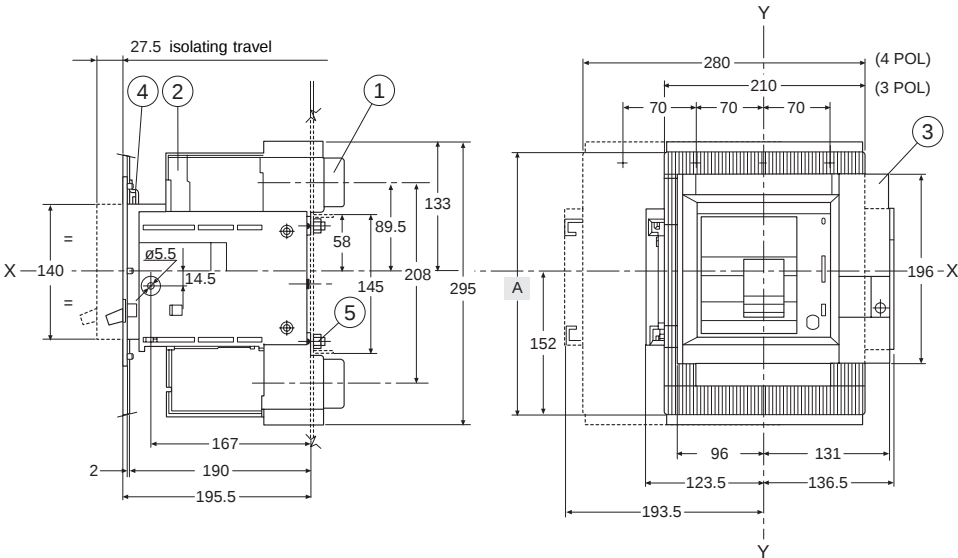




Overall dimensions

SACE S6 - S6X

Withdrawable circuit-breaker



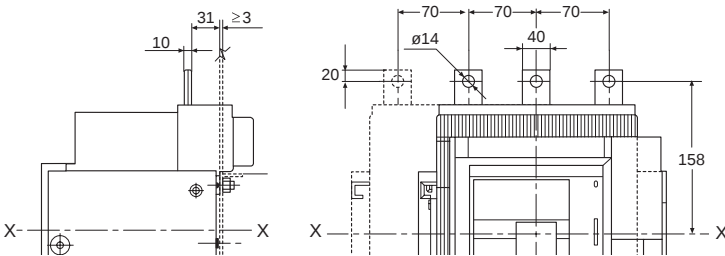
Key

- ① Fixed part
- ② Moving part
- ③ Flange for compartment door (included in supply)
- ④ Lock for compartment door (to order)
- ⑤ Tightening torque 9 Nm

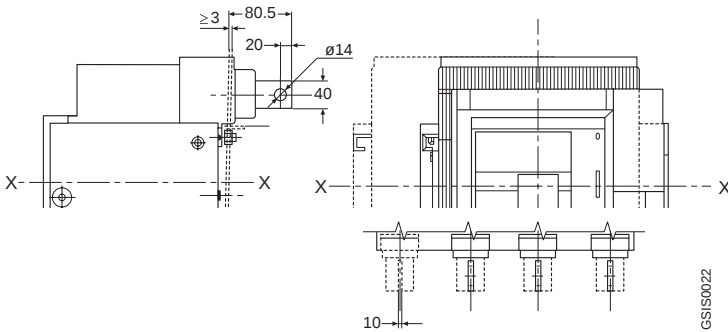
	A
S6	273
S6X	411

Terminals

Front for SACE S6 630, S6 800



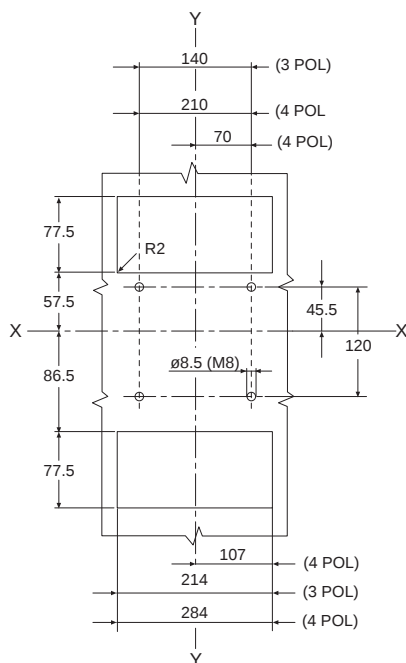
Horizontal or vertical rear flat bar for SACE S6 630, S6 800



Mounting parts for withdrawable circuit-breaker

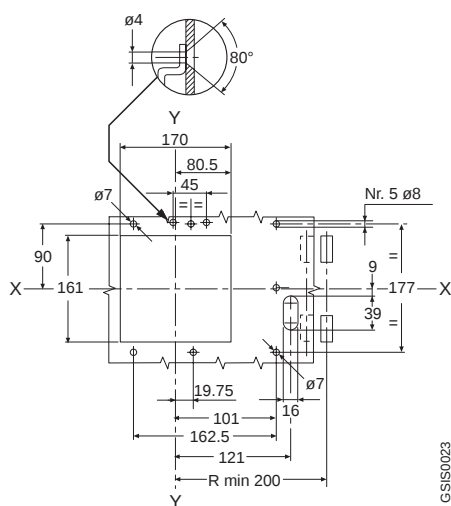
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



GSIS0023

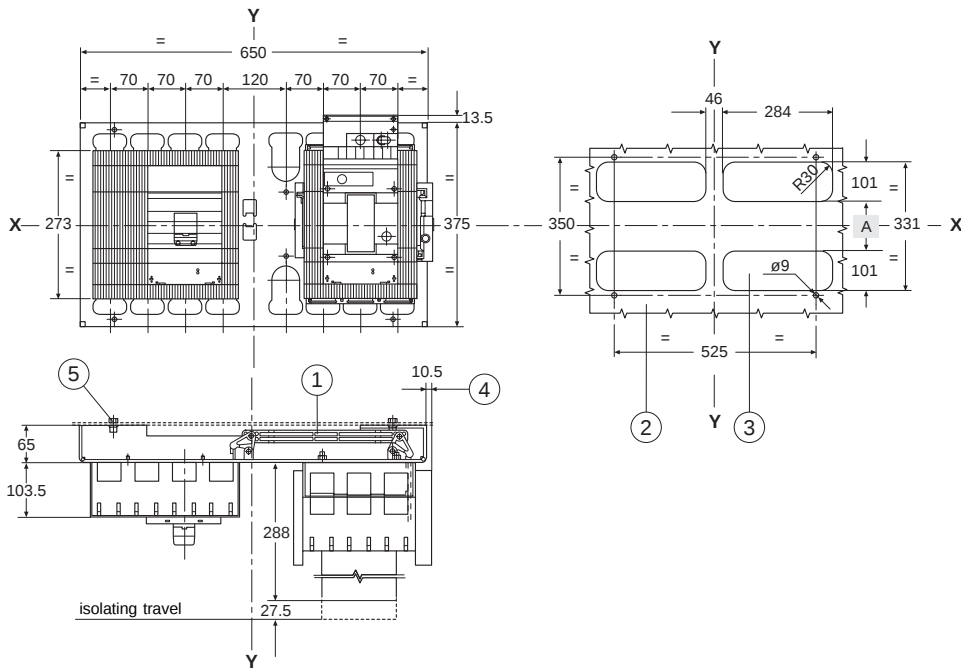


Overall dimensions

SACE S6 - S6X

Accessories

Interlock across two horizontally-installed circuit-breakers



Key

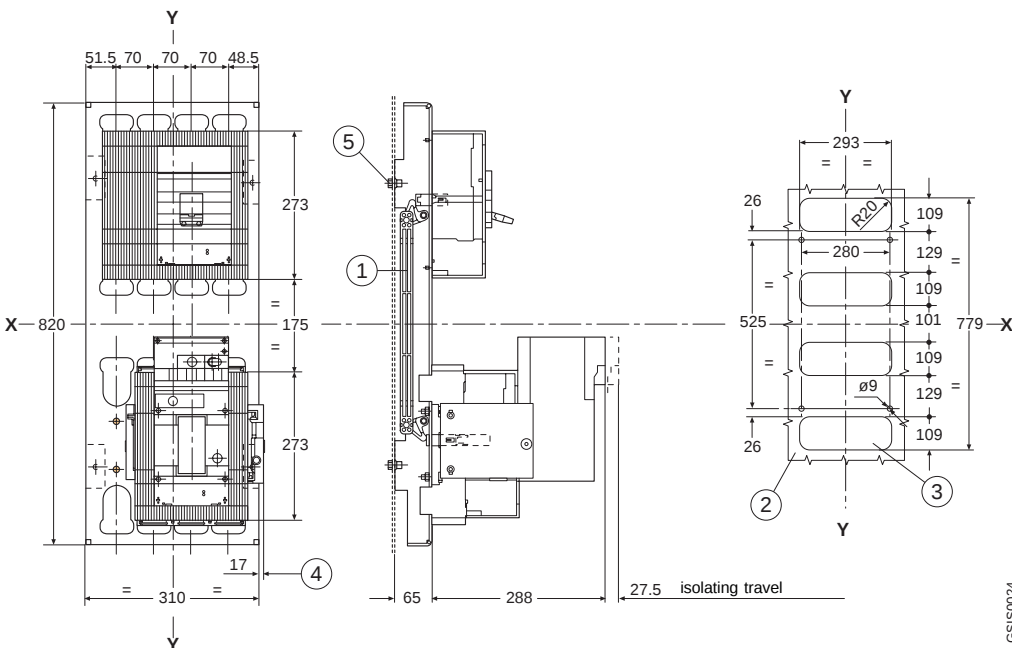
- ① Interlock device
- ② Drilling template for mounting circuit-breaker on sheet metal
- ③ Drilling template for all versions with rear terminals
- ④ Dimensions with withdrawable version mounted on right
- ⑤ Tightening torque 9 Nm

Note

See the various different versions for the dimensions of the circuit-breakers

	A mm
S6	129 (fixed, withdrawable)
S6X	267 (fixed) 129 (withdrawable)

Interlock across two vertically-installed circuit-breakers (for S6 only)



Key

- ① Interlock device
- ② Drilling template for mounting circuit-breaker on sheet metal
- ③ Drilling template for all versions with rear terminals
- ④ Dimensions with withdrawable version mounted underneath
- ⑤ Tightening torque 9 Nm

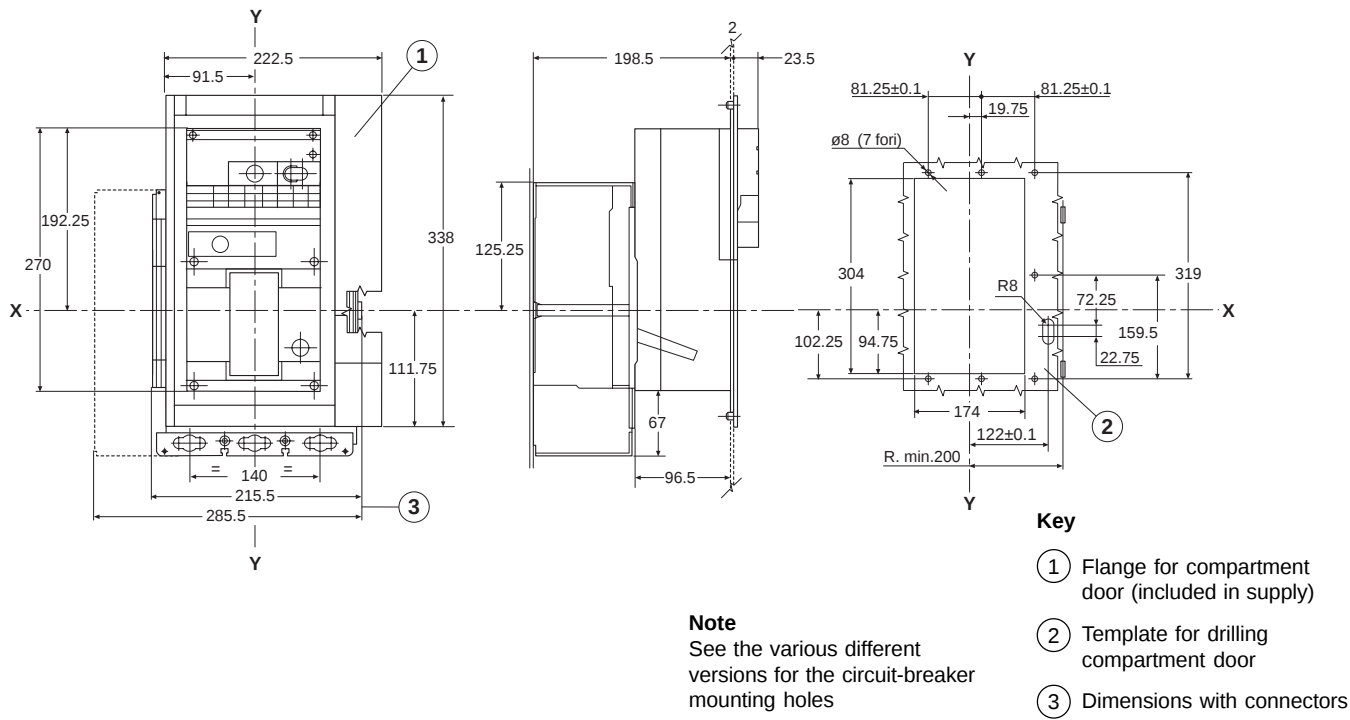
Note

See the various different versions for the dimensions of the circuit-breakers

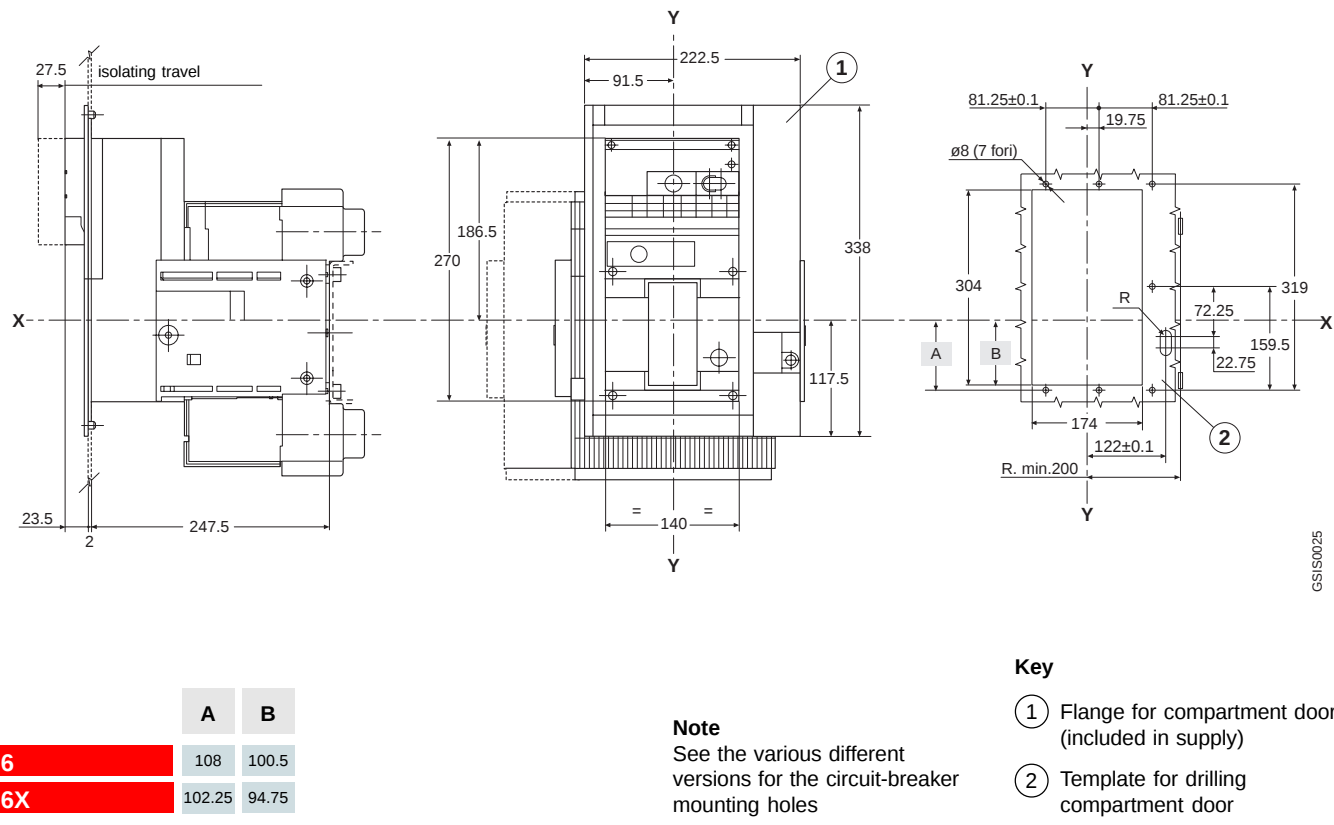
GS/S0024

Accessories

Motor operator for fixed circuit-breaker



Motor operator for withdrawable circuit-breakers



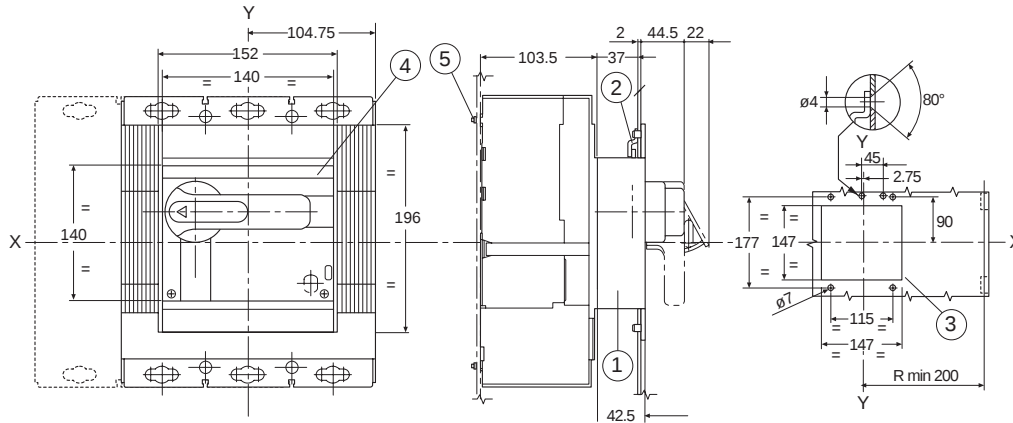


Overall dimensions

SACE S6 - S6X

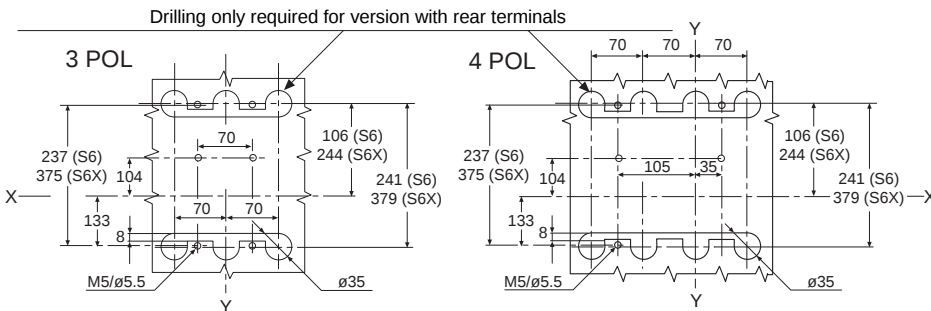
Accessories

Rotary handle operating mechanism on fixed circuit-breaker



Key

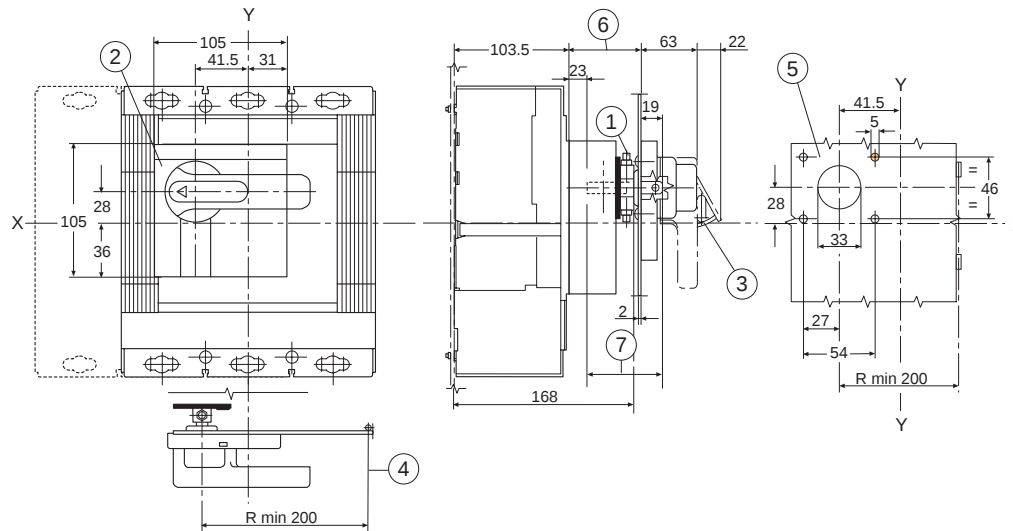
- ① Rotary handle operating mechanism on circuit-breaker
- ② Lock for compartment door (to order)
- ③ Drilling of compartment door
- ④ Flange for compartment door (included in supply)
- ⑤ Tightening torque 2 Nm



Note

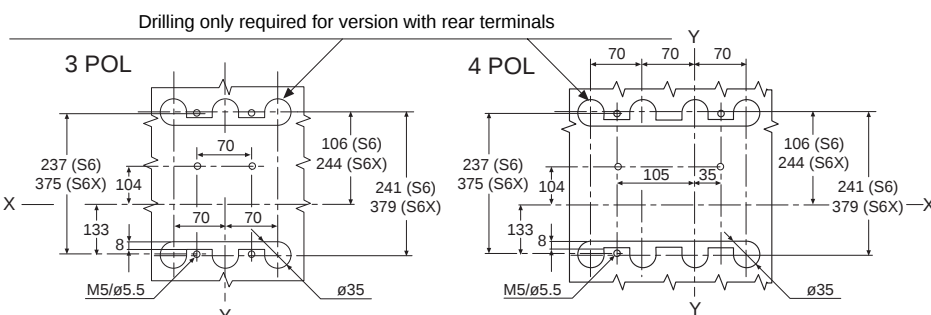
See the various different versions for the circuit-breaker mounting holes

Compartment door-mounted rotary handle mechanism with adjustable depth for fixed circuit-breaker



Key

- ① Transmission assembly
- ② Rotary handle assembly with door lock device
- ③ Padlock device (maximum 3 padlocks max $\varnothing$ 6 mm to be provided by customer only for circuit-breaker open position)
- ④ Minimum radius of rotation for fulcrum of door
- ⑤ Drilling template for mounting circuit-breaker on sheet metal
- ⑥ 72...506 mm (with IP54 protection min. 96)
- ⑦ Distance ⑥ -4 mm (shaft length)



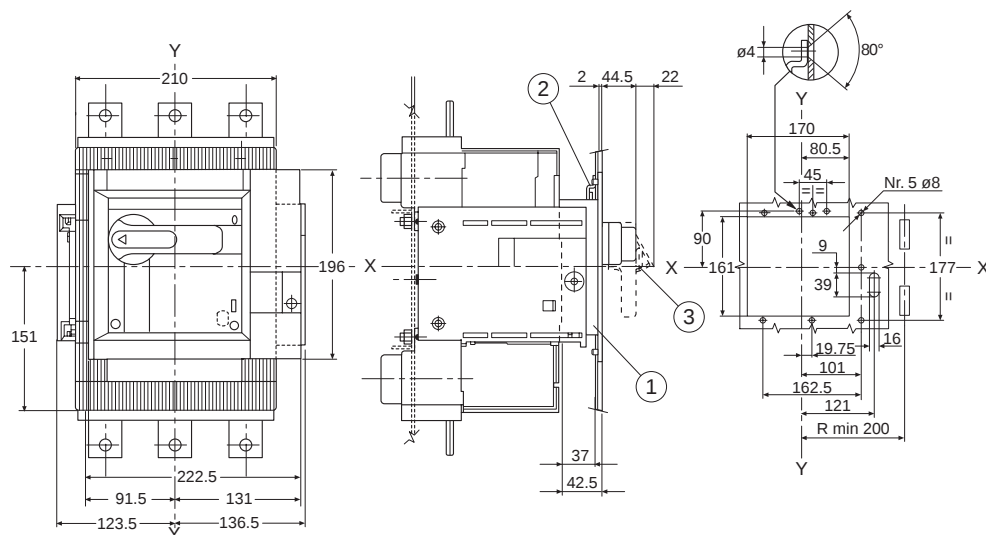
Note

See the various different versions for the circuit-breaker mounting holes

CSIS0026

Accessories

Rotary handle operating mechanism on withdrawable circuit-breaker



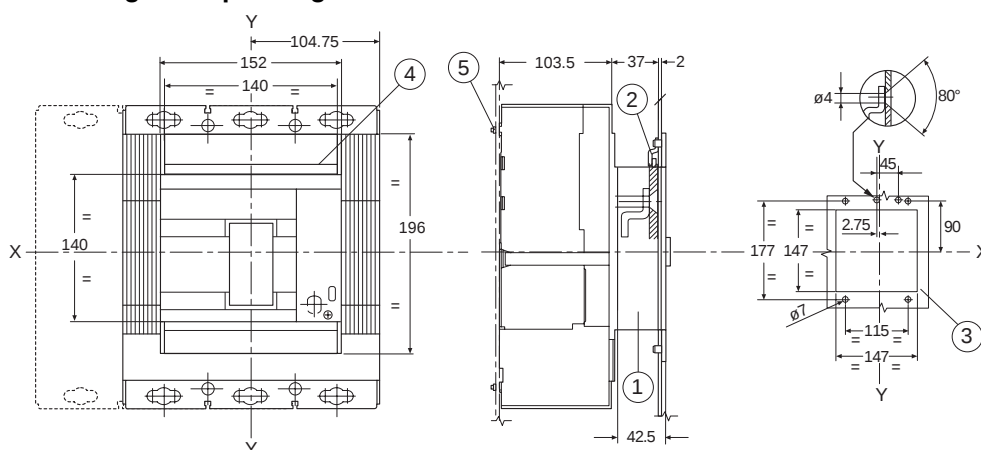
Key

- ① Rotary handle on circuit-breaker
- ② Lock for compartment door (to order)
- ③ Padlock device for open position (maximum 3 padlocks max. $\varnothing$ 6 mm to be provided by user)

Note

See the various different versions for the circuit-breaker mounting holes

Front flange for operating lever mechanism

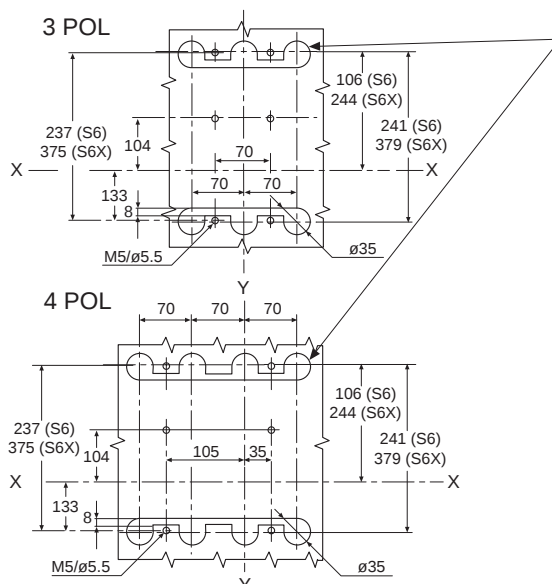


Key

- ① Front flange for operating lever mechanism
- ② Lock for compartment door (to order)
- ③ Drilling of compartment door
- ④ Flange for compartment door (included in supply)
- ⑤ Tightening torque 2 Nm

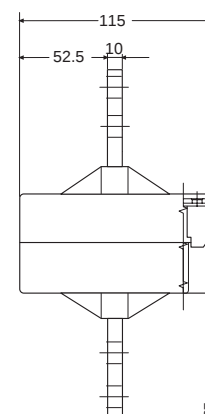
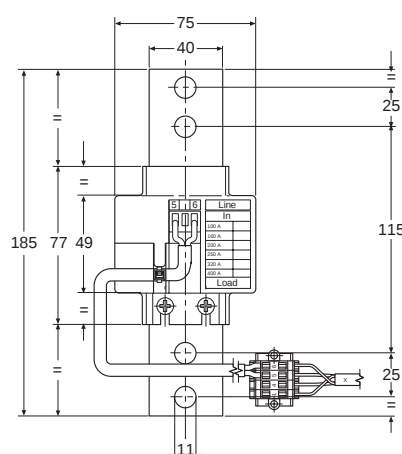
Note

See the various different versions for the circuit-breaker mounting holes



Drilling only required for version with rear terminals

External neutral



GSIS0027



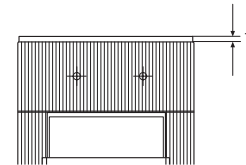
Overall dimensions

SACE S7

Fixed circuit-breaker

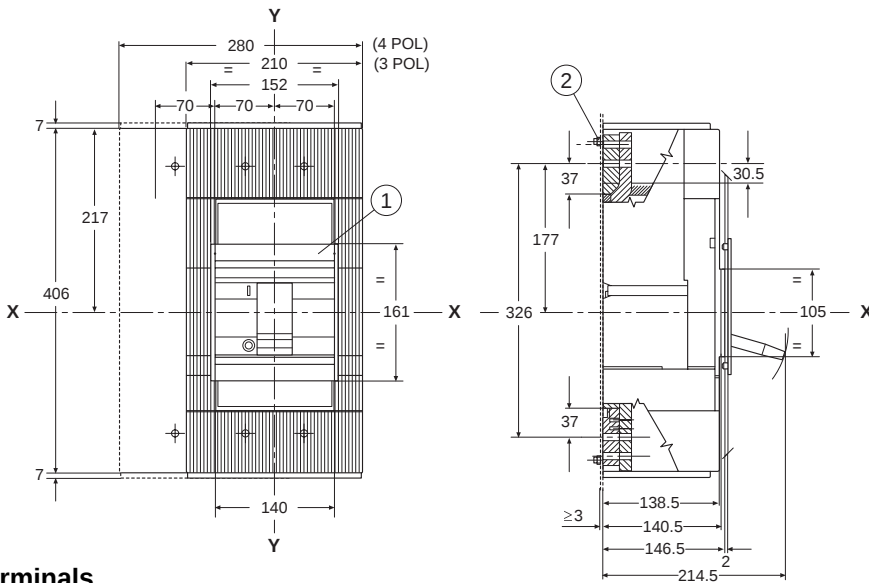
Terminal covers

low



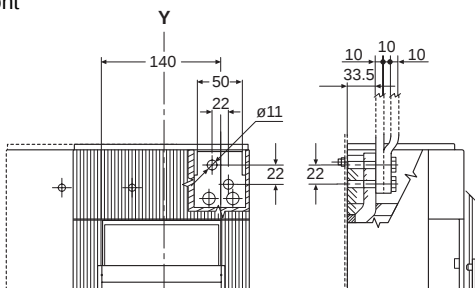
Key

- ① Flange for compartment door (included in supply)
- ② Tightening torque 2 Nm

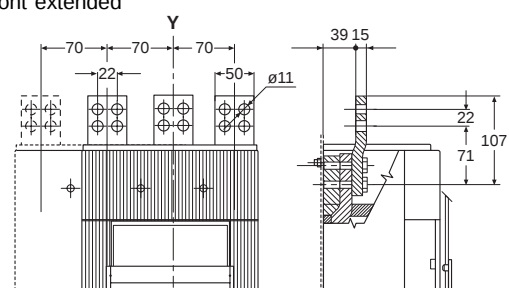


Terminals

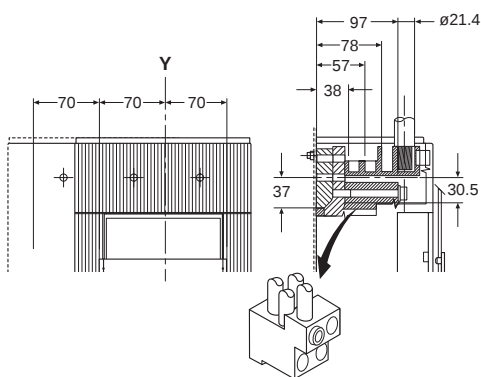
Front



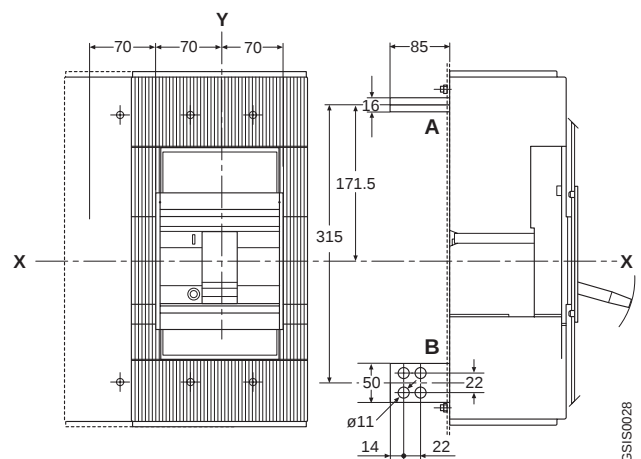
Front extended



Front for Cu/Al cables for S7 1250

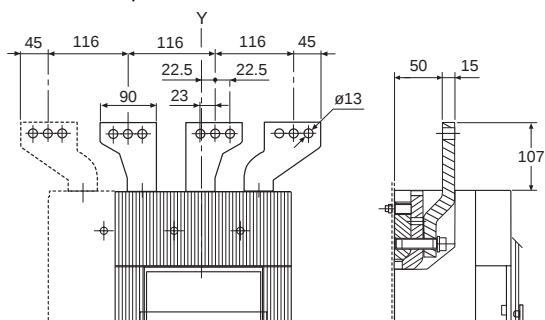


Horizontal or vertical flat bar rear terminals



A = horizontal installation
B = vertical installation

Front extended spreaded

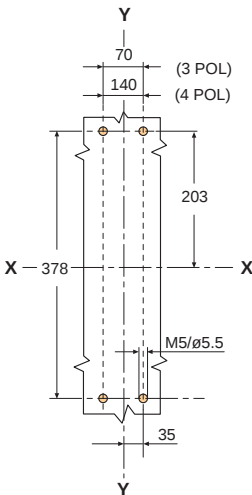


Mounting parts for fixed circuit-breaker

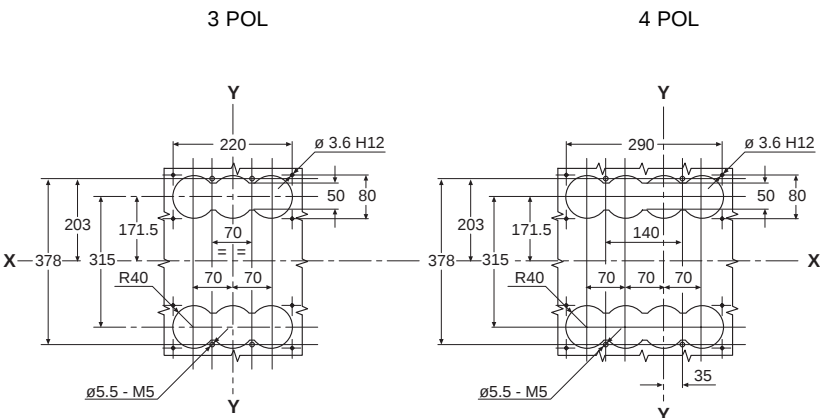
Template for drilling sheet metal support

(Minimum thickness of sheet metal: 3 mm)

For terminals:
Front
Front extended
Front for Cu/Al cables

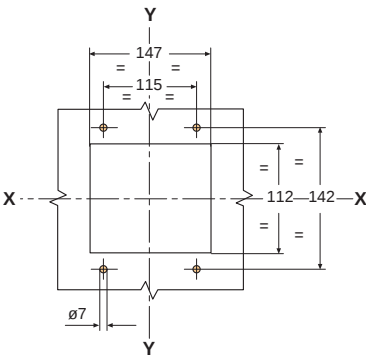


For flat bar rear terminals



Template for drilling compartment door and fitting flange

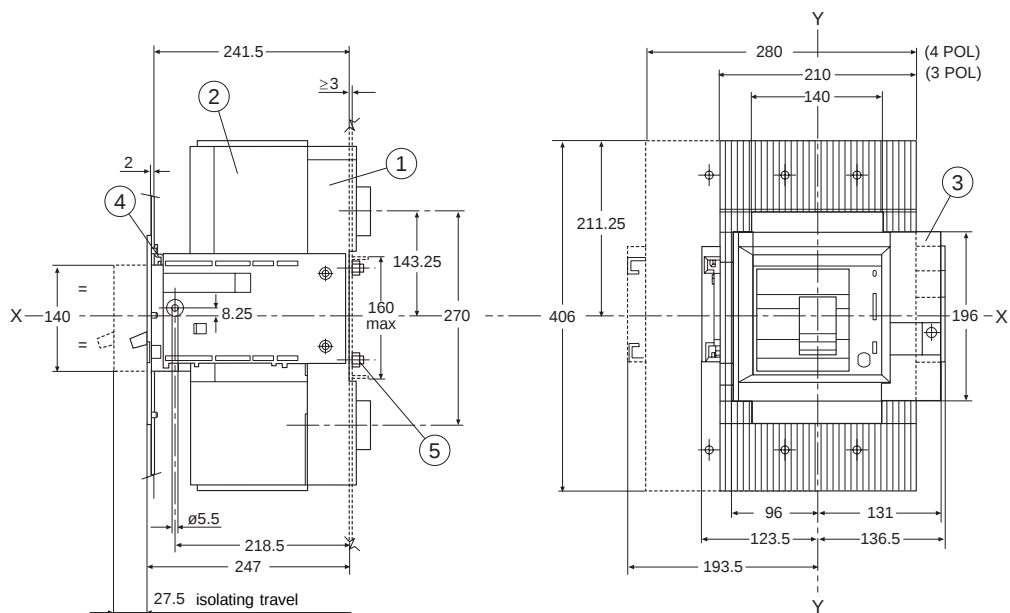
(thickness of sheet metal: 2 mm)



GSIS0029

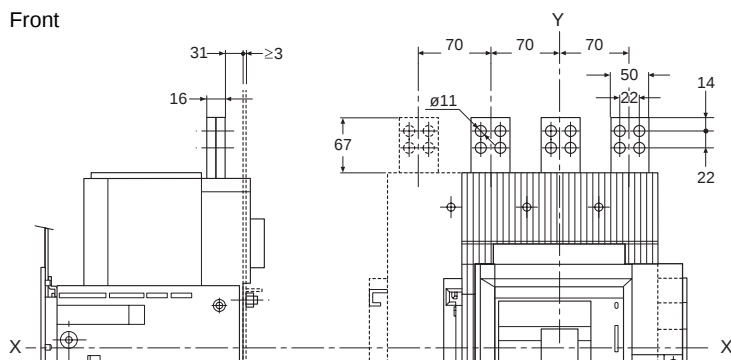


Withdrawable circuit-breaker

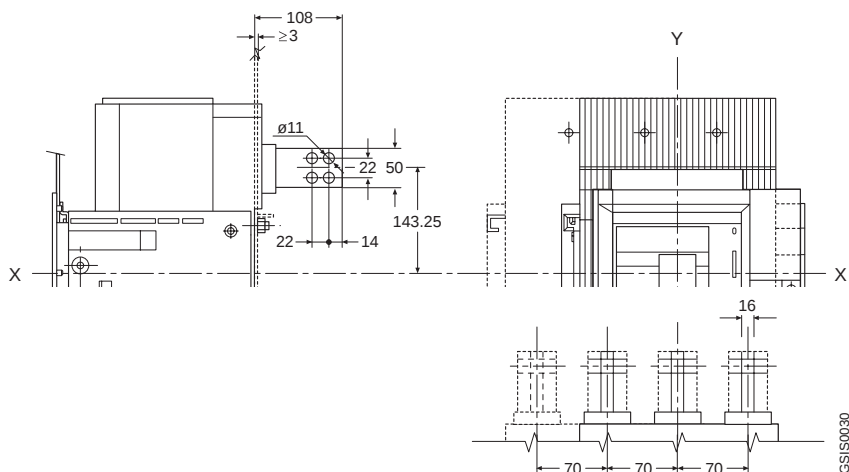


Terminals

Front



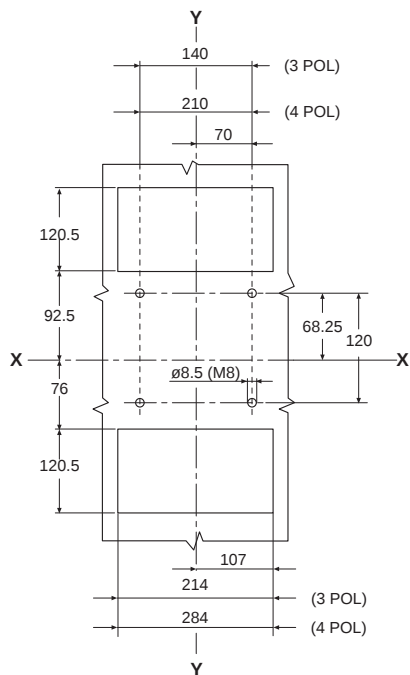
Horizontal or vertical flat bar rear terminals



Mounting parts for withdrawable circuit-breaker

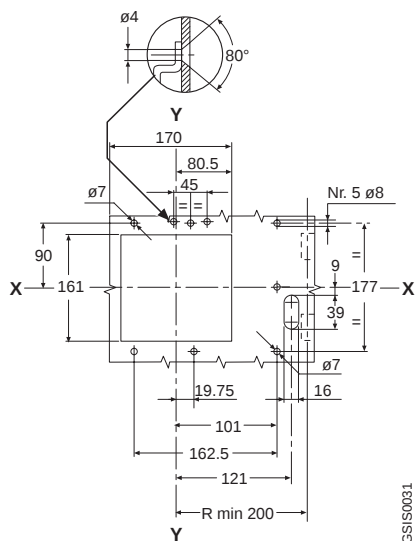
Template for drilling sheet metal support or channel

(Minimum thickness of sheet metal: 3 mm)



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



GSIS0031

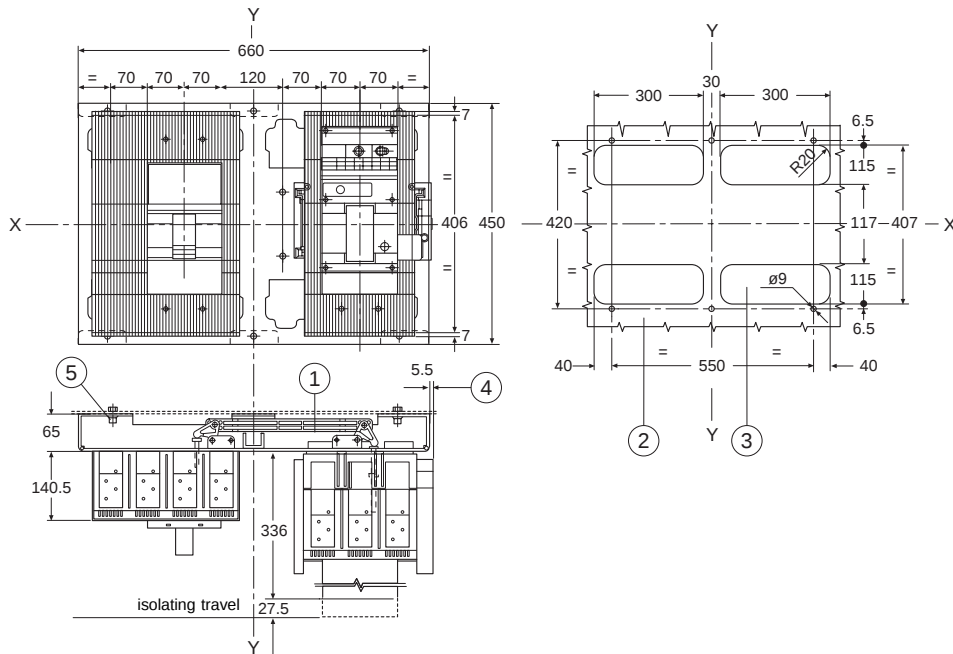


Overall dimensions

SACE S7

Accessories

Interlock across two horizontally-installed circuit-breakers



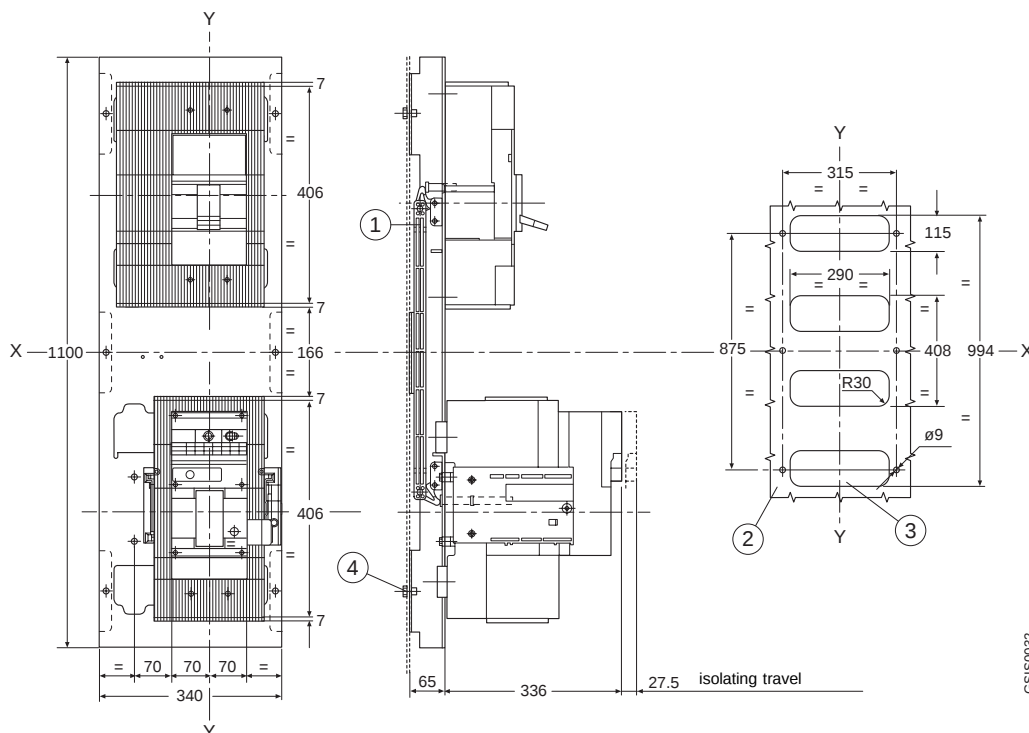
Key

- ① Interlock device
- ② Drilling template for mounting circuit-breaker on sheet metal
- ③ Drilling template for all versions with rear terminals
- ④ Dimensions with withdrawable version mounted on right
- ⑤ Tightening torque 9 Nm

