SIEMENS

FS720

Fire detection system

Characteristic product data

MP1XS

Building Technologies

Fire Safety & Security Products

Technical specifications and availability subject to change without notice.

Table of contents

1 About this document

Goal and purpose

This document describes the hardware components of the fire detection system. It includes detailed information on the setup and function of the different hardware components. It especially provides information on the following:

- Pin assignment
- Indication elements
- Adjustment elements
- Technical data

This document does not include any instructions about planning, installation, commissioning etc. These instructions can be found in the corresponding documents. Document A6V10210355, Description, contains an overview of the structure and operating principle of the fire detection system. The description also contains an overview of the documentation setup.

Scope

The information contained in this document is valid for the market package MP1XS.

The document also contains information on country-specific components. The country-specific components are marked with square brackets, e. g. [DE], and may not be sold/used in your country.

Target groups

The information in this document is intended for the following target groups:

Target group	Activity	Qualification
Product Manager	● Is responsible for information passing between the manufacturer and regional company. ● Coordinates the flow of information between the individual groups of people involved in a project.	● Has obtained suitable specialist training for the function and for the products. ● Has attended the training courses for Product Managers.
Project Manager	● Coordinates the deployment of all persons and resources involved in the project according to the schedule. ● Provides the information required to run the project.	● Has obtained suitable specialist training for the function and for the products. ● Has attended the training courses for Project Managers.
Commissioning personnel	● Configures the product at the place of installation according to customer-specific requirements. ● Checks the product operability and releases the product for use by the operator. ● Searches for and corrects malfunctions.	● Has obtained suitable specialist training for the function and for the products. ● Has attended the training courses for commissioning personnel.

Target group	Activity	Qualification
Maintenance personnel	● Carries out all maintenance work. ● Checks that the products are in perfect working order. ● Searches for and corrects malfunctions.	● Has obtained suitable specialist training for the function and for the products.

Reference document

The reference version of this document is the international version in English. The international version is not localized.

The reference document has the following designation:

ID_x_en_--

x = modification index, en = English, -- = international

Document identification

Position	Information
Title page	● Product type ● Product designation ● Document type
Last page, bottom left	● Document ID ID_ModificationIndex_Language_COUNTRY ● Edition date
Last page, bottom right-hand side	● Manual ● Register

Conventions for text marking

Markups

Special markups are shown in this document as follows:

▷	Requirement for a behavior instruction
⇨	Intermediate result of a behavior instruction
⇨	End result of a behavior instruction
'Text'	Quotation, reproduced identically
<Key>	Identification of keys

Supplementary information

The  symbol identifies supplementary information such as a tip for an easier way of working.

Supplementary information is labelled with the 'i' symbol.

Reference documents

Document ID	Title
A6V10210355	FS720, Fire Detection System, Description

History of changes

Document ID	Edition date	Brief description
A6V10210368_b_en_--	05.2009	1. revised edition MP1XS
A6V10210368_a_en_--	11.2008	First edition MP1XS

2 Safety

2.1 Safety notices

The safety notices must be observed in order to protect people and property.

The safety notices in this document contain the following elements:

- Symbol for danger
- Signal word
- Nature and origin of the danger
- Consequences if the danger occurs
- Measures or prohibitions for danger avoidance

Symbol for danger

	This is the symbol for danger. It warns of **risks of injury**. Follow all measures identified by this symbol to avoid injury or death.

Additional danger symbols

These symbols indicate general dangers, the type of danger or possible consequences, measures and prohibitions, examples of which are shown in the following table:

 General danger

 Explosive atmosphere

 Voltage/electric shock

 Laser light

 Battery

 Heat

Signal word

The signal word classifies the danger as defined in the following table:

Signal word	Danger level
DANGER	DANGER identifies a dangerous situation, which **will result directly in death or serious injury** if you do not avoid this situation.

Signal word	Danger level
WARNING	WARNING identifies a dangerous situation, which **may result in death or serious injury** if you do not avoid this situation.
CAUTION	CAUTION identifies a dangerous situation, which **could result in slight to moderately serious injury** if you do not avoid this situation.
NOTICE	*NOTICE* identifies possible damage to property that may result from non-observance.

How risk of injury of presented

Information about the risk of injury is shown as follows:

⚠ WARNING

Nature and origin of the danger

Consequences if the danger occurs

- Measures / prohibitions for danger avoidance

How possible damage to property is presented

Information about possible damage to property is shown as follows:

NOTICE

Nature and origin of the danger

Consequences if the danger occurs

- Measures / prohibitions for danger avoidance

2.2 Safety regulations for the method of operation

National standards, regulations and legislation

Siemens products are developed and produced in compliance with the relevant European and international safety standards. Should additional national or local safety standards or legislation concerning the planning, assembly, installation, operation or disposal of the product apply at the place of operation, then these must also be taken into account together with the safety regulations in the product documentation.

Electrical installations

	⚠ **WARNING** **Electrical voltage** Electric shock ● Work on electrical installations may only be carried out by qualified electricians or by instructed persons working under the guidance and supervision of a qualified electrician, in accordance with the electrotechnical regulations.

- Wherever possible disconnect products from the power supply when carrying out commissioning, maintenance or repair work on them.
- Lock volt-free areas to prevent them being switched back on again by mistake.
- Label the connection terminals with external external voltage using a 'DANGER External voltage' sign.
- Route mains connections to products separately and fuse them with their own, clearly marked fuse.
- Fit an easily accessible disconnecting device in accordance with IEC 60950-1 outside of installation.
- Produce earthing as stated in local safety regulations.

Assembly, installation, commissioning and maintenance

- If you require tools such as a ladder, these must be safe and must be intended for the work in hand.
- When starting the fire control panel ensure that unstable conditions cannot arise.
- Ensure that all points listed in the 'Testing the product operability' section below are observed.
- You may only set controls to normal function when the product operability has been completely tested and the system has been handed over to the customer.

Testing the product operability

- Prevent the remote transmission from triggering erroneously.
- If testing building installations or activating devices from third-party companies, you must collaborate with the people appointed.
- The activation of fire control installations for test purposes must not cause injury to anyone or damage to the building installations. The following instructions must be observed:
  - Use the correct potential for activation; this is generally the potential of the building installation.
  - Only check controls up to the interface (relay with blocking option).
  - Make sure that only the controls to be tested are activated.

- Inform people before testing the alarming control devices and allow for possible panic responses.
- Inform people about any noise or mist which may be produced.
- Before testing the remote transmission, inform the corresponding alarm and fault signal receiving stations.

Modifications to the system layout and products

Modifications to the system and to individual products may lead to faults, malfunctioning and safety risks. Written confirmation must be obtained from Siemens and the corresponding safety bodies for modifications or additions.

Modules and spare parts

- Components and spare parts must comply with the technical specifications defined by Siemens. Only use products specified or recommended by Siemens.
- Only use fuses with the specified fuse characteristics.
- Wrong battery types and improper battery changing lead to a risk of explosion. Only use the same battery type or an equivalent battery type recommended by Siemens.
- Batteries must be disposed of in an environmentally friendly manner. Observe national guidelines and regulations.

Disregard of the safety regulations

Before they are delivered, Siemens products are tested to ensure they function correctly when used properly. Siemens disclaims all liability for damage or injuries caused by the incorrect application of the instructions or the disregard of danger warnings contained in the documentation. This applies in particular to the following damage:

- Personal injuries or damage to property caused by improper use and incorrect application
- Personal injuries or damage to property caused by disregarding safety instructions in the documentation or on the product
- Personal injury or damage to property caused by poor maintenance or lack of maintenance

Disclaimer

We have checked that the content of this document matches the hardware and software described. Despite this, we cannot rule out deviations and cannot therefore assume liability for them matching completely. The details in this document are checked regularly and any corrections needed included in subsequent editions.

We are grateful for any suggestions for improvement.

2.3 Standards and directives complied with

A list of the standards and directives complied with is available from your Siemens contact.

2.4 Release Notes

Limitations to the configuration or use of devices in a fire detection installation with a particular firmware version are possible.

⚠ WARNING

Limited or non-existent fire detection

Personal injury and damage to property in the event of a fire.

- Read the 'Release Notes' before you plan and/or configure a fire detection installation.
- Read the 'Release Notes' before you carry out a firmware update to a fire detection installation.

NOTICE

Incorrect planning and/or configuration

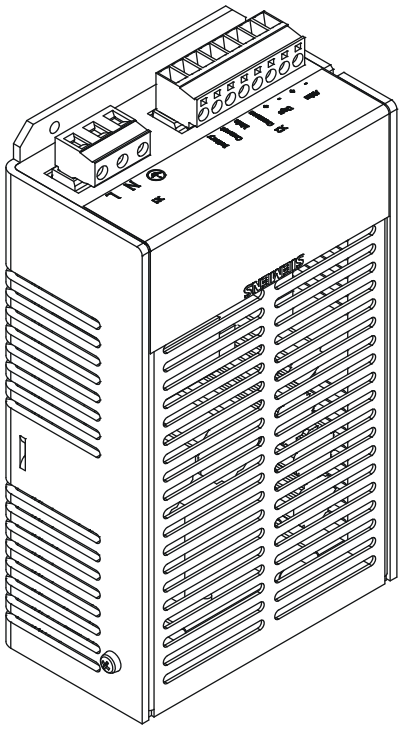
Important standards and specifications are not satisfied.

Fire detection installation is not accepted for commissioning.

Additional expense resulting from necessary new planning and/or configuration.

- Read the 'Release Notes' before you plan and/or configure a fire detection installation.
- Read the 'Release Notes' before you carry out a firmware update to a fire detection installation.

3 Power supply (70 W) FP2001-A1



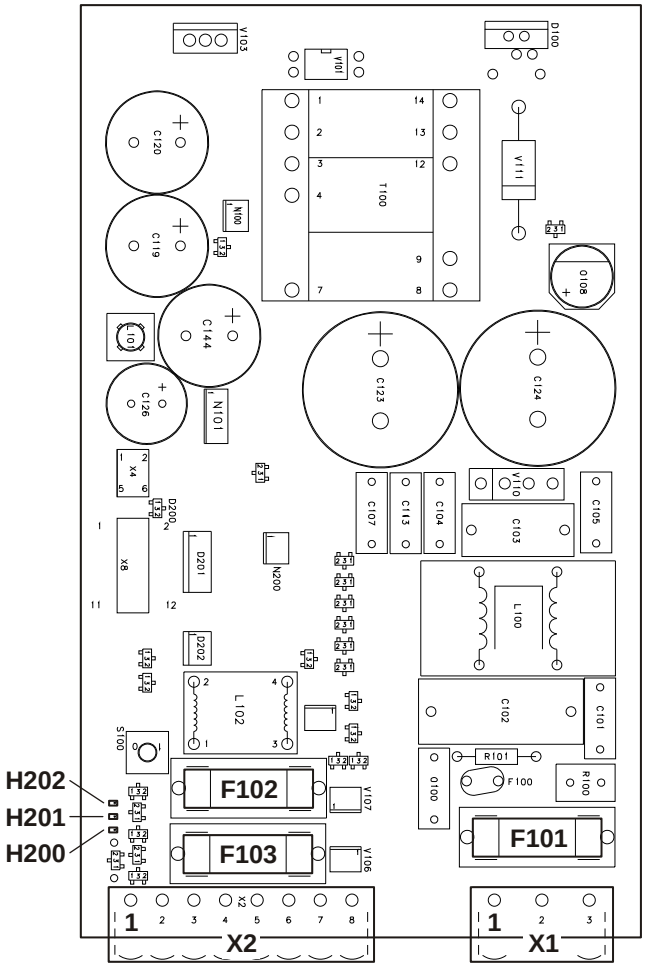
3.1 Description

The power supply (70 W) FP2001 converts the mains voltage to system voltage and charges the batteries.

The power supply has the following features:

- Output power 70 W
- Short-circuit-proof
- Current limit
- Mains voltage surveillance
- Uninterruptible power supply in battery operation
- Battery charging with temperature compensation
- Battery surveillance
- Used to supply other consumers (complies with EN 54 and VdS)
- Cannot be cascaded

3.2 Views



PCB view of power supply (70 W) FP2001

Element	Des.	Function
Connections	X1	Mains connection terminals
	X2	Connection for supply outputs and monitoring signals
LEDs	H202	'MAINS' LED: Mains voltage surveillance
	H201	'BATT' LED: Battery surveillance
	H200	'CONV' LED: Power supply surveillance
Fuses	F101	Mains fuse (3.15 A/T; 5 x 20 mm)
	F102/ F103	Fuses for batteries (3.15 A/T; 5 x 20 mm)

⚠ WARNING

High voltage! Danger to life!

Electric shock

- Connect the power supply to the mains only when the cover is closed.

3.3 Pin assignments

3.3.1 X1 mains connection

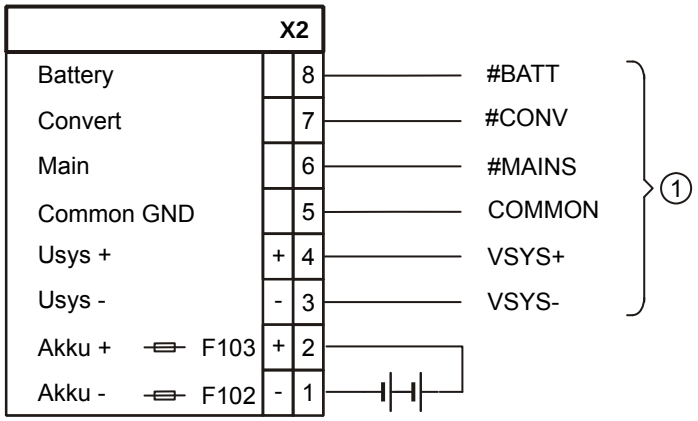
PIN	Designation	Description
1	⏚	Ground (protective conductor PE)
2	N	Neutral conductor
3	L	External conductor (L1)

Admissible cable cross-section: 0.2 ... 2.5 mm²

3.3.2 X2 monitoring signals

PIN	Designation	Description
8	Battery	Detection line (#BATT): Battery fault
7	Convert	Detection line (#CONV): Power supply fault
6	Main	Detection line (#MAINS): Mains fault
5	Common GND	Ground (COMMON)
4	Usys +	System supply (VSYS+)
3	Usys –	System supply (VSYS-)
2	Akku +	Battery supply (+)
1	Akku –	Battery supply (-)

Admissible cable cross-section: 0.2 ... 2.5 mm²



1 Cable tree to periphery board or fire terminal board

See also

- X1 supply [→ 40]
- X1 supply [→ 63]
- X1 supply [→ 33]
- X1 supply [→ 50]

3.4 Indications

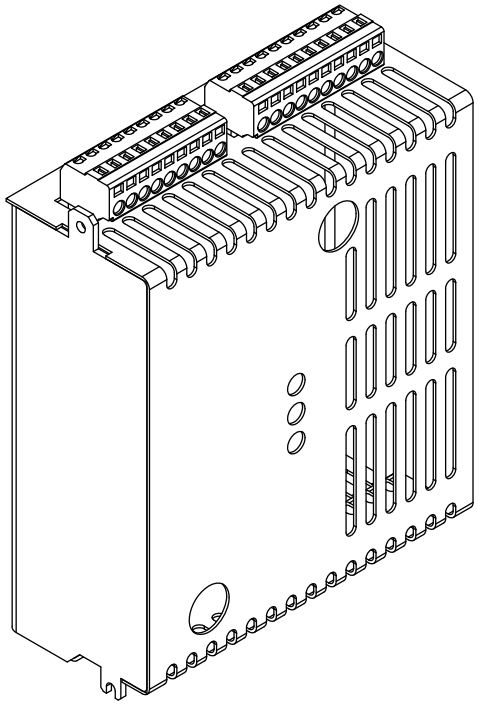
LED	Color	Function	Condition	Meaning
MAINS (H202)	Yellow	Mains voltage surveillance	On	No mains voltage, fault in the primary supply
			Off	Normal condition
BATT (H201)	Yellow	Battery surveillance	On	Battery fault
			Off	Normal condition
CONV (H200)	Green	Power supply surveillance	On	Normal condition
			Off	Power supply fault

3.5 Technical data

Mains supply	Voltage	85 … 265 V AC, 50/60 Hz
	Power	0.5 … 1 A
	Power consumption	Max. 90 VA
Supply output (system)	Designation	'Usys'
	Voltage	20 … 28.6 V DC (depending on charging state and temperature)
	Current:	
	● Maximum nominal output current with battery charge ($I_{max\ a}$)	0,9 A
	● Maximum nominal output current without battery charge ($I_{max\ b}$)	2,5 A
	● Minimum output current (I_{min})	0,05 A
	Performance	70 W
	Ripple	Max. 2.5 %
Supply output (battery)	Designation	'Akku'
	Voltage	21 … 28.6 V DC (depending on charging state and temperature)
	Charging current	Max. 1.6 A (the charging current is reduced at full load)
	Connectable batteries	2 x 12 V / 7 … 17 Ah (all battery types recommended by Siemens in acc. with document A6V10210362, planning)
	Load resistance (R_{imax})	Max. 1 Ω (batteries incl. line)
	Batteries are monitored for	● Short-circuit ● Open line ● Internal short-circuit ● Presence
	Low discharge protection	Battery voltage < 20.5 V DC

Mains fault monitoring signal	Designation	'Main'
	Active in event of	No mains voltage (signal within 10 s)
	Execution	Open collector
Battery fault monitoring signal	Designation	'Battery'
	Active in event of	• Battery fault • Battery voltage < 21.0 V DC (together with 'Main')
	Execution	Open collector
	Designation	'Convert'
	Active in event of	Fault within the power supply
	Execution	Open collector
Connections	Mains supply, battery supply and monitoring signals	Plug-type connection
Mechanical data	Dimensions (W x H x D)	95 x 170 x 54 mm
	Weight	800 g
Standards and approvals	Standards	EN 54-4:1997
	Approvals	VdS G206112
	CPD certificate	0786-CPD-20266
	CE conformity mark	Yes

4 Power supply (150 W) SV 24V-150W

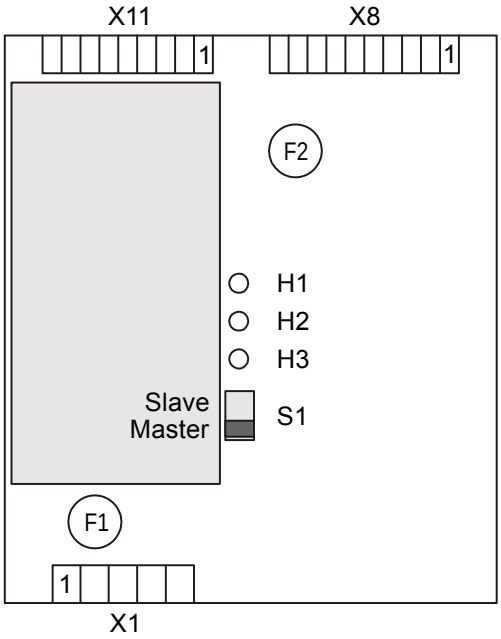


4.1 Description

The power supply (150 W) SV 24V-150W converts the mains voltage to system voltage and charges the batteries. It displays the following features:

- Output power 150 W
- Up to three power supply units SV 24V-150W cascadable
- Short-circuit-proof
- Current limit
- Mains voltage surveillance
- Uninterruptible power supply in battery operation
- Temperature-compensated battery charging with external temperature sensor
- Battery surveillance
- Temperature sensor surveillance
- Used to supply other consumers (complies with EN 54 and VdS)

4.2 Views



Power supply view (150 W) SV 24V-150W

Element	Des.	Function
Connections	X1	Mains connection terminals
	X8	Connections for output voltage
	X11	Connections for monitoring signals
LEDs	H1	Status display for mains voltage
	H2	Status display of battery
	H3	Status display of temperature sensor
Fuses	F1	Mains fuse (4 AT / 250 V)
	F2	Battery fuse (6.3 AF / 250 V)
Switch	S1	Operation mode selection switch (master / slave)

⚠ WARNING

High voltage! Danger to life!

Electric shock

- Connect the power supply to the mains only when the cover is closed.

