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Cerberus ECO
Fire Safety Products and Accessories
Product Catalogue

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Contents

Cerberus ECO enjoy protecting

Lives and businesses deserve reliable protection from the risk of fire, and in Siemens' Cerberus ECO you can benefit from such protection by the system's exceptionally smart and powerful fire detection product series. Cerberus ECO has specifically been designed with small to medium premises in mind - including commercial buildings, hotels, shopping arcades, residential and a host of similar enterprises.

With more than 160 years of Siemens fire safety expertise to draw upon, Cerberus ECO incorporates key state-of-the-art global technologies that are second to none. The products and system adopt simple maintenance and operation design concepts in order to keep installation and commissioning as straightforward as possible. Cerberus ECO delivers dependable fire detection and alarm signalling, while maximising the protection of individuals, buildings and assets.

Designed for simple installation, maintenance and operation (SIMO design concept)

Tailored for the needs of users in small to medium sized businesses for simple, cost-efficient protection, Cerberus ECO has adopted simple installation, maintenance and operation design concepts for the products and system that take into account the complete working cycle of installers and users.

International quality product

Cerberus ECO has been specially developed by a dedicated SMART R&D team based in China, a strong centre of competency for SMART products (Simple, Maintenance-friendly, Affordable, Reliable, Timely-to-market). This ECO product series incorporates key state-of-the-art global technologies and system architecture, while complying with Siemens' high quality standards.

Complete product range - A wide range of applications

Cerberus ECO's compact and complete range of cost-efficient fire safety products - tailor-made to protect your staff, buildings and assets - comprises fire detectors as well as control panels and peripheral equipment such as manual call points, and input and output modules. Cerberus ECO is the reliable choice for a wide range of applications whether they are for commercial buildings, hotels, shopping arcades, commercial, residential or similar enterprises.

Putting you first - Service is part of the package

Siemens recognises that pre-sales and after-sales services are essential for reliable fire detection products, which is why Cerberus ECO comes with a series of valuable service offerings for both installers and users. To support users to effortlessly install and operate the system, Siemens offers a customer hotline, e-training, and quick and reliable logistics.

Powerful networking

Cerberus ECO installation grows with you. So should you want to extend or convert your building, Cerberus ECO installation can be easily expanded.

Free wiring topology

Cerberus ECO enables you to achieve higher cost-effectiveness by optimising installation and maintenance costs via free wiring topology.

Smart devices - Innovative features

Devices in the Cerberus ECO product series are equipped with numerous powerful features for easy installation and commissioning. The dust and dirt compensation feature and 'Sticker method' installation for detectors, 360-degree viewable alarm indicator, PC-free commissioning on panel with large easy-to-read LCD monitor, and easy-to-use menu button on panel, are just some of the innovative features of this system.

Highlights

- Reliable product – incorporates key state-of-the-art global technologies and Siemens' high quality standards
- High cost-effectiveness – affordable by small to medium sized businesses
- Smart design – for simple installation, maintenance and operation
- User-friendly operation – expandable and compatible with future developments

FC18 Control Panel Range

Highlights

- Highly user-friendly panel range with three panel options.

- Quick and accurate programming via PC or on panel with large 320 x 240 pixels LCD monitor.

- Easy-to-use menu button to call out pull-down menu for swift testing, commissioning, configuration, event management, monitoring and report handling.

- Flexible file handling simplifies commissioning and reduces costs.

- Easy programming and commissioning enabled by innovative tools and functions.

Highly user-friendly panel range
A new range of control panels (FC18) with three panel options - FC1820 ($\leq$ 252 points), FC1840 ($\leq$ 504 points) and FC186x (504 - 1,512 points) - are offered in the highly user-friendly Cerberus ECO product series, which makes installation, operation, integration and maintenance easier than ever.

Cerberus ECO provides the flexibility you need for system expansion, modernisation and backward-compatibility innovation, and enables you to achieve higher cost-effectiveness by optimising installation and maintenance costs with flexible wiring technology. This new panel stubs on loop as well as star style field bus topology and free polarity wire connection. Each panel can monitor and operate from 252 to 1,512 devices and enables networking with up to 32 panels.

Programming - PC or Panel
The Cerberus ECO FC18 control panel range supports programming via PC or panel. Equipped with a large 320 x 240 pixels LCD monitor, programming work is rapid and accurate.

Easy-to-use - Menu button on panel
An easy-to-use menu button is available on the FC18 control panel range. Testing, commissioning, configuration, event management, monitoring and report handling are all easily accomplished by simply pushing the menu button to call out the user-friendly pull-down menu.

Flexibility - File handling
Cerberus ECO incorporates a series of features to support flexible file handling to reduce commissioning costs:

- Configuration file can be exported to and imported from Excel file.
- No re-configuration / re-download of configuration file necessary following firmware version updates.
- 'Download & Upload priority' enables uninterrupted download and upload process.
- History record can be uploaded from panel to PC to accommodate 'Expandable archiving'.
- 'Customer report' file with information on all devices mounted on site can be exported.

Easy programming and commissioning
Innovative tools and functions to simplify and reduce the time for programming work, such as:

- 'Unique ID code' for each peripheral enables easy localization and lifecycle identity.
- 'Logical expression name' to enhance readability.
- 'Group programming' function to simplify logic relations.
- 'Multi-device-select' function enables assignment of multiple devices in one group.
- 'System copy & paste' function for easy merging of configurations by different technicians.

FD181 device range

Complete range of devices
A complete range of devices (FD181) are offered in the Cerberus ECO fire detection product series, including smoke and heat detectors. Dual-channel input module and dual-channel input/output module with open/short circuit monitoring, floor repeat terminal for easy access of alarm information, re-settable manual call point, collective input module, and an isolator module are also provided as part of the comprehensive package.

Fast & Accurate fire detection
Benefit from Siemens advanced communication protocol from global R&D team, which assures quick identifying of fire dangers and reliable signal transmission.

Logical 'Sticker method' installation
The detectors are designed for easy commissioning by logical 'Sticker method' installation. Each detector has a unique device ID sticker attached at the back that can be positioned on project drawings for quick and accurate testing and commissioning.

Protective caps and dust/dirt compensation
Eye-catching protective cap in red is available for the protection of smoke detector during the installation period. Together with a dust/dirt compensation feature, greatly facilitate smoother installation work and reduce costs.

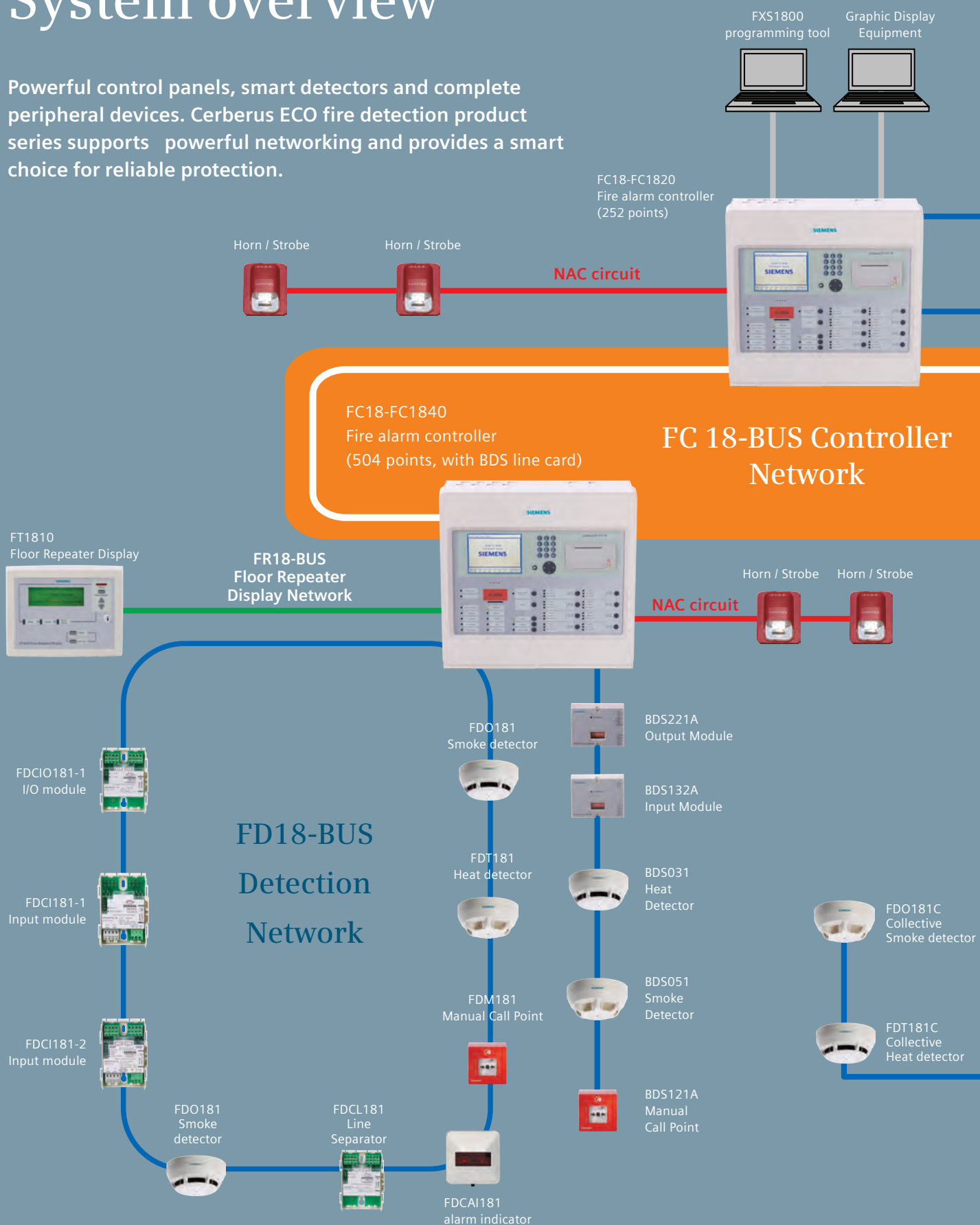## Strict enforcement of environmental standard
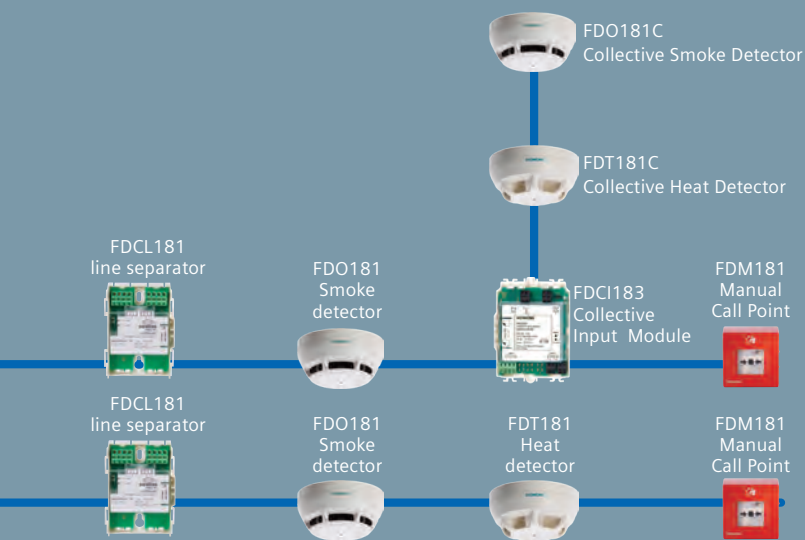In deference to the environment, all detectors are RoHS compliance.

Highlights

- Advanced communication protocol assures fast & accurate fire detection
- Complete range of devices with smart designs
- Logical 'Sticker method' installation via unique device ID sticker
- Detector protective caps and dust compensation feature facilitate smoother installation and reduce costs
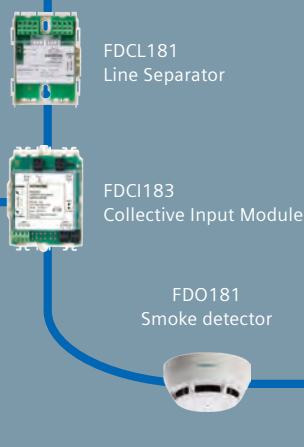
Cerberus ECO System overview

Powerful control panels, smart detectors and complete peripheral devices. Cerberus ECO fire detection product series supports   powerful networking and provides a smart choice for reliable protection.

FXS1800 programming tool

Graphic Display Equipment

FC18-FC1820 Fire alarm controller (252 points)

Horn / Strobe

Horn / Strobe

NAC circuit

FC18-FC1840 Fire alarm controller (504 points, with BDS line card)

FC 18-BUS Controller Network

FT1810 Floor Repeater Display

FR18-BUS Floor Repeater Display Network

Horn / Strobe   Horn / Strobe

NAC circuit

FDCIO181-1 I/O module

FDO181 Smoke detector

BDS221A Output Module

BDS132A Input Module

FD18-BUS Detection Network

FDCI181-1 Input module

FDT181 Heat detector

BDS031 Heat Detector

BDS051 Smoke Detector

FDO181C Collective Smoke detector

FDCI181-2 Input module

FDM181 Manual Call Point

FDT181C Collective Heat detector

FDO181 Smoke detector

FDCL181 Line Separator

BDS121A Manual Call Point

FDCAI181 alarm indicator

FDO181C
Collective Smoke Detector

FDT181C
Collective Heat Detector

FDCL181
line separator

FDO181
Smoke
detector

FDCI183
Collective
Input Module

FDM181
Manual
Call Point

FDCL181
line separator

FDO181
Smoke
detector

FDT181
Heat
detector

FDM181
Manual
Call Point

■ FC18-BUS Controller Network
Cerberus ECO FC18 panel range enables interlocking with up to 32 FC18 panels via FC18-BUS.

■ FD18-BUS Detection Network
Each FC18 panel - FC1820, 1840 or 186X - enables monitoring and operating from 252 to over 1,512 devices via FD18-BUS. This new panel range supports from one loop to eight loops configuration, stub on loop as well as star style field bus topology and free polarity wire connection.

■ FR18-BUS Floor Repeator Display Network
A floor repeater display can be connected via FR18-BUS for remote monitoring to further reduce costs.

■ NAC circuit
ECO control panels have built-in NAC (Notification Alarm Control) alarm output. It can be directly connected to notification alarm devices such as horn or strobe.