Note

See the various different versions for the dimensions of the circuit-breakers

Interlock across two vertically-installed circuit-breakers



Key

- ① Interlock device
- ② Drilling template for mounting circuit-breaker on sheet metal
- ③ Drilling template for all versions with rear terminals
- ④ Tightening torque 9 Nm

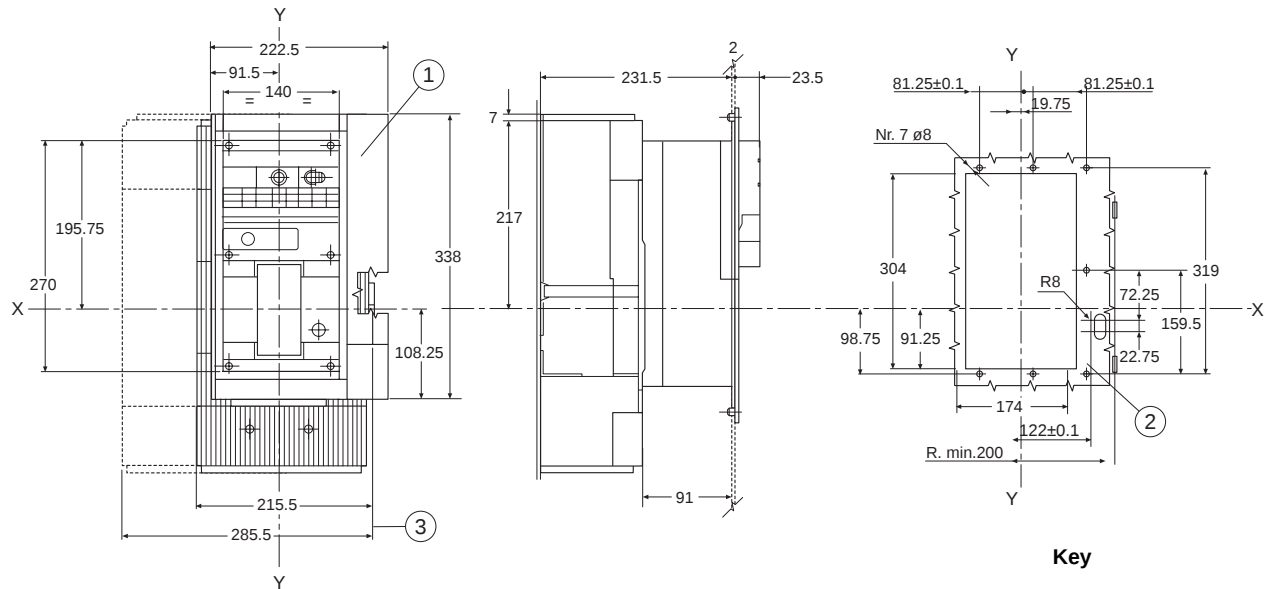
GSIS0032

Note

See the various different versions for the dimensions of the circuit-breakers

Accessories

Motor operator for fixed circuit-breaker

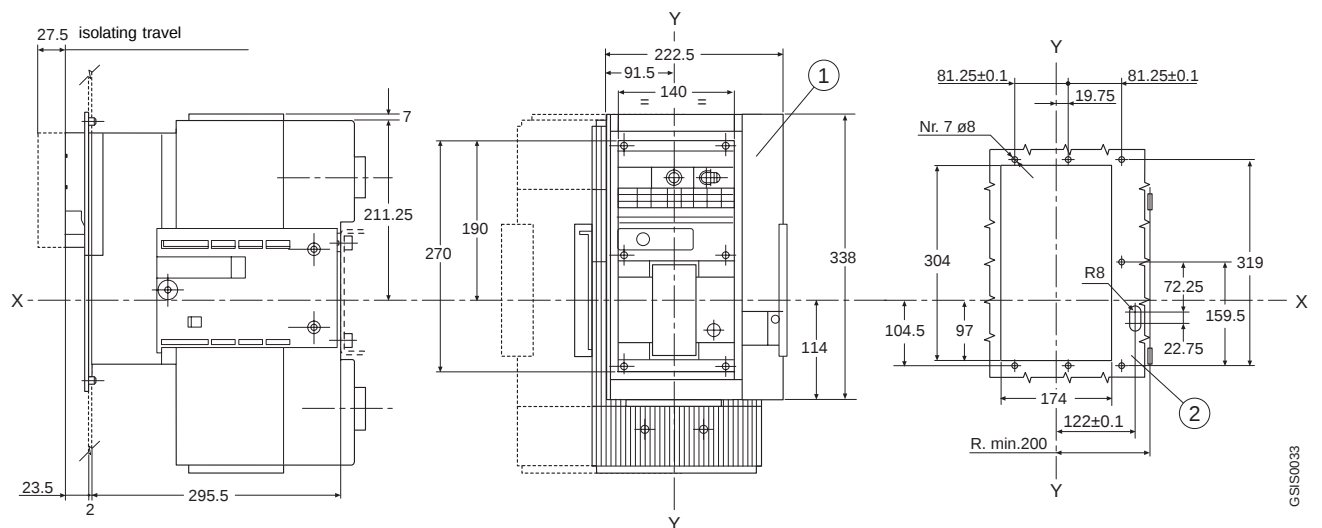


Note
See the various different
versions for the circuit-breaker
mounting holes

Key

- ① Flange for compartment door (included in supply)
- ② Template for drilling compartment door
- ③ Dimensions with connectors

Motor operator for withdrawable circuit-breaker



Note
See the various different
versions for the circuit-breaker
mounting holes

Key

- ① Flange for compartment door (included in supply)
- ② Template for drilling compartment door

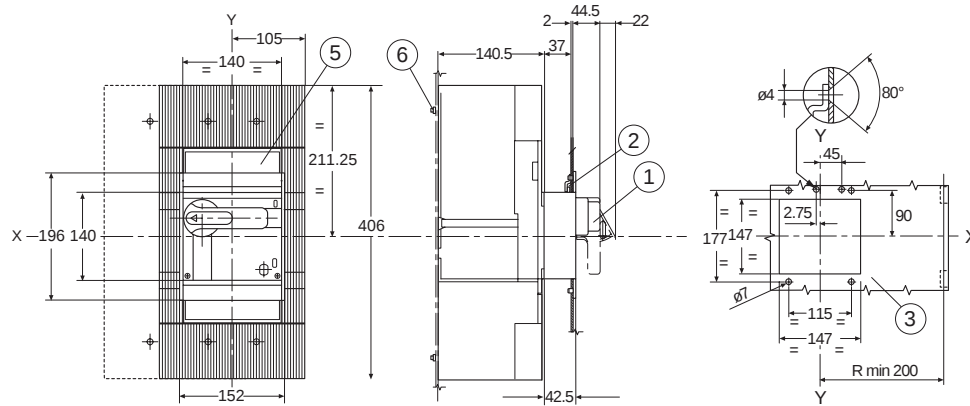


Overall dimensions

SACE S7

Accessories

Rotary handle operating mechanism on fixed circuit-breaker



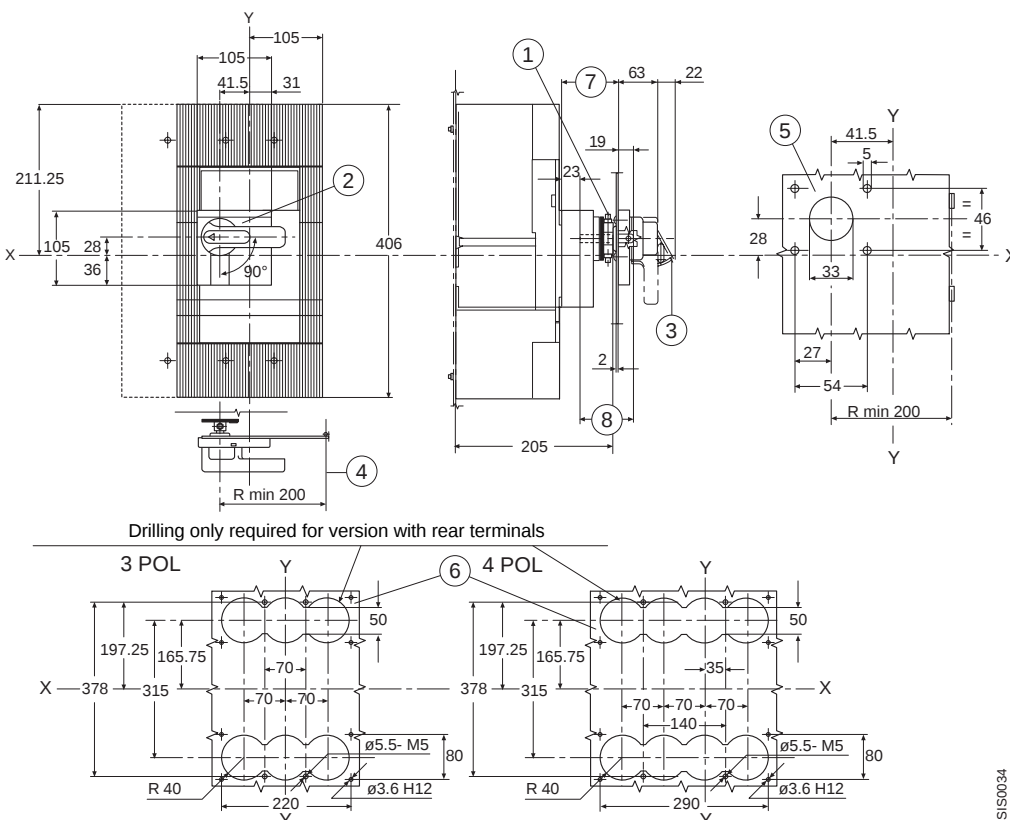
Key

- ① Rotary handle operating mechanism on circuit-breaker
- ② Lock for compartment door (to order)
- ③ Drilling of compartment door
- ④ Drilling template for mounting circuit-breaker on sheet metal
- ⑤ Flange for compartment door (included in supply)
- ⑥ Tightening torque 2 Nm

Note

See the various different versions for the dimensions of the circuit-breakers

Compartment door-mounted rotary handle operating mechanism for fixed circuit-breaker



Key

- ① Transmission assembly
- ② Rotary handle assembly with door lock device
- ③ Padlock device (maximum 3 padlocks max $\varnothing$ 6 mm to be provided by customer only for circuit-breaker open position)
- ④ Minimum radius of rotation for fulcrum of door
- ⑤ Template for drilling compartment door
- ⑥ Drilling template for mounting circuit-breaker on sheet metal
- ⑦ 72 ... 506 mm (with IP54 protection min. 96)
- ⑧ Distance ⑦ - 4 mm (shaft length)

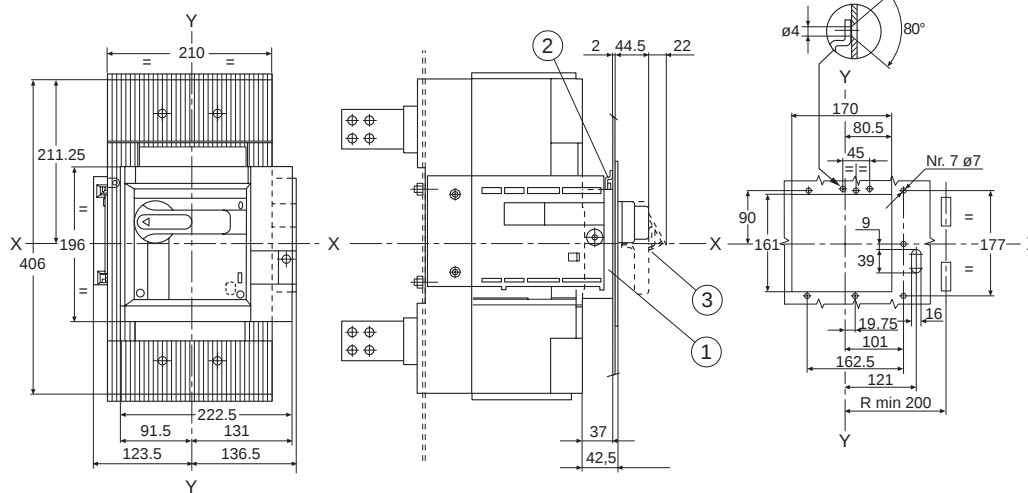
Note

See the various different versions for the dimensions of the circuit-breakers

GSIS0034

Accessories

Rotary handle operating mechanism on withdrawable circuit-breaker



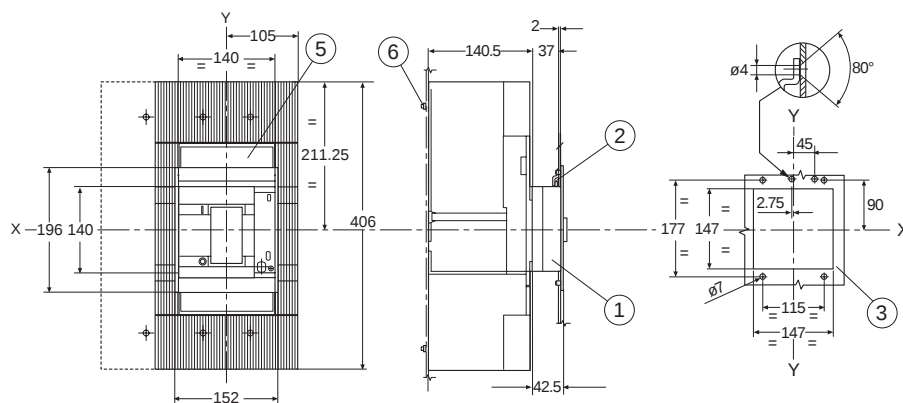
Key

- ① Rotary handle operating mechanism on circuit-breaker
- ② Lock for compartment door (to order)
- ③ Padlock device for open position (maximum 3 padlocks max. $\varnothing$ 6 mm to be provided by user)

Note

See the various different versions for the circuit-breaker mounting holes

Front flange for operating lever mechanism



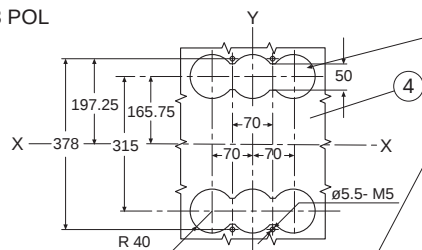
Key

- ① Front flange for lever operating mechanism
- ② Lock for compartment door (to order)
- ③ Drilling of compartment door
- ④ Drilling template for mounting circuit-breaker on sheet metal
- ⑤ Flange for compartment door (included in supply)
- ⑥ Tightening torque 2 Nm

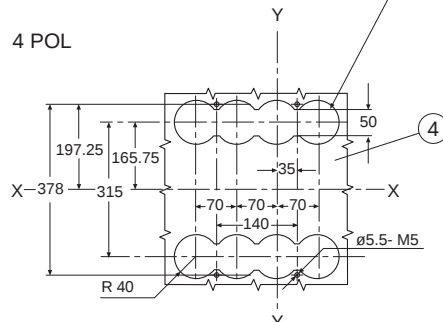
Note

See the various different versions for the circuit-breaker mounting holes

3 POL

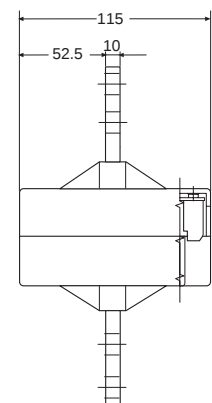
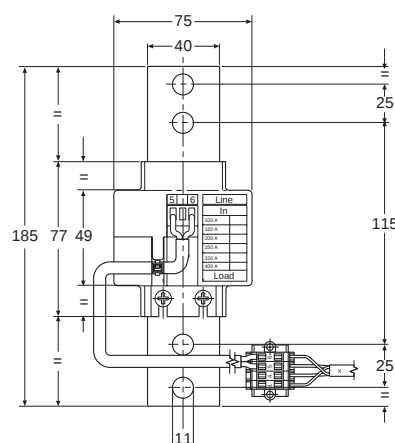


4 POL



Drilling only required for version with rear terminals

External neutral



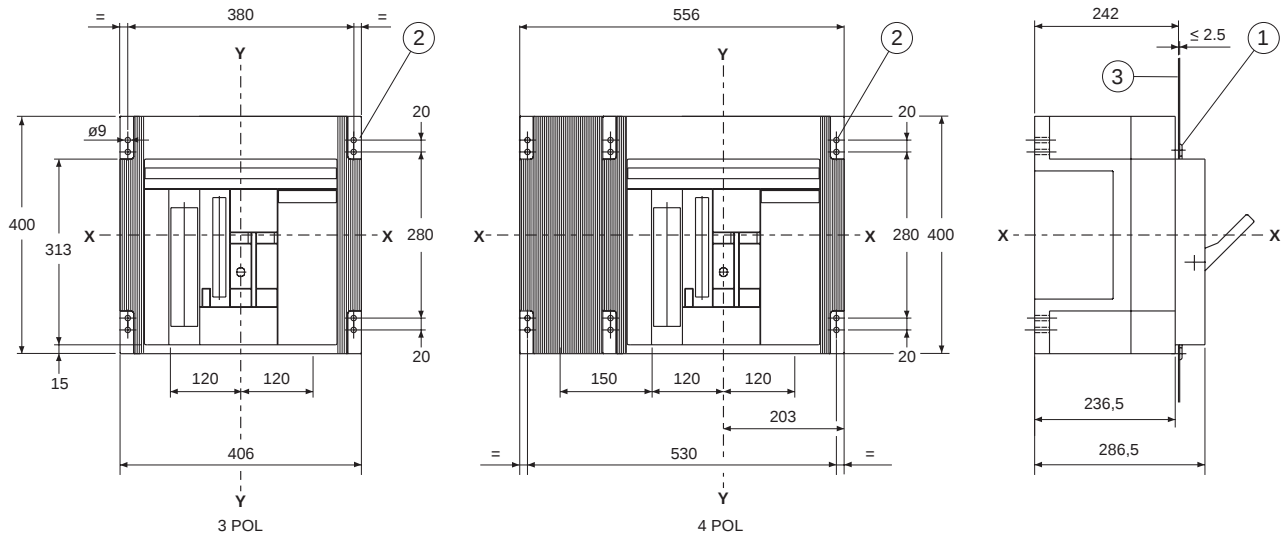
CSIS0035



Overall dimensions

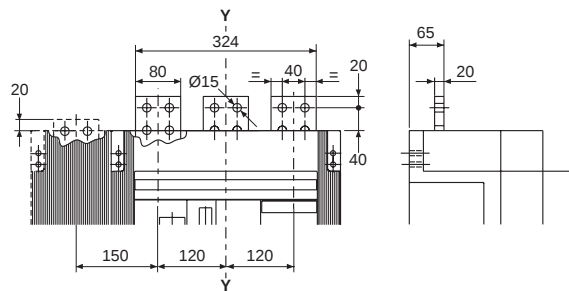
SACE S8

Fixed circuit-breaker

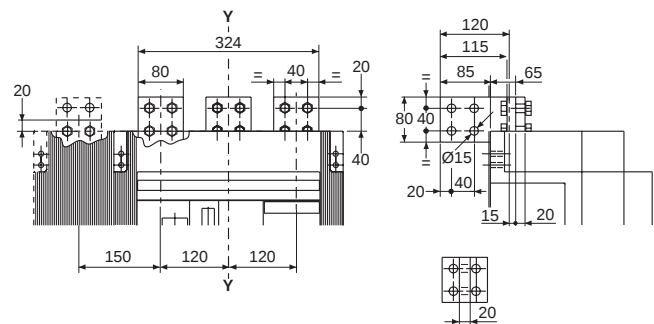


Terminals

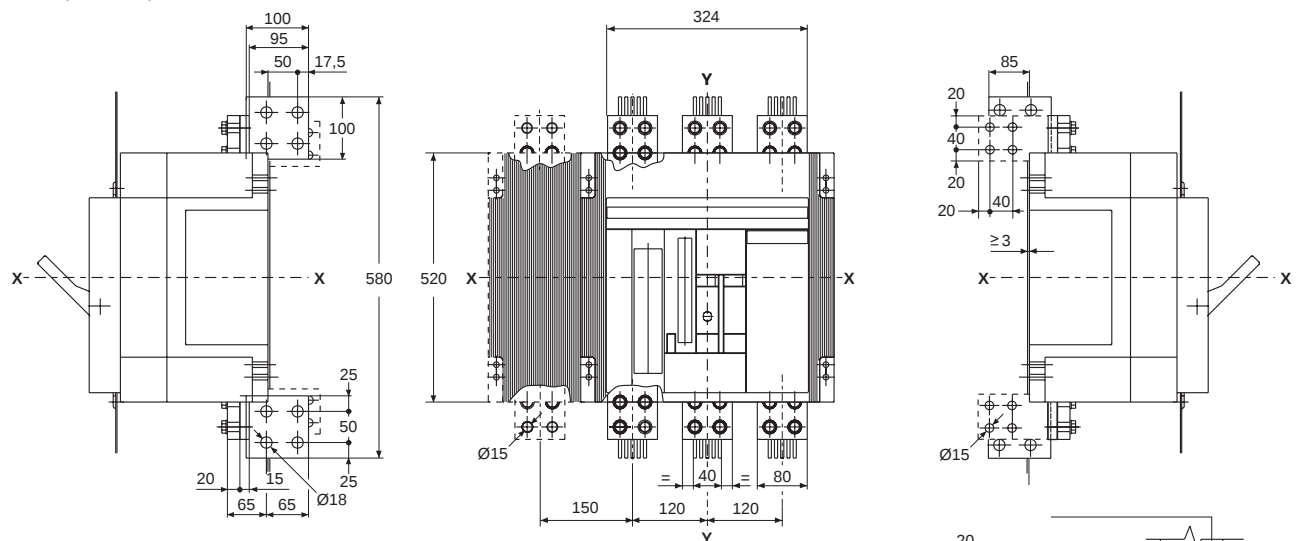
Front (S8 2000-2500)



Rear (S8 2000-2500)

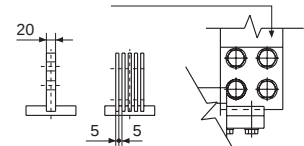


Rear (S8 3200)



Key

- ① Flange for compartment door
- ② Circuit-breaker mounting holes
- ③ Internal side of compartment door

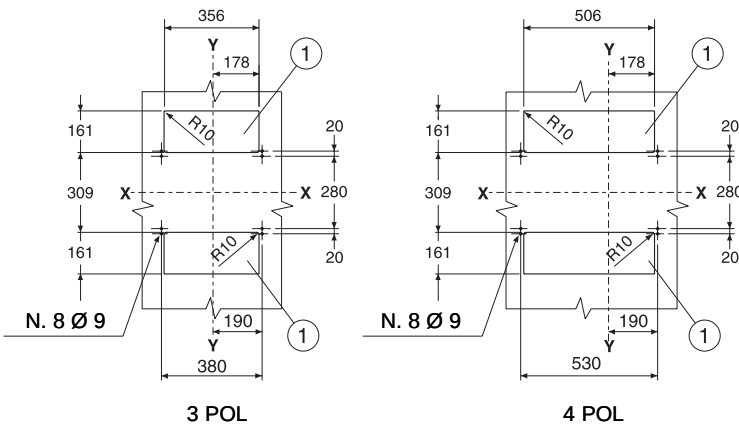


GSIS0036

Mounting parts for fixed circuit-breaker

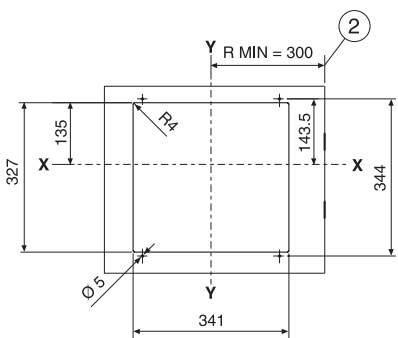
Template for drilling sheet metal support

(Minimum thickness of sheet metal: 3mm)



Template for drilling compartment door and fitting flange

(Minimum thickness of sheet metal: < 2,5mm)

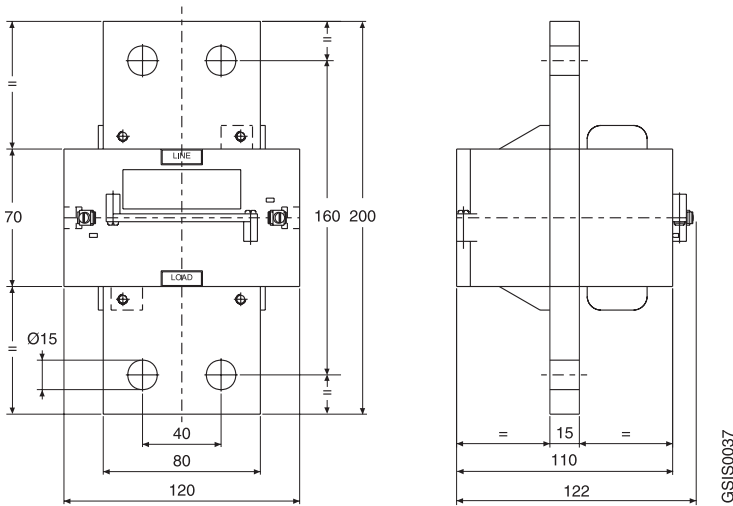


Key

- ① Hole for rear terminals only
- ② Minimum radius of rotation of compartment door

Accessories

External neutral





Overall dimensions

Distances to be respected

Insulation distances for installation in metal compartment with wall to chassis ground or wall to chassis ground protected with insulating plate

Wall to chassis ground [mm]

	A ($U_b \leq 415V$)	A(*) ($U_b \geq 440V$)	B	C
S1	25	50	20	20
S2	25	50	20	20
S3	35	100	25	20
S4	35	100	25	20
S5	35	100	25	20
S6	35	100	25	20
S7	50	100	30	20
S8	200	200	30	120

(*) these distances are valid for operating voltages of $> 440 V$ and for circuit-breakers with breaking capacity level L.

	A	B	C	D	E		F
					3 POL	3 POL	
S2X100	25	20	20	169	135	–	73
S3X	50	25.5	30	340	161	196	112
S4X	60	25.5	30	430	161	196	112
S6X	60	30.5	30	500	275	345	152

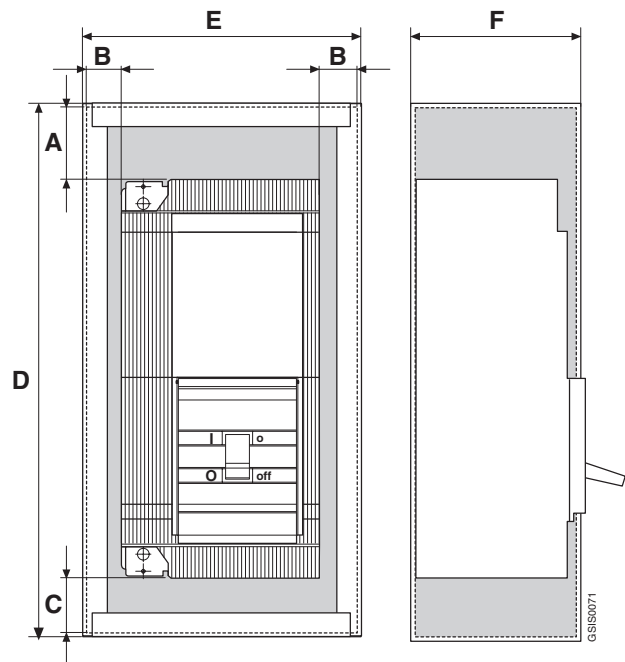
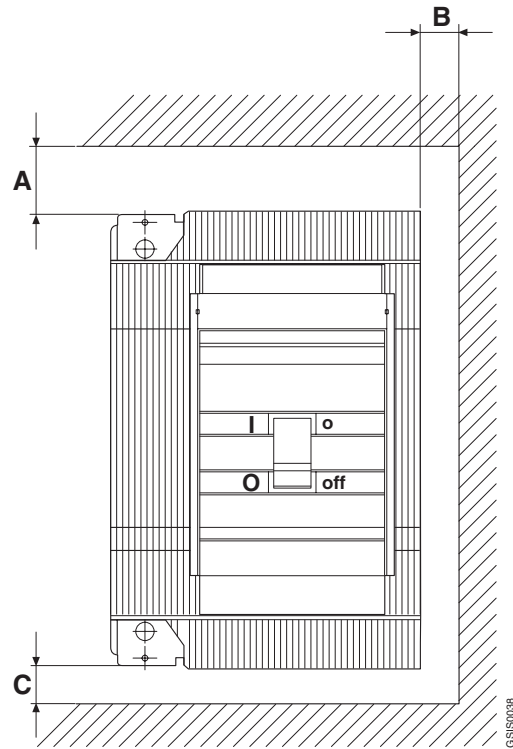
A - B - C = Distances inside compartment walls

D - E - F = Distances outside compartment

Insulation distances for installation in insulated compartment

Insulated wall [mm]

	A	B	C
S1	25	0	20
S2	25	0	20
S3	35	0	20
S4	35	0	20
S5	35	0	20
S6	35	10	20
S7	50	10	20
S8	120	15	120



The dimensions shown apply for operating voltages U_b of up to 690 V.

The dimensions to be respected must be added to the maximum dimensions of the various different versions of the circuit-breakers, including the terminals.

Minimum distance between centres for two horizontally or vertically-installed circuit-breakers

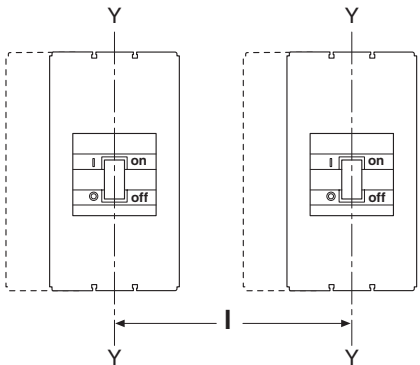
For horizontal or vertical installation, make sure that the connection busbars or cables don't reduce the air insulation distances.

Minimum distance between centres for horizontally-installed circuit-breakers

	Circuit-breaker width [mm]		I [mm]	
	3 POL	4 POL	3 POL	4 POL
S1	78	103	78/93 ^(*)	103/118 ^(*)
S2	90	120	90/105 ^(*)	120/135 ^(*)
S3	105	140	105/119 ^(*)	140
S4	105	140	105/119 ^(*)	140
S5	140	184	140	185
S6	210	280	210	280
S7	210	280	210	280
S8	435	585	435	585

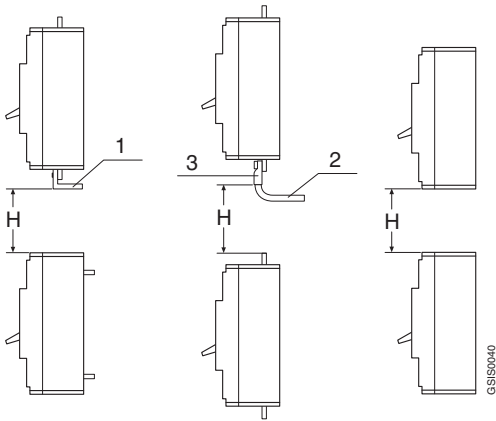
(*) these are the distances to be respected for circuit-breakers fitted with a flange for the compartment door or side conductor outlets.

The distances between centres are for the installation of fixed and plug in circuit-breakers. When installing withdrawable SACE S3, S4, S5, S6, S7 circuit-breakers you should also take into account the dimensions of the metal supporting channel that needs to be fitted between the guides of the fixed parts of two adjacent circuit-breakers.



Minimum distance between centres for vertically-installed circuit-breakers

	H [mm]
S1	60
S2	90
S3	140
S4	140
S5	140
S6	180
S7	180
S8	300



- 1 Connection not insulated
- 2 Insulated cable
- 3 Cable terminals



Circuit-diagrams

Index

Operating status shown	6/42
Duty releases	6/44
Auxiliary contacts	6/46
Position contacts	6/48
Auxiliary circuits of electronic releases	6/50
Motor operators	6/53
Graphic symbols for circuit-diagrams (IEC 617 and CEI 3-14 ... 3-26)	6/54
Key and reference notes	6/55



Circuit diagrams

Operating status shown

The circuit is shown in the following conditions:

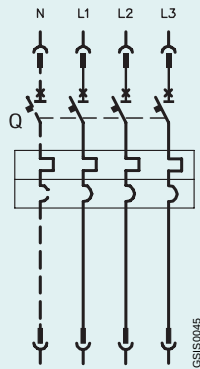
- fixed, plug in or withdrawable circuit-breaker (depending on type of circuit-breaker), open and racked in
- circuits de-energised
- releases not tripped

- motor operator with springs loaded (for S6-S7 circuit-breakers)

The circuit-breaker is only fitted with those accessories specified in the ABB SACE confirmation of order. Consult this catalogue for information on how to make out an order.

SACE S1-S2-S3-S5-S6

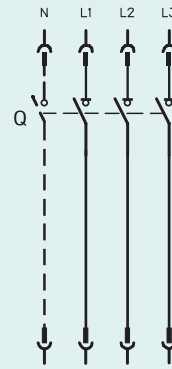
Three-pole or four-pole circuit-breaker with thermomagnetic release



GSIS0045

SACE S3D-S6D-S7D-S8D

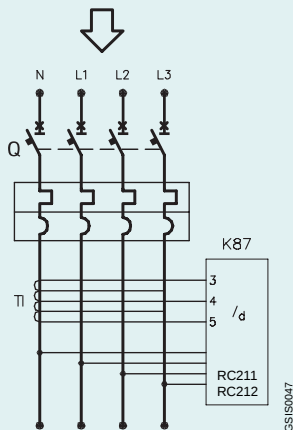
Three-pole or four-pole switch-disconnector



GSIS0046

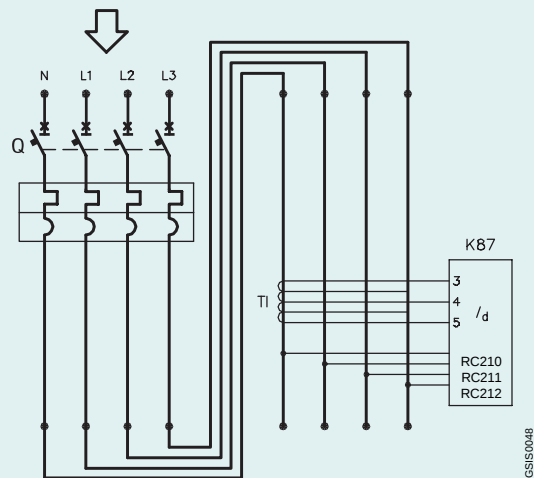
SACE S1-S2-S3

Four-pole fixed circuit-breaker with vertically-installed residual-current release
SACE RC211 o RC212



GSIS0047

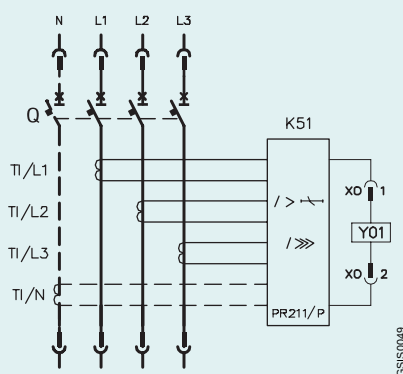
Four-pole fixed circuit-breaker with horizontally-installed residual-current release
SACE RC210, RC211 o RC212



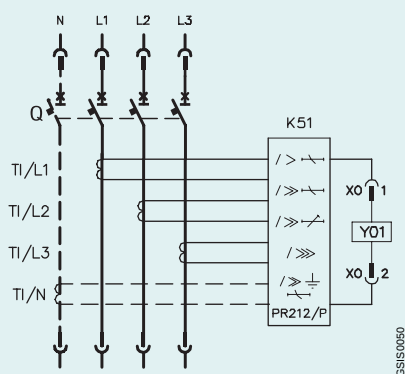
GSIS0048

SACE S4-S5-S6-S7

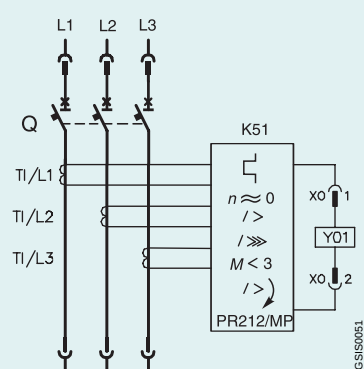
Three-pole or four-pole circuit-breaker
with SACE PR211/P
microprocessor-based release



Three-pole or four-pole circuit-breaker
with SACE PR212/P
microprocessor-based release

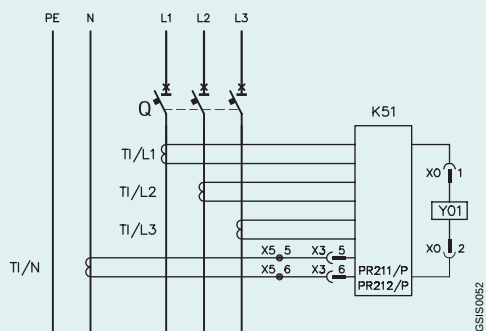


Three-pole circuit-breaker
with SACE PR212/MP
microprocessor-based release



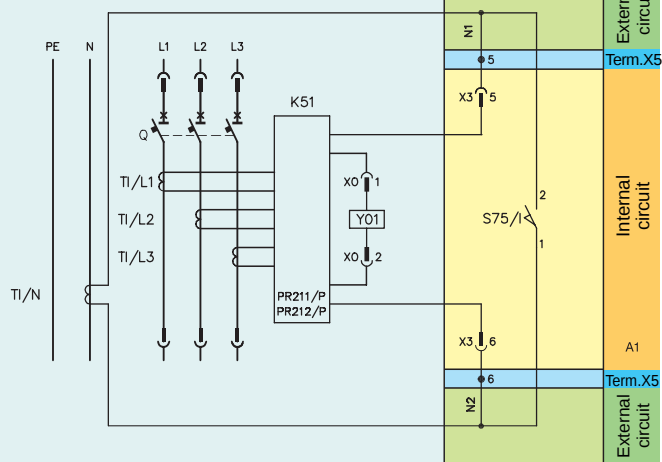
SACE S4-S5-S6-S7

Three-pole fixed circuit-breaker
with current transformer on neutral
conductor outside circuit-breaker



N.B. If using a fixed circuit-breaker with a current transformer on the neutral conductor outside the circuit-breaker, you must short-circuit the terminals of the TI/N transformer when you want to remove the circuit-breaker.