4.3 Pin assignments

4.3.1 X1 mains connection

PIN	Designation	Description
1	PE	Ground (protective conductor)
2	L	External conductor (L1)
3	L	External conductor (L1)
4	N	Neutral conductor
5	N	Neutral conductor

Admissible cable cross-section: 0.2 ... 2.5 mm²

4.3.2 X8 output voltage

PIN	Designation	Description
10	$+B_{l\text{-}begr.}$	Connection for battery, current limited via internal battery fuse F2 (not cascaded)
9	$+B_{l\text{-}unbegr.}$	Connection for battery, no current limit (when cascaded, fuse in the cable tree)
8	+24 V	Supply output +24 V
7	+24 V	Supply output +24 V
6	+24 V	Supply output +24 V
5	+24 V	Supply output +24 V
4	+24 V	Supply output +24 V
3	0 V	Supply output 0 V
2	0 V	Supply output 0 V
1	0 V	Supply output 0 V

Admissible cable cross-section: 0,2 ... 2,5 mm²

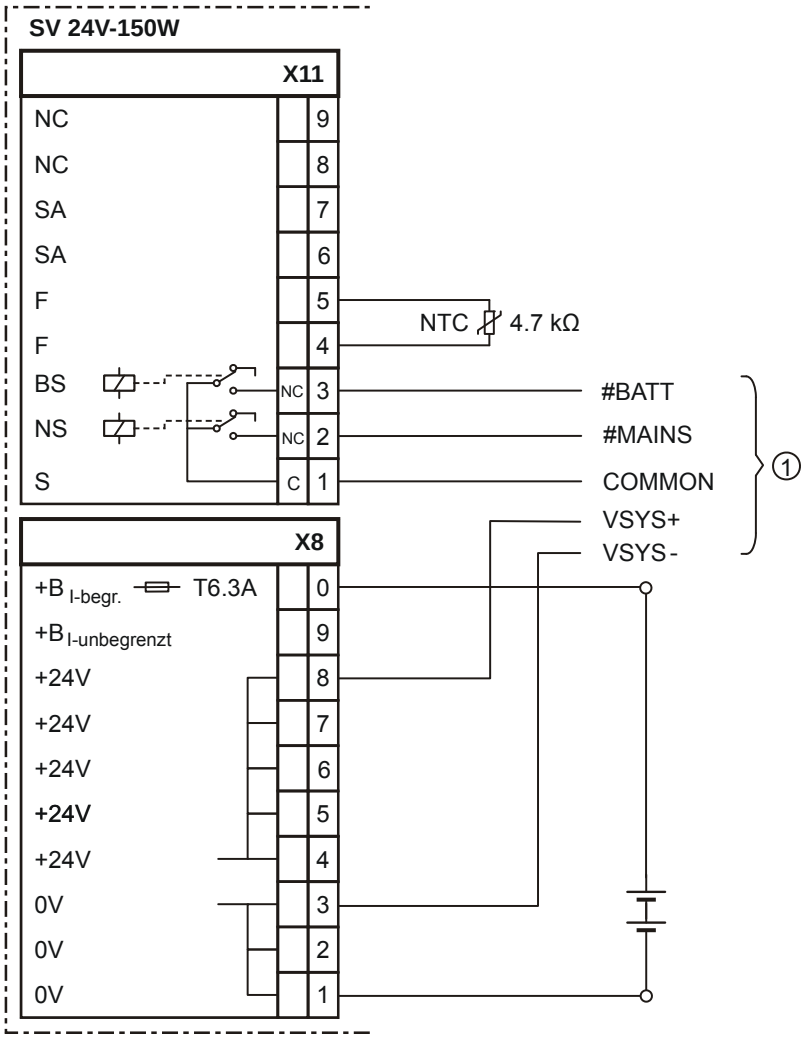
Comment

Batteries may be connected either on terminal 10 or, with external fuse, to terminal 9.

4.3.3 X11 monitoring signals

PIN	Designation	Description
9	NC	Not used
8	NC	Not used
7	SA	Control line for consistent current distribution (only when cascaded)
6	SA	Control line for consistent current distribution (only when cascaded)
5	F	Connection for temperature sensor (master only)
4	F	Connection for temperature sensor (master only)
3	BS	Signaling: Battery fault (normal operation 1/3 closed)
2	NS	Signaling: Mains fault (normal operation 1/2 closed)
1	S	Signaling: Common fault contact

Admissible cable cross-section: 0,2 ... 2,5 mm²

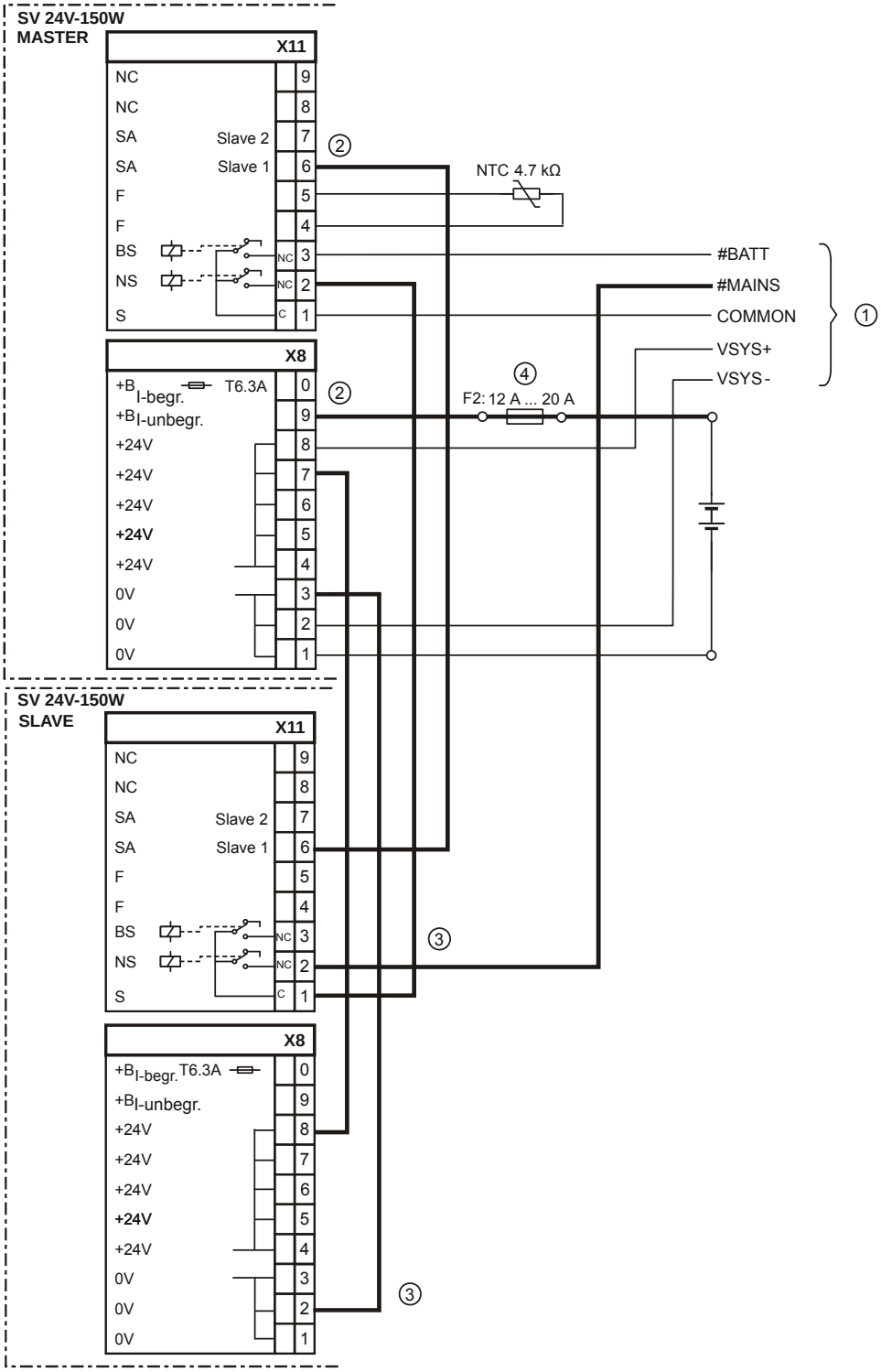


1 Cable tree to periphery board or fire terminal board

See also

- X1 supply [→ 40]
- X1 supply [→ 63]
- X1 supply [→ 33]
- X1 supply [→ 50]

4.3.4 Cascading of two supply units



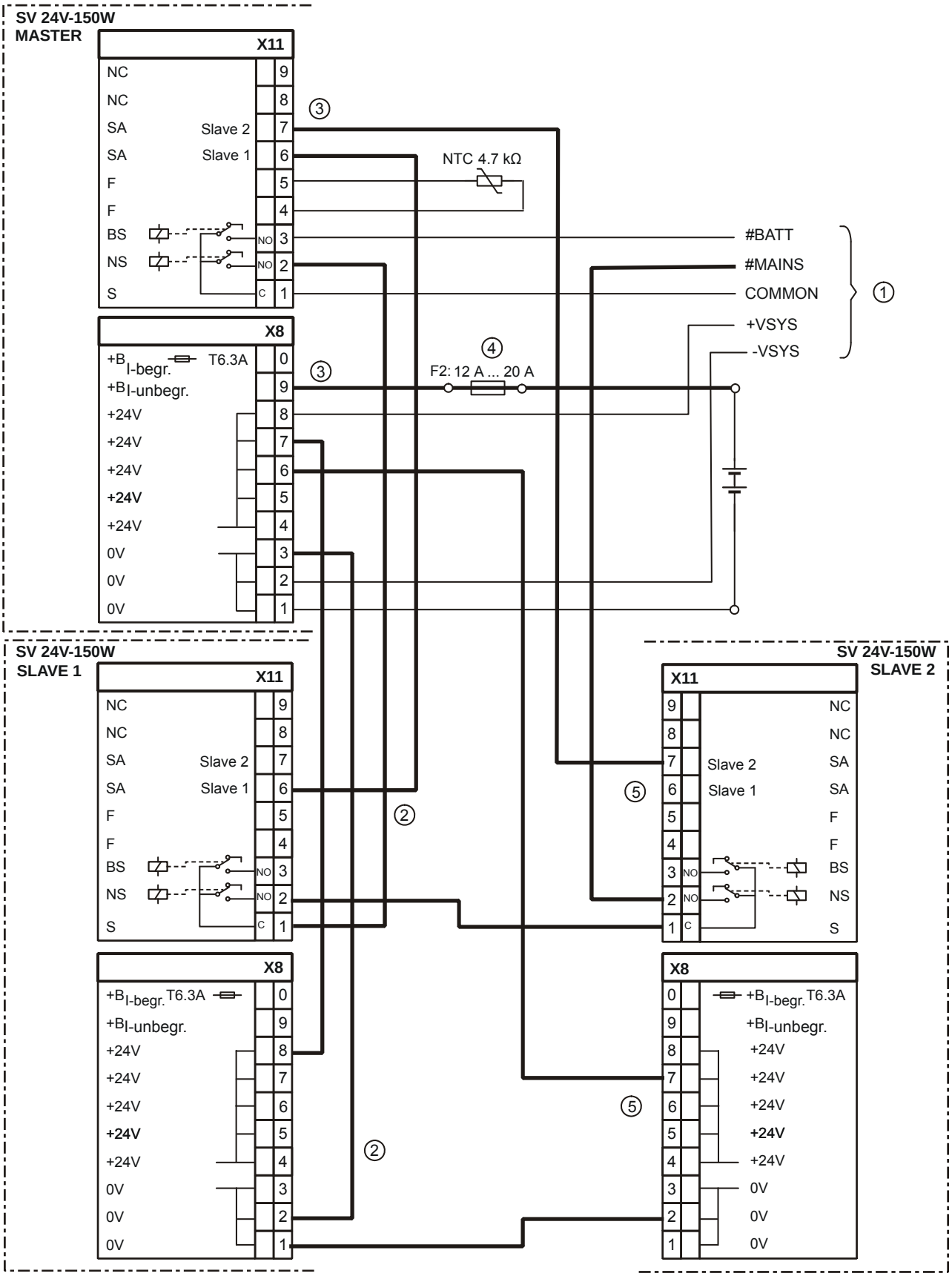
Cascading of two 150 W power supply units

1	Cable tree to periphery board or fire terminal board
2	Existing cable tree (connection for master power supply)
3	Additional cable tree for the second power supply (slave)
4	Additional fused terminal (F2) on the top hat rail

Notes

- The **connection lines marked in bold** of the additional cable tree (3) and the existing cable tree (2) must be wired again when installing the second power supply source (slave).
- In order to avoid ambient temperature differences, the two power supply units must be mounted next to each other in the same housing.
- The batteries and the system supply must only be connected to the master power supply unit.
- Only one temperature sensor must be connected to the master power supply unit.
- The temperature sensor must be fitted close to the batteries. (Precise details can be found in document A6V10210390, installation).

4.3.5 Cascading of three supply units



Cascading of three 150 W power supply units

1	Cable tree to periphery board or fire terminal board
2	Existing cable tree (connection for master power supply)
3	Additional cable tree for the second power supply source (slave 1)
4	Additional fused terminal (F2) on the top hat rail
5	Additional cable tree for the third power supply source (slave 2)

Notes

- The **connection lines marked in bold** of the additional cable tree (3 and 5) and the existing cable tree (2) must be wired again when installing the second power supply source (slave).
- In order to avoid ambient temperature differences, the three power supply units must be mounted next to each other in the same housing.
- The batteries and the system supply must only be connected to the master power supply unit.
- Only one temperature sensor must be connected to the master power supply unit.
- The temperature sensor must be fitted close to the batteries. (Precise details can be found in document A6V10210390, installation).

4.4 Indications

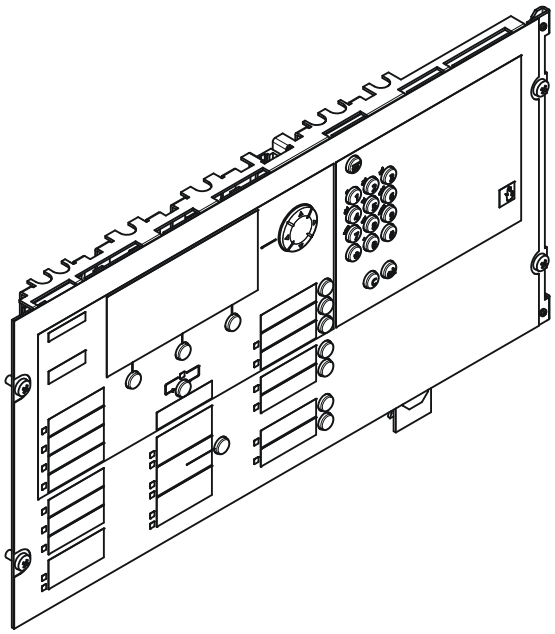
LED	Color	Function	Condition	Meaning
H1	Green	Mains voltage surveillance	On	Normal operation (mains voltage available)
			Off	Fault (no mains voltage)
H2	Yellow	Battery surveillance	On	Battery fault (open line, short circuit or voltage too low)
			Off	Normal operation (no fault)
H3	Yellow	Temperature sensor surveillance	On	Temperature sensor fault (open line, short-circuit or excess temperature)
			Off	Normal operation (no fault)

4.5 Technical data

Mains supply	Voltage	115 / 230 V AC +10/-15 % 50/60 Hz (automatic switchover)
	Current (I_{max})	2.6 / 1.2 A
	Power consumption	Max. 300 VA
Supply output (system)	Voltage	20 … 28.4 V DC (depending on charge and temperature)
	Power	Max. 5 A (jointly limited to 120 %)
	Performance	150 W

	Execution	● Idling-proof ● Short-circuit-proof ● Current limited
	Ripple	Max. 2.5 %
Supply output (batteries)	Voltage	21.0 … 28.4 V DC
	Charging current	Max. 5,0 A
	Connectable batteries	2 x 12 V / min. 21 ... max. 65 Ah (all battery types recommended by Siemens in acc. with doc. no. A6V10210362, planning)
	Batteries are monitored for	● Short-circuit ● Open line ● Internal short-circuit ● Presence
	Low discharge protection	Battery voltage < 21 V DC
Mains fault monitoring signal	Designation	'NS'
	Active in event of	No mains voltage or mains voltage is too low (signaling after 60 s at the earliest)
	Execution	Potential-free opening contact
Battery fault monitoring signal	Designation	'BS'
	Active in event of	● Battery fault ● Battery voltage < 21.0 V DC
	Execution	Potential-free opening contact
Connections	Mains supply:	
	● Execution	Spring clips
	● Admissible cable cross-section	Max. 1,5 mm^2
	Battery supply and monitoring signals:	
	● Execution	Spring clips / pluggable block
	● Admissible cable cross-section	Max. 2.5 mm^2
Mechanical data	Dimensions (W x H x D)	130 x 150 x 70 mm
	Weight	900 g
Standards and approvals	Standards	EN 54-4:1997
	Approvals	● VdS (BMT): G200126 ● VdS (IMT): G102007
	CE conformity mark	Yes

5 Operator unit FCMxxxx



5.1 Description

The operating unit FCM72xx contains the central computing unit (PMI & mainboard incl. CPU module) and the PMI. The operating unit is used in all stations and contains different options, depending on the type of station.

The central computing unit has the following interfaces:

- Interface to the periphery board
- Slot for a networking module (SAFEDLINK) with full functionality
- Slot for a networking module (SAFEDLINK) with degraded mode function
- Ethernet connection for:
  - maintenance PC or
  - networking via LAN
- Slots for serial options:
  - RS232 module for the connection of an event printer
  - RS485 module for connecting other devices such as ESPA 4.4.4. interface, FAT [DE], FDF [DE], UGA [FR] or remote EVAC-NL operation
- Interface for the periphery bus for the connection of:
  - LED indicator (internal)
  - EVAC-NL operation (internal)
- Support for the license key (L1 or L2)

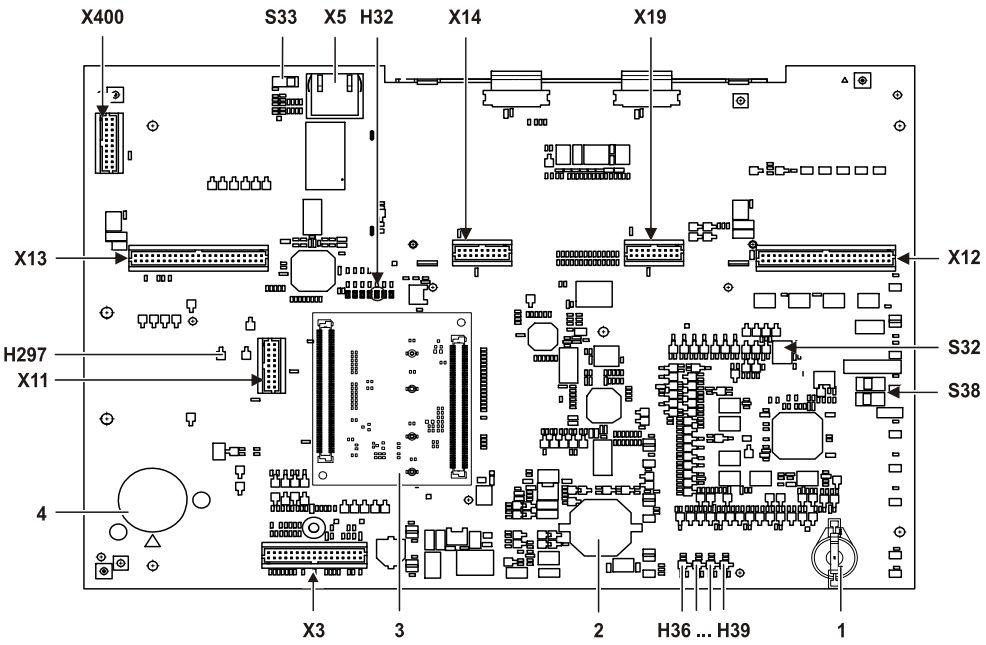
The PMI has the following features:

- Graphic display
- Buzzer
- Configurable LED indicators
- Insertable inscription strips
- Operation can be released with a password or key switch (optional)

Notes:

- The operation and designation of the keys and indicators are described in document A6V10211076, operation.
- Templates for inscription strips can be found in document A6V10217440, inscription strips.

5.2 View of PMI & mainboard



PCB view of PMI & mainboard

1	Support for license key
2	Buzzer
3	CPU module
4	Key switch (optional)
X3	Connection for periphery board or fire terminal board (supply and data signals)
X5	Ethernet connection
X11	Not used
X12	Slot for networking module (SAFEDLINK) FN2001-A1; degraded mode module
X13	Slot for networking module (SAFEDLINK) FN2001-A1; main module

X14	* Slot for RS232 module FCA2001-A1 (e.g. for event printer)
X19	* Slot for RS232 or RS485 module for FAT [DE]
X400	Connection for peripheral data bus
S32	Reset key
S33	Switch for the ground fault monitoring of the Ethernet connection
S38	Switches for booting and operation system options

* The serial modules can be equipped in any way.

5.3 Indications

LED	Color	Function	Condition	Meaning
H32	Yellow	LINK control indicator	Off	No Ethernet connection
			On	Ethernet connection established
H36	Yellow	Processor status indicator	Off	Processor in normal operation
			On	Processor in degraded mode; replace component or contact hotline
H37	Red	Processor status indicator	Off	Processor in normal operation
			On	Processor in degraded mode
H38	Red	Installation ready for switching off	Off	Installation in operation
			On	Installation may be disconnected from the mains
H39	Red	Processor status indicator	Off	Processor in normal operation
			On	Processor in degraded mode; replace component or contact hotline
H297	Red	Reserved		

5.4 Adjustment elements

S32: Reset key

Operation	Function
Press briefly	The station is shut down in a controlled manner. After the station has shut down, the 'Power down ready' LED lights up. This may take up to 5 minutes! The station may now be disconnected from the supply.
Press for approx. 5 s	Hardware reset The station is shut down immediately and rebooted. This may lead to data loss.

S33: Switch for the ground fault monitoring of the Ethernet connection

S33-1	S33-2	Function
ON	ON	Ground fault monitoring switched on
OFF	OFF	Ground fault monitoring switched off
OFF	ON	Not admissible
ON	OFF	Not admissible

Note:

The two switches must always be in the same position!

S38: Switches for booting and operation system options

The two S38 switches have independent functions. In normal conditions, both switches must be set to OFF.

