In The Name of God

2005 Products Catalog

MODULAR TERMINAL BLOCKS

Confidenc in Connection

RAAD

Photo & Design: Gilar +9821 88130988

The Company

Raad Manufacturing Company was founded in 1988 as a designer and producer of different kinds of molds. In 1992, the company expanded its activities and continued as an OEM in modular terminal block industry.

Since the beginning of its operation, Raad has maintained and improved close cooperative relation with its customers and taken benefit of their views and feedbacks. Key strategies such as enhancing customers satisfaction, applying highly productive technological processes and using the best quality materials and parts, are all the company's policies which define its approach to development and open the doors into new discoveries in the field.

Today, thanks to several approvals obtained world-wide by its products, having had comprehensive range of products, Raad is, honorably, the leading manufacturer of terminal blocks in Middle East. The company's headquarter and sales division is located in Tehran and the manufacturing site is practicing in a rural area of Isfahan, employing over 200 well-trained and skilled personnel.

Raad Manufacturing Co. reserves the right to make changes to any information given in this catalog regarding technical progresses.

Please contact us for update technical information and new prices.

Headquarter and sales division

North 3rd floor, 28, 2nd St.
Shahnazari St., Madar Sq., Mirdamad Blv.
Tehran - Iran
Tel. +98 21 227 8455 - 6
Fax +98 21 227 8457
salse@raad-co.com
www.raad-co.com

Factory

20th St., Azadegan freeway
Isfahan - Iran
PO Box 81395/111
Tel. +98 311 3802026
Fax +98 311 3802013
info@raad-co.com

Contents

RTP 2.5 / Page 10 **RTP 4** / Page 10 **RTP 6** / Page 11 **RTP 10** / Page 11

RTP 16 / Page 12 **RTP 25** / Page 12 **RTP 35** / Page 13 **RTP 50** / Page13

RTP 95 / Page 14 **RET 2.5** / Page 16 **RET 4** / Page 16

RET 6 / Page 17 **RET 10** / Page 17 **RET 16** / Page 18 **RET 35** / Page 18

DRT4 4 / Page 20 **DRT4 B4** / Page 21 **DRT4 B16** / Page 22 **DRT4 B6** / Page 22

DRTP4 B4 / Page 23 **DRTP4 B6** / Page 23 **DRTP4 B6** / Page 24 **DRTP4 BR4** / Page 25

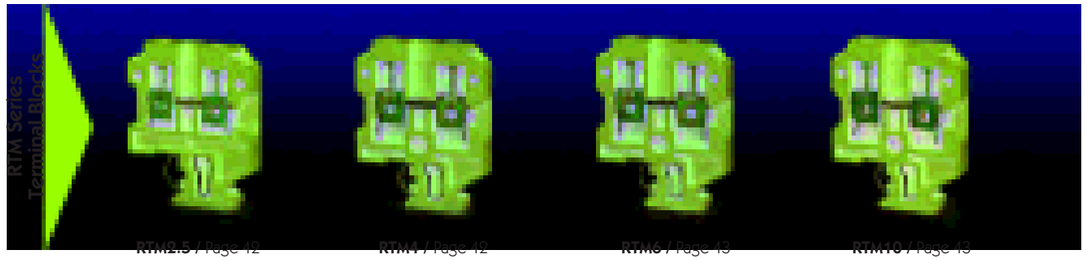
DRTP4 BR2 / Page 25 **DRTP4 LD** / Page 26 **DRTP4 NL** / Page 26 **RCT L2** / Page 28

RCT L2U2 / Page 28 **RST6** / Page 29 **RTT6** / Page 29 **RDT4** / Page 30

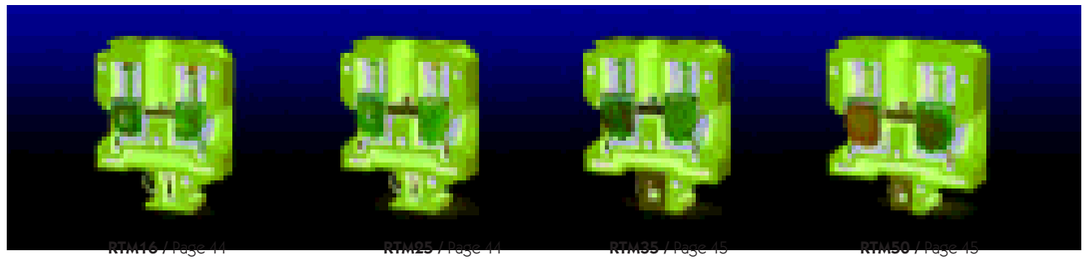
RDT4 TS / Page 30 **STC6** / Page 31

RCTF10 / Page 34 **RCTF10 NL** / Page 34

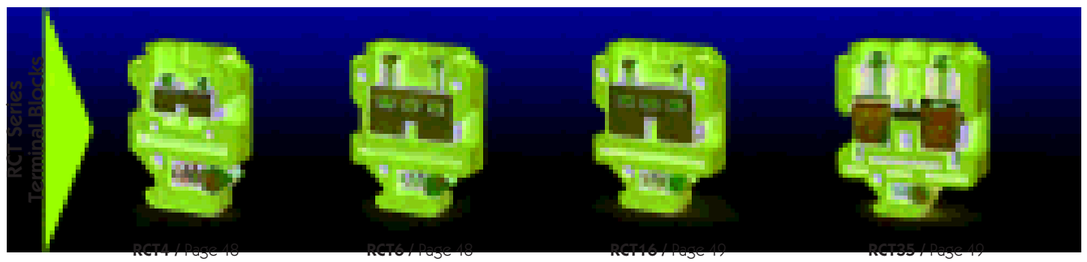
RCTF10 LD / Page 35 **RF15** / Page 36 **RF15 NL** / Page 36 **RF15 LD** / Page 37



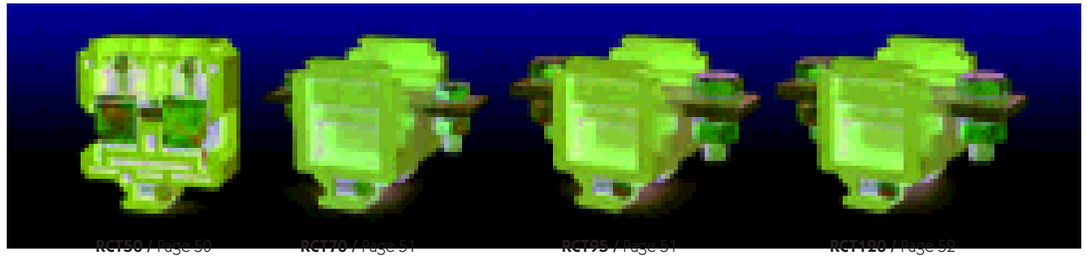
RTM2.5 / Page 42 **RTM4** / Page 42 **RTM6** / Page 43 **RTM10** / Page 43



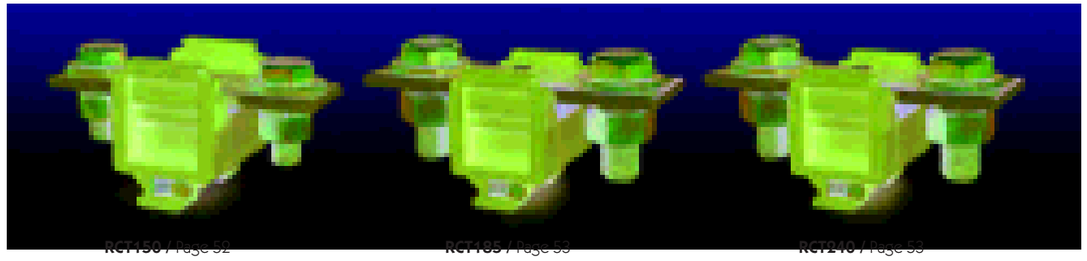
RTM16 / Page 44 **RTM25** / Page 44 **RTM35** / Page 45 **RTM50** / Page 45



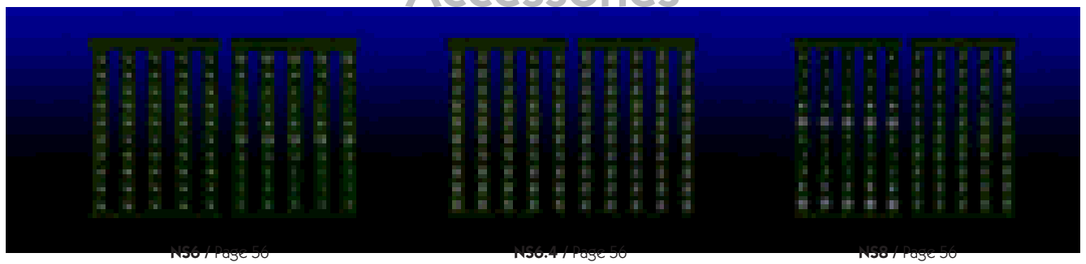
RCT4 / Page 48 **RCT6** / Page 48 **RCT10** / Page 49 **RCT35** / Page 49



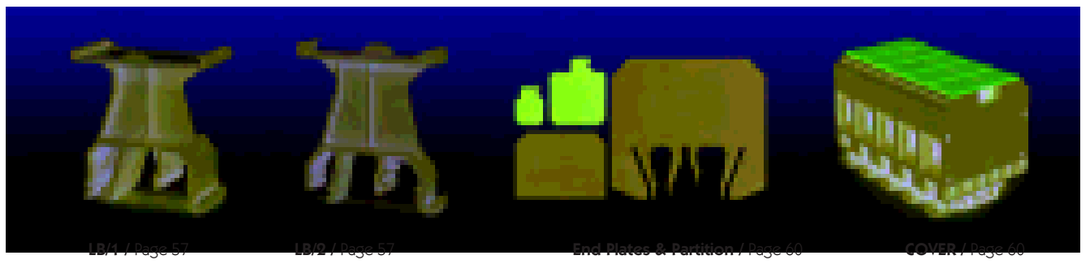
RCT50 / Page 50 **RCT70** / Page 51 **RCT95** / Page 51 **RCT120** / Page 52



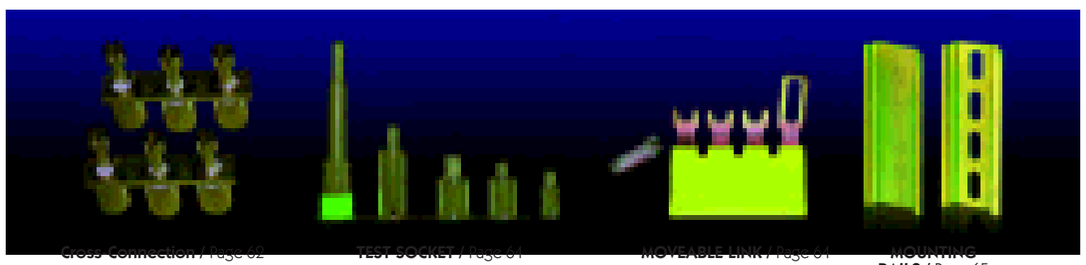
RCT150 / Page 52 **RCT185** / Page 53 **RCT240** / Page 53



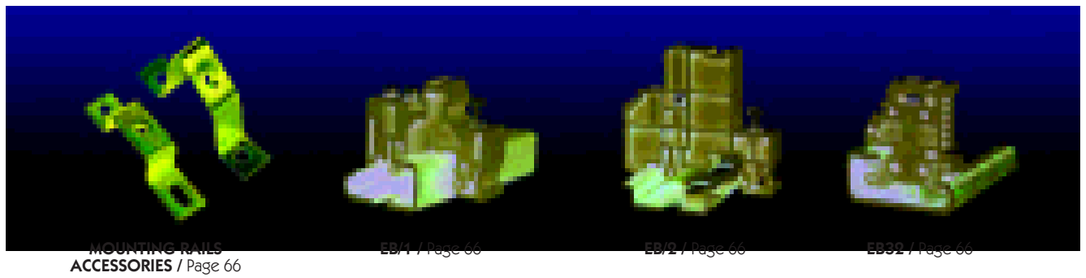
N38 / Page 56 **N38.4** / Page 56 **N38** / Page 56



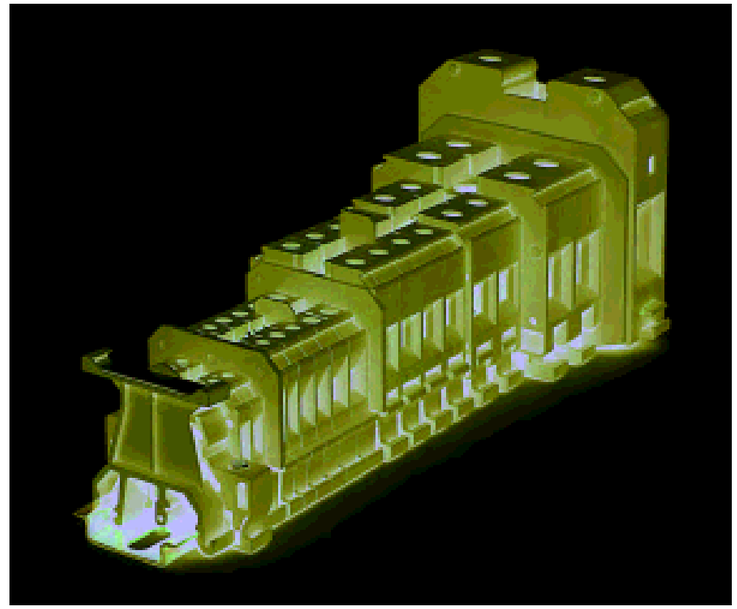
EB/1 / Page 57 **EB/2** / Page 57 **End Plates & Partition** / Page 60 **COVER** / Page 60



CROSS-CONNECTION / Page 62 **TEST SOCKET** / Page 64 **MOVEABLE LINK** / Page 64 **MOUNTING RAILS** / Page 65



MOUNTING RAILS ACCESSORIES / Page 66 **EB/1** / Page 66 **EB/2** / Page 66 **EB32** / Page 66



RTP SERIES
TERMINAL BLOCKS

Raad offers the
RTP series with the following advantages:

- Combination foot for both TH35 and G32 mounting rails
- Terminal insulation body polyamide 6.6
- Easy to tighten due to screwdriver guide
- Closed cable entry for preventing from wire splitting
- Best connection of the conductor, needing no special cable preparation
- Appropriate for different cross-sections, rigid or flexible
- Similar end plates and patition for several types
- Preassembled and divisible cross-connection system and easy removable unwanted cross-connection
- Offering protective conductor terminals, suitable for various sizes of terminals
- Having 10 marker strips simultaneously mountable on some sizes of the terminal
- Certified by notorious national institutes

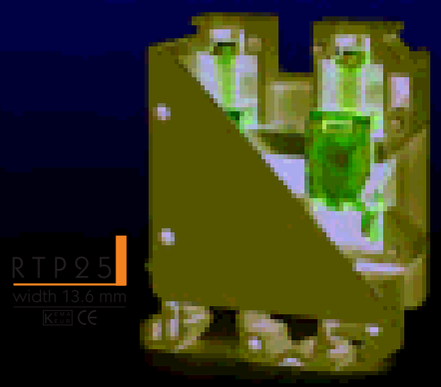
IEC 60947-7-1 rated data	RTP2.5			RTP4		
Voltage(V)/Impulse voltage (kV)	500/6			500/6		
Pollution degre/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	24			32		
Cross - section (mm^2)	2.5			4		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ,TH 35-7.5, 15	RTP2.5	101001	100	RTP4	101003	100
End plate width (mm)	EP-RTP2.5 1.5	201001	100	EP-RTP4,6,10 1.5	201003	50
Partition width (mm)	P-RTP2.5 1.5	201005	100	P-RTP4,6,10 1.5	201008	50
Small partition no loss of pitch	SP-2.5-10	201007	100	SP-2.5-10	201007	100
End bracket, for G 32 width (mm) Raad recommended	EB32 8	200101	50	EB32 9.5	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/1 9.5	200102	50	EB/1 9.5	200102	50
Cross-connection max. current (A)	CC10-2.5 10-pos. 20 CC3-2.5 3-pos. CC2-2.5 2-pos.	201020 201021 201022	10 50 50	CC10-4 10-pos. 32 CC3-4 3-pos. CC2-4 2-pos.	201023 201024 201025	10 50 50
Test socket	TS3/6/2.3	200540	50	TS3/6/2.3	200540	50
Marking	NS6	For details see Accessories		NS6.4	For details see Accessories	

Dimensions (mm)		
Width/Length	6/45.5	6.4/45.6
Hight, G32/TH 35-7.5/TH 35-15	45.7/41.5/49	51.3/47.4/54.9
Connection capacity		
Solid (mm^2)	0.5-4	0.5-4
Multi stranded (mm^2)	0.5-4	0.5-4
Flexible (mm^2)	0.5-2.5	0.5-4
American Wire Gauge (AWG)	20-12	20-12
IEC test gauge	**A3**	**A4**
Stripping length (mm)	10	12
Clamping screw	**M2.5**	**M3**
Tightening torque (N.m)	0.4	0.5
Insulation material	**PA 6.6**	**PA 6.6**

IEC 60947-7-1 rated data	RTP6			RTP10		
Voltage(V)/Impulse voltage (kV)	800/8			800/8		
Pollution degre/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	41			57		
Cross - section (mm^2)	6			10		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ,TH 35-7.5, 15	RTP6	101005	50	RTP10	101007	50
End plate width (mm)	EP-RTP4,6,10 1.5	201003	50	EP-RTP4,6,10 1.5	201003	50
Partition width (mm)	P-RTP4,6,10 1.5	201008	50	P-RTP4,6,10 1.5	201008	50
Small partition no loss of pitch	SP-2.5-10	201007	100	SP-2.5-10	201007	100
End bracket, for G 32 width (mm) Raad recommended	EB32 8	200101	50	EB32 8	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/1 9.5	200102	50	EB/1 9.5	200102	50
Cross-connection max. current (A)	CC10-6 10-pos. 47 CC3-6 3-pos. CC2-6 2-pos.	201026 201027 201028	10 50 50	CC10-10 10-pos. 47 CC3-10 3-pos. CC2-10 2-pos.	201029 201030 201031	10 50 50
Test socket	TS3/8/4	200541	50	TS3/8/4	200541	50
Marking	NS8	For details see Accessories		NS8 Raad recommended	For details see Accessories	

Dimensions (mm)		
Width/Length	8/45.6	10/45.6
Hight, G32/TH 35-7.5/TH 35-15	51.3/47.4/54.9	51.3/47.4/54.9
Connection capacity		
Solid (mm^2)	0.5-10	0.5-16
Multi stranded (mm^2)	0.5-10	0.5-16
Flexible (mm^2)	0.5-6	0.5-10
American Wire Gauge (AWG)	20-8	20-6
IEC test gauge	**A5**	**B6**
Stripping length (mm)	12	12
Clamping screw	**M3.5**	**M4**
Tightening torque (N.m)	1.2	1.5
Insulation material	**PA 6.6**	**PA 6.6**

RTP16
width 12.5 mm



RTP25
width 13.6 mm

RTP35
width 16.5 mm

RTP50
width 20.1 mm

IEC 60947-7-1 rated data	RTP16			RTP25		
Voltage(V)/Impulse voltage (kV)	800/8			800/8		
Pollution degre/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	76			101		
Cross - section (mm^2)	16			25		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ,TH 35-7.5, 15	RTP16	101009	50	RTP25	101011	50
Partition width (mm)	GP 3	201103	20	GP 3	201103	20
Small Partition no loss of pitch	SP-16-35	201101	50	SP-16-35	201101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/1 9.5	200102	50	EB/1 9.5	200102	50
	EB/2 10	200103	50	EB/2 10	200103	50
Cross-connection	CC10-16 10-pos.	201120	10	CC10-25 10-pos.	201123	10
	CC3-16 3-pos.	201121	20	CC3-25 3-pos.	201124	20
	CC2-16 2-pos.	201122	20	CC2-25 2-pos.	201125	20
max. current (A)	47			65		
Test socket	TS3.5/8/4	200542	50	TS4/8/4	200543	50
Marking	NS8 Raad recommended	For details see Accessories		NS8 Raad recommended	For details see Accessories	