Three-pole plug-in or withdrawable
circuit-breaker with current transformer on
neutral conductor outside circuit-breaker



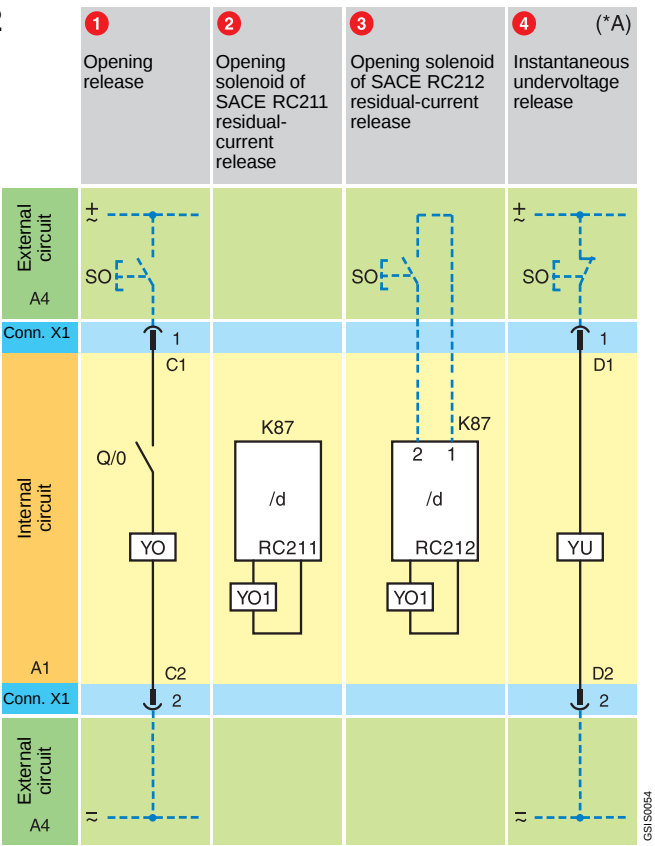
20 Circuit of current transformer on neutral conductor outside circuit-breaker (for withdrawable circuit-breaker)



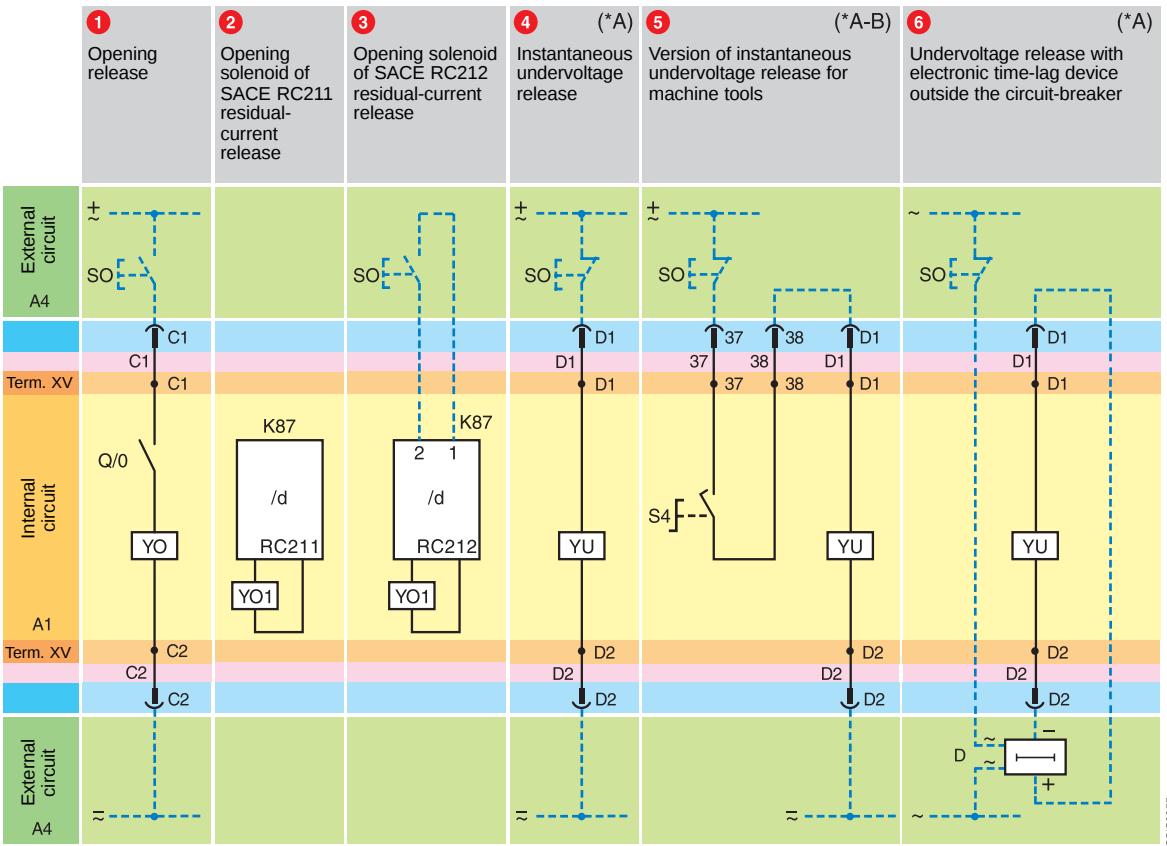
Circuit diagrams

Duty releases

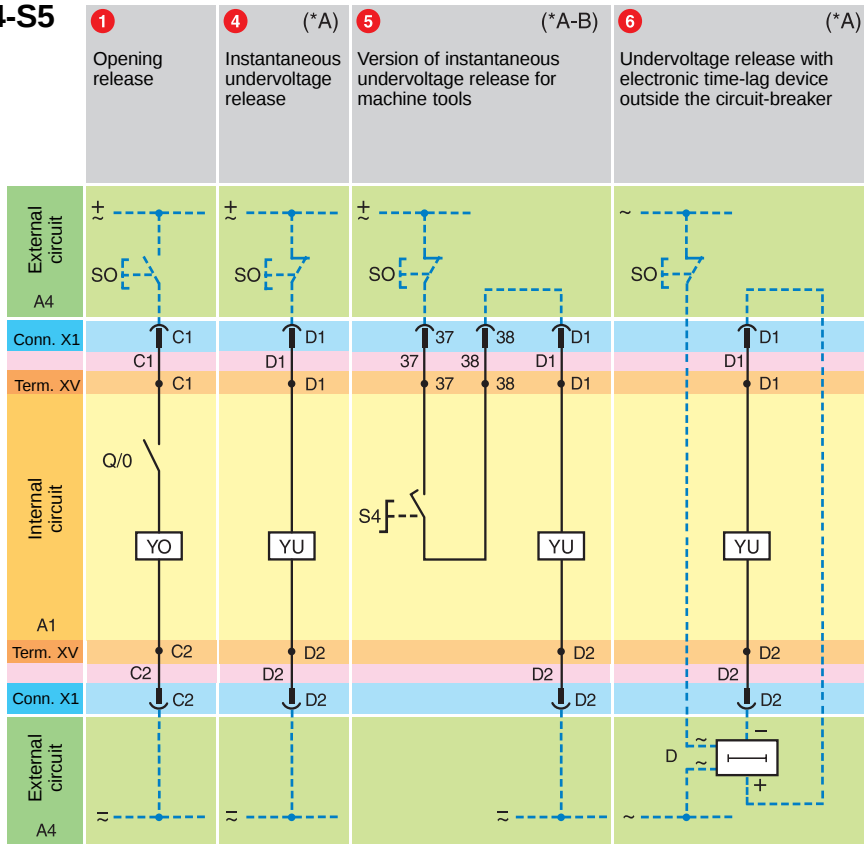
SACE S1-S2



SACE S3



SACE S4-S5



Incompatibility

The circuits indicated in the following figures cannot be powered simultaneously on the same circuit-breaker

1 - 4 - 5 - 6 2 - 3

Availability

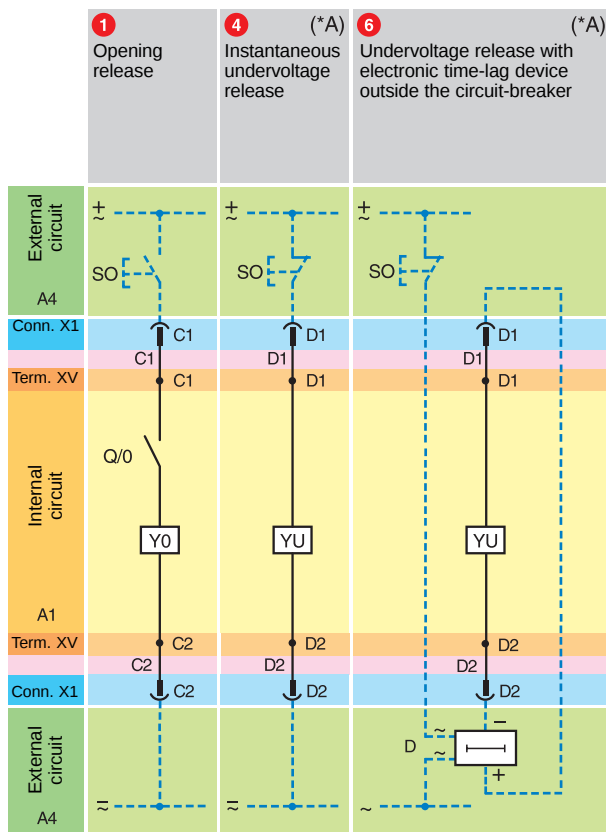
Connectors X1 and X2 are only supplied to order for circuit-breakers S1 - S2.

Notes

(*A) The undervoltage release is powered from upstream of the circuit-breaker or by an independent power supply: closing of the circuit-breaker is only allowed when the release is energised (the closing lock is implemented mechanically).

(*B) Contact S4 shown in Fig. 5 opens the circuit when the circuit-breaker is open and closes it again upon a manual closing command from the rotary handle, in conformity with the Standards governing machine tools (the circuit-breaker will not close, however, if the undervoltage release is not powered).

SACE S6-S7

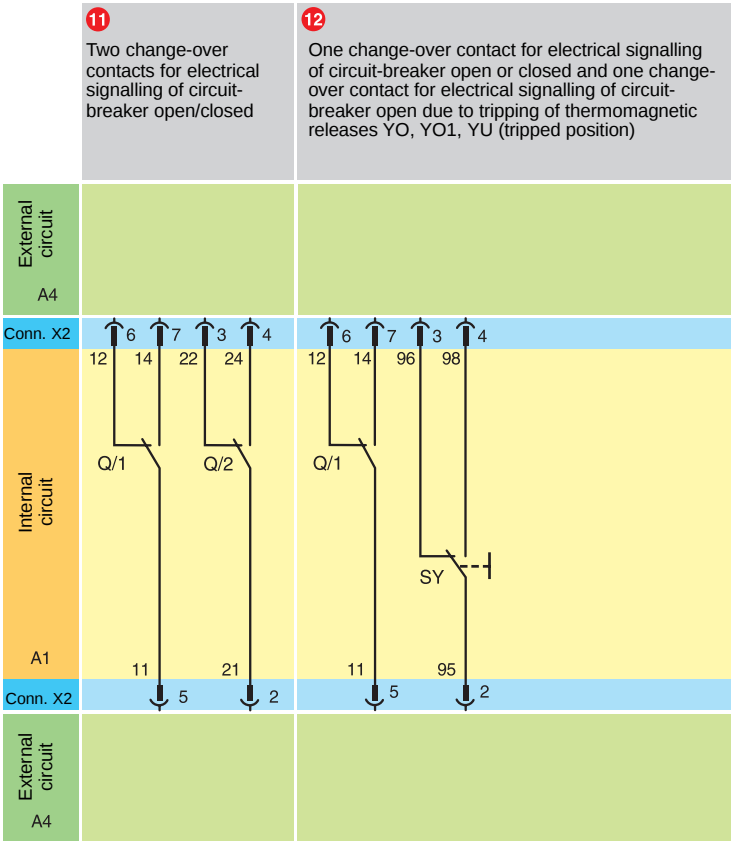




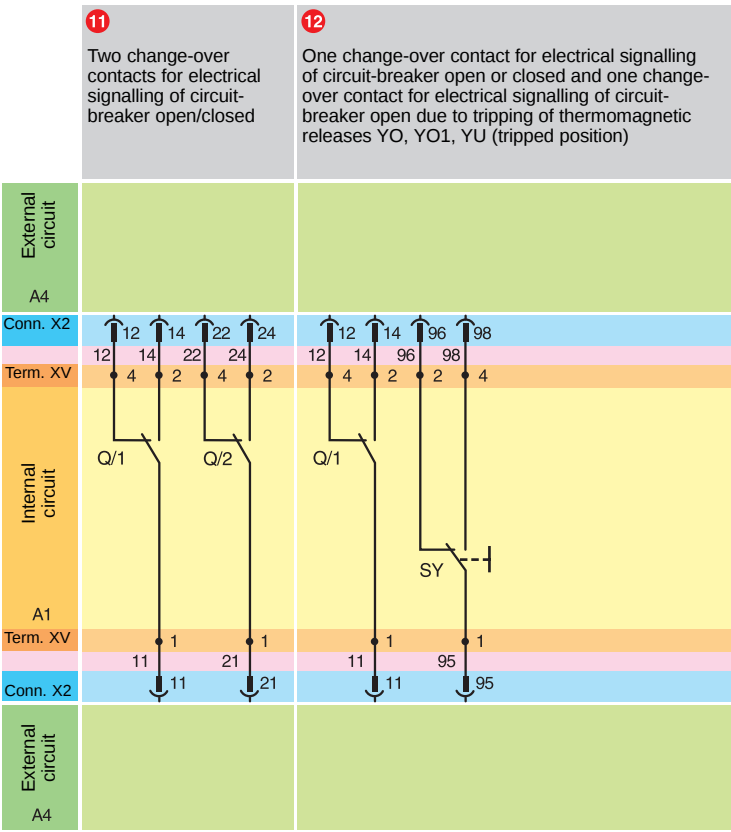
Circuit diagrams

Auxiliary contacts

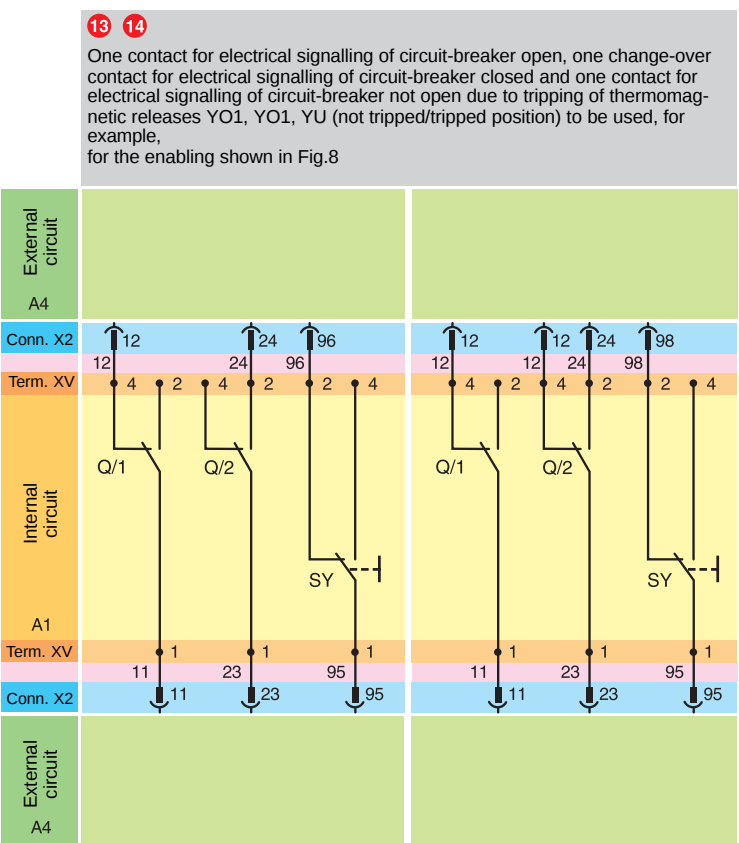
SACE S1-S2



SACE S3-S4-S5-S6-S7



SACE S6-S7



Incompatibility

The circuits indicated in the following figures cannot be powered simultaneously on the same circuit-breaker:

11-12-13-14

Availability

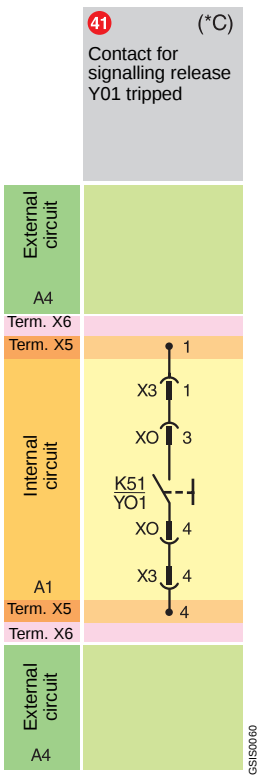
Connectors X1 and X2 are only supplied to order for circuit-breakers S1 - S2.

Notes

(*C) The electrical signalling contact for the microprocessor-based overcurrent release, shown in Fig. 41, has the following electrical characteristics:

- rated voltage = 125V AC / 30V DC
- breaking capacity (resistive load = 3 W/VA)
- maximum interrupted current = 0.5 A

SACE S4-S5-S6-S7

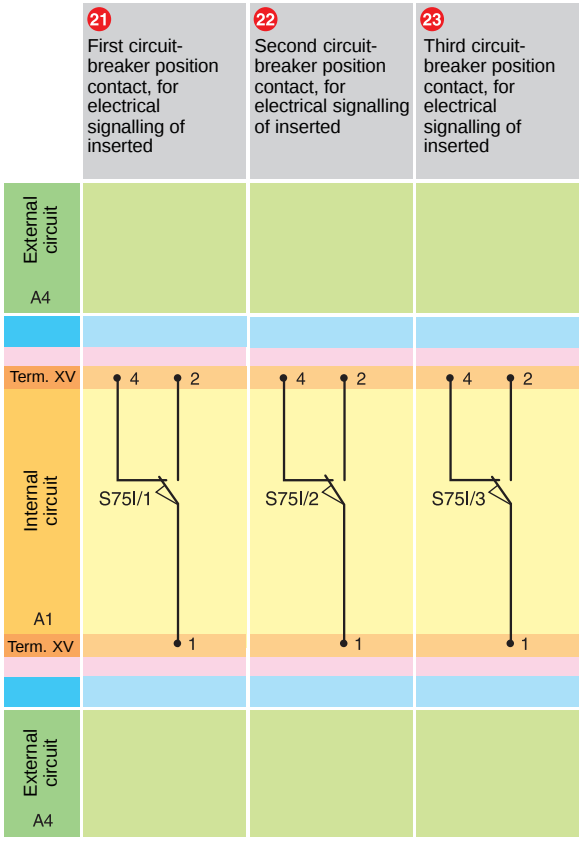




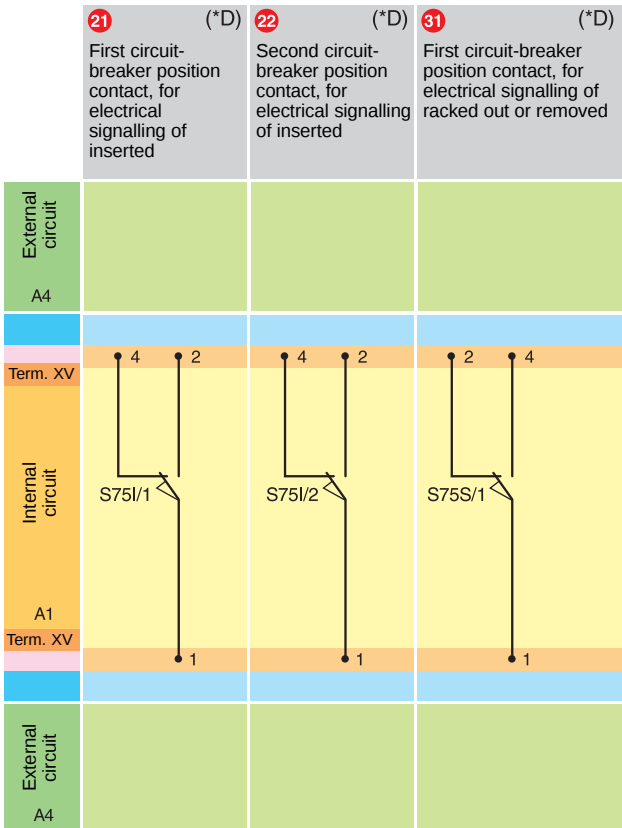
Circuit diagrams

Position contacts

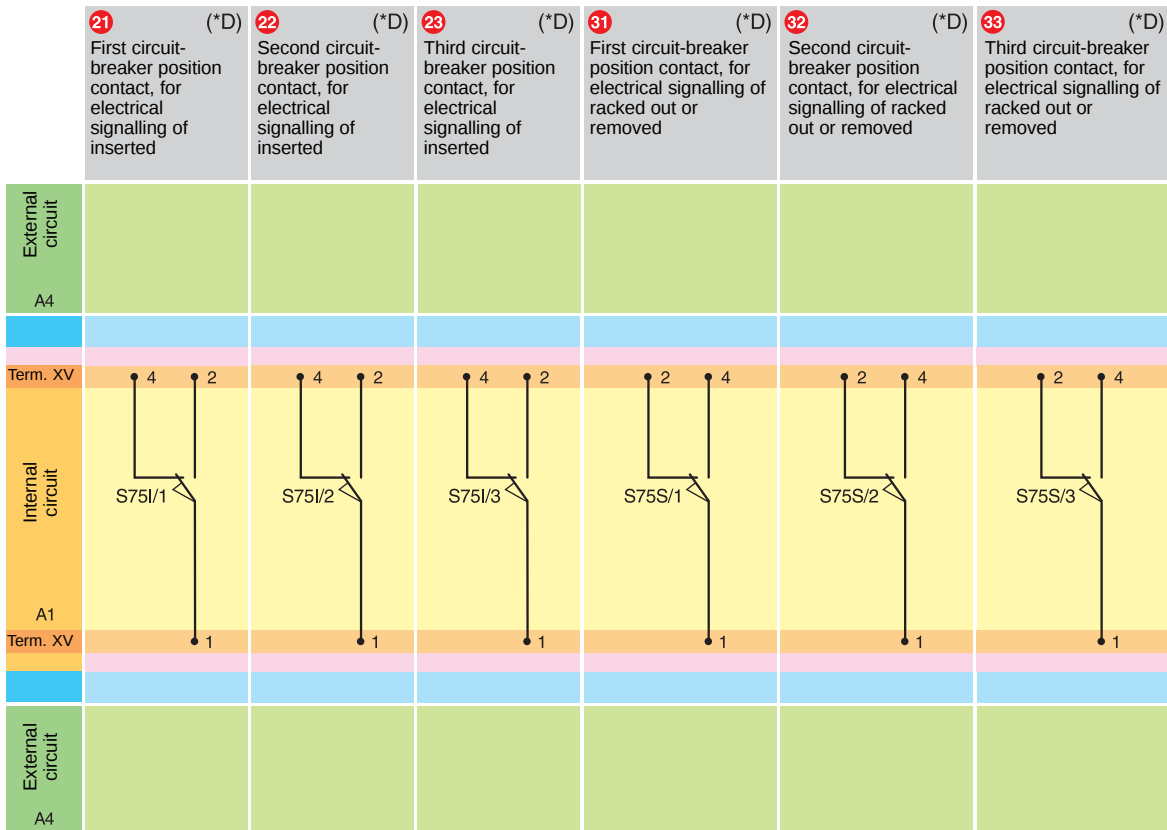
SACE S2



SACE S3

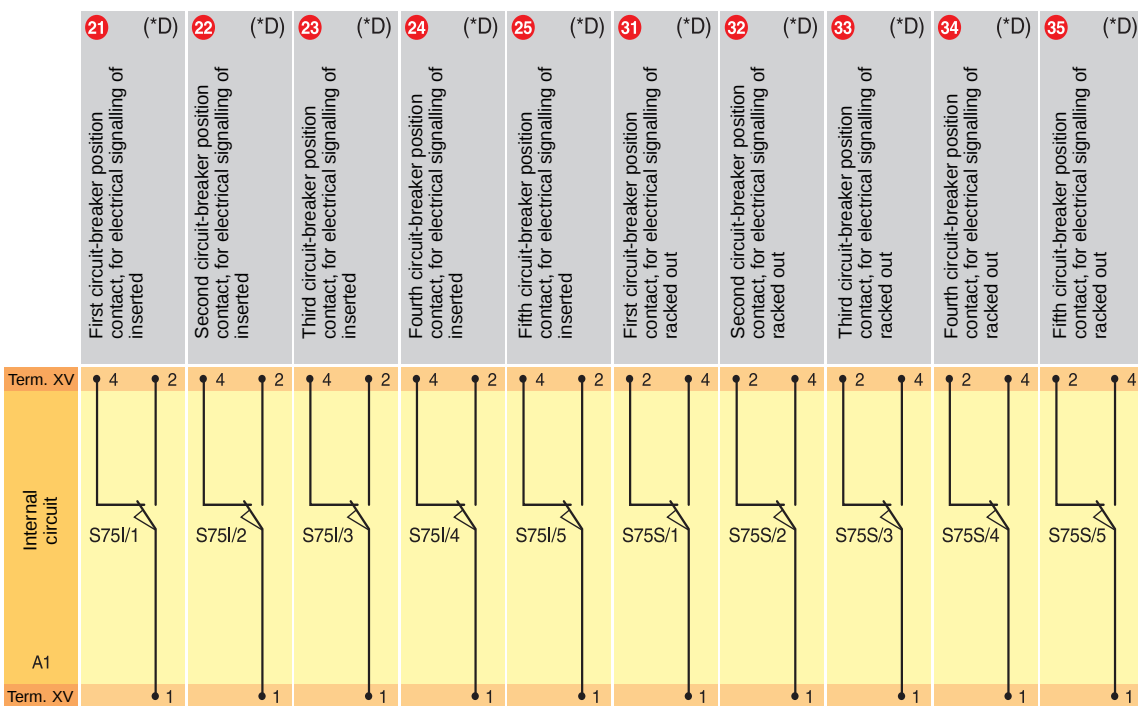


SACE S4-S5



GS/S50063

SACE S6-S7



GS/S5064

Incompatibility

The circuits indicated in the following figures cannot be powered simultaneously on the same circuit-breaker:

- 20 - 21 - 31
- 22 - 32 23 - 33
- 24 - 34 25 - 35

Notes

(*D) The circuit-breaker can be fitted with position contacts S75I and S75S in any combination up to a maximum of

- total of 2 contacts for S3
- total of 3 contacts for S4, S5
- total of 5 contacts for S6, S7

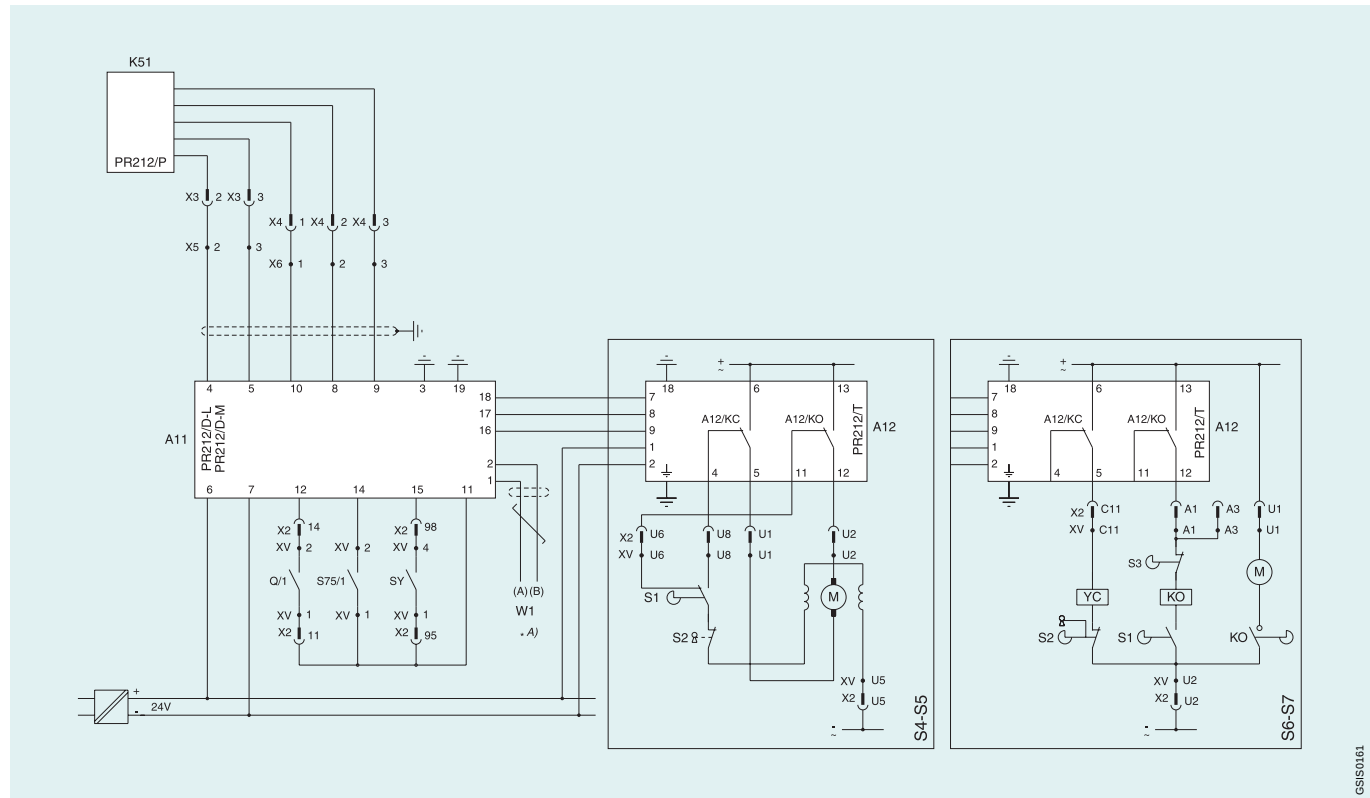


Circuit diagrams

Auxiliary circuits of SACE PR212/P electronic releases

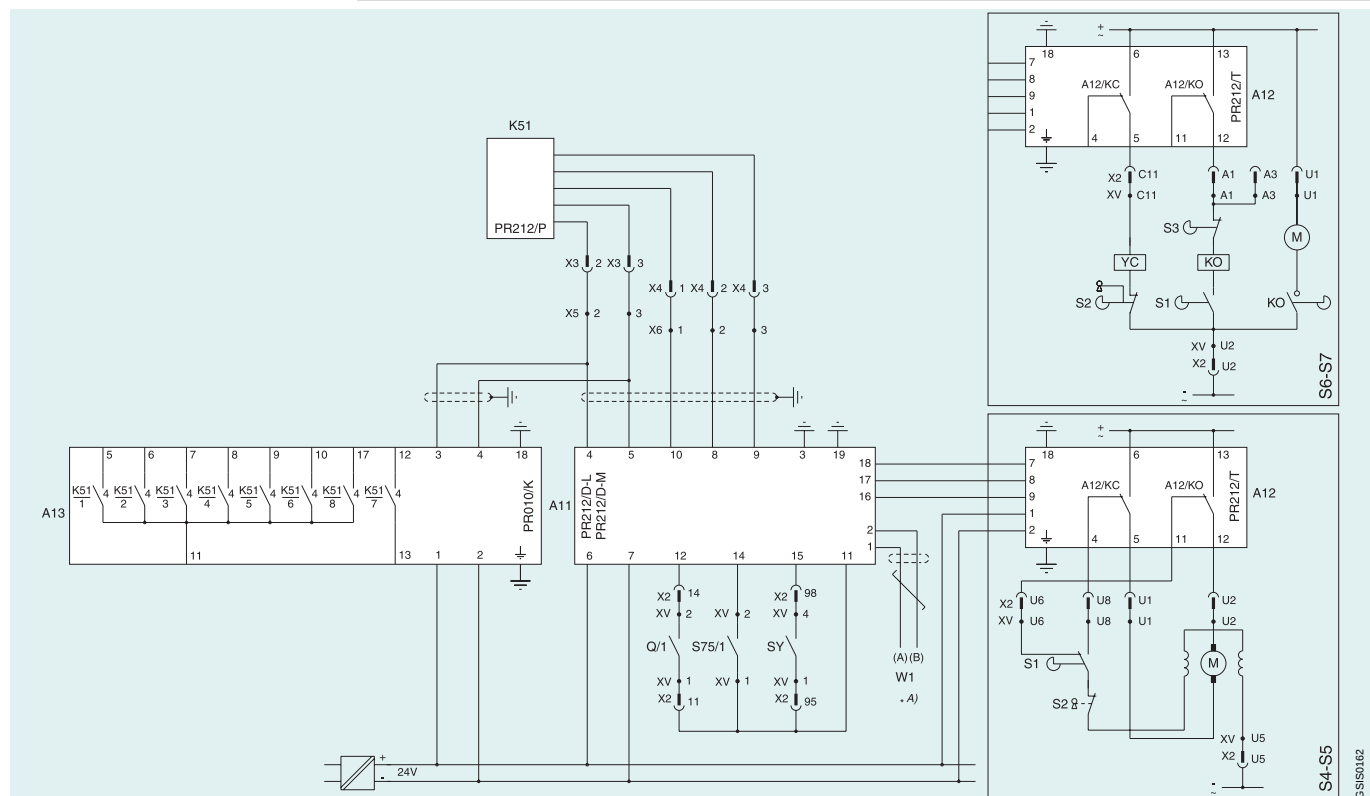
SACE S4-S5-S6-S7

SACE PR212/P release connected to the dialogue unit SACE PR212/D and actuator unit SACE PR212/T



SACE S4-S5-S6-S7

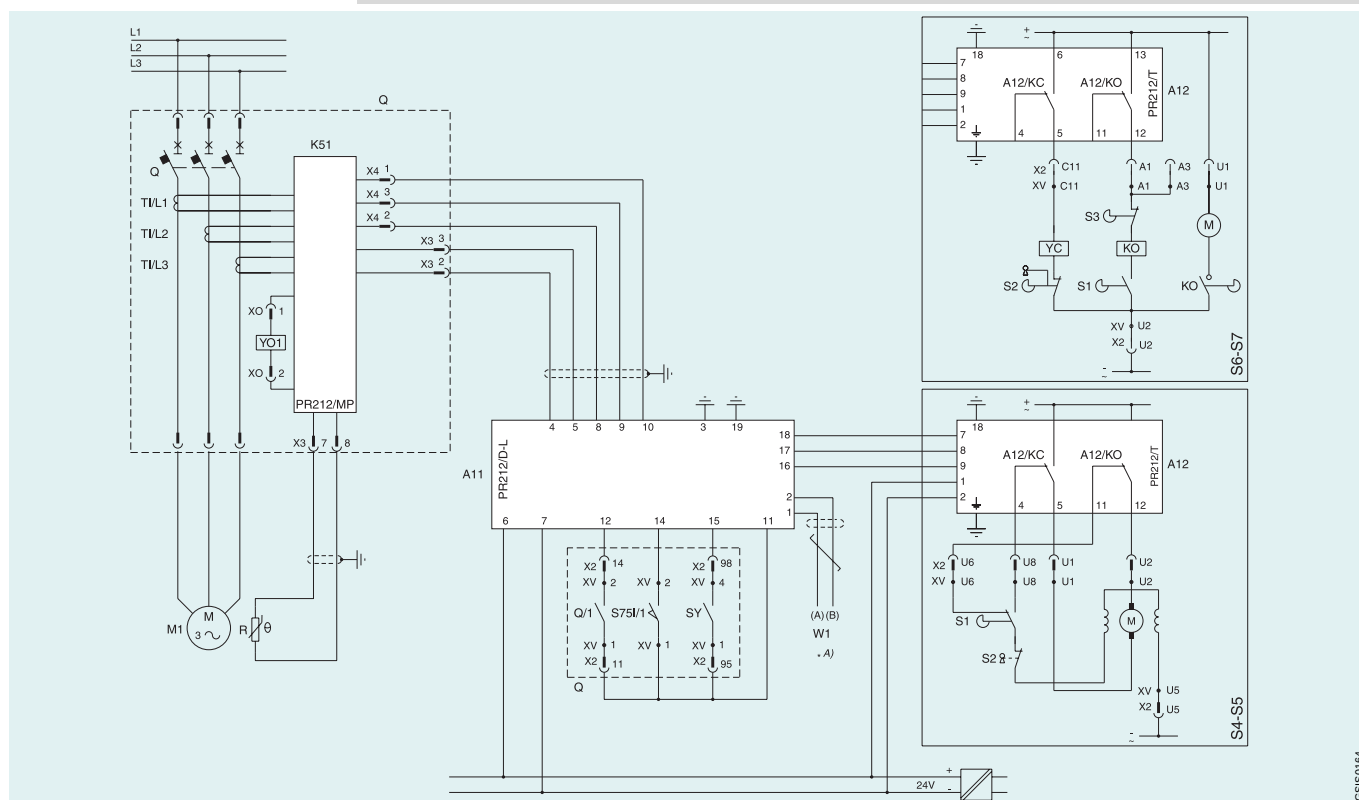
SACE PR212/P release connected to the dialogue unit SACE PR212/D, signalling unit SACE PR010/K and actuator unit SACE PR212/T



Auxiliary circuits of SACE PR212/MP electronic releases for motor protection

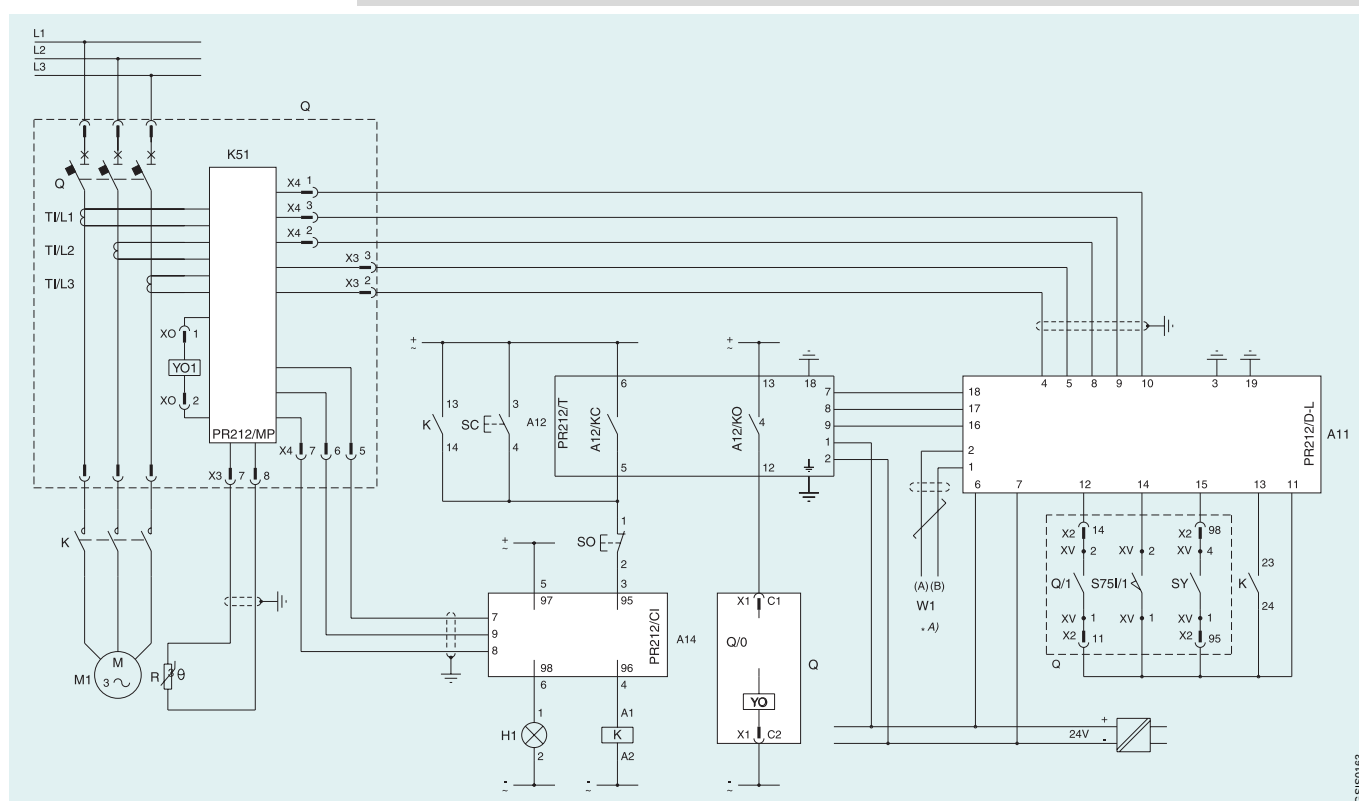
SACE S4-S5-S6-S7

SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L and actuator unit SACE PR212/T



SACE S4-S5-S6-S7

SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L, actuator unit SACE PR212/T and contactor operator unit SACE PR212/CI



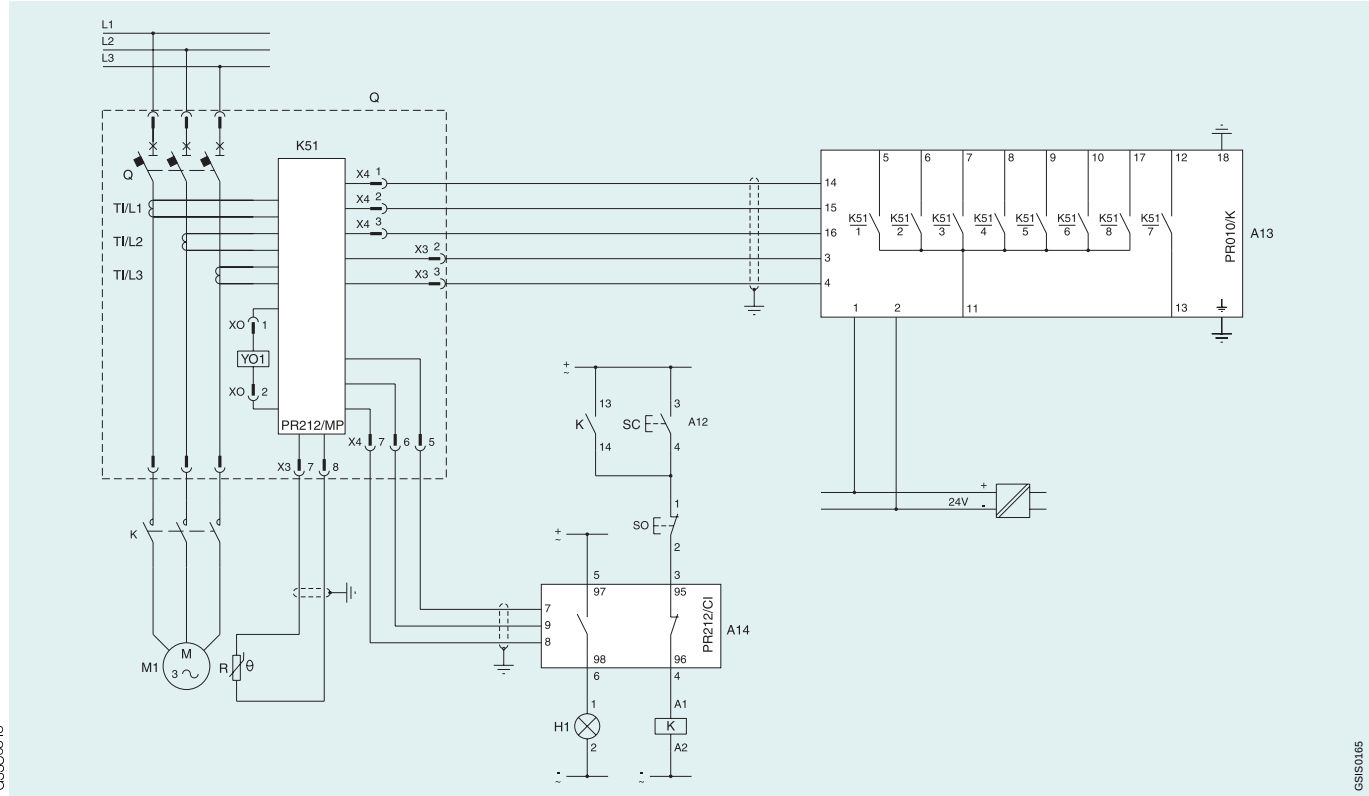


Circuit diagrams

Auxiliary circuits of SACE PR212/MP electronic releases for motor protection

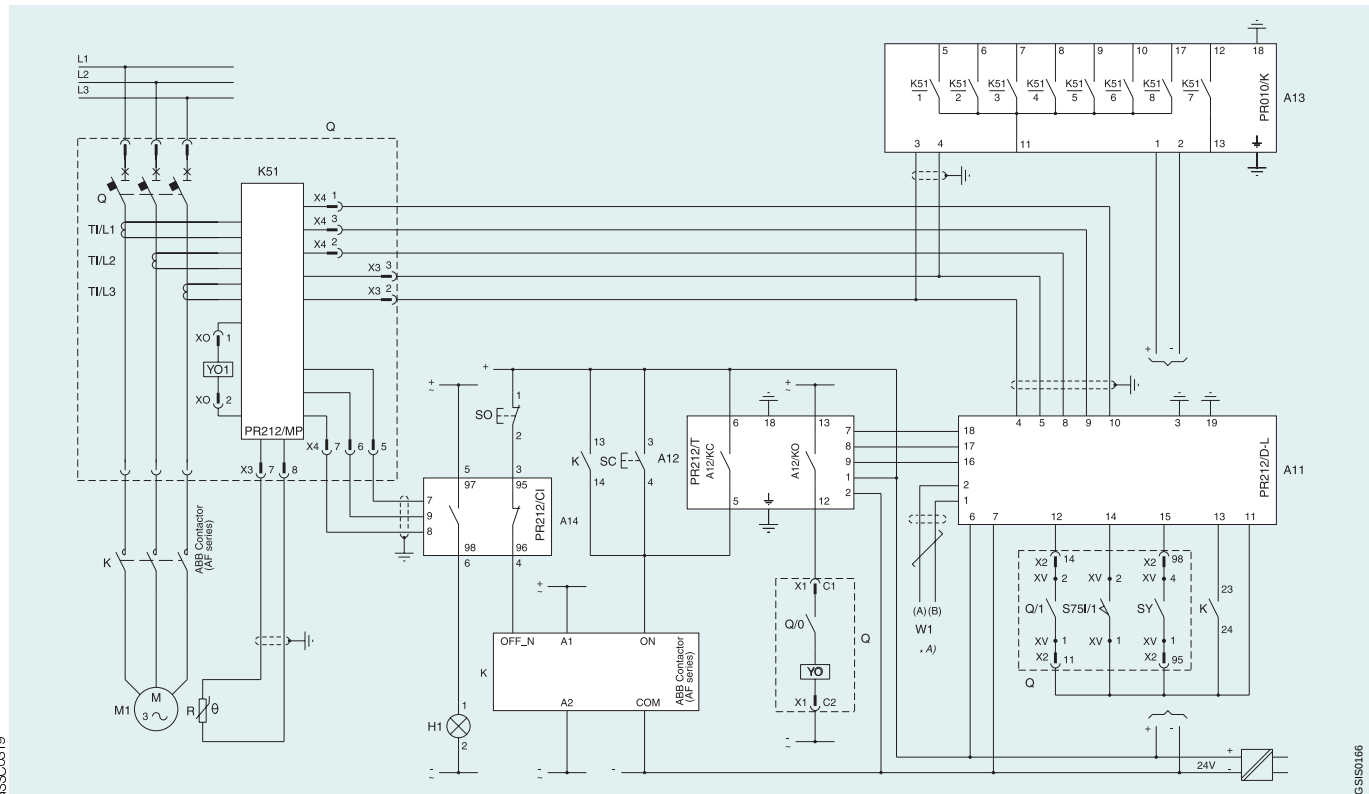
SACE S4-S5-S6-S7

SACE PR212/MP release connected to the signalling unit SACE PR010/K and contactor operator unit SACE PR212/C1