FC18R-FC186x
Fire alarm controller
(504-1,512 points,with BDS
line card)

FR18-BUS
Floor Repeater
Display Network

FT1810
Floor Repeater Display

FTM1811
Mimic Display Board

NAC circuit

Horn / Strobe

Horn / Strobe

FDCI181-2
Input module

FDCL181
Line Separator

FDO181
Smoke detector

FDO181
Smoke detector

FDT181
Heat detector

FD18-BUS
Detection
Network

FDCL181
Line Separator

FDCI183
Collective Input Module

FDO181
Smoke detector

FDM181
Manual Call Point

FDCIO181-2
I/O module

FDCL181
Line Separator

FDCL181
Line Separator

FDO181
Smoke detector

FDT181
Heat detector

FDCAI181
alarm indicator

FDO181
Smoke detector

FDT181
Heat detector

FDCAI181
alarm indicator

Cerberus ECO at a glance

	Control panels		
Type	FC1861 / FC1862 / FC1863	FC1840	FC1820
Description	Fire alarm controller	Fire alarm controller (504 points)	Fire alarm controller (252 points)
Features	Loop, stub on loop or star style field bus topology, free polarity wire connection, interlocking up to 8 panels, easy-to-use menu button, programmable from PC or Panel		
	2 loops / 4 loops / 6 loops 504 devices / 1,008 devices / 1,512 devices	2 loops, 504 devices	1 loop, 252 devices

	Detectors			
Type	FDO181	FDT181	FDO181C	FDT181C
Description	Addressable Smoke detector (with protective red cap)	Addressable heat detector	Collective smoke detector	Collective heat detector
Features	Easy commissioning by 'Sticker method' installation, with dust compensation	Easy commissioning by 'Sticker method' installation	Collective detector, no address setting, polarity free connection	Collective detector, no address setting, polarity free connection

	Addressable modules					
Type	FDCI183	FDCI181-2	FDCIO181-2	FDCL181	FDCI181-1	FDCIO181-1
Description	Collective Input Module	Input module	I/O module	Line Separator	Input module	I/O module
Features	1 monitored inputs as collective detector connection	Dual-channel Input	Dual-channel Input/Output	-		

	Resettable manual call point	Mimic Display Board	Floor repeater display	Alarm indicator
Type	FDM181	FTM1811	FT1810	FDCAI181
Description	Manual Call Point	Mimic Display Board	Floor Repeater Display	Alarm indicator
Features	With reset function	60 outputs for LED activation	Connected via FR18-BUS for remote monitoring	Indicate quickly the source of an alarm signal

System Load Reference

Detectors and other field devices

Type	Name	Load Factor	Quiescent current(mA)	Max. current(mA)
FDO181	Smoke Detector	1	0.26	1.20
FDT181	Heat Detector	1	0.26	1.20
FDO181C	Collective Smoke Detector	0	0.1	60
FDT181C	Collective Heat Detector	0	0.1	60
FDM181	Manual Call Point	1	0.22	1.20
FDCI181-2	Input Module	3	0.33	0.45
FDCIO181-2	Input/Output Module	5	0.56	0.85
FDCL181	Line Separator	1	0.25	0.43
FDCI183	Collective Input Module	3	0.45	1.1
FDCI181-1	Input module	3	0.27	0.37
FDCIO181-1	Input/Output module	3	0.31	0.51
FDCAI181	alarm indicator	1	0.2	—

Floor Panel

Type	Name	Address	Quiescent current(mA)	Max. current(mA)
FT1810	Floor Repeater Display	1	30	110
FTM1811	Mimic Display Board	1	100	200

Panels

Type	Name	Address	Quiescent current(A)	Max. current(A)
FC1820	Fire Alarm Controller (≤ 252 points)	1	0.55	2.00
FC1840	Fire Alarm Controller (≤ 504 points)	1	0.60	2.50
FC1861	Fire Alarm Controller (≤ 504 points)	1	0.75	2.50
FC1862	Fire Alarm Controller (≤ 1,008 points)	1	1.23	3.80
FC1863	Fire Alarm Controller (≤ 1,512 points)	1	1.71	5.20

Controller

Type		Order No.
FC1820	**FC1820 / FC1840 Fire Alarm Controller**	S54420-C1-A1

- Multi-language operation menu designed Windows-like for fast and easy operation
- Shortcut key (right key) for popping out operation items of equipment/event
- Large history storage size for up to 10,000 records, first-in-first-out order; all events can be recorded during operation period
- LCD backlight Auto-off mode. When no operation or message to display within preset time, LCD backlight will automatically turn off. When there are events / operations, LCD will light up automatically to display events and/or interlock devices

FC1840 — S54420-C2-A1

- 2 channels of programmable input/output (Output: 40mA@24VDC can be programmed as general alarm output or general trouble output; Input: dry contact)
- 1 channel of NAC for audible and visible devices (max. 0.5A @24VDC)
- 8 channels of interlocking functions for automatic control and manual operations of control equipment
- Efficient group programming according to different usage
- FC1820 controller can connect up to 252 points; FC1840 controller can connect up to 504 points
- Up to 32 controllers can be networked together
- Max. distance of controller network bus (FC18-BUS) 1,000m
- Twisted paired cable for polarity-free detection bus (FD18-BUS); max. loop distance up to 2,500m, and max. stub distance up to 1,500m (wiring capacity from 1.0 to 1.5 mm^2)
- Three user levels for different operation authority. Each user level accessed by pre-defined, changeable password
- Convenient pluggable terminals with clear marks for field wiring
- Auto-mapping function supports commissioning task
- Detection algorithm can be adjusted by controller according to different environment to provide high reliability of alarm report and reduce false alarms
- Programming either directly from controller or computer
- "Sticker Method" for ease of on-site commissioning
- FD18-BUS detection bus can be configured as loop or stubs
- FC18-BUS controller bus can be configured as stub

	FC1820	FC1840
No. of line cards	1	2
Number of points	252	504
LCD screen	320×240 pixels, backlit	
No. of programmable input/output on main board	2	
No. of zone of interlocking panel	8	
No. of NAC (0.5mA @24VDC)	1	
Maximum history records	10,000	
Max. distance between controllers within FC18-BUS	1,000 m	
Max. No. of controllers connected within FC18-BUS	32	
Max. distance between controller and FRT within FR18-BUS	1,000 m	
Max. No. of FRT connected to controller	32	
Auto-mapping function	Operation from terminal	
Battery (not included)	Depends on local regulation	
Communication interface	Special converter module	
Input voltage	220VAC@1.5A, 110VAC@3A 220VAC/50Hz, 110VAC/60Hz	
Power supply capacity	5 A@24 VDC	
External power output	1 A@24 VDC	
Size (mm)	437Wx 408Hx170D	
Weight (without battery)	10.35 kg	
Power fuse	220VAC@1.5A, 110VAC@3A	
Battery fuse	24 VDC@5.0 A	
Operating temperature	0 ~ +40 ˚C	
Storage temperature	−10 ~ +50 ˚C	
Relative humidity	≤ 95% (40±2°C)	
Protection category	IP30	
Environment requirement	Indoor / Clean	
Datasheet	A6V10322968	

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Type		Order No.
FC18R-FC186x	**FC1861 / FC1862 / FC1863 Fire Alarm Controller**	S54420-C5-A1
		S54420-C6-A1
		S54420-C7-A1

- Multilanguage operation menu designed with Windows-like style for fast and easy operation
- Shortcut key (right key) for popping out operation items of equipment/event
- Large history storage size for up to 10,000 records, first in first out order, all events can be recorded during the operation period
- LCD backlight Auto-off mode. When there is no operation or message to display within preset time, LCD backlight will be automatically turn off. When there are events / operations, LCD will light up automatically to display events and/or inter-lock devices
- 2 channels of programmable input/output (Output: 40mA@24VDC, it can be pro-grammed as general alarm output or general trouble output; Input: dry contact)
- 1 channel of NAC for audible and visible devices (max. 0.5A @24VDC)
- 8 channels of interlocking functions for automatic control and manual operations of control equipments
- Efficient group programming according to different uses
- FC1861 controller can support up to 504 points, FC1862 controller can support up to 1,008 points, FC1863 controller can support up to 1,512 points. All the FC18R-FC186x controller can be extended up to 2,016 points by add Line Cards.
- Up to 32 controllers can be net worked together
- Controller network bus (FC18-BUS) has a max. distance of 1,000m
- Twisted paired cable is for polarity-free detection bus (FD18-BUS), transmission distances is up to 2,500m in loop mode, and 1,500m for a stub line mode (the wiring capacity is between 1.0 to 1.5 mm^2)
- Three user levels for different operation authority. Each user level is accessed by a pre-defined and changeable password
- Convenient pluggable terminals with clear marks for field wiring
- Auto-mapping function to support on commissioning task
- Detection algorithm can be adjusted from controller according to different envi-ronment, to provide high reliability of alarm report and reduce false alarm
- Programming can be done either directly on controller or through computer
- "Sticker Method" provide easy for commissioning on site

	FC1861	FC1862	FC1863
No. of line cards	2	4	6
Number of points	504	1,008	1,512
	(can extended to 2,016 points)		
LCD screen	320×240 pixels, backlit		
No. of programmable input/output			
• on mainboard	2		
No. of zone of interlocking panel	8		
No. of NAC (0.5mA @24VDC)	1		
Maximum history records	10,000		
Max. distance between controllers			
• within FC18-BUS	1,000 m		
Max. No. of controllers connected			
• within FC18-BUS	32		
Max. distance between a controller and			
• a FRT within FR18-BUS	1,000 m		
Max. No of FRT connected to a controller	32		
Auto-mapping function	Operation from terminal		
Battery (not included)	Depends on local regulation		
Communication interface	Special converter module		
Input voltage	220VAC@3A, 110VAC@6A		
	220VAC/50Hz, 110VAC/60Hz		
Power supply capacity	10 A@24 VDC		
Size (mm)	1000 H×600 W×200 D		
Weight (without battery)	33.5 Kg		
Power fuse	220VAC@3A, 110VAC@6A		
Battery fuse	24VDC@10A		
Operating temperature	0 ~ +40 ˚C		
Storage temperature	−10 ~ +50 ˚C		
Relative humidity	≤95% (40±2°C)		
Environment requirement	Indoor / Clean		
Datasheet	A6V10322053		
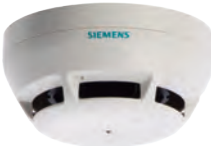
Detectors and Base

Type		Order No.

FDO181   FDO181 Smoke Detector   S54320-F2-A1

The FDO181 wide-spectrum smoke detector is an optical smoke detector with an optical sensor. It works according to the principle of forward scattering. The detector reacts extremely sensitively to light aerosols caused by fire. The increased sensitivity makes possible the early detection of smouldering and open fires.

- With built-in CPU, signals received are processed by intelligent algorithm
- Two kinds of sensitivity settings (standard, sensitive)
- Opto-electronic sampling chamber more reliably and accurately detects fire
- Automatically addresses setting without encoder setting or DIP switch
- For early detection of smoke and smouldering fires
- Resistant to environment and interference factors such as dust, fibres, insects, humidity, extreme temperatures, electro-magnetic interference, corrosion, vapour, vibration, synthetic aerosols and atypical fire phenomena
- All-around visible alarm indicator
- Communication via FD18-BUS, polarity-free connection
- "Sticker Method" for ease of commissioning

Operating voltage	12 ... 32 VDC
Operating current (quiescent)	0.26 mA
Activation current	1.2 mA
Sensitivity	Standard 2.5%
	Sensitive 1.8%
Operating temperature	−10 ... +50˚C
Storage temperature	−20 ... +75˚C
Relative humidity	≤96% (40±2°C)
Communication protocol	FD18-BUS
Load factor	1
Colour	White, RAL 9010
Protection category GB4208-93	IP44
Datasheet	A6V10326259

FDO181_DC   FDO181/FDO181C Dust Cap (Red)

Protects the FDO181 smoke detector and FDO181C collective smoke detector during the installation.
(Please remove the dust cap after installation!)

Type		Order No.
FDT181	**FDT181 Heat Detector**	S54320-F3-A1

Heat detector FDT181 is an intelligent detector. It is used for early fire detection inside a building.

- With built-in CPU, signals received are processed by intelligent algorithm
- Two operation modes: A2S/A2R
- Automatically addresses setting without encoder setting or DIP switch
- All-around visible alarm indicator
- Resistant to environment and interference factors such as humidity, electro-magnetic interference, corrosion and vibration.
- Communication via FD18-BUS, polarity-free connection
- "Sticker Method" for ease of commissioning

Operating voltage	12 ... 32 VDC
Operating current (quiescent)	0.26 mA
Activation current	1.2 mA
Operating temperature	−10 ... +50 ˚C
Storage temperature	−20 ... +75 ˚C
Relative humidity	≤96% (40±2°C)
Communication protocol	FD18-BUS
Load factor	1
Colour	White, RAL 9010
Protection category GB4208-93	IP44
Datasheet	A6V10326261

FDB181	**FDB181 Detector Base**	S54320-F1-A1

The FDB181 detector base is a universal base. It is fixed on the fire detection site and used for the installation of FD181 series detectors:

- FDO181 Smoke detector
- FDT181 Heat detector
- Universal bases, applicable to both surface install and conceal install
- Large opening in the detector base for easy cable insertion
- Adopt environmentally friendly materials

Connection terminals	1.0... 1.5 mm²
Operating temperature	According to
Storage temperature	data of
Protection category GB4208-93	detectors
Colour	White, RAL 9010
Datasheet	A6V10326265

Type		Order No.
FDO181C	**FDO181C Collective Smoke Detector**	S54320-F11-A2

The FDO181C is an optical smoke detector with an optical sensor. It works according to the principle of forward scattering. The detector reacts extremely sensitive on light aerosols caused by fire. The increased sensitivity makes the detection of smoldering and open fire possible.

- Intelligent detector with built-in CPU, providing advanced distributed intelligence for optimum reliable detection principle
- Opto-electronic sampling chamber detects fire more reliable and accurate
- Collective detector, no address setting, polarity free connection
- Communication with FC18 controller via FDCI183 collective input module, each FDCI183 can connect max. 32 collective detectors
- Particularly suited for the early detection of smoke-generating flaming and smoldering fires
- Resistant to environment and interference factors such as dust, fibers, insects, humidity, extreme temperatures, corrosive, vapors, vibration, synthetic aerosols. With immunity against electro-magnetic interference
- Self-test of operating status, when fault occurs or low voltage happens, indicator can prompt user
- Automatic drift compensation and dust prompt for reducing false alarm because of dust accumulation
- 360° visible alarm indicator
- Dust cap protects the detector from being contaminated by construction work

Operating voltage	10 ... 28 VDC
Operating current (quiescent)	0.1 mA
Activation current	60.0 mA
Sensitivity	Standard 2.4%m
Operating temperature	−10 ... +50 °C
Storage temperature	−20 ... +70 °C
Relative humidity	≤96% (40±2°C)
Colour	White, RAL 9010
Protection category GB4208-93	IP40
Datasheet	A6V10361096

FDT181C	**FDT181C Collective Heat Detector**	S54320-F12-A2

The heat detector FDT181C is a collective detector. It is used for fire detection inside a building.