Dimensions (mm)		
Width/Length	12.5/49.8	13.6/49.8
Hight, G32/TH 35-7.5/TH 35-15	65/61/68.5	65/61/68.5
Connection capacity		
Solid (mm^2)	0.5-16	0.5-16
Multi stranded (mm^2)	0.5-16	0.5-25
Flexible (mm^2)	0.5-16	0.5-25
American Wire Gauge (AWG)	20-4	20-3
IEC test gauge	**B7**	**B8**
Stripping length (mm)	12.3	12.3
Clamping screw	**M5**	**M5**
Tightening torque (N.m)	2.5	2.5
Insulation material	**PA 6.6**	**PA 6.6**

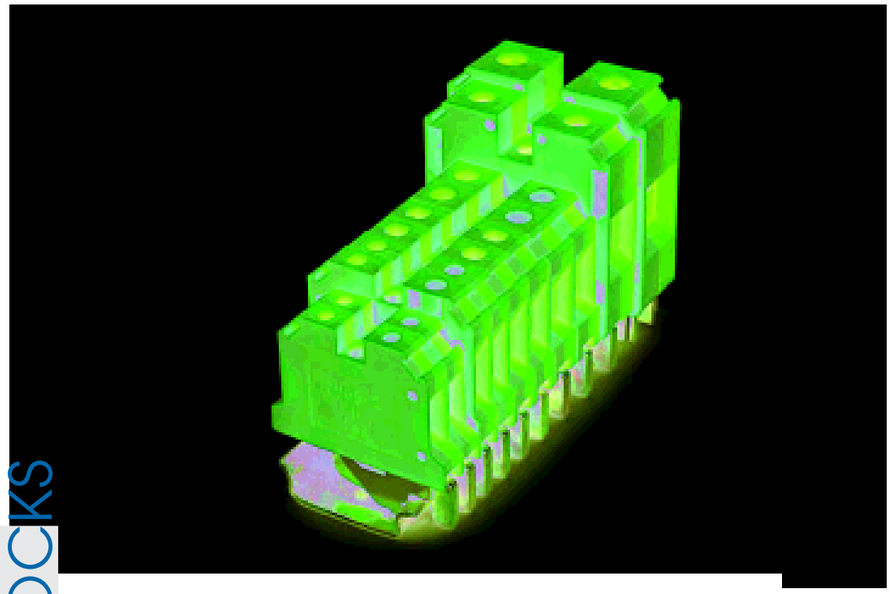
IEC 60947-7-1 rated data	RTP35			RTP50		
Voltage(V)/Impulse voltage (kV)	800/8			1000/8		
Pollution degre/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	125			150		
Cross - section (mm^2)	35			50		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ,TH 35-7.5, 15	RTP35	101013	20	RTP50	101015	20
Partition width (mm)	GP 3	201103	20	GP 3	201103	20
Small partition no loss of pitch	SP-16-35	201101	50	SP-50	201102	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/1 9.5	200102	50			
	EB/2 10	200103	50	EB/2 10	200103	50
Cross-connection	CC10-35 10-pos.	201126	10	CC3-50 3-pos.	201129	10
	CC3-35 3-pos.	201127	20	CC2-50 2-pos.	201130	10
	CC2-35 2-pos.	201128	20			
max. current (A)	65			180		
Test socket	TS4/8/4	200543	50			
Marking	NS8 Raad recommended	For details see Accessories		NS8 Raad recommended	For details see Accessories	
Protection cover				CP50	201180	50

Dimensions (mm)		
Width/Length	16.5/51.4	20.1/67.8
Hight, G32/TH 35-7.5/TH 35-15	67.6/63.5/71	73.5/69.5/77
Connection capacity		
Solid (mm^2)	1.5-16	6-16
Multi stranded (mm^2)	1.5-35	6-50
Flexible (mm^2)	1.5-35	10-50
American Wire Gauge (AWG)	14-1	8-0
IEC test gauge	**B9**	**B10**
Stripping length (mm)	14.9	19
Clamping screw	**M6**	**M8**
Tightening torque (N.m)	3.5	4.5
Insulation material	**PA 6.6**	**PA 6.6-V0 on request**

IEC 60947-7-1 rated data	RTP95		
Voltage(V)/Impulse voltage (kV)	1000/8		
Pollution degre/Voltage category/Material group	3/III/I		
Current (A)	232		
Cross - section (mm^2)	95		
Description	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ,TH 35-15	RTP95	102018	5
Terminal block, for mounting on TH 35 -15, 2.3 thickness	RTP95	102019	5
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/2 10	200103	50
Cross-connection	CC3-95 3-pos.	201218	10
	CC2-95 2-pos.	201219	10
max. current (A)	232		
Marking	NS8 Raad recommended	For details see Accessories	

Dimensions (mm)	
Width/Length	25/90.2
Hight, G32/TH 35-15	97.3/101
Connection capacity	
Solid (mm^2)	6-95
Multi stranded (mm^2)	6-95
Flexible (mm^2)	10-95
American Wire Gauge (AWG)	8-4/0
IEC test gauge	**B12**
Stripping length (mm)	24.5
Clamping screw	**M8**
Tightening torque (N.m)	12-14
Insulation material	**PA 6.6 - V0 on request**

PROTECTIVE CONDUCTOR TERMINAL BLOCKS



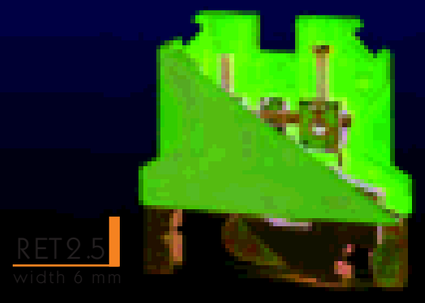
- Moutable on both TH35 and G32 mounting rails, beside other types of terminals
- Having green - yellow, partially insulated, cases made of polyamide 6.6
- Designed to provide proper electrical and mechanical connection with its mounting rail, so that it can be used as a protective conductor busbar
- Protective conductor terminal blocks share the same space-saving characteristic and design specifications as the RTP series
- Used for connecting PE and PEN conductors, regarding the rated cross - section to be more than 10 mm for PEN function, as specified in the below table

Table A.1 - Maximum short - time withstand currents allocated to the rail profile and thermal rated current of a PEN busbar

IEC 60947-7-2				
Rail profile	**Material**	**Equivalent E-Cu cross-section mm^2**	**Short-time withstand current 1 s kA**	**Thermal rated current of a PEN busbar A**
"Top hat" rail	Steel **	10	1.2	-
IEC 607 15/TH 15-5.5	Copper *	25	3	101
	Aluminium *	16	1.92	76
G-type rail	Steel **	35	4.2	-
IEC 607 15/G32	Copper *	120	14.4	269
	Aluminium *	70	8.4	192
"Top hat" rail	Steel **	16	1.92	-
IEC 607 15/TH 35-7.5	Copper *	50	6	150
	Aluminium *	35	4.2	125
"Top hat" rail	Steel **	50	6	-
IEC 607 15/TH 35-15	Copper *	150	18	309
	Aluminium *	95	11.4	232

* Copper or aluminium alloys selected by the manufacturer of terminal block assembly to achieve the values in the table.

** Steel protective conductor busbars are not allowed to be used as a PEN conductor.


RET2.5
width 6 mm

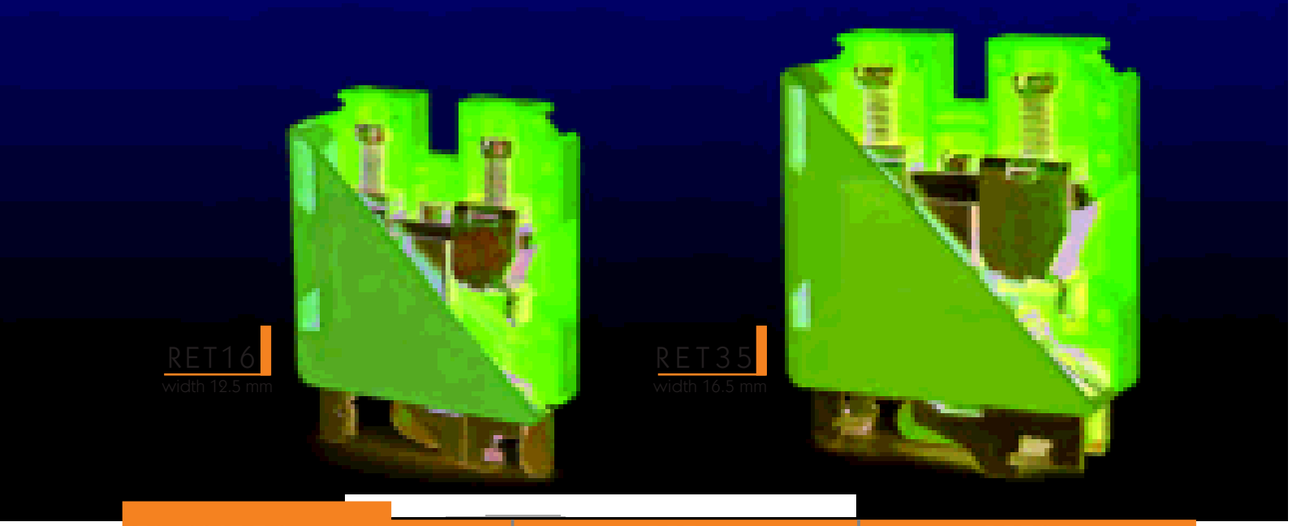

RET4
width 6.4 mm


RET6
width 8 mm


RET10
width 10 mm

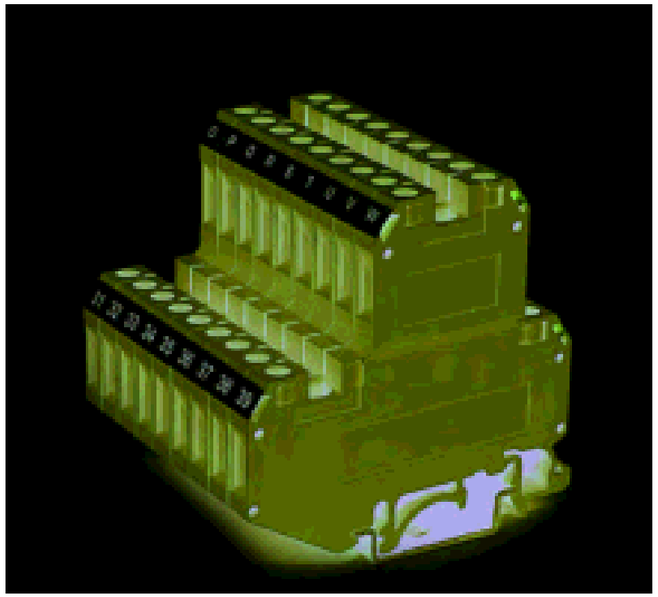
IEC 60947-7-2 rated data	RET2.5			RET4		
Impulse voltage (kV)	6			6		
Pollution degre/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	-			-		
Cross - section (mm^2)	2.5			4		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ⊐ ,TH 35-7.5, 15 ⊐ ⊏	RET 2.5	101201	50	RET 4	101202	50
Marking 1↕2↕3↕	NS6	For details see Accessories		NS6.4	For details see Accessories	
Dimensions (mm)						
Width/Length	6/45.5			6.4/45.6		
Hight, G32/TH 35-7.5/TH 35-15	45.7/41.5/49			51.3/47.4/54.9		
Connection capacity						
Solid (mm^2)	0.5-4			0.5-4		
Multi stranded (mm^2)	0.5-4			0.5-4		
Flexible (mm^2)	0.5-2.5			0.5-4		
American Wire Gauge (AWG)	20-12			20-12		
IEC test gauge	**A3**			**A4**		
Stripping length (mm)	10			12		
Clamping screw/Tightening torque (N.m)	**M2.5/0.4**			**M3/0.5**		
Center screw/Tightening torque (N.m)	M3/0.5			M3/0.5		
Insulation material	**PA 6.6**			**PA 6.6**		

IEC 60947-7-2 rated data	RET6			RET10		
Impulse voltage (kV)	8			8		
Pollution degre/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	-			57		
Cross - section (mm^2)	6			10		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ⊐ ,TH 35-7.5, 15 ⊐ ⊏	RET 6	101203	25	RET 10	101204	25
Marking 1↕2↕3↕	NS8	For details see Accessories		NS8 Raad recommended	For details see Accessories	
Dimensions (mm)						
Width/Length	8/45.6			10/45.6		
Hight, G32/TH 35-7.5/TH 35-15	51.3/47.4/54.9			51.3/47.4/54.9		
Connection capacity						
Solid (mm^2)	0.5-10			0.5-16		
Multi stranded (mm^2)	0.5-10			0.5-16		
Flexible (mm^2)	0.5-6			0.5-10		
American Wire Gauge (AWG)	20-8			20-6		
IEC test gauge	**A5**			**B6**		
Stripping length (mm)	12			12		
Clamping screw/Tightening torque (N.m)	**M3.5/1.2**			**M4/1.5**		
Center screw/Tightening torque (N.m)	M4/1.2			M4/1.2		
Insulation material	**PA 6.6**			**PA 6.6**		



IEC 60947-7-2 rated data	RET16			RET35		
Impulse voltage (kV)	8			8		
Pollution degre/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	76			125		
Cross - section (mm^2)	16			35		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ⊔ ,TH 35-7.5, 15 ⊓ ⊔	RET 16	101205	20	RET 35	101206	20
Marking 1 2 3	NS8 Raad recommended	For details see Accessories		NS8 Raad recommended	For details see Accessories	

Dimensions (mm)		
Width/Length	12.2/49.8	16.5/51.4
Hight, G32/TH 35-7.5/TH 35-15	65/61/68.5	67.6/68.5/71
Connection capacity		
Solid (mm^2)	0.5-16	1.5-35
Multi stranded (mm^2)	0.5-16	1.5-35
Flexible (mm^2)	0.5-16	1.5-35
American Wire Gauge (AWG)	20-4	14-1
IEC test gauge	**B7**	**B9**
Stripping length (mm)	12.3	14.9
Clamping screw/Tightening torque (N.m)	**M5/2.5**	**M6/3.5**
Center screw/Tightening torque (N.m)	M4/1.2	M5/2
Insulation material	**PA 6.6**	**PA 6.6**



DOUBLE LEVEL TERMINAL BLOCKS

Raad double level terminal blocks enjoy the spase-saving advantage. It is remarkable in this type of terminal that the upper level is offset laterally by half of the terminal block width. The following advantages are met, due to the double wiring density:

- Accessibility of the lower level screw is more effective with a screw driver and
- Lower labels and entry points can be viewed better

The EP3 end plate and the EP2 end plate compensates for the level offset at the beginning and the end of the terminal strips, so that standard terminal blocks can be directly aligned.
As for foot connection, they can be mounted on either of the TH 35 or G 32 mounting rails.

DRTP4
width 6.4 mm

IEC 60947-7-1 rated data	DRTP4		
Voltage(V)/Impulse voltage (kV)	500/6		
Pollution degre/Voltage category/Material group	3/III/I		
Current (A)	32		
Cross - section (mm^2)	4		
Description	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ⊐, TH 35-7.5, 15 ⊓	DRTP4	101302	50
End plate 1 width (mm)	EP1-DRTP4	201302	20
End plate 2 width (mm)	EP2-DRTP4	201303	20
End plate 3 width (mm)	EP3-DRTP4	201304	20
Partition width (mm)	P-DRTP4	200302	20
Small partition no loss of pitch	SP-2.5-10	201007	100
End bracket, for G 32 ⊐ TH 35- 7.5, 15 ⊓ width (mm) Raad recommended	EB/2 10	200103	50
Cross-connection	CC10-D4 10-pos. CC3-D4 3-pos. CC2-D4 2-pos.	201310 201311 201312	10 50 50
max. current (A)	32		
Test socket	TS3/6/2.3	200540	
Marking 1 2 3	NS6.4	For details see Accessories	

Dimensions (mm)	
Width/Length	6.4/68.4
Hight, G32/TH 35-7.5/TH 35-15	71.5/67.5/75
Connection capacity	
Solid (mm^2)	0.5-4
Multi stranded (mm^2)	0.5-4
Flexible (mm^2)	0.5-4
American Wire Gauge (AWG)	20-12
IEC test gauge	**A4**
Stripping length (mm)	9
Clamping screw	**M2.5**
Tightening torque (N.m)	0.4
Insulation material	**PA 6.6**

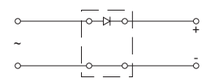
DRTP4-D1
width 6.4 mm

IEC 60947-7-1 rated data	DRTP4-D1		
Voltage (VAC)	400		
Diode reverse voltage (V)	1000		
Current (A)	32		
Diode current (A)	1		
Diode	1N4007		
Cross - section (mm^2)	4		
Description	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ⊐, TH 35-7.5, 15 ⊓	DRTP4-D1	101310	50
End plate 1 width (mm)	EP1-DRTP4	201302	20
End plate 2 width (mm)	EP2-DRTP4	201303	20
End plate 3 width (mm)	EP3-DRTP4	201304	20
Partition width (mm)	P-DRTP4	200302	20
Small partition no loss of pitch	SP-2.5-10	201007	100
End bracket, for G 32 ⊐ TH 35- 7.5, 15 ⊓ width (mm) Raad recommended	EB/2 10	200103	50
Cross-connection	CC10-D4 10-pos. CC3-D4 3-pos. CC2-D4 2-pos.	201310 201311 201312	10 50 50
max. current (A)	32		
Test socket	TS3/6/2.3	200540	
Marking 1 2 3	NS6.4	For details see Accessories	

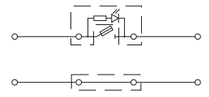
Dimensions (mm)	
Width/Length	6.4/68.4
Hight, G32/TH 35-7.5/TH 35-15	71.5/67.5/75
Connection capacity	
Solid (mm^2)	0.5-4
Multi stranded (mm^2)	0.5-4
Flexible (mm^2)	0.5-4
American Wire Gauge (AWG)	20-12
IEC test gauge	**A4**
Stripping length (mm)	9
Clamping screw	**M2.5**
Tightening torque (N.m)	0.4
Insulation material	**PA 6.6**

In designing DRTP4, Special capabilities are offered for installing electronic elements.

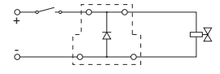
Raad double level terminal blocks are used for voltage rectifying, monitoring, fine switching, and test circuits. Furthermore, a number of circuits, in which the terminal are applied, are offered. Any other type of circuit is offered on request.