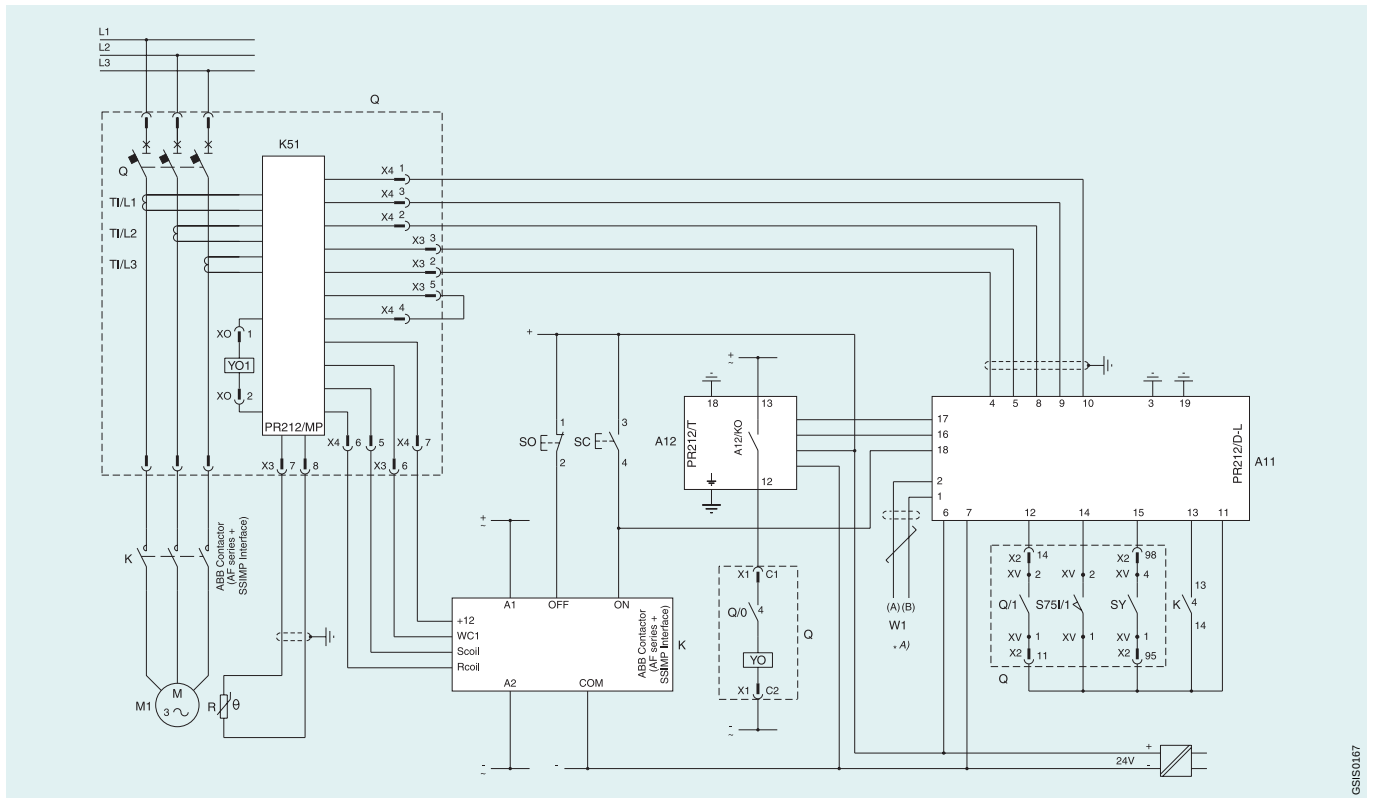
SACE S4-S5-S6-S7

SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L, actuator unit SACE PR212/T, signalling unit SACE PR010/K and contactor operator unit SACE PR212/C1



SACE S4-S5-S6-S7

SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L and actuator unit SACE PR212/T



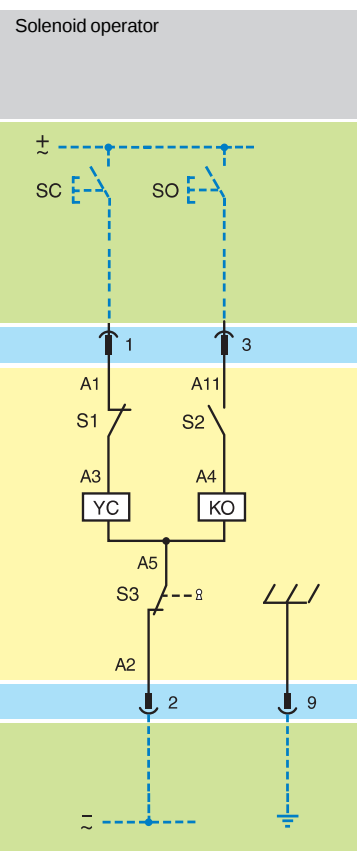
GSIS0167



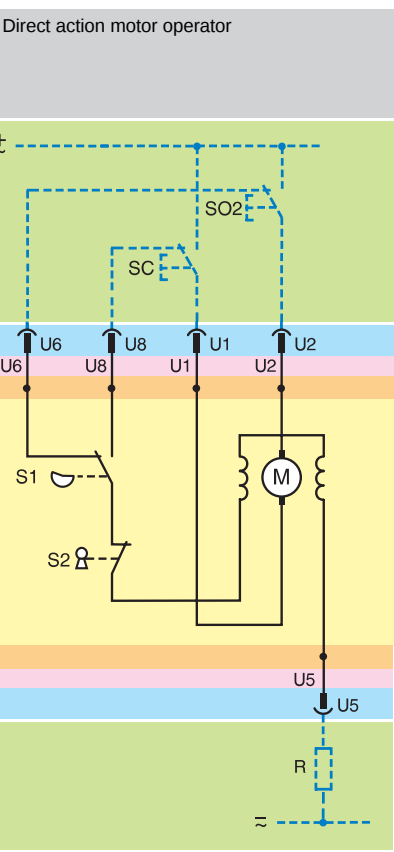
Circuit diagrams

Motor operators

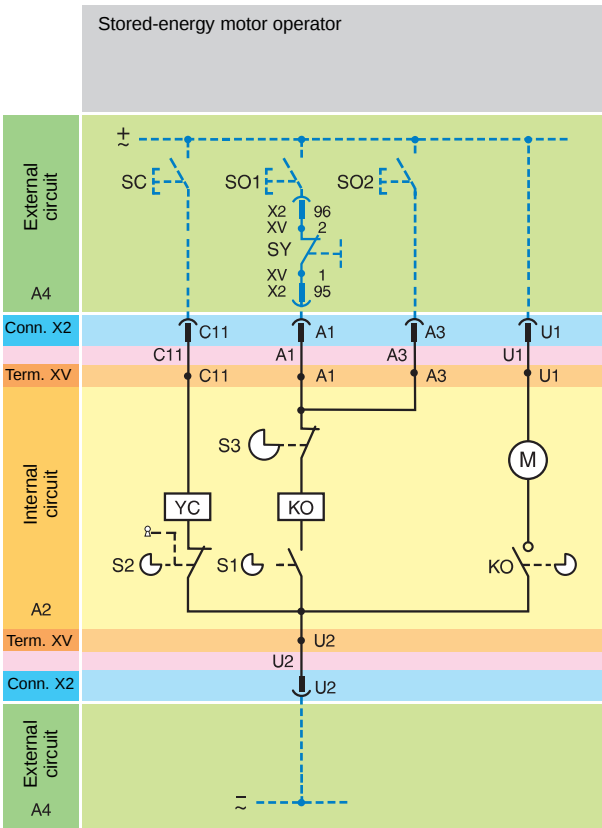
SACE S1-S2



SACE S3-S4-S5



SACE S6-S7





Circuit diagrams

Graphic symbols for circuit diagrams
(Standards IEC 617 and CEI 3-14...3-26)

	Thermal effect		Terminal or clamp		Make contact with held position
	Electromagnetic effect		Socket (female) or pole of a socket		Make position contact (limit contact)
	Time delay		Socket and plug (female and male)		Opening position contact (limit contact)
	Mechanical connection		Temperature dependent resistor		Change-over position contact with temporary interruption (limit contact)
	Manual mechanical control (general case)		Resistor (general symbol)		Switch-disconnector
	Pushbutton actuator		Induction motor, threephase, squirrel cage		Contactor (closing contact)
	Key control		Motor (general symbol)		Circuit-breaker with automatic release
	Cam control		Brush		Control coil (general symbol)
	Earth (general symbol)		Motor energised in series		Instantaneous overcurrent relay
	Equipotentiality		Current transformer with primary formed by 4 through conductors and wound secondary, with socket		Overcurrent relay with adjustable short time-delay trip
	Galvanically separated converter		Current transformer		Overcurrent relay with short inverse time-delay trip
	Shielded cable conductors (example: two conductors)		Make contact		Overcurrent relay with inverse long time delay
	Conductors or stranded cables (example: two conductors)		Break contact		Earth fault overcurrent relay with inverse short time-delay trip
	Connection of conductors		Change-over contact with temporary interruption		Residual current relay



Circuit diagrams

Key and notes

●	= Figure number of diagram	Q	= Main switch
*	= See the note indicated by the letter	Q/0 ... 2	= Auxiliary contacts of the circuit-breaker
A1	= Applications of the circuit-breaker	R	= Resistor outside the circuit-breaker, supplied for motor power supply voltages of more than 220 V
A2	= Applications of the motor operators	S1	= For S3 - S4 - S5: position contact operated by a circuit-breaker cam For S6 - S7: contact controlled by the motor operator cam: closes when the circuit-breaker reaches its closed position and opens when the circuit-breaker reaches its open position (doesn't switch when the circuit-breaker goes into its tripped position)
A4	= Example switchgear and connections for control and signalling, outside the circuit-breaker	S2	= For S3 - S4 - S5: safety contact operated by: - key lock (if fitted) - padlock device - manual control selector. For S6 - S7: contact controlled by the motor operator cam: opens when the circuit-breaker reaches its closed position and closes when the circuit-breaker reaches its open position (doesn't switch when the circuit-breaker goes into its tripped position). The contact is also operated by the key lock device (if present)
A11	= PR212/D-L dialogue unit, for connection to a centralised control system	S3	= Contact controlled by the motor operator cam: opens after contact KO has closed and closes when the circuit-breaker reaches its open position (doesn't switch when the circuit-breaker goes into its tripped position)
A12	= PR212/T actuator unit, with auxiliary relays for executing commands from the dialogue unit	S4	= Contact operated by the circuit-breaker rotary handle
A12/KC	= Actuator unit closing control	S75/1...5	= Contacts for electrical signalling of circuit-breaker in inserted position (only for plug in or withdrawable circuit-breakers)
A12/KO	= Actuator unit opening control	S75S/1...5	= Contacts for electrical signalling of circuit-breaker in removed or racked-out position (only for plug in or withdrawable circuit-breakers)
A13	= PR010/K signalling unit with auxiliary relays for electrical signalling of the protection functions of the microprocessor-based overcurrent release	SC	= Pushbutton or contact for closing the circuit-breaker or for motor start. For circuit-breakers S3 - S4 - S5, the operating mechanism must have a time of not less than 100ms
A14	= Interface unit with SACE PR212/CI operator unit	SO	= Pushbutton or contact for opening the circuit-breaker or for motor stop
D	= Electronic time-lag device of undervoltage release (outside the circuit-breaker)	SO1, SO2	= Pushbuttons or contacts for opening the circuit-breaker. For circuit-breakers S3 - S4 - S5, the operating mechanism must have a time of not less than 100 ms (see "Instructions for resetting the circuit-breaker after the releases have tripped")
K51	= PR211, PR212/P or PR212/MP microprocessor-based overcurrent release with the following protection functions: - L overload protection with inverse long time-delay trip - S short-circuit protection with inverse or definite short time-delay trip (only available with PR212/P release) - I short-circuit protection with instantaneous trip - G earth fault protection with inverse short time-delay trip (only available with PR212/P release)	SY	= Contact for electrical signalling of circuit-breaker open due to tripping of thermomagnetic releases, YO, YO1, YU (tripped position)
K51/X	= Electrical signalling of alarm for internal communication fault	Ti	= Toroidal current transformer
K51/X	= Electrical signalling of alarm for protection function G in tripping zone	Ti/L1	= Current transformer located on phase L1
K51/X	= Electrical signalling of alarm for protection function I in tripping zone	Ti/L2	= Current transformer located on phase L2
K51/X	= Electrical signalling of alarm for protection function L in tripping zone	Ti/L3	= Current transformer located on phase L3
K51/X	= Electrical signalling for protection function L in pre-alarm zone	Ti/N	= Current transformer located on neutral
K51/X	= Electrical signalling of alarm for protection function S in tripping zone		
K51/X	= Electrical signalling of alarm for release YO1 tripped due to overcurrent or 'trip test' (Fig. 41)		
K87	= RC211-RC212 residual-current release (for circuit-breakers S1-S2-S3) or RC210 (for circuit-breaker S1)		
KO	= For S3 - S4 - S5: auxiliary opening relay. For S6 - S7: opening and spring-loading relay with held-position make contact, released by a cam of the motor operator when the circuit-breaker reaches its open position and the closing springs have been loaded		
M	= For S3 - S4 - S5: motor with energising in series for opening and closing of the circuit-breaker. For S6 - S7: motor for opening the circuit-breaker and loading the closing springs of the circuit-breaker		
M1	= Three-phase asynchronous motor		



Circuit diagrams

Graphic symbols for circuit diagrams (Standards IEC 617 and CEI 3-14...3-26)

W1	= Serial interface with monitoring system (EIA RS485 interface)
X1, X2	= Connectors for the auxiliary circuits of the circuit-breaker. For circuit-breakers S1 - S2 supplied to order only.
X3, X4	= Connectors for the circuits of the microprocessor-based overcurrent release (with plug in or withdrawable circuit-breakers, the connectors are pulled out at the same time as the circuit-breaker)
X5, X6	= Terminal delivery block for microprocessor-based overcurrent release circuits
XO	= Connector for the opening solenoid YO1
XV	= Terminal blocks for accessories
YC	= Closing release
YO	= Opening release
YO1	= Opening solenoid of the RC211 or RC212 residual current release (for S1 - S2 - S3) and of the overcurrent release (for S4 ... S8)
YU	= Undervoltage release

3) Electrical resetting always enabled

The electrical opening control (contact SO2) is connected in series directly to relay KO for S3 - S4 - S5 or connected directly to pole A3 of connector X2 (for S6 - S7) and is therefore always enabled.

Example of use: automatic resetting of the circuit-breaker immediately after the releases have been tripped

N.B. If an overcurrent release is fitted, it will be necessary to identify the causes that brought it to its tripped position in order to prevent it from closing again in short-circuit conditions.

Manual resetting is always allowed in each of these examples.

Instructions for resetting the circuit-breaker after the releases have tripped

The circuit-breaker can open both through the action of the motor operator and due to the following releases tripping:

- overcurrent
- undervoltage
- opening

with consequent opening of contact SY (if fitted) in series with relay KO.

A reset operation involving manual or electric opening will have to be carried out in order to close the circuit-breaker again after tripping. Contact SY closes again at the end of the operation. The type of resetting should be chosen to suit the design requirements and duty conditions. A number of possible solutions are suggested below:

1) Manual resetting only

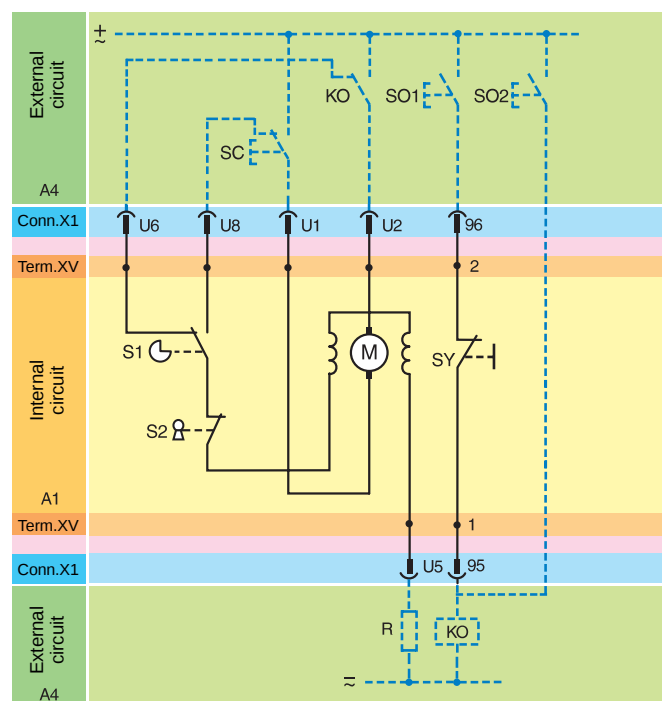
The electrical opening control (contact SO1) must be connected in series with contact SY. Opening (for S3 - S4 - S5 using the auxiliary relay KO) is therefore prevented until the circuit-breaker is in its tripped position. To reset the circuit-breaker one needs to operate the related lever until the circuit-breaker is in its open position and the closing springs are fully loaded.

2) Electrical resetting, responsibility of the operator

The normal electric opening control (contact SO1) must be connected in series with contact SY.

Another opening control is provided (contact SO2), connected in series directly to relay KO for S3 - S4 - S5 or connected directly to pole A3 of connector X2 for S6 - S7.

This control must be protected by, for example, a pushbutton keyswitch. It should only be used if the information relayed to the control station manager allows one to rule out the possibility of the tripping having been caused by a short circuit, or if the causes of the short circuit have been removed.



GSIS0007



Order codes

Index

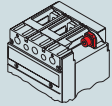
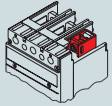
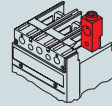
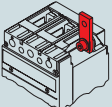
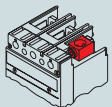
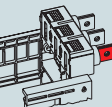
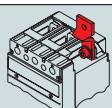
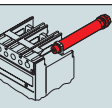
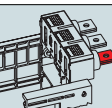
General information	7/2
Circuit-breakers for power distribution	
SACE Isomax S1	7/3
SACE Isomax S2	7/6
SACE Isomax S3	7/13
SACE Isomax S4	7/26
SACE Isomax S5	7/32
SACE Isomax S6	7/41
SACE Isomax S7	7/47
SACE Isomax S8	7/51
Current-limiting circuit-breakers	
SACE Isomax S2X 100	7/52
SACE Isomax S3X	7/53
SACE Isomax S4X	7/56
SACE Isomax S6X	7/58
Circuit-breakers for motor protection	
SACE Isomax S2X 80	7/60
SACE Isomax S3	7/61
SACE Isomax S4	7/62
SACE Isomax S5	7/63
SACE Isomax S6	7/63
SACE Isomax S7	7/63
SACE Isomax S3X-S4X-S6X	7/64
Circuit-breakers for applications up to 1000 V	7/65
Switch-disconnectors	
SACE Isomax S2D	7/67
SACE Isomax S3D	7/68
SACE Isomax S6D	7/70
SACE Isomax S7D	7/71
SACE Isomax S8D	7/72
Accessories	7/73



Order codes

General information

Interpretation of abbreviations used for article description

 F = Front terminals	 FC Cu = Front terminals for copper cables	 RC = Rear terminals for cables
 EF = Extended front terminals	 FC CuAl = Front terminals for copper / aluminium cables	 VR = Vertical flat-bar rear terminals
 ES = Spreaded extended front terminals	 R = Threaded rear terminals	 HR = Horizontal flat-bar rear terminals

 Im	Magnetic trip current	 PR211 P	Microprocessor-based electronic release SACE PR211/P (functions I - LI)	 DC -	Direct current circuit-breakers for applications up to 1000V
 Im = 3 Ith					
 Im = 5 Ith					
 Im = 10 Ith		 PR212 P	Microprocessor-based electronic release SACE PR212/P (functions LSI - LSIG)	 AC ~	Alternate current circuit-breakers for applications up to 1000V
 Im = 5...10 Ith		 PR212 MP	Microprocessor-based electronic release for motor protection SACE PR212/MP (functions LRIU)		
				Iu	Rated uninterrupted current of the circuit-breaker
				In	Rated current of electronic release
				Ith	Rated current of thermomagnetic release
				Icw	Rated short-time withstand current
				Icu	Rated ultimate short-circuit breaking capacity
				Icm	Rated duty short-circuit making capacity (peak value)



Order codes

SACE Isomax S1 circuit-breaker

F = FIXED



S1B 125 $I_n (40\text{ }^{\circ}\text{C}) = 125\text{ A}$ $I_{cu} (415\text{ V}) = 16\text{ kA}$

Thermomagnetic release		 Im = 5 Ith	code 1SDA0 R1		 Im = 10 Ith	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>FC Cu = Front terminals for copper cables</i>							
S1B 125 F FC Cu	R 10	160A	23645	24245	500A	00002	00052
S1B 125 F FC Cu	R 12.5	160A	23647	24247	500A	00004	00054
S1B 125 F FC Cu	R 16	160A	23649	24249	500A	00006	00056
S1B 125 F FC Cu	R 20	200A	23651	24251	500A	00008	00058
S1B 125 F FC Cu	R 25	200A	23653	24253	500A	00010	00060
S1B 125 F FC Cu	R 32	200A	23655	24255	500A	00012	00062
S1B 125 F FC Cu	R 40	200A	23657	24257	500A	00014	00064
S1B 125 F FC Cu	R 50	250A	23659	24259	500A	00016	00066
S1B 125 F FC Cu	R 63	320A	23661	24261	630A	00018	00068
S1B 125 F FC Cu	R 80	400A	23663	24263	800A	00020	00070
S1B 125 F FC Cu	R 100	500A	23665	24265	1000A	00022	00072
S1B 125 F FC Cu	R 125	630A	23667	24267	1250A	00024	00074
<i>R = Terminali posteriori filettati</i>							
S1B 125 F R	R 10	160A	23765	23885	500A	00027	00077
S1B 125 F R	R 12.5	160A	23767	23887	500A	00029	00079
S1B 125 F R	R 16	160A	23769	23889	500A	00031	00081
S1B 125 F R	R 20	200A	23771	23891	500A	00033	00083
S1B 125 F R	R 25	200A	23773	23893	500A	00035	00085
S1B 125 F R	R 32	200A	23775	23895	500A	00037	00087
S1B 125 F R	R 40	200A	23777	23897	500A	00039	00089
S1B 125 F R	R 50	250A	23779	23899	500A	00041	00091
S1B 125 F R	R 63	320A	23781	23901	630A	00043	00093
S1B 125 F R	R 80	400A	23783	23903	800A	00045	00095
S1B 125 F R	R 100	500A	23785	23905	1000A	00047	00097
S1B 125 F R	R 125	630A	23787	23907	1250A	00049	00099



Order codes

SACE Isomax S1 circuit-breaker

F = FIXED



S1N 125 $I_n (40^\circ\text{C}) = 125\text{ A}$ $I_{cu} (415\text{ V}) = 25\text{ kA}$

Thermomagnetic release		 Im = 5 lth	code 1SDA0 R1		 Im = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>FC Cu = Front terminals for copper cables</i>							
S1N 125 F FC Cu	R 10	160A	23669	24269	500A	00152	00202
S1N 125 F FC Cu	R 12.5	160A	23671	24271	500A	00154	00204
S1N 125 F FC Cu	R 16	160A	23673	24273	500A	00156	00206
S1N 125 F FC Cu	R 20	200A	23675	24275	500A	00158	00208
S1N 125 F FC Cu	R 25	200A	23677	24277	500A	00160	00210
S1N 125 F FC Cu	R 32	200A	23679	24279	500A	00162	00212
S1N 125 F FC Cu	R 40	200A	23681	24281	500A	00164	00214
S1N 125 F FC Cu	R 50	250A	23683	24283	500A	00166	00216
S1N 125 F FC Cu	R 63	320A	23685	24285	630A	00168	00218
S1N 125 F FC Cu	R 80	400A	23687	24287	800A	00170	00220
S1N 125 F FC Cu	R 100	500A	23689	24289	1000A	00172	00222
S1N 125 F FC Cu	R 125	630A	23691	24291	1250A	00174	00224
<i>R = Threaded rear terminals</i>							
S1N 125 F R	R 10	160A	23789	23909	500A	00177	00227
S1N 125 F R	R 12.5	160A	23791	23911	500A	00179	00229
S1N 125 F R	R 16	160A	23793	23913	500A	00181	00231
S1N 125 F R	R 20	200A	23795	23915	500A	00183	00233
S1N 125 F R	R 25	200A	23797	23917	500A	00185	00235
S1N 125 F R	R 32	200A	23799	23919	500A	00187	00237
S1N 125 F R	R 40	200A	23801	23921	500A	00189	00239
S1N 125 F R	R 50	250A	23803	23923	500A	00191	00241
S1N 125 F R	R 63	320A	23805	23925	630A	00193	00243
S1N 125 F R	R 80	400A	23807	23927	800A	00195	00245
S1N 125 F R	R 100	500A	23809	23929	1000A	00197	00247
S1N 125 F R	R 125	630A	23811	23931	1250A	00199	00249

Magnetic release		Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
		3 poles		4 poles		3 poles		4 poles	
FC Cu = Front terminals for copper cables									
S1N 125 F FC Cu	In 16A	160A	33676	33772					
S1N 125 F FC Cu	In 40A	200A	33684	33780					
S1N 125 F FC Cu	In 50A	250A	33686	33782	500A	33662		33758	
S1N 125 F FC Cu	In 63A	320A	33688	33784	630A	33664		33760	
S1N 125 F FC Cu	In 80A	400A	33690	33786	800A	33666		33762	
S1N 125 F FC Cu	In 100A				1000A	33668		33764	
S1N 125 F FC Cu	In 125A				1250A	33670		33766	
R = Threaded rear terminals									
S1N 125 F R	In 16A	160A	33724	33820					
S1N 125 F R	In 40A	200A	33732	33828					
S1N 125 F R	In 50A	250A	33734	33830	500A	33710		33806	
S1N 125 F R	In 63A	320A	33736	33832	630A	33712		33808	
S1N 125 F R	In 80A	400A	33738	33834	800A	33714		33810	
S1N 125 F R	In 100A				1000A	33716		33812	
S1N 125 F R	In 125A				1250A	33718		33814	

S1N 125 Curva D $I_n (40^\circ\text{C}) = 125\text{ A}$ $I_{cu} (415\text{ V}) = 25\text{ kA}$

Thermomagnetic release			code 1SDA0 R1 4 poles
<i>FC Cu = Front terminals for copper cables</i>			
S1N 125 F FC Cu	R 63A	1250A	45084
S1N 125 F FC Cu	R 80A	1250A	45087
S1N 125 F FC Cu	R 100A	1400A	45089
S1N 125 F FC Cu	R 125A	1500A	45091
<i>R = Threaded rear terminals</i>			
S1N 125 F R	R 63A	1250A	45093
S1N 125 F R	R 80A	1250A	45095
S1N 125 F R	R 100A	1400A	45097
S1N 125 F R	R 125A	1500A	45099

Order codes

SACE Isomax S1 circuit-breaker

P = PLUG-IN



Moving part

S1B 125 $I_u (40\text{ }^{\circ}\text{C}) = 125\text{ A}$ $I_{cu} (415\text{ V}) = 16\text{ kA}$

Thermomagnetic release		Im = 5 lth	code 1SDA0 R1		Im = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S1B 125 P MP	R 10	160A	24005	24125	500A	00102	00127
S1B 125 P MP	R 12.5	160A	24007	24127	500A	00104	00129
S1B 125 P MP	R 16	160A	24009	24129	500A	00106	00131
S1B 125 P MP	R 20	200A	24011	24131	500A	00108	00133
S1B 125 P MP	R 25	200A	24013	24133	500A	00110	00135
S1B 125 P MP	R 32	200A	24015	24135	500A	00112	00137
S1B 125 P MP	R 40	200A	24017	24137	500A	00114	00139
S1B 125 P MP	R 50	250A	24019	24139	500A	00116	00141
S1B 125 P MP	R 63	320A	24021	24141	630A	00118	00143
S1B 125 P MP	R 80	400A	24023	24143	800A	00120	00145
S1B 125 P MP	R 100	500A	24025	24145	1000A	00122	00147
S1B 125 P MP	R 125	630A	24027	24147	1250A	00124	00149

S1N 125 $I_u (40\text{ }^{\circ}\text{C}) = 125\text{ A}$ $I_{cu} (415\text{ V}) = 25\text{ kA}$

Thermomagnetic release		 Im = 5 lth	code 1SDA0 R1		 Im = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S1N 125 P MP	R 10	160A	24029	24149	500A	00252	00277
S1N 125 P MP	R 12.5	160A	24031	24151	500A	00254	00279
S1N 125 P MP	R 16	160A	24033	24153	500A	00256	00281
S1N 125 P MP	R 20	200A	24035	24155	500A	00258	00283
S1N 125 P MP	R 25	200A	24037	24157	500A	00260	00285
S1N 125 P MP	R 32	200A	24039	24159	500A	00262	00287
S1N 125 P MP	R 40	200A	24041	24161	500A	00264	00289
S1N 125 P MP	R 50	250A	24043	24163	500A	00266	00291
S1N 125 P MP	R 63	320A	24045	24165	630A	00268	00293
S1N 125 P MP	R 80	400A	24047	24167	800A	00270	00295
S1N 125 P MP	R 100	500A	24049	24169	1000A	00272	00297
S1N 125 P MP	R 125	630A	24051	24171	1250A	00274	00299

Magnetic release		Im = 5 lth	code 1SDA0 R1		Im = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S1N 125 P MP	In 16A	160A	33964	34012			
S1N 125 P MP	In 40A	200A	33972	34020			
S1N 125 P MP	In 50A	250A	33974	34022	500A	33950	33998
S1N 125 P MP	In 63A	320A	33976	34024	630A	33952	34000
S1N 125 P MP	In 80A	400A	33978	34026	800A	33954	34002
S1N 125 P MP	In 100A				1000A	33956	34004
S1N 125 P MP	In 125A				1250A	33958	34006

S1N 125 Curva D $I_u (40\text{ }^{\circ}\text{C}) = 125\text{ A}$ $I_{cu} (415\text{ V}) = 25\text{ kA}$

Thermomagnetic release		 Im = 10 lth	code 1SDA0 R1	
<i>FC Cu = Front terminals for copper cables</i>			4 poles	
S1N 125 P MP	R 63A		1250A	45101
S1N 125 P MP	R 80A	1250A	45103	
S1N 125 P MP	R 100A	1400A	45105	
S1N 125 P MP	R 125A	1500A	45107	



Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



S2B 160 I_n (40 °C) = **160 A** I_{cu} (415 V) = **16 kA**

Thermomagnetic release			code 1SDA0 R1			code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>EF = Extended front terminals</i>							
S2B 160 F EF	R 12.5	160A	34056	34440	500A	34032	34416
S2B 160 F EF	R 16	160A	34058	34442	500A	34034	34418
S2B 160 F EF	R 20	200A	34060	34444	500A	34036	34420
S2B 160 F EF	R 25	200A	34062	34446	500A	34038	34422
S2B 160 F EF	R 32	200A	34064	34448	500A	34040	34424
S2B 160 F EF	R 40	200A	34066	34450	500A	34042	34426
S2B 160 F EF	R 50	250A	34068	34452	500A	34044	34428
S2B 160 F EF	R 63	320A	34070	34454	630A	34046	34430
S2B 160 F EF	R 80	400A	34072	34456	800A	34048	34432
S2B 160 F EF	R 100	500A	34074	34458	1000A	34050	34434
S2B 160 F EF	R 125	630A	34076	34460	1250A	34052	34436
S2B 160 F EF	R 160	800A	34078	34462	1600A	34054	34438
<i>FC Cu = Front terminals for copper cables</i>							
S2B 160 F FC Cu	R 12.5	160A	23693	24293	500A	00302	00352
S2B 160 F FC Cu	R 16	160A	23695	24295	500A	00304	00354
S2B 160 F FC Cu	R 20	200A	23697	24297	500A	00306	00356
S2B 160 F FC Cu	R 25	200A	23699	24299	500A	00308	00358
S2B 160 F FC Cu	R 32	200A	23701	24301	500A	00310	00360
S2B 160 F FC Cu	R 40	200A	23703	24303	500A	00312	00362
S2B 160 F FC Cu	R 50	250A	23705	24305	500A	00314	00364
S2B 160 F FC Cu	R 63	320A	23707	24307	630A	00316	00366
S2B 160 F FC Cu	R 80	400A	23709	24309	800A	00318	00368
S2B 160 F FC Cu	R 100	500A	23711	24311	1000A	00320	00370
S2B 160 F FC Cu	R 125	630A	23713	24313	1250A	00322	00372
S2B 160 F FC Cu	R 160	800A	23715	24315	1600A	00324	00374
<i>FC CuAl = Front terminals for copper/aluminium cables</i>							
S2B 160 F FC CuAl*	R 12.5	160A	34200	34584	500A	34176	34560
S2B 160 F FC CuAl*	R 16	160A	34202	34586	500A	34178	34562
S2B 160 F FC CuAl*	R 20	200A	34204	34588	500A	34180	34564
S2B 160 F FC CuAl*	R 25	200A	34206	34590	500A	34182	34566
S2B 160 F FC CuAl*	R 32	200A	34208	34592	500A	34184	34568
S2B 160 F FC CuAl*	R 40	200A	34210	34594	500A	34186	34570
S2B 160 F FC CuAl*	R 50	250A	34212	34596	500A	34188	34572
S2B 160 F FC CuAl*	R 63	320A	34214	34598	630A	34190	34574
S2B 160 F FC CuAl*	R 80	400A	34216	34600	800A	34192	34576
S2B 160 F FC CuAl*	R 100	500A	34218	34602	1000A	34194	34578
S2B 160 F FC CuAl*	R 125	630A	34220	34604	1250A	34196	34580
S2B 160 F FC CuAl*	R 160	800A	34222	34606	1600A	34198	34582
S2B 160 F FC CuAl**	R 12.5	160A	34296	34680	500A	34272	34656
S2B 160 F FC CuAl**	R 16	160A	34298	34682	500A	34274	34658
S2B 160 F FC CuAl**	R 20	200A	34300	34684	500A	34276	34660
S2B 160 F FC CuAl**	R 25	200A	34302	34686	500A	34278	34662
S2B 160 F FC CuAl**	R 32	200A	34304	34688	500A	34280	34664
S2B 160 F FC CuAl**	R 40	200A	34306	34690	500A	34282	34666
S2B 160 F FC CuAl**	R 50	250A	34308	34692	500A	34284	34668
S2B 160 F FC CuAl**	R 63	320A	34310	34694	630A	34286	34670
S2B 160 F FC CuAl**	R 80	400A	34312	34696	800A	34288	34672
S2B 160 F FC CuAl**	R 100	500A	34314	34698	1000A	34290	34674
S2B 160 F FC CuAl**	R 125	630A	34316	34700	1250A	34292	34676
S2B 160 F FC CuAl**	R 160	800A	34318	34702	1600A	34294	34678
<i>R = Threaded rear terminals</i>							
S2B 160 F R	R 12.5	160A	23813	23933	500A	00327	00377
S2B 160 F R	R 16	160A	23815	23935	500A	00329	00379
S2B 160 F R	R 20	200A	23817	23937	500A	00331	00381
S2B 160 F R	R 25	200A	23819	23939	500A	00333	00383
S2B 160 F R	R 32	200A	23821	23941	500A	00335	00385
S2B 160 F R	R 40	200A	23823	23943	500A	00337	00387
S2B 160 F R	R 50	250A	23825	23945	500A	00339	00389
S2B 160 F R	R 63	320A	23827	23947	630A	00341	00391
S2B 160 F R	R 80	400A	23829	23949	800A	00343	00393
S2B 160 F R	R 100	500A	23831	23951	1000A	00345	00395
S2B 160 F R	R 125	630A	23833	23953	1250A	00347	00397
S2B 160 F R	R 160	800A	23835	23955	1600A	00349	00399

* Cable section = 1 x 2.5...50 mm²
 ** Cable section = 1 x 35...95 mm²

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



S2N 160

I_u (40 °C) = **160 A**

I_{cu} (415 V) = **35 kA**

Thermomagnetic release		Im = 5 Ith	code 1SDA0 R1		Im = 10 Ith	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
EF = Extended front terminals							
S2N 160 F EF	R 12.5	160A	34826	35210	500A	34802	35186
S2N 160 F EF	R 16	160A	34828	35212	500A	34804	35188
S2N 160 F EF	R 20	200A	34830	35214	500A	34806	35190
S2N 160 F EF	R 25	200A	34832	35216	500A	34808	35192
S2N 160 F EF	R 32	200A	34834	35218	500A	34810	35194
S2N 160 F EF	R 40	200A	34836	35220	500A	34812	35196
S2N 160 F EF	R 50	250A	34838	35222	500A	34814	35198
S2N 160 F EF	R 63	320A	34840	35224	630A	34816	35200
S2N 160 F EF	R 80	400A	34842	35226	800A	34818	35202
S2N 160 F EF	R 100	500A	34844	35228	1000A	34820	35204
S2N 160 F EF	R 125	630A	34846	35230	1250A	34822	35206
S2N 160 F EF	R 160	800A	34848	35232	1600A	34824	35208
FC Cu = Front terminals for copper cables							
S2N 160 F FC Cu	R 12.5	160A	23717	24317	500A	00452	00502
S2N 160 F FC Cu	R 16	160A	23719	24319	500A	00454	00504
S2N 160 F FC Cu	R 20	200A	23721	24321	500A	00456	00506
S2N 160 F FC Cu	R 25	200A	23723	24323	500A	00458	00508
S2N 160 F FC Cu	R 32	200A	23725	24325	500A	00460	00510
S2N 160 F FC Cu	R 40	200A	23727	24327	500A	00462	00512
S2N 160 F FC Cu	R 50	250A	23729	24329	500A	00464	00514
S2N 160 F FC Cu	R 63	320A	23731	24331	630A	00466	00516
S2N 160 F FC Cu	R 80	400A	23733	24333	800A	00468	00518
S2N 160 F FC Cu	R 100	500A	23735	24335	1000A	00470	00520
S2N 160 F FC Cu	R 125	630A	23737	24337	1250A	00472	00522
S2N 160 F FC Cu	R 160	800A	23739	24339	1600A	00474	00524
FC CuAl = Front terminals for copper/aluminium cables							
S2N 160 F FC CuAl*	R 12.5	160A	34970	35354	500A	34946	35330
S2N 160 F FC CuAl*	R 16	160A	34972	35356	500A	34948	35332
S2N 160 F FC CuAl*	R 20	200A	34974	35358	500A	34950	35334
S2N 160 F FC CuAl*	R 25	200A	34976	35360	500A	34952	35336
S2N 160 F FC CuAl*	R 32	200A	34978	35362	500A	34954	35338
S2N 160 F FC CuAl*	R 40	200A	34980	35364	500A	34956	35340
S2N 160 F FC CuAl*	R 50	250A	34982	35366	500A	34958	35342
S2N 160 F FC CuAl*	R 63	320A	34984	35368	630A	34960	35344
S2N 160 F FC CuAl*	R 80	400A	34986	35370	800A	34962	35346
S2N 160 F FC CuAl*	R 100	500A	34988	35372	1000A	34964	35348
S2N 160 F FC CuAl*	R 125	630A	34990	35374	1250A	34966	35350
S2N 160 F FC CuAl*	R 160	800A	34992	35376	1600A	34968	35352
S2N 160 F FC CuAl**	R 12.5	160A	35066	35450	500A	35042	35426
S2N 160 F FC CuAl**	R 16	160A	35068	35452	500A	35044	35428
S2N 160 F FC CuAl**	R 20	200A	35070	35454	500A	35046	35430
S2N 160 F FC CuAl**	R 25	200A	35072	35456	500A	35048	35432
S2N 160 F FC CuAl**	R 32	200A	35074	35458	500A	35050	35434
S2N 160 F FC CuAl**	R 40	200A	35076	35460	500A	35052	35436
S2N 160 F FC CuAl**	R 50	250A	35078	35462	500A	35054	35438
S2N 160 F FC CuAl**	R 63	320A	35080	35464	630A	35056	35440
S2N 160 F FC CuAl**	R 80	400A	35082	35466	800A	35058	35442
S2N 160 F FC CuAl**	R 100	500A	35084	35468	1000A	35060	35444
S2N 160 F FC CuAl**	R 125	630A	35086	35470	1250A	35062	35446
S2N 160 F FC CuAl**	R 160	800A	35088	35472	1600A	35064	35448
R = Threaded rear terminals							
S2N 160 F R	R 12.5	160A	23837	23957	500A	00477	00527
S2N 160 F R	R 16	160A	23839	23959	500A	00479	00529
S2N 160 F R	R 20	200A	23841	23961	500A	00481	00531
S2N 160 F R	R 25	200A	23843	23963	500A	00483	00533
S2N 160 F R	R 32	200A	23845	23965	500A	00485	00535
S2N 160 F R	R 40	200A	23847	23967	500A	00487	00537
S2N 160 F R	R 50	250A	23849	23969	500A	00489	00539
S2N 160 F R	R 63	320A	23851	23971	630A	00491	00541
S2N 160 F R	R 80	400A	23853	23973	800A	00493	00543
S2N 160 F R	R 100	500A	23855	23975	1000A	00495	00545
S2N 160 F R	R 125	630A	23857	23977	1250A	00497	00547
S2N 160 F R	R 160	800A	23859	23979	1600A	00499	00549



Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



Thermomagnetic release			Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
EF = Extended front terminals										
S2N 160 F EF	In	16A	160A	34876	35260					
S2N 160 F EF	In	40A	200A	34884	35268					
S2N 160 F EF	In	50A	250A	34886	35270		500A	34862	35246	
S2N 160 F EF	In	63A	320A	34888	35272		630A	34864	35248	
S2N 160 F EF	In	80A	400A	34890	35274		800A	34866	35250	
S2N 160 F EF	In	100A					1000A	34868	35252	
S2N 160 F EF	In	125A					1250A	34870	35254	
S2N 160 F EF	In	160A					1600A	34872	35256	
FC Cu = Front terminals for copper cables										
S2N 160 F FC Cu	In	16A	160A	34924	35308					
S2N 160 F FC Cu	In	40A	200A	34932	35316					
S2N 160 F FC Cu	In	50A	250A	34934	35318		500A	34910	35294	
S2N 160 F FC Cu	In	63A	320A	34936	35320		630A	34912	35296	
S2N 160 F FC Cu	In	80A	400A	34938	35322		800A	34914	35298	
S2N 160 F FC Cu	In	100A					1000A	34916	35300	
S2N 160 F FC Cu	In	125A					1250A	34918	35302	
S2N 160 F FC Cu	In	160A					1600A	34920	35304	
FC CuAl = Front terminals for copper/aluminium cables										
S2N 160 F FC CuAl*	In	16A	160A	35020	35404					
S2N 160 F FC CuAl*	In	40A	200A	35028	35412					
S2N 160 F FC CuAl*	In	50A	250A	35030	35414		500A	35006	35390	
S2N 160 F FC CuAl*	In	63A	320A	35032	35416		630A	35008	35392	
S2N 160 F FC CuAl*	In	80A	400A	35034	35418		800A	35010	35394	
S2N 160 F FC CuAl*	In	100A					1000A	35012	35396	
S2N 160 F FC CuAl*	In	125A					1250A	35014	35398	
S2N 160 F FC CuAl*	In	160A					1600A	35016	35400	
S2N 160 F FC CuAl**	In	16A	160A	35116	35500					
S2N 160 F FC CuAl**	In	40A	200A	35124	35508					
S2N 160 F FC CuAl**	In	50A	250A	35126	35510		500A	35102	35486	
S2N 160 F FC CuAl**	In	63A	320A	35128	35512		630A	35104	35488	
S2N 160 F FC CuAl**	In	80A	400A	35130	35514		800A	35106	35490	
S2N 160 F FC CuAl**	In	100A					1000A	35108	35492	
S2N 160 F FC CuAl**	In	125A					1250A	35110	35494	
S2N 160 F FC CuAl**	In	160A					1600A	35112	35496	
R = Threaded rear terminals										
S2N 160 F R	In	16A	160A	35164	35548					
S2N 160 F R	In	40A	200A	35172	35556					
S2N 160 F R	In	50A	250A	35174	35558		500A	35150	35534	
S2N 160 F R	In	63A	320A	35176	35560		630A	35152	35536	
S2N 160 F R	In	80A	400A	35178	35562		800A	35154	35538	
S2N 160 F R	In	100A					1000A	35156	35540	
S2N 160 F R	In	125A					1250A	35158	35542	
S2N 160 F R	In	160A					1600A	35160	35544	

* Cable section = 1 x 2.5...50 mm²
 ** Cable section = 1 x 35...95 mm²

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



S2S 160

I_u (40 °C) = **160 A**

I_{cu} (415 V) = **50 kA**

Im = 10 Ith

code 1SDA0 R1
3 poles 4 poles

Thermomagnetic release

EF = Extended front terminals

S2S 160 F EF	R 12.5	500A	35570	35762
S2S 160 F EF	R 16	500A	35572	35764
S2S 160 F EF	R 20	500A	35574	35766
S2S 160 F EF	R 25	500A	35576	35768
S2S 160 F EF	R 32	500A	35578	35770
S2S 160 F EF	R 40	500A	35580	35772
S2S 160 F EF	R 50	500A	35582	35774
S2S 160 F EF	R 63	630A	35584	35776
S2S 160 F EF	R 80	800A	35586	35778
S2S 160 F EF	R 100	1000A	35588	35780
S2S 160 F EF	R 125	1250A	35590	35782
S2S 160 F EF	R 160	1600A	35592	35784

FC Cu = Front terminals for copper cables

S2S 160 F FC Cu	R 12.5	500A	00602	00652
S2S 160 F FC Cu	R 16	500A	00604	00654
S2S 160 F FC Cu	R 20	500A	00606	00656
S2S 160 F FC Cu	R 25	500A	00608	00658
S2S 160 F FC Cu	R 32	500A	00610	00660
S2S 160 F FC Cu	R 40	500A	00612	00662
S2S 160 F FC Cu	R 50	500A	00614	00664
S2S 160 F FC Cu	R 63	630A	00616	00666
S2S 160 F FC Cu	R 80	800A	00618	00668
S2S 160 F FC Cu	R 100	1000A	00620	00670
S2S 160 F FC Cu	R 125	1250A	00622	00672
S2S 160 F FC Cu	R 160	1600A	00624	00674