- S38-2 has an impact on booting.
  The position of S38-2 always has the priority over S38-1.

S38-2	Function
ON	Station performs a software update.
OFF	Station is booted in normal mode.

Once the software update is complete, S38-2 must be set to OFF, otherwise a new update is initiated.

- S38-1 has an impact on starting the operation system.

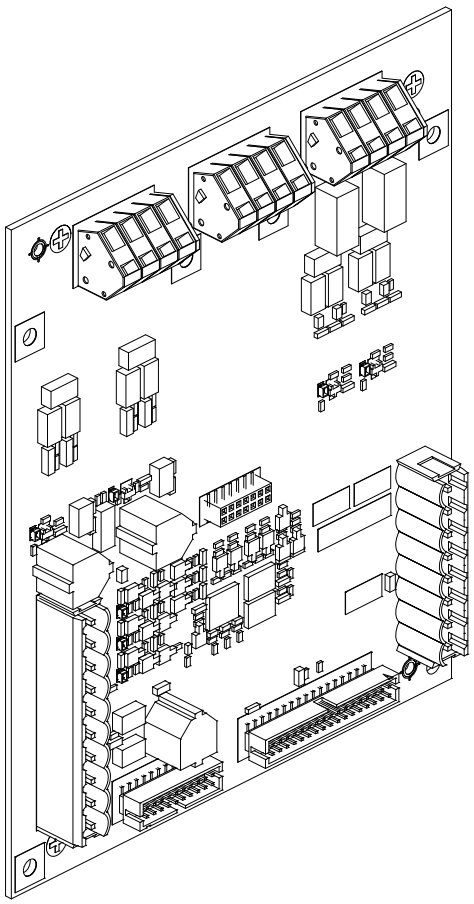
38-1	Function
ON	Station is booted in factory reset mode.
OFF	Station is booted in normal mode.

When the station has been booted in factory reset mode, S38-1 must be set to OFF. Otherwise a new factory reset is initiated.

5.5 Technical data

Supply input	Voltage	20 … 30 V DC
	Quiescent current (display illumination off)	120 mA
	Maximum current (display illumination on and lamp test on)	200 mA
Display	Dimensions (L x W)	115 x 50 mm
	Resolution	256 x 112 pixels
Interfaces	Slots for serial options (RS232 or RS485 module)	● For RS232 module for event printer ● For RS485 module for ESPA-4.4.4 interface, FAT, FBF
	Slots for networking module (SAFEDLINK).	● Full functionality (incl. degraded mode function) ● Degraded mode function only
	Ethernet connection	10/100 Mbit/s
	Connections for peripheral data bus	1
Connections	Ethernet	RJ45
	Peripheral data bus	Plug-type connection
Mechanical data	Dimensions (W x H x D)	427 x 200 x 25 mm
	Weight	1800 g

6 Fire terminal board FTI2001-A1

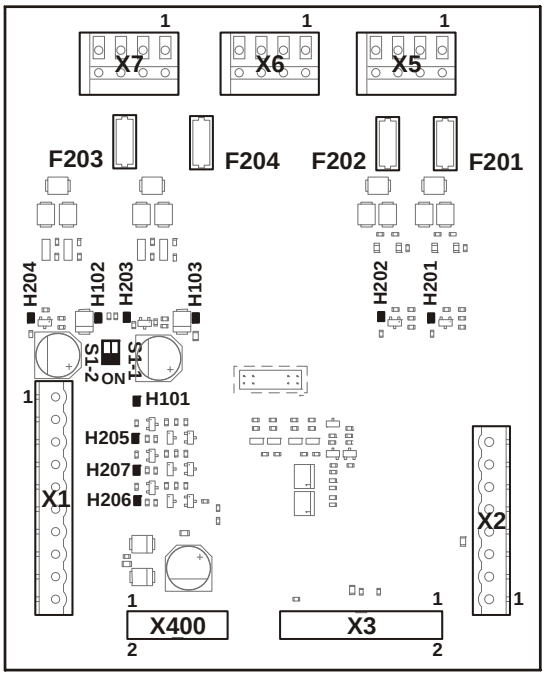


6.1 Description

The fire terminal board FTI2001-A1 is used in the fire terminal FT724. It is the interface between the power supply unit (mains or battery) and the operating unit. It has the following features:

- Supply inputs for an external 24V supply
- A third supply input [FR]
- Monitored supply outputs (24 V)

6.2 Views



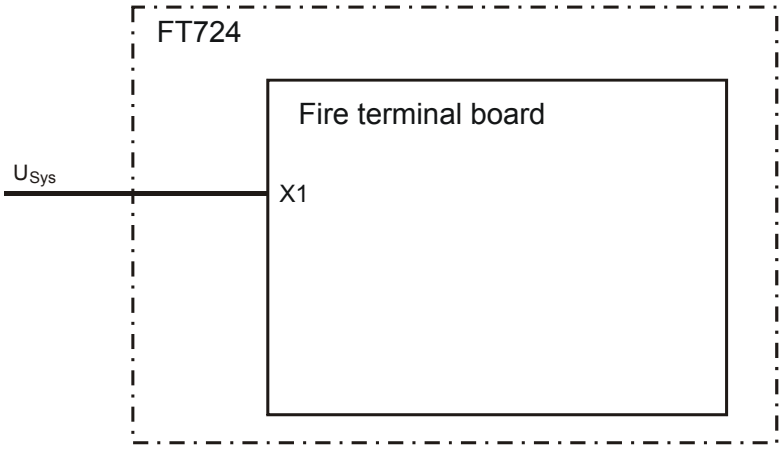
PCB view of FTI2001 fire terminal board

Element	Des.	Function
Plugs and terminals	X1	Supply and message signals from the power supply unit
	X2	Not used
	X3	Connection to the PMI & mainboard
	X5	Supply outputs (2 x 24 V)
	X6	Supply input 2 (24 V)
	X7	Supply input 1 (24 V)
	X400	Connection for the periphery bus
LEDs	H101 … H103	Power Down Ready
	H201	Surveillance of the fuse for supply output 1
	H202	Surveillance of the fuse for supply output 2
	H203	Surveillance of the voltage at the supply input 2
	H204	Surveillance of the voltage at the supply input 1
	H207	Power supply surveillance
	H206	Mains voltage surveillance
	H205	Battery surveillance
Fuses	F201	Supply output 1 (1 A/T); Schurter OMT 125
	F202	Supply output 2 (1 A/T); Schurter OMT 125
	F203	Supply input 1 (2 A/T); Schurter OMT 125
	F204	Supply input 2 (2 A/T); Schurter OMT 125
Switch	S1	Switch for supply surveillance of X6 and X7

6.3 Pin assignments

6.3.1 X1 supply

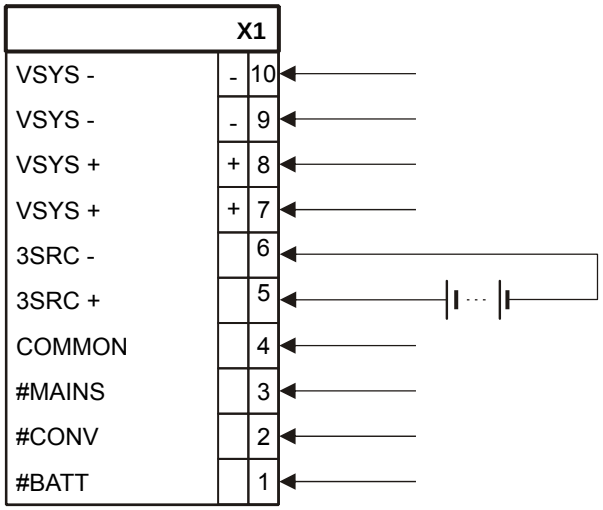
The optional power supply or the external 24 V supply is connected to supply input X1.



FTI2001-A1, supply input for external supply or fitted power supply (optional)

PIN	Designation	Description
10	VSYS–	Supply input from the power supply (–)
9	VSYS–	Supply input from the power supply (–)
8	VSYS+	Supply input from the power supply (+)
7	VSYS+	Supply input from the power supply (+)
6	3SRC–	Input for third supply source (–) [FR]
5	3SRC+	Input for third supply source (+) [FR]
4	COMMON	Ground
3	#MAINS	Message input from the power supply: Mains failure
2	#CONV	Message input from the power supply: Converter fault
1	#BATT	Message input from the power supply: Battery fault

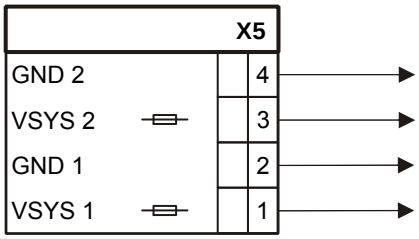
Admissible cable cross-section: 0,2 ... 2,5 mm²



6.3.2 X5 supply output

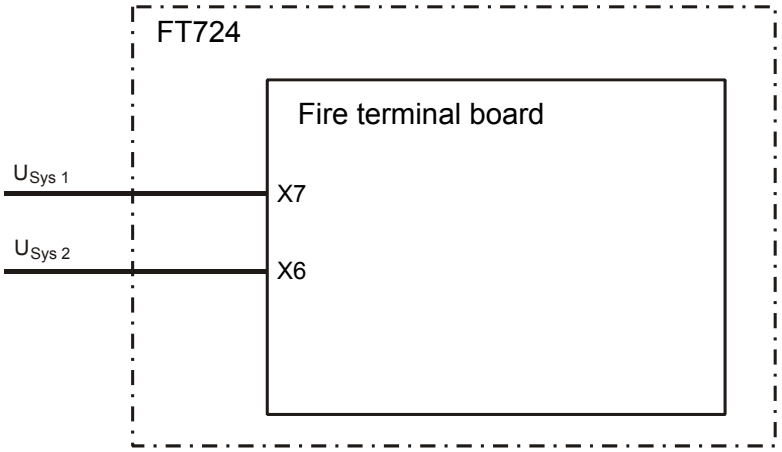
PIN	Designation	Description
4	GND 2	Ground
3	VSYS 2	System supply 21 … 28.6 V DC (+) (1 A/T)
2	GND 1	Ground
1	VSYS 1	System supply 21 … 28.6 V DC (+) (1 A/T)

Admissible cable cross-section: 0.2 ... 2.5 mm²



6.3.3 X6/X7 supply input 2/1

If the fire terminal is supplied by a fire control panel, a redundant supply is needed according to EN 54. For reasons of reliability, the two supply lines must be routed separately.

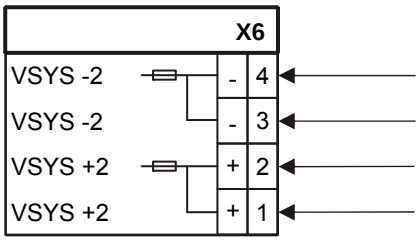


FTI2001-A1, supply via a fire control panel

X6, supply input 2

PIN	Designation	Description
4	VSYS - 2	Ground
3	VSYS - 2	Ground
2	VSYS + 2	System supply 21 … 28.6 V DC (+)
1	VSYS + 2	System supply 21 … 28.6 V DC (+)

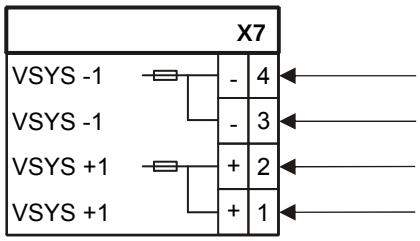
Admissible cable cross-section: 0,2 ... 2,5 mm²



X7, supply input 1

PIN	Designation	Description
4	VSYS - 1	Ground
3	VSYS - 1	Ground
2	VSYS + 1	System supply 21 … 28.6 V DC (+)
1	VSYS + 1	System supply 21 … 28.6 V DC (+)

Admissible cable cross-section: 0,2 ... 2,5 mm²



6.4 Indications

LED	Color	Function	Condition	Meaning
H101 … H103	Red	Power Down Ready	Off	Normal operation
			On	Control panel may be disconnected from the mains
H201	Yellow	Supply output 1	Off	Fuse ok
			On	Fuse damaged
H202	Yellow	Supply output 2	Off	Fuse ok
			On	Fuse damaged
H203	Yellow	Surveillance of the voltage at the supply input 2 'VSYS2' *	Off	Supply available
			On	No supply and surveillance is switched on (S1-1 = ON)
H204	Yellow	Surveillance of the voltage at the supply input 1 'VSYS1' *	Off	Supply available
			On	No supply and surveillance is switched on (S1-2 = ON)
H207	Yellow	Power supply surveillance 'CONVERT_DEF_IN'	On	Fault in the power supply unit
			Off	Normal condition
H206	Yellow	Mains voltage surveillance 'MAINS_FAIL_IN'	On	No mains voltage
			Off	Normal condition
H205	Green	Battery surveillance 'BATT_DEF_IN'	On	Battery fault
			Off	Normal condition

* For a correct indication the switch S1 must be in the corresponding position!

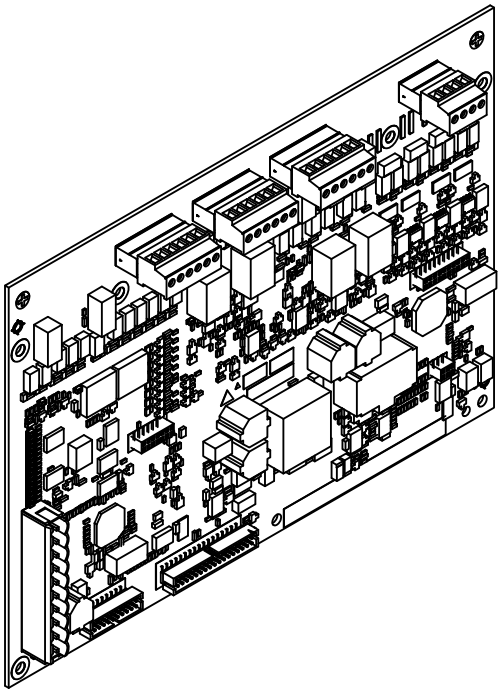
6.5 Adjustment elements

Switch	Function	Position	Meaning
S1-1	Supply input 1 'VSYS1'	ON	Input is used
		OFF	Input is not used
S1-2	Supply input 2 'VSYS2'	ON	Input is used
		OFF	Input is not used

6.6 Technical data

Supply (connector X1)	Designation	'VSYS+'; 'VSYS-'
	Operating voltage	21 … 28.6 V DC (= Usys)
	Operating current	Max. 2.5 A
Input 3rd supply source (connector X1)	Designation	'3SRC+'; '3SRC-'
	Voltage	7 … 30 V DC
	Power	Max. 40 mA
Supply input 1 (connector X7)	Designation	'VSYS +1', 'VSYS -1'
	Voltage	21 … 28.6 V DC (= Usys)
	Power	Max. 2 A
Supply input 2 (connector X6)	Designation	'VSYS +2', 'VSYS -2'
	Voltage	21 … 28.6 V DC (= Usys)
	Power	Max. 2 A
Supply output (connector X5)	Designation	'VSYS 1', 'VSYS 2'; 'GND 1', 'GND 2'
	Voltage	21 … 28.6 V DC
	Power	Max. 1 A per output
Connection terminals	Inputs and outputs	
	• Design	Spring clips
	• Admissible cable cross-section	0.2 ... 2.5 mm²
Mechanical data	Dimensions (L x W x H)	210 x 150 x 40 mm
	Weight	130 g

7 Periphery board (1-loop) FCI2001-A1

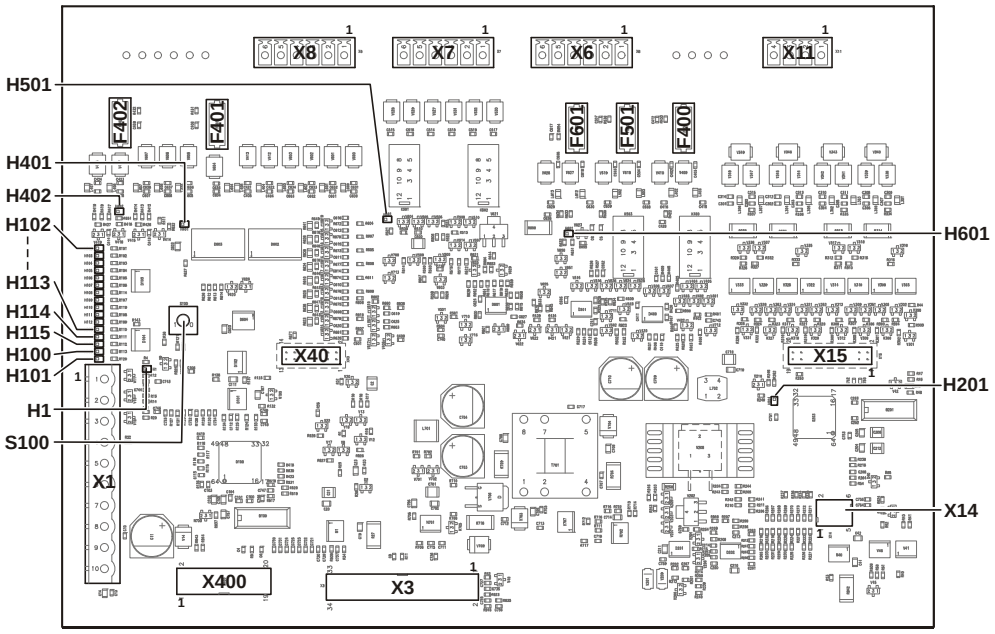


7.1 Description

The periphery board (1-loop) is used in the fire control panel FC721. It has the following features:

- Integrated line card for connecting a C-NET-loop or two stubs
- Max. 126 device addresses
- Connections for one remote transmission device each for RT Alarm and RT Fault
- One monitored output each for Alarm and Fault
- Four configurable inputs/outputs (24 V)
- Monitored sounder (horn) output
- A monitored supply output
- Input for a third supply source
- Activation of fault outputs in degraded mode operation
- Alarm evaluation in degraded mode operation; activation of the alarm and horn outputs in case of emergency alarm

7.2 Views



PCB view of periphery board (1-loop) FCI2010

Element	Des.	Function
Plugs and terminals	X1	Supply connection
	X3	Connection periphery bus to the PMI & mainboard
	X6	Monitored outputs for alarm, fault and horn
	X7	Changeover contacts for RT Alarm and RT Fault
	X8	Configurable inputs/outputs 1 … 4, supply input 1
	X11	C-NET detector line, loop 1 (mod. 2)
	X400	Connection periphery bus for additional peripherals
Slots for modules	X15	Not used
	X40	Not used
	X14	Not used
LEDs	H1	Power Down Ready
	H201	C-NET module 2 indication
	H401	Monitoring supply output 1 (fuse F401)
	H402	Not used
	H501	Monitoring alarm output (fuse F501)
	H601	Monitoring fault output (fuse F601)
	H102-H113	Indications of programmable inputs and outputs (H100, H101, H114, H115 not used)
	H114	Not used
	H115	Not used

Element	Des.	Function
Fuses	F400	Horn output (1 A/T); Schurter OMT 125
	F401	Supply output 1 (1 A/T); Schurter OMT 125
	F402	Not used
	F501	Monitored alarm output (1 A/T); Schurter OMT 125
	F601	Monitored fault output (1 A/T); Schurter OMT 125
Adjustment elements	S100	Switchover of the LED indicators for the inputs and outputs

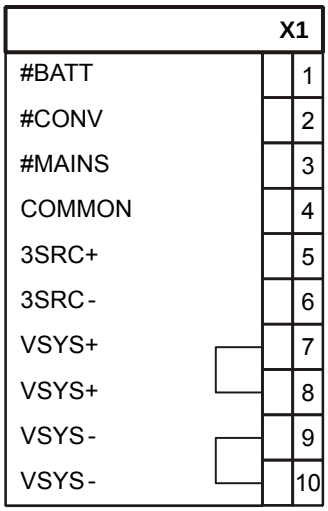
7.3 Pin assignments

Inputs and outputs which are not used do not require termination.
C-NET detector lines which are not used must not be terminated.