- Operation modes: A2
- Collective detector, no address setting, polarity free connection
- Communication with FC18 controller via FDCI183 collective input module, each FDCI183 can connect max. 32 collective detectors
- 360° visible alarm indicator
- Resistant to environment and interference factors such as humidity, corrosive and vibration, with immunity against electro-magnetic interference.

Operating voltage	10 ... 28 VDC
Operating current (quiescent)	0.1 mA
Activation current	60.0 mA
Operating temperature	−10 ... +50 °C
Storage temperature	−20 ... +70 °C
Relative humidity	≤96% (40±2°C)
Colour	White, RAL 9010
Protection category GB4208-93	IP40
Datasheet	A6V10361100

Detectors and other field devices
Detector and Base

Type		Order No.
FDB181C	**FDB181C Collective Detector Base**	S54320-F9-A2

The FDB181C collective detector bases are universal bases. It's fixed on fire detection site and are used for installations of FD181C series collective detectors:

- FDO181C collective smoke detector
- FDT181C collective heat detector
- Universal bases, applicable to both surface install and conceal install
- Large opening in the detector base for easy cable insertion
- Adopt environmentally friendly materials

Connecting terminals	1.0 ... 1.5 mm^2
Operating temperature	According to
Storage temperature	data of
Protection category GB4208-93	detectors
Colour	White, RAL 9010
Datasheet	A6V10361102

Type		Order No.
FDCAI181	**FDCAI181 Alarm indicator**	
	The FDCAI181 alarm indicator is connected to the loop and can be programmed to indicate quickly the source of an alarm signal from detectors which are not easily accessible or visible. Addressing and control takes place via the control panel. The alarm indicator is switched as if it was a detector in the detector line. The alarm indicator has 2x2 connectors for the detector line. The alarm indicator contains indicator lamps (LEDs). They light up as soon as the connected fire detector gives an alarm.	S54370-F21-A1

- Addressable external alarm indicator
- Indication of detectors in alarm in ceiling voids etc.
- Free programmable
- Communication via FD18-BUS (individual addressing)
- Modern flat design
- Non screw terminals
- Ecologically processing
- Recyclable materials
- Electronic and synthetic materials easily separable

Operating voltage	DC 12... 33 V
Operating current (quiescent)	<200µA
Blinking cycle	1s: Locate or Alarm
	0.5s: Locate when Alarm
Load factor	1
Connection terminals	1.0...1.5 mm 2
Operating temperature	-10 ... +55 °C
Storage temperature	-20 ... +70 °C
Humidity	≤95 % rel
Communication protocol	FD18-BUS
Color	white, ~RAL 9010
Protection category	IP40
Datasheet	A6V10384005

Detectors and other field devices
Resettable Manual Call Point

Type		Order No.
FDM181	**FDM181 Manual Call Point**	S54321-F1-A1

The manual call point serves for the manual activation of alarms in case of fire. It consists of a housing and an electronic component.

- Resettable operation panel
- Automatically address setting without encoder setting or Dip-switch
- Indicates condition (Alarm or Locate) by means of an LED
- Communication via FD18-BUS
- "Sticker Method" for ease of commissioning

Operating voltage	12 ... 32 VDC
Operating current (quiescent)	0.22 mA
Activation current	1.2 mA
Operating temperature	−10 ... +50 ˚C
Storage temperature	−20 ... +75 ˚C
Relative humidity	≤95%
Communication protocol	FD18-BUS
Load factors	1
Connection terminals	1.0 ... 1.5 mm^2
Colour	Red, RAL3000
Protection category GB4208-93	IP44
Datasheet	A6V10326263

Type		Order No.
FDCIO181-1	**FDCIO181-1 Input Module**	S54322-F7-A1

- 1 monitored digital input
- Input lines are monitored for open line and short/open circuit (terminal resistors is man-datory)
- Microprocessor-controlled signal evaluation
- Prevention of noise interference through intelligent analysis of input signals
- LED display of input status
- Automatic address setting, without encoder settings or Dip-switch
- Power supply via FD18-BUS
- Communication with controller via FD18-BUS(detection line)
- Directly used in dry areas, Applicable in dusty and humid areas when installed in FDCH221 housing
- "Sticker Method" easy for commissioning

Operating voltage	12 ... 32 VDC
Operating current(Quiescent)	0.27 mA
Activation current	0.37 mA
Monitoring resistors	3.3KΩ(1/4w) / 680Ω(1/4w)
Operating temperature	0 ... +42 ℃
Storage temperature	−20 ... +75 ℃
Humidity	≤95 %
Communication protocol	FD18-BUS
Load factors	3
Connection terminals	1.0 ... 1.5 mm^2
Color	
- Housing	white, RAL 9010
- Cover	transparent
Protection category EN60529/IEC529/GB4208-93	
- With housing FDCH221	IP65
Datasheet	A6V10436763

Type		Order No.
FDCIO181-1	**FDCIO181-1 Input/Output Module**	S54322-F8-A1

- Microprocessor-controlled signal evaluation
- Automatic address setting, without encoder settings or DIP switch
- 1 monitored input, 1 monitored output
- LED display of input and output status
- Input lines monitored for open line or short/open circuit
- Prevention of noise interference through intelligent analysis of input signals
- Output lines monitored for open line or short/open circuit (when potential out-put not acti-vated)
- Output monitoring configurable(on/off)
- Control output for equipment 24 VDC, max. 2 A
- Communication with controller via FD18-BUS(detector line)
- Directly used in dry areas. Applicable in dusty and humid areas when installed in FDCH221 housing
- "Sticker Method" easy for commissioning

Operating voltage	12 ... 32 VDC
Operating current (quiescent)	0.31 mA
Activation current	0.51 mA
Output	
- Capacity	2 A @ 24 VDC
- Monitoring resistor	3.3k Ω(1/4w)
- Diode	1N5404
Input	
- Monitoring resistor	3.3k Ω / 680 Ω
Operating temperature	0 ... +42 ℃
Storage temperature	−20 ... +75 ℃
Humidity	≤95 % rel.
Communication protocol	FD18-BUS
Load factors	3
Connection terminals	1.0 ... 1.5 mm^2
Color	
- Housing	white, RAL 9010
- Cover	transparent
Protection category EN60529/IEC529/GB4208-93	
- With FDCH221 housing	IP65
Datasheet	A6V10436766

Type	Order No.
FDCIO181-2	S54322-F2-A1

FDCIO181-2 Input/Output Module

- Microprocessor-controlled signal evaluation
- Automatic address setting, without encoder settings or DIP switch
- 2 monitored inputs, 2 monitored outputs
- LED display of input and output status
- Input lines monitored for open line or short/ open ciruit(terminal resistors mandatory)
- Prevention of noise interference via intelligent analysis of input signals
- Output lines monitored for open line or short/open circuit (when potential output not activated)
- Output monitoring configurable(on/off)
- Control output for equipment 24 VDC, max. 2 A
- Communication with controller via FD18-BUS(detector line)
- Directly used in dry areas. Applicable in dusty and humid areas when installed in FDCH221 housing
- "Sticker Method" for ease of commissioning

Operating voltage	12 ... 32 VDC
Operating current (quiescent)	0.56 mA
Activation current	0.85 mA
Output	
- Capacity	2 A @ 24 VDC
- Monitoring resistor	3.3k Ω (1/4w)
- Diode	1N5404
Input	
- Monitoring resistor	3.3k Ω(1/4w) / 680 Ω(1/4w)
Operating temperature	0 ... +42 ˚C
Storage temperature	−20 ... +75 ˚C
Relative humidity	≤95 %
Communication protocol	FD18-BUS
Load factors	5
Connection terminals	1.0 ... 1.5 mm^2
Colour	
- Housing	white, RAL 9010
- Cover	transparent
Protection category EN60529 / IEC529/GB4208-93	
With FDCH221 housing	IP65
Datasheet A6V10326267	

Type		Order No.
FDCI181-2	**FDCI181-2 Input Module**	S54322-F1-A1

- 2 monitored digital inputs
- Input lines are monitored for open line or short/open circuit (terminal resistors mandatory)
- Microprocessor-controlled signal evaluation
- Prevention of noise interference via intelligent analysis of input signals
- LED display of input status
- Automatic address setting, without encoder settings or Dip-switch
- Power supply via FD18-BUS
- Communication with controller via FD18-BUS (detection line)
- Directly used in dry areas. Applicable in dusty and humid areas when installed in FDCH221 housing
- "Sticker Method" for ease of commissioning

Operating voltage	12 ... 32 VDC
Operating current (quiescent)	0.33 mA
Activation current	0.45 mA
Monitoring resistors	3.3k Ω (1/4w) / 680Ω(1/4w)
Operating temperature	0 ... +42 ˚C
Storage temperature	−20 ... +75 ˚C
Relative humidity	≤95 %
Communication protocol	FD18-BUS
Load factors	3
Connection terminals	1.0 ... 1.5 mm^2
Colour	
- Housing	white, RAL 9010
- Cover	transparent
Protection category EN60529 / IEC529/GB4208-93	
With FDCH221 housing	IP65
Datasheet	A6V10326257

Type		Order No.
FDCI183	**FDCI183 Collective Input Module**	S54312-F8-A2

- 1 monitored input as collective detector connection
- LED display of alarm and fault status
- External 24VDC power required
- Microprocessor-controlled signal evaluation
- Earth fault monitoring
- With the Zener diode barrier, it is also possible to connect intrinsically safe detectors
- Directly used in dry areas.Applicable in dusty and humid areas when installed in FDCH221 housing
- "Sticker Method" for ease of commissioning

FD18-BUS Operating voltage	12... 33 VDC
FD18-BUS Operating current	Quiescent: 0.45mA
	Alarm:1.1mA
External power supply	
- Input voltage	18... 32 VDC @ 0.15A
End of line	1.5KE20CA(EOL) or EOL22(ex)
Operating temperature	−10... +50 °C
Storage temperature	−30... +70 °C
Relative humidity	≤95 %
Communication protocol	FD18-BUS
Local factors	3
Connection terminals	1.0... 1.5 mm^2
Color	
- Housing	Pure white, RAL 9010
- Cover	transparen
Protection category EN60529 / IEC529	
- with FDCH221 housing	IP65
Line impedance of collective detection line	<150Ω (twins cable)
Datasheet	A6V10362122

Detectors and other field devices
Module and Fire Repeater Display

Type		Order No.
FDCL181	**FDCL181 Line Separator**	S54322-F3-A1

FDCL181 Line Separator is used to detect and isolate the short-circuit part of the FD18-BUS. It's also connected to prevent different branches from breaking down at the same time due to short circuit.

- Protection of FD18-BUS from short-circuit
- For T branches of FD18-BUS
- Indicates conditions by LED indicator
- Automatic address setting without encoder settings or Dip-switch
- Communication via FD18-BUS (separate address)
- Directly applicable in dry areas. Applicable in humid and dusty areas with FDCH221 housing
- "Sticker Method" for ease of commissioning

Operating voltage	12 ... 32 VDC
Operating current (quiescent)	0.25 mA
Activation current	0.45 mA
Operating temperature	0 ... +42 ˚C
Storage temperature	−20 ... +75 ˚C
Relative humidity	≤95%
Communication protocol	FD18-BUS
Load factors	1
Connection terminals	1.0 ... 1.5 mm^2
Colour	
- Housing	white, RAL 9010
- Cover	transparent
Protection category EN60529 / IEC529/GB4208-93	
With FDCH221 housing	IP65
Datasheet	A6V10326269

Type		Order No.

FT1810

FT1810 Floor Repeater Display

S54420-F3-A1

The floor repeater display is an indication and operation unit in a fire detection system with following functions:

Indication of events	Operation
• Alarm	• Scrolling through lists
• Trouble	• Switch off buzzer

- Small floor repeater operating and display panels for use with the addressed FC18 fire detection system
- Large backlight LCD display(192X64 pixels) whose contrast can be set manually
- Communication with controller via FR18-BUS (individual address)
- External 24VDC power required
- In total, up to 32 floor repeater displays can be connected to one FC18 fire alarm controller
- Flat, elegant housing

Operating voltage	24 VDC±20%
Operating current (quiescent)	30 mA
Activation current	110 mA
Operating temperature	0 ... +42 ˚C
Storage temperature	−20 ... +60 ˚C
Relative humidity	≤95 %
Communication protocol	FR18-BUS
Connection terminals	1.0 ... 1.5 mm^2
Colour	white, RAL 9010
Protection category GB4208-93	IP30
Datasheet	A6V10323189

FTM1811

Mimic Display Board

S54420-F4-A1

- 60 outputs for LED activation
- 1 dry contact output for buzzer
- 2 inputs for "Buzzer silence" and "Lamp test"
- Communication with controller via FR18-BUS(CAN-Bus) (individual address)
- External 24VDC power required
- Input/output are not monitored

Operating voltage	24 VDC±30%
Operating current (quiescent)	100 mA
Max. current	200 mA
Rated output per LED	10 mA
Max. current per LED	15 mA
Operating temperature	−3 ... +42 ˚C
Storage temperature	−20 ... +60 ˚C
Relative humidity	≤95 %
Communication Protocol	FR18-BUS
Connection terminals	1.0 ... 1.5 mm^2
Datasheet	A6V10260209

Cerberus ECO Controller Spare Parts

Type		Order No.
FCM1811-A1	**FCM1811-A1 FC18 CPU Board (For FC1820/40/6x)**	S54420-A12-A1
	• CPU board together with main board comprises main part of FC1820/40/6x controller. Integration of some common components makes it more general. Mainly used for storing and loading configuration files.	
	Datasheet A6V10244852	
FCM1820-A1	**FCM1820-A1 FC18 Interlocking Board (For FC1820/40/6x)**	S54420-A13-A1
	• FCM1820-A1 interlocking panel mainly used for auto-control and manual control of important devices (such as fire-pump, fan, etc.) • FCM1820-A1interlocking panel has 8 outputs, rated 24VDC/ 40mA, use to activate extinguishing devices on-site; 8 dry contact inputs, used to receive confirmation of activated devices	
	Datasheet A6V10244854	

Cerberus ECO Controller Spare Parts

Type		Order No.

FCI1801-A1

FCI1801-A1 FC18 Line Card
(For FC1820/40)

S54420-A9-A1

- FCI1801-A1 line card specially designed for FC1820/40 series controllers, can automatically identify controllers. Used for connection with FD181 series field devices
- FCI1801-A 1 line card contains 1 loop or 2 stubs, can connect 252 points
- FCI1801-A 1 line card applies 2-wire polarity-free detection bus; stub wiring for field bus and free branch acceptable
- Overload protection available
- When short line occurs, will activate line protection application automatically. When trouble resolved, line card recovers automatically

Datasheet	A6V10244856

FDCH221

Housing for FC18 Series Module

S54312-F3-A1

- Housing with seal for the mounting of FC18 series module
- The required screwed cable glands and back nuts M20 are not included

Dimensions (W x H x D)	207 x 119 x 48 mm
Color	white, RAL 9010 / transparent matt
Protection category	IP65

Detectors and other field devices
Cerberus ECO Controller Spare Parts

Type		Order No.