FC CuAl = Front terminals for copper/aluminium cables

S2S 160 F FC CuAl*	R 12.5	500A	36197	35834
S2S 160 F FC CuAl*	R 16	500A	36199	35836
S2S 160 F FC CuAl*	R 20	500A	36201	35838
S2S 160 F FC CuAl*	R 25	500A	36203	35840
S2S 160 F FC CuAl*	R 32	500A	36205	35842
S2S 160 F FC CuAl*	R 40	500A	36207	35844
S2S 160 F FC CuAl*	R 50	500A	36209	35846
S2S 160 F FC CuAl*	R 63	630A	36211	35848
S2S 160 F FC CuAl*	R 80	800A	36213	35850
S2S 160 F FC CuAl*	R 100	1000A	36215	35852
S2S 160 F FC CuAl*	R 125	1250A	36217	35854
S2S 160 F FC CuAl*	R 160	1600A	36219	35856

S2S 160 F FC CuAl**	R 12.5	500A	36221	35882
S2S 160 F FC CuAl**	R 16	500A	36223	35884
S2S 160 F FC CuAl**	R 20	500A	36225	35886
S2S 160 F FC CuAl**	R 25	500A	36227	35888
S2S 160 F FC CuAl**	R 32	500A	36229	35890
S2S 160 F FC CuAl**	R 40	500A	36231	35892
S2S 160 F FC CuAl**	R 50	500A	36233	35894
S2S 160 F FC CuAl**	R 63	630A	36235	35896
S2S 160 F FC CuAl**	R 80	800A	36237	35898
S2S 160 F FC CuAl**	R 100	1000A	36239	35900
S2S 160 F FC CuAl**	R 125	1250A	36241	35902
S2S 160 F FC CuAl**	R 160	1600A	36243	35904

R = Threaded rear terminals

S2S 160 F R	R 12.5	500A	00627	00677
S2S 160 F R	R 16	500A	00629	00679
S2S 160 F R	R 20	500A	00631	00681
S2S 160 F R	R 25	500A	00633	00683
S2S 160 F R	R 32	500A	00635	00685
S2S 160 F R	R 40	500A	00637	00687
S2S 160 F R	R 50	500A	00639	00689
S2S 160 F R	R 63	630A	00641	00691
S2S 160 F R	R 80	800A	00643	00693
S2S 160 F R	R 100	1000A	00645	00695
S2S 160 F R	R 125	1250A	00647	00697
S2S 160 F R	R 160	1600A	00649	00699

* Cable section = 1 x 2.5...50 mm²

** Cable section = 1 x 35...95 mm²



Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



Magnetic release			code 1SDA0 R1	
			3 poles	4 poles
EF = Extended front terminals				
S2S 160 F EF	In 50A	500A	35631	35798
S2S 160 F EF	In 63A	630A	35633	35800
S2S 160 F EF	In 80A	800A	35635	35802
S2S 160 F EF	In 100A	1000A	35636	35804
S2S 160 F EF	In 125A	1250A	35638	35806
S2S 160 F EF	In 160A	1600A	35640	35808
FC Cu = Front terminals for copper cables				
S2S 160 F FC Cu	In 50A	500A	35678	35822
S2S 160 F FC Cu	In 63A	630A	35680	35824
S2S 160 F FC Cu	In 80A	800A	35682	35826
S2S 160 F FC Cu	In 100A	1000A	35684	35828
S2S 160 F FC Cu	In 125A	1250A	35686	35830
S2S 160 F FC Cu	In 160A	1600A	35688	35832
FC CuAl = Front terminals for copper/aluminium cables				
S2S 160 F FC CuAl*	In 50A	500A	35702	35870
S2S 160 F FC CuAl*	In 63A	630A	35704	35872
S2S 160 F FC CuAl*	In 80A	800A	35706	35874
S2S 160 F FC CuAl*	In 100A	1000A	35708	35876
S2S 160 F FC CuAl*	In 125A	1250A	35710	35878
S2S 160 F FC CuAl*	In 160A	1600A	35712	35880
S2S 160 F FC CuAl**	In 50A	500A	35726	35918
S2S 160 F FC CuAl**	In 63A	630A	35728	35920
S2S 160 F FC CuAl**	In 80A	800A	35730	35922
S2S 160 F FC CuAl**	In 100A	1000A	35732	35924
S2S 160 F FC CuAl**	In 125A	1250A	35734	35926
S2S 160 F FC CuAl**	In 160A	1600A	35736	35928
R = Threaded rear terminals				
S2S 160 F R	In 50A	500A	35750	35942
S2S 160 F R	In 63A	630A	35752	35944
S2S 160 F R	In 80A	800A	35754	35946
S2S 160 F R	In 100A	1000A	35756	35948
S2S 160 F R	In 125A	1250A	35758	35950
S2S 160 F R	In 160A	1600A	35760	35952

* Cable section = 1 x 2.5...50 mm²

** Cable section = 1 x 35...95 mm²

Order codes

SACE Isomax S2 circuit-breaker

P = PLUG-IN



Moving part

S2B 160

I_n (40 °C) = **160 A**

I_{cu} (415 V) = **16 kA**

Thermomagnetic release			code 1SDA0 R1			code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S2B 160 P MP	R 12.5	160A	24053	24173	500A	00402	00427
S2B 160 P MP	R 16	160A	24055	24175	500A	00404	00429
S2B 160 P MP	R 20	200A	24057	24177	500A	00406	00431
S2B 160 P MP	R 25	200A	24059	24179	500A	00408	00433
S2B 160 P MP	R 32	200A	24061	24181	500A	00410	00435
S2B 160 P MP	R 40	200A	24063	24183	500A	00412	00437
S2B 160 P MP	R 50	250A	24065	24185	500A	00414	00439
S2B 160 P MP	R 63	320A	24067	24187	630A	00416	00441
S2B 160 P MP	R 80	400A	24069	24189	800A	00418	00443
S2B 160 P MP	R 100	500A	24071	24191	1000A	00420	00445
S2B 160 P MP	R 125	630A	24073	24193	1250A	00422	00447
S2B 160 P MP	R 160	8000A	24075	24195	1600A	00424	00449

S2N 160

I_n (40 °C) = **160 A**

I_{cu} (415 V) = **35 kA**

Thermomagnetic release			code 1SDA0 R1			code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S2N 160 P MP	R 12.5	160A	24077	24197	500A	00552	00577
S2N 160 P MP	R 16	160A	24079	24199	500A	00554	00579
S2N 160 P MP	R 20	200A	24081	24201	500A	00556	00581
S2N 160 P MP	R 25	200A	24083	24203	500A	00558	00583
S2N 160 P MP	R 32	200A	24085	24205	500A	00560	00585
S2N 160 P MP	R 40	200A	24087	24207	500A	00562	00587
S2N 160 P MP	R 50	250A	24089	24209	500A	00564	00589
S2N 160 P MP	R 63	320A	24091	24211	630A	00566	00591
S2N 160 P MP	R 80	400A	24093	24213	800A	00568	00593
S2N 160 P MP	R 100	500A	24095	24215	1000A	00570	00595
S2N 160 P MP	R 125	630A	24097	24217	1250A	00572	00597
S2N 160 P MP	R 160	800A	24099	24219	1600A	00574	00599

Magnetic release				Im = 5 Ith		Im = 10 Ith	
				code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S2N 160 P MP	In 16A	160A	36076	36124			
S2N 160 P MP	In 40A	200A	36084	36132			
S2N 160 P MP	In 50A	250A	36086	36134	500A	36062	36110
S2N 160 P MP	In 63A	320A	36088	36136	630A	36064	36112
S2N 160 P MP	In 80A	400A	36090	36138	800A	36066	36114
S2N 160 P MP	In 100A				1000A	36068	36116
S2N 160 P MP	In 125A				1250A	36070	36118
S2N 160 P MP	In 150A				1600A	36072	36120



Order codes

SACE Isomax S2 circuit-breaker

P = PLUG-IN



Moving part

S2S 160 I_n (40 °C) = **160 A** I_{cu} (415 V) = **50 kA**

Thermomagnetic release				code 1SDA0 R1
				3 poles 4 poles
S2S 160 P MP	R 12.5	500A		00702 00727
S2S 160 P MP	R 16	500A		00704 00729
S2S 160 P MP	R 20	500A		00706 00731
S2S 160 P MP	R 25	500A		00708 00733
S2S 160 P MP	R 32	500A		00710 00735
S2S 160 P MP	R 40	500A		00712 00737
S2S 160 P MP	R 50	500A		00714 00739
S2S 160 P MP	R 63	630A		00716 00741
S2S 160 P MP	R 80	800A		00718 00743
S2S 160 P MP	R 100	1000A		00720 00745
S2S 160 P MP	R 125	1250A		00722 00747
S2S 160 P MP	R 160	1600A		00724 00749

Magnetic release			code 1SDA0 R1
			3 poles 4 poles
S2S 160 P MP	In 50A	500A	36158 36182
S2S 160 P MP	In 63A	630A	36160 36184
S2S 160 P MP	In 80A	800A	36162 36186
S2S 160 P MP	In 100A	1000A	36164 36188
S2S 160 P MP	In 125A	1250A	36166 36190
S2S 160 P MP	In 150A	1600A	36168 36192

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



S3N 160

I_n (40 °C) = 160 A

I_{cu} (415 V) = 35 kA

Thermomagnetic release			code 1SDA0 R1	
			3 poles	4 poles
<i>F = Front terminals</i>				
S3N 160 F F	R 100	300A	48539	48549
S3N 160 F F	R 125	375A	48540	48550
S3N 160 F F	R 160	I480A	48541	48551
S3N 160 F F (N50%)	R 160	I480A		48559

Thermomagnetic release		 $I_m = 5 I_{th}$	code 1SDA0 R1		 $I_m = 10 I_{th}$	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>F = Front terminals</i>							
S3N 160 F F	R 32	250A	13359	13383	500A	13346	13371
S3N 160 F F	R 50	250A	13361	13385	500A	13348	13373
S3N 160 F F	R 80	400A	13363	13387	800A	13350	13375
S3N 160 F F	R 100	500A	13365	13389	1000A	13352	13377
S3N 160 F F	R 125	625A	13367	13391	1250A	13354	13379
S3N 160 F F	R 160	800A	13369	13393	1600A	13356	13381

EF = Extended front terminals

S3N 160 F EF	R 32	250A	00764	01389	500A	00752	01377
S3N 160 F EF	R 50	250A	00766	01391	500A	00754	01379
S3N 160 F EF	R 80	400A	00768	01393	800A	00756	01381
S3N 160 F EF	R 100	500A	00770	01395	1000A	00758	01383
S3N 160 F EF	R 125	625A	00772	01397	1250A	00760	01385
S3N 160 F EF	R 160	800A	00774	01399	1600A	00762	01387

FC Cu = Front terminals for copper cables

S3N 160 F FC Cu	R 32	250A	00914	01539	500A	00902	01527
S3N 160 F FC Cu	R 50	250A	00916	01541	500A	00904	01529
S3N 160 F FC Cu	R 80	400A	00918	01543	800A	00906	01531
S3N 160 F FC Cu	R 100	500A	00920	01545	1000A	00908	01533
S3N 160 F FC Cu	R 125	625A	00922	01547	1250A	00910	01535
S3N 160 F FC Cu	R 160	800A	00924	01549	1600A	00912	01537

FC CuAl = Front terminals for copper/aluminium cables

S3N 160 F FC CuAl	R 32	250A	01064	01689	500A	01052	01677
S3N 160 F FC CuAl	R 50	250A	01066	01691	500A	01054	01679
S3N 160 F FC CuAl	R 80	400A	01068	01693	800A	01056	01681
S3N 160 F FC CuAl	R 100	500A	01070	01695	1000A	01058	01683
S3N 160 F FC CuAl	R 125	625A	01072	01697	1250A	01060	01685
S3N 160 F FC CuAl	R 160	800A	01074	01699	1600A	01062	01687

R = Threaded rear terminals

S3N 160 F R	R 32	250A	01364	14243	500A	01352	14231
S3N 160 F R	R 50	250A	01366	14245	500A	01354	14233
S3N 160 F R	R 80	400A	01368	14247	800A	01356	14235
S3N 160 F R	R 100	500A	01370	14249	1000A	01358	14237
S3N 160 F R	R 125	625A	01372	14251	1250A	01360	14239
S3N 160 F R	R 160	800A	01374	14253	1600A	01362	14241

RC = Rear terminals for cables

S3N 160 F RC	R 32	250A	01214	01839	500A	01202	01827
S3N 160 F RC	R 50	250A	01216	01841	500A	01204	01829
S3N 160 F RC	R 80	400A	01218	01843	800A	01206	01831
S3N 160 F RC	R 100	500A	01220	01845	1000A	01208	01833
S3N 160 F RC	R 125	625A	01222	01847	1250A	01210	01835
S3N 160 F RC	R 160	800A	01224	01849	1600A	01212	01837

R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker

S3N 160 F R Res. Cur	R 32	250A		25459	500A		25447
S3N 160 F R Res. Cur	R 50	250A		25461	500A		25449
S3N 160 F R Res. Cur	R 80	400A		25463	800A		25451
S3N 160 F R Res. Cur	R 100	500A		25465	1000A		25453
S3N 160 F R Res. Cur	R 125	625A		25467	1250A		25455
S3N 160 F R Res. Cur	R 160	800A		25469	1600A		25457



Order codes

SACE Isomax S2 circuit-breaker

F = FIXED



Magnetic release	Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
			3 poles	4 poles			3 poles	4 poles
F = Front terminals								
S3N 160 F F	In 50A	250A	25817	25889	500A	25804	25877	
S3N 160 F F	In 80A	400A	25819	25891	800A	25807	25879	
S3N 160 F F	In 100A				1000A	25809	25881	
S3N 160 F F	In 125A	625A	25823	25895	1250A	25811	25883	
S3N 160 F F	In 160A				1600A	25813	25885	
EF = Extended front terminals								
S3N 160 F EF	In 50A	250A	27930	29706	500A	27918	29694	
S3N 160 F EF	In 80A	400A	27932	29708	800A	27920	29696	
S3N 160 F EF	In 100A				1000A	27922	29698	
S3N 160 F EF	In 125A	625A	27936	29712	1250A	27924	29700	
S3N 160 F EF	In 160A				1600A	27926	29702	
FC Cu = Front terminals for copper cables								
S3N 160 F FC Cu	In 50A	250A	28074	29850	500A	28062	29838	
S3N 160 F FC Cu	In 80A	400A	28076	29852	800A	28064	29840	
S3N 160 F FC Cu	In 100A				1000A	28066	29842	
S3N 160 F FC Cu	In 125A	625A	28080	29856	1250A	28068	29844	
S3N 160 F FC Cu	In 160A				1600A	28070	29846	
FC CuAl = Front terminals for copper/aluminium cables								
S3N 160 F FC CuAl	In 50A	250A	28218	29994	500A	28206	29982	
S3N 160 F FC CuAl	In 80A	400A	28220	29996	800A	28208	29984	
S3N 160 F FC CuAl	In 100A				1000A	28210	29986	
S3N 160 F FC CuAl	In 125A	625A	28224	30000	1250A	28212	29988	
S3N 160 F FC CuAl	In 160A				1600A	28214	29990	
R = Threaded rear terminals								
S3N 160 F R	In 50A	250A	28506	30282	500A	28494	30270	
S3N 160 F R	In 80A	400A	28508	30284	800A	28496	30272	
S3N 160 F R	In 100A				1000A	28498	30274	
S3N 160 F R	In 125A	625A	28512	30288	1250A	28500	30276	
S3N 160 F R	In 160A				1600A	28502	30278	
RC = Rear terminals for cables								
S3N 160 F RC	In 50A	250A	28362	30138	500A	28350	30126	
S3N 160 F RC	In 80A	400A	28364	30140	800A	28352	30128	
S3N 160 F RC	In 100A				1000A	28354	30130	
S3N 160 F RC	In 125A	625A	28368	30144	1250A	28356	30132	
S3N 160 F RC	In 160A				1600A	28358	30134	

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



S3H 160

I_u (40 °C) = **160 A**

I_{cu} (415 V) = **65 kA**

Thermomagnetic release		 Im = 3 Ith	code 1SDA0 R1	
			3 poles	4 poles
<i>F = Front terminals</i>				
S3H 160 F F	R 100	300A	48542	48552
S3H 160 F F	R 125	375A	48543	48553
S3H 160 F F	R 160	480A	48544	48554
S3H 160 F F (N50%)	R 160	480A		48560

Thermomagnetic release		Im = 5 Ith	code 1SDA0 R1 3 poles 4 poles		Im = 10 Ith	code 1SDA0 R1 3 poles 4 poles	
F = Front terminals							
S3H 160 F F	R 32	250A	13407	13431	500A	13395	13419
S3H 160 F F	R 50	250A	13409	13433	500A	13397	13421
S3H 160 F F	R 80	400A	13411	13435	800A	13399	13423
S3H 160 F F	R 100	500A	13413	13437	1000A	13401	13425
S3H 160 F F	R 125	625A	13415	13439	1250A	13403	13427
S3H 160 F F	R 160	800A	13417	13441	1600A	13405	13429
EF = Extended front terminals							
S3H 160 F EF	R 32	250A	02089	02689	500A	02077	02677
S3H 160 F EF	R 50	250A	02091	02691	500A	02079	02679
S3H 160 F EF	R 80	400A	02093	02693	800A	02081	02681
S3H 160 F EF	R 100	500A	02095	02695	1000A	02083	02683
S3H 160 F EF	R 125	625A	02097	02697	1250A	02085	02685
S3H 160 F EF	R 160	800A	02099	02699	1600A	02087	02687
FC Cu = Front terminals for copper cables							
S3H 160 F FC Cu	R 32	250A	02239	14268	500A	02227	14256
S3H 160 F FC Cu	R 50	250A	02241	14270	500A	02229	14258
S3H 160 F FC Cu	R 80	400A	02243	14272	800A	02231	14260
S3H 160 F FC Cu	R 100	500A	02245	14274	1000A	02233	14262
S3H 160 F FC Cu	R 125	625A	02247	14276	1250A	02235	14264
S3H 160 F FC Cu	R 160	800A	02249	14278	1600A	02237	14266
FC CuAl = Front terminals for copper/aluminium cables							
S3H 160 F FC CuAl	R 32	250A	02364	14343	500A	02352	14331
S3H 160 F FC CuAl	R 50	250A	02366	14345	500A	02354	14333
S3H 160 F FC CuAl	R 80	400A	02368	14347	800A	02356	14335
S3H 160 F FC CuAl	R 100	500A	02370	14349	1000A	02358	14337
S3H 160 F FC CuAl	R 125	625A	02372	14351	1250A	02360	14339
S3H 160 F FC CuAl	R 160	800A	02374	14353	1600A	02362	14341
R = Threaded rear terminals							
S3H 160 F R	R 32	250A	02664	03139	500A	02652	03127
S3H 160 F R	R 50	250A	02666	03141	500A	02654	03129
S3H 160 F R	R 80	400A	02668	03143	800A	02656	03131
S3H 160 F R	R 100	500A	02670	03145	1000A	02658	03133
S3H 160 F R	R 125	625A	02672	03147	1250A	02660	03135
S3H 160 F R	R 160	800A	02674	03149	1600A	02662	03137
RC = Rear terminals for cables							
S3H 160 F RC	R 32	250A	02514	02989	500A	02502	02977
S3H 160 F RC	R 50	250A	02516	02991	500A	02504	02979
S3H 160 F RC	R 80	400A	02518	02993	800A	02506	02981
S3H 160 F RC	R 100	500A	02520	02995	1000A	02508	02983
S3H 160 F RC	R 125	625A	02522	02997	1250A	02510	02985
S3H 160 F RC	R 160	800A	02524	02999	1600A	02512	02987
R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker							
S3H 160 F R Res. Cur	R 32	250A		25483	500A		25471
S3H 160 F R Res. Cur	R 50	250A		25485	500A		25473
S3H 160 F R Res. Cur	R 80	400A		25487	800A		25475
S3H 160 F R Res. Cur	R 100	500A		25489	1000A		25477
S3H 160 F R Res. Cur	R 125	625A		25491	1250A		25479
S3H 160 F R Res. Cur	R 160	800A		25493	1600A		25481



Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



Magnetic release	Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles	
F = Front terminals								
S3H 160 F F	In 50A	250A	25841	25913	500A	25829	25901	
S3H 160 F F	In 80A	400A	25843	25915	800A	25831	25903	
S3H 160 F F	In 100A				1000A	25833	25905	
S3H 160 F F	In 125A	625A	25847	25919	1250A	25835	25907	
S3H 160 F F	In 160A				1600A	25837	25909	
EF = Extended front terminals								
S3H 160 F EF	In 50A	250A	28530	30306	500A	28518	30294	
S3H 160 F EF	In 80A	400A	28532	30308	800A	28520	30296	
S3H 160 F EF	In 100A				1000A	28522	30298	
S3H 160 F EF	In 125A	625A	28536	30312	1250A	28524	30300	
S3H 160 F EF	In 160A				1600A	28526	30302	
FC Cu = Front terminals for copper cables								
S3H 160 F FC Cu	In 50A	250A	28674	30450	500A	28662	30438	
S3H 160 F FC Cu	In 80A	400A	28676	30452	800A	28664	30440	
S3H 160 F FC Cu	In 100A				1000A	28666	30442	
S3H 160 F FC Cu	In 125A	625A	28680	30456	1250A	28668	30444	
S3H 160 F FC Cu	In 160A				1600A	28670	30446	
FC CuAl = Front terminals for copper/aluminium cables								
S3H 160 F FC CuAl	In 50A	250A	28818	30594	500A	28806	30582	
S3H 160 F FC CuAl	In 80A	400A	28820	30596	800A	28808	30584	
S3H 160 F FC CuAl	In 100A				1000A	28810	30586	
S3H 160 F FC CuAl	In 125A	625A	28824	30600	1250A	28812	30588	
S3H 160 F FC CuAl	In 160A				1600A	28814	30590	
R = Threaded rear terminals								
S3H 160 F R	In 50A	250A	29106	30882	500A	29094	30870	
S3H 160 F R	In 80A	400A	29108	30884	800A	29096	30872	
S3H 160 F R	In 100A				1000A	29098	30874	
S3H 160 F R	In 125A	625A	29112	30888	1250A	29100	30876	
S3H 160 F R	In 160A				1600A	29102	30878	
RC = Rear terminals for cables								
S3H 160 F RC	In 50A	250A	28962	30738	500A	28950	30726	
S3H 160 F RC	In 80A	400A	28964	30740	800A	28952	30728	
S3H 160 F RC	In 100A				1000A	28954	30730	
S3H 160 F RC	In 125A	625A	28968	30744	1250A	28956	30732	
S3H 160 F RC	In 160A				1600A	28958	30734	

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



S3L 160

I_n (40 °C) = 160 A

I_{cu} (415 V) = 85 kA

Thermomagnetic release		Im = 5 lth	code 1SDA0 R1		Im = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
F = Front terminals							
S3L 160 F F	R 32	250A	13455	13479	500A	13443	13467
S3L 160 F F	R 50	250A	13457	13481	500A	13445	13469
S3L 160 F F	R 80	400A	13459	13483	800A	13447	13471
S3L 160 F F	R 100	500A	13461	13485	1000A	13449	13473
S3L 160 F F	R 125	625A	13463	13487	1250A	13451	13475
S3L 160 F F	R 160	800A	13465	13489	1600A	13453	13477
EF = Extended front terminals							
S3L 160 F EF	R 32	250A	03264	03864	500A	03252	03852
S3L 160 F EF	R 50	250A	03266	03866	500A	03254	03854
S3L 160 F EF	R 80	400A	14486	14511	800A	03256	03856
S3L 160 F EF	R 100	500A	03269	03869	1000A	03258	03858
S3L 160 F EF	R 125	625A	03271	03871	1250A	03260	03860
S3L 160 F EF	R 160	800A	03273	03873	1600A	03262	03862
FC Cu = Front terminals for copper cables							
S3L 160 F FC Cu	R 32	250A	03408	04008	500A	03396	03996
S3L 160 F FC Cu	R 50	250A	03410	04010	500A	03398	03998
S3L 160 F FC Cu	R 80	400A	14492	14517	800A	03400	04000
S3L 160 F FC Cu	R 100	500A	03413	04013	1000A	03402	04002
S3L 160 F FC Cu	R 125	625A	03415	04015	1250A	03404	04004
S3L 160 F FC Cu	R 160	800A	03417	04017	1600A	03406	04006
FC CuAl = Front terminals for copper/aluminium cables							
S3L 160 F FC CuAl	R 32	250A	03552	04152	500A	03540	04140
S3L 160 F FC CuAl	R 50	250A	03554	04154	500A	03542	04142
S3L 160 F FC CuAl	R 80	400A	14498	14523	800A	03544	04144
S3L 160 F FC CuAl	R 100	500A	03557	04157	1000A	03546	04146
S3L 160 F FC CuAl	R 125	625A	03559	04159	1250A	03548	04148
S3L 160 F FC CuAl	R 160	800A	03561	04161	1600A	03550	04150
R = Threaded rear terminals							
S3L 160 F R	R 32	250A	03840	04440	500A	03828	04428
S3L 160 F R	R 50	250A	03842	04442	500A	03830	04430
S3L 160 F R	R 80	400A	14510	14535	800A	03832	04432
S3L 160 F R	R 100	500A	03845	04445	1000A	03834	04434
S3L 160 F R	R 125	625A	03847	04447	1250A	03836	04436
S3L 160 F R	R 160	800A	03849	04449	1600A	03838	04438
RC = Rear terminals for cables							
S3L 160 F RC	R 32	250A	03696	04296	500A	03684	04284
S3L 160 F RC	R 50	250A	03698	04298	500A	03686	04286
S3L 160 F RC	R 80	400A	14504	14529	800A	03688	04288
S3L 160 F RC	R 100	500A	03701	04301	1000A	03690	04290
S3L 160 F RC	R 125	625A	03703	04303	1250A	03692	04292
S3L 160 F RC	R 160	800A	03705	04305	1600A	03694	04294
R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker							
S3L 160 F R Res. Cur	R 32	250A		25507	500A		25495
S3L 160 F R Res. Cur	R 50	250A		25509	500A		25497
S3L 160 F R Res. Cur	R 80	400A		25511	800A		25499
S3L 160 F R Res. Cur	R 100	500A		25513	1000A		25501
S3L 160 F R Res. Cur	R 125	625A		25515	1250A		25503
S3L 160 F R Res. Cur	R 160	800A		25517	1600A		25505



Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



Magnetic release	Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles	
F = Front terminals								
S3L 160 F F	In 50A	250A	25865	25937	500A	25853	25925	
S3L 160 F F	In 80A	400A	25867	25939	800A	25855	25927	
S3L 160 F F	In 100A				1000A	25857	25929	
S3L 160 F F	In 125A	625A	25871	25943	1250A	25859	25931	
S3L 160 F F	In 160A				1600A	25861	25933	
EF = Extended front terminals								
S3L 160 F EF	In 50A	250A	29130	30906	500A	29118	30894	
S3L 160 F EF	In 80A	400A	29132	30908	800A	29120	30896	
S3L 160 F EF	In 100A				1000A	29122	30898	
S3L 160 F EF	In 125A	625A	29136	30912	1250A	29124	30900	
S3L 160 F EF	In 160A				1600A	29126	30902	
FC Cu = Front terminals for copper cables								
S3L 160 F FC Cu	In 50A	250A	29274	31050	500A	29262	31038	
S3L 160 F FC Cu	In 80A	400A	29276	31052	800A	29264	31040	
S3L 160 F FC Cu	In 100A				1000A	29266	31042	
S3L 160 F FC Cu	In 125A	625A	29280	31056	1250A	29268	31044	
S3L 160 F FC Cu	In 160A				1600A	29270	31046	
FC CuAl = Front terminals for copper/aluminium cables								
S3L 160 F FC CuAl	In 50A	250A	29418	31170	500A	29406	31158	
S3L 160 F FC CuAl	In 80A	400A	29420	31172	800A	29408	31160	
S3L 160 F FC CuAl	In 100A				1000A	29410	31162	
S3L 160 F FC CuAl	In 125A	625A	29424	31176	1250A	29412	31164	
S3L 160 F FC CuAl	In 160A				1600A	29414	31166	
R = Threaded rear terminals								
S3L 160 F R	In 50A	250A	44388	31458	500A	44376	31446	
S3L 160 F R	In 80A	400A	44390	31460	800A	44378	31448	
S3L 160 F R	In 100A				1000A	44380	31450	
S3L 160 F R	In 125A	625A	44394	31464	1250A	44382	31452	
S3L 160 F R	In 160A				1600A	44384	31454	
RC = Rear terminals for cables								
S3L 160 F RC	In 50A	250A	29562	31314	500A	29550	31302	
S3L 160 F RC	In 80A	400A	29564	31316	800A	29552	31304	
S3L 160 F RC	In 100A				1000A	29554	31306	
S3L 160 F RC	In 125A	625A	29568	31320	1250A	29556	31308	
S3L 160 F RC	In 160A				1600A	29558	31310	

Order codes

SACE Isomax S3 circuit-breaker

P = PLUG-IN



Moving part

S3N 160

I_u (40 °C) = **160 A**

I_{cu} (415 V) = **35 kA**

Thermomagnetic release			Im = 5 Ith		code 1SDA0 R1		Im = 10 Ith		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S3N 160 P MP	R 32	250A			01989	02039			01977	02027
S3N 160 P MP	R 50	250A			01991	02041			01979	02029
S3N 160 P MP	R 80	400A			01993	02043			01981	02031
S3N 160 P MP	R 100	500A			01995	02045			01983	02033
S3N 160 P MP	R 125	625A			01997	02047			01985	02035
S3N 160 P MP	R 160	800A			01999	02049			01987	02037

Magnetic release			Im = 5 Ith		code 1SDA0 R1		Im = 10 Ith		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S3N 160 P MP	In 50A	250A			31482	31530			31470	31518
S3N 160 P MP	In 80A	400A			31484	31532			31472	31520
S3N 160 P MP	In 100A								31474	31522
S3N 160 P MP	In 125A	625A			31488	31536			31476	31524
S3N 160 P MP	In 160A								31478	31526

S3H 160

I_u (40 °C) = **160 A**

I_{cu} (415 V) = **65 kA**

Thermomagnetic release			Im = 5 Ith		code 1SDA0 R1		Im = 10 Ith		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S3H 160 P MP	R 32	250A			03164	03214			03152	03202
S3H 160 P MP	R 50	250A			03166	03216			03154	03204
S3H 160 P MP	R 80	400A			03168	03218			03156	03206
S3H 160 P MP	R 100	500A			03170	03220			03158	03208
S3H 160 P MP	R 125	625A			03172	03222			03160	03210
S3H 160 P MP	R 160	800A			03174	03224			03162	03212

Magnetic release			Im = 5 Ith		code 1SDA0 R1		Im = 10 Ith		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S3H 160 P MP	In 50A	250A			31578	31626			31566	31614
S3H 160 P MP	In 80A	400A			31580	31628			31568	31616
S3H 160 P MP	In 100A								31570	31618
S3H 160 P MP	In 125A	625A			31584	31632			31572	31620
S3H 160 P MP	In 160A								31574	31622

S3L 160

I_u (40 °C) = **160 A**

I_{cu} (415 V) = **85 kA**

Thermomagnetic release			Im = 5 Ith		code 1SDA0 R1		Im = 10 Ith		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S3L 160 P MP	R 32	250A			04464	04512			04452	04500
S3L 160 P MP	R 50	250A			04466	04514			04454	04502
S3L 160 P MP	R 80	400A			14536	14538			04456	04504
S3L 160 P MP	R 100	500A			04469	04517			04458	04506
S3L 160 P MP	R 125	625A			04471	04519			04460	04508
S3L 160 P MP	R 160	800A			04473	04521			04462	04510

Magnetic release			Im = 5 Ith		code 1SDA0 R1		Im = 10 Ith		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S3L 160 P MP	In 50A	250A			31674	31722			31662	31710
S3L 160 P MP	In 80A	400A			31676	31724			31664	31712
S3L 160 P MP	In 100A								31666	31714
S3L 160 P MP	In 125A	625A			31680	31728			31668	31716
S3L 160 P MP	In 160A								31670	31718



Order codes

SACE Isomax S3 circuit-breaker

W = WITHDRAWABLE



Moving part

S3N 160

$I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$

$I_{cu} (415\text{ V}) = 35\text{ kA}$

Thermomagnetic release			Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
			3 poles	4 poles	3 poles	4 poles	3 poles	4 poles	3 poles	4 poles
S3N 160 W MP	R 32	250A	02014	02064	500A	02002	02052			
S3N 160 W MP	R 50	250A	02016	02066	500A	02004	02054			
S3N 160 W MP	R 80	400A	02018	02068	800A	02006	02056			
S3N 160 W MP	R 100	500A	02020	02070	1000A	02008	02058			
S3N 160 W MP	R 125	625A	02022	02072	1250A	02010	02060			
S3N 160 W MP	R 160	800A	02024	02074	1600A	02012	02062			

Magnetic release			Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
			3 poles	4 poles	3 poles	4 poles	3 poles	4 poles	3 poles	4 poles
S3N 160 W MP	In 50A	250A	31506	31554	500A	31494	31542			
S3N 160 W MP	In 80A	400A	31508	31556	800A	31496	31544			
S3N 160 W MP	In 100A				1000A	31498	31546			
S3N 160 W MP	In 125A	625A	31512	31560	1250A	31500	31548			
S3N 160 W MP	In 160A				1600A	31502	31550			

S3H 160

$I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$

$I_{cu} (415\text{ V}) = 65\text{ kA}$

Thermomagnetic release			Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
			3 poles	4 poles	3 poles	4 poles	3 poles	4 poles	3 poles	4 poles
S3H 160 W MP	R 32	250A	03189	03239	500A	03177	03227			
S3H 160 W MP	R 50	250A	03191	03241	500A	03179	03229			
S3H 160 W MP	R 80	400A	03193	03243	800A	03181	03231			
S3H 160 W MP	R 100	500A	03195	03245	1000A	03183	03233			
S3H 160 W MP	R 125	625A	03197	03247	1250A	03185	03235			
S3H 160 W MP	R 160	800A	03199	03249	1600A	03187	03237			

Magnetic release			Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
			3 poles	4 poles	3 poles	4 poles	3 poles	4 poles	3 poles	4 poles
S3H 160 W MP	In 50A	250A	31602	31650	500A	31590	31638			
S3H 160 W MP	In 80A	400A	31604	31652	800A	31592	31640			
S3H 160 W MP	In 100A				1000A	31594	31642			
S3H 160 W MP	In 125A	625A	31608	31656	1250A	31596	31644			
S3H 160 W MP	In 160A				1600A	31598	31646			

S3L 160

$I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$

$I_{cu} (415\text{ V}) = 85\text{ kA}$

Thermomagnetic release			Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
			3 poles	4 poles	3 poles	4 poles	3 poles	4 poles	3 poles	4 poles
S3L 160 W MP	R 32	250A	04488	04536	500A	04476	04524			
S3L 160 W MP	R 50	250A	04490	04538	500A	04478	04526			
S3L 160 W MP	R 80	400A	14537	14539	800A	04480	04528			
S3L 160 W MP	R 100	500A	04493	04541	1000A	04482	04530			
S3L 160 W MP	R 125	625A	04495	04543	1250A	04484	04532			
S3L 160 W MP	R 160	800A	04497	04545	1600A	04486	04534			

Magnetic release			Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
			3 poles	4 poles	3 poles	4 poles	3 poles	4 poles	3 poles	4 poles
S3L 160 W MP	In 50A	250A	31698	31746	500A	31686	31734			
S3L 160 W MP	In 80A	400A	31700	31748	800A	31688	31736			
S3L 160 W MP	In 100A				1000A	31690	31738			
S3L 160 W MP	In 125A	625A	31704	31752	1250A	31692	31740			
S3L 160 W MP	In 160A				1600A	31694	31742			

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



S3N 250

I_n (40 °C) = 250 A

I_{cu} (415 V) = 35 kA

Thermomagnetic release			code 1SDA0 R1	
			3 poles	4 poles
<i>F = Front terminals</i>				
S3N 250 F F	R 200	600A	48545	48555
S3N 250 F F	R 250	750A	48546	48556
S3N 250 F F (N50%)	R 200	600A		48561
S3N 250 F F (N50%)	R 250	750A		48562

Thermomagnetic release		Im = 5 Ith	code 1SDA0 R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 R1 3 poles	4 poles
F = Front terminals							
S3N 250 F F	R 200	1000A	13495	13503	2000A	13491	13499
S3N 250 F F	R 250	1250A	13497	13505	2500A	13493	13501
EF = Extended front terminals							
S3N 250 F EF	R 200	1000A	04552	04777	2000A	04548	04773
S3N 250 F EF	R 250	1250A	04554	04779	2500A	04550	04775
FC Cu = Front terminals for copper cables							
S3N 250 F FC Cu	R 200	1000A	04606	14419	2000A	04602	14415
S3N 250 F FC Cu	R 250	1250A	04608	14421	2500A	04604	14417
FC CuAl = Front terminals for copper/aluminium cables							
S3N 250 F FC CuAl	R 200	1000A	04660	14455	2000A	04656	14451
S3N 250 F FC CuAl	R 250	1250A	04662	14457	2500A	04658	14453
R = Threaded rear terminals							
S3N 250 F R	R 200	1000A	04768	04912	2000A	04764	04908
S3N 250 F R	R 250	1250A	04770	04914	2500A	04766	04910
RC = Rear terminals for cables							
S3N 250 F RC	R 200	1000A	04714	04858	2000A	04710	04854
S3N 250 F RC	R 250	1250A	04716	04860	2500A	04712	04856
R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker							
S3N 250 F R Res. Cur	R 200	1000A		25523	2000A		25519
S3N 250 F R Res. Cur	R 250	1250A		25525	2500A		25521

Magnetic release		Im = 10 Ith	code 1SDA0 R1
		3 poles	4 poles
<i>F = Front terminals</i>			
S3N 250 F F	In 200A	2000A	27388 27476
S3N 250 F F	In 250A	2500A	27390 27478
<i>EF = Extended front terminals</i>			
S3N 250 F EF	In 200A	2000A	31756 32337
S3N 250 F EF	In 250A	2500A	31758 32339
<i>FC Cu = Front terminals for copper cables</i>			
S3N 250 F FC Cu	In 200A	2000A	31804 32385
S3N 250 F FC Cu	In 250A	2500A	31806 32387
<i>FC CuAl = Front terminals for copper/aluminium cables</i>			
S3N 250 F FC CuAl	In 200A	2000A	31844 32433
S3N 250 F FC CuAl	In 250A	2500A	31846 32435
<i>R = Threaded rear terminals</i>			
S3N 250 F R	In 200A	2000A	31940 32529
S3N 250 F R	In 250A	2500A	31942 32531
<i>RC = Rear terminals for cables</i>			
S3N 250 F RC	In 200A	2000A	31892 32481
S3N 250 F RC	In 250A	2500A	31894 32483



Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



S3H 250 $I_n (40\text{ }^\circ\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Thermomagnetic release			code 1SDA0 R1
			3 poles 4 poles
<i>F = Front terminals</i>			
S3H 250 F F	R 200	600A	48547 48557
S3H 250 F F	R 250	750A	48548 48558
S3H 250 F F (N50%)	R 200	600A	48563
S3H 250 F F (N50%)	R 250	750A	48564

Thermomagnetic release		Im = 5 lth	code 1SDA0 R1 3 poles 4 poles		Im = 10 lth	code 1SDA0 R1 3 poles 4 poles	
<i>F = Front terminals</i>							
S3H 250 F F	R 200	1000A	13511	13519	2000A	13507	13515
S3H 250 F F	R 250	1250A	13513	13521	2500A	13509	13517
<i>EF = Extended front terminals</i>							
S3H 250 F EF	R 200	1000A	04957	05182	2000A	04953	05178
S3H 250 F EF	R 250	1250A	04959	05184	2500A	04955	05180
<i>FC Cu = Front terminals for copper cables</i>							
S3H 250 F FC Cu	R 200	1000A	05011	05236	2000A	05007	05232
S3H 250 F FC Cu	R 250	1250A	05013	05238	2500A	05009	05234
<i>FC CuAl = Front terminals for copper/aluminium cables</i>							
S3H 250 F FC CuAl	R 200	1000A	05065	05290	2000A	05061	05286
S3H 250 F FC CuAl	R 250	1250A	05067	05292	2500A	05063	05288
<i>R = Threaded rear terminals</i>							
S3H 250 F R	R 200	1000A	05173	05398	2000A	05169	05394
S3H 250 F R	R 250	1250A	05175	05400	2500A	05171	05396
<i>RC = Rear terminals for cables</i>							
S3H 250 F RC	R 200	1000A	05119	05344	2000A	05115	05340
S3H 250 F RC	R 250	1250A	05121	05346	2500A	05117	05342
<i>R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker</i>							
S3H 250 F R Res. Cur	R 200	1000A		25531	2000A		25527
S3H 250 F R Res. Cur	R 250	1250A		25533	2500A		25529

Magnetic release		Im = 10 lth	code 1SDA0 R1
		3 poles	4 poles
<i>F = Front terminals</i>			
S3H 250 F F	In 200A	2000A	27564 27652
S3H 250 F F	In 250A	2500A	27566 27654
<i>EF = Extended front terminals</i>			
S3H 250 F EF	In 200A	2000A	31948 32537
S3H 250 F EF	In 250A	2500A	31950 32539
<i>FC Cu = Front terminals for copper cables</i>			
S3H 250 F FC Cu	In 200A	2000A	31996 32585
S3H 250 F FC Cu	In 250A	2500A	31998 32587
<i>FC CuAl = Front terminals for copper/aluminium cables</i>			
S3H 250 F FC CuAl	In 200A	2000A	32044 32633
S3H 250 F FC CuAl	In 250A	2500A	32046 32635
<i>R = Threaded rear terminals</i>			
S3H 250 F R	In 200A	2000A	32097 32729
S3H 250 F R	In 250A	2500A	32099 32732
<i>RC = Rear terminals for cables</i>			
S3H 250 F RC	In 200A	2000A	32089 32681
S3H 250 F RC	In 250A	2500A	32091 32683

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED



S3L 250

I_n (40 °C) = 250 A

I_{cu} (415 V) = 85 kA

Thermomagnetic release		Im = 5 lth	code 1SDA0 R1		Im = 10 lth	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
F = Front terminals							
S3L 250 F F	R 200	1000A	13527	13535	2000A	13523	13531
S3L 250 F F	R 250	1250A	13529	13537	2500A	13525	13533
EF = Extended front terminals							
S3L 250 F EF	R 200	1000A	05443	05668	2000A	05439	05664
S3L 250 F EF	R 250	1250A	05445	05670	2500A	05441	05666
FC Cu = Front terminals for copper cables							
S3L 250 F FC Cu	R 200	1000A	05497	05722	2000A	05493	05718
S3L 250 F FC Cu	R 250	1250A	05499	05724	2500A	05495	05720
FC CuAl = Front terminals for copper/aluminium cables							
S3L 250 F FC CuAl	R 200	1000A	05551	05776	2000A	05547	05772
S3L 250 F FC CuAl	R 250	1250A	05553	05778	2500A	05549	05774
R = Threaded rear terminals							
S3L 250 F R	R 200	1000A	05659	05884	2000A	05655	05880
S3L 250 F R	R 250	1250A	05661	05886	2500A	05657	05882
RC = Rear terminals for cables							
S3L 250 F RC	R 200	1000A	05605	05830	2000A	05601	05826
S3L 250 F RC	R 250	1250A	05607	05832	2500A	05603	05828
R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker							
S3L 250 F R Res. Cur	R 200	1000A		25539	2000A		25535
S3L 250 F R Res. Cur	R 250	1250A		25541	2500A		25537

Magnetic release		Im = 10 lth	code 1SDA0 R1
		3 poles	4 poles
F = Front terminals			
S3L 250 F F	In 200A	2000A	27748 27828
S3L 250 F F	In 250A	2500A	27750 27830
EF = Extended front terminals			
S3L 250 F EF	In 200A	2000A	32137 32737
S3L 250 F EF	In 250A	2500A	32139 32739
FC Cu = Front terminals for copper cables			
S3L 250 F FC Cu	In 200A	2000A	32185 32785
S3L 250 F FC Cu	In 250A	2500A	32187 32787
FC CuAl = Front terminals for copper/aluminium cables			
S3L 250 F FC CuAl	In 200A	2000A	32233 32833
S3L 250 F FC CuAl	In 250A	2500A	32235 32835
R = Threaded rear terminals			
S3L 250 F R	In 200A	2000A	32329 32921
S3L 250 F R	In 250A	2500A	32331 32923
RC = Rear terminals for cables			
S3L 250 F RC	In 200A	2000A	32281 32761
S3L 250 F RC	In 250A	2500A	32283 32763



Order codes

SACE Isomax S3 circuit-breaker

P = PLUG-IN



Moving part

S3N 250 $I_u (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Thermomagnetic release			Im = 5 Ith		Im = 10 Ith	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S3N 250 P MP	R 200	1000A	04921	04939	2000A	04917
S3N 250 P MP	R 250	1250A	04923	04941	2500A	04919
						04935
						04937

Magnetic release			Im = 10 Ith		Im = 10 Ith	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S3N 250 P MP	In 200A				2000A	32929
S3N 250 P MP	In 250A				2500A	32931
						32945
						32947

S3H 250 $I_u (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Thermomagnetic release			Im = 5 Ith		Im = 10 Ith	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S3H 250 P MP	R 200	1000A	05407	05425	2000A	05403
S3H 250 P MP	R 250	1250A	05409	05427	2500A	05405
						05421
						05423