7.3.1 X1 supply

PIN	Designation	Description
1	#BATT	Message input from the power supply: Battery fault
2	#CONV	Message input from the power supply: Converter fault
3	#MAINS	Message input from the power supply: Mains failure
4	COMMON	Ground
5	3SRC+	Supply input for third supply source (+) [FR]
6	3SRC–	Supply input for third supply source (-) [FR]
7	VSYS+	Supply input from the power supply (+)
8	VSYS+	Supply input from the power supply (+)
9	VSYS–	Supply input from the power supply (–)
10	VSYS–	Supply input from the power supply (–)

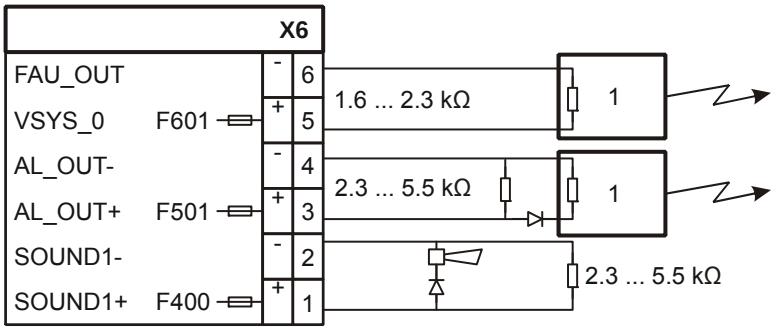
Admissible cable cross-section: 0.2 ... 2.5 mm²



7.3.2 X6 Horn, alarm and fault monitored outputs

PIN	Designation	Description
6	FAU_OUT	Output fault
5	VSYS_O	Supply output for consumer fault
4	AL_OUT-	Alarm output (-)
3	AL_OUT+	Alarm output (+)
2	SOUND1-	Horn output (-)
1	SOUND1+	Horn output (+)

Admissible cable cross-section: 0.2 ... 1.5 mm²

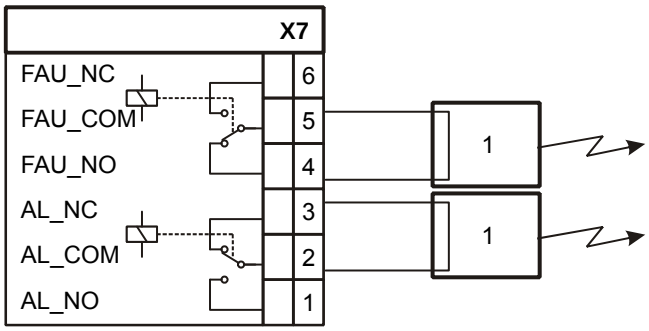


1 Remote transmission

7.3.3 X7 RT alarm and RT fault changeover contacts

PIN	Designation	Description
6	FAU_NC	RT fault break contact (normally closed)
5	FAU_COM	RT fault center tap (common)
4	FAU_NO	RT fault make contact (normally open)
3	AL_NC	RT alarm break contact (normally closed)
2	AL_COM	RT alarm center tap (common)
1	AL_NO	RT alarm make contact (normally open)

Admissible cable cross-section: 0.2 ... 1.5 mm²

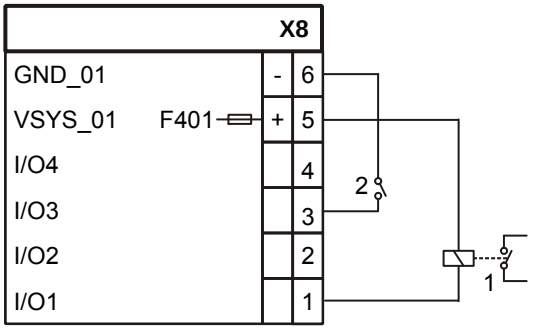


1	Remote transmission
FAU_…	Relay in normal operation = contact 5/4 closed
AL_…	Relay in normal operation = contact 2/3 closed

7.3.4 X8 configurable inputs/outputs 1 … 4 and supply output 1

PIN	Designation	Description
6	GND_01	Supply output 1 (–)
5	VSYS_01	Supply output 1 (+)
4	I/O4	Configurable input/output 4
3	I/O3	Configurable input/output 3
2	I/O2	Configurable input/output 2
1	I/O1	Configurable input/output 1

Admissible cable cross-section: 0.2 ... 1.5 mm²



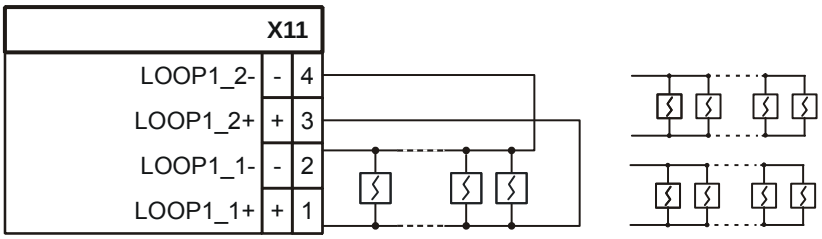
All inputs/outputs can be connected as follows:

1	Configured as output
2	Configured as input

7.3.5 X11 detector line loop 1

PIN	Designation	Description
4	LOOP1_2–	Loop 1 / stub 2 (–)
3	LOOP1_2+	Loop 1 / stub 2 (+)
2	LOOP1_1–	Loop 1 / stub 1 (–)
1	LOOP1_1+	Loop 1 / stub 1 (+)

Admissible cable cross-section: 0.2 ... 1.5 mm²



Comment

One loop or two stubs can be connected.

7.4 Indications

Indications of supply and system

LED	Colour	Function	Condition	Meaning
H1	Red	Power Down Ready	Off	Normal operation
			On	Control panel may be disconnected from the mains.
H401	Yellow	Supply output 1 (F401)	Off	Fuse ok
			On	Fuse damaged
H501	Yellow	Monitored alarm output (F501)	Off	Fuse ok
			On	Fuse damaged
H601	Yellow	Monitored fault output (F601)	Off	Fuse ok
			On	Fuse damaged

Indication of outputs

LED	Colour	Function	Condition	Meaning
H102	Yellow	FUE_FAU_1	Off	Relay activated (default)
			On	Relay not activated
H103	Yellow	FUE_FAU_2	Off	Active (default)
			Slow	Open line
			Fast	Short-circuit
			On	Passive
H104	Yellow	FUE_AL_1	Off	Relay not activated (default)
			On	Relay activated
H105	Yellow	FUE_AL_2	Off	Passive (default)
			Slow	Open line
			Fast	Short-circuit
			On	Active
H106	Yellow	HORN_1	Off	Passive (default)
			Slow	Open line
			Fast	Short-circuit
			On	Active

Indications of programmable inputs / outputs

LED	Colour	Function	Condition	STATUS	DIRECTION
H108	Yellow	IO_FAULT	Off	Normal operation	
			On	I/O error (excess temperature, excess voltage, etc.)	
H109	Yellow	IO_DIR	Off	I/O STATUS (push button S100)	
			On	I/O DIRECTION (push button S100)	
H110	Yellow	IO_1	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H111	Yellow	IO_2	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H112	Yellow	IO_3	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H113	Yellow	IO_4	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT

C-NET indicators

LED	Colour	Function	Condition	Meaning
H201	Yellow	C-NET loop 1 (module 2)	Off	Passive (normal operation)
			1 x flashing (every 2 s)	Failsafe active (communication to PMI interrupted)
			2 x flashing quickly (every 2 s)	Failsafe active + local alarm
			1 x flashing (every 1 s)	Failsafe active + indication (local alarm)
			1 x flashing (every 1 s) and 2 x quickly flashing (every 2 s)	Failsafe active + local alarm + indication
			On	Startup problems C-NET module 2 (clock)

7.5 Adjustment elements

Switch	Function	Position	Meaning
S100	Switchover of the indication for the I/O LEDs (see also H109)	Switchover	STATUS indication
			DIRECTION indication

7.6 Technical data

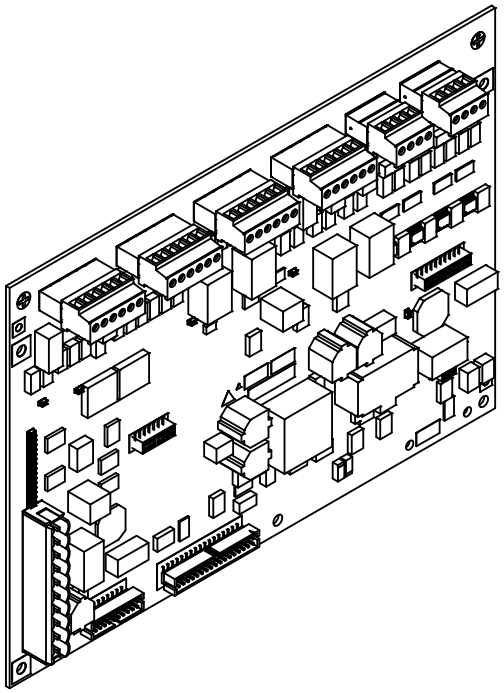
Supply input	Designation	'VSYS+'; 'VSYS-'
	Operating voltage	21 … 28.6 V DC (= Vsys)
	Operating current	Max. 5 A
Input 3. supply source [FR]	Designation	'3SRC+'; '3SRC-'
	Voltage	7 … 30 V DC
	Power	Max. 40 mA
Supply output 1	Designation	'VSYS_01', 'VSYS_02'; 'GND'
	Voltage	21 … 28.6 V DC
	Power	Max. 1 A (safeguarded with 1 AT)
Detector line	Designation	'LOOP1_1+'; 'LOOP1_1-' …
	Output voltage	Max. 33 V DC
	Number of integrated line cards	1
	Output current per integrated line card	Max. 0.5 A
	Addressable devices per integrated line card	Max. 126
	Connectable lines per integrated line card	1 loop or 2 stubs
	Protocol	C-NET

	Cable types	All types (recommended: twisted); for detailed specifications see document A6V10210362, planning
	Monitored for	● Ground fault ● Short-circuit ● Open line ● Line capacitance
	Design	● Short-circuit-proof ● Voltage surge protection ● Open line
Changeover contacts RT fault	Designation	'FAU_NO'; 'FAU_COM'; 'FAU_NC'
	Design	● Relay output ● Break or make contact ● Failsafe ● Activated in degraded mode
	Switching voltage	Max. 60 V DC
	Switching current	Max. 400 mA
Monitored output Fault	Designation	'VSYS_O'; 'FAU_OUT'
	Design	● Open drain ● Failsafe ● Activated in degraded mode
	Output voltage	21 ... 28.6 V DC
	Output current	Max. 300 mA (safeguarded with 1 AT)
	Guaranteed output current (monitored for short-circuit and open line)	15 mA with $U_{out\ min}$ = 16 V
	Monitored for (if output inactive)	● Short-circuit ● Open line
	Nominal monitoring resistance	1.6 … 2.3 kΩ
	Min. tolerance	+/–Ω
Changeover contacts RT alarm	Designation	’AL_NO’; ’AL_COM’; ’AL_NC’
	Design	● Relay output ● Break or make contact ● Activated in degraded mode
	Switching voltage	Max. 60 V DC
	Switching current	Max. 400 mA
Monitored output Alarm	Designation	'AL_OUT+'; 'AL_OUT-'
	Design	● Relay reversed polarity ● Activated in degraded mode
	Output voltage	21 ... 28.6 V DC
	Output current	Max. 1 A (safeguarded with 1 AT)
	Guaranteed output current (monitored for short-circuit and open line)	20 mA with $U_{out\ min}$ = 16 V
	Monitored for (if output inactive)	● Short-circuit ● Open line

	Nominal monitoring resistance with tolerance	2.3 … 5.5 kΩ +/–Ω
Monitored sounder (horn) output	Designation	'SOUND1+'; 'SOUND1-'
	Design	● Relay reversed polarity ● Activated in degraded mode
	Output voltage	21 ... 28.6 V DC [1])
	Output current	Max. 1 A (safeguarded with 1 AT)
	Guaranteed output current (monitored for short-circuit and open line)	20 mA with $U_{out\ min}$ = 16 V
	Monitored for (if output inactive)	● Short-circuit ● Open line
	Nominal monitoring resistance with tolerance	2.3 … 5.8 kΩ +/–Ω
Configurable inputs/outputs 1 … 4	Designation	'I/O1' … 'I/O4'
	Individually configurable as	● Input ● Output
	Configured as input:	
	● Design	● Digital ● Not monitored
	● Threshold values	> Vsys/2 = off < Vsys/4 = on
	Configured as output:	
	● Design	● Open drain ● Inherently short-circuit-proof ● Excess temperature protection
	● Output voltage	21 … 28.6 V DC
	● Output current per output	Max. 300 mA
	● Output current of all outputs (total)	1 A
Connection terminals	Inputs, outputs and detector line	
	● Design	Spring clips
	● Admissible cable cross-section	0,2 ... 1,5 mm²
	Supply:	
	● Design	Screw terminals
	● Admissible cable cross-section	0,5 ... 2,5 mm²
Mechanical data	Dimensions (L x W x H)	210 x 150 x 40 mm
	Weight	220 g

[1]) **NOTICE! Some voltage ranges of certified horns are limited to 28 V. This maximum voltage can only be guaranteed if the control panel temperature is always > 5 °C.**

8 Periphery board (2 loops) FCI2002-A1

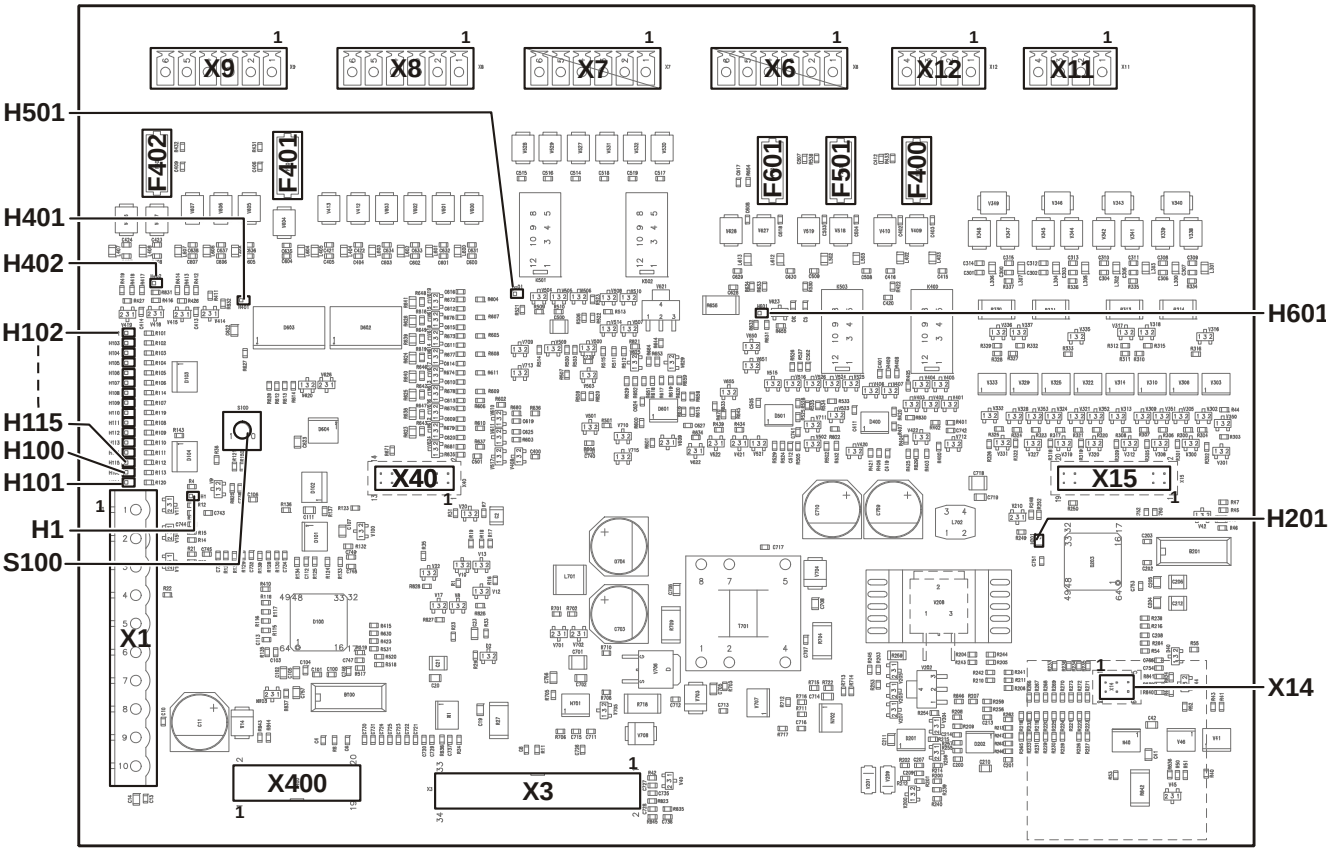


8.1 Description

The periphery board (2 loops) is used in the fire control panel FC722. It has the following features:

- Integrated line card for the connection of two C-NET loops or four stubs (mixed variants are possible)
- Optional loop extension (C-NET) FCI2003-A1 to extend to four loops or eight stubs
- Max. 252 device addresses
- Connections for one remote transmission device each for RT Alarm and RT Fault
- One monitored output each for Alarm and Fault
- Eight configurable inputs/outputs (24 V)
- Monitored sounder (horn) output
- Two monitored supply outputs
- Input for a third supply source
- Activation of fault outputs in degraded mode operation
- Alarm evaluation in degraded mode operation; activation of the alarm and horn outputs in case of emergency alarm

8.2 Views



PCB view of periphery board (2 loops) FCI2002

Element	Des.	Function
Plugs and terminals	X1	Supply connection
	X3	Connection periphery bus to the PMI & mainboard
	X6	Monitored outputs for alarm, fault and horn
	X7	Changeover contacts for RT Alarm and RT Fault
	X8	Configurable inputs/outputs 1 … 4, supply input 1
	X9	Configurable inputs/outputs 5 … 8, supply input 2
	X11	C-NET detector line, loop 1 (module 2)
	X12	C-NET detector line, loop 2 (module 2)
	X400	Connection periphery bus for additional peripherals
Slots for modules	X15	Loop extension (C-NET) FCI2003 for the integrated line card
	X40	Not used
	X14	Not used
LEDs	H1	Power Down Ready
	H201	C-NET module 2 indication
	H401	Monitoring supply output 1 (fuse F401)
	H402	Monitoring supply output 2 (fuse F402)
	H501	Monitoring alarm output (fuse F501)

Element	Des.	Function
	H601	Monitoring fault output (fuse F601)
	H100-H115	Indications of programmable inputs and outputs
Fuses	F400	Horn output (1 A/T); Schurter OMT 125
	F401	Supply output 1 (1 A/T); Schurter OMT 125
	F402	Supply output 2 (1 A/T); Schurter OMT 125
	F501	Monitored alarm output (1 A/T); Schurter OMT 125
	F601	Monitored fault output (1 A/T); Schurter OMT 125
Adjustment elements	S100	Switchover of the LED indicators for the inputs and outputs

8.3 Pin assignments

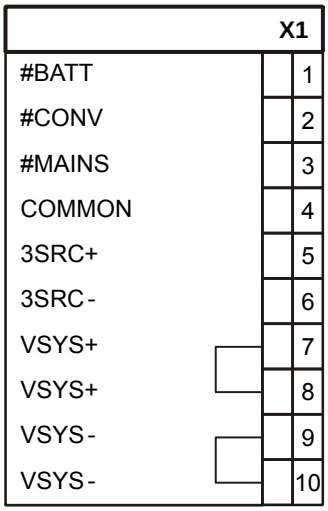
Inputs and outputs which are not used do not require termination.

C-NET detector lines which are not used must not be terminated.