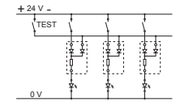
Example for rectifying purposes



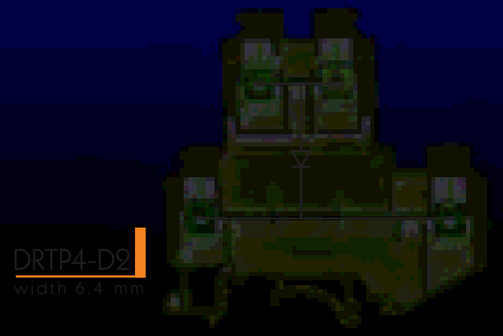
Example for displying protection status



Example for fine switching a DC load

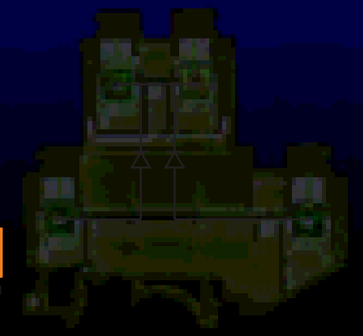


Example for lamp test circuit



IEC 60947-7-1 rated data	DRTP4-D2			DRTP4-D3		
Voltage (VAC)	400			400		
Diode reverse voltage (V)	1000			1000		
Current (A)	-			-		
Diode current (A)	1			1		
Diode	1N4007			1N4007		
Cross - section (mm^2)	4			4		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ⊐, TH 35-7.5, 15 ⊔ Freewheeling diode for DC loads	DRTP4-D2	101311	50	DRTP4-D3	101312	50
End plate 1 width (mm)	EP1-DRTP4	201302	20	EP1-DRTP4	201302	20
End plate 2 width (mm)	EP2-DRTP4	201303	20	EP2-DRTP4	201303	20
End plate 3 width (mm)	EP3-DRTP4	201304	20	EP3-DRTP4	201304	20
Partition width (mm)	P-DRTP4	200302	20	P-DRTP4	200302	20
Small partition no loss of pitch	SP-2.5-10	201007	100	SP-2.5-10	201007	100
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/2 10	200103	50	EB/2 10	200103	50
Cross-connection	CC10-D4 10-pos. CC3-D4 3-pos. CC2-D4 2-pos.	201310 201311 201312	10 50 50	CC10-D4 10-pos. CC3-D4 3-pos. CC2-D4 2-pos.	201310 201311 201312	10 50 50
max. current (A)	32			32		
Test socket	TS3/6/2.3	200540	50	TS3/6/2.3	200540	50
Marking 1 2 3	NS6.4	For details see Accessories		NS6.4	For details see Accessories	

Dimensions (mm)		
Width/Length	6.4/68.4	6.4/68.4
Hight, G32/TH 35-7.5/TH 35-15	71.5/67.5/75	71.5/67.5/75
Connection capacity		
Solid (mm^2)	0.5-4	0.5-4
Multi stranded (mm^2)	0.5-4	0.5-4
Flexible (mm^2)	0.5-4	0.5-4
American Wire Gauge (AWG)	20-12	20-12
IEC test gauge	A4	A4
Stripping length (mm)	9	9
Clamping screw	M2.5	M2.5
Tightening torque (N.m)	0.4	0.4
Insulation material	PA 6.6	PA 6.6

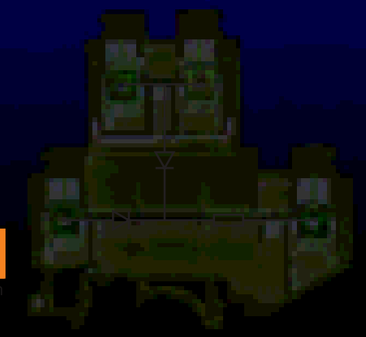


IEC 60947-7-1 rated data	DRTP4-D4			DRTP4-D5		
Voltage (VAC)	400			400		
Diode reverse voltage (V)	1000			1000		
Current (A)	-			-		
Diode current (A)	1			1		
Diode	1N4007			1N4007		
Cross - section (mm^2)	4			4		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ⊐, TH 35-7.5, 15 ⊔ for lamp test circuit	DRTP4-D4	101313	50	DRTP4-D5	101314	50
End plate 1 width (mm)	EP1-DRTP4	201302	20	EP1-DRTP4	201302	20
End plate 2 width (mm)	EP2-DRTP4	201303	20	EP2-DRTP4	201303	20
End plate 3 width (mm)	EP3-DRTP4	201304	20	EP3-DRTP4	201304	20
Partition width (mm)	P-DRTP4	200302	20	P-DRTP4	200302	20
Small partition no loss of pitch	SP-2.5-10	201007	100	SP-2.5-10	201007	100
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/2 10	200103	50	EB/2 10	200103	50
Cross-connection	CC10-D4 10-pos. CC3-D4 3-pos. CC2-D4 2-pos.	201310 201311 201312	10 50 50	CC10-D4 10-pos. CC3-D4 3-pos. CC2-D4 2-pos.	201310 201311 201312	10 50 50
max. current (A)	32			32		
Test socket	TS3/6/2.3	200540	50	TS3/6/2.3	200540	50
Marking 1 2 3	NS6.4	For details see Accessories		NS6.4	For details see Accessories	

Dimensions (mm)		
Width/Length	6.4/68.4	6.4/68.4
Hight, G32/TH 35-7.5/TH 35-15	71.5/67.5/75	71.5/67.5/75
Connection capacity		
Solid (mm^2)	0.5-4	0.5-4
Multi stranded (mm^2)	0.5-4	0.5-4
Flexible (mm^2)	0.5-4	0.5-4
American Wire Gauge (AWG)	20-12	20-12
IEC test gauge	A4	A4
Stripping length (mm)	9	9
Clamping screw	M2.5	M2.5
Tightening torque (N.m)	0.4	0.4
Insulation material	PA 6.6	PA 6.6

DRTP4-D6
width 6.4 mm

DRTP4-DR1
width 6.4 mm



DRTP4-DR2
width 6.4 mm

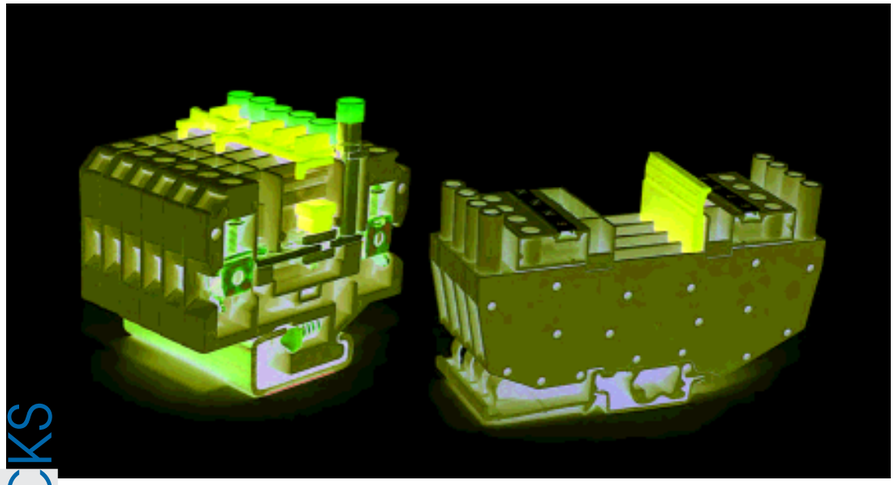
IEC 60947-7-1 rated data		DRTP4-D6		
Voltage (VAC)		400		
Diode reverse voltage (V)		1000		
Current (A)		-		
Diode current (A)		1		
Diode		1N4007		
Cross - section (mm^2)		4		
Description		**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ⊐ ,TH 35-7.5, 15 ⊐ ⊏ for lamp test circuit		DRTP4-D6	101315	50
End plate 1 width (mm)		EP1-DRTP4	201302	20
End plate 2 width (mm)		EP2-DRTP4	201303	20
End plate 3 width (mm)		EP3-DRTP4	201304	20
Partition width (mm)		P-DRTP4	200302	20
Small partition no loss of pitch		SP-2.5-10	201007	100
End bracket, for G 32 ⊐ TH 35- 7.5, 15 ⊐ ⊏ width (mm) Raad recommended		EB/2 10	200103	50
Cross-connection max. current (A)		CC10-D4 10-pos. 32 CC3-D4 3-pos. 32 CC2-D4 2-pos. 32	201310 201311 201312	10 50 50
Test socket		TS3/6/2.3	200540	50
Marking	1 2 3	NS6.4	For details see Accessories	
Dimensions (mm)				
Width/Length		6.4/68.4		
Hight, G32/TH 35-7.5/TH 35-15		71.5/67.5/75		
Connection capacity				
Solid (mm^2)		0.5-4		
Multi stranded (mm^2)		0.5-4		
Flexible (mm^2)		0.5-4		
American Wire Gauge (AWG)		20-12		
IEC test gauge		A4		
Stripping length (mm)		9		
Clamping screw		M2.5		
Tightening torque (N.m)		0.4		
Insulation material		PA 6.6		

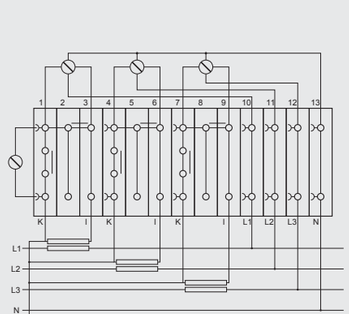
IEC 60947-7-1 rated data		DRTP4-DR1			DRTP4-DR2		
Voltage (VDC)		24			24		
Diode reverse voltage (V)		1000			1000		
Current (A)		-			-		
Diode current (A)		1			1		
Diode		1N4007			1N4007		
Resistor		1.5kΩ			1.5kΩ		
Cross - section (mm^2)		4			4		
Description		**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ⊐ ,TH 35-7.5, 15 ⊐ ⊏ for lamp test circuit with resistor		DRTP4-DR1	101316	50	DRTP4-DR2	101317	50
End plate 1 width (mm)		EP1-DRTP4	201302	20	EP1-DRTP4	201302	20
End plate 2 width (mm)		EP2-DRTP4	201303	20	EP2-DRTP4	201303	20
End plate 3 width (mm)		EP3-DRTP4	201304	20	EP3-DRTP4	201304	20
Partition width (mm)		P-DRTP4	200302	20	P-DRTP4	200302	20
Small partition no loss of pitch		SP-2.5-10	201007	100	SP-2.5-10	201007	100
End bracket, for G 32 ⊐ TH 35- 7.5, 15 ⊐ ⊏ width (mm) Raad recommended		EB/2 10	200103	50	EB/2 10	200103	50
Cross-connection max. current (A)		CC10-D4 10-pos. 32 CC3-D4 3-pos. 32 CC2-D4 2-pos. 32	201310 201311 201312	10 50 50	CC10-D4 10-pos. 32 CC3-D4 3-pos. 32 CC2-D4 2-pos. 32	201310 201311 201312	10 50 50
Test socket		TS3/6/2.3	200540	50	TS3/6/2.3	200540	50
Marking	1 2 3	NS6.4	For details see Accessories		NS6.4	For details see Accessories	
Dimensions (mm)							
Width/Length		6.4/68.4			6.4/68.4		
Hight, G32/TH 35-7.5/TH 35-15		71.5/67.5/75			71.5/67.5/75		
Connection capacity							
Solid (mm^2)		0.5-4			0.5-4		
Multi stranded (mm^2)		0.5-4			0.5-4		
Flexible (mm^2)		0.5-4			0.5-4		
American Wire Gauge (AWG)		20-12			20-12		
IEC test gauge		A4			A4		
Stripping length (mm)		9			9		
Clamping screw		M2.5			M2.5		
Tightening torque (N.m)		0.4			0.4		
Insulation material		PA 6.6			PA 6.6		

IEC 60947-7-1 rated data		DRTP4-LD			DRTP4-NL		
Voltage		24VDC			115-230VAC		
LED or Neon lamp current		<5mA			<5mA		
Cross - section (mm^2)		4			4		
Description		**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32 ⊐, TH 35-7.5, 15 ⊐⊏ DC and AC voltage indicator		DRTP4-LD DC voltage indicator	101318	50	DRTP4-NL AC voltage indicator	101319	50
End plate 1 width (mm)		EP1-DRTP4	201302	20	EP1-DRTP4	201301	20
End plate 2 width (mm)		EP2-DRTP4	201303	20	EP2-DRTP4	201303	20
End plate 3 width (mm)		EP3-DRTP4	201304	20	EP3-DRTP4	201304	20
Partition width (mm)		P-DRTP4	200302	20	P-DRTP4	200302	20
Small partition no loss of pitch		SP-2.5-10	201007	100	SP-2.5-10	201007	100
End bracket, for G 32 ⊐, TH 35- 7.5, 15 ⊐⊏ width (mm) Raad recommended		EB/2 10	200103	50	EB/2 10	200103	50
Cross-connection		CC10-D4 10-pos. CC3-D4 3-pos. CC2-D4 2-pos.	201310 201311 201312	10 50 50	CC10-D4 10-pos. CC3-D4 3-pos. CC2-D4 2-pos.	201310 201311 201312	10 50 50
max. current (A)		32			32		
Test socket		TS3/6/2.3	200540	50	TS3/6/2.3	200540	50
Marking	1 2 3	NS6.4	For details see Accessories		NS6.4	For details see Accessories	

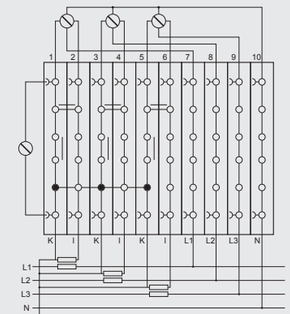
Dimensions (mm)		
Width/Length	6.4/68.4	6.4/68.4
Hight, G32/TH 35-7.5/TH 35-15	71.5/67.5/75	71.5/67.5/75
Connection capacity		
Solid (mm^2)	0.5-4	0.5-4
Multi stranded (mm^2)	0.5-4	0.5-4
Flexible (mm^2)	0.5-4	0.5-4
American Wire Gauge (AWG)	20-12	20-12
IEC test gauge	A4	A4
Stripping length (mm)	9	9
Clamping screw	M2.5	M2.5
Tightening torque (N.m)	0.4	0.4
Insulation material	PA 6.6	PA 6.6

TEST DISCONNECT TERMINAL BLOCKS





Wattmeter test circuit, designed with 13 RCT-L2 and RCT-LU2



Wattmeter test circuit, designed with 10 RST6 and RTT6

In measuring, control and remote - controlled systems test and disconnect terminals are often installed.

A typical circuit can be considered for each of the above mentioned items.RCTL2, RCTLU2, STC6, and new types such as RST6, RTT6, RDT4, accompanied by their relating accessories, can be mounted in all types of circuits specified in this field, including secondary circuits for current transformers.

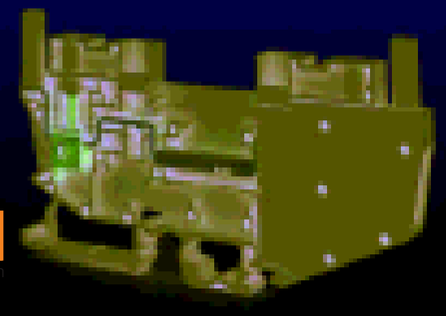
RCT-L2
width 8 mm

RCT-LU2
width 8 mm

IEC 60947-7-1 rated data		RCT-L2			RCT-LU2		
Voltage (V) / Impulse voltage (kV)		400/6			400/6		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		32			32		
Cross - section (mm^2)		6			6		
Description		**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Test disconnect terminal, for mounting on G 32		RCT-L2	100902	50	RCT-LU2	100901	50
End plate width (mm)		EP-L2,LU2 2	200710	50	EP-L2,LU2 2	200710	50
End bracket, for G 32 width (mm) Raad recommended		EB32 8	200101	50	EB32 8	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended		EB/1 9.5	200102	50	EB/1 9.5	200102	50
Moveable cross-connection, for 2 terminal blocks, with 2 test socket screws and 2 sleeves max. current (A)		ML2A 24	200706	100	ML2A 24	200706	100
Moveable cross-connection, for 4 terminal blocks, with 4 test socket screws and 4 sleeves max. current (A)		ML4A 24	200707	50	ML4A 24	200707	50
Moveable cross-connection, for 2 terminal blocks, with 2 screws and 2 sleeves max. current (A)		ML2B 24	200701	100	ML2B 24	200701	100
Moveable cross-connection, for 4 terminal blocks, with 4 screws and 4 sleeves max. current (A)		ML4B 24	200702	50	ML4B 24	200702	50
Test socket		TS3/14/4	200703	50	TS3/14/4	200703	50
Marking		NS6	For details see Accessories		NS6	For details see Accessories	

Dimensions (mm)		
Width/Length/Hight, G32	8/64/52.5	8/64/52.5
Connection capacity		
Solid (mm^2)	0.5-10	0.5-10
Multi stranded (mm^2)	0.5-10	0.5-10
Flexible (mm^2)	0.5-6	0.5-6
American Wire Gauge (AWG)	20-8	20-8
IEC test gauge	**A5**	**A5**
Stripping length (mm)	12	12
Clamping screw/Tightening torque (N.m)	**M3.5/1.2**	**M3.5/1.1**
Center screw/Tightening torque (N.m)	M3/0.5	-
Insulation material	**PA 6.6**	**PA 6.6**

RST6
width 8 mm

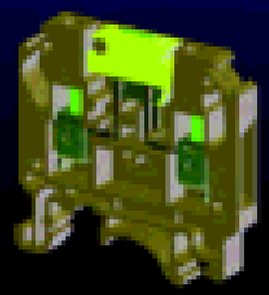


RTT6
width 8 mm

IEC 60947-7-1 rated data		RST6			RTT6		
Voltage (V) / Impulse voltage (kV)		400/6			400/6		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		32			32		
Cross - section (mm^2)		6			6		
Description		**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Test disconnect terminal, for mounting on G 32 TH 35-7.5,15		RST6	100912	20	RTT6	100913	20
Moveable cross-connection, for 2 terminal blocks, with 2 screws max. current (A)		ML2N 32	200708	50	ML2N 32	200708	50
Moveable cross-connection, for 3 terminal blocks, with 3 screws max. current (A)		ML3N 32	200709	50	ML3N 32	200709	50
Moveable cross-connection, for 4 terminal blocks, with 4 screws max. current (A)		ML4N 32	200712	25	ML4N 32	200712	25
Cross-connection max. current (A)		CC10-6 10-pos. CC3-6 3-pos. CC2-6 2-pos. 47	201026 201027 201028	10 50 50	CC10-6 10-pos. CC3-6 3-pos. CC2-6 2-pos. 47	201026 201027 201028	10 50 50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended		EB/1 9.5	200102	50	EB/1 9.5	200102	50
Marking		NS8	For details see Accessories		NS8	For details see Accessories	

Dimensions (mm)		
Width/Length	8/107	8/107
Hight, G32/TH 35-7.5/TH 35-15	65/61.5/69	65/61.5/69
Connection capacity		
Solid (mm^2)	0.5-10	0.5-10
Multi stranded (mm^2)	0.5-10	0.5-10
Flexible (mm^2)	0.5-6	0.5-6
American Wire Gauge (AWG)	20-8	20-8
IEC test gauge	**A5**	**A5**
Stripping length (mm)	12	12
Clamping screw/Tightening torque (N.m)	**M3.5/1.2**	**M3.5/1.2**
Center screw/Tightening torque (N.m)	M3/0.5	-
Insulation material	**PA 6.6**	**PA 6.6**