FCI1802-A1

FCI1802-A1 BDS
Line Card for FC18 Controller

S54420-A25-A1

- FCI1802-A1 line card is specially designed for FC18 series controllers. It can be automatically identified by controller. It is used for connection with BC80 series field devices.
- FCI1802-A1 line card contains two lines and each line can connect 127 points.
- Compatible with BC80en, BC80-UL, FD180 series field deviecs.
- Compatible with BDS331 floor repeater display.
- 2-wire polarity-free of detection bus, stub wring is available and free branch is acceptable.

Operating voltage	+28 V
Quiescent current	650 mA / 24 V
Max. current	1.1 A / 24 V
Operating temperature	0 ~ +40 °C
Storage temperature	-10 ~ +50 °C
Humidity	≤ 95% (40±2 °C)
Size	110*120 mm
Max. No. of line	2
Max. No. of field devices per line	127
Wire type for FD18-BUS	Recommend RVS1.0 ~ RVS1.5
Line impedance	≤ 20 Ω
Short circuit auto protection (isolation)	available
Datasheet	A6V10412606

FCI1802-B1

FCI1802-B1 BDS
Line Card for FC18R Controller

S54420-A26-A1

- FCI1802-B1 line card is specially designed for FC18R series controllers. It can be automatically identified by controller. It is used for connection with BC80 series field devices.
- FCI1802-B1 line card contains two lines and each line can connect 127 points.
- Compatible with BC80en, BC80-UL, FD180 series field devices.
- Compatible with BDS331 floor repeater display.
- 2-wire polarity-free of detection bus, stub wring is available and free branch is acceptable.

operating voltage	+28 V
Quiescent current	650 mA / 24 V
Max. current	1.1 A / 24 V
Operating temperature	0 ~ +40 °C
Storage temperature	-10 ~ +50 °C
Humidity	≤95% (40±2 °C)
Size	155*120mm
Max. No. of line for each card	2
Max. No. of field devices for each line	127
Wire type for FD18-BUS	Recommend RVS1.0~RVS1.5
Line impedance	≤ 20 Ω
Short circuit auto protection (isolation)	available
Datasheet	A6V10412608

Cerberus ECO Controller Spare Parts

Type		Order No.
FCP1810-A2	**FC18 Printer (For FC1820/40/6x)** • Printer can print out history event or on real time	S54420-C18-A1
FHA1810-A1	**FHA1810-A1 FC18 Housing Front Cover (For FC1820/40)** • For cover of FC1820/40 fire alarm controller Datasheet A6V10244860	S54420-B19-A1
FCM1821-A1	**FCM1821-A1 FC18 Terminal Board (For FC1820/40)** • FCM1821-A1 terminal board specially designed for FC18 series controllers; easy for connection Datasheet A6V10244862	S54420-A14-A1

Spare Parts
Cerberus ECO Controller Spare Parts

Type		Order No.
FCA1804	**FCA1804 FC18 USB/RS232 Adapter** • For downloading and uploading firmware and configuration file	S54420-F8-A1
FP1802-A2	**FC18 Power Supply (5A)** **(Power supply for FC1820/40)**	S54420-C21-A1

Input voltage	220VAC/50Hz, 110VAC/60Hz
Output voltage	5 A@24 VDC
Operating temperature	-20 ~ +55 ˚C
Storage temperature	-45 ~ +85 ˚C
Relative Humidity	≤95%

FCI1802-A2   S54420-A10-A1

FC18R-FC186x Line card
(For FC186x)

• FCI1802-A2 line card is specially designed for FC186x controllers, can automatically identify controllers. It is used for connection with FD18 field devices
• FCI1802-A2 line card contains 1 loop or 2 stubs, and each line can connect 252 points
• FCI1802-A2 line card apply 2-wire polarity-free detection bus, stub wiring for field bus and free branch is acceptable
• Overload protection is available
• When short line occurs, it will activate the line protection application automatically. When trouble is resolved, line card can recover normal automatically

Datasheet   A6V10322575

Cerberus ECO Controller Spare Parts

Type		Order No.
FCM1821-A2	**FC18R-FC186x** **Terminal Board of Main board (For FC186x)** • FC18R-FC186x terminal board of Main board is specially designed for FC18R Main board, easy for connection Datasheet A6V10322577	S54420-A15-A1
FCM1822-A2	**FC18R-FC186x** **Terminal Board of Interlocking Panel** **(For FC186x)** • FC18R-FC186x terminal board of Interlocking Panel is specially designed for FC18R interlocking panel, easy for connection Datasheet A6V10322579	S54420-A16-A1
FCM1823-A2	**FC18R-FC186x** **Terminal Board of Line card (For FC186x)** • FCM1823-A2 FC18R-FC186x terminal board of Line card is specially designed for FC18R Line card, easy for connection Datasheet A6V10322581	S54420-A17-A1
FP1801-A2	**FC18R Power Supply** **(Power supply for FC186x)** Input voltage 220VAC/50Hz, 110VAC/60Hz Output voltage 10 A@24 VDC Operating temperature -20 ~ +55 ˚C Storage temperature −45 ~ +85 ˚C Relative Humidity ≤95% Datasheet A6V10322583	S54420-C20-A1
FCM1801-A2	**FC18R-FC186x Main Unit (For FC186x)** • Main unit for FC186x • Include CPU board, main board, interlocking panel, LCD and keypad • Used for data collection and analysis, and control the field device • FCM1801-A2 FC18R-FC186x Main unit is used for operation, programming and display all kinds of events on LCD or front panel Datasheet A6V10322585	S54420-C11-A1

Type	Name	Order No.	Page
FC1820	Fire Alarm Controller (252 points)	S54420-C1-A1	10
FC1840	Fire Alarm Controller (504 points)	S54420-C2-A1	10
FC1861 (504)		S54420-C5-A1	
FC1862 (1,008)	Fire Alarm Controller	S54420-C6-A1	11
FC1863 (1,512)		S54420-C7-A1	
FDO181	Smoke Detector	S54320-F2-A1	12
FDT181	Heat Detector	S54320-F3-A1	13
FDB181	Detector Base	S54320-F1-A1	13
FDO181C	Collective Smoke Detector	S54320-F11-A2	14
FDT181C	Collective Heat Detector	S54320-F12-A2	14
FDB181C	Collective Detector Base	S54320-F9-A2	15
FDCAI181	Alarm Indicator	S54370-F21-A1	15
FDM181	Manual Call Point	S54321-F1-A1	16
FDCIO181-1	Input Module	S54322-F7-A1	17
FDCIO181-1	Input/Output Module	S54322-F8-A1	17
FDCIO181-2	Input/Output Module	S54322-F2-A1	18
FDCI181-2	Input Module	S54322-F1-A1	19
FDCI183	Collective Input Module	S54312-F8-A2	19
FDCL181	Line Separator	S54322-F3-A1	20
FT1810	Floor Repeater Display	S54420-F3-A1	21
FTM1811	Mimic Display Board	S54420-F4-A1	21
FCM1811-A1	FC18 CPU Board	S54420-A12-A1	22
FCM1820-A1	FC18 Interlocking Board	S54420-A13-A1	22
FCI1801-A1	FC18 Line Card	S54420-A9-A1	22
FDCH221	Housing for FC18 Series Module	S54312-F3-A1	22
FCI1802-A1	BDS Line Card for FC18 Controller	S54312-F3-A1	23
FCI1802-B1	BDS Line Card for FC18R Controller	S54420-A25-A1	23
FCP1810-A2	FC18 Printer	S54420-C18-A1	24
FHA1810-A1	FC18 Front Cover	S54420-B19-A1	24
FCM1821-A1	FC18 Terminal Board	S54420-A14-A1	24
FCA1804	FCA1804 FC18 USB/RS232 Adapter	S54420-F8-A1	24
FP1802-A2	FC18 Power Supply (5A)	S54420-C21-A1	24
FCI1802-A2	FC18R-FC186x Line card	S54420-A10-A1	24
FCM1821-A2	FC18R-FC186x Terminal Board of Main board	S54420-A15-A1	25
FCM1822-A2	FC18R-FC186x Terminal Board of Interlocking panel	S54420-A16-A1	25
FCM1823-A2	FC18R-FC186x Terminal Board of Line Card	S54420-A17-A1	25
FP1801-A2	FC18R Power Supply	S54420-C20-A1	25
FCM1801-A2	FC18R-FC186x Main Unit	S54420-C11-A1	25

Cerberus ECO
Fire Safety Products and Accessories

Product Catalogue - Appendix

Appendix Index

Cerberus ECO
System Installation Guidelines

Heat detector < 10m
Smoke detector < 15m

0.5m < x < 6m

0.5m < x < 6m

1.3~1.5m

In this section, we illustrate best practice for installation of fire detection equipment. While not all possible cases may be covered, these are intended to provide guidelines. Local regulations may be more detailed and must always be observed. Please contact your local Siemens sales organization for more detailed information and documentation.

Detectors should be positioned*

- at least 0.5 m from the wall
- max. 12 m from the previous detector

Manual call points manual call points should be positioned*

- in a clearly visible location
- 1.5 m from floor level

> 1m

1.3~1.5m
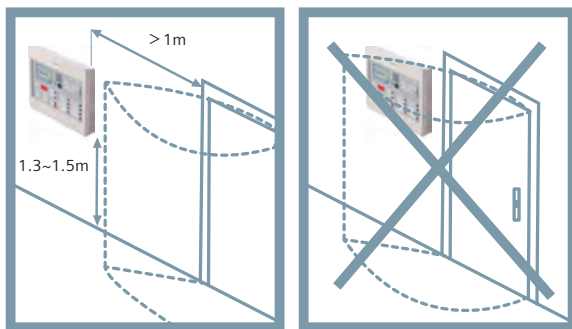
Fire control panels mounting the fire control panel*

Keep a minimum distance to objects which could obscure the panel or the view to it

> 1.5m   > 1.5m

> 0.5m
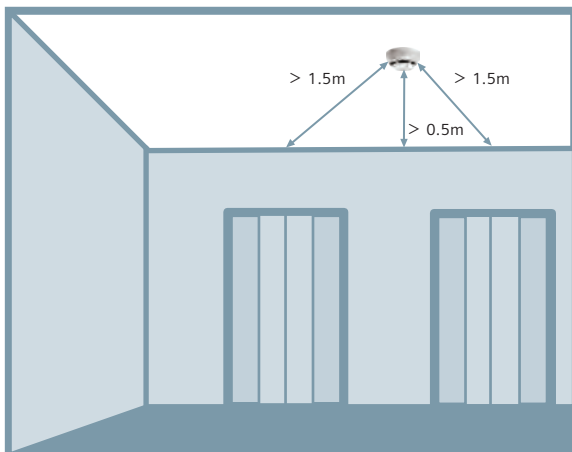
Detector positioning near elevators*

Cerberus ECO
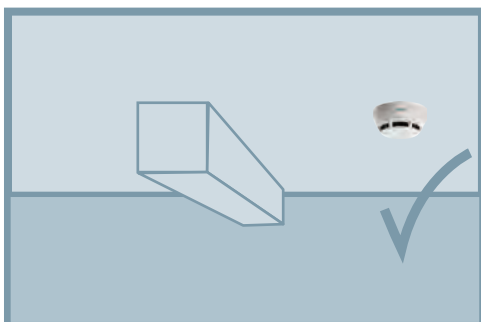## System Installation Guidelines
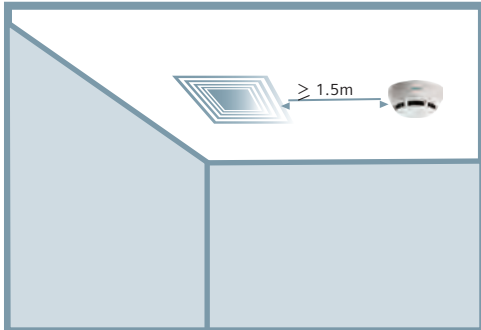
Detector positioning near fresh air supply*
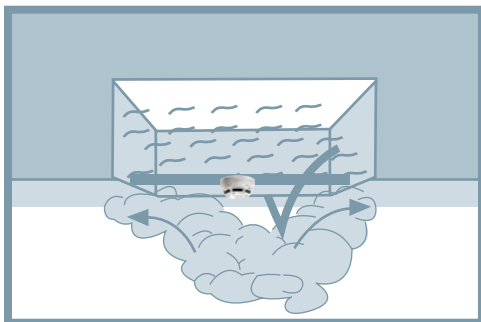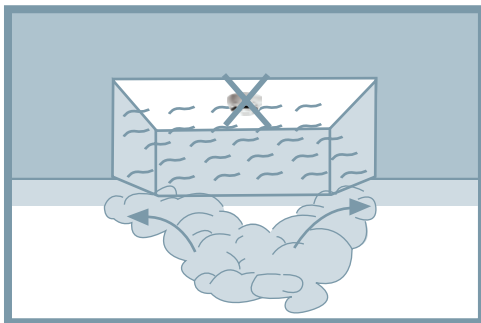
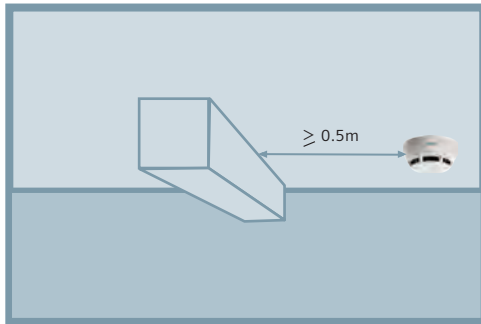Use a support to install a detector at ceiling height*
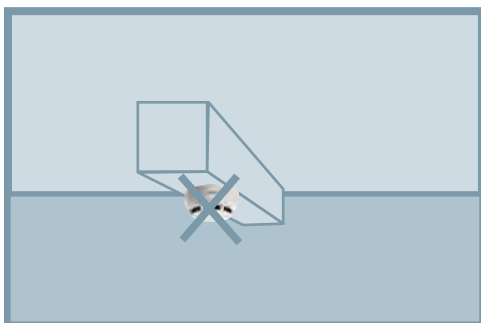
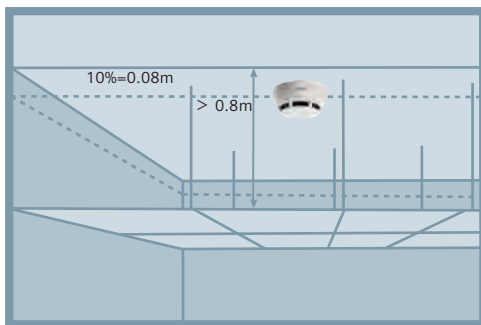Place the detector at the highest point in the room*
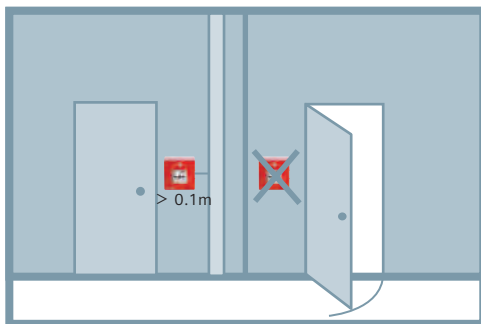
Cerberus ECO
System Installation Guidelines

Ensure the correct distance to ceiling obstacles*

Position the detector within the top 10% of a space*

Ensure a minimum distance to objects which could obstruct the view to a manual call point*

Manual call points should not be obscured by an open door*

* Note: or observe local regulations

Cerberus ECO
System Design Guidelines

1.1 FC18-BUS

Communication between controllers (CAN-BUS communication). Twisted-pair is required, the maximum length is 1,000m.