8.3.1 X1 supply

PIN	Designation	Description
1	#BATT	Message input from the power supply: Battery fault
2	#CONV	Message input from the power supply: Converter fault
3	#MAINS	Message input from the power supply: Mains failure
4	COMMON	Ground
5	3SRC+	Supply input for third supply source (+) [FR]
6	3SRC–	Supply input for third supply source (-) [FR]
7	VSYS+	Supply input from the power supply (+)
8	VSYS+	Supply input from the power supply (+)
9	VSYS–	Supply input from the power supply (–)
10	VSYS–	Supply input from the power supply (–)

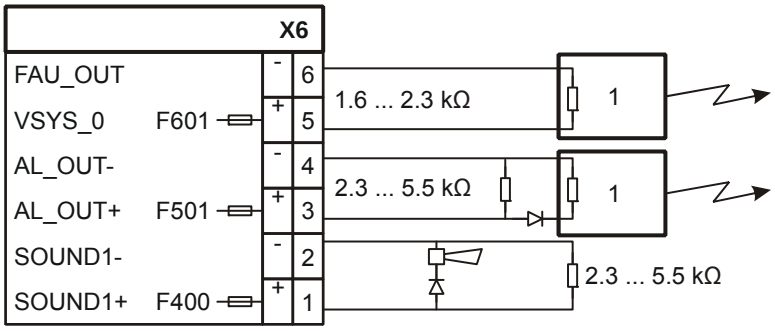
Admissible cable cross-section: 0.2 ... 2.5 mm²



8.3.2 X6 Horn, alarm and fault monitored outputs

PIN	Designation	Description
6	FAU_OUT	Output fault
5	VSYS_O	Supply output for consumer fault
4	AL_OUT-	Alarm output (-)
3	AL_OUT+	Alarm output (+)
2	SOUND1-	Horn output (-)
1	SOUND1+	Horn output (+)

Admissible cable cross-section: 0.2 ... 1.5 mm²

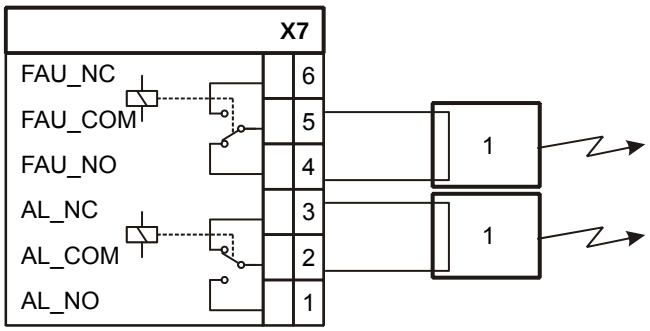


1 Remote transmission

8.3.3 X7 RT alarm and RT fault changeover contacts

PIN	Designation	Description
6	FAU_NC	RT fault break contact (normally closed)
5	FAU_COM	RT fault center tap (common)
4	FAU_NO	RT fault make contact (normally open)
3	AL_NC	RT alarm break contact (normally closed)
2	AL_COM	RT alarm center tap (common)
1	AL_NO	RT alarm make contact (normally open)

Admissible cable cross-section: 0.2 ... 1.5 mm²

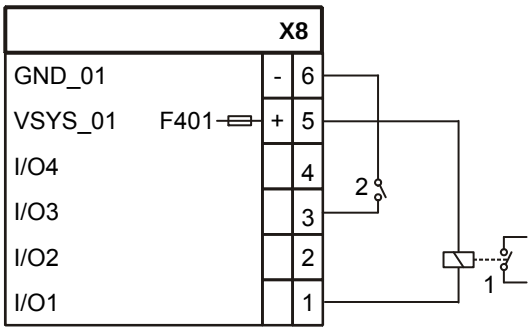


1	Remote transmission
FAU_…	Relay in normal operation = contact 5/4 closed
AL_…	Relay in normal operation = contact 2/3 closed

8.3.4 X8 configurable inputs/outputs 1 … 4 and supply output 1

PIN	Designation	Description
6	GND_01	Supply output 1 (–)
5	VSYS_01	Supply output 1 (+)
4	I/O4	Configurable input/output 4
3	I/O3	Configurable input/output 3
2	I/O2	Configurable input/output 2
1	I/O1	Configurable input/output 1

Admissible cable cross-section: 0.2 ... 1.5 mm²



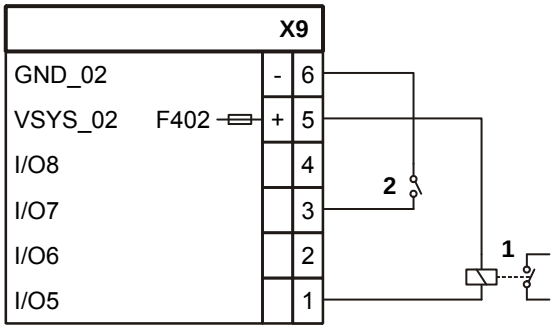
All inputs/outputs can be connected as follows:

1	Configured as output
2	Configured as input

8.3.5 X9 configurable inputs/outputs 5 … 8 and supply output 2

PIN	Designation	Description
6	GND_02	Supply output 2 (–)
5	VSYS_02	Supply output 2 (+)
4	I/O8	Configurable input/output 8
3	I/O7	Configurable input/output 7
2	I/O6	Configurable input/output 6
1	I/O5	Configurable input/output 5

Admissible cable cross-section: 0.2 ... 1.5 mm²



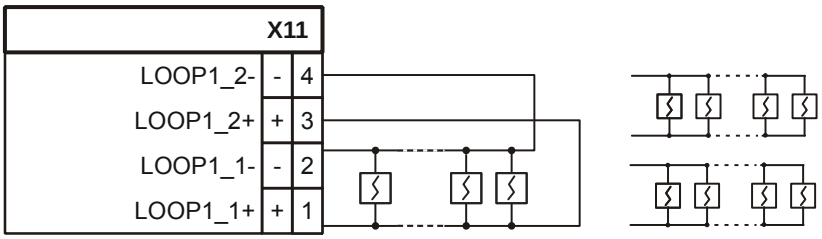
All inputs/outputs can be connected as follows:

1	Configured as output
2	Configured as input

8.3.6 X11 detector line loop 1

PIN	Designation	Description
4	LOOP1_2–	Loop 1 / stub 2 (–)
3	LOOP1_2+	Loop 1 / stub 2 (+)
2	LOOP1_1–	Loop 1 / stub 1 (–)
1	LOOP1_1+	Loop 1 / stub 1 (+)

Admissible cable cross-section: 0.2 ... 1.5 mm²



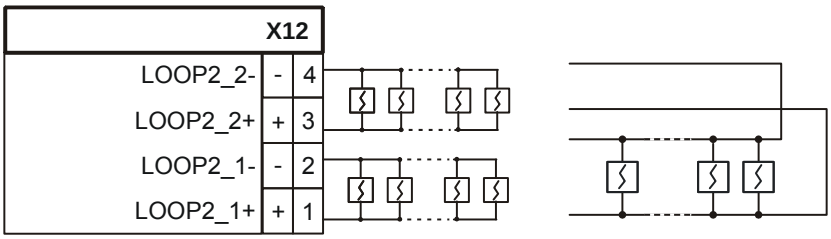
Comment

One loop or two stubs can be connected.

8.3.7 X12 detector line loop 2

PIN	Designation	Description
4	LOOP2_2–	Loop 2 / stub 4 (–)
3	LOOP2_2+	Loop 2 / stub 4 (+)
2	LOOP2_1–	Loop 2 / stub 3 (–)
1	LOOP2_1+	Loop 2 / stub 3 (+)

Admissible cable cross-section: 0.2 ... 1.5 mm²



Comment

One loop or two stubs can be connected.

8.4 Indications

Indications of supply and system

LED	Colour	Function	Condition	Meaning
H1	Red	Power Down Ready	Off	Normal operation
			On	Control panel may be disconnected from the mains.
H401	Yellow	Supply output 1 (F401)	Off	Fuse ok
			On	Fuse damaged
H402	Yellow	Supply output 2 (F402)	Off	Fuse ok
			On	Fuse damaged
H501	Yellow	Monitored alarm output (F501)	Off	Fuse ok
			On	Fuse damaged
H601	Yellow	Monitored fault output (F601)	Off	Fuse ok
			On	Fuse damaged

Indication of outputs

LED	Colour	Function	Condition	Meaning
H102	Yellow	FUE_FAU_1	Off	Relay activated (default)
			On	Relay not activated
H103	Yellow	FUE_FAU_2	Off	Active (default)
			Slow	Open line
			Fast	Short-circuit
			On	Passive
H104	Yellow	FUE_AL_1	Off	Relay not activated (default)
			On	Relay activated
H105	Yellow	FUE_AL_2	Off	Passive (default)
			Slow	Open line
			Fast	Short-circuit
			On	Active
H106	Yellow	HORN_1	Off	Passive (default)
			Slow	Open line
			Fast	Short-circuit
			On	Active

Indications of programmable inputs / outputs

LED	Colour	Function	Condition	STATUS	DIRECTION
H108	Yellow	IO_FAULT	Off	Normal operation	
			On	I/O error (excess temperature, excess voltage, etc.)	
H109	Yellow	IO_DIR	Off	I/O STATUS (push button S100)	
			On	I/O DIRECTION (push button S100)	
H110	Yellow	IO_1	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H111	Yellow	IO_2	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H112	Yellow	IO_3	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H113	Yellow	IO_4	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H114	Yellow	IO_5	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H115	Yellow	IO_6	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H100	Yellow	IO_7	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H101	Yellow	IO_8	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT

C-NET indicators

LED	Colour	Function	Condition	Meaning
H201	Yellow	C-NET loop 1 and 2 (module 2)	Off	Passive (normal operation)
			1 x flashing (every 2 s)	Failsafe active (communication to PMI interrupted)
			2 x flashing quickly (every 2 s)	Failsafe active + local alarm
			1 x flashing (every 1 s)	Failsafe active + indication (local alarm)
			1 x flashing (every 1 s) and 2 x quickly flashing (every 2 s)	Failsafe active + local alarm + indication
			On	Start problems C-NET loop 1 and 2, module 2 (clock)

8.5 Adjustment elements

Switch	Function	Position	Meaning
S100	Switchover of the indication for the I/O LEDs (see also H109)	Switchover	STATUS indication
			DIRECTION indication

8.6 Technical data

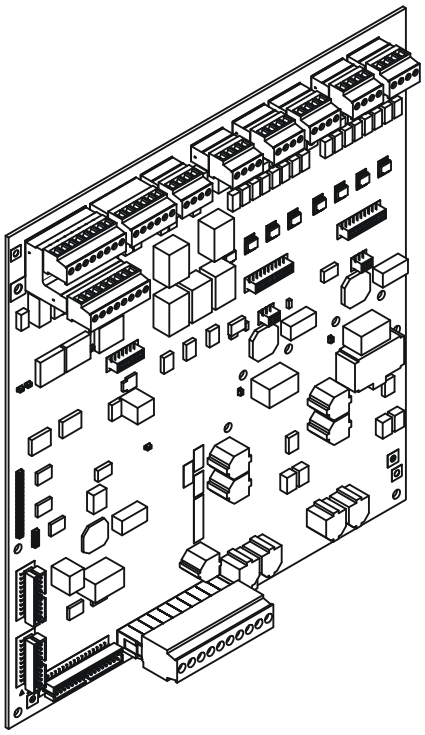
Supply input	Designation	'VSYS+'; 'VSYS-'
	Operating voltage	21 … 28.6 V DC (= Vsys)
	Operating current	Max. 5 A
Input 3. supply source [FR]	Designation	'3SRC+'; '3SRC-'
	Voltage	7 … 30 V DC
	Power	Max. 40 mA
Supply outputs 1 and 2	Designation	'VSYS_01', 'VSYS_02'; 'GND'
	Voltage	21 … 28.6 V DC
	Power	Max. 1 A (safeguarded with 1 AT)
Detector line	Designation	'LOOP1_1+'; 'LOOP1_1-' … LOOP2_2+'; 'LOOP2_2-'
	Output voltage	Max. 33 V DC
	Number of integrated line cards	1
	Output current per integrated line card	Max. 0,5 A
	Addressable devices per integrated line card	Max. 126
	Connectable lines per integrated line card	2 loops or 4 stubs (mixed variants are possible)
	Protocol	C-NET
	Cable types	All types (recommended: twisted); for detailed specifications see document A6V10210362, planning
	Monitored for	• Ground fault • Short-circuit • Open line • Line capacitance
	Execution	• Short-circuit-proof • Voltage surge protection • Open line

Changeover contacts RT fault	Designation	'FAU_NO'; 'FAU_COM'; 'FAU_NC'
	Execution	● Relay output ● Break or make contact ● Failsafe ● Activated in degraded mode
	Switching voltage	Max. 60 V DC
	Switching current	Max. 400 mA
Monitored output Fault	Designation	'VSYS_O'; 'FAU_OUT'
	Execution	● Open drain ● Failsafe ● Activated in degraded mode
	Output voltage	21 ... 28.6 V DC
	Output current	Max. 300 mA (safeguarded with 1 AT)
	Guaranteed output current (monitored for short-circuit and open line)	15 mA with $U_{out\ min}$ = 16 V
	Monitored for (if output inactive)	● Short-circuit ● Open line
	Nominal monitoring resistance	1.6 … 2.3 kΩ
	Min. tolerance	+/–Ω
Changeover contacts RT alarm	Designation	'AL_NO'; 'AL_COM'; 'AL_NC'
	Execution	● Relay output ● Break or make contact ● Activated in degraded mode
	Switching voltage	Max. 60 V DC
	Switching current	Max. 400 mA
Monitored output Alarm	Designation	'AL_OUT+'; 'AL_OUT-'
	Execution	● Relay reversed polarity ● Activated in degraded mode
	Output voltage	21 ... 28.6 V DC
	Output current	Max. 1 A (safeguarded with 1 AT)
	Guaranteed output current (monitored for short-circuit and open line)	20 mA with $U_{out\ min}$ = 16 V
	Monitored for (if output inactive)	● Short-circuit ● Open line
	Nominal monitoring resistance with tolerance	2.3 … 5.5 kΩ +/–Ω
Monitored sounder (horn) output	Designation	'SOUND1+'; 'SOUND1-'
	Execution	● Relay reversed polarity ● Activated in degraded mode
	Output voltage	21 ... 28.6 V DC [1])
	Output current	Max. 1 A (safeguarded with 1 AT)
	Guaranteed output current (monitored for short-circuit and open line)	20 mA with $U_{out\ min}$ = 16 V

	Monitored for (if output inactive)	• Short-circuit • Open line
	Nominal monitoring resistance with tolerance	2.3 … 5,8 kΩ +/–Ω
Configurable inputs/outputs 1 …	Designation	'I/O1' … 'I/O8'
	Individually configurable as	• Input • Output
	Configured as input:	
	• Execution	• Digital • Not monitored
	• Threshold values	> Vsys/2 = off < Vsys/4 = on
	Configured as output:	
	• Execution	• Open drain • Inherently short-circuit-proof • Excess temperature protection
	• Output voltage	21 … 28.6 V DC
	• Output current per output	Max. 300 mA
	• Output current of all outputs (total)	1 A
Connection terminals	Inputs, outputs and detector line	
	• Execution	Spring clips
	• Admissible cable cross-section	0,2 ... 1,5 mm²
	Supply:	
	• Execution	Screw terminals
	• Admissible cable cross-section	0,5 ... 2,5 mm²
Mechanical data	Dimensions (L x W x H)	210 x 150 x 40 mm
	Weight	220 g

[1] Some voltage ranges of certified horns are limited to 28 V. This maximum voltage can only be guaranteed if the control panel temperature is > 5 °C.

9 Periphery board (4 loops) FCI2004-A1

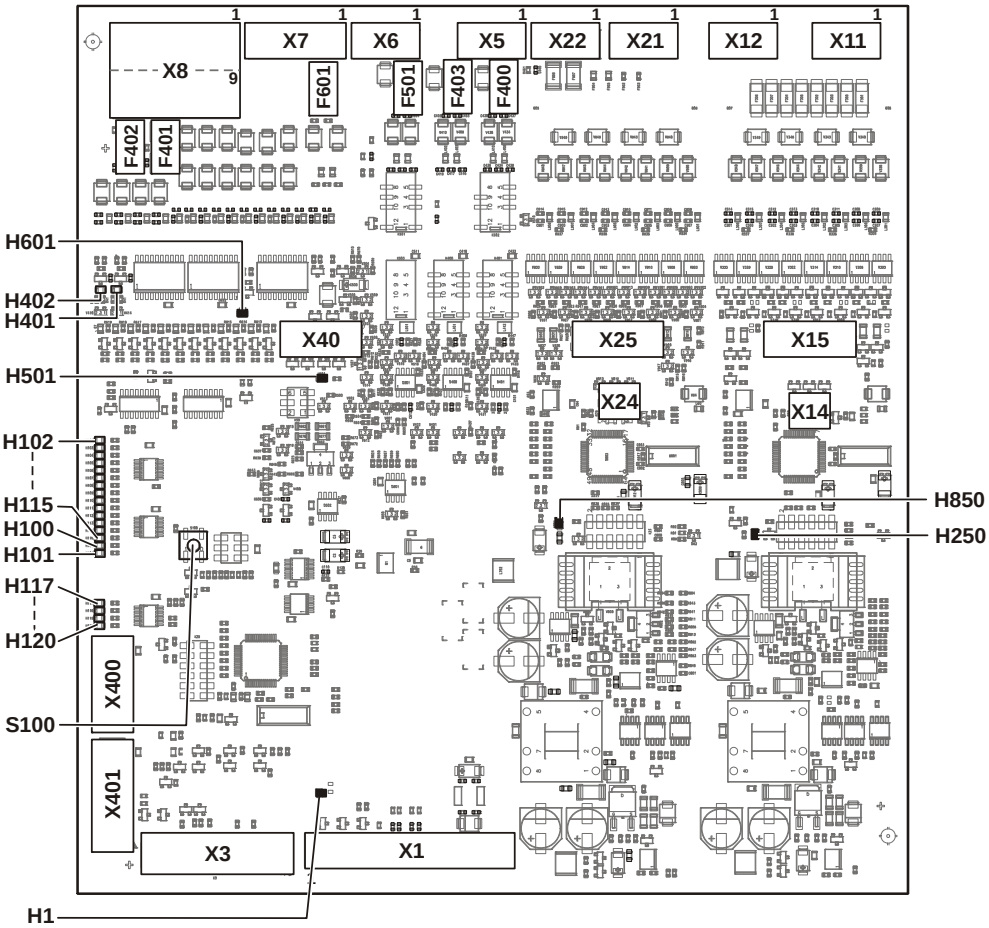


9.1 Description

The periphery board (4 loops) is used in the fire control panel FC724. It has the following features:

- Integrated line cards for the connection of four C-NET loops or eight stubs (mixed variants are possible)
- Optional loop extensions (C-NET) FCI2003-A1 to extend to eight loops or sixteen stubs
- Maximum 504 device addresses
- Connections for one remote transmission device each for RT Alarm and RT Fault
- One monitored output each for Alarm and Fault
- Twelve configurable inputs/outputs (24 V)
- Two monitored horn outputs
- Two monitored supply outputs
- Input for a third supply source
- Activation of fault outputs in degraded mode operation
- Alarm evaluation in degraded mode operation; activation of the alarm and horn outputs in case of emergency alarm

9.2 Views



PCB view of FCI2004

Element	Des.	Function
Plugs and terminals	X1	Supply connection
	X3	Connection periphery bus to the PMI & mainboard
	X5	Monitored horn outputs
	X6	Monitored outputs for Alarm and Fault
	X7	Changeover contacts for RT Alarm and RT Fault
	X8	Configurable inputs/outputs 1 … 12 and supply outputs Vsys
	X11	C-NET detector line, loop 1 (module 2)
	X12	C-NET detector line, loop 2 (module 2)
	X21	C-NET detector line, loop 1 (module 3)
	X22	C-NET detector line, loop 2 (module 3)
	X400	Connection periphery bus for additional peripherals
	X401	Connection periphery bus for additional peripherals
Slots for modules	X14	Not used
	X15	Loop extension (C-NET) FCI2003 for the integrated line card 1
	X24	Not used
	X25	Loop extension (C-NET) FCI2003 for the integrated line card 2
	X40	Not used

Element	Des.	Function
LEDs	H1	Power Down Ready
	H250	C-NET module 2 indication
	H850	C-NET module 3 indication
	H401	Monitoring supply output 1 (fuse F401)
	H402	Monitoring supply output 2 (fuse F402)
	H501	Monitoring alarm output (fuse F501)
	H601	Monitoring fault output alarm output (fuse F601)
	H100-H120	Indications of the programmable I/Os
Fuses	F400	Horn output 1 (1 A/T); Schurter OMT 125
	F401	Supply output 1 (1 A/T); Schurter OMT 125
	F402	Supply output 2 (1 A/T); Schurter OMT 125
	F403	Horn output 2 (1 A/T); Schurter OMT 125
	F501	Monitored alarm output (1 A/T); Schurter OMT 125
	F601	Monitored fault output (1 A/T); Schurter OMT 125
Adjustment elements	S100	Switchover of the LED indicators for the I/Os

9.3 Pin assignments

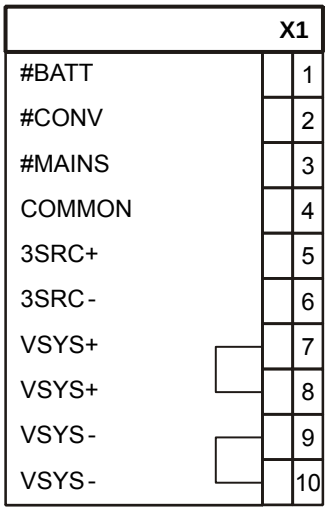
Inputs and outputs which are not used do not require termination.

C-NET detector lines which are not used must not be terminated.