Magnetic release			Im = 10 Ith		Im = 10 Ith	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S3H 250 P MP	In 200A				2000A	32961
S3H 250 P MP	In 250A				2500A	32963
						32977
						32979

S3L 250 $I_u (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 85\text{ kA}$

Thermomagnetic release			Im = 5 Ith		Im = 10 Ith	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S3L 250 P MP	R 200	1000A	05893	05911	2000A	05889
S3L 250 P MP	R 250	1250A	05895	05913	2500A	05891
						05907
						05909

Magnetic release			Im = 10 Ith		Im = 10 Ith	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S3L 250 P MP	In 200A				2000A	32993
S3L 250 P MP	In 250A				2500A	32995
						33009
						33011

Order codes

SACE Isomax S3 circuit-breaker

W = WITHDRAWABLE

Moving part



S3N 250

I_u (40 °C) = **250 A**

I_{cu} (415 V) = **35 kA**

Thermomagnetic release		Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
				3 poles	4 poles			3 poles	4 poles
S3N 250 W MP	R 200	1000A	04930	04948	2000A	04926	04944		
S3N 250 W MP	R 250	1250A	04932	04950	2500A	04928	04946		

Magnetic release			Im = 10 lth	code 1SDA0 R1
				3 poles 4 poles
S3N 250 W MP	In 200A		2000A	32937 32953
S3N 250 W MP	In 250A		2500A	32939 32955

S3H 250

I_u (40 °C) = **250 A**

I_{cu} (415 V) = **65 kA**

Thermomagnetic release		Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
				3 poles	4 poles			3 poles	4 poles
S3H 250 W MP	R 200	1000A	05416	05434	2000A	05412	05430		
S3H 250 W MP	R 250	1250A	05418	05436	2500A	05414	05432		

Magnetic release			Im = 10 lth	code 1SDA0 R1	
				3 poles	4 poles
S3H 250 W MP	In 200A		2000A	32969	32985
S3H 250 W MP	In 250A		2500A	32971	32987

S3L 250

I_u (40 °C) = **250 A**

I_{cu} (415 V) = **85 kA**

Thermomagnetic release		Im = 5 lth		code 1SDA0 R1		Im = 10 lth		code 1SDA0 R1	
				3 poles	4 poles			3 poles	4 poles
S3L 250 W MP	R 200	1000A	05902	05920	2000A	05898	05916		
S3L 250 W MP	R 250	1250A	05904	05922	2500A	05900	05918		

Magnetic release			Im = 10 lth	code 1SDA0 R1	
				3 poles	4 poles
S3L 250 W MP	In 200A		2000A	33001	33017
S3L 250 W MP	In 250A		2500A	33003	33019



Order codes

SACE Isomax S4 circuit-breaker

F = FIXED



S4N 160 $I_n (40\text{ }^\circ\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
F = Front terminals							
S4N 160 F F	In 100 A	I	15548	15836	LSI	15553	15841
		LI	15550	15838	LSIG	15558	15846
S4N 160 F F	In 160 A	I	15549	15837	LSI	15554	15842
		LI	15551	15839	LSIG	15559	15847
EF = Extended front terminals							
S4N 160 F EF	In 100 A	I	15632	15920	LSI	15635	15923
		LI	15633	15921	LSIG	15637	15925
S4N 160 F EF	In 160 A	I	05924	06080	LSI	05926	06082
		LI	05925	06081	LSIG	05929	06085
FC Cu = Front terminals for copper cables							
S4N 160 F FC Cu	In 100 A	I	15680	15968	LSI	15683	15971
		LI	15681	15969	LSIG	15685	15973
S4N 160 F FC Cu	In 160 A	I	05960	06116	LSI	05962	06118
		LI	05961	06117	LSIG	05965	06121
FC CuAl = Front terminals for copper/aluminium cables							
S4N 160 F FC CuAl	In 100 A	I	15728	16016	LSI	15731	16019
		LI	15729	16017	LSIG	15733	16021
S4N 160 F FC CuAl	In 160 A	I	05996	06152	LSI	05998	06154
		LI	05997	06153	LSIG	06001	06157
R = Threaded rear terminals							
S4N 160 F R	In 100 A	I	15830	16112	LSI	15833	16115
		LI	15831	16113	LSIG	15835	16117
S4N 160 F R	In 160 A	I	06074	06224	LSI	06076	06226
		LI	06075	06225	LSIG	06079	06229
RC = Rear terminals for cables							
S4N 160 F RC	In 100 A	I	15782	16064	LSI	15785	16067
		LI	15783	16065	LSIG	15787	16069
S4N 160 F RC	In 160 A	I	06038	06188	LSI	06040	06190
		LI	06039	06189	LSIG	06043	06193

S4H 160 $I_n (40\text{ }^\circ\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
F = Front terminals							
S4H 160 F F	In 100 A	I	16142	16424	LSI	16146	16428
		LI	16144	16426	LSIG	16152	16434
S4H 160 F F	In 160 A	I	16143	16425	LSI	16147	16429
		LI	16145	16427	LSIG	16153	16435
EF = Extended front terminals							
S4H 160 F EF	In 100 A	I	16226	16508	LSI	16228	16510
		LI	16227	16509	LSIG	16231	16513
S4H 160 F EF	In 160 A	I	06254	06404	LSI	06256	06406
		LI	06255	06405	LSIG	06259	06409
FC Cu = Front terminals for copper cables							
S4H 160 F FC Cu	In 100 A	I	16274	16556	LSI	16276	16558
		LI	16275	16557	LSIG	16279	16561
S4H 160 F FC Cu	In 160 A	I	06290	06440	LSI	06292	06442
		LI	06291	06441	LSIG	06295	06445
FC CuAl = Front terminals for copper/aluminium cables							
S4H 160 F FC CuAl	In 100 A	I	16322	16604	LSI	16324	16606
		LI	16323	16605	LSIG	16327	16609
S4H 160 F FC CuAl	In 160 A	I	06326	06476	LSI	06328	06478
		LI	06327	06477	LSIG	06331	06481

Order codes

SACE Isomax S4 circuit-breaker

F = FIXED



Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles	PR212 P	code 1SDA0 R1 3 poles 4 poles		
<i>R = Threaded rear terminals</i>							
S4H 160 F R	In 100 A	I	16418	16700	LSI	16420	16702
		LI	16419	16701	LSIG	16423	16705
S4H 160 F R	In 160 A	I	06398	06548	LSI	06400	06550
		LI	06399	06549	LSIG	06403	06553
<i>RC = Rear terminals for cables</i>							
S4H 160 F RC	In 100 A	I	16370	16652	LSI	16372	16654
		LI	16371	16653	LSIG	16375	16657
S4H 160 F RC	In 160 A	I	06362	06512	LSI	06364	06514
		LI	06363	06513	LSIG	06367	06517

S4L 160 I_u (40 °C) = **160 A** I_{cu} (415 V) = **100 kA**

Microprocessor-based release		PR211 P	code 1SDA0 3 poles	 R1 4 poles	PR212 P	code 1SDA0 3 poles	 R1 4 poles
F = Front terminals							
S4L 160 F F	In 100 A	I	16730	17012	LSI	16734	17016
		LI	16732	17014	LSIG	16740	17022
S4L 160 F F	In 160 A	I	16731	17013	LSI	16735	17017
		LI	16733	17015	LSIG	16741	17023
EF = Extended front terminals							
S4L 160 F EF	In 100 A	I	16814	17096	LSI	16816	17098
		LI	16815	17097	LSIG	16819	17101
S4L 160 F EF	In 160 A	I	06578	06728	LSI	06580	06730
		LI	06579	06729	LSIG	06583	06733
FC Cu = Front terminals for copper cables							
S4L 160 F FC Cu	In 100 A	I	16862	17144	LSI	16864	17146
		LI	16863	17145	LSIG	16867	17149
S4L 160 F FC Cu	In 160 A	I	06614	06764	LSI	06616	06766
		LI	06615	06765	LSIG	06619	06769
FC CuAl = Front terminals for copper/aluminium cables							
S4L 160 F FC CuAl	In 100 A	I	16910	17192	LSI	16912	17194
		LI	16911	17193	LSIG	16915	17197
S4L 160 F FC CuAl	In 160 A	I	06650	06800	LSI	06652	06802
		LI	06651	06801	LSIG	06655	06805
R = Threaded rear terminals							
S4L 160 F R	In 100 A	I	17006	17288	LSI	17008	17290
		LI	17007	17289	LSIG	17011	17293
S4L 160 F R	In 160 A	I	06722	06872	LSI	06724	06874
		LI	06723	06873	LSIG	06727	06877
RC = Rear terminals for cables							
S4L 160 F RC	In 100 A	I	16958	17240	LSI	16960	17242
		LI	16959	17241	LSIG	16963	17245
S4L 160 F RC	In 160 A	I	06686	06836	LSI	06688	06838
		LI	06687	06837	LSIG	06691	06841



Order codes

SACE Isomax S4 circuit-breaker

P = PLUG-IN



Moving part

S4N 160 $I_n (40\text{ }^\circ\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Microprocessor-based release			PR211 P		PR212 P	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S4N 160 P MP	In 100 A	I	16118	16130	LSI	16121
		LI	16119	16131	LSIG	16123
S4N 160 P MP	In 160 A	I	06230	06242	LSI	06232
		LI	06231	06243	LSIG	06235

S4H 160 $I_n (40\text{ }^\circ\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based release			PR211 P		PR212 P	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S4H 160 P MP	In 100 A	I	16706	16718	LSI	16708
		LI	16707	16719	LSIG	16711
S4H 160 P MP	In 160 A	I	06554	06566	LSI	06556
		LI	06555	06567	LSIG	06559

S4L 160 $I_n (40\text{ }^\circ\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based release			PR211 P		PR212 P	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S4L 160 P MP	In 100 A	I	17294	17306	LSI	17296
		LI	17295	17307	LSIG	17299
S4L 160 P MP	In 160 A	I	06878	06890	LSI	06880
		LI	06879	06891	LSIG	06883

W = WITHDRAWABLE



Moving part

S4N 160 $I_n (40\text{ }^\circ\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Microprocessor-based release			PR211 P		PR212 P	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S4N 160 W MP	In 100 A	I	16124	16136	LSI	16127
		LI	16125	16137	LSIG	16129
S4N 160 W MP	In 160 A	I	06236	06248	LSI	06238
		LI	06237	06249	LSIG	06241

S4H 160 $I_n (40\text{ }^\circ\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based release			PR211 P		PR212 P	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S4H 160 W MP	In 100 A	I	16712	16724	LSI	16714
		LI	16713	16725	LSIG	16717
S4H 160 W MP	In 160 A	I	06560	06572	LSI	06562
		LI	06561	06573	LSIG	06565

S4L 160 $I_n (40\text{ }^\circ\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based release			PR211 P		PR212 P	
			code 1SDA0 R1 3 poles	4 poles	code 1SDA0 R1 3 poles	4 poles
S4L 160 W MP	In 100 A	I	17300	17312	LSI	17302
		LI	17301	17313	LSIG	17305
S4L 160 W MP	In 160 A	I	06884	06896	LSI	06886
		LI	06885	06897	LSIG	06889

Order codes

SACE Isomax S4 circuit-breaker

F = FIXED



S4N 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>F = Front terminals</i>							
S4N 250 F F	In 250 A	I	17318	17384	LSI	17320	17386
		LI	17319	17385	LSIG	17323	17389
<i>EF = Extended front terminals</i>							
S4N 250 F EF	In 250 A	I	06902	07052	LSI	06904	07054
		LI	06903	07053	LSIG	06907	07057
<i>FC Cu = Front terminals for copper cables</i>							
S4N 250 F FC Cu	In 250 A	I	06938	07088	LSI	06940	07090
		LI	06939	07089	LSIG	06943	07093
<i>FC CuAl = Front terminals for copper/aluminium cables</i>							
S4N 250 F FC CuAl	In 250 A	I	06974	07124	LSI	06976	07126
		LI	06975	07125	LSIG	06979	07129
<i>R = Threaded rear terminals</i>							
S4N 250 F R	In 250 A	I	07046	07196	LSI	07048	07198
		LI	07047	07197	LSIG	07051	07201
<i>RC = Rear terminals for cables</i>							
S4N 250 F RC	In 250 A	I	07010	07160	LSI	07012	07162
		LI	07011	07161	LSIG	07015	07165

S4H 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
<i>F = Front terminals</i>							
S4H 250 F F	In 250 A	I	17450	17516	LSI	17452	17518
		LI	17451	17517	LSIG	17455	17521
<i>EF = Extended front terminals</i>							
S4H 250 F EF	In 250 A	I	07226	07376	LSI	07228	07378
		LI	07227	07377	LSIG	07231	07381
<i>FC Cu = Front terminals for copper cables</i>							
S4H 250 F FC Cu	In 250 A	I	07262	07412	LSI	07264	07414
		LI	07263	07413	LSIG	07267	07417
<i>FC CuAl = Front terminals for copper/aluminium cables</i>							
S4H 250 F FC CuAl	In 250 A	I	07298	07448	LSI	07300	07450
		LI	07299	07449	LSIG	07303	07453
<i>R = Threaded rear terminals</i>							
S4H 250 F R	In 250 A	I	07370	07520	LSI	07372	07522
		LI	07371	07521	LSIG	07375	07525
<i>RC = Rear terminals for cables</i>							
S4H 250 F RC	In 250 A	I	07334	07484	LSI	07336	07486
		LI	07335	07485	LSIG	07339	07489



Order codes

SACE Isomax S4 circuit-breaker

F = FIXED



S4L 250 $I_n (40\text{ }^\circ\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
F = Front terminals							
S4L 250 F F	In 250 A	I	17582	17648	LSI	17584	17650
		LI	17583	17649	LSIG	17587	17653
EF = Extended front terminals							
S4L 250 F EF	In 250 A	I	07550	07700	LSI	07552	07702
		LI	07551	07701	LSIG	07555	07705
FC Cu = Front terminals for copper cables							
S4L 250 F FC Cu	In 250 A	I	07586	07736	LSI	07588	07738
		LI	07587	07737	LSIG	07591	07741
FC CuAl = Front terminals for copper/aluminium cables							
S4L 250 F FC CuAl	In 250 A	I	07622	07772	LSI	07624	07774
		LI	07623	07773	LSIG	07627	07777
R = Threaded rear terminals							
S4L 250 F R	In 250 A	I	07694	07844	LSI	07696	07846
		LI	07695	07845	LSIG	07699	07849
RC = Rear terminals for cables							
S4L 250 F RC	In 250 A	I	07658	07808	LSI	07660	07810
		LI	07659	07809	LSIG	07663	07813

Order codes

SACE Isomax S4 circuit-breaker

P = PLUG-IN



Moving part

S4N 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Microprocessor-based release			PR211 P			PR212 P	
			code 1SDA0 R1	code 1SDA0 R1		code 1SDA0 R1	code 1SDA0 R1
S4N 250 P MP	In 250 A	I	07202	07214	LSI	07204	07216
		LI	07203	07215	LSIG	07207	07219

S4H 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based release			PR211 P			PR212 P	
			code 1SDA0 R1	code 1SDA0 R1		code 1SDA0 R1	code 1SDA0 R1
S4H 250 P MP	In 250 A	I	07526	07538	LSI	07528	07540
		LI	07527	07539	LSIG	07531	07543

S4L 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based release			PR211 P			PR212 P	
			code 1SDA0 R1	code 1SDA0 R1		code 1SDA0 R1	code 1SDA0 R1
S4L 250 P MP	In 250 A	I	07850	07862	LSI	07852	07864
		LI	07851	07863	LSIG	07855	07867

W = WITHDRAWABLE



Moving part

S4N 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Microprocessor-based release			PR211 P			PR212 P	
			code 1SDA0 R1	code 1SDA0 R1		code 1SDA0 R1	code 1SDA0 R1
S4N 250 W MP	In 250 A	I	07208	07220	LSI	07210	07222
		LI	07209	07221	LSIG	07213	07225

S4H 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based release			PR211 P			PR212 P	
			code 1SDA0 R1	code 1SDA0 R1		code 1SDA0 R1	code 1SDA0 R1
S4H 250 W MP	In 250 A	I	07532	07544	LSI	07534	07546
		LI	07533	07545	LSIG	07537	07549

S4L 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based release			PR211 P			PR212 P	
			code 1SDA0 R1	code 1SDA0 R1		code 1SDA0 R1	code 1SDA0 R1
S4L 250 W MP	In 250 A	I	07856	07868	LSI	07858	07870
		LI	07857	07869	LSIG	07861	07873



Order codes

SACE Isomax S5 circuit-breaker

F = FIXED



S5N 400 $I_n (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Thermomagnetic release			code 1SDA0 R1	
			3 poles	4 poles
F = Front terminals				
S5N 400 F F	R 320	3200A	38438	38440
S5N 400 F F	R 400	4000A	38439	38441
EF = Extended front terminals				
S5N 400 F EF	R 320	3200A	38442	38444
S5N 400 F EF	R 400	4000A	38443	38445
FC Cu = Front terminals for copper cables				
S5N 400 F FC Cu	R 320	3200A	38446	38448
S5N 400 F FC Cu	R 400	4000A	38447	38449
FC CuAl = Front terminals for copper/aluminium cables				
S5N 400 F FC CuAl*	R 320	3200A	38450	38452
S5N 400 F FC CuAl*	R 400	4000A	38451	38453
S5N 400 F FC CuAl**	R 320	3200A	38466	38480
S5N 400 F FC CuAl**	R 400	4000A	38467	38481
R = Threaded rear terminals				
S5N 400 F R	R 320	3200A	38486	38488
S5N 400 F R	R 400	4000A	38487	38489
RC = Rear terminals for cables				
S5N 400 F RC	R 320	3200A	38482	38484
S5N 400 F RC	R 400	4000A	38483	38485

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles	code 1SDA0 R1 4 poles	PR212 P	code 1SDA0 R1 3 poles	code 1SDA0 R1 4 poles
F = Front terminals							
S5N 400 F F	In 320 A	I	17714	17846	LSI	17718	17850
		LI	17716	17848	LSIG	17724	17856
S5N 400 F F	In 400 A	I	17715	17847	LSI	17719	17851
		LI	17717	17849	LSIG	17725	17857
EF = Extended front terminals							
S5N 400 F EF	In 320 A	I	07874	08174	LSI	07878	08178
		LI	07876	08176	LSIG	07884	08184
S5N 400 F EF	In 400 A	I	07875	08175	LSI	07879	08179
		LI	07877	08177	LSIG	07885	08185
FC Cu = Front terminals for copper cables							
S5N 400 F FC Cu	In 320 A	I	07946	08246	LSI	07950	08250
		LI	07948	08248	LSIG	07956	08256
S5N 400 F FC Cu	In 400 A	I	07947	08247	LSI	07951	08251
		LI	07949	08249	LSIG	07957	08257
FC CuAl = Front terminals for copper/aluminium cables							
S5N 400 F FC CuAl*	In 320 A	I	08018	08318	LSI	08022	08322
		LI	08020	08320	LSIG	08028	08328
S5N 400 F FC CuAl*	In 400 A	I	08019	08319	LSI	08023	08323
		LI	08021	08321	LSIG	08029	08329
S5N 400 F FC CuAl**	In 320 A	I	38454	38468	LSI	38458	38472
		LI	38456	38470	LSIG	38464	38478
S5N 400 F FC CuAl**	In 400 A	I	38455	38469	LSI	38459	38473
		LI	38457	38471	LSIG	38465	38479
R = Threaded rear terminals							
S5N 400 F R	In 320 A	I	08162	08450	LSI	08166	08454
		LI	08164	08452	LSIG	08172	08460
S5N 400 F R	In 400 A	I	08163	08451	LSI	08167	08455
		LI	08165	08453	LSIG	08173	08461
RC = Rear terminals for cables							
S5N 400 F RC	In 320 A	I	08090	08390	LSI	08094	08394
		LI	08092	08392	LSIG	08100	08400
S5N 400 F RC	In 400 A	I	08091	08391	LSI	08095	08395
		LI	08093	08393	LSIG	08101	08401

* Cable section = 1 x 240 mm²

** Cable section = 2 x 120 mm²

Order codes

SACE Isomax S5 circuit-breaker

F = FIXED



S5H 400

I_u (40 °C) = 400 A

I_{cu} (415 V) = 65 kA

Thermomagnetic release			code 1SDA0 R1	
			3 poles	4 poles
F = Front terminals				
S5H 400 F F	R 320	3200A	38522	38524
S5H 400 F F	R 400	4000A	38523	38525
EF = Extended front terminals				
S5H 400 F EF	R 320	3200A	38526	38528
S5H 400 F EF	R 400	4000A	38527	38529
FC Cu = Front terminals for copper cables				
S5H 400 F FC Cu	R 320	3200A	38530	38532
S5H 400 F FC Cu	R 400	4000A	38531	38533
FC CuAl = Front terminals for copper/aluminium cables				
S5H 400 F FC CuAl*	R 320	3200A	38534	38536
S5H 400 F FC CuAl*	R 400	4000A	38535	38537
S5H 400 F FC CuAl**	R 320	3200A	38550	38564
S5H 400 F FC CuAl**	R 400	4000A	38551	38565
R = Threaded rear terminals				
S5H 400 F R	R 320	3200A	38570	38572
S5H 400 F R	R 400	4000A	38571	38573
RC = Rear terminals for cables				
S5H 400 F RC	R 320	3200A	38566	38568
S5H 400 F RC	R 400	4000A	38567	38569

Microprocessor-based release			PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
<i>F = Front terminals</i>								
S5H 400 F F	In 320 A	I	17990	18122	LSI	17994	18126	
		LI	17992	18124	LSIG	18000	18132	
S5H 400 F F	In 400 A	I	17991	18123	LSI	17995	18127	
		LI	17993	18125	LSIG	18001	18133	
<i>EF = Extended front terminals</i>								
S5H 400 F EF	In 320 A	I	08510	08810	LSI	08514	08814	
		LI	08512	08812	LSIG	08520	08820	
S5H 400 F EF	In 400 A	I	08511	08811	LSI	08515	08815	
		LI	08513	08813	LSIG	08521	08821	
<i>FC Cu = Front terminals for copper cables</i>								
S5H 400 F FC Cu	In 320 A	I	08582	08882	LSI	08586	08886	
		LI	08584	08884	LSIG	08592	08892	
S5H 400 F FC Cu	In 400 A	I	08583	08883	LSI	08587	08887	
		LI	08585	08885	LSIG	08593	08893	
<i>FC CuAl = Front terminals for copper/aluminium cables</i>								
S5H 400 F FC CuAl*	In 320 A	I	08654	08954	LSI	08658	08958	
		LI	08656	08956	LSIG	08664	08964	
S5H 400 F FC CuAl*	In 400 A	I	08655	08955	LSI	08659	08959	
		LI	08657	08957	LSIG	08665	08965	
S5H 400 F FC CuAl**	In 320 A	I	38538	38552	LSI	38542	38556	
		LI	38540	38554	LSIG	38548	38563	
S5H 400 F FC CuAl**	In 400 A	I	38539	38553	LSI	38543	38557	
		LI	38541	38555	LSIG	38549	38562	
<i>R = Threaded rear terminals</i>								
S5H 400 F R	In 320 A	I	08798	09098	LSI	08802	09102	
		LI	08800	09100	LSIG	08808	09108	
S5H 400 F R	In 400 A	I	08799	09099	LSI	08803	09103	
		LI	08801	09101	LSIG	08809	09109	
<i>RC = Rear terminals for cables</i>								
S5H 400 F RC	In 320 A	I	08726	09026	LSI	08730	09030	
		LI	08728	09028	LSIG	08736	09036	
S5H 400 F RC	In 400 A	I	08727	09027	LSI	08731	09031	
		LI	08729	09029	LSIG	08737	09037	

* Cable section = 1 x 240 mm²

** Cable section = 2 x 120 mm²



Order codes

SACE Isomax S5 circuit-breaker

F = FIXED



S5L 400 $I_n (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	
			3 poles	4 poles
F = Front terminals				
S5L 400 F F	R 320	3200A	38606	38608
S5L 400 F F	R 400	4000A	38607	38609
EF = Extended front terminals				
S5L 400 F EF	R 320	3200A	38610	38612
S5L 400 F EF	R 400	4000A	38611	38613
FC Cu = Front terminals for copper cables				
S5L 400 F FC Cu	R 320	3200A	38614	38616
S5L 400 F FC Cu	R 400	4000A	38615	38617
FC CuAl = Front terminals for copper/aluminium cables				
S5L 400 F FC CuAl*	R 320	3200A	38618	38620
S5L 400 F FC CuAl*	R 400	4000A	38619	38621
S5L 400 F FC CuAl**	R 320	3200A	38634	38648
S5L 400 F FC CuAl**	R 400	4000A	38635	38649
R = Threaded rear terminals				
S5L 400 F R	R 320	3200A	38654	38656
S5L 400 F R	R 400	4000A	38655	38657
RC = Rear terminals for cables				
S5L 400 F RC	R 320	3200A	38650	38652
S5L 400 F RC	R 400	4000A	38651	38653

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
F = Front terminals							
S5L 400 F F	In 320 A	I	18254	18386	LSI	18258	18390
		LI	18256	18388	LSIG	18264	18396
S5L 400 F F	In 400 A	I	18255	18387	LSI	18259	18391
		LI	18257	18389	LSIG	18265	18397
EF = Extended front terminals							
S5L 400 F EF	In 320 A	I	09158	09458	LSI	09162	09462
		LI	09160	09460	LSIG	09168	09468
S5L 400 F EF	In 400 A	I	09159	09459	LSI	09163	09463
		LI	09161	09461	LSIG	09169	09469
FC Cu = Front terminals for copper cables							
S5L 400 F FC Cu	In 320 A	I	09230	09530	LSI	09234	09534
		LI	09232	09532	LSIG	09240	09540
S5L 400 F FC Cu	In 400 A	I	09231	09531	LSI	09235	09535
		LI	09233	09533	LSIG	09241	09541
FC CuAl = Front terminals for copper/aluminium cables							
S5L 400 F FC CuAl*	In 320 A	I	09302	09602	LSI	09306	09606
		LI	09304	09604	LSIG	09312	09612
S5L 400 F FC CuAl*	In 400 A	I	09303	09603	LSI	09307	09607
		LI	09305	09605	LSIG	09313	09613
S5L 400 F FC CuAl**	In 320 A	I	38622	38636	LSI	38626	38640
		LI	38624	38638	LSIG	38628	38646
S5L 400 F FC CuAl**	In 400 A	I	38623	38637	LSI	38627	38641
		LI	38625	38639	LSIG	38629	38647
R = Threaded rear terminals							
S5L 400 F R	In 320 A	I	09446	09746	LSI	09450	09750
		LI	09448	09748	LSIG	09456	09756
S5L 400 F R	In 400 A	I	09447	09747	LSI	09451	09751
		LI	09449	09749	LSIG	09457	09757
RC = Rear terminals for cables							
S5L 400 F RC	In 320 A	I	09374	09674	LSI	09378	09678
		LI	09376	09676	LSIG	09384	09684
S5L 400 F RC	In 400 A	I	09375	09675	LSI	09379	09679
		LI	09377	09677	LSIG	09385	09685

* Cable section = 1 x 240 mm²

** Cable section = 2 x 120 mm²

Order codes

SACE Isomax S5 circuit-breaker

P = PLUG-IN



Moving part

S5N 400 $I_u (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Thermomagnetic release			Im = 5...10 Ith		code 1SDA0 R1	
					3 poles	4 poles
S5N 400 P MP	R 320	3200A			43896	43902
S5N 400 P MP	R 400	4000A			43897	43903

Microprocessor-based release			PR211 P		code 1SDA0 R1		PR212 P		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S5N 400 P MP	In 320 A	I			08462	08486	LSI		08466	08490
		LI			08464	08488			08472	08496
S5N 400 P MP	In 400 A	I			08463	08487	LSI		08467	08491
		LI			08465	08489			08473	08497

S5H 400 $I_u (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Thermomagnetic release			Im = 5...10 Ith		code 1SDA0 R1	
					3 poles	4 poles
S5H 400 P MP	R 320	3200A			43898	43904
S5H 400 P MP	R 400	4000A			43899	43905

Microprocessor-based release			PR211 P		code 1SDA0 R1		PR212 P		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S5H 400 P MP	In 320 A	I			09110	09134	LSI		09114	09138
		LI			09112	09136			09120	09144
S5H 400 P MP	In 400 A	I			09111	09135	LSI		09115	09139
		LI			09113	09137			09121	09145

S5L 400 $I_u (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Thermomagnetic release			Im = 5...10 Ith		code 1SDA0 R1	
					3 poles	4 poles
S5L 400 P MP	R 320	3200A			43900	43906
S5L 400 P MP	R 400	4000A			43901	43907

Microprocessor-based release			PR211 P		code 1SDA0 R1		PR212 P		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S5L 400 P MP	In 320 A	I			09758	09782	LSI		09762	09786
		LI			09760	09784			09768	09792
S5L 400 P MP	In 400 A	I			09759	09783	LSI		09763	09787
		LI			09761	09785			09769	09793



Order codes

SACE Isomax S5 circuit-breaker

W = WITHDRAWABLE



Moving part

S5N 400 $I_n (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Thermomagnetic release			Im = 5...10 Ith		code 1SDA0 R1	
					3 poles	4 poles
S5N 400 W MP	R 320	3200A			38414	38416
S5N 400 W MP	R 400	4000A			38415	38417

Microprocessor-based release			PR211 P		code 1SDA0 R1		PR212 P		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S5N 400 W MP	In 320 A	I			08474	08498	LSI		08478	08502
		LI			08476	08500			08484	08508
S5N 400 W MP	In 400 A	I			08475	08499	LSI		08479	08503
		LI			08477	08501			08485	08509

S5H 400 $I_n (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Thermomagnetic release			Im = 5...10 Ith		code 1SDA0 R1	
					3 poles	4 poles
S5H 400 W MP	R 320	3200A			38490	38492
S5H 400 W MP	R 400	4000A			38491	38493

Microprocessor-based release			PR211 P		code 1SDA0 R1		PR212 P		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S5H 400 W MP	In 320 A	I			09122	09146	LSI		09126	09150
		LI			09124	09148			09132	09156
S5H 400 W MP	In 400 A	I			09123	09147	LSI		09127	09151
		LI			09125	09149			09133	09157

S5L 400 $I_n (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Thermomagnetic release			Im = 5...10 Ith		code 1SDA0 R1	
					3 poles	4 poles
S5L 400 W MP	R 320	3200A			38574	38576
S5L 400 W MP	R 400	4000A			38575	38577

Microprocessor-based release			PR211 P		code 1SDA0 R1		PR212 P		code 1SDA0 R1	
					3 poles	4 poles			3 poles	4 poles
S5L 400 W MP	In 320 A	I			09770	09794	LSI		09774	09798
		LI			09772	09796			09780	09804
S5L 400 W MP	In 400 A	I			09771	09795	LSI		09775	09799
		LI			09773	09797			09781	09805

Order codes

SACE Isomax S5 circuit-breaker

W = WITHDRAWABLE

Moving part ⁽¹⁾



S5N 400 I_u (40 °C) = **400 A** I_{cu} (415 V) = **35 kA**

Thermomagnetic release			Im = 5...10 lth		code 1SDA0 R1	
					3 poles	4 poles
S5N 400 W MP	R 320	3200A			38426	38436
S5N 400 W MP	R 400	4000A			38427	38437

Microprocessor-based release			PR211 P		code 1SDA0 R1	
					3 poles	4 poles
S5N 400 W MP	In 320 A	I			38418	38428
		LI			38420	38430
S5N 400 W MP	In 400 A	I			38419	51608
		LI			38421	38431

S5H 400 I_u (40 °C) = **400 A** I_{cu} (415 V) = **65 kA**

Thermomagnetic release			Im = 5...10 lth		code 1SDA0 R1	
					3 poles	4 poles
S5H 400 W MP	R 320	3200A			38506	38520
S5H 400 W MP	R 400	4000A			38507	38521

Microprocessor-based release			PR211 P		code 1SDA0 R1	
					3 poles	4 poles
S5H 400 W MP	In 320 A	I			38494	38508
		LI			38496	38510
S5H 400 W MP	In 400 A	I			38495	38509
		LI			38497	38511

S5L 400 I_u (40 °C) = **400 A** I_{cu} (415 V) = **100 kA**

Thermomagnetic release			Im = 5...10 lth		code 1SDA0 R1	
					3 poles	4 poles
S5L 400 W MP	R 320	3200A			38590	38604
S5L 400 W MP	R 400	4000A			38591	38605

Microprocessor-based release			PR211 P		code 1SDA0 R1	
					3 poles	4 poles
S5L 400 W MP	In 320 A	I			38578	38592
		LI			38580	38594
S5L 400 W MP	In 400 A	I			38579	38593
		LI			38581	38595

(1) The S5 400 mobile parts indicated on this page can be used in conjunction with S5 630 W FP fixed parts.

Two different fixed parts are available for circuit-breakers S5 400 and S5 630.

Fixed circuit-breaker S5 400:

- converted into the mobile part of a withdrawable circuit-breaker using kit 1SDA0 13718 R1 (three-pole), 1SDA0 13719 R1 (four-pole) can be used in conjunction with the fixed part for S5 400 (see codes on pages 7/81).
- converted into the mobile part of a withdrawable circuit-breaker using kit 1SDA0 38778 R1 (three-pole), 1SDA0 38779 R1 (four-pole) can be used in conjunction with the fixed part for S5 630. This page shows the codes for the mobile parts of withdrawable circuit-breakers which have already been converted and can be used in conjunction with the fixed parts for S5 630.

Circuit-breaker S5 630 can be converted into the mobile part of a withdrawable circuit-breaker using kit 1SDA0 38778 R1 (three-pole), 1SDA0 38779 R1 (four-pole) and used in conjunction exclusively with the fixed parts for S5 630 (see codes on page 7/81).



Order codes

SACE Isomax S5 circuit-breaker

F = FIXED



S5N 630 $I_n (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	
			3 poles	4 poles
<i>F = Front terminals</i>				
S5N 630 F F	R 500	5000A	38678	38683
<i>ES = Spreaded extended front terminals</i>				
S5N 630 F ES	R 500	5000A	38684	38685
<i>FC Cu = Front terminals for copper cables</i>				
S5N 630 F FC Cu	R 500	5000A	38686	38687
<i>R = Threaded rear terminals</i>				
S5N 630 F R	R 500	5000A	38690	38691

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
F = Front terminals							
S5N 630 F F	In 630 A	I	38674	38679	LSI	38676	38681
		LI	38675	38680	LSIG	38677	38682
ES = Spreaded extended front terminals							
S5N 630 F ES	In 630 A	I	14575	14725	LSI	14577	14727
		LI	14576	14726	LSIG	14580	14730
FC Cu = Front terminals for copper cables							
S5N 630 F FC Cu	In 630 A	I	14611	14761	LSI	14613	14763
		LI	14612	14762	LSIG	14616	14766
R = Threaded rear terminals							
S5N 630 F R	In 630 A	I	14719	14869	LSI	14721	14871
		LI	14720	14870	LSIG	14724	14874

S5H 630 $I_n (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	
			3 poles	4 poles
<i>F = Front terminals</i>				
S5H 630 F F	R 500	5000A	38708	38713
<i>ES = Spreaded extended front terminals</i>				
S5H 630 F ES	R 500	5000A	38714	38715
<i>FC Cu = Front terminals for copper cables</i>				
S5H 630 F FC Cu	R 500	5000A	38716	38717
<i>R = Threaded rear terminals</i>				
S5H 630 F R	R 500	5000A	38720	38721

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
<i>F = Front terminals</i>							
S5H 630 F F	In 630 A	I	38704	38709	LSI	38706	38711
		LI	38705	38710	LSIG	38707	38712
<i>ES = Spreaded extended front terminals</i>							
S5H 630 F ES	In 630 A	I	14899	15049	LSI	14901	15051
		LI	14900	15050	LSIG	14904	15054
<i>FC Cu = Front terminals for copper cables</i>							
S5H 630 F FC Cu	In 630 A	I	14935	15085	LSI	14937	15087
		LI	14936	15086	LSIG	14940	15090
<i>R = Threaded rear terminals</i>							
S5H 630 F R	In 630 A	I	15043	15193	LSI	15045	15195
		LI	15044	15194	LSIG	15048	15198

Order codes

SACE Isomax S5 circuit-breaker

F = FIXED



S5L 630

$I_n (40\text{ }^{\circ}\text{C}) = \mathbf{630\text{ A}}$

$I_{cu} (415\text{ V}) = \mathbf{100\text{ kA}}$

Thermomagnetic release

$I_m = 5 \dots 10 I_{th}$

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

S5L 630 F F	R 500	5000A	38740	38745
-------------	-------	-------	--------------	--------------

ES = Spreaded extended front terminals

S5L 630 F ES	R 500	5000A	38746	38747
--------------	-------	-------	--------------	--------------

FC Cu = Front terminals for copper cables

S5L 630 F FC Cu	R 500	5000A	38748	38749
-----------------	-------	-------	--------------	--------------

R = Threaded rear terminals

S5L 630 F R	R 500	5000A	38752	38753
-------------	-------	-------	--------------	--------------

Microprocessor-based release

PR211 P

code 1SDA0 R1
3 poles 4 poles

PR212 P

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

S5L 630 F F	In 630 A	I	38736	38741	LSI	38738	38743
		LI	38737	38742	LSIG	38739	38744

ES = Spreaded extended front terminals

S5L 630 F ES	In 630 A	I	15223	15373	LSI	47991	43801
		LI	15224	15374	LSIG	15228	15378

FC Cu = Front terminals for copper cables

S5L 630 F FC Cu	In 630 A	I	15259	15409	LSI	43748	43815
		LI	15260	15410	LSIG	15264	15414

R = Threaded rear terminals

S5L 630 F R	In 630 A	I	15367	15517	LSI	43775	43843
		LI	15368	15518	LSIG	15372	15522



Order codes

SACE Isomax S5 circuit-breaker

W = WITHDRAWABLE



Moving part

S5N 630 $I_u (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1	
			3 poles	4 poles
S5N 630 W MP	R 500	5000A	38666	38673

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S5N 630 W MP	In 630 A	I	38660	38667	LSI	38662	38669
		LI	38661	38668	LSIG	38665	38672

S5H 630 $I_u (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1	
			3 poles	4 poles
S5H 630 W MP	R 500	5000A	38697	38703

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S5H 630 W MP	In 630 A	I	38693	38699	LSI	38695	38701
		LI	38694	38700	LSIG	38696	38702

S5L 630 $I_u (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1	
			3 poles	4 poles
S5L 630 W MP	R 500	5000A	38729	38754

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S5L 630 W MP	In 630 A	I	38723	38730	LSI	38725	38732
		LI	38724	38731	LSIG	38728	38734



Order codes

SACE Isomax S6 circuit-breaker

F = FIXED



S6N 630

$I_n (40\text{ }^\circ\text{C}) = 630\text{ A}$

$I_{cu} (415\text{ V}) = 35\text{ kA}$

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	
			3 poles	4 poles
<i>F = Front terminals</i>				
S6N 630 F F	R 630	6300A	38787	38788
<i>EF = Extended front terminals</i>				
S6N 630 F EF	R 630	6300A	38789	38790
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S6N 630 F FC CuAl*	R 630	6300A	38791	38792
<i>R = Threaded rear terminals</i>				
S6N 630 F R	R 630	6300A	38795	38796
<i>RC = Rear terminals for cables</i>				
S6N 630 F RC	R 630	6300A	38793	38794

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
F = Front terminals							
S6N 630 F F	In 630 A	I	18518	18572	LSI	18520	18574
		LI	18519	18573	LSIG	18523	18577
EF = Extended front terminals							
S6N 630 F EF	In 630 A	I	09806	09902	LSI	09808	09904
		LI	09807	09903	LSIG	09811	09907
FC CuAl = Front terminals for copper/aluminium cables							
S6N 630 F FC CuAl*	In 630 A	I	09836	09932	LSI	09838	09934
		LI	09837	09933	LSIG	09841	09937
R = Threaded rear terminals							
S6N 630 F R	In 630 A	I	09896	09992	LSI	09898	09994
		LI	09897	09993	LSIG	09901	09997
RC = Rear terminals for cables							
S6N 630 F RC	In 630 A	I	09866	09962	LSI	09868	09964
		LI	09867	09963	LSIG	09871	09967

S6S 630

$I_n (40\text{ }^\circ\text{C}) = 630\text{ A}$

$I_{cu} (415\text{ V}) = 50\text{ kA}$

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	
			3 poles	4 poles
F = Front terminals				
S6S 630 F F	R 630	6300A	38799	38800
EF = Extended front terminals				
S6S 630 F EF	R 630	6300A	38801	38802
FC CuAl = Front terminals for copper/aluminium cables				
S6S 630 F FC CuAl*	R 630	6300A	38817	38818
R = Threaded rear terminals				
S6S 630 F R	R 630	6300A	38957	38959
RC = Rear terminals for cables				
S6S 630 F RC	R 630	6300A	38819	38820

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
F = Front terminals							
S6S 630 F F	In 630 A	I	18626	18680	LSI	18628	18682
		LI	18627	18681	LSIG	18631	18685
EF = Extended front terminals							
S6S 630 F EF	In 630 A	I	10010	10106	LSI	10012	10108
		LI	10011	10107	LSIG	10015	10111
FC CuAl = Front terminals for copper/aluminium cables							
S6S 630 F FC CuAl*	In 630 A	I	10040	10136	LSI	10042	10138
		LI	10041	10137	LSIG	10045	10141
R = Threaded rear terminals							
S6S 630 F R	In 630 A	I	10100	10196	LSI	10102	10198
		LI	10101	10197	LSIG	10105	10201
RC = Rear terminals for cables							
S6S 630 F RC	In 630 A	I	10070	10166	LSI	10072	10168
		LI	10071	10167	LSIG	10075	10171

* Cable section = 1 x 240 mm²



Order codes

SACE Isomax S6 circuit-breaker

F = FIXED



S6H 630 $I_n (40^\circ\text{C}) = 630 \text{ A}$ $I_{cu} (415 \text{ V}) = 65 \text{ kA}$

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	
			3 poles	4 poles
F = Front terminals				
S6H 630 F F	R 630	6300A	38823	38824
EF = Extended front terminals				
S6H 630 F EF	R 630	6300A	38825	38826
FC CuAl = Front terminals for copper/aluminium cables				
S6H 630 F FC CuAl*	R 630	6300A	38827	38835
R = Threaded rear terminals				
S6H 630 F R	R 630	6300A	38958	38960
RC = Rear terminals for cables				
S6H 630 F RC	R 630	6300A	38843	38844

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
F = Front terminals							
S6H 630 F F	In 630 A	I	18734	18788	LSI	18736	18790
		LI	18735	18789	LSIG	18739	18793
EF = Extended front terminals							
S6H 630 F EF	In 630 A	I	10214	10310	LSI	10216	10312
		LI	10215	10311	LSIG	10219	10315
FC CuAl = Front terminals for copper/aluminium cables							
S6H 630 F FC CuAl*	In 630 A	I	10244	10340	LSI	10246	10342
		LI	10245	10341	LSIG	10249	10345
R = Threaded rear terminals							
S6H 630 F R	In 630 A	I	10304	10400	LSI	10306	10402
		LI	10305	10401	LSIG	10309	10405
RC = Rear terminals for cables							
S6H 630 F RC	In 630 A	I	10274	10370	LSI	10276	10372
		LI	10275	10371	LSIG	10279	10375

S6L 630 $I_n (40^\circ\text{C}) = 630 \text{ A}$ $I_{cu} (415 \text{ V}) = 100 \text{ kA}$

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	
			3 poles	4 poles
<i>F = Front terminals</i>				
S6L 630 F F	R 630	6300A	38847	38848
<i>EF = Extended front terminals</i>				
S6L 630 F EF	R 630	6300A	38849	38850
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S6L 630 F FC CuAl*	R 630	6300A	38851	38859
<i>R = Threaded rear terminals</i>				
S6L 630 F R	R 630	6300A	38961	38962
<i>RC = Rear terminals for cables</i>				
S6L 630 F RC	R 630	6300A	38867	38868

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
<i>F = Front terminals</i>							
S6L 630 F F	In 630 A	I	18842	18896	LSI	18844	18898
		LI	18843	18897	LSIG	18847	18901
<i>EF = Extended front terminals</i>							
S6L 630 F EF	In 630 A	I	10418	10514	LSI	10420	10516
		LI	10419	10515	LSIG	10423	10519
<i>FC CuAl = Front terminals for copper/aluminium cables</i>							
S6L 630 F FC CuAl*	In 630 A	I	10448	10544	LSI	10450	10546
		LI	10449	10545	LSIG	10453	10549
<i>R = Threaded rear terminals</i>							
S6L 630 F R	In 630 A	I	10508	10604	LSI	10510	10606
		LI	10509	10605	LSIG	10513	10609
<i>RC = Rear terminals for cables</i>							
S6L 630 F RC	In 630 A	I	10478	10574	LSI	10480	10576
		LI	10479	10575	LSIG	10483	10579