1.2 FC18-BUS Controller Network

- Cerberus ECO system enables max. connection of 32 Cerberus ECO controllers. Each controller can be configured to monitor and control all connected field devices within entire network.

- Interlocking controls can be programmed within the same controller or across other controllers.

- For FC18-Bus network will need to set the EOL through dip switch for the first and last controller.
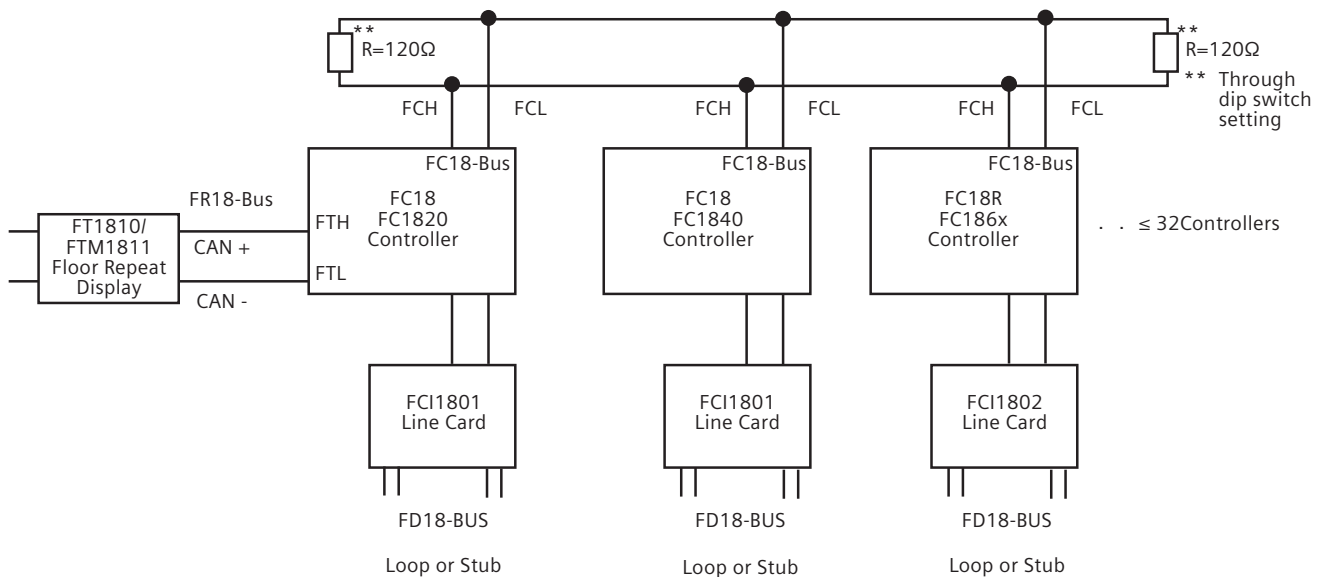
1.3 Single controller capacity

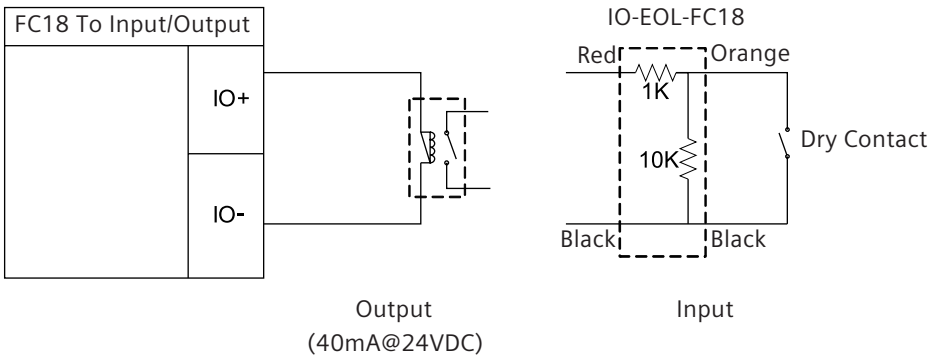| Name	Type	Build-in Line card	Max. line card	Max. loop	Max. Points
FC18-FC1820 Fire alarm controller	FC18-FC1820	1	1	1	252
FC18-FC1840 Fire alarm controller	FC18-FC1840	2	2	2	504
FC18R-FC1861 Fire alarm controller	FC18R-FC1861	2	*6	*6	504
FC18R-FC1862 Fire alarm controller	FC18R-FC1862	4	*6	*6	1,008
FC18R-FC1863 Fire alarm controller	FC18R-FC1863	6	*6	*6	1,512

* CPU can handle 8 line cards

Cerberus ECO
System Design Guidelines

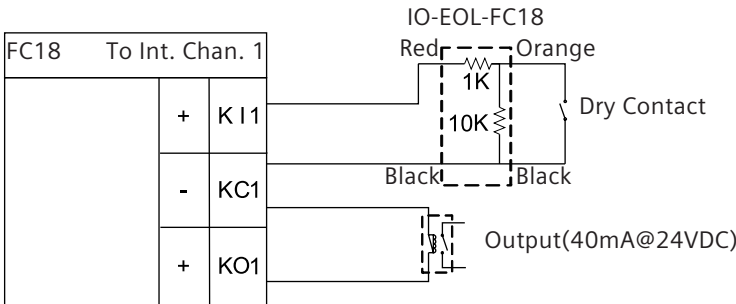### 1.4 FC18/FC18R Controller Input/output wiring diagram
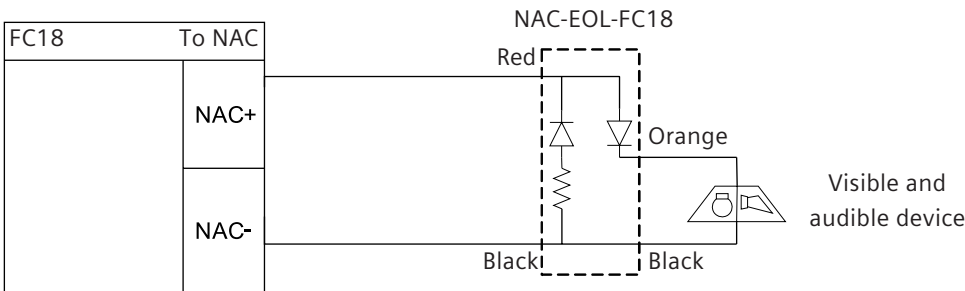
Note: the load range of each output is 24VDC, 600Ω – 1.2kΩ

FC18 To Input/Output

IO+

IO-

Output
(40mA@24VDC)

IO-EOL-FC18

Red   Orange
1K
10K
Black   Black

Dry Contact

Input

1.5 FC18/FC18R Interlocking panel wiring diagram

Note: the load range of each output is 24VDC, 600Ω – 1.2kΩ

FC18   To Int. Chan. 1

+   K I1

-    KC1

+   KO1

IO-EOL-FC18

Red   Orange
1K
10K
Black   Black

Dry Contact

Output(40mA@24VDC)

1.6 FC18/FC18R alarm device (NAC) wiring diagram

FC18   To NAC

NAC+

NAC-

NAC-EOL-FC18

Red

Orange

Black   Black

Visible and
audible device

Cerberus ECO
System Design Guidelines

1.7 System Wiring

• Below shows the loop that Cerberus ECO FC18/FC18R controllers connect with a line card FCI1801.
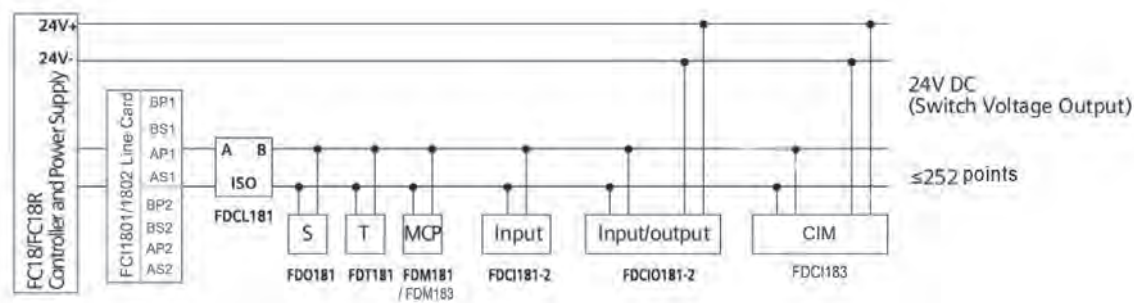
2.1 FR18-BUS

Communication between FT1810 floor repeater display and FC18 controllers (CAN-BUS conmmunication).
The maximum length is 1,000m.

2.2 FR18-BUS Floor Repeater Display (FRT) wiring diagram

• Note: Ensure positive and negative connections properly in place, FC18-Bus polarity-sensitive.

• FR18-BUS network will need to install end of line resistor (120Ω) at both ends (EOL setting via dip-switch or jumper).
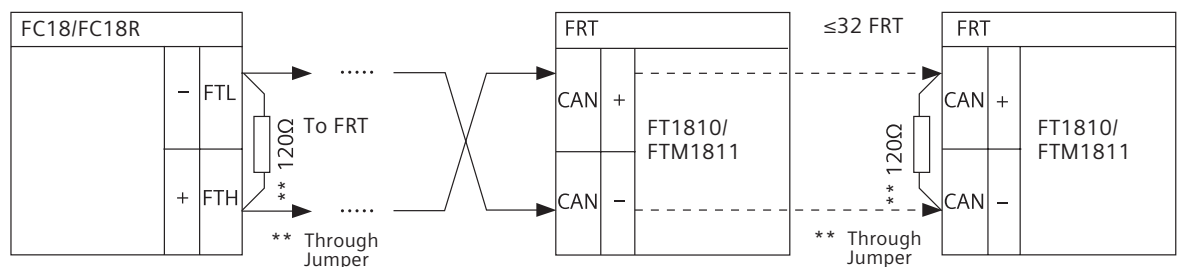
3.1 FD18-BUS

Communication between line cards and field devices. The wiring length should less than 1,500m for stub structure and 2,500m for loop structure.

3.2 FD18-BUS Line card diagram

Note: In loop mode, wires from BP1 must end at AP1; wires from BS1 must end at AS1. Connection of field devices polarity-free.
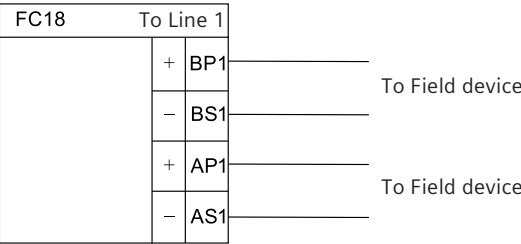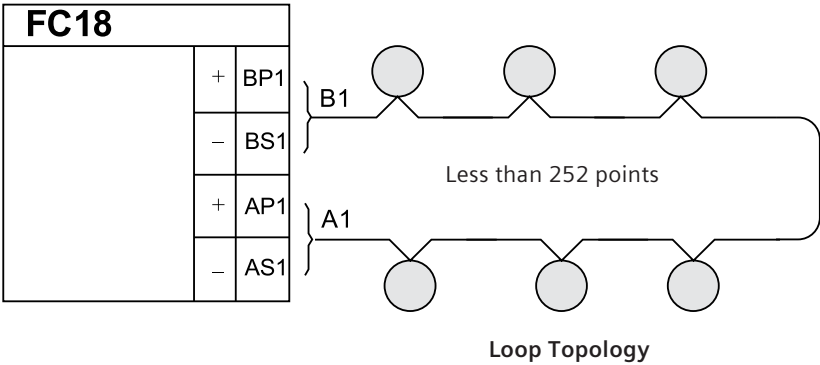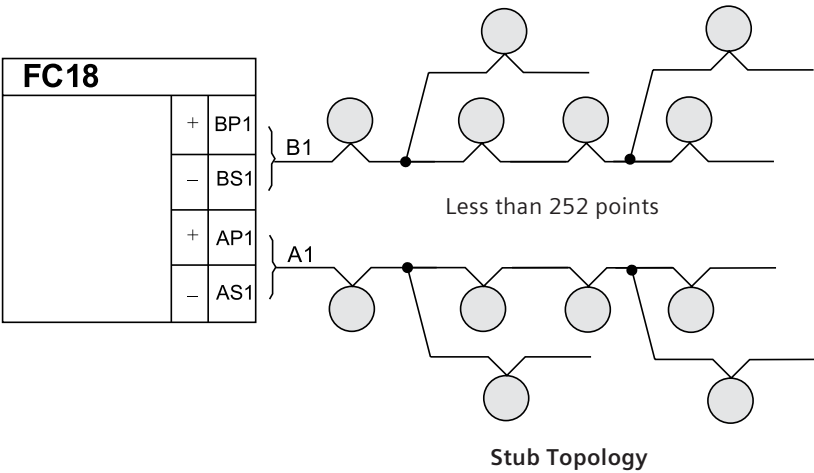
Cerberus ECO
System Design Guidelines

3.3 FD18-BUS Detection loop topology
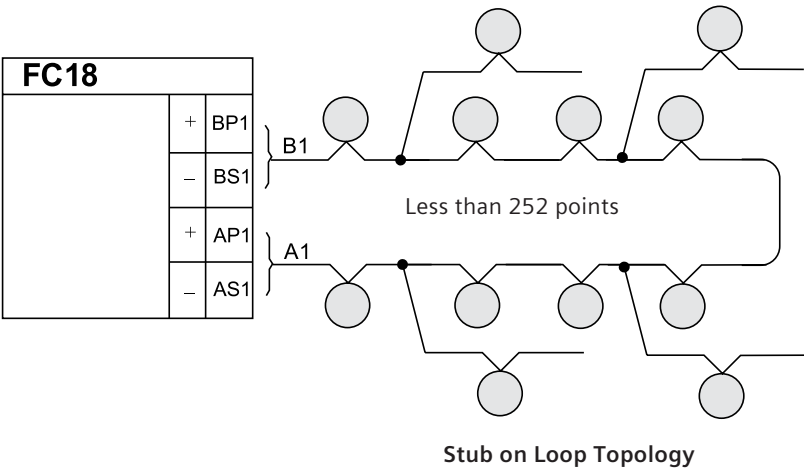
Detection loop topology for FS18 fire alarm control system:

3.3.1 Loop Topology

FC18

+	BP1	B1
−	BS1	
+	AP1	A1
−	AS1	

Less than 252 points

Loop Topology

3.3.2 Stub Topology

FC18

+	BP1	B1
−	BS1	
+	AP1	A1
−	AS1	

Less than 252 points

Stub Topology

3.3.3 Stub on loop topology

FC18

+	BP1	B1
−	BS1	
+	AP1	A1
−	AS1	

Less than 252 points

Stub on Loop Topology

Cerberus ECO
System Design Guidelines

3.3.4 Line Separator application A

• Maximum 32 FD181 field devices can be connected to line separator or between two line separator.