RDT 4
width 6.4 mm



RDT4-TS
width 6.4 mm

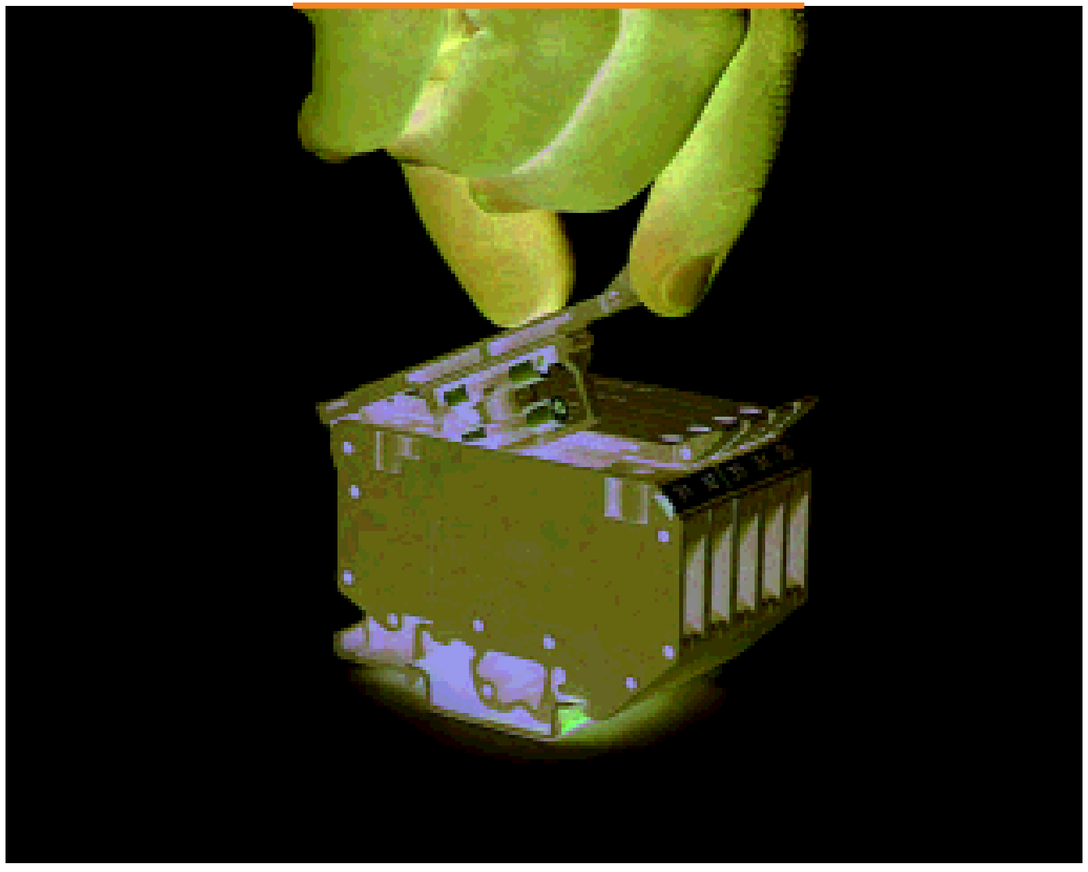
IEC 60947-7-1 rated data	RDT4			RDT4-TS		
Voltage (V) / Impulse voltage (kV)	500/6			500/6		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	17.5			17.5		
Cross - section (mm^2)	4			4		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Test disconnect terminal, for mounting on G 32 TH 35-7.5,15	RDT4	101401	50	RDT4-TS with socket screw	101401	50
End plate width (mm)	EP-RDT4	200404	100	EP-RDT4	200404	100
End bracket, for G 32 width (mm) Raad recommended	EB32 8	200101	50	EB32 8	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/1 9.5	200102	50	EB/1 9.5	200102	50
Bridge-comb max. current (A)	BC10-4 10-pos. 12	201410	10	BC10-4 12	201410	10
Marking	NS6.4	For details see Accessories		NS6.4	For details see Accessories	

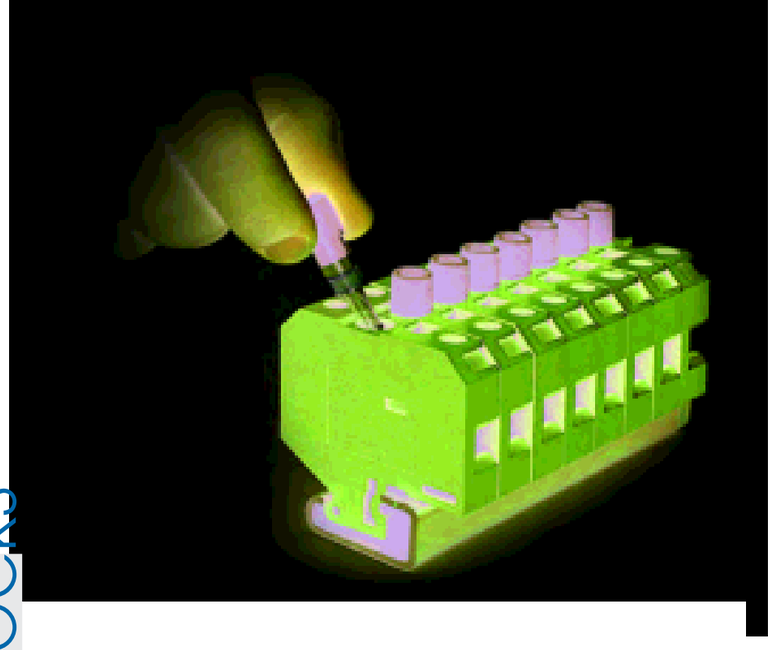
Dimensions (mm)		
Width/Length	6.4/49	6.4/49
Hight, G32/TH 35-7.5/TH 35-15	51.3/47.4/54.9	51.3/47.4/54.9
Connection capacity		
Solid (mm^2)	0.5-4	0.5-4
Multi stranded (mm^2)	0.5-4	0.5-4
Flexible (mm^2)	0.5-4	0.5-4
American Wire Gauge (AWG)	20-12	20-12
IEC test gauge	A4	A4
Stripping length (mm)	12	12
Clamping screw	M3	M3
Tightening torque (N.m)	0.5	0.5
Insulation material	PA 6.6	PA 6.6

STC6
width 6.4 mm

IEC 60947-7-1 rated data	STC6		
Voltage (V) / Impulse voltage (kV)	500/6		
Pollution degree/Voltage category/Material group	3/III/I		
Current (A)	24		
Cross - section (mm^2)	4		
Description	**Type**	**Ordering No.**	**Qty.**
Disconnect terminal, for mounting on G 32	STC6	100701	100
End plate width (mm)	EP-STC6 1.5	200401	100
End bracket, for G 32 width (mm) Raad recommended	EB32 8	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/1 9.5	200102	50
Marking	NS6	For details see Accessories	

Dimensions (mm)	
Width/Length/Hight, G32	6.4/39.5/66
Connection capacity	
Solid (mm^2)	0.5-4
Multi stranded (mm^2)	0.5-4
Flexible (mm^2)	0.5-4
American Wire Gauge (AWG)	20-12
IEC test gauge	A4
Stripping length (mm)	12
Clamping screw	M3
Tightening torque (N.m)	0.5
Insulation material	PA 6.6





FUSE TERMINAL BLOCKS

In accordance with the electrical standards, all electrical equipment control systems and machines must be protected with fuse cartridges, thus fuse terminal blocks have been developed to meet these standards and requirements.

The technical data of the fuse terminal blocks, for the protection of electrical devices, is bound to the application and the use of products.

In RCTF type, the fuse cartridge is inserted in terminal block together with the screw cap. The terminal block is furnished with a light indicator which signalizes when the fuse blows.

The RFT type holds different segments: The base terminal block and the upper hinged-type fuse carrier.

The RFT type is equipped with indicator light, RCTF type alike, functioning similarly. Another advantage of the RFT type which distinguishes it from other types is its bonus to carry a spare fuse cartridge inside the terminal cartridge.

RCTF10
width 13 mm

RCTF10-NL
width 13 mm

IEC 60947-7-1 rated data		RCTF10			RCTF10-NL		
Voltage (V) / Impulse voltage (kV)		400/6			-		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		6.3			6.3		
Cross - section (mm^2)		10			10		
Description		**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Fuse terminal block, without indicator, for mounting on G 32, for fuse cartridge 5×20 and 5×25mm		RCTF10	100801	20			
Fuse terminal block, with neon lamp, for mounting on G 32, for fuse cartridge 5×20 and 5×25mm					RCTF10-NL 110-250VAC	100802	20
End plate width (mm)		EP-RCTF10 3	200901	20	EP-RCTF10 3	200901	20
End bracket, for G 32 width (mm) Raad recommended		EB32 8	200101	50	EB32 8	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended		EB/1 9.5	200102	50	EB/1 9.5	200102	50
Test socket		TS3/8/4	200541	50			

Dimensions (mm)		
Width/Length/Hight, G32	13/53.6/51.1	13/53.6/51.1
Connection capacity		
Solid (mm^2)	0.5-16	0.5-16
Multi stranded (mm^2)	0.5-16	0.5-16
Flexible (mm^2)	0.5-10	0.5-10
American Wire Gauge (AWG)	20-6	20-6
IEC test gauge	**B6**	**B6**
Stripping length (mm)	12	12
Clamping screw	**M4**	**M4**
Tightening torque (N.m)	1.5	1.5
Insulation material	**MF 150**	**MF 150**

RCTF10-LD
width 13 mm

RCTF10-LD
width 13 mm

IEC 60947-7-1 rated data		RCTF10-LD			RCTF10-LD		
Voltage (V) / Impulse voltage (kV)		-			-		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		6.3			6.3		
Cross - section (mm^2)		10			10		
Description		**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Fuse terminal block, with LED, for mounting on G 32, for fuse cartridge 5×20 and 5×25mm		RCTF10-LD 24VDC,48VAC	100803	20	RCTF10-LD 40-60VDC, 80-120VAC	100804	20
End plate width (mm)		EP-RCTF10 3	200901	20	EP-RCTF10 3	200901	20
End bracket, for G 32 width (mm) Raad recommended		EB32 8	200101	50	EB32 8	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended		EB/1 9.5	200102	50	EB/1 9.5	200102	50

Dimensions (mm)		
Width/Length/Hight, G32	13/53.6/59.5	13/53.6/59.5
Connection capacity		
Solid (mm^2)	0.5-16	0.5-16
Multi stranded (mm^2)	0.5-16	0.5-16
Flexible (mm^2)	0.5-10	0.5-10
American Wire Gauge (AWG)	20-6	20-6
IEC test gauge	**B6**	**B6**
Stripping length (mm)	12	12
Clamping screw	**M4**	**M4**
Tightening torque (N.m)	1.5	1.5
Insulation material	**MF 150**	**MF 150**

* Other voltages available upon request

RFT5
width 8 mm

RFT5-NL
width 8 mm

IEC 60947-7-1 rated data		RFT5			RFT5-NL		
Voltage (V) / Impulse voltage (kV)		800/8			-		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		6.3			6.3		
Cross - section (mm^2)		6			6		
Description		**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Fuse terminal block, without indicator, for mounting on G 32, TH 35- 7.5, 15, for fuse cartridge 5×20 and 5×25mm		RFT5	100805	20			20
Fuse terminal block, with neon lamp, for mounting on G 32, TH 35- 7.5, 15, for fuse cartridge 5×20 and 5×25mm					RFT5-NL 110-250VAC	100807	20
End bracket, for G 32 width (mm) Raad recommended		EB32 8	200101	50	EB32 8	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended		EB/1 9.5	200102	50	EB/1 9.5	200102	50
Marking	1 2 3	NS8	For details see Accessories		NS8	For details see Accessories	

Dimensions (mm)		
Width/Length	8/72.5	8/72.5
Hight, G32/TH 35-7.5/TH 35-15	59.4/55.6/63.1	59.4/55.6/63.1
Connection capacity		
Solid (mm^2)	0.5-10	0.5-10
Multi stranded (mm^2)	0.5-10	0.5-10
Flexible (mm^2)	0.5-6	0.5-6
American Wire Gauge (AWG)	20-8	20-8
IEC test gauge	A5	A5
Stripping length (mm)	12	12
Clamping screw	M3.5	M3.5
Tightening torque (N.m)	1.2	1.2
Insulation material	PA 6.6	PA 6.6

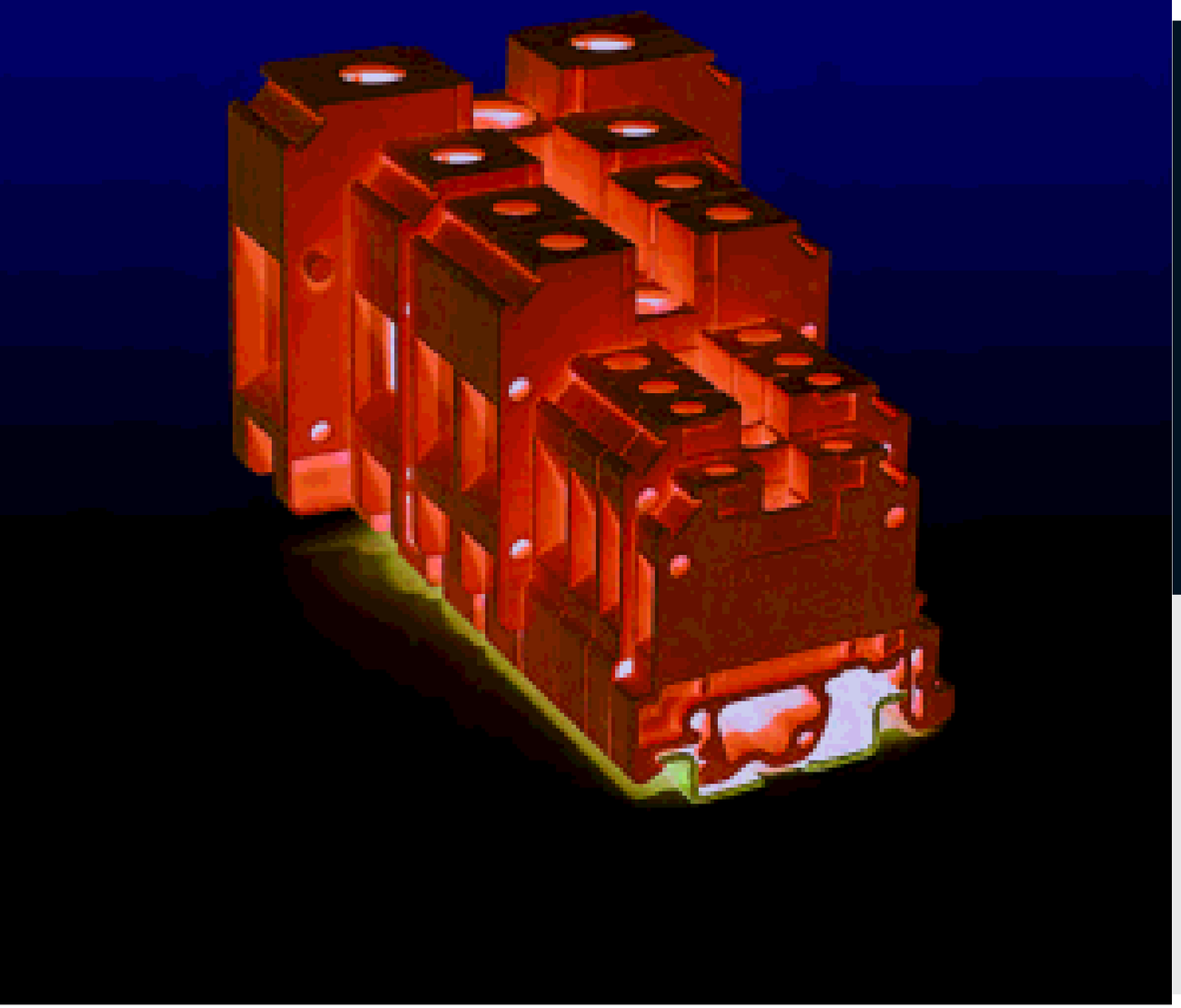
RFT5-LD
width 8 mm

IEC 60947-7-1 rated data		RFT5-LD		
Voltage (V) / Impulse voltage (kV)		-		
Pollution degree/Voltage category/Material group		3/III/I		
Current (A)		6.3		
Cross - section (mm^2)		6		
Description		**Type**	**Ordering No.**	**Qty.**
Fuse terminal block, with LED, for mounting on G 32, TH 35- 7.5, 15, for fuse cartridge 5×20 and 5×25mm		RFT5-LD 12-24VDC 24-48VAC	100806	20
End bracket, for G 32 width (mm) Raad recommended		EB32 8	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended		EB/1 9.5	200102	50
Marking	1 2 3	NS8	For details see Accessories	

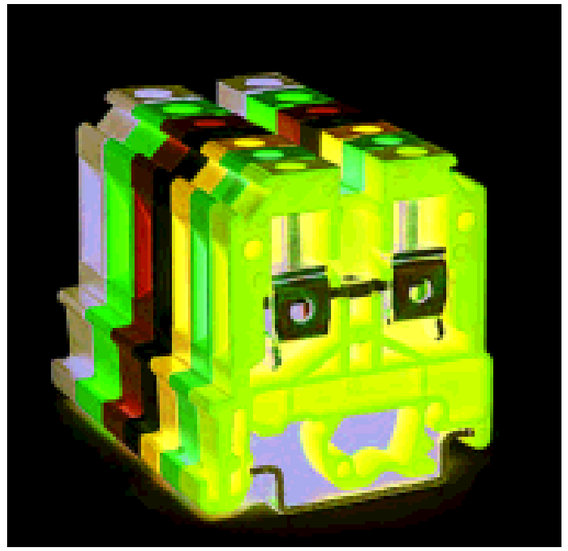
Dimensions (mm)	
Width/Length	8/72.5
Hight, G32/TH 35-7.5/TH 35-15	59.4/55.6/63.1
Connection capacity	
Solid (mm^2)	0.5-10
Multi stranded (mm^2)	0.5-10
Flexible (mm^2)	0.5-6
American Wire Gauge (AWG)	20-8
IEC test gauge	A5
Stripping length (mm)	12
Clamping screw	M3.5
Tightening torque (N.m)	1.2
Insulation material	PA 6.6

* Other voltages available upon request

Confidence in Connection

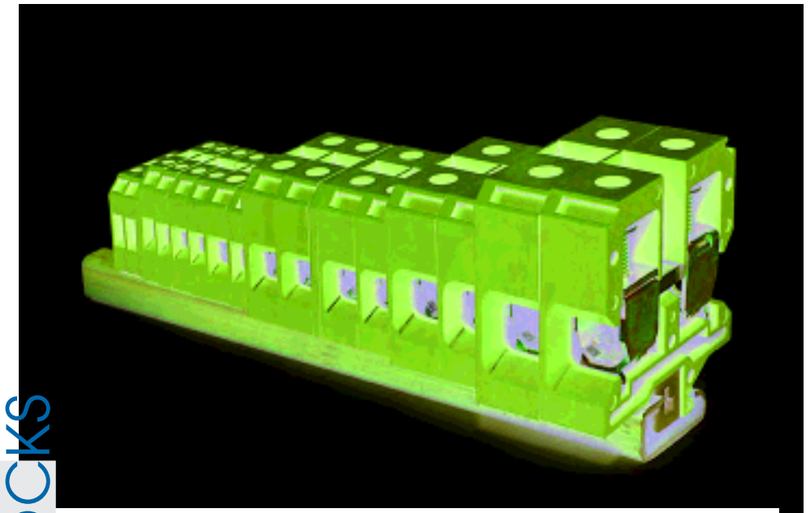


COLOURED TERMINAL BLOCKS



Raad Manufacturing Company initiated manufacturing RTP series in two colour varieties, gray and blue, and has, honorably, succeed to turn the series in eleven colours in order to meet its customer's demands and provide them other opportunities to handle through 11-coloured terminal blocks as the followings:

- Grey
- Blue
- Light cream
- Black
- Brown
- Red
- Orange
- Yellow
- Green
- Violet
- White



RCT SERIES
TERMINAL BLOCKS

Melamine moulded products are specialized to resist any deformation effect and enjoy a very high tracking resistance .This resin has excellent non-hygroscopic behavior with low humidity absorption, compared to PA 6.6., having a higher continuous service temperature. Raad melamine terminals are technically produced and best for working sites which level of dryness and humidity is in variable conditions. One disadvantage of melamine terminal blocks in comparison to the PA 6.6 type is their low flexibility and their lack of disposable feature.

Raad melamine terminal blocks in RCT and RTM series are G32 mounting rails mountable designed.