9.3.1 X1 supply

PIN	Designation	Description
1	#BATT	Message input from the power supply: Battery fault
2	#CONV	Message input from the power supply: Converter fault
3	#MAINS	Message input from the power supply: Mains failure
4	COMMON	Ground
5	3SRC+	Third power supply input (+) [FR]
6	3SRC–	Third power supply input (–) [FR]
7	VSYS+	Supply input from the power supply (+)
8	VSYS+	Supply input from the power supply (+)
9	VSYS–	Supply input from the power supply (–)
10	VSYS–	Supply input from the power supply (–)

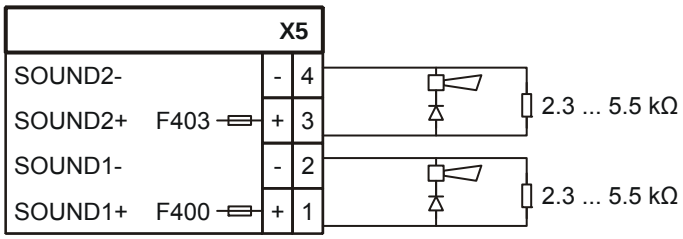
Admissible cable cross-section: 0,2 ... 2,5 mm²



9.3.2 X5 monitored horn outputs 1 and 2

PIN	Designation	Description
4	SOUND2-	Horn output 2 (-)
3	SOUND2+	Horn output 2 (+)
2	SOUND1-	Horn output 1 (-)
1	SOUND1+	Horn output 1 (+)

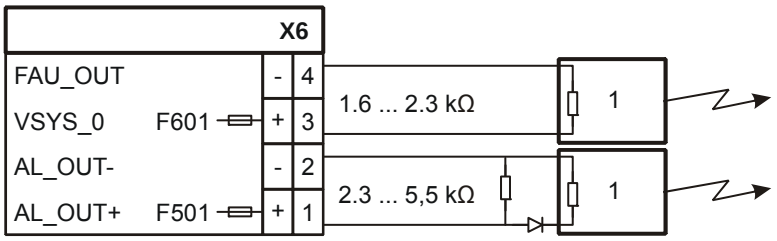
Admissible cable cross-section: 0.2 ... 1.5 mm²



9.3.3 X6 alarm and fault monitored outputs

PIN	Designation	Description
4	FAU_OUT	Output fault
3	VSYS_O	Supply output for consumer fault
2	AL_OUT-	Alarm output (-)
1	AL_OUT+	Alarm output (+)

Admissible cable cross-section: 0.2 ... 1.5 mm²

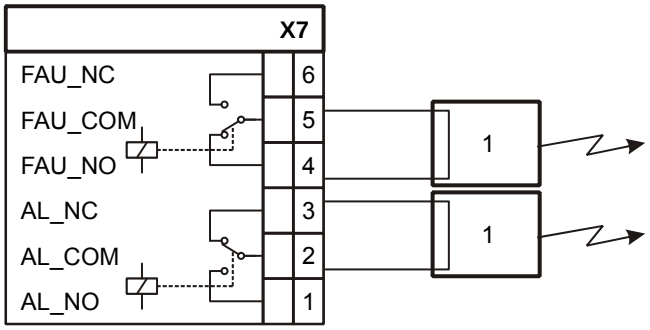


1 Remote transmission

9.3.4 X7 RT alarm and RT fault changeover contacts

PIN	Designation	Description
6	FAU_NC	RT fault break contact (normally closed)
5	FAU_COM	RT fault center tap (common)
4	FAU_NO	RT fault make contact (normally open)
3	AL_NC	RT alarm break contact (normally closed)
2	AL_COM	RT alarm center tap (common)
1	AL_NO	RT alarm make contact (normally open)

Admissible cable cross-section: 0.2 ... 1.5 mm²

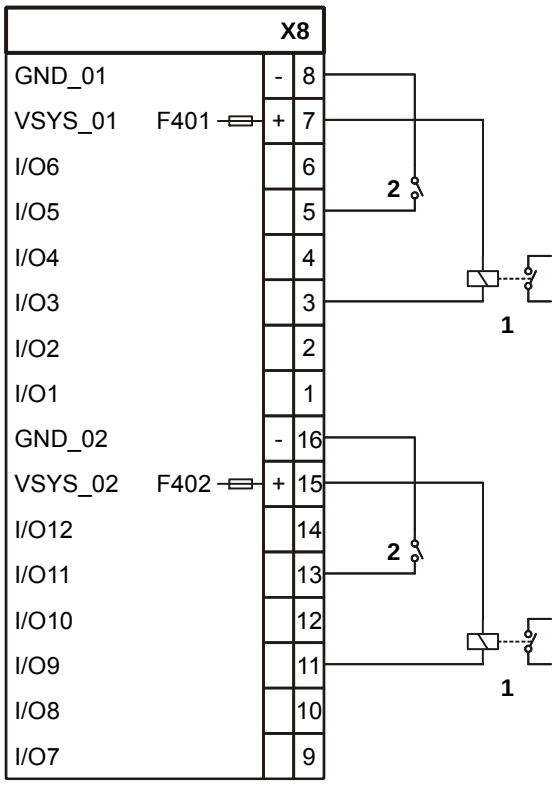


1	Remote transmission
FAU_…	Relay in normal operation = contact 5/4 closed
AL_…	Relay in normal operation = contact 2/3 closed

9.3.5 X8 configurable inputs/outputs 1 … 12 and supply outputs 1 … 2

PIN	Designation	Description
8	GND_01	Supply output 1 (-)
7	VSYS_01	Supply output 1 (+)
6	I/O6	Configurable input/output 6
5	I/O5	Configurable input/output 5
4	I/O4	Configurable input/output 4
3	I/O3	Configurable input/output 3
2	I/O2	Configurable input/output 2
1	I/O1	Configurable input/output 1
16	GND_02	Supply output 2 (-)
15	VSYS_02	Supply output 2 (+)
14	I/O12	Configurable input/output 12
13	I/O11	Configurable input/output 11
12	I/O10	Configurable input/output 10
11	I/O9	Configurable input/output 9
10	I/O8	Configurable input/output 8
9	I/O7	Configurable input/output 7

Admissible cable cross-section: 0.2 ... 1.5 mm²



All inputs/outputs can be connected as follows:

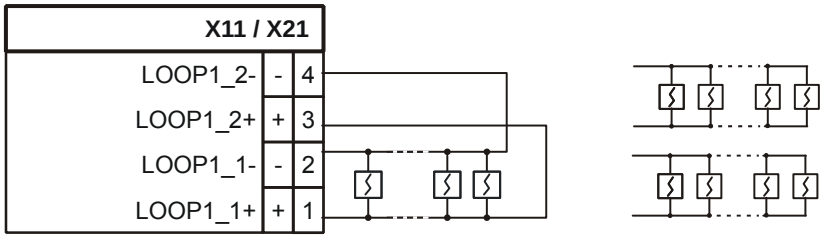
1	Configured as output
2	Configured as input

9.3.6 X11 / X21 detector line loop 1 (module 2/3)

PIN	Designation	Description	Comments for X11	Comments for X21 *
4	LOOP1_2–	Loop 1 / stub 2 (–)	Connection – 1st loop	Connection – 3rd loop
3	LOOP1_2+	Loop 1 / stub 2 (+)	Connection + 1st loop	Connection + 3rd loop
2	LOOP1_1–	Loop 1 / stub 1 (–)	Connection - 1st loop	Connection - 3rd loop
1	LOOP1_1+	Loop 1 / stub 1 (+)	Connection + 1st loop	Connection + 3rd loop

Admissible cable cross-section: 0,2 ... 1.5 mm²

* Loop number without loop extension



Comment

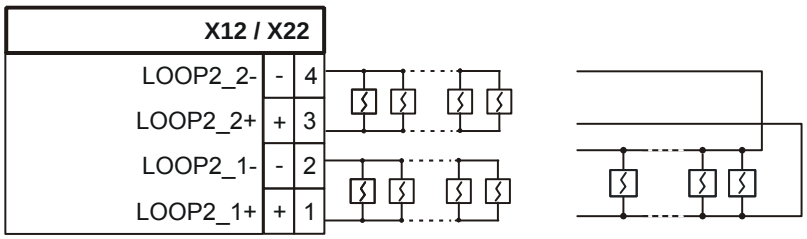
- The technical term LOOP 1 applies to both loops on connectors X11 and X21
- One loop or two stubs can be connected.

9.3.7 X12 / X22 detector line loop 2 (module 2/3)

PIN	Designation	Description	Comments for X12	Comments for X22 *
4	LOOP1_2–	Loop 1 / stub 2 (–)	Connection – 2nd loop	Connection – 4th loop
3	LOOP1_2+	Loop 1 / stub 2 (+)	Connection + 2nd loop	Connection + 4th loop
2	LOOP1_1–	Loop 1 / stub 1 (–)	Connection - 2nd loop	Connection - 4th loop
1	LOOP1_1+	Loop 1 / stub 1 (+)	Connection + 2nd loop	Connection + 4th loop

Admissible cable cross-section: 0,2 ... 1.5 mm²

* Loop number without loop extension



Comment

- The technical term LOOP 2 applies to both loops on connectors X12 and X22
- One loop or two stubs can be connected.

9.4 Indications

Indications of supply and system

LED	Colour	Function	Condition	Meaning
H1	Red	Power Down Ready	Off	Normal operation
			On	Control panel may be disconnected from the mains.
H401	Yellow	Supply output 1 (F401)	Off	Fuse ok
			On	Fuse damaged
H402	Yellow	Supply output 2 (F402)	Off	Fuse ok
			On	Fuse damaged
H501	Yellow	Monitored alarm output (F501)	Off	Fuse ok
			On	Fuse damaged
H601	Yellow	Monitored fault output (F601)	Off	Fuse ok
			On	Fuse damaged

Indication of outputs

LED	Colour	Function	Condition	Meaning
H102	Yellow	FUE_FAU_1	Off	Relay activated (default)
			On	Relay not activated
H103	Yellow	FUE_FAU_2	Off	Active (default)
			Slow	Open line
			Fast	Short-circuit
			On	Passive
H104	Yellow	FUE_AL_1	Off	Relay not activated (default)
			On	Relay activated
H105	Yellow	FUE_AL_2	Off	Passive (default)
			Slow	Open line
			Fast	Short-circuit
			On	Active
H106	Yellow	HORN_1	Off	Passive (default)
			Slow	Open line
			Fast	Short-circuit
			On	Active
H107	Yellow	HORN_2	Off	Passive (default)
			Slow	Open line
			Fast	Short-circuit
			On	Active

Indications of programmable inputs / outputs

LED	Colour	Function	Condition	STATUS	DIRECTION
H108	Yellow	IO_FAULT	Off	Normal operation	
			On	I/O error (excess temperature, excess voltage, etc.)	
H109	Yellow	IO_DIR	Off	I/O STATUS (push button S100)	
			On	I/O DIRECTION (push button S100)	
H110	Yellow	IO_1	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H111	Yellow	IO_2	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H112	Yellow	IO_3	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H113	Yellow	IO_4	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H114	Yellow	IO_5	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H115	Yellow	IO_6	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H100	Yellow	IO_7	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H101	Yellow	IO_8	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H117	Yellow	IO_9	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H118	Yellow	IO_10	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H119	Yellow	IO_11	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT
H120	Yellow	IO_12	Off	High input (default)	INPUT (default)
			On	Low input	OUTPUT

C-NET indicators

LED	Colour	Function	Condition	Meaning
H250	Yellow	C-NET loop 1 and 2 (module 2)	Off	Passive (normal operation)
			1 x flashing (every 2 s)	Failsafe active (communication to PMI interrupted)
			2 x flashing quickly (every 2 s)	Failsafe active + local alarm
			1 x flashing (every 1 s)	Failsafe active + indication (local alarm)
			1 x flashing (every 1 s) and 2 x quickly flashing (every 2 s)	Failsafe active + local alarm + indication
			On	Startup problems C-NET module 2 (clock)
H850	Yellow	C-NET loop 3 and 4 (module 3)	Off	Passive (normal operation)
			1 x flashing (every 2 s)	Failsafe active (communication to PMI interrupted)
			2 x flashing quickly (every 2 s)	Failsafe active + local alarm
			1 x flashing (every 1 s)	Failsafe active + indication (local alarm)
			1 x flashing (every 1 s) and 2 x quickly flashing (every 2 s)	Failsafe active + local alarm + indication
			On	Startup problems C-NET module 2 (clock)

9.5 Adjustment elements

Switch	Function	Position	Meaning
S100	Switchover of the indication for the I/O LEDs (see also H109)	Switchover	STATUS indication
			DIRECTION indication

9.6 Technical data

Supply input	Designation	'VSYS+'; 'VSYS-'
	Operating voltage	21 … 28.6 V DC (= Vsys)
	Operating current	Max. 5 A
Input 3. supply source	Designation	'3SRC+'; '3SRC-'
	Voltage	7 … 30 V DC
	Power	Max. 40 mA

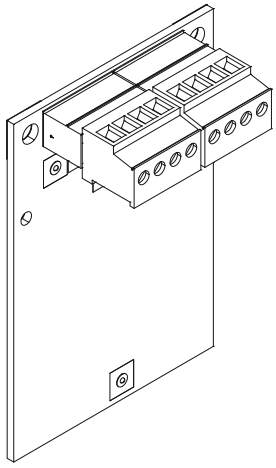
Supply outputs 1 and 2	Designation	'VSYS_01', 'VSYS_02'; 'GND'
	Voltage	21 … 28.6 V DC
	Power	Max. 1 A (safeguarded with 1 AT)
Detector lines	Designation	'LOOP1_1+'; 'LOOP1_1-' … 'LOOP2_2+'; 'LOOP2_2-'
	Output voltage	Max. 33 V DC
	Number of integrated line cards	2
	Output current per integrated line card	Max. 0,5 A
	Addressable devices per integrated line card	Max. 252
	Connectable lines per integrated line card	2 loops or 4 stubs (mixed variants are possible)
	Protocol	C-NET
	Cable types	All types (recommended: twisted); for detailed specifications see document A6V10210362, planning
	Monitored for	● Ground fault ● Short-circuit ● Open line ● Line capacitance
	Execution	● Short-circuit-proof ● Voltage surge protection ● Open line
Changeover contacts RT fault	Designation	’FAU_NO’; ’FAU_COM’; ’FAU_NC’
	Execution	● Relay output ● Break or make contact ● Failsafe ● Activated in degraded mode
	Switching voltage	Max. 60 V DC
	Switching current	Max. 400 mA
Monitored output Fault	Designation	'VSYS_O'; 'FAU_OUT'
	Execution	● Open drain ● Failsafe ● Activated in degraded mode
	Output voltage	21 ... 28.6 V DC
	Output current	Max. 0.3 A (safeguarded with 1 AT)
	Guaranteed output current (monitored for short-circuit and open line)	15 mA with $U_{out\ min}$ = 16V
	Monitored for (if output inactive)	● Short-circuit ● Open line
	Nominal monitoring resistance min. tolerance	1,6 … 2,3 kΩ +/–Ω

Changeover contacts RT alarm	Designation	'AL_NO'; 'AL_COM'; 'AL_NC'
	Execution	• Relay output • Break or make contact • Activated in degraded mode
	Switching voltage	Max. 60 V DC
	Switching current	Max. 400 mA
Monitored output Alarm	Designation	'AL_OUT+'; 'AL_OUT-'
	Execution	• Relay reversed polarity • Activated in degraded mode
	Output voltage	21 ... 28.6 V DC
	Output current	Max. 1 A (safeguarded with 1 AT)
	Guaranteed output current (monitored for short-circuit and open line)	20 mA with $U_{out\ min}$ = 16V
	Monitored for (if output inactive)	• Short-circuit • Open line
	Nominal monitoring resistance min. tolerance	2.3 … 5.5 kΩ +/–Ω
Monitored horn outputs 1 and 2	Designation	• 'SOUND1+'; 'SOUND1-' • 'SOUND2+'; 'SOUND2-'
	Execution	• Relay reversed polarity • Activated in degraded mode
	Output voltage	21 ... 28.6 V DC [1])
	Output current	Max. 1 A (safeguarded with 1 AT)
	Guaranteed output current: (monitored for short-circuit and open line)	20 mA with $U_{out\ min}$ = 16V
	Monitored for (if output inactive)	• Short-circuit • Open line
	Nominal monitoring resistance min. tolerance	2.3 … 5.5 kΩ +/–Ω
Configurable inputs/outputs 1 … 2	Designation	'I/O1' … 'I/O12'
	Individually configurable as	• Input • Output
	Configured as input	
	• Execution	• Digital • Not monitored
	• Threshold values	• > Vsys/2 = off • < Vsys/4 = on
	Configured as output:	
	• Execution	• Open drain • Inherently short-circuit-proof • Excess temperature protection
	• Output voltage	21 … 28.6 V DC
	• Output current per output	Max. 300 mA
	• Output current of all outputs (total)	1,5 A

Connection terminals	Inputs, outputs and C-NET	
	● Execution	Screw terminals
	● Admissible cable cross-section	0,2 ... 1,5 mm²
	Supply	
	● Execution	Screw terminals
	● Admissible cable cross-section	0,5 ... 2,5 mm²
Mechanical data	Dimensions (L x W x H)	210 x 225 x 40 mm
	Weight	350 g

[1] Some voltage ranges of certified horns are limited to 28 V. This maximum voltage can only be guaranteed if the control panel temperature is > 5 °C.

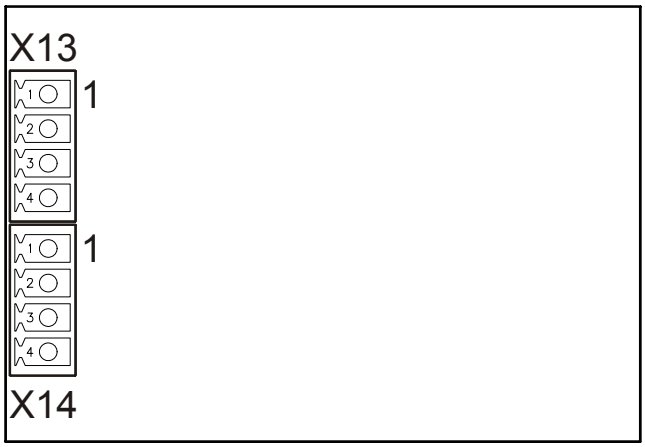
10 Loop extension FCI2003-A1



10.1 Description

The loop extension (C-NET) is plugged onto the periphery board in the fire control panels and makes it possible to double the admissible number of loops per integrated line card. The number of addresses per integrated line card remains at 252.

10.2 Views



PCB view of loop extension FCI2003-A1

X13 Connections for loop 3

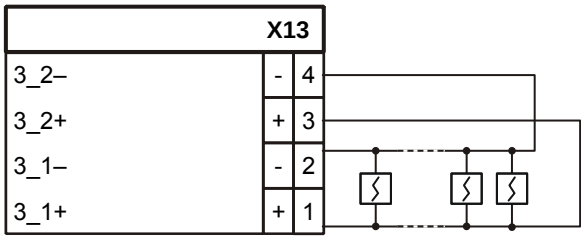
X14 Connections for loop 4

10.3 Pin assignments

10.3.1 X13 connection loop 3

PIN	Designation	Description
4	3_2-	Loop extension for loop 3 or stub 6 (–)
3	3_2+	Loop extension for loop 3 or stub 6 (+)
2	3_1-	Loop extension for loop 3 or stub 5 (–)
1	3_1+	Loop extension for loop 3 or stub 5 (+)

Admissible cable cross-section: 0,2 ... 1.5 mm²



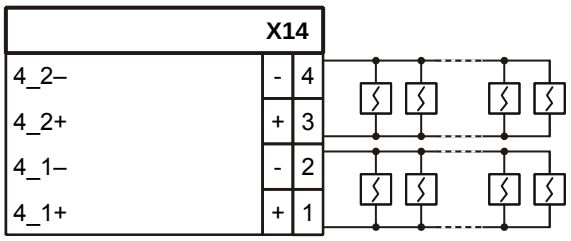
Notes:

- One loop or two stubs can be connected to the loop extension (C-NET).
- The plug for the loop extension (C-NET) is always located at the corresponding detector line connection.

10.3.2 X14 connection loop 4

PIN	Designation	Description
4	4_2-	Loop extension for loop 4 or stub 8 (–)
3	4_2+	Loop extension for loop 4 or stub 8 (+)
2	4_1-	Loop extension for loop 4 or stub 7 (–)
1	4_1+	Loop extension for loop 4 or stub 7 (+)

Admissible cable cross-section: 0,2 ... 1.5 mm²



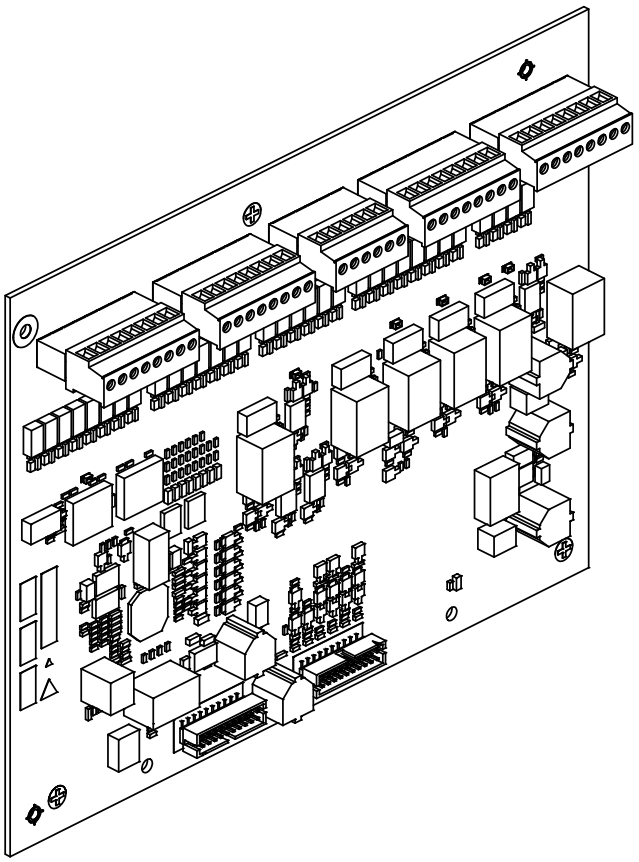
Notes:

- One loop or two stubs can be connected to the loop extension (C-NET).
- The plug for the loop extension (C-NET) is always located at the corresponding detector line connection.