• One node cannot be connected by three or more line separators in the same detection line. (The topologies of Fig. 3.3.7 to Fig. 3.3.9 are not supported) .

• The line resistance between the controller and the nearest line separator or between two line separators shall be less than 17.5Ω, otherwise line separators are not guaranteed to work normally.
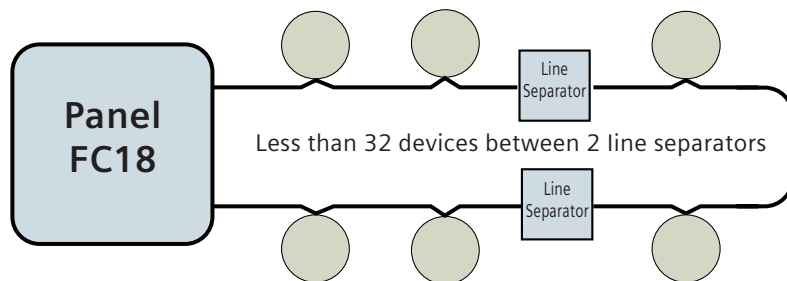
3.3.5 Line Separator application B
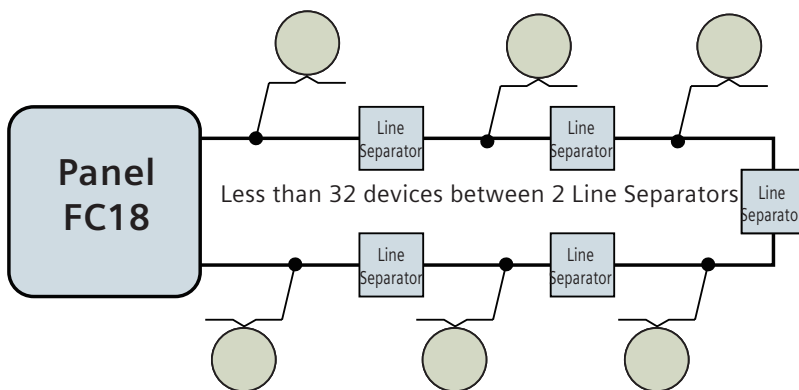
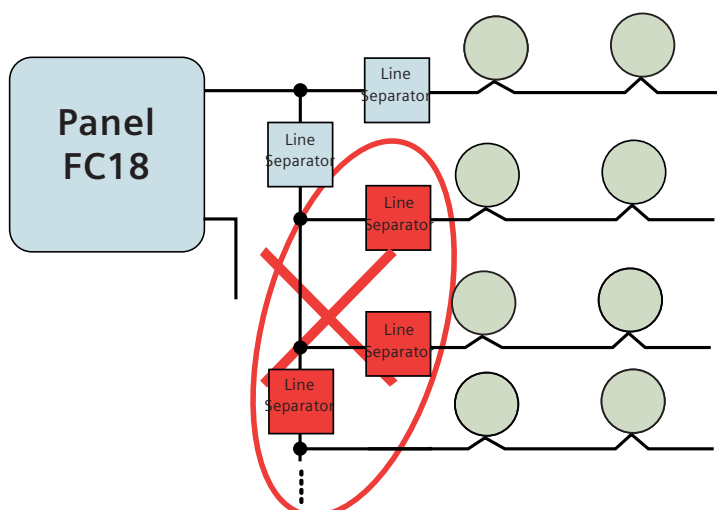### 3.3.6 Line Separator application C
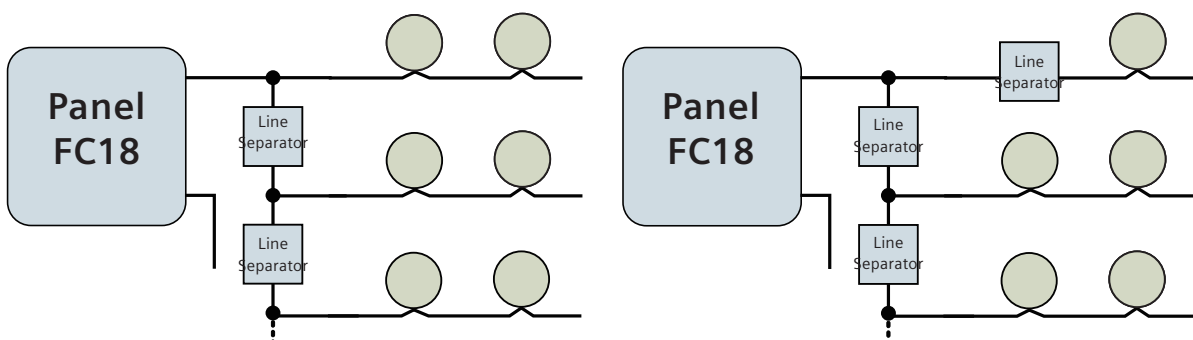
3.3.7 Line Separator application D
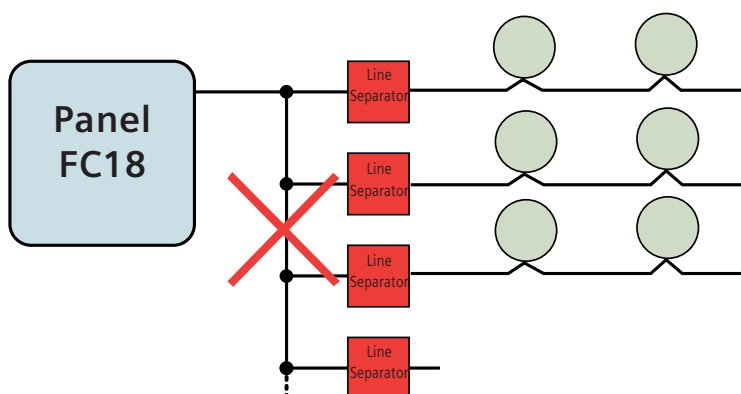
3.3.8 Line Separator application E
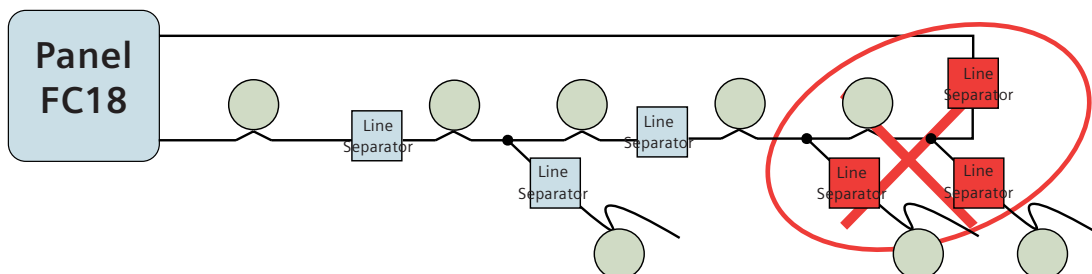
3.3.9 Line Separator application F

Cerberus ECO
Installation and Wiring

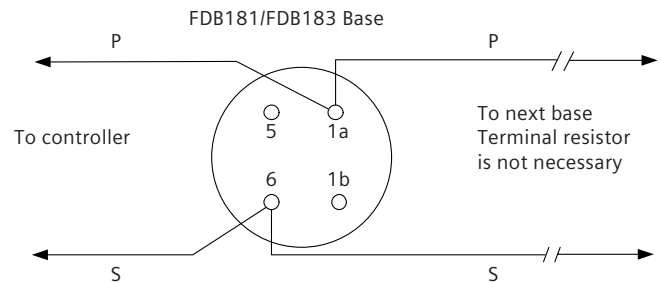### 4.1 FDB181/FDB183 Detector Base Installation

The installation of a base should strictly follow the engineering design drawings, with bases should be evenly distributed.

Procedure of installation:

1. Insert the cables through the base and connect them to the terminals.
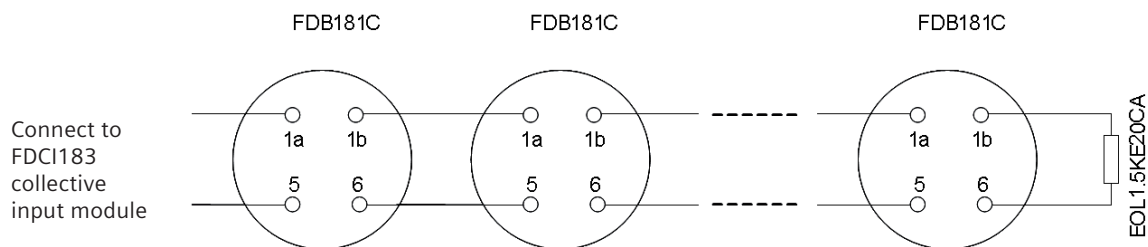
2. Fix the base to the ceiling with screws.

Note:

- The detector should be installed once construction has been finished.

- In order to ensure the reliability of the connection between the base and the detector, please do not use U-type terminals.

- Twisted-pairs with the wiring requirement of 1.0~1.5mm^2 are recommended.

FDB181/FDB183 Base

To controller

To next base
Terminal resistor
is not necessary

4.2 FDB181C Collective Detector Base Installation

The installation of a base should strictly follow the engineering design drawings. The bases should be evenly distributed.

FDB181C   FDB181C   FDB181C

Connect to
FDCI183
collective
input module

EOL1.5KE20CA

Procedure of installation:

1. Insert the cables through the base and connect them to the terminals.

2. Fix the base to the ceiling with screws.

Note:

- The detector should be installed after the construction has been finished.

- In order to ensure the reliability of the connection between the base and the detector, please do not use U-type terminals.

- Twisted-pairs with the wiring requirement of 1.0~1.5mm^2 are recommended.

Cerberus ECO
Installation and Wiring

4.3 FDCAI181 Addressable Alarm Indicator Installation

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5
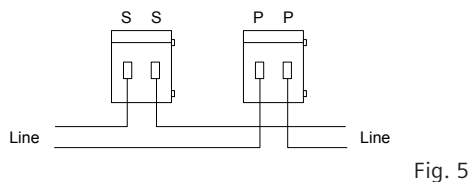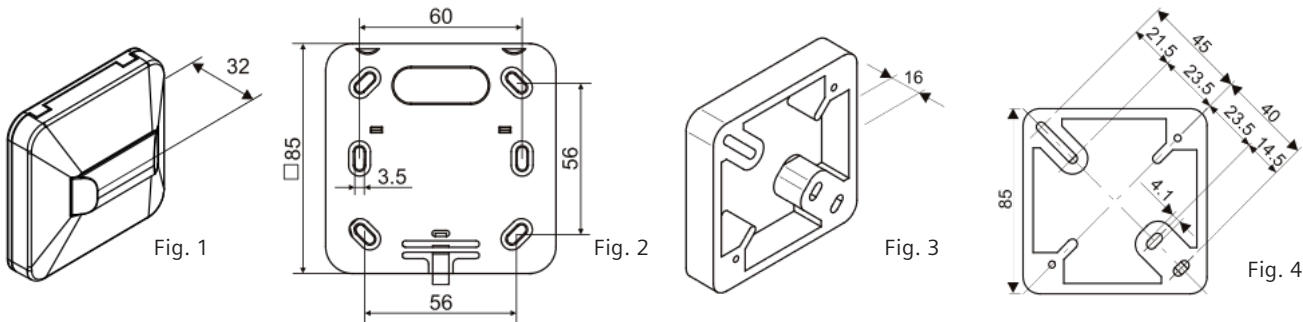
WARNING

Electrical voltage on lines
Mortal danger due to electric shock
- During mounting and installation work, voltage must not be applied to the cables.
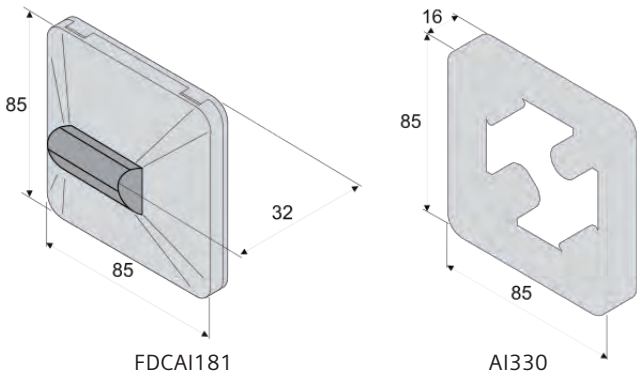
Installation of FDCAI181:
1. Remove the white cover cap (press the black cam).
2. Mount the base plate (Fig. 2) on a wall or recess-mounted socket using 2 ... 4 screws with max. diameter 3 mm.
3. Connect the alarm indicator in accordance with the connection diagram (Fig. 5).
4. Refit the white cover cap.
5. Snap the white cover cap into place.

Installation of additional frame AI330:
For surface-mounted cable entry the additional frame AI330 must also be mounted.
Max. cable diameter: 10 mm
1. Mount the additional frame AI330 (accessory) on a wall or recess-mounted socket using two screws with max. diameter of 4 mm (Fig. 3, Fig. 4).
2. Remove the white cover cap from alarm indicator FDCAI181 (press the black cam).
3. Attach the base plate of the alarm indicator to additional frame AI330 with 2 wood or sheet-metal screws of di-ameter 3 mm, max. 16 mm long.
4. Connect the alarm indicator in accordance with the connection diagram (Fig. 5).
5. Refit the white cover cap.
6. Snap the white cover cap into place.