RTM2.5
width 6.2 mm

RTM4
width 6.6 mm

IEC 60947-7-1 rated data		RTM2.5			RTM4		
Voltage (V) / Impulse voltage (kV)		500/6			500/6		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		24			32		
Cross - section (mm^2)		2.5			4		
Description		**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32		RTM2.5	100201	100	RTM4	100202	50
End Plate width (mm)		EP-RTM2.5 3	200501	100	EP-RTM4,6,10 3	200502	100
End bracket, for G 32 width (mm) Raad recommended		EB32 8	200101	50	EB32 8	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended		EB/1 9.5	200102	50	EB/1 9.5	200102	50
Cross-connection		CCM10-2.5 10-pos. CCM4-2.5 4-pos.	200520 200521	10 50	CCM10-4 10-pos. CCM4-4 4-pos.	200522 200523	10 50
max. current (A)		16			16		
Test socket		TS3/6/2.3	200540	50	TS3/6/2.3	200540	50
Marking	1 2 3	NS6	For details see Accessories		NS6.4	For details see Accessories	

Dimensions (mm)		
Width/Length/Hight, G32	6.2/36.2/46.2	6.6/39.8/51.5
Connection capacity		
Solid (mm^2)	0.5-4	0.5-4
Multi stranded (mm^2)	0.5-4	0.5-4
Flexible (mm^2)	0.5-2.5	0.5-4
American Wire Gauge (AWG)	20-12	20-12
IEC test gauge	**A3**	**A4**
Stripping length (mm)	10	12
Clamping screw	**M2.5**	**M3**
Tightening torque (N.m)	0.4	0.5
Insulation material	**MF 150**	**MF 150**

RTM6
width 8 mm

RTM10
width 10 mm

IEC 60947-7-1 rated data		RTM6			RTM10		
Voltage (V) / Impulse voltage (kV)		500/6			500/6		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		41			57		
Cross - section (mm^2)		6			10		
Description		**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32		RTM6	100203	50	RTM10	100204	50
End Plate width (mm)		EP-RTM4,6,10 3	200502	100	EP-RTM4,6,10 3	200502	100
End bracket, for G 32 width (mm) Raad recommended		EB32 8	200101	50	EB32 8	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended		EB/1 9.5	200102	50	EB/1 9.5	200102	50
Cross-connection		CCM10-6 10-pos. CCM4-6 4-pos.	200524 200525	10 50	CCM10-10 10-pos. CCM4-10 4-pos.	200526 200527	10 50
max. current (A)		24			30		
Test socket		TS3/8/4	200541	50	TS3/8/4	200541	50
Marking	1 2 3	NS6.4	For details see Accessories		NS6.4	For details see Accessories	

Dimensions (mm)		
Width/Length/Hight, G32	8/39.8/51.5	8/39.8/51.5
Connection capacity		
Solid (mm^2)	0.5-10	0.5-16
Multi stranded (mm^2)	0.5-10	0.5-16
Flexible (mm^2)	0.5-6	0.5-10
American Wire Gauge (AWG)	20-8	20-6
IEC test gauge	**A5**	**B6**
Stripping length (mm)	12	12
Clamping screw	**M3.5**	**M4**
Tightening torque (N.m)	1.2	1.5
Insulation material	**MF 150**	**MF 150**

RTM16
width 13 mm

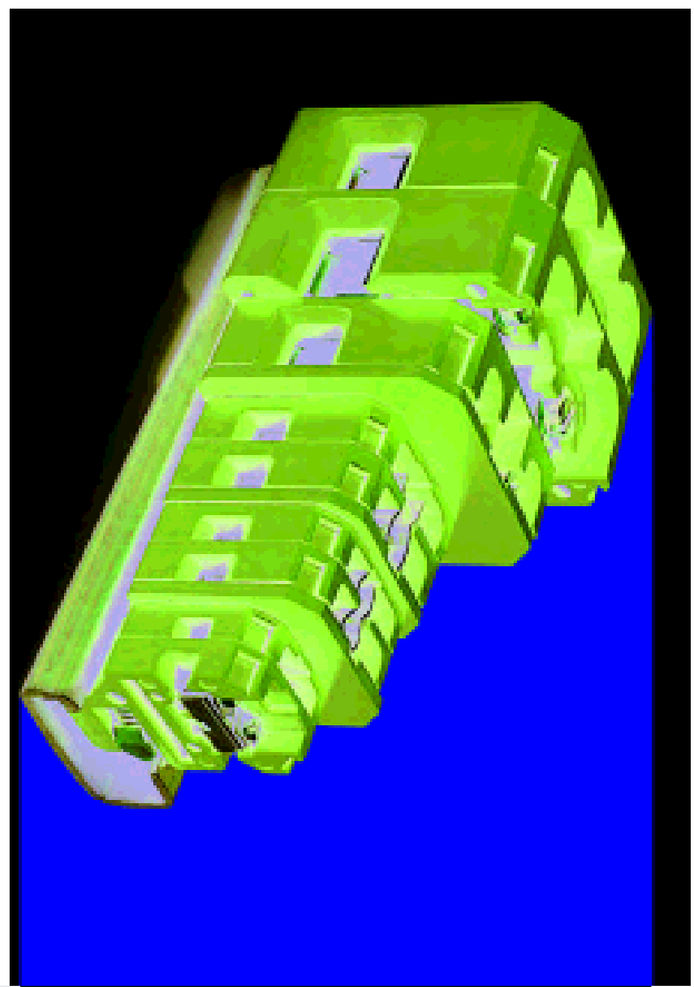
RTM25
width 14 mm

RTM35
width 17.5 mm

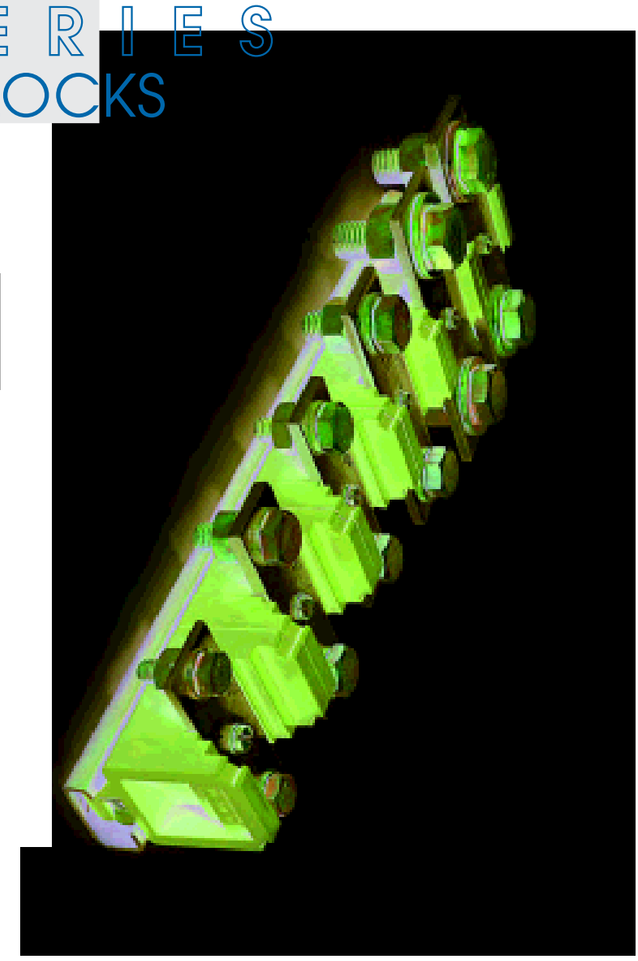
RTM50
width 20 mm

IEC 60947-7-1 rated data		RTM16			RTM25		
Voltage (V) / Impulse voltage (kV)		1000/8			1000/8		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		76			101		
Cross - section (mm^2)		16			25		
Description		**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32		RTM16	100205	50	RTM25	100206	50
End Plate width (mm)		EP-RTM16,25 3	200503	50	EP-RTM16,25 3	200503	50
End bracket, for G 32 TH 35- 7.5, 15		EB/1 9.5	200102	50	EB/1 9.5	200102	50
width (mm) Raad recommended		EB/2 10	200103	50	EB/2 10	200103	50
Cross-connection		CCM10-16 10-pos.	200528	10	CCM10-25 10-pos.	200529	10
max. current (A)		47			65		
Test socket		TS3.5/8/4	200542	50	TS4/8/4	200543	50
Marking	1 2 3	NS8	For details see Accessories		NS8	For details see Accessories	
Dimensions (mm)							
Width/Length/Hight, G32		13/46.4/61.2			13/46.4/61.2		
Connection capacity							
Solid (mm^2)		0.5-16			0.5-16		
Multi stranded (mm^2)		0.5-16			0.5-25		
Flexible (mm^2)		0.5-16			0.5-25		
American Wire Gauge (AWG)		20-4			20-3		
IEC test gauge		**B7**			**B7**		
Stripping length (mm)		12.3			12.3		
Clamping screw		**M5**			**M5**		
Tightening torque (N.m)		2.5			2.5		
Insulation material		**MF 150**			**MF 150**		

IEC 60947-7-1 rated data		RTM35			RTM50		
Voltage (V) / Impulse voltage (kV)		1000/8			1000/8		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		125			150		
Cross - section (mm^2)		35			50		
Description		**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32		RTM35	100207	20	RTM50	100208	20
End Plate width (mm)		EP-RTM35 3	200504	20	EP-RTM50 3	200506	20
End bracket, for G 32 TH 35- 7.5, 15		EB/1 9.5	200102	50			
width (mm) Raad recommended		EB/2 10	200103	50	EB/2 10	200103	50
Cross-connection		CCM10-35 10-pos.	200530	10	CCM3-50 3-pos.	200531	10
max. current (A)		65			180		
Test socket		TS4/8/4	200543	50			
Marking	1 2 3	NS8	For details see Accessories		NS8	For details see Accessories	
Dimensions (mm)							
Width/Length/Hight, G32		17.5/54/67.1			20/68/77.1		
Connection capacity							
Solid (mm^2)		1.5-16			6-16		
Multi stranded (mm^2)		1.5-35			6-50		
Flexible (mm^2)		1.5-35			10-50		
American Wire Gauge (AWG)		14-1			8-0		
IEC test gauge		**B9**			**B10**		
Stripping length (mm)		14.9			19		
Clamping screw		**M6**			**M8**		
Tightening torque (N.m)		3.5			4.5		
Insulation material		**MF 150**			**MF 150**		



RCT SERIES
TERMINAL BLOCKS



IEC 60947-7-1 rated data	RCT4			RCT6		
Voltage (V) / Impulse voltage (kV)	250/4			320/4		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	24			41		
Cross - section (mm^2)	2.5			4		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32	RCT4	100101	100	RCT6	100102	50
End Plate width (mm)	EP-RCT4 3	200201	100	EP-RCT6 3	200202	100
Partition width (mm)	P-RCT4 3	200210	100	P-RCT6 3	200211	100
End bracket, for G 32 width (mm)	EB32 8	200101	50	EB32 8	200101	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm)				EB/1 9.5	200102	50
Cross-connection	CCT10-4 10-pos. CCT4-4 4-pos.	200220 200221	10 50	CCT10-6 10-pos. CCT4-6 4-pos.	200222 200223	10 50
max. current (A)	16			16		

Dimensions (mm)		
Width/Length/Hight, G32	7/28/41	8/34.8/48
Connection capacity		
Solid (mm^2)	1-4	1.5-6
Multi stranded (mm^2)	1-4	1.5-6
Flexible (mm^2)	1-2.5	1.5-4
American Wire Gauge (AWG)	16-12	14-10
IEC test gauge	**A3**	**A4**
Stripping length (mm)	8	10
Clamping screw	**M3**	**M4**
Tightening torque (N.m)	0.5	1.2
Insulation material	**MF 150**	**MF 150**

IEC 60947-7-1 rated data	RCT16			RTM35		
Voltage (V) / Impulse voltage (kV)	320/4			500/6		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	57			125		
Cross - section (mm^2)	10			25		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32	RCT16	100103	50	RCT35	100104	20
End Plate width (mm)	EP-RCT16 3	200203	100	EP-RCT35 3	200204	20
Partition width (mm)	P-RCT16 3	200212	100			
End bracket, for G 32 width (mm) Raad recommended	EB32 8	200101	50			
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/1 9.5	200102	50	EB/1 9.5	200102	50
				EB/2 10	200103	50
Cross-connection	CCT10-16 10-pos. CCT4-16 4-pos.	200224 200225	10 50			
max. current (A)	24					

Dimensions (mm)		
Width/Length/Hight, G32	10.2/36.8/50	16.5/49.8/62.7
Connection capacity		
Solid (mm^2)	2.5-16	6-16
Multi stranded (mm^2)	2.5-16	6-35
Flexible (mm^2)	2.5-10	10-25
American Wire Gauge (AWG)	12-6	8-2
IEC test gauge	**B6**	**B8**
Stripping length (mm)	12	16
Clamping screw	**M4**	**M6**
Tightening torque (N.m)	1.2	2.5
Insulation material	**MF 150**	**MF 150**

RCT50
width 22.5 mm

RCT70
width 54 mm

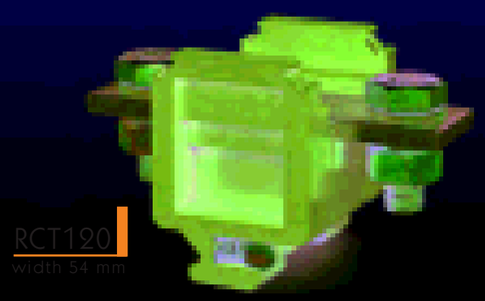
RCT95
width 54 mm

IEC 60947-7-1 rated data	RCT50		
Voltage (V) / Impulse voltage (kV)	800/6		
Pollution degree/Voltage category/Material group	3/III/I		
Current (A)	150		
Cross - section (mm^2)	35		
Description	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32	RCT50	100105	20
End Plate width (mm)	EP-RCT50 3	200205	20
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/2 10	200103	50

Dimensions (mm)	
Width/Length/Hight, G32	22.5/59.5/70.7
Connection capacity	
Solid (mm^2)	10-16
Multi stranded (mm^2)	10-50
Flexible (mm^2)	16-35
American Wire Gauge (AWG)	6-1
IEC test gauge	**B9**
Stripping length (mm)	18
Clamping screw	**M8**
Tightening torque (N.m)	3.5
Insulation material	**MF 150**

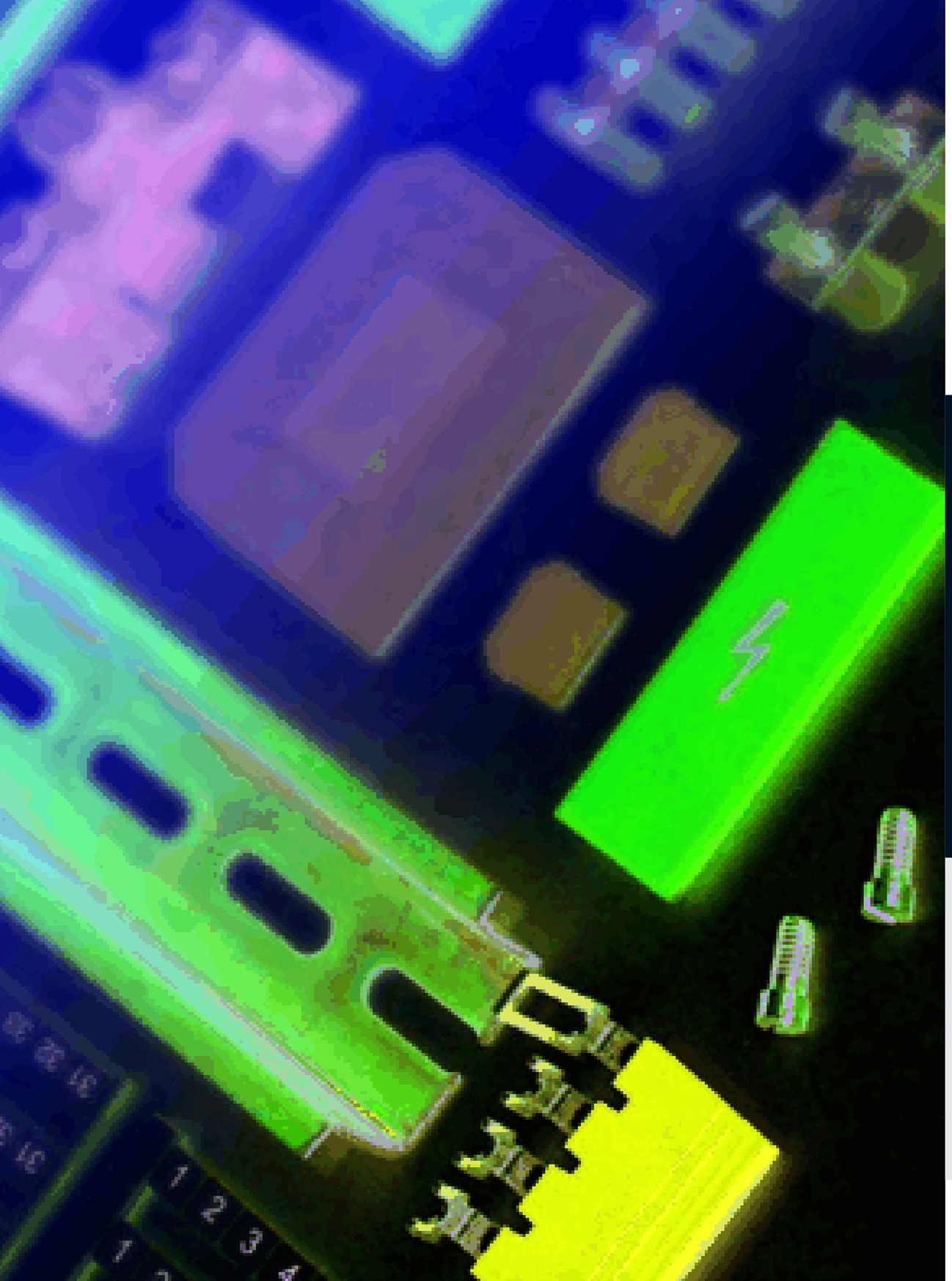
IEC 60947-7-1 rated data	RCT70			RCT95		
Voltage (V) / Impulse voltage (kV)	1000/8			1000/8		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	192			232		
Cross - section (mm^2)	70			95		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32	RCT70	100106	5	RCT95	100107	5
End bracket, for G 32 TH 35- 7.5, 15 width (mm)Raad recommended	EB/2 10	200103	50	EB/2 10	200103	50

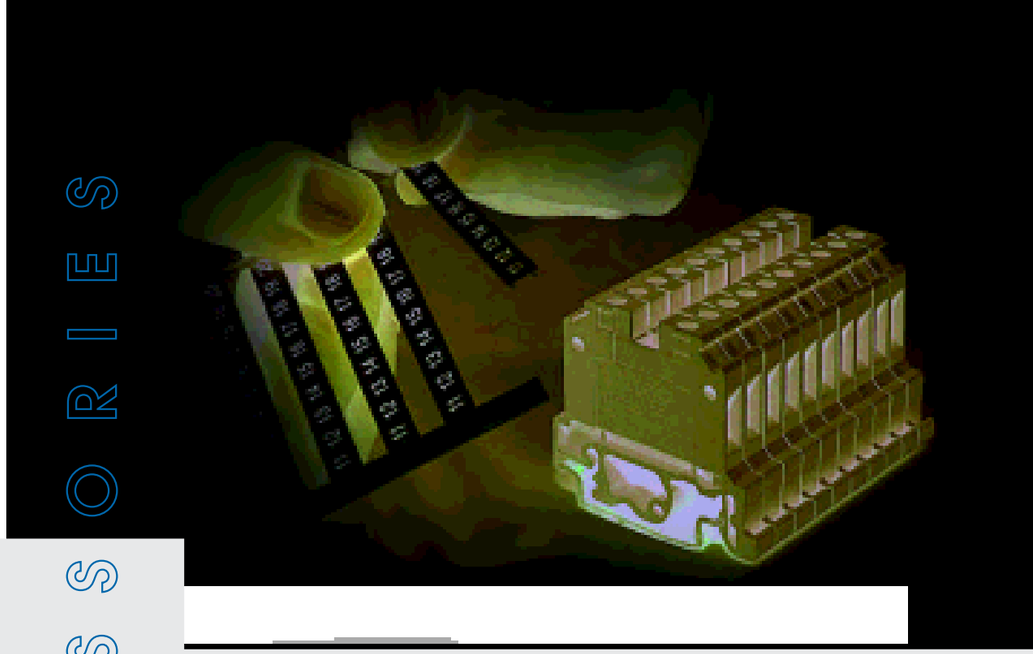
Dimensions (mm)		
Width/Length/Hight, G32	54/80/57	54/91/57
Connection capacity		
Cable lugs DIN 46235	16-70	16-95
Clamping screw	**M8**	**M10**
Tightening torque (N.m)	6	10
Insulation material	**MF 150**	**MF 150**