10.4 Technical data

Detector line loop 1 and loop 2	Designation	'3_1+' … '4_2–'
	Output voltage	Max. 33 V DC
	Connectable lines	2 loops or 4 stubs
	Protocol	C-NET
	Monitored for	● Ground fault ● Short-circuit ● Open line ● Line capacitance
	Execution	● Short-circuit-proof ● Voltage surge protection ● Open line
Connection terminals	Inputs, outputs and detector lines:	
	● Execution	Screw terminals
	● Admissible cable cross-section	0,2 ... 1,5 mm²
Mechanical data	Dimensions (W x H x D)	48 x 20 x 70 mm
	Weight	25 g

11 Fire department periphery module FCI2001-D1 [DE]



11.1 Description

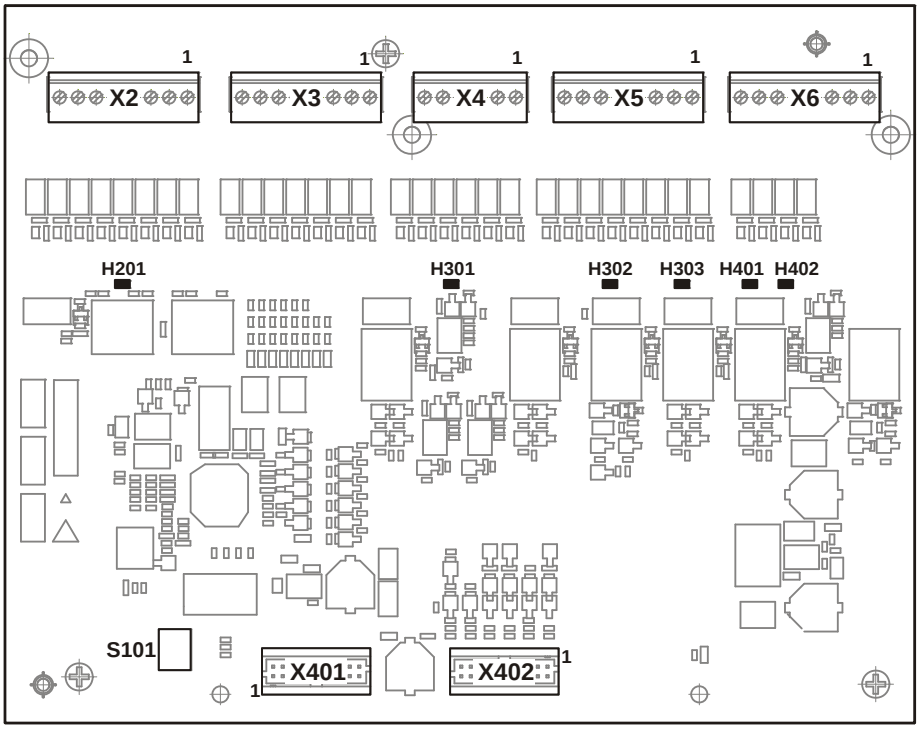
The fire department periphery module makes the connection of the following peripherals possible, in compliance with the VdS:

- Fire department control panel (FBF)
- Remote transmission (RT) or remote device (RD)
- Releasing element (FSE)
- Fire department key depot (FSD)
- Identification lamp (KL)
- Local alarm (LA)
- Intrusion detection system (EMA)

The fire department periphery module is connected to the periphery board and has the following features:

- All inputs and outputs to the peripherals are provided with EMI- and overvoltage protection.
- Activation of RT, RD, FSD and LA in degraded mode operation.
- The lines to RT, RD, FSE, FSD and LA are monitored.

11.2 Views



PCB view of fire department periphery module FCI2001-D1

Element	Des.	Function
Plugs and terminals	X2	Fire department operating panel outputs
	X3	Fire department operating panel inputs
	X4	Remote equipment or remote device and release element
	X5	Fire department key depot
	X6	Identification lamp, local alarm and intrusion detection system
	X401	Peripheral data bus and supply
	X402	Peripheral data bus and supply
LEDs	H201	Fire department operating panel
	H301	Remote transmission
	H302	Fire department key depot: Unlocking
	H303	Fire department key depot: Heater
	H401	Identification lamp
	H402	Local alarm
Key switch	S101	Reading in the measuring values of all monitored inputs and outputs

11.3 Pin assignments

Inputs and outputs which are not used do not require termination.

11.3.1 X2 fire department operating panel / X3 fire department operating panel

X2 fire department operating panel

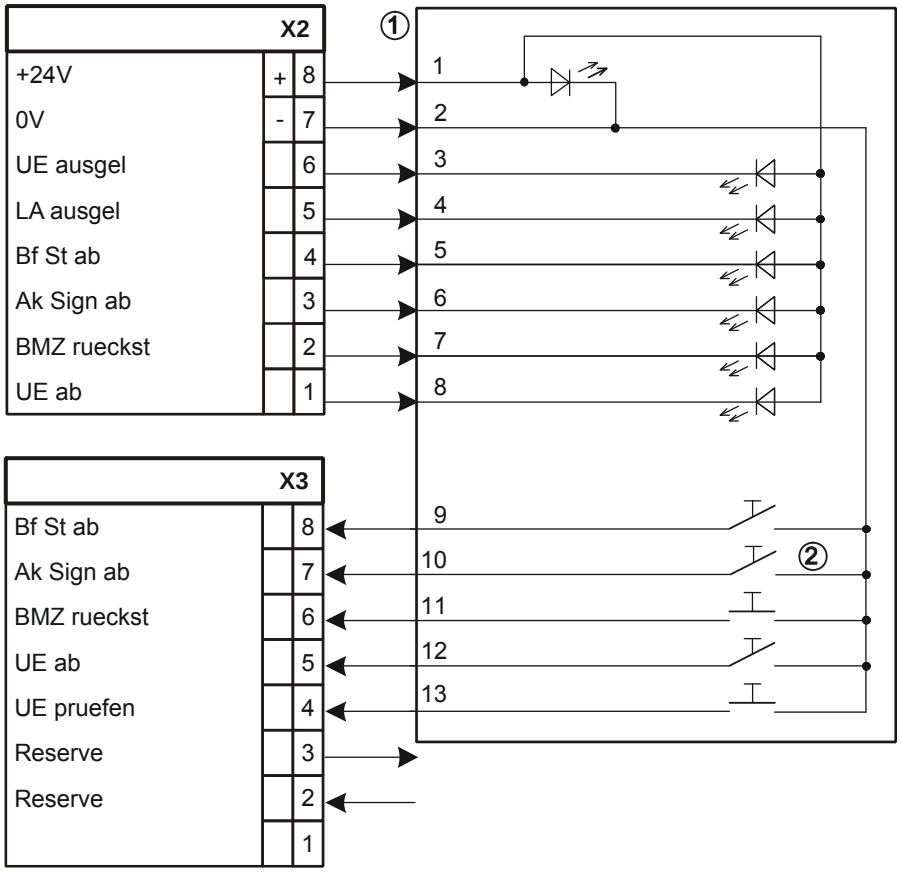
PIN	Designation	Description
8	+24V	Operating voltage (+24 V)
7	0V	Operating voltage (-)
6	UE ausgel	Transmission transmission triggered
5	LA ausgel	Extinguishing system triggered
4	Bf St ab	Fire controls off
3	Ak Sign ab	Acoustic signals off
2	BMZ rueckst	Reset fire control panel
1	UE ab	Remote transmission off

Admissible cable cross-section: 0.2 ... 1.5 mm²

X3 fire department operating panel

PIN	Designation	Description
8	Bf St ab	Fire controls off
7	Ak Sign ab	Acoustic signals off
6	BMZ rueckst	Reset fire control panel
5	UE ab	Remote transmission off
4	UE pruefen	Check remote transmission
3	Reserve	Reserve output
2	Reserve	Reserve input
1		Not used

Admissible cable cross-section: 0.2 ... 1.5 mm²



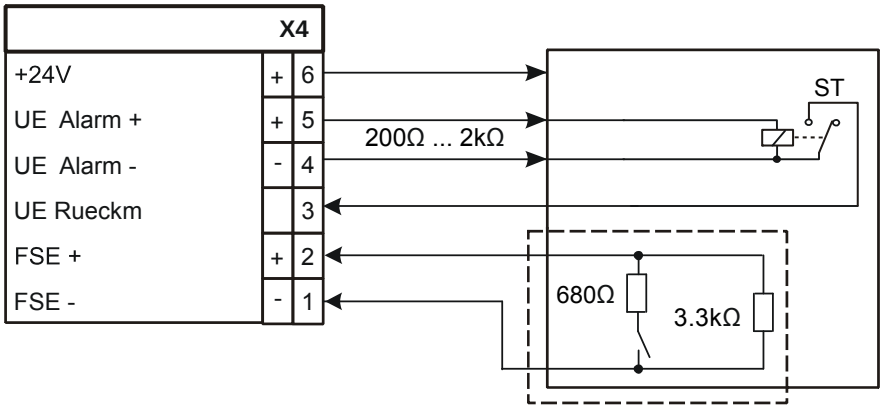
1 The connection details correspond to the FBF Type Wiesmeier FBF0770

2 only switch possible

11.3.2 X4 remote transmission /release element

PIN	Designation	Description
6	+24 V	Operating voltage (+24 V)
5	UE Alarm+	Remote transmission/device alarm (+)
4	UE Alarm-	Remote transmission/device alarm (-)
3	UE Rueckm	Remote transmission /device acknowledgement (+)
2	FSE+	Release element with monitored remote switching output or separately monitored key switch
1	FSE-	

Admissible cable cross-section: 0.2 ... 1.5 mm²

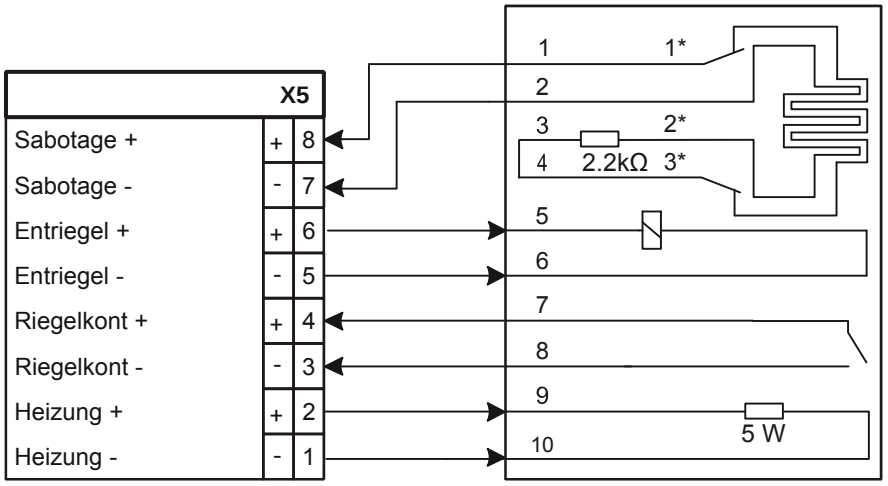


ST Fault contact of the transmission device

11.3.3 X5 fire department key depot

PIN	Designation	Description
8	Sabotage +	Tamper monitoring (+)
7	Sabotage -	Tamper monitoring (-)
6	Entriegel +	Unlocking (+)
5	Entriegel -	Unlocking (-)
4	Riegelkont +	Latch contact (+)
3	Riegelkont -	Latch contact (-)
2	Heizung +	Heating (+)
1	Heizung -	Heating (-)

Admissible cable cross-section: 0.2 ... 1.5 mm²



1* Door contact

2* Drill protection

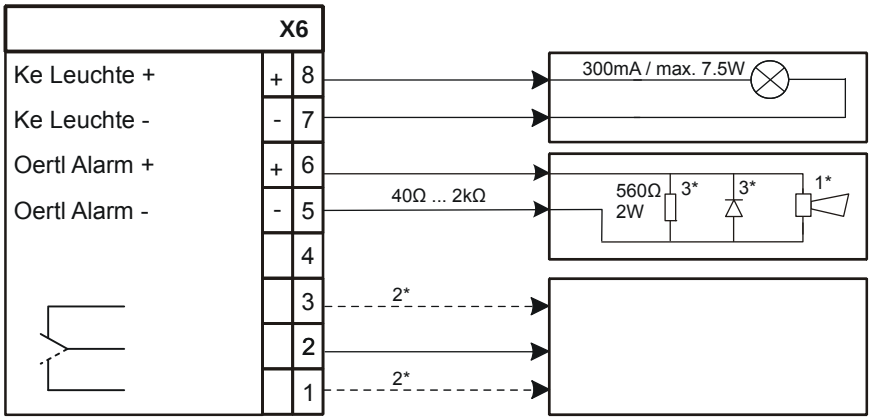
3* Key contact

When an alarm is pending, the key depot for the heating is disconnected from the power supply for reasons of product safety. Only when the alarm is reset, is it again connected to the power supply.

11.3.4 X6 intrusion detection system / local alarm / identification lamp

PIN	Designation	Description
8	Ke Leuchte +	Identification lamp (+)
7	Ke Leuchte -	Identification lamp (-)
6	Oertl Alarm +	Local alarm (+)
5	Oertl Alarm -	Local alarm (-)
4	-	not used
3		FSD sabotage, closer (normally open)
2		FSD sabotage, common
1		FSD sabotage, opener (normally open)

Admissible cable cross-section: 0.2 ... 1.5 mm²



1* Horn or beacon

2* FSD sabotage, connection for "Transmission intrusion detection system" (can be connected as NO or NC)

3* If necessary

11.4 Indications

LED	Color	Function	Condition	Meaning
H201	Yellow	Fire department operating panel	Off	Normal operation
			On	Fault: Overload protection active (short-circuit)
H301	Yellow	Remote transmission and transmission device	Off	Normal operation
			On	Fault: Overload protection active (short-circuit)
H302	Yellow	Fire department key depot: Unlocking	Off	Normal operation
			On	Fault: Overload protection active (short-circuit)
H303	Yellow	Fire department key depot: Heater	Off	Normal operation
			On	Fault: Overload protection active (short-circuit)
H401	Yellow	Identification lamp	Off	Normal operation
			On	Fault: Overload protection active (short-circuit)
H402	Yellow	Local alarm	Off	Normal operation
			On	Fault: Overload protection active (short-circuit)

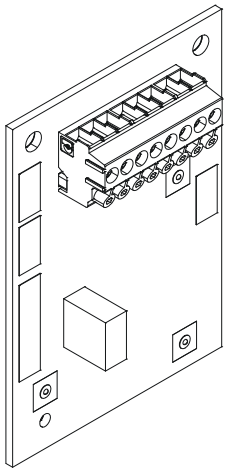
11.5 Technical data

Fire department control panel (FBF)	Supply voltage	24 V
	Supply current	Typ. <50 mA, max. 1A (current limited)
	Design of the inputs and outputs	● Active low ● Short-circuit-proof
	Line resistance per wire	Max. 10 Ω
Remote transmission / transmission device	Supply voltage	24 V
	Supply current	Typ. <30 mA, max. 1A (current limited)
	Output (RT/RD alarm):	
	● Voltage/current (if active)	24 V; 12 … 120 mA; max. 1 A
	● Design	● Active high ● Short-circuit-proof ● Current limited
	● In quiescent condition monitored for	● Short-circuit (incl. gradual) ● Open line (incl. gradual)
	● Load resistance	200 Ω … 2 kΩ
	● Line resistance per wire	Max. 10 Ω
	Input (RT/RD confirmation):	
	● Design	● Active low ● Short-circuit-proof
	Line resistance per wire	Max. 10 Ω

Releasing element (FSE)	Input FSE:	
	● Design	Short-circuit-proof
	● Termination resistor for quiescent condition	3.3 kΩ
	● Termination resistor for alarm	3.3 kΩ parallel 680 Ω
	● Monitored for	● Short circuit ● Open line
	● Line resistance per wire	Max. 10 Ω
Fire department key depot	Tamper input:	
	● Design	Short-circuit-proof
	● Termination resistor for quiescent condition	2.2 Ω
	● Monitored for	Deviation >40 % of 2.2 Ω
	● Line resistance per wire	Max. 10 Ω
	Deblocking output:	
	● Voltage/current (if active)	24 V / typ. 260 mA; max. 1 A
	● Design	● Active high ● Short-circuit-proof ● Current limited
	● Line resistance per wire	Max. 5 Ω
	Input latch contact:	
	● Design	● Active low ● Short-circuit-proof
	● Line resistance per wire	Max. 10 Ω
	Output heating:	
	● Voltage/current (if active)	24 V, typ 200 mA (5 W); max. 1 A
	● Design	● Active high ● Short-circuit-proof ● Current limited
	● Line resistance per wire	Max. 5 Ω
	Output tamper transmission:	
	● Switching voltage/switching current	30 V AC / 1 A max. (max. 30 W)
	● Design	● Quiescent current relay ● Potential-free

Identification lamp (KL)	Voltage/current (if active)	24 V / typ. 300 mA (max. 1 A)
	Design of the output	● Active high ● Short-circuit-proof ● Current limited
	Line resistance per wire	Max. 5 Ω
Local alarm (LA)	Voltage/current (if active)	24 V / typ. 12 … 600 mA (max. 1 A)
	Design of the output	● Active high ● Short-circuit-proof ● Current limited
	In quiescent condition monitored for	● Short circuit ● Open line
	Load resistance	40 Ω … 2 kΩ
	Line resistance per wire	Max. 5% of the load resistance
Connections	VdS peripherals	Screw terminals; 0.2 ... 1.5 mm²
	Power supply	Screw terminals; 0.5 ... 2.5 mm²
	Periphery board	Plug-type connection
Mechanical data	Dimensions (L x W x H)	190 x 150 x 40 mm
	Weight	200 g

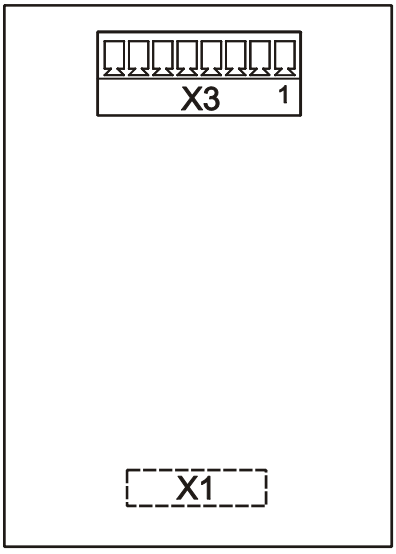
12 RS232 module (isolated) FCA2001-A1



12.1 Description

The RS232 module (isolated) FCA2001 is plugged onto the PMI & mainboard and is required for the operation of an event printer. The RS232 interface is electrically isolated from the station.

12.2 Views



PCB view of RS232 module (isolated) FCA2001-A1

X1 Plug-type connection to the operating unit (rear panel)

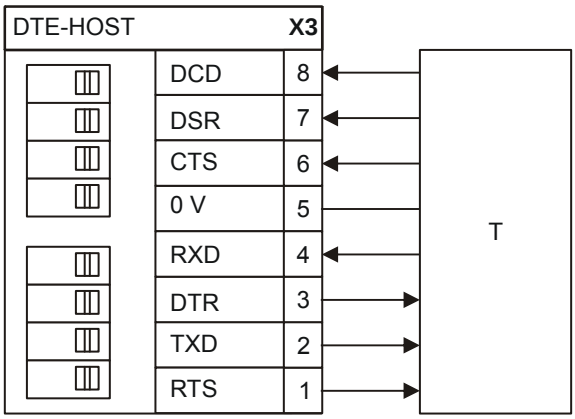
X2 Connection terminals for RS232 interface

12.3 Pin assignments

12.3.1 X3 DTE-HOST

PIN	Designation	Description
8	DCD ←	Data Carrier Detected
7	DSR ←	Data Set Ready
6	CTS ←	Clear To Send
5	0 V	Ground
4	RXD ←	Received Data
3	DTR →	Data Terminal Ready
2	TXD →	Transmitted Data
1	RTS →	Ready To Send

Admissible cable cross-section: 0.2 ... 1.5 mm²



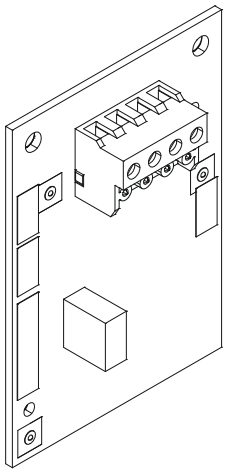
T Participant with RS232 interface

12.4 Technical data

Power supply	Voltage	3.3 V DC
	Operating current at:	
	● No-load operation	approx. 65 mA
	● Send and receive at 19.2 kbit/s	approx. 75 mA
RS232 interface	Connection	Point-to-point
	Communication mode	Full duplex
	Max. data rate	115.2 kbit/s
	Max. cable length	15 m
	Max. data rate at 15m	19.2 kbit/s
	Electrical isolation between the RS232 interface and the station	1.5 kV

Connections	RS232 interface:	
	• Design	8-pole screw terminal
	• Cross-section	0.14 … 1.5 mm^2
	To the operating unit	Plug-type connection
Mechanical data	Dimensions (W x H x D)	50 x 15 x 70 mm
	Weight	20 g

13 RS485 module (isolated) FCA2002-A1

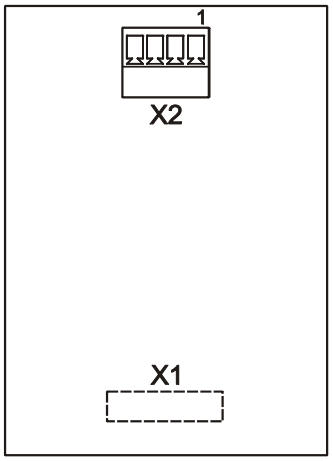


13.1 Description

The RS485 module (isolated) FCA2002 is plugged onto the PMI & mainboard and is required for the operation of peripherals such as the remote EVAC module [NL] FAT [DE], ESPA 4.4.4 interface and serial FBF [DE]. The RS485 module has the following features:

- Standardized RS485 interface
- Electrical isolation between the RS485 interface and the station
- Ground fault monitoring

13.2 Views



PCB view of RS485 module (isolated) FCA2002-A1

X1 Plug-type connection to the operating unit (rear panel)

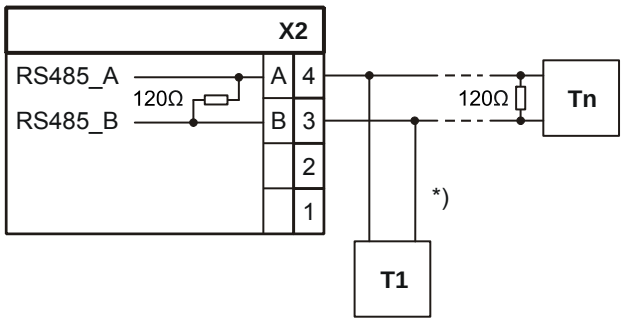
X2 RS485 interface to the peripherals

13.3 Pin assignments

13.3.1 X2 connector

PIN	Designation	Description
4	RS485_A	Line A
3	RS485_B	Line B
2		Not connected
1		Not connected

Admissible cable cross-section: 0.2 ... 1.5 mm²



T1 First participant Tn Last participant

Comments

*) Stub lines must not exceed 20 m!