* Cable section = 2 x 240 mm²

Order codes

SACE Isomax S6 circuit-breaker

W = WITHDRAWABLE

Moving part



S6N 630 $I_u (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1	
			3 poles	4 poles
S6N 630 W MP	R 630	6300A	38785	38786

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S6N 630 W MP	In 630 A	I	09998	10004	LSI	10000	10006
		LI	09999	10005	LSIG	10003	10009

S6S 630 $I_u (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (415\text{ V}) = 50\text{ kA}$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1	
			3 poles	4 poles
S6S 630 W MP	R 630	6300A	38797	38798

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S6S 630 W MP	In 630 A	I	10202	10208	LSI	10204	10210
		LI	10203	10209	LSIG	10207	10213

S6H 630 $I_u (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1	
			3 poles	4 poles
S6H 630 W MP	R 630	6300A	38821	38822

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S6H 630 W MP	In 630 A	I	10406	10412	LSI	10408	10414
		LI	10407	10413	LSIG	10411	10417

S6L 630 $I_u (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1	
			3 poles	4 poles
S6L 630 W MP	R 630	6300A	38845	38846

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S6L 630 W MP	In 630 A	I	10610	10616	LSI	10612	10618
		LI	10611	10617	LSIG	10615	10621



Order codes

SACE Isomax S6 circuit-breaker

F = FIXED



S6N 800 $I_n (40\text{ }^\circ\text{C}) = 800\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	
			3 poles	4 poles
F = Front terminals				
S6N 800 F F	R 800	8000A	38871	38872
EF = Extended front terminals				
S6N 800 F EF	R 800	8000A	38873	38874
FC CuAl = Front terminals for copper/aluminium cables				
S6N 800 F FC CuAl*	R 800	8000A	38875	38876
R = Threaded rear terminals				
S6N 800 F R	R 800	8000A	38879	38880
RC = Rear terminals for cables				
S6N 630 F RC	R 800	8000A	38877	38878

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
F = Front terminals							
S6N 800 F F	In 800 A	I	18950	19004	LSI	18952	19006
		LI	18951	19005	LSIG	18955	19009
EF = Extended front terminals							
S6N 800 F EF	In 800 A	I	10622	10718	LSI	10624	10720
		LI	10623	10719	LSIG	10627	10723
FC CuAl = Front terminals for copper/aluminium cables							
S6N 800 F FC CuAl*	In 800 A	I	10652	10748	LSI	10654	10750
		LI	10653	10749	LSIG	10657	10753
R = Threaded rear terminals							
S6N 800 F R	In 800 A	I	10712	10808	LSI	10714	10810
		LI	10713	10809	LSIG	10717	10813
RC = Rear terminals for cables							
S6N 800 F RC	In 800 A	I	10682	10778	LSI	10684	10780
		LI	10683	10779	LSIG	10687	10783

S6S 800 $I_n (40\text{ }^\circ\text{C}) = 800\text{ A}$ $I_{cu} (415\text{ V}) = 50\text{ kA}$

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	
			3 poles	4 poles
<i>F = Front terminals</i>				
S6S 800 F F	R 800	8000A	38883	38884
<i>EF = Extended front terminals</i>				
S6S 800 F EF	R 800	8000A	38885	38886
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S6S 800 F FC CuAl*	R 800	8000A	38887	38895
<i>R = Threaded rear terminals</i>				
S6S 800 F R	R 800	8000A	38963	38964
<i>RC = Rear terminals for cables</i>				
S6S 800 F RC	R 800	8000A	38903	38904

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
F = Front terminals							
S6S 800 F F	In 800 A	I	19058	19112	LSI	19060	19114
		LI	19059	19113	LSIG	19063	19117
EF = Extended front terminals							
S6S 800 F EF	In 800 A	I	10826	10922	LSI	10828	10924
		LI	10827	10923	LSIG	10831	10927
FC CuAl = Front terminals for copper/aluminium cables							
S6S 800 F FC CuAl*	In 800 A	I	10856	10952	LSI	10858	10954
		LI	10857	10953	LSIG	10861	10957
R = Threaded rear terminals							
S6S 800 F R	In 800 A	I	10916	11006	LSI	10918	11008
		LI	10917	11007	LSIG	10921	11011
RC = Rear terminals for cables							
S6S 800 F RC	In 800 A	I	10886	10976	LSI	10888	10978
		LI	10887	10977	LSIG	10891	10981

* Cable section = 3 x 185 mm²

Order codes

SACE Isomax S6 circuit-breaker

F = FIXED



S6H 800 $I_n (40\text{ }^{\circ}\text{C}) = 800\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	
			3 poles	4 poles
<i>F = Front terminals</i>				
S6H 800 F F	R 800	8000A	38907	38908
<i>EF = Extended front terminals</i>				
S6H 800 F EF	R 800	8000A	38909	38910
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S6H 800 F FC CuAl*	R 800	8000A	38911	38919
<i>R = Threaded rear terminals</i>				
S6H 800 F R	R 800	8000A	38965	38966
<i>RC = Rear terminals for cables</i>				
S6H 800 F RC	R 800	8000A	38927	38928

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
<i>F = Front terminals</i>							
S6H 800 F F	In 800 A	I	19166	19220	LSI	19168	19222
		LI	19167	19221	LSIG	19171	19225
<i>EF = Extended front terminals</i>							
S6H 800 F EF	In 800 A	I	11024	11120	LSI	11026	11122
		LI	11025	11121	LSIG	11029	11125
<i>FC CuAl = Front terminals for copper/aluminium cables</i>							
S6H 800 F FC CuAl*	In 800 A	I	11054	11150	LSIG	11056	11152
		LI	11055	11151	LSIG	11059	11155
<i>R = Threaded rear terminals</i>							
S6H 800 F R	In 800 A	I	11114	11210	LSIG	11116	11212
		LI	11115	11211	LSIG	11119	11215
<i>RC = Rear terminals for cables</i>							
S6H 800 F RC	In 800 A	I	11084	11180	LSI	11086	11182
		LI	11085	11181	LSIG	11089	11185

S6L 800 $I_n (40\text{ }^{\circ}\text{C}) = 800\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 R1	
			3 poles	4 poles
F = Front terminals				
S6L 800 F F	R 800	8000A	38931	38932
EF = Extended front terminals				
S6L 800 F EF	R 800	8000A	38933	38934
FC CuAl = Front terminals for copper/aluminium cables				
S6L 800 F FC CuAl*	R 800	8000A	38935	38943
R = Threaded rear terminals				
S6L 800 F R	R 800	8000A	38973	38974
RC = Rear terminals for cables				
S6L 800 F RC	R 800	8000A	38951	38952

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles			
F = Front terminals							
S6L 800 F F	In 800 A	I	19274	19328	LSI	19276	19330
		LI	19275	19329	LSIG	19279	19333
EF = Extended front terminals							
S6L 800 F EF	In 800 A	I	11228	11324	LSI	11230	11326
		LI	11229	11325	LSIG	11233	11329
FC CuAl = Front terminals for copper/aluminium cables							
S6L 800 F FC CuAl*	In 800 A	I	11258	11354	LSI	11260	11356
		LI	11259	11355	LSIG	11263	11359
R = Threaded rear terminals							
S6L 800 F R	In 800 A	I	11318	11414	LSI	11320	11416
		LI	11319	11415	LSIG	11323	11419
RC = Rear terminals for cables							
S6L 800 F RC	In 800 A	I	11288	11384	LSI	11290	11386
		LI	11289	11385	LSIG	11293	11389

* Cable section = 3 x 185 mm²



Order codes

SACE Isomax S6 circuit-breaker

W = WITHDRAWABLE



Moving part

S6N 800 $I_n (40\text{ }^\circ\text{C}) = 800\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1 3 poles	4 poles
S6N 800 W MP	R 800	8000A	38869	38870

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
S6N 800 W MP	In 800 A	I	10814	10820	LSI	10816	10822
		LI	10815	10821	LSIG	10819	10825

S6S 800 $I_n (40\text{ }^\circ\text{C}) = 800\text{ A}$ $I_{cu} (415\text{ V}) = 50\text{ kA}$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1 3 poles	4 poles
S6S 800 W MP	R 800	8000A	38881	38882

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
S6S 800 W MP	In 800 A	I	11012	11018	LSI	11014	11020
		LI	11013	11019	LSIG	11017	11023

S6H 800 $I_n (40\text{ }^\circ\text{C}) = 800\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1 3 poles	4 poles
S6H 800 W MP	R 800	8000A	38905	38906

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
S6H 800 W MP	In 800 A	I	11216	11222	LSI	11218	11224
		LI	11217	11223	LSIG	11221	11227

S6L 800 $I_n (40\text{ }^\circ\text{C}) = 800\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Thermomagnetic release		$I_m = 5...10$ I_{th}	code 1SDA0 R1 3 poles	4 poles
S6L 800 W MP	R 800	8000A	38929	38930

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
S6L 800 W MP	In 800 A	I	11420	11682	LSI	11422	11684
		LI	11421	11683	LSIG	11425	11687



Order codes

SACE Isomax S7 circuit-breaker

F = FIXED



S7S 1250 $I_n (40\text{ }^\circ\text{C}) = 1250\text{ A}$ $I_{cu} (415\text{ V}) = 50\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 3 poles	 R1 4 poles	PR212 P	code 1SDA0 3 poles	 R1 4 poles
F = Front terminals							
S7S 1250 F F	In 1000 A	I	19382	19490	LSI	19386	19494
		LI	19384	19492	LSIG	19392	19500
S7S 1250 F F	In 1250 A	I	19383	19491	LSI	19387	19495
		LI	19385	19493	LSIG	19393	19501
EF = Extended front terminals							
S7S 1250 F EF	In 1000 A	I	11432	11624	LSI	11436	11628
		LI	11434	11626	LSIG	11442	11634
S7S 1250 F EF	In 1250 A	I	11433	11625	LSI	11437	11629
		LI	11435	11627	LSIG	11443	11635
FC CuAl = Front terminals for copper/aluminium cables							
S7S 1250 F FC CuAl	In 1000 A	I	11492	11428	LSI	11496	11688
		LI	11494	11430	LSIG	11502	11694
S7S 1250 F FC CuAl	In 1250 A	I	11493	11429	LSI	11497	11689
		LI	11495	11431	LSIG	11503	11695
VR = Vertical flat-bar rear terminals							
S7S 1250 F VR	In 1000 A	I	11612	11804	LSI	11616	11808
		LI	11614	11806	LSIG	11622	11814
S7S 1250 F VR	In 1250 A	I	11613	11805	LSI	11617	11809
		LI	11615	11807	LSIG	11623	11815
HR = Horizontal flat-bar rear terminals							
S7S 1250 F HR	In 1000 A	I	11552	11744	LSI	11556	11748
		LI	11554	11746	LSIG	11562	11754
S7S 1250 F HR	In 1250 A	I	11553	11745	LSI	11557	11749
		LI	11555	11747	LSIG	11563	11755

S7H 1250 $I_n (40\text{ }^\circ\text{C}) = 1250\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based release			PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
F = Front terminals								
S7H 1250 F F	In 1000 A	I		19598	19706	LSI	19602	19710
		LI		19600	19708	LSIG	19608	19716
S7H 1250 F F	In 1250 A	I		19599	19707	LSI	19603	19711
		LI		19601	19709	LSIG	19609	19717
EF = Extended front terminals								
S7H 1250 F EF	In 1000 A	I		11840	12032	LSI	11844	12036
		LI		11842	12034	LSIG	11850	12042
S7H 1250 F EF	In 1250 A	I		11841	12033	LSI	11845	12037
		LI		11843	12035	LSIG	11851	12043
FC CuAl = Front terminals for copper/aluminium cables								
S7H 1250 F FC CuAl	In 1000 A	I		11900	12092	LSI	11904	12096
		LI		11902	12094	LSIG	11910	12102
S7H 1250 F FC CuAl	In 1250 A	I		11901	12093	LSI	11905	12097
		LI		11903	12095	LSIG	11911	12103
VR = Vertical flat-bar rear terminals								
S7H 1250 F VR	In 1000 A	I		12020	12212	LSI	12024	12216
		LI		12022	12214	LSIG	12030	12222
S7H 1250 F VR	In 1250 A	I		12021	12213	LSI	12025	12217
		LI		12023	12215	LSIG	12031	12223
HR = Horizontal flat-bar rear terminals								
S7H 1250 F HR	In 1000 A	I		11960	12152	LSI	11964	12156
		LI		11962	12154	LSIG	11970	12162
S7H 1250 F HR	In 1250 A	I		11961	12153	LSI	11965	12157
		LI		11963	12155	LSIG	11971	12163



Order codes

SACE Isomax S7 circuit-breaker

F = FIXED



P309620

S7L 1250 $I_n (40^\circ\text{C}) = 1250\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
F = Front terminals							
S7L 1250 F F	In 1000 A	I	19814	19922	LSI	19818	19926
		LI	19816	19924	LSIG	19824	19932
S7L 1250 F F	In 1250 A	I	19815	19923	LSI	19819	19927
		LI	19817	19925	LSIG	19825	19933
EF = Extended front terminals							
S7L 1250 F EF	In 1000 A	I	12248	12440	LSI	12252	12444
		LI	12250	12442	LSIG	12258	12450
S7L 1250 F EF	In 1250 A	I	12249	12441	LSI	12253	12445
		LI	12251	12443	LSIG	12259	12451
FC CuAl = Front terminals for copper/aluminium cables							
S7L 1250 F FC CuAl	In 1000 A	I	12308	12500	LSI	12312	12504
		LI	12310	12502	LSIG	12318	12510
S7L 1250 F FC CuAl	In 1250 A	I	12309	12501	LSI	12313	12505
		LI	12311	12503	LSIG	12319	12511
VR = Vertical flat-bar rear terminals							
S7L 1250 F VR	In 1000 A	I	12428	12620	LSI	12432	12624
		LI	12430	12622	LSIG	12438	12630
S7L 1250 F VR	In 1250 A	I	12429	12621	LSI	12433	12625
		LI	12431	12623	LSIG	12439	12631
HR = Horizontal flat-bar rear terminals							
S7L 1250 F HR	In 1000 A	I	12368	12560	LSI	12372	12564
		LI	12370	12562	LSIG	12378	12570
S7L 1250 F HR	In 1250 A	I	12369	12561	LSI	12373	12565
		LI	12371	12563	LSIG	12379	12571

W = WITHDRAWABLE

Moving part



P309620

S7S 1250 $I_n (40^\circ\text{C}) = 1250\text{ A}$ $I_{cu} (415\text{ V}) = 50\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S7S 1250 W MP	In 1000 A	I	11816	11828	LSI	11820	11832
		LI	11818	11830	LSIG	11826	11838
S7S 1250 W MP	In 1250 A	I	11817	11829	LSI	11821	11833
		LI	11819	11831	LSIG	11827	11839

S7H 1250 $I_n (40^\circ\text{C}) = 1250\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S7H 1250 W MP	In 1000 A	I	12224	12236	LSI	12228	12240
		LI	12226	12238	LSIG	12234	12246
S7H 1250 W MP	In 1250 A	I	12225	12237	LSI	12229	12241
		LI	12227	12239	LSIG	12235	12247

S7L 1250 $I_n (40^\circ\text{C}) = 1250\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
S7L 1250 W MP	In 1000 A	I	12632	12644	LSI	12636	12648
		LI	12634	12646	LSIG	12642	12654
S7L 1250 W MP	In 1250 A	I	12633	12645	LSI	12637	12649
		LI	12635	12647	LSIG	12643	12655

Order codes

SACE Isomax S7 circuit-breaker

F = FIXED



S7S 1600 $I_u (40\text{ }^{\circ}\text{C}) = 1600\text{ A}$ $I_{cu} (415\text{ V}) = 50\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 3 poles	 R1 4 poles	PR212 P	code 1SDA0 3 poles	 R1 4 poles
F = Front terminals							
S7S 1600 F F	In 1600 A	I	20030	20072	LSI	20032	20074
		LI	20031	20073	LSIG	20035	20077
EF = Extended front terminals							
S7S 1600 F EF	In 1600 A	I	12656	12710	LSI	12658	12712
		LI	12657	12711	LSIG	12661	12715
VR = Vertical flat-bar rear terminals							
S7S 1600 F VR	In 1600 A	I	12704	12758	LSI	12706	12760
		LI	12705	12759	LSIG	12709	12763
HR = Horizontal flat-bar rear terminals							
S7S 1600 F HR	In 1600 A	I	12680	12734	LSI	12682	12736
		LI	12681	12735	LSIG	12685	12739

S7H 1600 $I_u (40\text{ }^{\circ}\text{C}) = 1600\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
F = Front terminals							
S7H 1600 F F	In 1600 A	I	20114	20156	LSI	20116	20158
		LI	20115	20157	LSIG	20119	20161
EF = Extended front terminals							
S7H 1600 F EF	In 1600 A	I	12776	12830	LSI	12778	12832
		LI	12777	12831	LSIG	12781	12835
VR = Vertical flat-bar rear terminals							
S7H 1600 F VR	In 1600 A	I	12824	12878	LSI	12826	12880
		LI	12825	12879	LSIG	12829	12883
HR = Horizontal flat-bar rear terminals							
S7H 1600 F HR	In 1600 A	I	12800	12854	LSI	12802	12856
		LI	12801	12855	LSIG	12805	12859

S7L 1600 $I_u (40\text{ }^{\circ}\text{C}) = 1600\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
F = Front terminals							
S7L 1600 F F	In 1600 A	I	20198	20240	LSI	20200	20242
		LI	20199	20241	LSIG	20203	20245
EF = Extended front terminals							
S7L 1600 F EF	In 1600 A	I	12896	12962	LSI	12898	12964
		LI	12897	12963	LSIG	12901	12967
VR = Vertical flat-bar rear terminals							
S7L 1600 F VR	In 1600 A	I	12956	13010	LSI	12958	13012
		LI	12957	13011	LSIG	12961	13015
HR = Horizontal flat-bar rear terminals							
S7L 1600 F HR	In 1600 A	I	12932	12986	LSI	12934	12988
		LI	12933	12987	LSIG	12937	12991



Order codes

SACE Isomax S7 circuit-breaker

W = WITHDRAWABLE

Moving part

S7S 1600 $I_u (40\text{ }^{\circ}\text{C}) = 1600\text{ A}$ $I_{cu} (415\text{ V}) = 50\text{ kA}$

Microprocessor-based release			PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
				3 poles	4 poles		3 poles	4 poles
S7S 1600 W MP	In 1600 A	I		12764	12770	LSI	12766	12772
		LI		12765	12771	LSIG	12769	12775

S7H 1600 $I_u (40\text{ }^{\circ}\text{C}) = 1600\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based release			PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
				3 poles	4 poles		3 poles	4 poles
S7H 1600 W MP	In 1600 A	I		12884	12890	LSI	12886	12892
		LI		12885	12891	LSIG	12889	12895

S7L 1600 $I_u (40\text{ }^{\circ}\text{C}) = 1600\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based release			PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
				3 poles	4 poles		3 poles	4 poles
S7L 1600 W MP	In 1600 A	I		13016	13022	LSI	13018	13024
		LI		13017	13023	LSIG	13021	13027



PS9620



Order codes

SACE Isomax S8 circuit-breaker

F = FIXED



S8H 2000 $I_n (40\text{ }^{\circ}\text{C}) = 2000\text{ A}$ $I_{cu} (415\text{ V}) = 85\text{ kA}$

Microprocessor-based
release

PR212
P

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

S8H 2000 F F	In 1600 A	LSI	44861	44877
		LSIG	44863	44879
S8H 2000 F F	In 2000 A	LSI	44862	44878
		LSIG	44864	44880

VR = Vertical flat-bar rear terminals

S8H 2000 F VR	In 1600 A	LSI	44869	44885
		LSIG	44871	44887
S8H 2000 F VR	In 2000 A	LSI	44870	44886
		LSIG	44872	44888

S8V 2000 $I_n (40\text{ }^{\circ}\text{C}) = 2000\text{ A}$ $I_{cu} (415\text{ V}) = 120\text{ kA}$

Microprocessor-based
release

PR212
P

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

S8V 2000 F F	In 1600 A	LSI	44918	44934
		LSIG	44920	44936
S8V 2000 F F	In 2000 A	LSI	44919	44935
		LSIG	44921	44937

VR = Vertical flat-bar rear terminals

S8V 2000 F VR	In 1600 A	LSI	44926	44942
		LSIG	44928	44944
S8V 2000 F VR	In 2000 A	LSI	44927	44943
		LSIG	44929	44945

S8H 2500 $I_n (40\text{ }^{\circ}\text{C}) = 2500\text{ A}$ $I_{cu} (415\text{ V}) = 85\text{ kA}$

Microprocessor-based
release

PR212
P

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

S8H 2500 F F	In 2500 A	LSI	44891	44899
		LSIG	44892	44900

VR = Vertical flat-bar rear terminals

S8H 2500 F VR	In 2500 A	LSI	44895	44903
		LSIG	44896	44904

S8V 2500 $I_n (40\text{ }^{\circ}\text{C}) = 2500\text{ A}$ $I_{cu} (415\text{ V}) = 120\text{ kA}$

Microprocessor-based
release

PR212
P

code 1SDA0 R1
3 poles 4 poles

F = Front terminals

S8V 2500 F F	In 2500 A	LSI	44948	44956
		LSIG	44949	44957

VR = Vertical flat-bar rear terminals

S8V 2500 F VR	In 2500 A	LSI	44952	44960
		LSIG	44953	44961

S8H 3200 $I_n (40\text{ }^{\circ}\text{C}) = 3200\text{ A}$ $I_{cu} (415\text{ V}) = 85\text{ kA}$

Microprocessor-based
release

PR212
P

code 1SDA0 R1
3 poles 4 poles

VR = Vertical flat-bar rear terminals

S8H 3200 F VR	In 3200 A	LSI	44908	44912
		LSIG	44909	44913

S8V 3200 $I_n (40\text{ }^{\circ}\text{C}) = 3200\text{ A}$ $I_{cu} (415\text{ V}) = 120\text{ kA}$

Microprocessor-based
release

PR212
P

code 1SDA0 R1
3 poles 4 poles

VR = Vertical flat-bar rear terminals

S8V 3200 F VR	In 3200 A	LSI	44964	44968
		LSIG	44965	44969



Order codes

SACE Isomax S2X 100 current-limiting circuit-breaker

F = FIXED



S2X 100 $I_n (40\text{ }^\circ\text{C}) = 100\text{ A}$ $I_{cu} (415\text{ V}) = 70\text{ kA}$

Thermomagnetic
release

I_m

code 1SDA0 R1
3 poles

*FC Cu = Front terminals
for copper cables*

S2X 100 F FC Cu	R 1	10A	50307
S2X 100 F FC Cu	R 1.6	16A	50308
S2X 100 F FC Cu	R 2.5	25A	50309
S2X 100 F FC Cu	R 4	40A	50310
S2X 100 F FC Cu	R 6.3	63A	50311
S2X 100 F FC Cu	R 10	100A	50312
S2X 100 F FC Cu	R 12.5	125A	50313
S2X 100 F FC Cu	R 16	160A	50314
S2X 100 F FC Cu	R 20	200A	50315
S2X 100 F FC Cu	R 25	250A	50316
S2X 100 F FC Cu	R 32	320A	50317
S2X 100 F FC Cu	R 40	400A	50318
S2X 100 F FC Cu	R 50	500A	50319
S2X 100 F FC Cu	R 63	630A	50320
S2X 100 F FC Cu	R 80	800A	50321
S2X 100 F FC Cu	R 100	1000A	50322

*R = Threaded rear
terminals*

S2X 100 F R	R 1	10A	50339
S2X 100 F R	R 1.6	16A	50340
S2X 100 F R	R 2.5	25A	50341
S2X 100 F R	R 4	40A	50342
S2X 100 F R	R 6.3	63A	50343
S2X 100 F R	R 10	100A	50344
S2X 100 F R	R 12.5	125A	50345
S2X 100 F R	R 16	160A	50346
S2X 100 F R	R 20	200A	50347
S2X 100 F R	R 25	250A	50348
S2X 100 F R	R 32	320A	50349
S2X 100 F R	R 40	400A	50350
S2X 100 F R	R 50	500A	50351
S2X 100 F R	R 63	630A	50352
S2X 100 F R	R 80	800A	50353
S2X 100 F R	R 100	1000A	50354

P = PLUG-IN



Moving part

S2X 100 $I_n (40\text{ }^\circ\text{C}) = 100\text{ A}$ $I_{cu} (415\text{ V}) = 70\text{ kA}$

Thermomagnetic
release

I_m

code 1SDA0 R1
3 poles

S2X 100 P MP	R 1	10A	50371
S2X 100 P MP	R 1.6	16A	50372
S2X 100 P MP	R 2.5	25A	50373
S2X 100 P MP	R 4	40A	50374
S2X 100 P MP	R 6.3	63A	50375
S2X 100 P MP	R 10	100A	50376
S2X 100 P MP	R 12.5	125A	50377
S2X 100 P MP	R 16	160A	50378
S2X 100 P MP	R 20	200A	50379
S2X 100 P MP	R 25	250A	50380
S2X 100 P MP	R 32	320A	50381
S2X 100 P MP	R 40	400A	50382
S2X 100 P MP	R 50	500A	50383
S2X 100 P MP	R 63	630A	50384
S2X 100 P MP	R 80	800A	50385
S2X 100 P MP	R 100	1000A	50386



Order codes

SACE Isomax S3X current-limiting circuit-breaker

F = FIXED



CS93151

S3X 125 $I_n (40\text{ °C}) = 125\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Thermomagnetic release			code 1SDA0 R1	
			3 poles	4 poles
<i>F = Front terminals</i>				
S3X 125 F F	R 32	500A	45197	45207
S3X 125 F F	R 50	500A	45199	45209
S3X 125 F F	R 80	800A	45201	45211
S3X 125 F F	R 100	1000A	45203	45213
S3X 125 F F	R 125	1250A	45205	45215
<i>EF = Extended front terminals</i>				
S3X 125 F EF	R 32	500A	45217	45267
S3X 125 F EF	R 50	500A	45219	45269
S3X 125 F EF	R 80	800A	45221	45271
S3X 125 F EF	R 100	1000A	45223	45273
S3X 125 F EF	R 125	1250A	45225	45275
<i>FC Cu = Front terminals for copper cables</i>				
S3X 125 F FC Cu	R 32	500A	45227	45277
S3X 125 F FC Cu	R 50	500A	45229	45279
S3X 125 F FC Cu	R 80	800A	45231	45281
S3X 125 F FC Cu	R 100	1000A	45233	45283
S3X 125 F FC Cu	R 125	1250A	45235	45285
<i>FC CuAl = Front terminals for copper/aluminium cables</i>				
S3X 125 F FC CuAl	R 32	500A	45237	45287
S3X 125 F FC CuAl	R 50	500A	45239	45289
S3X 125 F FC CuAl	R 80	800A	45241	45291
S3X 125 F FC CuAl	R 100	1000A	45243	45293
S3X 125 F FC CuAl	R 125	1250A	45245	45295
<i>R = Threaded rear terminals</i>				
S3X 125 F R	R 32	500A	45257	45307
S3X 125 F R	R 50	500A	45259	45309
S3X 125 F R	R 80	800A	45261	45311
S3X 125 F R	R 100	1000A	45263	45313
S3X 125 F R	R 125	1250A	45265	45315
<i>RC = Rear terminals for cables</i>				
S3X 125 F RC	R 32	500A	45247	45297
S3X 125 F RC	R 50	500A	45249	45299
S3X 125 F RC	R 80	800A	45251	45301
S3X 125 F RC	R 100	1000A	45253	45303
S3X 125 F RC	R 125	1250A	45255	45305



Order codes

SACE Isomax S3X current-limiting circuit-breaker

F = FIXED



S3X 200 $I_n (40\text{ }^\circ\text{C}) = 200\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Thermomagnetic release		I _m	code 1SDA0 R1	
			3 poles	4 poles
F = Front terminals				
S3X 200 F F	R 125	1250A	46039	46045
S3X 200 F F	R 160	1600A	46041	46047
S3X 200 F F	R 200	2000A	46043	46049
EF = Extended front terminals				
S3X 200 F EF	R 125	1250A	46051	46081
S3X 200 F EF	R 160	1600A	46053	46083
S3X 200 F EF	R 200	2000A	46055	46085
FC Cu = Front terminals for copper cables				
S3X 200 F FC Cu	R 125	1250A	46057	46087
S3X 200 F FC Cu	R 160	1600A	46059	46089
S3X 200 F FC Cu	R 200	2000A	46061	46091
FC CuAl = Front terminals for copper/aluminium cables				
S3X 200 F FC CuAl	R 125	1250A	46063	46093
S3X 200 F FC CuAl	R 160	1600A	46065	46095
S3X 200 F FC CuAl	R 200	2000A	46067	46097
R = Threaded rear terminals				
S3X 200 F R	R 125	1250A	46075	46105
S3X 200 F R	R 160	1600A	46077	46107
S3X 200 F R	R 200	2000A	46079	46109
RC = Rear terminals for cables				
S3X 200 F RC	R 125	1250A	46069	46099
S3X 200 F RC	R 160	1600A	46071	46101
S3X 200 F RC	R 200	2000A	46073	46103

P = PLUG-IN



Moving part

S3X 125 $I_n (40\text{ }^\circ\text{C}) = 125\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Thermomagnetic release		I_m	code 1SDA0 R1	
			3 poles	4 poles
S3X 125 P MP	R 32	500A	45317	45327
S3X 125 P MP	R 50	500A	45319	45329
S3X 125 P MP	R 80	800A	45321	45331
S3X 125 P MP	R 100	1000A	45323	45333
S3X 125 P MP	R 125	1250A	45325	45335

S3X 200 $I_n (40\text{ }^\circ\text{C}) = 200\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Thermomagnetic release		 I _m	code 1SDA0 R1
			3 poles 4 poles
S3X 200 P MP	R 125	1250A	46111 46117
S3X 200 P MP	R 160	1600A	46113 46119
S3X 200 P MP	R 200	2000A	46115 46121

Order codes

SACE Isomax S3X current-limiting circuit-breaker

W = WITHDRAWABLE

Moving part



S3X 125

I_n (40 °C) = 125 A

I_{cu} (415 V) = 200 kA

Thermomagnetic release			I_m	code 1SDA0 R1
				3 poles4 poles
S3X 125 W MP	R 32	500A	45337	45347
S3X 125 W MP	R 50	500A	45339	45349
S3X 125 W MP	R8 0	800A	45341	45351
S3X 125 W MP	R 100	1000A	45343	45353
S3X 125 W MP	R 125	1250A	45345	45355

S3X 200

I_n (40 °C) = 200 A

I_{cu} (415 V) = 200 kA

Thermomagnetic release			I_m	code 1SDA0 R1
				3 poles4 poles
S3X 200 W MP	R 125	1250A	46123	46129
S3X 200 W MP	R 160	1600A	46125	46131
S3X 200 W MP	R 200	2000A	46127	46133



Order codes

SACE Isomax S4X current-limiting circuit-breaker

F = FIXED



S4X 250 $I_n (40\text{ }^\circ\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1		PR212 P	code 1SDA0 R1	
			3 poles	4 poles		3 poles	4 poles
F = Front terminals							
S4X 250 F F	In=100	I	46582	46592	LSI	46586	46596
		LI	46584	46594	LSIG	46588	46598
S4X 250 F F	In=160	I	46583	46593	LSI	46587	46597
		LI	46585	46595	LSIG	46589	46599
S4X 250 F F	In=250	I	46524	46528	LSI	46526	46530
		LI	46525	46529	LSIG	46527	46531
EF = Extended front terminals							
S4X 250 F EF	In=100	I	46657	46707	LSI	46663	46713
		LI	46660	46710	LSIG	46668	46716
S4X 250 F EF	In=160	I	46658	46708	LSI	46664	46714
		LI	46661	46711	LSIG	46669	46717
S4X 250 F EF	In=250	I	46659	46709	LSI	46665	46715
		LI	46662	46712	LSIG	46670	46718
FC Cu = Front terminals for copper cables							
S4X 250 F FC Cu	In=100	I	46671	46719	LSI	46677	46725
		LI	46674	46722	LSIG	46680	46728
S4X 250 F FC Cu	In=160	I	46672	46720	LSI	46678	46726
		LI	46675	46723	LSIG	46681	46729
S4X 250 F FC Cu	In=250	I	46673	46721	LSI	46679	46727
		LI	46676	46724	LSIG	46682	46730
FC CuAl = Front terminals for copper/aluminium cables							
S4X 250 F FC CuAl	In=100	I	46830	46842	LSI	46836	46848
		LI	46833	46845	LSIG	46839	46851
S4X 250 F FC CuAl	In=160	I	46831	46843	LSI	46837	46849
		LI	46834	46846	LSIG	46840	46852
S4X 250 F FC CuAl	In=250	I	46832	46844	LSI	46838	46850
		LI	46835	46847	LSIG	46841	46853
R = Threaded rear terminals							
S4X 250 F R	In=100	I	46695	46743	LSI	46701	46749
		LI	46698	46746	LSIG	46704	46752
S4X 250 F R	In=160	I	46696	46744	LSI	46702	46750
		LI	46699	46747	LSIG	46705	46753
S4X 250 F R	In=250	I	46697	46745	LSI	46703	46751
		LI	46700	46748	LSIG	46706	46754
RC = Rear terminals for cables							
S4X 250 F RC	In=100	I	46683	46731	LSI	46689	46737
		LI	46686	46734	LSIG	46692	46740
S4X 250 F RC	In=160	I	46684	46732	LSI	46690	46738
		LI	46687	46735	LSIG	46693	46741
S4X 250 F RC	In=250	I	46685	46733	LSI	46691	46739
		LI	46688	46736	LSIG	46694	46742

Order codes

SACE Isomax S4X current-limiting circuit-breaker

P = PLUG-IN



65S9152

Moving part

S4X 250 Iu (40 °C) = 250 A Icu (415 V) = 200 kA

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
S4X 250 P MP	In=100	I	46755	46767	LSI	46761	46773
		LI	46758	46770	LSIG	46764	46776
S4X 250 P MP	In=160	I	46756	46768	LSI	46762	46774
		LI	46759	46771	LSIG	46765	46777
S4X 250 P MP	In=250	I	46757	46769	LSI	46763	46775
		LI	46760	46772	LSIG	46766	46778

W = WITHDRAWABLE



65S9152

Moving part

S4X 250 Iu (40 °C) = 250 A Icu (415 V) = 200 kA

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles 4 poles		PR212 P	code 1SDA0 R1 3 poles 4 poles	
S4X 250 W MP	In=100	I	46779	46791	LSI	46785	46797
		LI	46782	46794	LSIG	46788	46800
S4X 250 W MP	In=160	I	46780	46792	LSI	46786	46798
		LI	46783	46795	LSIG	46789	46801
S4X 250 W MP	In=250	I	46781	46793	LSI	46787	46799
		LI	46784	46796	LSIG	46790	46802



Order codes

SACE Isomax S6X current-limiting circuit-breaker

F = FIXED



CS891153

S6X 400 $I_n (40\text{ °C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
F = Front terminals							
S6X 400 F F	In=320	I	47595	47601	LSI	47597	47603
		LI	47596	47602	LSIG	47598	47604
S6X 400 F F	In=400	I	46534	46538	LSI	46536	46540
		LI	46535	46539	LSIG	46537	46541
EF = Extended front terminals							
S6X 400 F EF	In=320	I	47661	47693	LSI	47665	47697
		LI	47663	47695	LSIG	47667	47699
S6X 400 F EF	In=400	I	47660	47692	LSI	47664	47696
		LI	47662	47694	LSIG	47666	47698
FC CuAl = Front terminals for copper/aluminium cables							
S6X 400 F FC CuAl	In=320	I	47669	47701	LSI	47673	47704
		LI	47671	47703	LSIG	47675	47707
S6X 400 F FC CuAl	In=400	I	47668	47700	LSI	47672	47705
		LI	47670	47702	LSIG	47674	47706
R = Threaded rear terminals							
S6X 400 F R	In=320	I	47685	47717	LSI	47689	47721
		LI	47687	47719	LSIG	47691	47723
S6X 400 F R	In=400	I	47684	47716	LSI	47688	47720
		LI	47686	47718	LSIG	47690	47722
RC = Rear terminals for cables							
S6X 400 F RC	In=320	I	47677	47709	LSI	47681	47713
		LI	47679	47711	LSIG	47683	47715
S6X 400 F RC	In=400	I	47676	47708	LSI	47680	47712
		LI	47678	47710	LSIG	47682	47714

S6X 630 $I_n (40\text{ °C}) = 630\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles	4 poles	PR212 P	code 1SDA0 R1 3 poles	4 poles
F = Front terminals							
S6X 630 F F	In=630	I	46560	46564	LSI	46562	46566
		LI	46561	46565	LSIG	46563	46567
EF = Extended front terminals							
S6X 630 F EF	In=630	I	47724	47744	LSI	47726	47746
		LI	47725	47745	LSIG	47727	47747
FC CuAl = Front terminals for copper/aluminium cables							
S6X 630 F FC CuAl	In=630	I	47729	47749	LSI	47731	47751
		LI	47730	47750	LSIG	47732	47752
R = Threaded rear terminals							
S6X 630 F R	In=630	I	47739	47759	LSI	47741	47761
		LI	47740	47760	LSIG	47742	47762
RC = Rear terminals for cables							
S6X 630 F RC	In=630	I	47734	47754	LSI	47736	47756
		LI	47735	47755	LSIG	47737	47757

Order codes

SACE Isomax S6X current-limiting circuit-breaker

W = WITHDRAWABLE Moving part



06399153

S6X 400 I_u (40 °C) = 400 A I_{cu} (415 V) = 200 kA

Microprocessor-based release			PR211 P		PR212 P	
			code 1SDA0 R1		code 1SDA0 R1	
			3 poles	4 poles	3 poles	4 poles
S6X 400 W MP	In=320	I	47633	47643	LSI	47637
		LI	47635	47645	LSIG	47641
S6X 400 W MP	In=400	I	47632	47642	LSI	47636
		LI	47634	47644	LSIG	47640

S6X 630 I_u (40 °C) = 630 A I_{cu} (415 V) = 200 kA

Microprocessor-based release			PR211 P		PR212 P	
			code 1SDA0 R1		code 1SDA0 R1	
			3 poles	4 poles	3 poles	4 poles
S6X 630 W MP	In=630	I	47650	47655	LSI	47652
		LI	47651	47656	LSIG	47653



Order codes

SACE Isomax S2X 80 circuit-breaker for motor protection

F = FIXED



S2X 80

I_n (40 °C) = **80 A**

I_{cu} (415 V) = **70 kA**

**Magnetic only
release**

I_m

code 1SDA0 R1
3 poles

FC Cu = Front terminals for copper cables

S2X 80 F FC Cu	R 1	13A	50231
S2X 80 F FC Cu	R 1.6	21A	50232
S2X 80 F FC Cu	R 2	26A	50233
S2X 80 F FC Cu	R 2.5	32A	50234
S2X 80 F FC Cu	R 3.2	42A	50235
S2X 80 F FC Cu	R 4	52A	50236
S2X 80 F FC Cu	R 5	65A	50237
S2X 80 F FC Cu	R 6.5	84A	50238
S2X 80 F FC Cu	R 8.5	110A	50239
S2X 80 F FC Cu	R 11	145A	50240
S2X 80 F FC Cu	R 12.5	163A	50241
S2X 80 F FC Cu	R 16	210A	50242
S2X 80 F FC Cu	R 20	260A	50243
S2X 80 F FC Cu	R 25	325A	50244
S2X 80 F FC Cu	R 32	415A	50245
S2X 80 F FC Cu	R 42	545A	50246
S2X 80 F FC Cu	R 52	680A	50247
S2X 80 F FC Cu	R 63	820A	50248
S2X 80 F FC Cu	R 80	1040A	50249

R = Threaded rear terminals

S2X 80 F R	R 1	13A	50250
S2X 80 F R	R 1.6	21A	50251
S2X 80 F R	R 2	26A	50252
S2X 80 F R	R 2.5	32A	50253
S2X 80 F R	R 3.2	42A	50254
S2X 80 F R	R 4	52A	50255
S2X 80 F R	R 5	65A	50256
S2X 80 F R	R 6.5	84A	50257
S2X 80 F R	R 8.5	110A	50258
S2X 80 F R	R 11	145A	50259
S2X 80 F R	R 12.5	163A	50260
S2X 80 F R	R 16	210A	50261
S2X 80 F R	R 20	260A	50262
S2X 80 F R	R 25	325A	50263
S2X 80 F R	R 32	415A	50264
S2X 80 F R	R 42	545A	50265
S2X 80 F R	R 52	680A	50266
S2X 80 F R	R 63	820A	50267
S2X 80 F R	R 80	1040A	50268

P = PLUG-IN



Moving part

S2X 80

I_n (40 °C) = **80 A**

I_{cu} (415 V) = **70 kA**

**Magnetic only
release**

I_m

code 1SDA0 R1
3 poles

S2X 80 P MP	R 1	13A	50269
S2X 80 P MP	R 1.6	21A	50270
S2X 80 P MP	R 2	26A	50271
S2X 80 P MP	R 2.5	32A	50272
S2X 80 P MP	R 3.2	41A	50273
S2X 80 P MP	R 4	52A	50274
S2X 80 P MP	R 5	65A	50275
S2X 80 P MP	R 6.5	84A	50276
S2X 80 P MP	R 8.5	110A	50277
S2X 80 P MP	R 11	145A	50278
S2X 80 P MP	R 12.5	163A	50279
S2X 80 P MP	R 16	210A	50280
S2X 80 P MP	R 20	260A	50281
S2X 80 P MP	R 25	325A	50282
S2X 80 P MP	R 32	415A	50283
S2X 80 P MP	R 42	545A	50284
S2X 80 P MP	R 52	680A	50285
S2X 80 P MP	R 63	820A	50286
S2X 80 P MP	R 80	1040A	50287



Order codes

SACE Isomax S3 circuit-breaker for motor protection

F = FIXED



S3N 160 $I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Magnetic only release		I_m	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>			
S3N 160 F F	R 3	12 ... 36A	47782
S3N 160 F F	R 5	20 ... 60A	47783
S3N 160 F F	R 10	40 ... 120A	47784
S3N 160 F F	R 25	100 ... 300A	47785
S3N 160 F F	R 50	200 ... 600A	47786
S3N 160 F F	R 100	400 ... 1200A	47787
S3N 160 F F	R 125	500 ... 1500A	47788
S3N 160 F F	R 160	640 ... 1600A	47789

S3H 160 $I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Magnetic only release		I_m	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>			
S3H 160 F F	R 50	200 ... 600A	45185
S3H 160 F F	R 100	400 ... 1200A	45186
S3H 160 F F	R 125	500 ... 1500A	45187
S3H 160 F F	R 160	640 ... 1600A	45188

S3L 160 $I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 85\text{ kA}$

Magnetic only release		I_m	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>			
S3L 160 F F	R 50	200 ... 600A	50544
S3L 160 F F	R 100	400 ... 1200A	50545
S3L 160 F F	R 125	500 ... 1500A	50546
S3L 160 F F	R 160	640 ... 1600A	50547

S3N 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Magnetic only release		I_m	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>			
S3N 250 F F	R 160	640 ... 1920A	48651
S3N 250 F F	R 200	800 ... 2400A	48654

S3H 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Magnetic only release		I_m	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>			
S3H 250 F F	R 160	640 ... 1920A	48657
S3H 250 F F	R 200	800 ... 2400A	48658

S3L 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 85\text{ kA}$

Magnetic only release		I_m	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>			
S3L 250 F F	R 160	640 ... 1920A	50548
S3L 250 F F	R 200	800 ... 2400A	50549

Note

Plug-in and withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.



Order codes

SACE Isomax S4 circuit-breaker for motor protection

F = FIXED



S4N 160 $I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S4N 160 F F $I_n = 100\text{A}$

LRIU 50139

S4N 160 F F $I_n = 160\text{A}$

LRIU 50140

S4H 160 $I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S4H 160 F F $I_n = 100\text{A}$

LRIU 45049

S4H 160 F F $I_n = 160\text{A}$

LRIU 45050

S4L 160 $I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S4L 160 F F $I_n = 100\text{A}$

LRIU 50550

S4L 160 F F $I_n = 160\text{A}$

LRIU 50551

S4N 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S4N 250 F F $I_n = 200\text{A}$

LRIU 50141

S4H 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S4H 250 F F $I_n = 200\text{A}$

LRIU 48662

S4L 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S4L 250 F F $I_n = 200\text{A}$

LRIU 50552

Note

Plug-in and withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.