FDCAI181

AI330

Details for ordering

Type	Part No.	Designation	Weight
FDCAI181	S54370-F21-A1	Addressable alarm indicator	0.0493 kg

4.4 FDCL181 Line Separator Installation
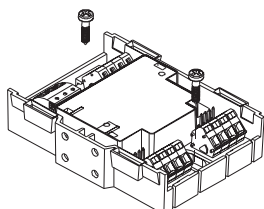
Fig. 4.3.1

Fig. 4.3.2

Fig. 4.3.3

Fig. 4.3.4

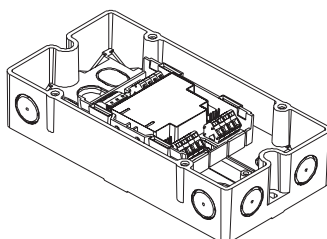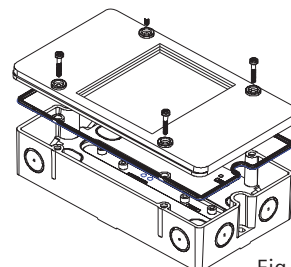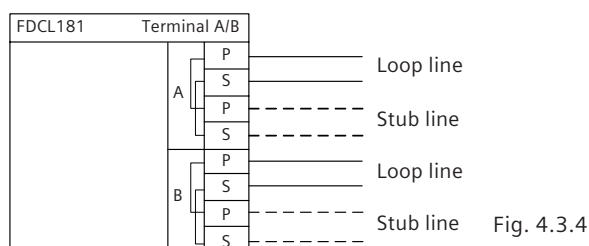| FDCL181	Terminal A/B		
	A	P	Loop line
		S	
		P	Stub line
		S	
	B	P	Loop line
		S	
		P	Stub line
		S	

Preparation

Determine the type of installation: there are 2 types of installation for FDCL181 line separator:
- Installation outside a switching cabinet or a control unit: use FDCH221 housing (Fig. 4.3.2) .
- Installation directly in a switching cabinet or a control unit: mount the module on an even surface (Fig.4.3.1).

⚠ **Damage by water!**
In humid or wet environments always use the housing FDCH221!

Installation of FDCH221 Housing

1. Open the housing.
2. Determine the cable entries in the housing and break these open.
3. Use two screws (M4) to fit the housing on a plane surface (Fig. 4.3.2). Distance between holes: 182.0±1.0mm.
4. Fix and guide in the cables with waterproof joint (provided by installers).
5. Fix the lid additionally with four screws (Fig. 4.3.3). (Only this way is IP protection guaranteed.

⚠ The housing lid is transparent. Consider suitable installation position to ensure module LEDs visible at any time.

Installation of module in FDCH221

⚠ **Caution!**
Overheating of FDCL81 line separator.

1. Open the housing.
2. Fix module with two screws in the housing (Fig. 4.3.2).
3. Press the module until it fits the housing.

Installation on an flat surface

1. Position module on an flat surface.
2. Fix module with two screws M4x15 (Fig. 4.3.1). Distance between holes: 63.5±1.0mm.

Electric connection
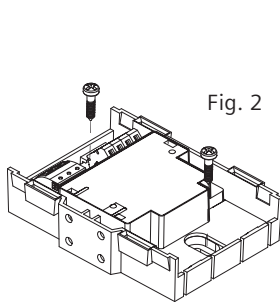
1. Connect the cables to the terminals according to Fig. 4.3.4.

Cerberus ECO
Installation and Wiring

Fig. 2

Fig. 3

Fig. 4

FDCI181-2   Detection line

P

S

Connect to controller

Connect to device

Fig. 5

FDCI181-2   Input 1/2

A

B

$Rp:3.3k\Omega$
$Rs:680\Omega$

Rp

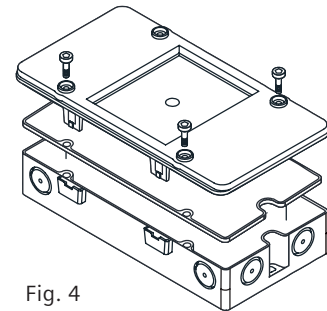Rs   Rp
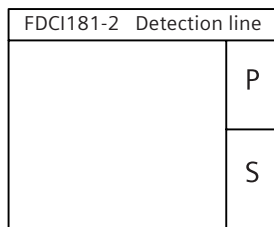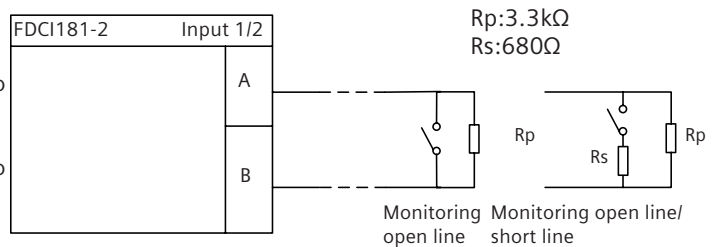
Monitoring open line

Monitoring open line/ short line
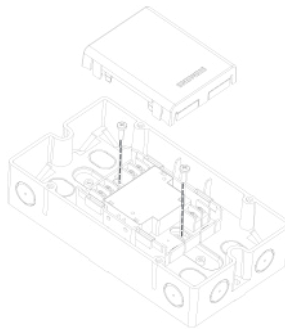
Fig. 6

Preparation

Determine the type of installation: there are 2 types of installation for FDCI181-2 Input module:
- Installation outside a switching cabinet or a control unit: use FDCH221 housing (Fig. 3) .
- Installation directly in a switching cabinet or a control unit: mount the module on an even surface (Fig.2).

⚠ **Damage by water!**
In humid or wet environments always use the housing FDCH221!

Installation of FDCH221 Housing

1. Open the housing.
2. Determine the cable entries in the housing and break these open.
3. Use two screws (M 4) to fit the housing on a plane surface (Fig. 3). Distance between holes: 182.0±1.0mm.
4. Fix and guide in the cables with waterproof joint (provided by users themselves).
5. Fix the lid additionally with four screws (Fig. 4). (Only this way is IP65 protection guaranteed.)

⚠ The housing lid is transparent. Consider a suitable installation position to make sure that the LEDs of the module are visible at any time.

Installation of module in FDCH221 housing

⚠ **Caution!**
Overheating of FDCI181-2 input module.

1. Open the housing.
2. Fix module with two screws in the housing (Fig. 3).
3. Close the housing.

Installation on an even surface

1. Position module on an even surface (Fig. 2).
2. Fix module with two M4 screws. Distance between holes:63.5±1.0mm.

Electric connection

1. Connect the cables to the terminals according to Fig. 5/6.

⚠ Connect only one wire per terminal!

2. Connect the resistors to the end of the monitored line. 2 resistors of 3.3KΩ and 2 of 680Ω are delivered with the product.

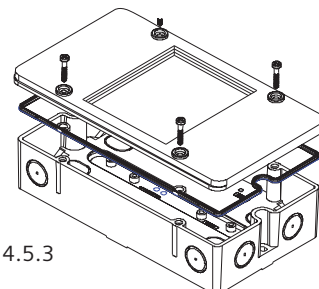## 4.6 FDCIO181-2 Input/Output Module Installation

Fig. 4.5.1

Fig. 4.5.2

Fig. 4.5.3

FDCIO181-2   Detection line

P — Connect to controller

S — Connect to next device
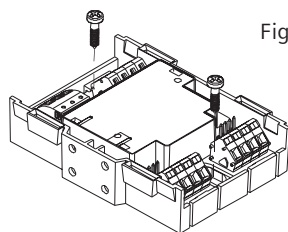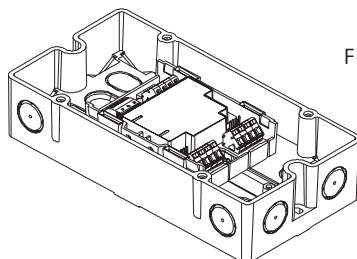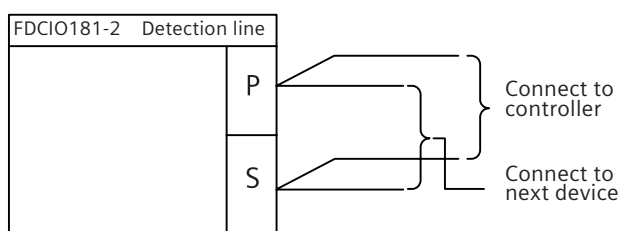
Potential-free contact (Output not monitored)

J2 J1   J3 J4

Input/output module jumper position J1, J3
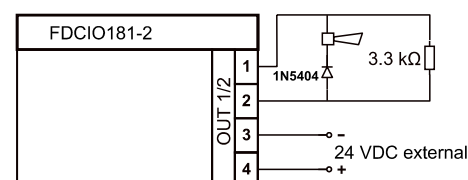

FDCIO181-2

OUT A
1 — NO/NC
2 — not used
3 — COM
4 — not used
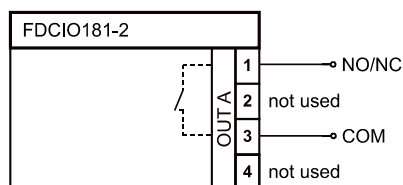
Connection diagram for potential-free contact output

Normal operation (Output lines monitored)

J2 J1   J3 J4

Input/output module jumper position J2, J4

FDCIO181-2

OUT 1/2
1 — 1N5404   3.3 kΩ
2
3 — −
4 — +   24 VDC external

Connection for normal operation with output line monitored for short circuit and open line

FDCIO181-2

OUT1/2
1
2
3 — −
4 — +   24 VDC external
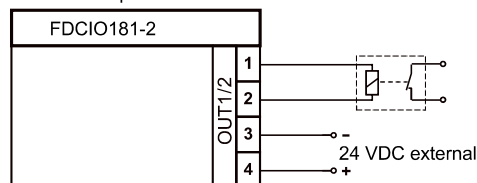
Connection diagram for inverted operation, e.g. when used as door retainer.

Preparation

Determine type of installation:
- Installation outside a switching cabinet or a control unit: use FDCH221 housing (Fig. 4.5.2) .
- Installation directly in a switching cabinet or a control unit: mount the module on an even surface (Fig. 4.5.1).

⚠ **Damage by water!**
In humid or wet environments always use FDCH221 housing!

Installation of FDCH221 Housing

1. Open the housing.
2. Determine the position of the cable entries in the housing and break them out.
3. Mount the housing on an even surface with two screws (Fig. 4.5.2). Distance between holes: 182.0±1.0mm.
4. Insert the cables and fix the cables in the housing.
5. Insert the seal and fix the lid additionally with four screws (Fig. 4.5.3) (only this way is IP65 protection guaranteed).

⚠ The housing lid is transparent. Consider suitable installation position to ensure module LEDs visible at any time.

Installation of module in FDCIO181-2

⚠ **Caution!**
Overheating of FDCIO181-2 input/output module.

1. Open the housing.
2. Place the module in the housing and fix it with two screws (Fig. 9/10).
3. Close the housing.

Procedure with installation on an flat surface

1. Place the module on an even surface.
2. Fix the module with two screws (M4x15) (Fig. 4.5.1). Distance between holes: 63.5±1.0mm

Electric connection

1. Referring to Figures connect the cables to the corresponding terminals.
2. Connect resistor/ diode .The resistors must be connected at the end of the monitored line.
3. Fix the cables to the module

⚠ **Caution!**
Mind the positive and negative polar when connecting the diodes.

Cerberus ECO
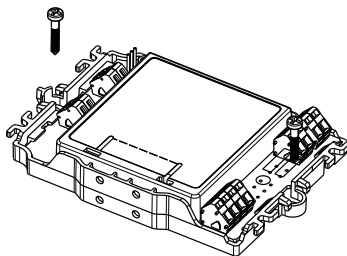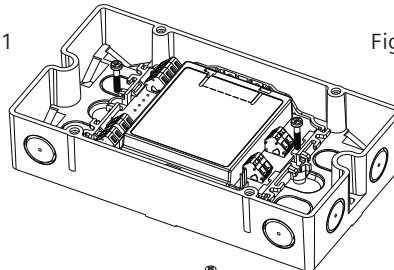## Installation and Wiring

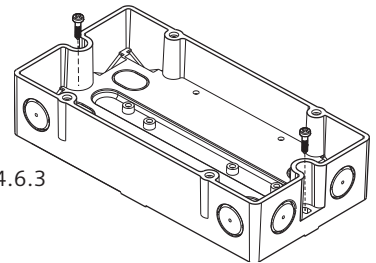### 4.7 FDCI183 Collective Input Module Installation
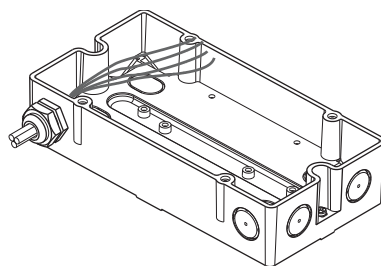
Fig. 4.6.1

Fig. 4.6.2

Fig. 4.6.3

Fig. 4.6.4

Fig. 4.6.5

FD18-BUS + / -   + / - FD18-BUS

FDCI183   + / - 24VDC

+ / -

Fig. 4.6.6   Collective detection line

FDCI183   **I/O**

EOL1.5KE20CA
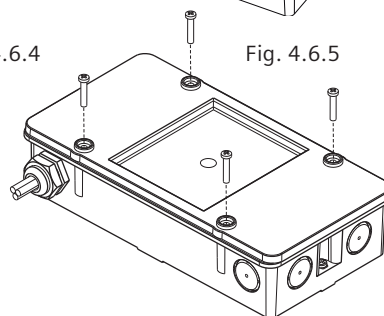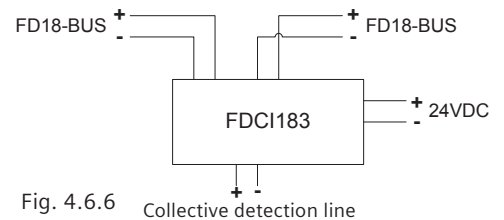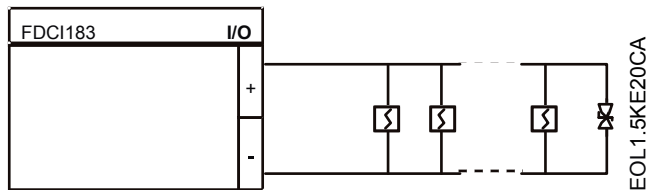
Fig. 4.6.7 Detection line connection

FDCI183   IO

Non explosion proof area   Explosion proof area

2   4
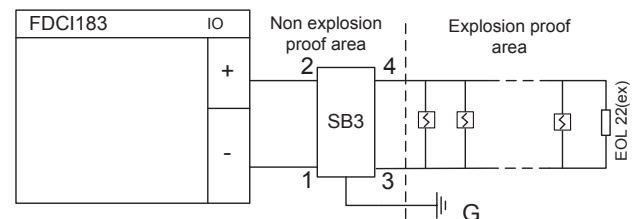
SB3

1   3

G

EOL 22(ex)

Fig. 4.6.8 Detector line with safety barrier
(the earth fault monitoring must be switched off)

Preparation

⚠ **Voltage!**
No power supply during installation.

Determine type of installation:
– Installation outside a switching cabinet or a control unit: use FDCH221 housing (Fig. 4.6.2) .
– Installation directly in a switching cabinet or a control unit: mount the module on an even surface (Fig. 4.6.1) .