IEC 60947-7-1 rated data	RCT120			RCT150		
Voltage (V) / Impulse voltage (kV)	1000/8			1000/8		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	269			309		
Cross - section (mm^2)	120			150		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32	RCT120	100108	5	RCT150	100109	5
End bracket, for G 32 TH 35- 7.5, 15 width (mm)Raad recommended	EB/2 10	200103	50	EB/2 10	200103	50
Dimensions (mm)						
Width/Length/Hight, G32	54/91/57			54/107/57		
Connection capacity						
Cable lugs DIN 46235	16-120			25-150		
Clamping screw	**M10**			**M12**		
Tightening torque (N.m)	10			14		
Insulation material	**MF 150**			**MF 150**		

IEC 60947-7-1 rated data	RCT185			RCT240		
Voltage (V) / Impulse voltage (kV)	1000/8			1000/8		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	353			415		
Cross - section (mm^2)	185			240		
Description	**Type**	**Ordering No.**	**Qty.**	**Type**	**Ordering No.**	**Qty.**
Terminal block, for mounting on G 32	RCT185	100111	5	RCT240	100110	5
End bracket, for G 32 TH 35- 7.5, 15 width (mm)Raad recommended	EB/2 10	200103	50	EB/2 10	200103	50
Dimensions (mm)						
Width/Length/Hight, G32	54/122/57			54/122/57		
Connection capacity						
Cable lugs DIN 46235	50-185			50-240		
Clamping screw	**M16**			**M16**		
Tightening torque (N.m)	25			25		
Insulation material	**MF 150**			**MF 150**		





ACCESSORIES

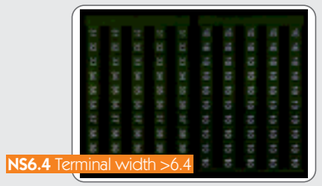
- Marking
- End Plates and Partitions
- Cross-Connections
- Test Accessories
- Mouting Rails and End Brackets

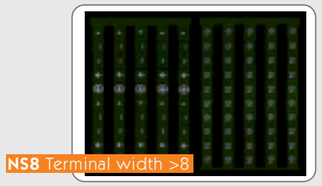
Marking

The NS Quick Marking System

This type of labeling meets the advantage of easy handling. The NS sheets consist of white polyamide with black printings.

The sheets are labeled horizontally with maximum 3 characters, easy to read and high-contrast.The hot impressed black printings are absolutely wiping resistant. One NS sheet consists of 5 strips, includes 10 single tags that can be simply pushed into the label slots of the terminal blocks. The NS sheets can be divided at any point and can be manually labeled with ease.





Size

The push-on tags of NS marking system can be requested in any of the following sizes with or without printed characters.

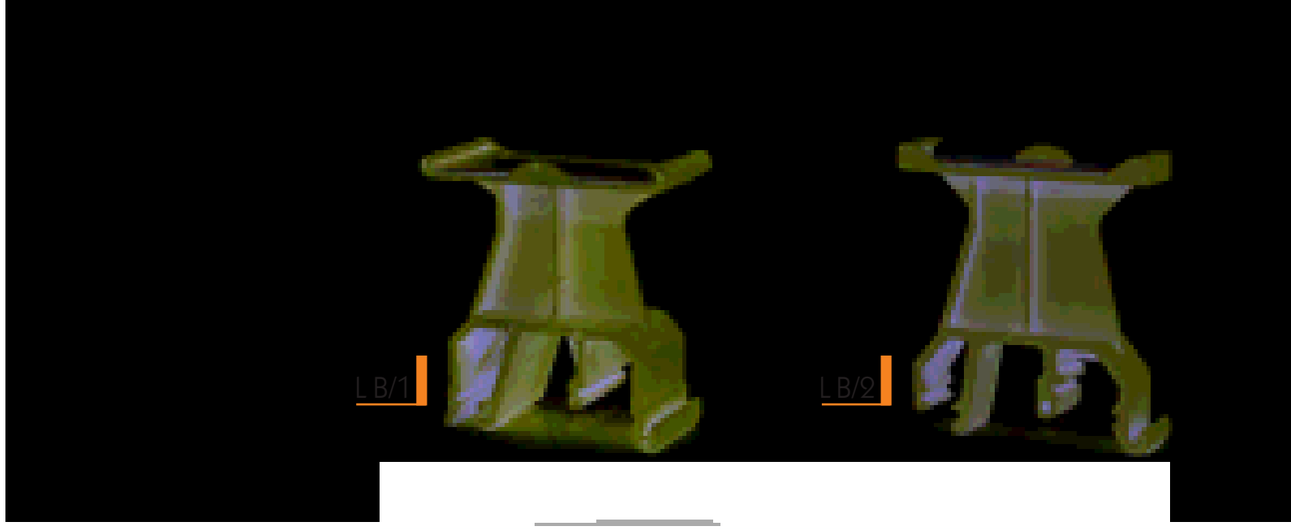
1) NS6, used for terminal block width 6 mm or more.
2) NS6.4, used for terminal block width 6.4 mm or more.
3) NS 8, used for terminal block width 8 mm or more.

Packing

The NS sheets are delivered in plastic bags of 10 sheets=50 strips=500 single tags.

NS Special printings

Special printings can be offered on request.



Marker carrier for groups of terminal blocks

Description	Type	Ordering No.	Qty.	Material
Group marker carrier, for mounting on G32 TH 35- 7.5, 15 width (mm)	LB/1 19.5	200104	50	PA6.6
Group marker carrier, for mounting on G32 TH 35- 7.5, 15 width (mm)	LB/2 9.5	200105	50	PA6.6

Type	Size	Ord. No.	Qty.
(111...)	NS6	202001	10
	NS6.4	203001	10
	NS8	204001	10
(222...)	NS6	202005	10
	NS6.4	203005	10
	NS8	204005	10
(333...)	NS6	202009	10
	NS6.4	203009	10
	NS8	204009	10
(444...)	NS6	202013	10
	NS6.4	203013	10
	NS8	204013	10
(555...)	NS6	202017	10
	NS6.4	203017	10
	NS8	204017	10
(666...)	NS6	202021	10
	NS6.4	203021	10
	NS8	204021	10
(777...)	NS6	202025	10
	NS6.4	203025	10
	NS8	204025	10
(888...)	NS6	202029	10
	NS6.4	203029	10
	NS8	204029	10

Type	Size	Ord. No.	Qty.
(999...)	NS6	202033	10
	NS6.4	203033	10
	NS8	204033	10
(1010...)	NS6	202037	10
	NS6.4	203037	10
	NS8	204037	10
(0...9)	NS6	202035	10
	NS6.4	203034	10
	NS8	204034	10
(1...10)	NS6	202041	10
	NS6.4	203041	10
	NS8	204053	10
(11...15)	NS6	202042	10
	NS6.4	203042	10
	NS8	204042	10
(11...20)	NS6	202077	10
	NS6.4	203045	10
	NS8	204077	10
(16...20)	NS6	202043	10
	NS6.4	203043	10
	NS8	204043	10
(21...25)	NS6	202047	10
	NS6.4	203047	10
	NS8	204047	10

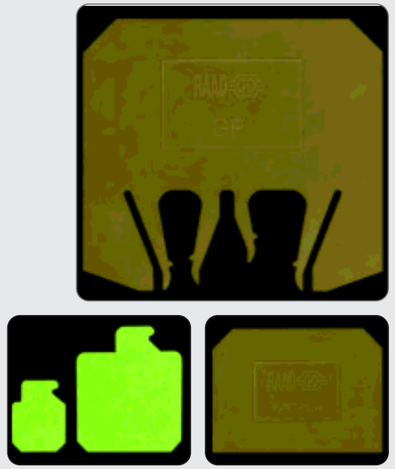
Type	Size	Ord. No.	Qty.
(51...100)	NS6	202049	10
	NS6.4	203109	10
	NS8	204049	10
(26...30)	NS6	202051	10
	NS6.4	203051	10
	NS8	204051	10
(1...50)	NS6	202053	10
	NS6.4	203053	10
	NS8	204041	10
(101...150)	NS6	202057	10
	NS6.4	203141	10
	NS8	204141	10
(31...35)	NS6	202059	10
	NS6.4	203159	10
	NS8	204059	10
(10...500)	NS6	202073	10
	NS6.4	203173	10
	NS8	204073	10
(36...40)	NS6	202074	10
	NS6.4	203074	10
	NS8	204074	10
(41...45)	NS6	202075	10
	NS6.4	203075	10
	NS8	204075	10
(46...50)	NS6	202076	10
	NS6.4	203076	10
	NS8	204076	10
(51...55)	NS6	202078	10
	NS6.4	203078	10
	NS8	204078	10
(56...60)	NS6	202079	10
	NS6.4	203079	10
	NS8	204079	10
(61...65)	NS6	202080	10
	NS6.4	203080	10
	NS8	204080	10
(21...30)	NS6	202081	10
	NS6.4	203081	10
	NS8	204081	10
(66...70)	NS6	202082	10
	NS6.4	203082	10
	NS8	204082	10
(71...75)	NS6	202083	10
	NS6.4	203083	10
	NS8	204083	10
(76...80)	NS6	202084	10
	NS6.4	203084	10
	NS8	204084	10

Type	Size	Ord. No.	Qty.
(31...40)	NS6	202085	10
	NS6.4	203085	10
	NS8	204085	10
(81...50)	NS6	202086	10
	NS6.4	203086	10
	NS8	204086	10
(86...90)	NS6	202087	10
	NS6.4	203087	10
	NS8	204087	10
(91...95)	NS6	202088	10
	NS6.4	203088	10
	NS8	204088	10
(41...50)	NS6	202089	10
	NS6.4	203057	10
	NS8	204089	10
(96...100)	NS6	202090	10
	NS6.4	23090	10
	NS8	204090	10
(151...200)	NS6	202129	10
	NS6.4	203111	10
	NS8	204142	10
(51...66)	NS6	202134	10
	NS6.4	203124	10
	NS8	204134	10
(91...100)	NS6	202099	10
	NS6.4	203059	10
	NS8	204165	10
(131...140)	NS6	202094	10
	NS6.4	203063	10
	NS8	204063	10
(141...150)	NS6	202104	10
	NS6.4	203064	10
	NS8	204064	10
(301...350)	NS6	202116	10
	NS6.4	203116	10
	NS8	204016	10
(351...400)	NS6	202107	10
	NS6.4	203117	10
	NS8	204107	10
(71...80)	NS6	202157	10
	NS6.4	203056	10
	NS8	204157	10
(51...60)	NS6	202149	10
	NS6.4	203054	10
	NS8	204149	10
(61...70)	NS6	202153	10
	NS6.4	203055	10
	NS8	204153	10

Type	Size	Ord. No.	Qty.
(251...300)	NS6	202115	10
	NS6.4	203115	10
	NS8	204035	10
(201...250)	NS6	202114	10
	NS6.4	203114	10
	NS8	204114	10
(111...120)	NS6	202091	10
	NS6.4	203061	10
	NS8	204061	10
(121...130)	NS6	202092	10
	NS6.4	203062	10
	NS8	204062	10
(101...110)	NS6	202120	10
	NS6.4	203060	10
	NS8	204060	10
(100...150)	NS6	202110	10
	NS6.4	203110	10
	NS8	204130	10
(401...450)	NS6	202108	10
	NS6.4	203118	10
	NS8	204108	10
(451...500)	NS6	202119	10
	NS6.4	203119	10
	NS8	204159	10
(81...90)	NS6	202161	10
	NS6.4	203058	10
	NS8	204161	10
(LPE...)	NS6	202121	10
	NS6.4	203121	10
	NS8	204121	10
(AB...Z)	NS6	202065	10
	NS6.4	203129	10
	NS8	204145	10
(UVWN...)	NS6	202069	10
	NS6.4	203069	10
	NS8	204069	10
UNPRINTED	NS6	202000	10
	NS6.4	203000	10
	NS8	204000	10
(UVW...)	NS6	202123	10
	NS6.4	203133	10
	NS8	204115	10
(RSTN...)	NS6	202045	10
	NS6.4	203113	10
	NS8	204113	10
(R...)	NS6	202189	10
	NS6.4	203189	10
	NS8	204139	10

Type	Size	Ord. No.	Qty.
(N...)	NS6	202186	10
	NS6.4	203186	10
	NS8	204186	10
(Y...)	NS6	202188	10
	NS6.4	203188	10
	NS8	204188	10
(L...)	NS6	202185	10
	NS6.4	203185	10
	NS8	204185	10
(1V...)	NS6	202145	10
	NS6.4	203135	10
	NS8	204135	10
(2V...)	NS6	202183	10
	NS6.4	203183	10
	NS8	204183	10
(3V...)	NS6	202187	10
	NS6.4	203187	10
	NS8	204187	10
(BB...)	NS6	202136	10
	NS6.4	203136	10
	NS8	204136	10
(UVW...MP)	NS6	202096	10
	NS6.4	203016	10
	NS8	204116	10
(1W...)	NS6	202148	10
	NS6.4	203138	10
	NS8	204138	10
(2W...)	NS6	202159	10
	NS6.4	203139	10
	NS8	204169	10
(3W...)	NS6	202182	10
	NS6.4	203182	10
	NS8	204182	10
(---...)	NS6	202097	10
	NS6.4	203097	10
	NS8	204097	10
(+++...)	NS6	202093	10
	NS6.4	203073	10
	NS8	204093	10
(1U...)	NS6	202130	10
	NS6.4	203130	10
	NS8	204030	10
(2U...)	NS6	202141	10
	NS6.4	203131	10
	NS8	204131	10
(3U...)	NS6	202184	10
	NS6.4	203184	10
	NS8	204184	10

End Plates and Partitions



End Plate

The last terminal in a row must, in most cases, be covered with an end plate. Within one terminal strip, composed of various terminal sizes, end plates should also be interposed. The end plate external dimensions correspond to the core dimensions of the attendant terminal. The end plates are held by an end bracket.

Partition

Depending upon the operating voltage, a partition must be fitted next to cross-connection groups, so that the necessary clearance and creepage distance can be maintained.

Small Partition

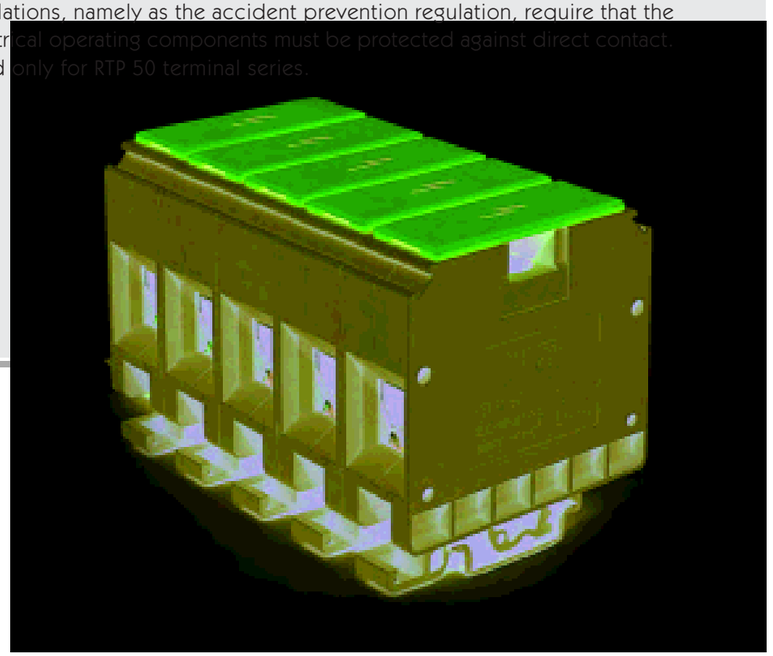
Space-saving partitions can be post-fitted between cross-connections for terminal blocks.

General Partition

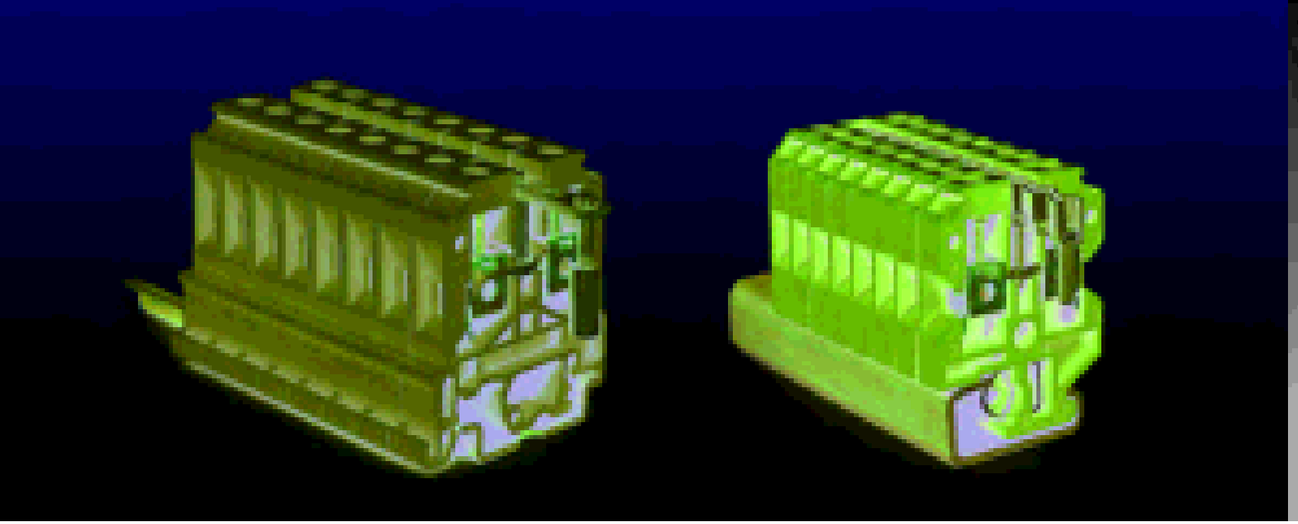
These types of partitions serve for RTP16-50.

Cover

Several safety regulations, namely as the accident prevention regulation, require that the live elements of electrical operating components must be protected against direct contact. This type is provided only for RTP 50 terminal series.