Order codes

SACE Isomax S5-S6-S7 circuit-breakers for motor protection

F = FIXED



PS36613

S5N 400 $I_n (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S5N 400 F F	$I_n = 320\text{ A}$	LRIU	50142
-------------	----------------------	------	-------

S5H 400 $I_n (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S5H 400 F F	$I_n = 320\text{ A}$	LRIU	45051
-------------	----------------------	------	-------

S5L 400 $I_n (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S5L 400 F F	$I_n = 320\text{ A}$	LRIU	50553
-------------	----------------------	------	-------

S6N 800 $I_n (40\text{ }^{\circ}\text{C}) = 800\text{ A}$ $I_{cu} (415\text{ V}) = 35\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S6N 800 F F	$I_n = 630\text{ A}$	LRIU	50143
-------------	----------------------	------	-------

S6H 800 $I_n (40\text{ }^{\circ}\text{C}) = 800\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S6H 800 F F	$I_n = 630\text{ A}$	LRIU	45052
-------------	----------------------	------	-------

S6L 800 $I_n (40\text{ }^{\circ}\text{C}) = 800\text{ A}$ $I_{cu} (415\text{ V}) = 100\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S6L 800 F F	$I_n = 630\text{ A}$	LRIU	50554
-------------	----------------------	------	-------

S7S 1250 $I_n (40\text{ }^{\circ}\text{C}) = 1250\text{ A}$ $I_{cu} (415\text{ V}) = 50\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S7S 1250 F F	$I_n = 1000\text{ A}$	LRIU	50144
--------------	-----------------------	------	-------

S7H 1250 $I_n (40\text{ }^{\circ}\text{C}) = 1250\text{ A}$ $I_{cu} (415\text{ V}) = 65\text{ kA}$

Microprocessor-based
release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S7H 1250 F F	$I_n = 1000\text{ A}$	LRIU	45053
--------------	-----------------------	------	-------



PS36620

Note

Withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.



Order codes

SACE Isomax S3X-S4X-S6X current-limiting circuit-breakers for motor protection

F = FIXED



S3X 125 $I_n (40\text{ }^{\circ}\text{C}) = 125\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Magnetic only release

I_m

code 1SDA0 R1
3 poles

F = Front terminals

S3X 125 F F	R 25	100 ... 300A	45387
S3X 125 F F	R 50	200 ... 600A	45388
S3X 125 F F	R 100	400 ... 1200A	45389
S3X 125 F F	R 125	500 ... 1500A	45390

S3X 200 $I_n (40\text{ }^{\circ}\text{C}) = 200\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Magnetic only release

I_m

code 1SDA0 R1
3 poles

F = Front terminals

S3X 200 F F	R 125	500 ... 1500A	46135
S3X 200 F F	R 160	640 ... 1920A	48659
S3X 200 F F	R 200	800 ... 2400A	48660

S4X 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Microprocessor-based release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S4X 250 F F	$I_n = 100\text{A}$	LRIU	46590
S4X 250 F F	$I_n = 160\text{A}$	LRIU	46591
S4X 250 F F	$I_n = 200\text{A}$	LRIU	48661

S6X 400 $I_n (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Microprocessor-based release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S6X 400 F F	$I_n = 320\text{A}$	LRIU	47780
-------------	---------------------	------	-------

S6X 630 $I_n (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (415\text{ V}) = 200\text{ kA}$

Microprocessor-based release

PR212
MP

code 1SDA0 R1
3 poles

F = Front terminals

S6X 630 F F	$I_n = 400\text{A}$	LRIU	47781
S6X 630 F F	$I_n = 630\text{A}$	LRIU	48663



Note

Plug-in and withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.



Order codes

SACE Isomax S circuit-breakers for applications up to 1000V

F = FIXED



S3L 160 $I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$ $I_{cu} (1000\text{ V}) = 6\text{ kA}$

Thermomagnetic release		AC ~	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>			
S3L 160 F F	R 32	Im 500A	50436
S3L 160 F F	R 50	Im 500A	50437
S3L 160 F F	R 80	Im 800A	50438
S3L 160 F F	R 100	Im 1000A	50439
S3L 160 F F	R 125	Im 1250A	50441
S3L 160 F F	R 160	Im 1600A	50442

S3L 160 $I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$ $I_{cu} (1000\text{ V}) = 40\text{ kA}$

Thermomagnetic release		DC -	code 1SDA0 R1 4 poles
<i>F = Front terminals</i>			
S3L 160 F F (N100%)	R 32	Im 500A	50443
S3L 160 F F (N100%)	R 50	Im 500A	50444
S3L 160 F F (N100%)	R 80	Im 800A	50445
S3L 160 F F (N100%)	R 100	Im 1000A	50446
S3L 160 F F (N100%)	R 125	Im 1250A	50447
S3L 160 F F (N100%)	R 160	Im 1600A	50448

S3L 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (1000\text{ V}) = 40\text{ kA}$

Thermomagnetic release		DC -	code 1SDA0 R1 4 poles
<i>F = Front terminals</i>			
S3L 250 F F (N100%)	R 200	Im 2000A	50449
S3L 250 F F (N100%)	R 250	Im 2500A	50450

S3X 125 $I_n (40\text{ }^{\circ}\text{C}) = 125\text{ A}$ $I_{cu} (1000\text{ V}) = 30\text{ kA}$

Thermomagnetic release		AC ~	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>			
S3X 125 F F	R 32	Im 500A	50451
S3X 125 F F	R 50	Im 500A	50452
S3X 125 F F	R 80	Im 800A	50453
S3X 125 F F	R 100	Im 1000A	50454
S3X 125 F F	R 125	Im 1250A	50455



S4L 160 $I_n (40\text{ }^{\circ}\text{C}) = 160\text{ A}$ $I_{cu} (1000\text{ V}) = 8\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles	PR212 P	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>					
S4L 160 F F	In 100 A	LI	50547	LSI	50458
				LSIG	50459

S4L 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (1000\text{ V}) = 8\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles	PR212 P	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>					
S4L 250 F F	In 250 A	LI	50460	LSI	50461
				LSIG	50462

S4X 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cu} (1000\text{ V}) = 30\text{ kA}$

Microprocessor-based release		PR211 P	code 1SDA0 R1 3 poles	PR212 P	code 1SDA0 R1 3 poles
<i>F = Front terminals</i>					
S4X 250 F F	In 250 A	LI	50463	LSI	50464
				LSIG	50465



Order codes

SACE Isomax S circuit-breakers for applications up to 1000V

F = FIXED



S5L 400 $I_n (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (1000\text{ V}) = 40\text{ kA}$

Thermomagnetic release

DC –

code 1SDA0 R1
4 poles

F = Front terminals

S5L 400 F F (N100%)

R 400

I_m 4000A

50466

S6L 630 $I_n (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (1000\text{ V}) = 40\text{ kA}$

Thermomagnetic release

DC –

code 1SDA0 R1
4 poles

F = Front terminals

S6L 630 F F (N100%)

R 630

I_m 6300A

50467

S6L 800 $I_n (40\text{ }^{\circ}\text{C}) = 800\text{ A}$ $I_{cu} (1000\text{ V}) = 50\text{ kA}$

Thermomagnetic release

DC –

code 1SDA0 R1
4 poles

F = Front terminals

S6L 800 F F (N100%)

R 800

I_m 8000A

50468

S5L 400 $I_n (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cu} (1000\text{ V}) = 8\text{ kA}$

Microprocessor-based release

PR211
P

code 1SDA0 R1
3 poles

PR212
P

code 1SDA0 R1
3 poles

S5L 400 F F

I_n 400 A

LI

50582

LSI

50583

LSIG

50584

S6L 630 $I_n (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (1000\text{ V}) = 12\text{ kA}$

Microprocessor-based release

PR211
P

code 1SDA0 R1
3 poles

PR212
P

code 1SDA0 R1
3 poles

S6L 630 F F

I_n 630 A

LI

50469

LSI

50470

LSIG

50471

S6L 800 $I_n (40\text{ }^{\circ}\text{C}) = 800\text{ A}$ $I_{cu} (1000\text{ V}) = 12\text{ kA}$

Microprocessor-based release

PR211
P

code 1SDA0 R1
3 poles

PR212
P

code 1SDA0 R1
3 poles

F = Front terminals

S6L 800 F F

I_n 800 A

LI

50534

LSI

50535

LSIG

50536

S6X 630 $I_n (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cu} (1000\text{ V}) = 30\text{ kA}$

Microprocessor-based release

PR211
P

code 1SDA0 R1
3 poles

PR212
P

code 1SDA0 R1
3 poles

F = Front terminals

S4X 630 F F

I_n 630 A

LI

50472

LSI

50473

LSIG

50474

S3D/S6D/S7D $I_n (40\text{ }^{\circ}\text{C}) = 320/800/1600\text{ A}$

Switch-disconnector

code 1SDA0 R1
3 poles

F = Front terminals

S3D 320 F F

50446

S6D 800 F F

50475

S7D 1600 F F

50479





Order codes

SACE Isomax S2D switch-disconnectors

F = FIXED



S2D 125 $I_n (40\text{ °C}) = 125\text{ A}$ $I_{cw} (1s) = 2.2\text{ kA}$ $I_{cm} (415\text{ V}) = 3.1\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>FC Cu = Front terminals for copper cables</i>		
S2D 125 F FC Cu	45057	45063
<i>FC CuAl = Front terminals for copper/aluminium cables</i>		
S2D 125 F FC CuAl*	45058	45064
S2D 125 F FC CuAl**	45059	45065
<i>EF = Extended front terminals</i>		
S2D 125 F EF	45056	45062
<i>R = Threaded rear terminals</i>		
S2D 125 F R	45060	45066

S2D 160 $I_n (40\text{ °C}) = 160\text{ A}$ $I_{cw} (1s) = 2.2\text{ kA}$ $I_{cm} (415\text{ V}) = 3.1\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>FC Cu = Front terminals for copper cables</i>		
S2D 160 F FC Cu	20632	45071
<i>FC CuAl = Front terminals for copper/aluminium cables</i>		
S2D 160 F FC CuAl*	45068	45072
S2D 160 F FC CuAl**	20633	45074
<i>EF = Extended front terminals</i>		
S2D 160 F EF	20630	45070
<i>R = Threaded rear terminals</i>		
S2D 160 F R	20634	45073

P = PLUG-IN



Moving part

S2D 125 $I_n (40\text{ °C}) = 125\text{ A}$ $I_{cw} (1s) = 2.2\text{ kA}$ $I_{cm} (415\text{ V}) = 3.1\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S2D 125 P MP	45061	45067

S2D 160 $I_n (40\text{ °C}) = 160\text{ A}$ $I_{cw} (1s) = 2.2\text{ kA}$ $I_{cm} (415\text{ V}) = 3.1\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S2D 160 P MP	45069	45075

* Cable section = $1 \times 2.5 \dots 50\text{ mm}^2$

** Cable section = $1 \times 35 \dots 95\text{ mm}^2$



Order codes

SACE Isomax S3D switch-disconnectors

F = FIXED



S3D 100 $I_n (40\text{ }^\circ\text{C}) = 100\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S3D 100 F F	20906	20907
<i>EF = Extended front terminals</i>		
S3D 100 F EF	20329	20354
<i>FC Cu = Front terminals for copper cables</i>		
S3D 100 F FC Cu	20335	20360
<i>FC CuAl = Front terminals for copper/aluminium cables</i>		
S3D 100 F FC CuAl	20341	20366
<i>R = Threaded rear terminals</i>		
S3D 100 F R	20353	20378
<i>RC = Rear terminals for cables</i>		
S3D 100 F RC	20347	20372

S3D 160 $I_n (40\text{ }^\circ\text{C}) = 160\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S3D 160 F F	20908	20909
<i>EF = Extended front terminals</i>		
S3D 160 F EF	20383	20408
<i>FC Cu = Front terminals for copper cables</i>		
S3D 160 F FC Cu	20389	20414
<i>FC CuAl = Front terminals for copper/aluminium cables</i>		
S3D 160 F FC CuAl	20395	20420
<i>R = Threaded rear terminals</i>		
S3D 160 F R	20407	20432
<i>RC = Rear terminals for cables</i>		
S3D 160 F RC	20401	20426

P = PLUG-IN



S3D 100 $I_n (40\text{ }^\circ\text{C}) = 100\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S3D 100 P MP	20379	20381

S3D 160 $I_n (40\text{ }^\circ\text{C}) = 160\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S3D 160 P MP	20433	20435

W = WITHDRAWABLE



S3D 100 $I_n (40\text{ }^\circ\text{C}) = 100\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S3D 100 W MP	20380	20382

S3D 160 $I_n (40\text{ }^\circ\text{C}) = 160\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S3D 160 W MP	20434	20436

Order codes

SACE Isomax S3D switch-disconnectors

F = FIXED



P3S3607

S3D 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S3D 250 F F	20910	20911
<i>EF = Extended front terminals</i>		
S3D 250 F EF	20437	20462
<i>FC Cu = Front terminals for copper cables</i>		
S3D 250 F FC Cu	20443	20468
<i>FC CuAl = Front terminals for copper/aluminium cables</i>		
S3D 250 F FC CuAl	20449	20474
<i>R = Threaded rear terminals</i>		
S3D 250 F R	20461	20486
<i>RC = Rear terminals for cables</i>		
S3D 250 F RC	20455	20480

S3D 320 $I_n (40\text{ }^{\circ}\text{C}) = 320\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S3D 320 F F	20912	20913
<i>EF = Extended front terminals</i>		
S3D 320 F EF	20491	20516
<i>FC Cu = Front terminals for copper cables</i>		
S3D 320 F FC Cu	20497	20522
<i>FC CuAl = Front terminals for copper/aluminium cables</i>		
S3D 320 F FC CuAl	20503	20528
<i>R = Threaded rear terminals</i>		
S3D 320 F R	20515	20540
<i>RC = Rear terminals for cables</i>		
S3D 320 F RC	20509	20534

P = PLUG-IN



P3S3607

S3D 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S3D 250 P MP	20487	20489

S3D 320 $I_n (40\text{ }^{\circ}\text{C}) = 320\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S3D 320 P MP	20541	20543

W = WITHDRAWABLE



P3S3607

S3D 250 $I_n (40\text{ }^{\circ}\text{C}) = 250\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S3D 250 W MP	20488	20490

S3D 320 $I_n (40\text{ }^{\circ}\text{C}) = 320\text{ A}$ $I_{cw} (1s) = 6.5\text{ kA}$ $I_{cm} (415\text{ V}) = 10\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S3D 320 W MP	20542	20544



Order codes

SACE Isomax S6D switch-disconnectors

F = FIXED



S6D 400 $I_u (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cw} (1\text{ s}) = 15\text{ kA}$ $I_{cm} (415\text{ V}) = 30\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S6D 400 F F	20545	20581
<i>EF = Extended front terminals</i>		
S6D 400 F EF	20552	20588
<i>FC CuAl = Front terminals for copper/aluminium cables</i>		
S6D 400 F FC CuAl	20566	20601
<i>R = Threaded rear terminals</i>		
S6D 400 F R	20573	20608
<i>RC = Rear terminals for cables</i>		
S6D 400 F RC	23326	23327

S6D 630 $I_u (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cw} (1\text{ s}) = 15\text{ kA}$ $I_{cm} (415\text{ V}) = 30\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S6D 630 F F	20674	20699
<i>EF = Extended front terminals</i>		
S6D 630 F EF	20680	20705
<i>FC CuAl = Front terminals for copper/aluminium cables</i>		
S6D 630 F FC CuAl	20686	20711
<i>R = Threaded rear terminals</i>		
S6D 630 F R	20698	20723
<i>RC = Rear terminals for cables</i>		
S6D 630 F RC	20692	20717

S6D 800 $I_u (40\text{ }^{\circ}\text{C}) = 800\text{ A}$ $I_{cw} (1\text{ s}) = 15\text{ kA}$ $I_{cm} (415\text{ V}) = 30\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S6D 800 F F	20724	20749
<i>EF = Extended front terminals</i>		
S6D 800 F EF	20730	20755
<i>FC CuAl = Front terminals for copper/aluminium cables</i>		
S6D 800 F FC CuAl	20736	20761
<i>R = Threaded rear terminals</i>		
S6D 800 F R	20748	20773
<i>RC = Rear terminals for cables</i>		
S6D 800 F RC	20742	20767

W = WITHDRAWABLE



S6D 400 $I_u (40\text{ }^{\circ}\text{C}) = 400\text{ A}$ $I_{cw} (1\text{ s}) = 15\text{ kA}$ $I_{cm} (415\text{ V}) = 30\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S6D 400 W MP	20617	20619

S6D 630 $I_u (40\text{ }^{\circ}\text{C}) = 630\text{ A}$ $I_{cw} (1\text{ s}) = 15\text{ kA}$ $I_{cm} (415\text{ V}) = 30\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S6D 630 W MP	20918	20919

S6D 800 $I_u (40\text{ }^{\circ}\text{C}) = 800\text{ A}$ $I_{cw} (1\text{ s}) = 15\text{ kA}$ $I_{cm} (415\text{ V}) = 30\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S6D 800 W MP	20920	20921



Order codes

SACE Isomax S7D switch-disconnectors

F = FIXED



PS59525

S7D 1000 $I_n (40\text{ }^{\circ}\text{C}) = 1000\text{ A}$ $I_{cw} (1s) = 25\text{ kA}$ $I_{cm} (415\text{ V}) = 52.5\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S7D 1000 F F	20774	20799
<i>EF = Extended front terminals</i>		
S7D 1000 F EF	20780	20805
<i>FC CuAl = Front terminals for copper/aluminium cables</i>		
S7D 1000 F FC CuAl	20786	20811
<i>VR = Vertical flat-bar rear terminals</i>		
S7D 1000 F VR	20798	20823
<i>HR = Horizontal flat-bar rear terminals</i>		
S7D 1000 F HR	20792	20817

S7D 1250 $I_n (40\text{ }^{\circ}\text{C}) = 1250\text{ A}$ $I_{cw} (1s) = 25\text{ kA}$ $I_{cm} (415\text{ V}) = 52.5\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S7D 1250 F F	20824	20849
<i>EF = Extended front terminals</i>		
S7D 1250 F EF	20830	20855
<i>FC CuAl = Front terminals for copper/aluminium cables</i>		
S7D 1250 F FC CuAl	20836	20861
<i>VR = Vertical flat-bar rear terminals</i>		
S7D 1250 F VR	20848	20873
<i>HR = Horizontal flat-bar rear terminals</i>		
S7D 1250 F HR	20842	20867

S7D 1600 $I_n (40\text{ }^{\circ}\text{C}) = 1600\text{ A}$ $I_{cw} (1s) = 25\text{ kA}$ $I_{cm} (415\text{ V}) = 52.5\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S7D 1600 F F	20874	20890
<i>EF = Extended front terminals</i>		
S7D 1600 F EF	20879	20895
<i>VR = Vertical flat-bar rear terminals</i>		
S7D 1600 F VR	20889	
<i>HR = Horizontal flat-bar rear terminals</i>		
S7D 1600 F HR	20884	20900

W = WITHDRAWABLE



PS59525

S7D 1000 $I_n (40\text{ }^{\circ}\text{C}) = 1000\text{ A}$ $I_{cw} (1s) = 25\text{ kA}$ $I_{cm} (415\text{ V}) = 52.5\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S7D 1000 W MP	20922	20923

S7D 1250 $I_n (40\text{ }^{\circ}\text{C}) = 1250\text{ A}$ $I_{cw} (1s) = 25\text{ kA}$ $I_{cm} (415\text{ V}) = 52.5\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S7D 630 W MP	20924	20925

S7D 1600 $I_n (40\text{ }^{\circ}\text{C}) = 1600\text{ A}$ $I_{cw} (1s) = 25\text{ kA}$ $I_{cm} (415\text{ V}) = 52.5\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
S7D 1600 W MP	20926	20927



F = FIXED



GS65749

Order codes

SACE Isomax S8D switch-disconnectors

S8D 2000 $I_{lu} (40\text{ }^{\circ}\text{C}) = 2000\text{ A}$ $I_{cw} (1s) = 40\text{ kA}$ $I_{cm} (415\text{ V}) = 85\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S8D 2000 F F	45158	45159
<i>VR = Vertical flat-bar rear terminals</i>		
S8D 2000 F VR	45160	45161

S8D 2500 $I_{lu} (40\text{ }^{\circ}\text{C}) = 2500\text{ A}$ $I_{cw} (1s) = 40\text{ kA}$ $I_{cm} (415\text{ V}) = 85\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>F = Front terminals</i>		
S8D 2500 F F	45162	45163
<i>VR = Vertical flat-bar rear terminals</i>		
S8D 2500 F VR	45164	45165

S8D 3200 $I_{lu} (40\text{ }^{\circ}\text{C}) = 3200\text{ A}$ $I_{cw} (1s) = 40\text{ kA}$ $I_{cm} (415\text{ V}) = 85\text{ kA}$

Switch-disconnector	code 1SDA0 R1	
	3 poles	4 poles
<i>VR = Vertical flat-bar rear terminals</i>		
S8D 3200 F VR	45167	45166



Order codes

SACE Isomax S accessories

Duty releases

Shunt opening releases



Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5	S6-S7	S8
24...30 V AC	13311			
48 V AC - 60 V DC	13306			
110...130 V AC	13312			
220...250 V AC	13313			
380...400 V AC	13314			
12 V DC	50581			
24 V DC	13304			
48 V DC	13305			
110 V DC	13307			
220 V DC	13309			
250 V DC	13310			
12 V DC		23403	23404	
24 V AC / DC	13781		14136	
48 V AC / DC	13782		14137	
60 V AC / DC			23406	
60 V AC / 60 ... 72 V DC	23405			
110...120 V AC - 110...125 V DC	13783		14138	
220...240 V AC - 220...250 V DC	13785		14140	
380...400 V AC	13786		14141	
480 V AC	37512		37514	
24 V DC				50685
30 V DC - 24 V AC				46602
48 V AC / DC				46600
60 V DC				46603
100...127 V DC / AC				47564
127...150 V AC				46605
160 V DC / 150...180 V AC				47565
200...250 V DC / 200...255 V AC				46607
380...500 V AC				46608

Shunt closing releases



Type	code 1SDA0 R1	S8
24 V AC 50 Hz		46636
30 V AC 50 Hz		46643
48 V AC 50 Hz		46637
60 V AC 50 Hz		46638
127 ...130 V AC 50 Hz		46646
220 V AC 50 Hz		46633
500 V AC 50 Hz		46644
24 V AC 60 Hz		46649
120 V AC 60 Hz		46647
208 ...220 V AC 60 Hz		46641
240 V AC 60 Hz		46648
380 V AC 60 Hz		46645
100 V AC 50 Hz - 110 ...115 V AC 60 Hz		46639
110 ...115 V AC 50 Hz - 125 ...127 V AC 60 Hz		46634
230 ...240 V AC 50 Hz - 277 V AC 60 Hz		46640
380 ...400 V AC 50 Hz - 440 V AC 60 Hz		46635
415 ...440 V AC 50 Hz - 480 V AC 60 Hz		46642
24 V DC		46650
30 V DC		46655
48 V DC		46651
60 V DC		46656
110...125 V DC		46652
220...250 V DC		46653
310 V DC		46654



Order codes

SACE Isomax S accessories



Undervoltage releases

Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5	S6-S7	S8
24 V AC 50 Hz	23401			46613
30 V AC 50 Hz				46620
48 V AC 50 Hz	23402			46614
60 V AC 50 Hz				46615
110 V AC 50 Hz	13319			
127 ...130 V AC 50 Hz				46623
220 V AC 50 Hz	13320			46609
500 V AC 50 Hz				46621
100 V AC 50 Hz - 110 ...115 V AC 60 Hz				46616
110 ...115 V AC 50 Hz - 125 ...127 V AC 60 Hz				46611
230 ...240 V AC 50 Hz - 277 V AC 60 Hz				46617
380 V AC 50 Hz - 380 ...440 V AC 60 Hz	13321			
380 ...400 V AC 50 Hz - 440 V AC 60 Hz				46612
415 ...440 V AC 50 Hz - 480 V AC 60 Hz				46619
24 V AC		13842	14188	
48 V AC		13843	14189	
60 V AC		23346	23347	
110 V AC 60 Hz	45046			
110 ...127 V AC		13844	14190	
120 V AC 60 Hz				46624
208 ...220 V AC 60 Hz				46618
220 ...250 V AC		13846	14192	
240 V AC 60 Hz				46625
380 V AC 60 Hz				46622
380 ...440 V AC		13847	14193	
480 V AC		37513	37515	
24 V DC	13315	13833	14179	46626
30 V DC				46631
48 V DC	13316	13835	14181	46627
60 V DC	45045	13836	14182	46632
110 V DC	13317			
110...125 V DC		13838	14184	46628
220 V DC	13318			
220...250 V DC		13839	14185	46629

Undervoltage releases + time-lag device

Type	code 1SDA0 R1		
	S3-S4-S5	S6-S7	S8
110 - 220 V AC	13840	14186	
24 V AC/DC			50737
30 V AC/DC			50738
48 V AC/DC			50739
60 V AC/DC			50740
110/125 V AC/DC			50741
220/250 V AC/DC			50742

Connectors for duty releases

Type	code 1SDA0 R1		
	S1-S2	S3-S4-S5-S6	S7
for fixed circuit-breakers - L=1m		13865	
for fixed circuit-breakers - L=2m		37523	
for fixed circuit-breakers - L=1m			14209
for fixed circuit-breakers - L=2m			44752
for plug-in or withdrawable circuit-breakers - L=1m		13866	
for withdrawable circuit-breakers - L=1m			14210
for withdrawable circuit-breakers - L=2m			48949
flying 9-pole socket-plug - L=0,6m	13333		
extension for testing auxiliary circuits with the circuit-breaker racked out		25552	25552

Order codes

SACE Isomax S accessories

Electrical signalling

Auxiliary contacts



Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5	S6-S7	S8
2 open/closed change-over contacts	13328	13856	23366	
1 open/closed change-over contacts and 1 release tripped signal	13327	13575	23332	
1 NO, 1 NC and 1 release not tripped signal			25773	
1 NO, 1 NC and 1 release tripped signal			48956	
3 open/closed change-over contacts				47563

Auxiliary contacts for digital signals

Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5	S6-S7	S8
2 open/closed change-over contacts		25544	25774	
1 open/closed change-over contacts and 1 release tripped signal		25545	25775	
1 NO, 1 NC and 1 release not tripped signal			25776	

Early making contacts and connectors

Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5-S6	S7	S8
early making contact and connector for undervoltage release		25551	48106	

Connectors for auxiliary contacts



Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5-S6	S7	S8
for fixed circuit-breakers - L=1m		13863		
for fixed circuit-breakers - L=2m		37522		
for fixed circuit-breakers - L=1m			14207	
for fixed circuit-breakers - L=2m			44751	
for plug-in or withdrawable circuit-breakers - L=1m		13864		
for withdrawable circuit-breakers - L=1m			14208	
for withdrawable circuit-breakers - L=2m			48947	
flying 9-pole socket-plug - L=0,6m	13329			
extension for testing auxiliary circuits with the circuit-breaker racked out		25553	25553	

Signally contacts

Type	code 1SDA0 R1			
				S8
contact for signalling closing springs charged				47562



Order codes

SACE Isomax S accessories

Motor operating mechanisms

Solenoid operator

Type	code 1SDA0 R1 S1-S2
at the side of the circuit-breaker	
48 V DC	48025
60 V DC - 110 V AC	48026
110 V DC - 220...230 V AC	48027
220 V DC	48028
on the front of the circuit-breaker	
48 V DC	48015
60 V DC - 110 V AC	48016
110 V DC - 220...230 V AC	48017
220 V DC	48018

Direct action motor operating mechanism

Type	code 1SDA0 R1 S3-S4-S5
24 V DC	13873
48...60 V DC	13874
100...127 V AC - 100...125 V DC	13875
220...240 V AC - 220...250 V DC	13876
380 V AC	13877
440 V AC	14545

Stored energy motor operating mechanism

Type	code 1SDA0 R1 S6	S7
24 V DC	14029	14214
48 V DC	14030	14215
60 V DC	23348	23350
110 V AC / DC	23349	23351
120...127 V AC / DC	14031	14216
220...250 V AC / DC	14032	14217
380 V AC	14033	14218

Geared motor for automatic charging of closing springs

Type	code 1SDA0 R1 S8
24/30 V DC	47558
48/60 V DC	47559
100...130 V DC	47560
220...250 V DC	47561

Connectors for motor operating mechanism and auxiliary contacts

Type	code 1SDA0 R1 S1-S2	S3-S4-S5-S6	S7
for fixed circuit-breakers - L=1m	13857		
for fixed circuit-breakers - L=2m	37524		
for fixed circuit-breakers - L=1m			14203
for fixed circuit-breakers - L=2m			44850
for plug-in or withdrawable circuit-breakers - L=1m	13858		
for withdrawable circuit-breakers - L=1m			14204
for withdrawable circuit-breakers - L=2m			48950
flying 9-pole socket-plug - L=0,6m	13329		
extension for testing auxiliary circuits with the circuit-breaker racked out		25554	25554

Order codes

SACE Isomax S accessories

Operating mechanism and locks

Direct-mounted rotary handle operating mechanism



Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5	S6	S7
for fixed/plug-in circuit breakers		13867	14026	14211
for withdrawable circuit breakers		13868	14027	14212
emergency for fixed or plug-in circuit-breakers		13870	46568	46570

Rotary handle operating mechanism with transmission rod



Type	code 1SDA0 R1			
	S1-S2	S3-S4-S5	S6	S7
compartment door, fixed depth for fixed or plug-in circuit-breakers (L= 119,5 mm)	13326			
compartment door, adjustable depth (L _{max} =300 mm) for fixed or plug-in		13869		
compartment door, adjustable depth (L _{max} =300 mm) for withdrawable		50714		
compartment door, adjustable depth (L _{max} =500 mm) for fixed			14028	14213
compartment door, adjustable depth (L _{max} =500 mm) for withdrawable			50715	50716
compartment door, emergency, fixed depth for fixed or plug-in circuit-breakers (L _{max} = 119.5 mm)	45054			
compartment door, emergency, adjustable depth for fixed or plug-in circuit-breakers (L _{max} = 300 mm)		13871		
compartment door, emergency, adjustable depth for fixed circuit-breakers (L _{max} = 500 mm)			46569	46572
remote transmission rod with adj. depth (L _{max} = 180 mm)	25436			
remote transmission rod with adj. depth (L _{max} = 500 mm)	45055	25427		

Front flange



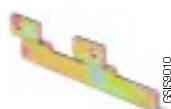
Type	code 1SDA0 R1			
	S3...S5	S6	S7	S8
front flange for operating lever mechanism for fixed or plug-in	13889	14035	14227	
front flange for operating lever mechanism for withdrawable	13890	14036	14228	
flange for compartment door				45023

Key lock for open position



Type	code 1SDA0 R1		
	S3...S5	S6-S7	S8
for motor operating mechanism - a different key for each cb.	13883	13885	
for motor operating mechanism - the same key for sets of cbs	13884	13886	
for motor operating mechanism against manual operation - the same key for each circuit-breaker		36245	
for front flange / rotary handle - a different key for each circuit-breaker	13881	13881	
for front flange / rotary handle - the same key for sets of circuit-breakers	13882	13882	
for front flange			45024
key lock type RONIS	43514	43514	

Locks

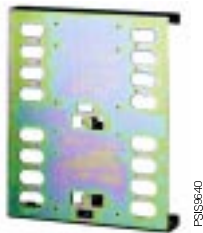


Type	Size	code 1SDA0 R1
compartment door lock for front flange		
for locks /crank handle operating mechanism	S3-S4-S5-S6-S7	13880
padlock device for operating lever	S1-S2	13332
padlock device on the front of the circuit-breaker	S8	45025
tamper-proof lock for thermal release	S2	36196
tamper-proof lock for thermal release	S3	25548



Order codes

SACE Isomax S accessories



PS3S6-U0

Mechanical interlock across two circuit-breakers

Type	code 1SDA0 R1	
	horizontal	vertical
S3	23330	23331
S3X	50524	
S4	13690	13691
S4X	50525	
S5400/630	43453	43454
S6	14024	14025
S7	14205	14206
S3-S4-S5-S6-S7 (circuit-breaker/fixed part for interlocking)	50093	50093

Connection terminals

Type	code 1SDA0 R1			
	3 pieces	4 pieces	6 pieces	8 pieces
EF=Extended front terminals				
S2			25797	25798
S3-S4	23353	23359	13596	13597
S5 400	23367	23373	13706	13707
S6 630	23379	23389	13920	13921
S6 800	23383	23393	13954	13955
S7	23399	23396	14079	14080
ES=Spreaded extended front terminals				
S3-S4	46517	46518	46515	46516
S5	47551	47552	47549	47550
S6 (1/2 upper kit)	50692	-	-	-
S6 (1/2 lower kit)	50704	-	-	-
S6	-	50693	50688	50689
S7 (1/2 upper kit)	50694	-	-	-
S7 (1/2 lowerkit)	50705	-	-	-
S7	-	50695	50690	50691
FC Cu=Front terminals for copper cables				
S3-S4	23354	23360	13598	13599
S5 400	23368	23374	13708	13709
S5 630	38769	38770	38767	38768
FC CuAl=Front terminals for copper/aluminium cables				
S2 (2,5-50 mm ²) (*)	50526	50528	36194	36195
S2 (35-95 mm ²) (*)	50527	50530	25801	25802
S3D 100	23355	23361	13600	13601
S3 160 - S4 160 (1x95 mm ²)	23356	23362	13602	13603
S3 250 - S4 250 (1x150 mm ²)	23357	23363	20293	20294
S5 400 (2x120 mm ²)	25766	25765	23295	23296
S5 400 (1x240 mm ²)	23370	23376	13710	13711
S6 630 (2x240 mm ²)	23380	23390	13922	13923
S6 800 (3x185 mm ²)	23384	23394	13956	13957
S7 1250 (4x240 mm ²)	23387	23397	14081	14082
R=Threaded rear terminals				
S1			13268	13269
S2			13294	13295
S3-S4	23352	23365	13606	13607
S5 400	23372	23378	13714	13715
S5 630	38776	38777	38968	38775
S6	23382	23392	13960	13961
R Res.Cur.=Threaded rear terminals for residual current-release mounted below				
S3		25543		
HR/VR=Horizontal or vertical flat-bar rear terminals				
S7	23400	23398	14083	14084
S8			46578	46579
RC = Rear terminals for copper/aluminium cables				
S3-S4 (1x120 mm ²)	23358	23364	13604	13605
S5 400 (1x240 mm ²)	23371	23377	13712	13713
S6 630 (2x150 mm ²)	23381	23391	13924	13925
S6 800 (3x240 mm ²)	23385	23395	13958	13959

(*) Order also the relevant EF extended front terminals

Order codes

SACE Isomax S accessories

Insulating terminal covers



Type	code 1SDA0 R1	
	3 poles	4 poles
high for fixed		
S1	13290	13291
S2	13340	13341
S3-S4	13695	13696
S5	13897	13898
S6	14040	14041
low for fixed and for moving part of plug-in or withdrawable circuit-breakers		
S1	13292	13293
S2	13342	13343
S3-S4	13693	13694
S5	13895	13896
S6	14038	14039
S7	23324	23325

Screws for sealing terminal covers

Type	code 1SDA0 R1
S1-S2	13344
S3-S4-S5-S6-S7	13699

Accessories for electronic releases



Type	Model	code 1SDA0 R1
Signalling unit SACE PR010/K	S4-S5-S6-S7	48965
Signalling unit SACE PR212/K	S8	45021
Dialogue unit SACE PR212/D-M Modbus + actuator unit SACE PR212/T for SACE PR212/P (LSI - LSIg)	S4-S5-S6-S7	50718
Dialogue unit SACE PR212/D-M Modbus + actuator unit SACE PR212/T for SACE PR212/MP (LRIU)	S4-S5-S6-S7	50719
Dialogue unit SACE PR212/D-L Lon + actuator unit SACE PR212/T for SACE PR212/P (LSI - LSIg)	S4-S5-S6-S7	50720
Dialogue unit SACE PR212/D-L Lon + actuator unit SACE PR212/T for SACE PR212/MP (LRIU)	S4-S5-S6-S7	50721
Dialogue unit SACE PR212/D + Actuator unit SACE PR212/T	S8	45020
Test unit SACE TT1	S4-S5-S6-S7	37121
Test and configuration unit SACE PR010/T	S4-S5-S6-S7	48964
SACE PR212/CI contactor operating unit (with PR212/MP)	S4-S5-S6-S7	50708
Current transformer for neutral conductor outside circuit-breaker	S4 100	37114
Current transformer for neutral conductor outside circuit-breaker	S4 160	37115
Current transformer for neutral conductor outside circuit-breaker	S4 250	37117
Current transformer for neutral conductor outside circuit-breaker	S5 320	37118
Current transformer for neutral conductor outside circuit-breaker	S5 400	37119
Current transformer for neutral conductor outside circuit-breaker	S5 630	37120
Current transformer for neutral conductor outside circuit-breaker	S6 630	25777
Current transformer for neutral conductor outside circuit-breaker	S6 800	25778
Current transformer for neutral conductor outside circuit-breaker	S7 1000	25779
Current transformer for neutral conductor outside circuit-breaker	S7 1250	25780
Current transformer for neutral conductor outside circuit-breaker	S7 1600	25781
Current transformer for neutral conductor outside circuit-breaker	S8 1600	45015
Current transformer for neutral conductor outside circuit-breaker	S8 2000	45016
Current transformer for neutral conductor outside circuit-breaker	S8 2500	45017
Current transformer for neutral conductor outside circuit-breaker	S8 3200	45018
X3 connector for relay tripped signal and neutral protection for fixed circuit-breaker with PR211/P, PR212/P - LSI	S4-S5-S6-S7	13702
X3, X4 connectors for relay tripped signal and neutral protection for fixed circuit-breaker with PR212/P - LSIg	S4-S5-S6-S7	13704
X3 connector for relay tripped signal and neutral protection for plug-in or withdrawable circuit-breaker with PR211/P, PR212/P - LSI	S4-S5-S6-S7	13703
X3, X4 connectors for relay tripped signal and neutral protection for plug-in or withdrawable circuit-breaker with PR212/P - LSIg	S4-S5-S6-S7	13705
electrical/mechanical signalling and lock for PR212/P tripped	S8	46581



Order codes

SACE Isomax S accessories

Conversion kits

from fixed circuit-breaker to moving part of plug-in circuit-breaker

Type	code 1SDA0 R1	
	3 poles	4 poles
S1	13270	13271
S2	13296	13297
S3-S4	13608	13609
S3X	46519	46520
S4X	46511	46512
S5 400	13716	13717



from fixed circuit-breaker to moving part of withdrawable circuit-breaker

Type	code 1SDA0 R1	
	3 poles	4 poles
S3-S4	13610	13611
S3X	46521	46522
S4X	46514	46513
S5 400	13718	13719
S5 630	38778	38779
S6 630 / 800	13962	13963
S6X	47619	47620
S7	23299	14087



from plug-in circuit-breaker to withdrawable circuit-breaker

Type	Size	code 1SDA0 R1
Guide for preparing the fixed part of a plug-in circuit-breaker for use as the fixed part of a withdrawable circuit-breaker	S3-S4	13692
Guide for preparing the fixed part of a plug-in circuit-breaker for use as the fixed part of a withdrawable circuit-breaker	S5	13892



Order codes

SACE Isomax S accessories

Fixed parts



Plug-in circuit-breaker

Type	code 1SDA0 R1	
	3 poles	4 poles
EF = Extended front terminals		
S3 P FP EF	13539	13548
S4 P FP EF	13612	13621
S5 400 P FP EF	13720	13729
FC = Front terminals for copper cables		
S1 P FP FC	13272	13274
S2 P FP FC	13298	13300
S3 P FP FC	13543	13550
S4 P FP FC	13616	13625
S5 400 P FP FC	13724	13733
R = Threaded rear terminals		
S1 P FP R	13273	13275
S2 P FP R	13299	13340
S3 P FP R	13547	13554
S4 P FP R	13620	13629
S5 400 P FP R	13728	13737



Withdrawable circuit-breaker

Type	code 1SDA0 R1	
	3 poles	4 poles
EF = Extended front terminals		
S3 W FP EF	13555	13564
S4 W FP EF	13630	13639
S5 400 W FP EF	13738	13747
S6 W FP EF	13964	13973
S7 W FP EF	48951	14097
ES = Spreaded extended front terminals		
S5 630 W FP ES	38761	38762
FC = Front terminals for copper cables		
S3 W FP FC	13559	13568
S4 W FP FC	13634	13643
S5 400 W FP FC	13742	13751
R = Threaded rear terminals		
S3 W FP R	13563	13572
S4 W FP R	13638	13647
S5 400 W FP R	13746	13755
S5 630 W FP R	38763	38970
VR = Vertical flat-bar rear terminals		
S5 630 W FP VR	38971	38972
S6 W FP VR	13972	13981
S7 W FP VR	14096	14105
HR = Horizontal flat-bar rear terminals		
S6 W FP HR	13968	13977
S7 W FP HR	14092	14101



Order codes

SACE Isomax S accessories

Accessories for fixed part of plug-in or withdrawable circuit-breakers

Terminals for the fixed parts of plug-in or withdrawable circuit-breakers



PS9563



PS9564



PS9565



PS9566



PS9567



PS9568

Type	code 1SDA0 R1	
	3 poles	4 poles
EF = Extended front terminals		
S3-S4	13650	13651
S5 400	13759	13760
S5 630	38780	38781
S6 (with terminals mounted below for S6X)	13984	13985
S7	14108	14109
FC Cu/Al = Front terminals for copper / aluminium cables		
S3-S4	13652	13653
S5 400	13761	13762
R = Threaded rear terminals		
S3-S4	13654	13655
S5 400	13763	13764
S5 630	38969	38782
HR = Horizontal flat-bar rear terminals		
S6	13986	13987
S7	14110	14111
VR = Vertical flat-bar rear terminals		
S5 630	38763	38784
S6	13988	13989
S7	14112	14113

Insulating covers for fixed parts

Type	code 1SDA0 R1	
	3 poles	4 poles
S3-S4	13697	13698
S5 400	13899	13900

Position contacts

Type	Model	code 1SDA0 R1
contacts for signalling circuit-breaker racked out	S3-S4-S5-S6-S7	13859
contacts for signalling circuit-breaker racked out for digital signals	S3-S4-S5-S6-S7	25546
contacts for signalling circuit-breaker racked in	S3-S4-S5-S6-S7	13860
contacts for signalling circuit-breaker racked in for digital signals	S3-S4-S5-S6-S7	25547

Lock for fixed part of withdrawable circuit-breakers

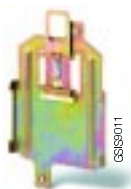
Type	Model	code 1SDA0 R1
key lock for locking in racked in / out position - different key for each cb.	S3-S4-S5-S6-S7	25434
key lock for locking in racked in / out position - same key for sets of cb.	S3-S4-S5-S6-S7	25435
padlock device	S3-S4-S5-S6-S7	13872

Order codes

SACE Isomax S accessories

Installation accessories

Bracket for mounting on DIN rail



Type	Model	code 1SDA0 R1
DIN EN 50022	S1	23328
DIN EN 50022	S2	23329
DIN EN 50022 (for solenoid operator)	S1	48523
DIN EN 50022 (for solenoid operator)	S2	48524
DIN EN 50023 (complete with DIN front flange H=45 mm)	S3 - 3 poles	13576
DIN EN 50023 (complete with DIN front flange H=45 mm)	S3 - 4 poles	13577
DIN EN 50023 (complete with DIN front flange H=45 mm)	S4 - 3 poles	13700
DIN EN 50023 (complete with DIN front flange H=45 mm)	S4 - 4 poles	13701
DIN EN 50023 (complete with DIN front flange H=45 mm)	S5 - 3 poles	13901
DIN EN 50023 (complete with DIN front flange H=45 mm)	S5 - 4 poles	13902

IP54 protection



Type	Model	code 1SDA0 R1
for fixed-depth rotary handle operating mechanism on door	S1-S2	13339
for adjustable-depth rotary handle operating mechanism on door	S3-S4-S5-S6-S7	13891

Residual-current releases

SACE RC210, RC211, SACE RC212



Type	code 1SDA0 R1	
	side by side	below
RC210/1 for S1 (In=63 A - IΔn=0,3 A)	45076	
RC210/1 for S1 (In=63 A - IΔn=0,5 A)	45077	
RC210/1 for S1 (In=63 A - IΔn=0,3 A)	45079	
RC210/1 for S1 (In=63 A - IΔn=0,5 A)	45080	
RC211/1 for S1	13282	13283
RC211/2 for S2	13222	13323
RC211/3 for S3	20288	20289
RC212/1 for S1	13284	13285
RC212/2 for S2	13324	13325
RC212/3 for S3	20290	20291

SACE RCQ



Type	code 1SDA0 R1
release and closed toroid - diameter 60 mm	37388
release and closed toroid - diameter 110 mm	37389
release and closed toroid - diameter 185 mm	50542
release and opening toroid - diameter 110 mm	37390
release and opening toroid - diameter 180 mm	37391
release and opening toroid - diameter 230 mm	37392
release only	37393
closed toroid only - diameter 60 mm	37394
closed toroid only - diameter 110 mm	37395
closed toroid only - diameter 185 mm	50543
opening toroid only - diameter 110 mm	37396
opening toroid only - diameter 180 mm	37397
opening toroid only - diameter 230 mm	37398



Due to possible developments of standards as well as of materials,
the characteristics and dimensions specified in the present catalogue
may only be considered binding after confirmation by ABB SACE.

604050012 en
Printed in Italy
Tipografia

ABB SACE S.p.A.

L.V. Breakers Division

Via Baioni, 35

24123 Bergamo - Italy

Tel.: +39 035.395.111 - Telefax: +39 035.395.306-433

<http://www.abb.com>