Procedure with installation on an even surface

1. Put the transponder on an even surface.
2. Fix it with two M4 screws (Fig. 4.6.1). Distance between installation holes: 118.0±1.0mm

Installation of module in FDCH221

1. Open the housing (Fig. 4.6.5).
2. Determine the cable entries in the housing and break them out.
3. Mount the housing on an flat surface with two M4x15 screws (Fig. 4.6.3). Distance between holes: 182.0±1.0mm.
4. Insert the cables and fix the cables in the housing (Fig. 4.6.4).
5. Insert the seal and fix the lid additionally with four screws (Fig. 4.6.5). (only this way is IP65 protection guaranteed)

Electrical connection

⚠ Input voltage should not be less than 18VDC. Mind the positive and negative polar when connecting the diodes.
Connect only one wire per terminal.

1. Connect the cables to the terminals according to the connection diagram (Fig. 4.6.6, Fig. 4.6.7, Fig. 4.6.8).
2. Connect the line terminators (EOL). These must be connected to the end of the line (Fig. 4.6.7 /Fig. 4.6.8).
3. Connect the cables to the module with cable ties (max. width 2.6 mm).

4.8 FDCIO181-1 Input/Output Module Installation
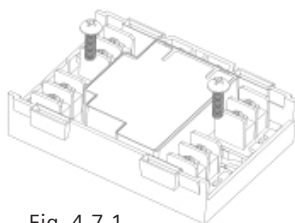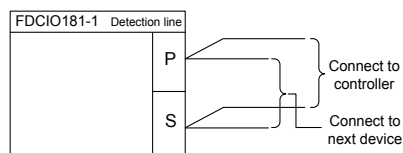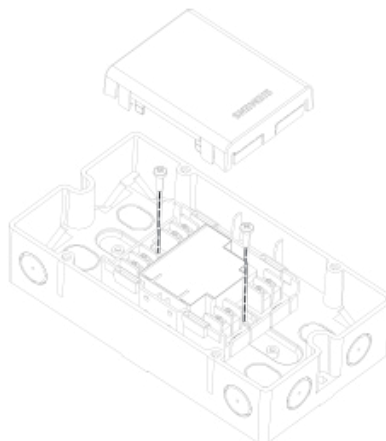

Fig. 4.7.1
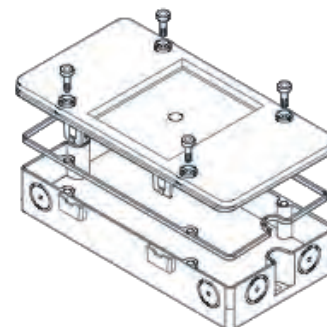

Fig. 4.7.2

Fig. 4.7.3

Fig. 4.7.4

Preparation

1. Determine type of installation:
– Installation outside a switching cabinet or a control unit: use FDCH221 housing (Fig. 10) .
– Installation directly in a switching cabinet or a control unit: mount the module on an even surface (Fig. 9).

⚠ **Damage by water!**
In humid or wet environments always use FDCH221 housing!

Mounting FDCH221 housing

1. Open the housing.
2. Determine the position of the cable entries in the housing and break them out.
3. Mount the housing on an even surface with two screws (Fig. 10). Distance between holes: 182.0±1.0mm.
4. Insert the cables and fix the cables in the housing.
5. Insert the seal and fix the lid additionally with four screws (Fig. 11) (only this way is IP65 protection guaranteed).

⚠ The housing lid is transparent. Consider a suitable instal-lation position to make sure that the LEDs of the module are visible at any time.

Procedure with installation in the housing

⚠ **CAUTION**
Overheating of the input/output module!

1. Open the housing.
2. Place the module in the housing and fix it with two screws (Fig. 9/10).
3. Close the housing.

Procedure with installation on an even surface

1. Place the module on an even surface.
2. Fix the module with two screws (M4 X15) (Fig. 9). Distance between holes: 63.5±1.0mm

Electric connection

1. Referring to Fig. 1,3,5,7,12 connect the cables to the corresponding terminals.
2. Connect resistor/ diode .The resistors must be connected at the end of the monitored line.
3. Fix the cables to the module

⚠ **CAUTION**
Mind the positive and negative polar when connecting the diodes.

4.9 FDCI181-1 Input Module Installation

Fig. 4.8.1

Fig. 4.8.3

Fig. 4.8.2
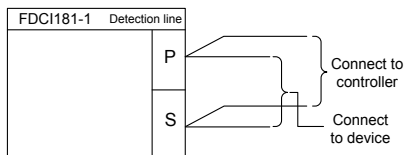
FDCI181-1 — Detection line

P — Connect to controller

S — Connect to device

Fig. 4.8.4

FDCI181-1 — Input

A
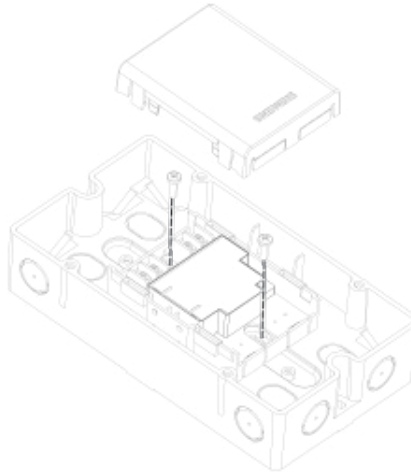
B

Rp:3k3
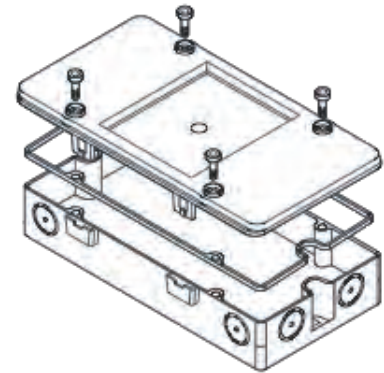Rs:680R

Monitoring open line

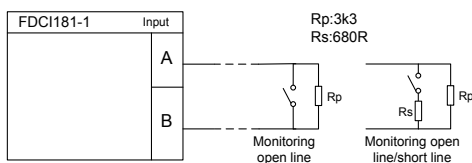Monitoring open line/short line
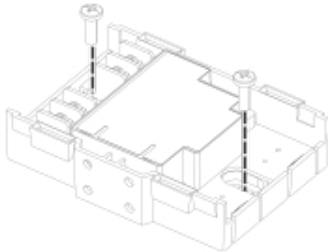
Fig. 4.8.5

Preparation

Determine the type of installation: there are 2 types of installation for FDCI181-1 Input module:
* Installation outside a switching cabinet or a control unit: use FDCH221 housing (Fig. 3) .
* Installation directly in a switching cabinet or a control unit: mount the module on an even surface (Fig.2).

⚠ **Damage by water!**
In humid or wet environments always use the housing FDCH221!

Installation of FDCH221 Housing

1. Open the housing.
2. Determine the cable entries in the housing and break these open.
3. Use two screws (M 4) to fit the housing on a plane surface (Fig. 3). Distance between holes: 182.0±1.0mm.
4. Fix and guide in the cables with waterproof joint (provided by users themselves).
5. Fix the lid additionally with four screws (Fig. 4). (Only this way is IP65 protection guaranteed.)

ⓘ The housing lid is transparent. Consider a suitable instal-lation position to make sure that the LEDs of the module are visible at any time.

Installation of module in FDCH221 housing

⚠ **Caution!**
Overheating of FDCI81-1 input module.

1. Open the housing.
2. Fix module with two screws in the housing (Fig. 3).
3. Close the housing.

Installation on an even surface

1. Position module on an even surface (Fig. 2).
2. Fix module with two M4 screws. Distance between holes:63.5±1.0mm.

Electric connection

1. Connect the cables to the terminals according to Fig. 5/6.

ⓘ Connect only one wire per terminal!

2. Connect the resistors to the end of the monitored line. 1 resistors of 3.3KΩ and 1 of 680Ω are delivered with the product.

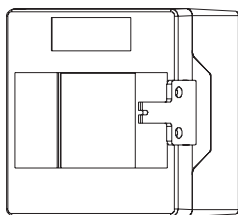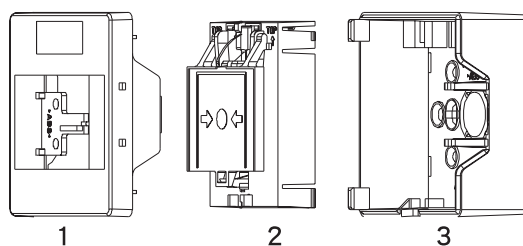### 4.10 FDM181 Manual Call Point Installation

Fig. 4.9.1

(1/3 – housing; 2 – electronic component)
Fig. 4.9.2 Exploded view

Preparation

- Remove key, open the housing.(Fig. 4.7.1) Keep the key in a safe place.
- Fix the housing.
- Drill the inlet opening (Break the joint between the opening and the housing with a screwdriver)

⚠ **Risk of injury!**
Observe the tool manufacturer's safety notes!

Installation

1. Fix the housing at a height of 1.3 to 1.5 m on an flat surface.
2. Pull the cables through the inlet opening(s) and into the housing.
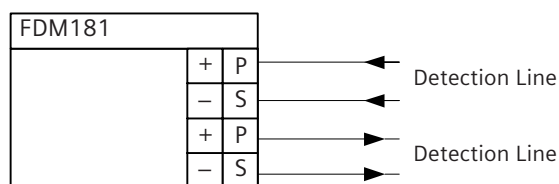3. Close the housing with the cover.

Fig. 4.7.3

Electrical connection

1. Open cover with key (see Fig. 4.7.1).
2. Connect the feed line to the terminals on the electronic component according to the connection diagram (see Fig. 4.7.3).
3. Place electronic component into housing marked "TOP" pointing upward (terminals at right) until locking device engages (see Fig. 4.7.2).
4. Close the housing with the cover.

⚠ Pay attention to the cables when placing the electronic component into the housing!

Cerberus ECO
Installation and Wiring

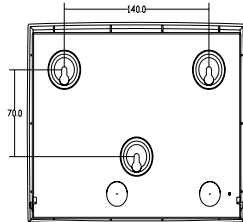## 4.11 FT1810 Floor Repeater Display Installation
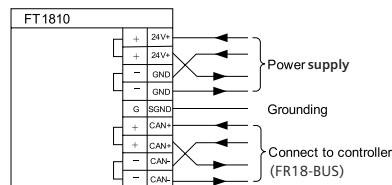

Fig. 4.10.1 Dimension (In: mm)
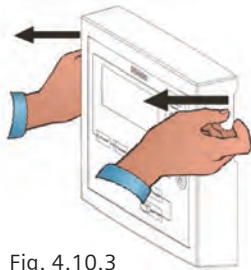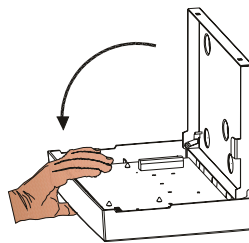

Fig. 4.10.2 Connection

Fig. 4.10.3

Fig. 4.10.4

Installation

1. Insert the loop line and external power wire through the floor repeater display.
2. Mark the drillings for the 3 dowel openings on a flat wall, drill the holes, put expansion bolts in and insert the screws loosely (Fig. 4.8.1).
3. Hang the floor repeater display on those screws through the waist-shape holes.
4. Open the front panel (Fig. 4.8.3/4.8.4), (make sure the bolt is on the open position) and tighten the screws.
5. Connect the cables to the terminal in accordance with the connection diagram (Fig. 4.8.2). The terminal equipment of FR18-BUS is required to be parallel connected with a resistance of 120Ω, which can be achieved through internal jumper of FT1810.
6. Close the front panel.
7. Lock it with the key. Remove the key and put it away.

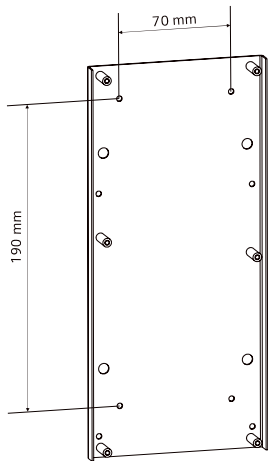## 4.12 FTM1811 Mimic Display Board Installation
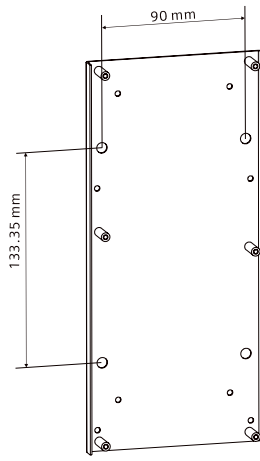

Fig. 4.11.1 Installation size for wall-mounted

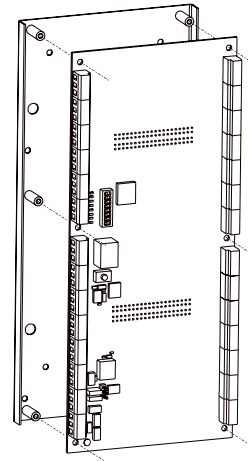Fig. 4.11.2 Installation size for rack-mounted
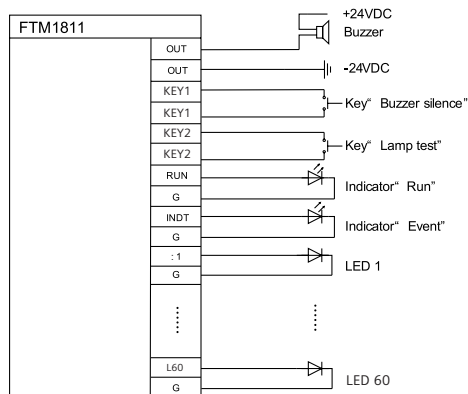
Fig. 4.11.3 Installation of PCB
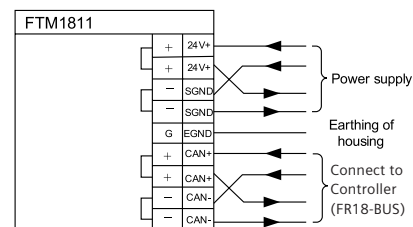

Fig. 4.11.4 Connection diagram 1

Fig. 4.11.5 Connection diagram 2

Procedure

1. Define the place of installation:
   - Outside an electric cabinet or controller (indoor only)
   - In an electric cabinet or in controller
2. Use four screws to fix the metal board of FTM1811 in controller/electric cabinet or on the wall z(refer to Fig.4.9.1/Fig.4.9.2).
3. Install PCB board on the metal board (refer to Fig. 4.9.3).
4. Connect the cables to the terminals (refer to Fig. 4.9.4./Fig.4.9.5)
5. Connect the jumper depending on if the FTM1811 is placed the end of FR18-BUS(CAN-Bus) line.

Note: Wiring capacity of power supply should be more than 1.5 mm^2.

The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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