Type	Ord. No.	Application	Material	Qty.
P-RCT4	200210	RCT4	MF150	100
P-RCT6	200211	RCT6	MF150	100
P-RCT16	200212	RCT16	MF150	100
P-RTP2.5	201005	RTP2.5	PA6.6	100
P-RTP4. 6, 10	201008	RTP4. 6, 10	PA6.6	50
SP-RTP2.5-10	201007	RTP2.5-10	PA6.6	100
SP-16-35	201101	RTP16-35	PA6.6	50
SP-50	201102	RTP50	PA6.6	50
GP	201103	-	PA6.6	20
EP-RCT4	200201	RCT4	MF150	100
EP-RCT6	200202	RCT6	MF150	100
EP-RCT16	200203	RCT16	MF150	100
EP-RCT35	200204	RCT35	MF150	20
EP-RCT50	200205	RCT50	MF150	20
EP-STC6	200403	STC6	PA6.6	100
EP-RDT4	200404	RDT4	PA6.6	100
CP-50	201180	RTP50	PA6.6	50
EP-RTM2.5	200501	RTM2.5	MF150	100
EP-RTM4, 6, 10	200502	RTM4, 6, 10	MF150	100
EP-RTM16,25	200503	RTM16,25	MF150	50
EP-RTM35	200504	RTM35	MF150	20
EP-RTM50	200506	RTM50	MF150	20
EP-L2, LU2	200710	RCTL2,RCTLU2	PA6.6	50
EP-RCTF10	200901	RCTF10	MF150	20
EP-RTP2.5	201001	RTP2.5	PA6.6	100
EP-RTP4, 6, 10	201003	RTP4, 6, 10	PA6.6	50



Cross-Connection

For cross-connection bar, connection sleeves and screws are already captively mounted with the corresponding number of poles. The cross-connection then only requires inserting in the individual terminal row when fitting. The cross-connection unit is supplied in 2, 3 and 10 poles.

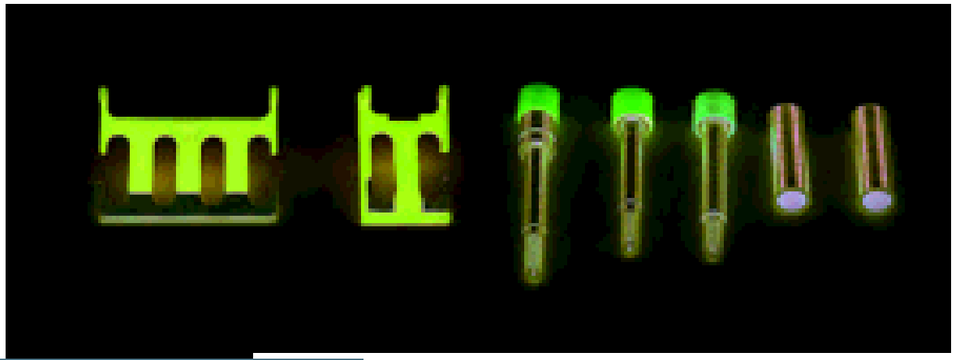
Cross-Connection Bar

To handle cross-connection of several terminal blocks, with the same potential, copper cross-connection bars are used. These cross-connection bars supplied in 2, 3 and 10 pole lengths are equal to the individual terminal widths. The cross-connection bar is electrically joined through a connection sleeve to the terminal block bus bar.

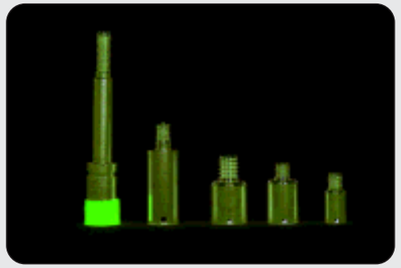
Connection Sleeve and Screw

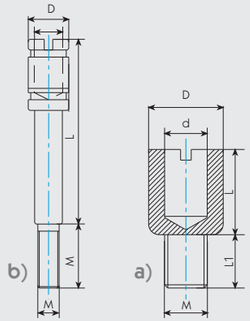
The length of the brass connection sleeve is matched to the individual terminal. In order to be able to connect the cross-connection bar and the connection sleeve to a terminal block bus bar, a brass screw is applied. The cross-connections are designed so that where a terminal does not need any cross-connection; it is possible to remove the screw and its sleeve, thus no cross-connection occurs in the terminal.

Type	Max Current (A)	Ord. No.	Application	Qty.	Type	Max Current (A)	Ord. No.	Application	Qty.
CC10-2.5	20	201020	RTP2.5	10	CCM10-2.5	16	200520	RTM2.5	10
CC3-2.5		201021		50	CCM4-2.5		200521		50
CC2-2.5		201022		50	CCM10-4	20	200522	RTM4	10
BC10-4	12	201014	RTP4, RDTU4 DRTP4, STC6	10	CCM4-4		200523		50
CC10-4	32	201023	RTP4	10	CCM10-6	24	200524	RTM6	10
CC3-4		201024		50	CCM4-6		200525		50
CC2-4		201025		50	CCM10-10	30	200526	RTM10	10
CC10-D4	32	201310	DRTP4	10	CCM4-10		200527		50
CC3-D4		201311		50	CCM10-16	47	200528	RTM16	10
CC2-D4		201312		50					
CC10-6	47	201026	RTP6, RST6, RTT6	10	CCM10-25	65	200529	RTM25	10
CC3-6		201027		50					
CC2-6		201028		50					
CC10-10	47	201029	RTP10	10	CCM10-35	65	200530	RTM35	10
CC3-10		201030		50					
CC2-10		201031		50					
CC10-16	47	201120	RTP16	10	CCM3-50	180	200531	RTM50	10
CC3-16		201121		20	CCT10-4	16	200220	RCT4	10
CC2-16		201122		20	CCT4-4		200221		50
CC10-25	65	201123	RTP25	10	CCT10-6	20	200222	RCT6	10
CC3-25		201124		20	CCT4-6		200223		50
CC2-25		201125		20	CCT10-16	24	200224	RCT16	10
CC10-35	65	201126	RTP35	10	CCT4-16		200225		50
CC3-35		201127		20					
CC2-35		201128		20					
CC3-50	180	201129	RTP50	10					
CC2-50		201130		10					



Test Accessories





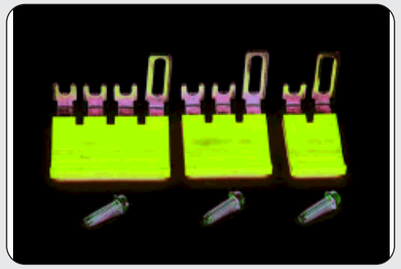
Test socket

This type of test accessory, made of brass, is tightened in the middle of terminal block busbar.

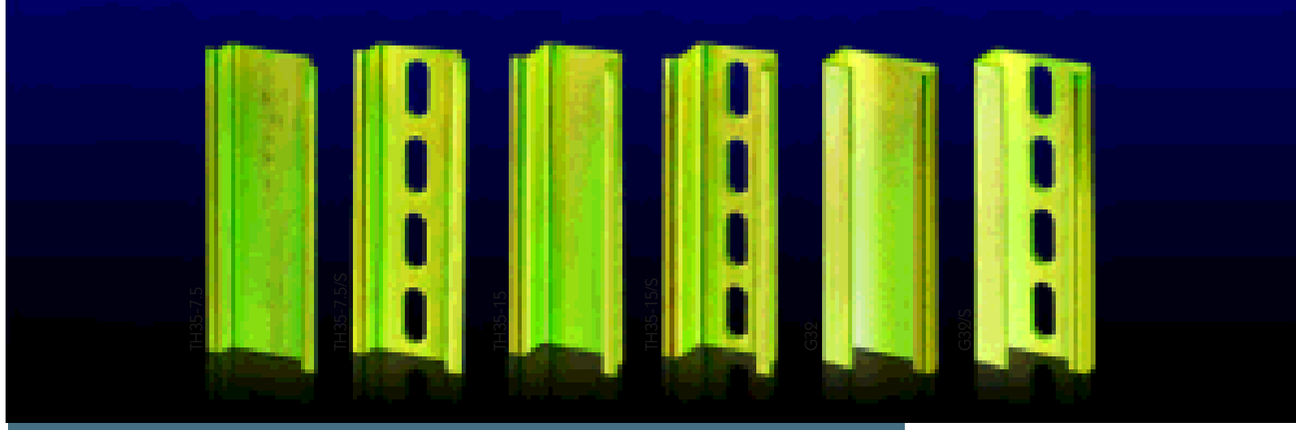
Type	Drawing	Ord No.	L	L1	d	D	M	Application	QTY.
TS3/6/2.3	a	200540	6	3.5	2.3	4	3	RTP2.5,4	50
TS3/8/4	a	200541	8	3.5	4	6	3	RTP6,10,RTM6,10,RCTF10	50
TS3.5/8/4	a	200542	8	5	4	7	3.5	RTP16,RTM16	50
TS4/8/4	a	200543	8	5	4	7	4	RTP25,35,RTM25,35	50
TS3/14/4	a	200703	14	5	4	6	3	RCTL2,RCTLU2	50
TSS3/26/4	b	200705	26	9	4	5.7	3	RCTL2,RCTLU2	50

Moveable link

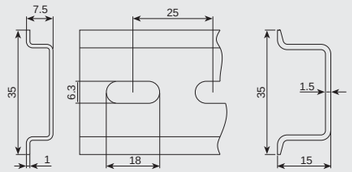
Moveable link, which is half in plastic (PA 6.6) and half in brass, permits the current branching for the terminal block, functioning as a cross-connection, which makes a connection, and though installed can also disconnect. It is also used in test disconnect terminal blocks.



Type	Ord No.	Application	QTY.
ML2A	200706	RCTL2,RCTLU2	100
ML4A	200707	RCTL2,RCTLU2	50
ML2B	200701	RCTL2,RCTLU2	100
ML4B	200702	RCTL2,RCTLU2	50
ML2N	200708	RST6,RTT6	50
ML3N	200709	RST6,RTT6	50
ML4N	200712	RST6,RTT6	50

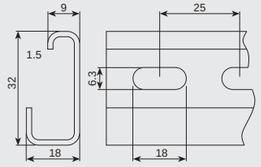


Mounting Rails and End Brackets



TH 35-7.5

TH 35-15



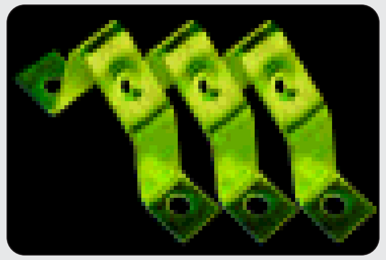
G 32

IEC 60715 mounting rails form the basis for the mounting of modular terminal blocks, as well as for rail mountable electro technical and electric components. Active and passive components are installed on mounting rails. In control cabinet design, the TH 35-15, TH 35-7.5 and G32 rails stand out with their high degree of dimensional accuracy and surface tempering. All steel versions are electroplated and additionally passivised with a yellow chromate coating; comply with the IEC 60715 standard. Raad supplies components which are totally co-ordinated in their functionality.

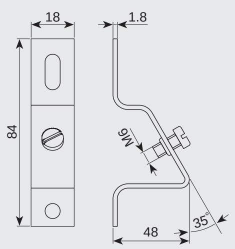
The mounting rails can also be used as a protective busbar. Raad protective conductor terminals meet the requirements specified in IEC 60947-7-2.

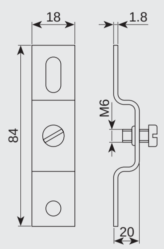
The rails are both produced in slotted and unslotted form for easier application by the users.

Description	Type	Ord No.	QTY.
Mounting Rail In accordance with IEC 60715, yellow chromated, length 2m, Slotted	TH 35-7.5/S	401102	20
Mounting Rail In accordance with IEC 60715, yellow chromated, length 2m, Unslotted	TH 35-7.5	401104	20
Mounting Rail In accordance with IEC 60715, yellow chromated, length 2m, Slotted	TH 35-15/S	401106	20
Mounting Rail In accordance with IEC 60715, yellow chromated, length 2m, Unslotted	TH 35-15	401108	20
Mounting Rail In accordance with IEC 60715, yellow chromated, length 2m , Slotted	G 32/S	401002	20
Mounting Rail In accordance with IEC 60715, yellow chromated, length 2m, Unslotted	G 32	401004	20
Material	Steel, galvanized &yellow chromated		



Mounting Rails Accessories





ARS mounting rail supports allow for sloped attachment of mounting rails at an angle of 35∞.Their designs are available with M6 threads.

The FRS mounting rail supports are similar to ARS rail supports, but with flat surface.

Description	Type	Ord No.	QTY.
Angled rail support allow for sloped attachment of mounting rail at an angle of 35, with M6 thread	ARS/M6	401202	10
Flat rail support allow for flat attachment of mounting rail, with M6 thread	FRS/M6	401204	10
Material	Steel, galvanized &yellow chromated		

End Brackets

Description	Type	Ord No.	QTY.
End bracket For mounting on G32, adjustable with terminal NS marking Width(mm)	EB32 8	200101	50
End bracket For mounting on G32 and TH35, adjustable with terminal NS marking Width(mm)	EB/1 9.5	200102	50
End bracket For mounting on G32 and TH35, adjustable with terminal NS marking Width(mm)	EB/2 10	200103	50
Material		Polyamide 6.6	

General Technical Information

Raad, Quality in Action

Achieving a uniform quality on production in mass productuion is impossible unless through establishment of quality management system. Having the certificate of quality management system in accordance with ISO 9000-2000 issued by authorized and well-known standard institutions, Raad manufacturing company is seeking to assure its customers for the existence of such system.

Furthermore, Raad products quality is proven by outstanding institutions, being well-known in electric field all around the world, offered various types of certificates.

Both, the certificates of products quality and quality management system indicate reliable products, manufactured by the company. The development plan to gain other certificates on products quality and quality management system is still alive and continuing.

RAAD products use parts and materials conform to standards in electrical industry and are subject to quality control system.

Metals

All metal parts in RAAD products are electro-plated using the latest state of engineering.

The surface protection conforms to technical standards. Steel parts at the beginning are zinc-plated and then a yellow chromate layer coats over the zinc, providing the best possible passivation.

Copper and brass parts are tin-plated. Tin plating provides excellent protection against corrosion and has good electrical conduction.

Insulating Material

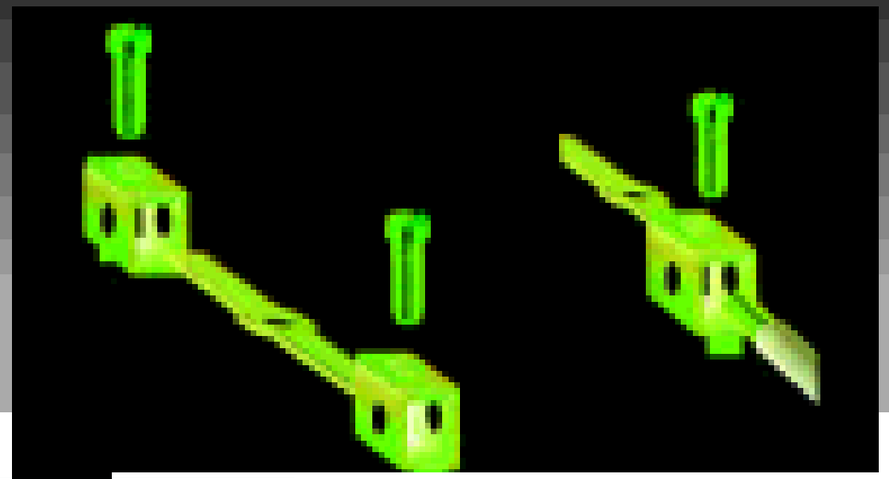
RAAD terminal blocks use two kinds of insulating materials, thermoplastics and thermosetting plastics.

Thermoplastics are processed using economical and environmentally healthy injection molding processes, and have good recycling properties and can be reused. Polyamide 6.6 is a thermoplastic, used in the insulation body of RAAD products. This modern semi-crystalline material has excellent electrical, mechanical, chemical and other characteristics even at 100 C for continues operating. The short-time peak temperatures are permissible up to about 200 C and the melting point is around 260 C.

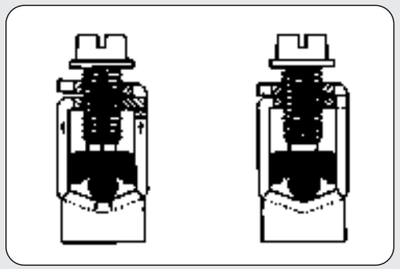
Polyamide 6.6 absorbs moisture from its surroundings, on average 2.8 %. This makes the PA 6.6 more flexible and resistant to breakage, even at -40 C. Today PA 6.6 is approved for use by the approval authorities such as CSA, NEMKO, KEMA, PTB, SEV, UL, VDE, etc.

Thermosetting materials have high dimensional stability, negligible water absorption and are tropic and termite resistant. Thermosetting plastic used by RAAD is a melamine formaldehyde molding compound type MF 150, mainly organically filled and is specified and tested in accordance with ISO, DIN, ASTM, JIS and BS. MF 150 has high continuous operating temperature, excellent inflammability and very good tracking resistance.

Properties	Standard	Unit	PA 6.6	MF 150
Max. application temperature	IEC60216-1	°C,<50h °C, <20.000h	125 105	160 135
Flammability class	UL94	-	V2	V0
Comprative tracking index	IEC60112	CTI CTIM	600 575(475)	600 600
Electrical strength (1 mm thickness)	IEC60243-1	kV/mm	31	30
Surface resistivety	IEC60093	Ω	$>10^{15}$	10^{11}
Volume resistivety	IEC60093	cm	10^{15}	10^{12}
Tropical and termite resistance	-	-	good	good



Screw Connection



This is the most popular of all known methods of connection. No other connection method allows such high contact forces to be produced in such a small space as a screw. RAAD terminal block screw connection is easy to operate with a standard screwdriver, suitable for all types of conductors without special preparation, absolutely gas tight and vibrationproof.

Reliable clamping

Most RAAD products use a clamping unit system which has been proven millions of times, world-wide. The clamping units as well as clamping screws are produced from hardened steel. When the clamping screw is tightened, the resultant force causes the upper thread overlap to spring open, thus causing a locking action to be exerted on the screw and an excellent resistance against vibration is achieved.

Standards and Regulations

Following are some of the important standards and regulations taken into consideration during the development and the production of our products, insofar as they apply.

IEC 60947-7-1 (2002)
Low- voltage switchgear and controlgrear
Part 7: Ancillary equipment
Section 1: Terminal blocks for copper conductors

IEC 60947-7-2 (2002)
Low - voltage switchgear and controlgear
Part 7: Ancillary equipment
Section 2: Protective conductor terminal blocks for copper conductors

IEC 60947-7-3 (2002)
Low-voltage switchgear and controlgear
Part 7: Ancillary equipment
Section 3: Safety equipment for fuse terminal blocks

IEC 60947-1 (2004)
Low - voltage switchgear and controlgear
Patr 1: General rules

IEC 60998-2-1 (2002)
Connecting devices for low voltage circuits for household and similar purposes
Part 2-1: Particular requirements for connecting devices as separate entities with screw - type clamping units

IEC 60998-1 (2002)
Connecting devices for low voltage circuits for household and similar purposes
Part 1: General requirements

IEC 60664-1 (2002)
Insulation coordination for equipment within low voltage systems
Part 1: Principles, requirements and tests

IEC 60715 (1981)
Dimensions of low - voltage switchgear and controlgear standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations

IEC 60127-1 (2003)
Miniature fuses
Part 1: Difinitions of miniature fuses and general requirements for miniature fuse - links

IEC 60127-2 (2003)
Miniature fuses
Part 2: Cartridge fuse - links

IEC 60529 (2001)
Classification of degrees of protection provided by enclosures (IP code)

IEC 60112 (2003)
Methods for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions.

IEC 60243-1 (1988)
Methods of test for electric strength of solid insulating materials
Part 1: Tests at power frequencies

IEC 60093 (1980)
Methods of testing of electrical insulating materials specific contact resistance and specific surface resistance of solid, electrically insulating materials

IEC 60216-1 (2001)
Electrical insulating materials
Properties of thermal endurance
Part 1: Ageing procedures and evaluation of test results

IEC 60695-2-10 (2000)
Fire Hazard testing
Part 2-10: Glowing/hot-wire based test methods
GLow-wire apparatus and common test procedure

IEC 60695-2-11 (2000)
Fire Hazard testing
Part 2-11: Glowing/hot-wire based test methods
GLow-wire apparatus and common test procedure

UL 94 (1991)
Test for flammability of plastic materials for parts in devices and appliances

IEC 60079-0 (2004)
Electrical apparatus for explosive gas atmospheres
Part 0: General requirements

IEC 60079-7 (2001)
Electrical apparatus for explosive gas atmospheres
Part 7: Increased safety 'e'

IEC 60079-11 (1999)
Electrical apparatus for explosive gas atmospheres
Part 7: Intrinsic safety 'i'

UL 1059 (2001)
Standard for Terminal Blocks

CSA CC 22.2 No.158 (1999)
Terminal Blocks

Terminal blocks tests

IEC 60947-7-1 is the main standard which meets all types of Raad terminal blocks. All Raad products are designed, manufactured and tested in accordance with the standard, which along with IEC 60947-1 determines the tests to be conducted on terminal blocks, each as a type test. Testsí details are specified in the standards. Below is an abstract of the forgoing tests.

Attachment of the terminal block to its mounting rail

To assure the stability of the terminal block to its mounting rail, with standard shape and dimension values, a relevant test is conducted by inserting a 150 mm long steel pin with a diameter specified in table 3 of IEC 60947-7-1. It is connected to each clamping unit and a tightening torque must be applied, as given in table 4 of IEC 60947-7-1. Force must be applied to the pin with regular intensity and without tears; the corresponding value must be taken from table 3 of IEC 60947-7-1. The distance between the application point of the force and the centre of clamping unit must be equal to 100 mm. During the test, no terminal block must disengage from its mounting rail or suffer any damage.

Table 3

IEC 60947-7-1
Attachment test parameters

Rated cross-section of terminal block		Force	Diameter of pin
mm^2	AWG/kcmil	N	mm
0.2	24		
0.34	22		
0.5	20		
0.75	18		
1.0	-	1	1.0
1.5	16		
2.5	14		
4	12		
6	10		
10	8	5	2.8
16	6		
25	4		
35	2	10	5.7
50	0		
70	00		
95	000		
-	0000		
120	250 kcmil	15	12.8
150	300 kcmil		
185	350 kcmil		
240	500 kcmil		
		20	20.5
300	600 kcmil		

Mechanical strength of terminals

To handle this test on screw-clamp terminal blocks, the conductors must be used, which have the maximum cross-section. The conductors must be connected and disconnected five times depending on the screw clamping, as determined in table 4 of IEC 60947-1. Where a screw is loosened, a new conductor must be applied. During the test, clamping units shall not work loose and there shall be no damage that will impair the further use of the screwed connections.

Table 4

IEC 60947-1
Tightening torques for the verification of the mechanical strength of screw-type terminals

Diameter of thread mm		Tightening torque		
Metric standard values	Range of diameter	I	II	III
1.6	≤1.6	0.05	0.1	0.1
2.0	>1.6 up to and including 2.0	0.1	0.2	0.2
2.5	>2.0 up to and including 2.8	0.2	0.4	0.4
3.0	>2.8 up to and including 3.0	0.25	0.5	0.5
-	>3.0 up to and including 3.2	0.3	0.6	0.6
3.5	>3.2 up to and including 3.6	0.4	0.8	0.8
4.0	>3.6 up to and including 4.1	0.7	1.2	1.2
4.5	>4.1 up to and including 4.7	0.8	1.8	1.8
5	>4.7 up to and including 5.3	0.8	2.0	2.0
6	>5.3 up to and including 6.0	1.2	2.5	3.0
8	>6.0 up to and including 8.0	2.5	3.5	6.0
10	>8.0 up to and including 10.0	-	4.0	10.0
12	>10 up to and including 12	-	-	14.0
14	>12 up to and including 15	-	-	19.0
16	>15 up to and including 20	-	-	25.0
20	>20 up to and including 24	-	-	36.0
24	>24	-	-	50.0

Column I Applies to screws without heads which, when tightened, do not protrude from the hole, and to other screws which cannot be tightened by means of a screwdriver with a blade wider than the root diameter of screw.

Column II Applies to nuts and screws which are tightened by means of a screwdriver.

Column III Applies to nuts and screws which can be tightened by means other than a screwdriver.

Damage and accidental loosening of conductors-flexion test

Specifically, this test is applied on terminal blocks suited for the connection of unprepared round copper conductors. It is a must to test both rigid and flexible conductors with Min and Max cross-sections; optionally, connections of multiple conductors to a single clamping unit. A particular test apparatus is considered to aid the test performance. During the test, neither must the conductor slip out of the clamping unit, nor does breakage occur near the clamping unit. Soon after the flexion test,

a pull-out test must occur without restoring the initial tightening torque.

Pull-out test

After the flexion test was conducted, a pull-out is carried-out by force, the value of which is presented in table 5 of IEC 60947-1 to the conductor attached to the clamping unit; this force must be applied regularly and without tears, for 1 minute; for screw-clamp terminal blocks, the tightening screws must not be newly tightened. During the test, neither must the conductor slip out of the clamping unit, nor does breakage occur near the clamping unit.

Table 5

IEC 60947-1

Test values for flexion and pull-out tests for round copper conductors

Conductor cross-section		Diameter of bushing hole [1) 2)]	Height H [1)]	Mass	Pulling force
mm²	AWG/kcmil	mm	mm	kg	n
0.2	24	6.5	260	0.2	10
0.34	22	6.5	260	0.2	15
0.5	20	6.5	260	0.3	20
0.75	18	6.5	260	0.4	30
1.0	-	6.5	260	0.4	35
1.5	16	6.5	260	0.4	40
2.5	14	9.5	280	0.7	50
4.0	12	9.5	280	0.9	60
6.0	10	9.5	280	1.4	80
10	8	9.5	280	2.0	90
16	6	13.0	300	2.9	100
25	4	13.0	300	4.5	135
-	3	14.5	320	5.9	156
35	2	14.5	320	6.8	190
-	1	15.9	343	8.6	236
50	0	15.9	343	9.5	236
70	00	19.1	368	10.4	285
95	000	19.1	368	14	351
-	0000	19.1	368	14	427
120	250 kcmil	22.2	406	14	427
150	300 kcmil	22.2	406	15	427
185	350 kcmil	25.4	432	16.8	503
-	400 kcmil	25.4	432	16.8	503
240	500 kcmil	28.6	464	20	578
300	600 kcmil	28.6	464	22.7	578

1) Tolerances: for heigh H ± 15 mm, for diameter of the bushing hole ± 2 mm.

2) If the bushing hole diameter is not large enough to accommodate the conductor without binding, a bushing having the next larger hole size may be used.

Rated cross-section

It is the value of max connectable conductor cross-section. The rated cross-section shall be selected from the standard cross-sections presented in table 1, IEC 60947-1. Where a ferrule is applied on a flexible conductor, then a terminal block of one step higher rated cross-section must be used, for example, a 2.5mm≤ flexible conductor covered with the relating ferrule must be inserted to a one step higher cross-section, i.e. terminal block with rated cross-section 4mm.

Rated connection capacity

It is the value of max connectable conductor cross-section. The rated cross-section shall be selected from the standard cross-sections presented in table 1, IEC 60947-1. Where a ferrule is applied on a flexible conductor, then a terminal block of one step higher rated cross-section must be used, for example, a 2.5mm≤ flexible conductor covered with the relating ferrule must be inserted to a one step higher cross-section, i.e. terminal block with rated cross-section 4mm.

Table 1

IEC 60947-7-1

Standard cross-sections of round copper conductors and approximate relationship between mm² and AWG/kcmil sizes

Rated cross-section mm²	AWG/kcmil size	Equivalent metric arra mm²
0,2	24	0,205
0,34	22	0,324
0,5	20	0,519
0,75	18	0,82
1	-	-
1,5	16	1,3
2,5	14	2,1
4	12	3,3
6	10	5,3
10	8	8,4
16	6	13,3
25	4	21,2
35	2	33,6
-	1	42,4
50	0	53,5
70	00	67,4
95	000	85,0
-	0000	107,2
120	250 kcmil	127
150	300l kcmil	152
185	350l kcmil	177
-	400 kcmil	203
240	500 kcmil	253
300	600 kcmil	304

NOTE: The dash, when it appears, counts as a size when considering connecting capacity (see 7.1.7.2).

Rated connection capacity

It is the range of cross-sections and the number of connectable conductors based on which the terminal blocks are designed. The IEC 947-7-1 determines the relation between the rated cross-section and rating connecting capacity of terminal blocks. Practically, terminal blocks up to 35mm², must be possible to connect a conductor of cross-section equal to the nominal cross-section and lower up to two cross-sections.

Insulation coordination for equipment within low voltage systems

IEC 60664-1 deals with insulation coordination for equipment within low voltage systems. It specifies the requirements for clearances, creepage distances and solid insulation for equipment based upon the performance criteria. Terminal blocks standard, IEC 60947-7-1, has the rules for coordination of insulation in accordance with IEC 60664-1.

Clearances

Degrees of pollution in the micro-environment

- **Pollution degree 1**

No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.

- **Pollution degree 2**

Only non- conductive pollution occurs except that occasionally a temporary conductivity caused by condensation is to be expected.

- **Pollution degree 3**

Conductive pollution occurs or dry non-conductive pollution occurs which becomes conductive due to condensation which is to be expected.

- **Pollution degree 4**

The pollution generates persistent conductivity caused by conductive dust, rain or snow.

Overvoltage categories

- Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriately low level.
- Examples for such devices are protected electronic circuits.
- Equipment of overvoltage category II is energy-consuming equipment to be supplied from the fixed installation. Examples of such equipment are appliances, portable tools and other household and similar loads.
- Equipment of over voltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment are subject to special requirements. Examples of such equipment are switches in fixed installation and equipment for industrial use with permanent connection to the fixed installation.
- Equipment of overvoltage category IV is for use at the origin of the installation. Examples of such equipment are electricity meters and primary over-current protection equipment

Table 1

IEC 60664-1

Rated impulse voltage for equipment energized directly form the low-voltage mains

Nominal voltage of the supply system based on IEC 38 [2)] V		Voltage line to neutral derived from normal voltages a.c. or d.c. up to and including V	Rated impulse voltage [1)] V			
			Over voltage category			
Three phase	Single phase		I	II	III	IV
		50	230	500	800	1500
		100	500	800	1500	2500
	120-240	150	800	1500	2500	4000
230/400 277/480		300	1500	2500	4000	6000
4009690		600	2500	4000	6000	8000
1000		1000	4000	6000	8000	12000

1) Equipment with these rated impulse voltages can be used in installation in accordance with IEC364-4-443.

2) The / mark indicates a four-wire three-phase distribution system. The lower value is the voltage line -to- netural, while the higher value is the voltage line-to-line. Where only one value is indicated, it refers to three-wire, three-phase systems and specifies value line-to-line.

Table 13

IEC 60947-1

Minimum clearance inair

Rated impulse withstand voltage U_{imp} kV	Minimum clearances mm							
	Case A Inhomogeneeous field conditions (see 2.5.63)				Case B Homogeneeous field ideal conditions (see 2.5.62)			
	Pollution degree				Pollution degree			
	1	2	3	4	1	2	3	4
0.33	0.01				0.01			
0.5	0.04	0.2			0.04	0.2		
0.8	0.1		0.8		0.1		0.8	1.6
1.5	0.5	0.5		1.6	0.3	0.3		
2.5	1.5	1.5	1.5		0.6	0.6		
4.0	3	3	3	3	1.2	1.2	1.2	
6.0	5.5	5.5	5.5	5.5	2	2	2	2
8.0	8	8	8	8	3	3	3	3
12	14	14	14	14	4.5	4.5	4.5	4.5

NOTE The values of minimum clearance in air are based on 1,2/50 µs impulse voltage, for barometric pressure of 80 kPa, equipment to normal atmospheric pressure at 2 000 m above sea level.

Creepage distances

The creepage distance is based on the rated voltage which is derived from the working voltage or nominal voltage of the supply system. The minimum creepage distances are allocated to the rated voltage according to the pollution degree and material group in table 15, IEC 60947-1.

In this catalog the products must be measured in compliance with IEC 60664-1 for overvoltage category III, pollution degree 3 and material group I, other wise the product information would include additional details.

Material groups

According to the range of values of the comparative tracing index (CTI), material groups are classified as follows:

- Material Group 600 ≤ CTI
- Material Group II 400 ≤ CTI <600
- Material Group IIIa 175 ≤ CTI<400
- Material Group IIIb 100 ≤ CTI<175

The CTI values refer to values obtained in accordance with IEC 60112, method A, for the insulating material used.

Table 15

IEC 60947-1
Minimum creepage distances

Rated insulation voltage of equipment or working voltage a.c. r.m.s or d.c. [4]	Creepage distances for equipment subject to long term stress mm													
	Pollution degree			Pollution degree			Pollution degree				Pollution degree			
	1 [5]	2 [5]	1	2			3				4			
	Material group			Material group				Material group				Material group			
V	1)	2)	1)	I	II	IIIa	IIIb	I	II	IIIa	IIIb	I	II	IIIa	IIIb
10	0.025	0.04	0.08	0.4	0.4	0.4		1	1	1		1.6	1.6	1.6	
12.5	0.025	0.04	0.09	0.42	0.42	0.42		1.05	1.05	1.05		1.6	1.6	1.6	
16	0.025	0.04	0.1	0.45	0.45	0.45		1.1	1.1	1.1		1.6	1.6	1.6	
20	0.025	0.04	0.11	0.48	0.48	0.48		1.2	1.2	1.2		1.6	1.6	1.6	
25	0.025	0.04	0.125	0.5	0.5	0.5		1.25	1.25	1.25		1.7	1.7	1.7	
32	0.025	0.04	0.14	0.53	0.53	0.53		1.3	1.3	1.3		1.8	1.8	1.8	
40	0.025	0.04	0.16	0.56	0.8	1.1		1.4	1.6	1.8		1.9	2.4	3	
50	0.025	0.04	0.18	0.6	0.85	1.2		1.5	1.7	1.9		2	2.5	3.2	
63	0.04	0.063	0.2	0.63	0.9	1.25		1.6	1.8	2		2.1	2.6	3.4	
80	0.063	0.1	0.22	0.67	0.95	1.3		1.7	1.9	2.1		2.2	2.8	3.6	
100	0.1	0.16	0.25	0.71	1	1.4		1.8	2	2.2		2.4	3	3.8	
125	0.16	0.25	0.28	0.75	1.05	1.5		1.9	2.1	2.4		2.5	3.2	4	
160	0.25	0.4	0.32	0.8	1.1	1.6		2	2.2	2.5		3.2	4	5	
200	0.4	0.63	0.42	1	1.4	2		2.5	2.8	3.2		4	5	6.3	
250	0.56	1	0.56	1.25	1.8	2.5		3.2	3.6	4		5	6.3	8	
320	0.75	1.6	0.75	1.6	2.2	3.2		4	4.5	5		6.3	8	10	
400	1	2	1	2	2.8	4		5	5.6	6.3		8	10	12.5	
500	1.3	2.5	1.3	2.5	3.6	5		6.3	7.1	8		10	12.5	16	
630	1.8	3.2	1.8	3.2	4.5	6.3		8	9	10		12.5	16	20	
800	2.4	4	2.4	4	5.6	8		10	11	12.5		16	20	25	3)
1 000	3.2	5	3.2	5	7.1	10		12.5	14	16		20	25	32	
1 250			4.2	6.3	9	12.5		16	18	20		25	32	40	
1 600			5.6	8	11	16		20	22	25		32	40	50	
2 000			7.5	10	14	20		25	28	32		40	50	63	
2 500			10	12.5	18	25		32	36	40		50	63	80	
3 200			12.5	16	22	32		40	45	50	3)	63	80	100	
4 000			16	20	28	40		50	56	63		80	100	125	
5 000			20	25	36	50		63	71	80		100	125	160	
6 300			25	32	45	63		80	90	100		125	160	200	
8 000			32	40	56	80		100	110	125		160	200	250	
10 000			40	50	71	100		125	140	160		200	250	320	

1) Material groups I, II, IIIa, IIIb.
2) Material groups I, II, IIIa.
3) Values of creepage distances in this area have not been established. Material groups IIIb is in general not recommended for application in pollution degree 3 above 630 V and in pollution degree 4.
4) As an exception, for rated insulation voltages 127 V, 208 V, 415/440 V, 660/690 V and 830 V, creepage distances corresponding to the lower values 125 V, 200 V, 400 V, 630 V and 800 V respectively may be used.
5) The values given in these two columns apply to creepage distances of printing circuit materials.
6) The values of creepage distances stated for 250 V can be used for 230 V (±10 %) normal voltage.

NOTE 1 It is appreciated that tracking or erosion will not occur on insulation subjected to working voltages of 32 V and below. However, the possibility of electrolytic corrosion has to be considered and for this reason minimum creepage distances have been specified.
NOTE 2 Voltage values are selected in accordance with the R_{10} series.

Dielectric test

The test is conducted on 5 adjacent terminal blocks, mounted on a metallic mounting rail and connected with rated cross-section conductors.

Test voltage must have a sinusoidal waveform with a frequency between 45 and 62 Hz.

The values applied, for 5 seconds, are those specified in the table 12A, IEC 60947-1. Irrespective of glow discharges without drop of voltage, no disruptive discharges shall occur during the test.

Table 12A

IEC 60947-1
Dielectric test voltage corresponding to the rated insulation voltage

Rated insulation voltage U_i	AC test voltage (r.m.s.)	DC test voltage [2), 3)]
V	V	V
$U_i \leq 60$	1 000	1 415
$60 < U_i \leq 300$	1 500	2 120
$300 < U_i \leq 690$	1 890	2 670
$690 < U_i \leq 800$	2 000	2 830
$800 < U_i \leq 1\,000$	2 200	3 110
$1\,000 < U_i \leq 1\,500$ [1)]	-	3 820

1) For d.c. only.
2) Test voltages based on 4.1.2.3.1, third paragraph of IEC 60664-1.
3) A direct current test voltage may be used only if an alternating test voltage cannot be applied. See also 3) b) ii) of 8.3.3.4.1.

Short-time withstand current

The standard IEC 947-7-1 obliges terminal blocks to withstand a current equal to 120A per each square mm of rated cross-section for 1 second.

Voltage drop

Voltage drop at the terminal indicates an index of contact resistance against the follow of current. The voltage drop test is conducted before and after mechanical strength, short-time withstand current and temperature-rise tests. IEC 60947-7-1 states that the voltage drop, measured on a new terminal block, must be lower than 3.2 mV and after the tests lower than 150 % of the value measured before the tests.

Temperature-rise test

The current in a terminal block causes overheating due to continuous operation. The overheating level shall not overcome a specified value, thus a temperature-rise test is applied to verify this performance requirement. The test is conducted by means of temperature-rise test on 5 neighboring terminal blocks connected at a test current as specified in table 4, IEC 60947-7-1. The temperature-rise of any part of the centrally located terminal block shall not exceed 45 K.

Table 4

IEC 60947-7-1
Values of test current for temperature-rise test, ageing test and voltage drop test for metric wire sizes

Rated cross-section	Test current	Rated cross-section	Test current
mm^2	A	mm^2	A
0.2	4	25	101
0.5	6	35	125
0.75	9	50	150
1	13.5	70	192
1.5	17.5	95	232
2.5	24	120	269
4	32	150	309
6	41	185	353
10	57	240	415
16	76	300	520

RAAD

Catalog

MODULAR TERMINAL BLOCKS

RAAD

North 3rd floor, 28, 2nd St.
Shahnazari St., Madar Sq.
Mirdamad Blv.
Tehran - Iran
Tel. +98 21 227 8455 - 6
Fax +98 21 227 8457
salse@raad-co.com
www.raad-co.com