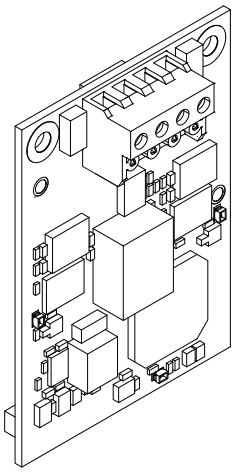
- Consider the polarity A, B!
- Terminate the line after the last participant (Tn) with 120 Ω!

13.4 Technical data

Power supply input	Voltage	3.3 V DC
	Operating voltage while:	
	• Receiving	Approx. 65 mA
	• Sending at 19.2 kbit/s	Approx. 125 mA
RS485 interface	Connection	Bus structure
	Communication mode	Half-duplex
	Number of participants	Max. 8
	Length of line	Max. 1200 m
	Data rate at 1200 m with	
	• Shielded cables	Max. 96 kbit/s
	• Unshielded cables	Max. 9.6 kbit/s

	Electrical isolation between the RS485 interface and the station	1.5 kV
	Monitored for	Ground fault
Connections	RS485 interface:	
	• Design	4-pole screw terminal
	• Cross-section	0.14 … 1.5 mm^2
	To the operating unit	Plug-type connection
Mechanical data	Dimensions (W x H x D)	50 x 15 x 70 mm
	Weight	20 g

14 Networking module (SAFEDLINK) FN2001-A1

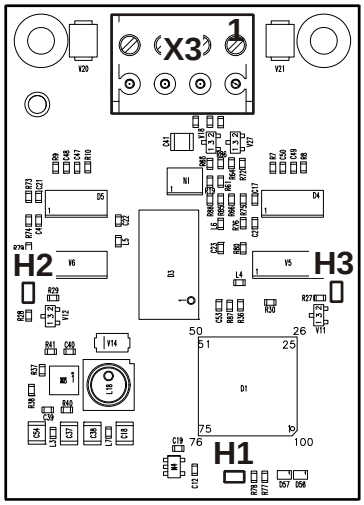


14.1 Description

The networking module (SAFEDLINK) FN2001 is used to network several stations via the system bus C-WEB. The networking module is plugged onto the PMI & mainboard and has the following features:

- Connections for a system bus input and a system bus output
- Integrated degraded mode function
- Electrical isolation between the system bus and the station
- Ground fault monitoring
- Redundant networking with one networking module per station (simple line fault)
- Redundancy can be extended by a second module per station (degraded mode module)

14.2 Views



Frontal view of the networking module (SAFEDLINK) FN2001-A1

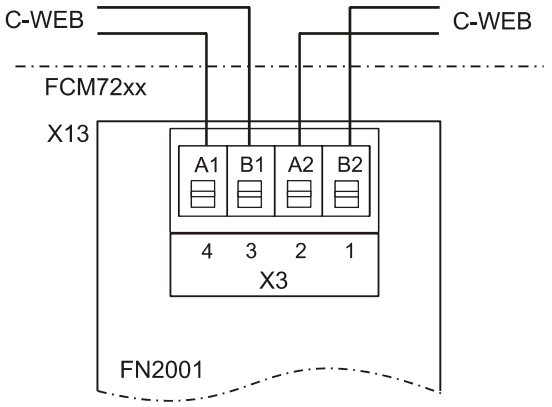
X1	Connector to the PMI & mainboard (connector on rear panel)
X2	Connector to the C-WEB lines (connector on the rear panel); not used in FS720
X3	Connector to the C-WEBlines; used with FS720
H1	LED green, status indicator for the networking module
H2	LED yellow, status indicator for line 1
H3	LED yellow, status indicator for line 2

14.3 Pin assignments

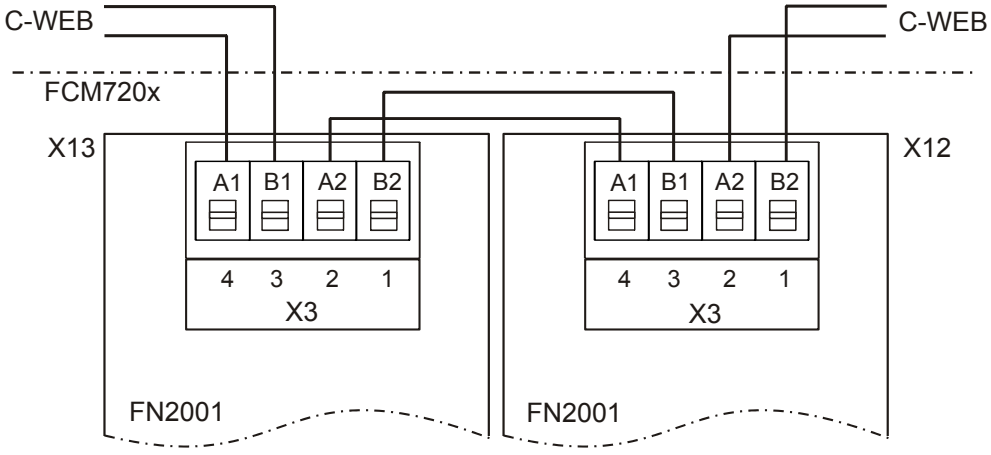
14.3.1 Connector X3

PIN	Designation	Description
4	A1	Line 1 (+)
3	B1	Line 1 (–)
2	A2	Line 2 (+)
1	B2	Line 2 (–)

Admissible cable cross-section: 0,2 ... 2,5 mm²



Cabling of 1 networking module



Cabling of 2 networking modules

The main module must always be plugged in slot X13 of the operating unit FCM72xx.

When two networking modules are used, the degraded mode module must be plugged in slot X12 of the FCM72xx operating unit.

14.4 Indications

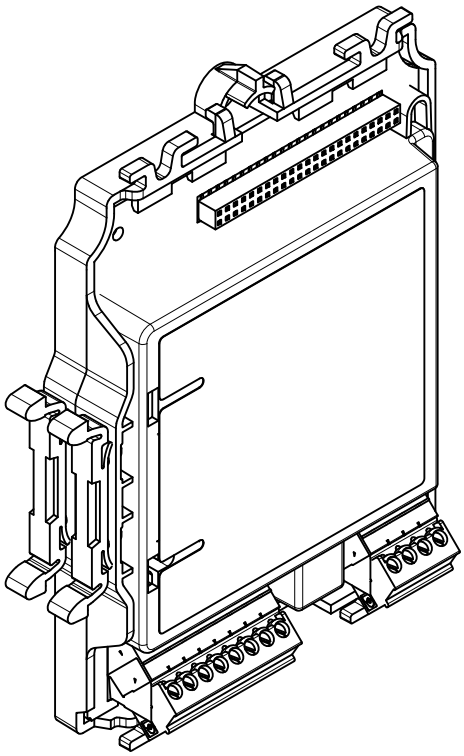
LED	Colour	Function	Condition	Meaning
H1	Green	Condition of the networking module (SAFEDLINK)	Off	Networking module (SAFEDLINK) is defective
			On	Normal condition (H2 and H3 are off)
			Flashes	Normal condition for degraded mode module (H2 and H3 are off)
H2	Yellow	Condition of the line 1 (A1, B1)	Off	Normal condition (communication on line 1 is OK)
			On	Error on line 1; (no communication on line 1)
H3	Yellow	Condition of the line 2 (A2, B2)	Off	Normal condition (communication on line 2 is OK)
			On	Error on line 2; (no communication on line 2)

14.5 Technical data

Supply input	Voltage	21 … 30 V DC
	Operating current	Max. 45 mA
System bus	Voltage	5 V DC
	Power	Max. 100 mA
	Impedance	120 Ω
	Cable type	Shielded and unshielded cables Example: ● Uninet 30044PFRNC(KAT6) ● R&M fseenet KAT5e F/UTP 4P ● Communication cable J-2T(St)TSTIIIBD ● CCM 2C1.5T1/1254(MICC) ● Fire detection cable JY(St)Y2x2x0.8mm red
	Protocol	SAFEDNET (UDP/IP)
	Data rate in operation mode:	
	● Speed	312 kbit/s
	● Distance	96 kbit/s
	Distance between 2 networking modules	Max. 1000 m
	Electrical isolation between the C-WEB and the station	1 kV
	Monitored for:	● Short-circuit ● Open line ● Ground fault ● Communication error

Connections	System bus:	
	● Execution	Screw terminals 0.2 … 2.5 mm^2 (0.8 mm^2 recommended)
	● Admissible cable cross-section	0.8 mm^2
	Operating unit	Plug-type connection
Mechanical data	Dimensions (W x H x D)	50 x 20 x 70 mm
	Weight	20 g

15 Repeater (SAFEDLINK) FN2002-A1



15.1 Description

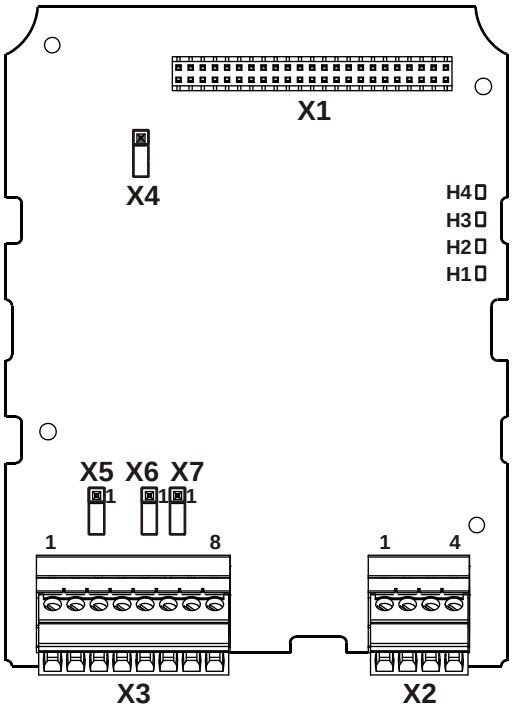
The repeater (SAFEDLINK) FN2002-A1 is used to extend the range with the C-WEB system bus. The repeater is built on the basis of the network module (SAFEDLINK) and allows the C-WEB line between two stations to be extended by 1000 m.

The repeater (SAFEDLINK) has the following features:

- Connections for remote supply and supply transmission to a second repeater
- Cable shields individually placed onto the ground by means of jumpers (HF low-impedance / NF high-impedance)
- Data rate of the C-WEB can be switched via a jumper
- Electrical isolation between the system bus and the station
- Electrical connection between the power supply and the station
- Ground fault monitoring
- EMC protection on system bus and power supply

The availability of the repeater (SAFEDLINK) is announced in a separate sales or delivery release.

15.2 Views



PCB view of repeater FN2002

X1	Not used for operation. Connector with full population for programming with firmware
X2	Connector for external power supply and the transmission to additional repeaters
X3	Connector for C-NET and earth connection
X4	Jumper for the switching over of the data rate (switchover during operation has no effect)
X5	Jumper for earthing X3/pin 3
X6	Jumper for earthing X3/pin 5
X7	Jumper for earthing X3/pin 6
H1	LED green, status indicator of the repeater
H2	LED yellow, status indicator for line 2
H3	LED yellow, status indicator for line 1
H4	LED red, earth fault indication for line 2

15.3 Pin assignments

15.3.1 Plug X2

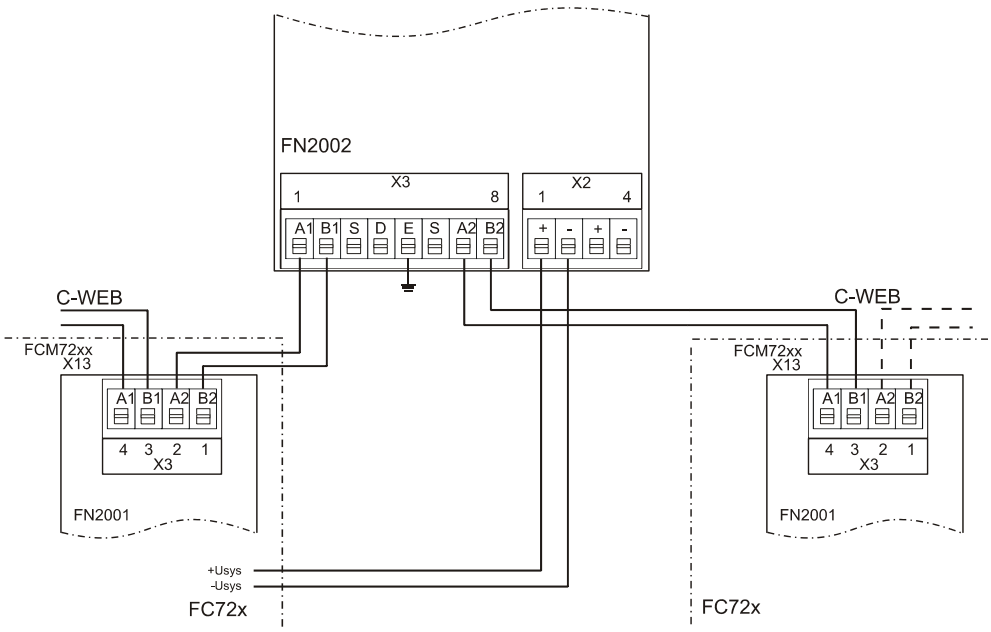
PIN	Designation	Description
1	+Usys	Power supply input
2	-Usys	Power supply input
3	+Usys	Supply output
4	-Usys	Supply output

Comment

"Input" and "Output" are connected in parallel on the PCB and can be exchanged.

15.3.2 Connector X3

PIN	Designation	Description
1	A1	Line 1 (+)
2	B1	Line 1 (-)
3	S	Shielding (optional)
4	D	Shielding (optional)
5	E	Ground connection
6	S	Shielding (optional)
7	A2	Line 2 (+)
8	B2	Line 2 (-)



Repeater FN2002, cabling

Notes

In the C-WEB, line 1 must always be wired to line 2, and line 2 must be wired to line 1.

15.4 Indications

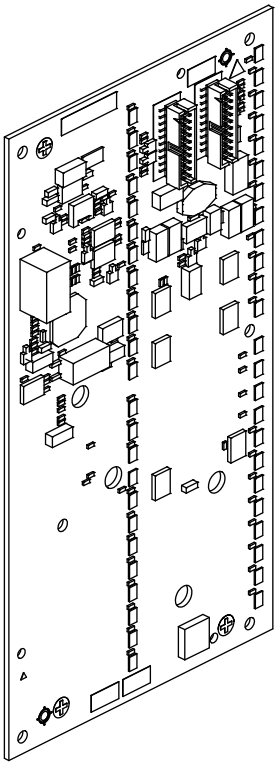
LED	Colour	Function	Condition	Meaning
H1	Green	Condition of the repeater (SAFEDLINK)	Flashes	Normal condition
			Off	Repeater (SAFEDLINK) is defective
H2	Yellow	Condition of the line 2 (A2, B2)	On	Error on connection line 2; repeater (SAFEDLINK) is OK
			Off	Normal condition
H3	Yellow	Condition of the line 1 (A1, B1)	On	Error on connection line 1; repeater (SAFEDLINK) is OK
			Off	Normal condition
H4	Red	Ground fault	On	Earth fault on connection line 2; repeater (SAFEDLINK) is OK
			Off	Normal condition

15.5 Technical data

Supply input	Voltage	9 … 30 V DC *
	Operating current	Max. 45 mA
System bus	Voltage	5 V DC
	Power	Max. 100 mA
	Impedance	120 Ω
	Protocol	SAFEDLINK (UDP/IP)
	Data rate in operation mode:	
	● Speed	312 kbit/s
	● Distance	96 kbit/s
	Distance between repeater and networking module	Max. 1000 m
	Electrical isolation between the FCnet and the station	1 kV
	Monitored for:	● Short-circuit ● Open line ● Ground fault ● Communication error
Connections	System bus:	
	● Execution	Screw terminals type Phoenix MC1.5/x-ST-3.81 0.8 … 1.5 mm^2 (0.8 mm^2 recommended)
	● Admissible cable cross-section	0.8 mm^2
	Operating unit	Plug-type connection
Mechanical data	Dimensions (W x H x D)	90 x 25 x 132 mm
	Weight	105 g

* The supply voltage may significantly decrease along the supply line from the station to the repeater. To ensure the reliable operation of the repeater, the terminal voltage must be at min. 9 V.

16 LED indicator (internal) FTO2002-A1



16.1 Description

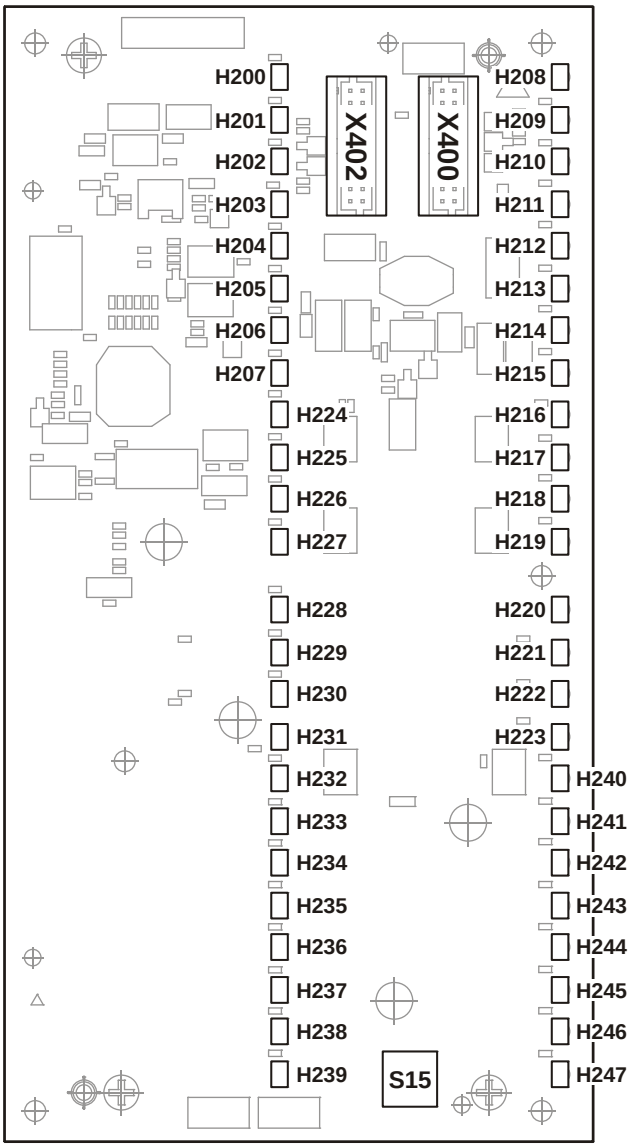
The LED indicator (internal) is integrated in the station and makes it possible to indicate events such as alarms and faults. In total, 48 LEDs are available (24 red and 24 yellow LEDs).

The LED indicator (internal) is built in the PMI or the operating add-on. An LED display can be fitted in the operating unit. A maximum of four LED displays can be fitted in the operating add-on.

The LED indicator (internal) is connected to the periphery bus and has the following features:

- Configuration of the LEDs with Cerberus-Engineering-Tool
- Can be cascaded

16.2 Views



PCB view of FT2002-A1

H200 … H247	LEDs (designation on PCB)
S15 (1 … 6)	Switch for device address
X400	Connection periphery bus (input)
X402	Connection periphery bus (output)

16.3 Adjustment elements

The LED indicator (internal) is assigned an address by means of the switches.

Switch S15						Meaning
1	2	3	4	5	6	
						Test mode (lamp test)
ON						Device address 1
	ON					Device address 2
ON	ON					Device address 3
		ON				Device address 4
ON		ON				Device address 5
	ON	ON				Device address 6
ON	ON	ON				Device address 7
			ON			Device address 8
ON			ON			Device address 9
	ON		ON			Device address 10
ON	ON		ON			Device address 11
		ON	ON			Device address 12
ON		ON	ON			Device address 13
	ON	ON	ON			Device address 14
ON	ON	ON	ON			Device address 15
				ON		Device address 16

Blank fields = Switch in 'OFF' position

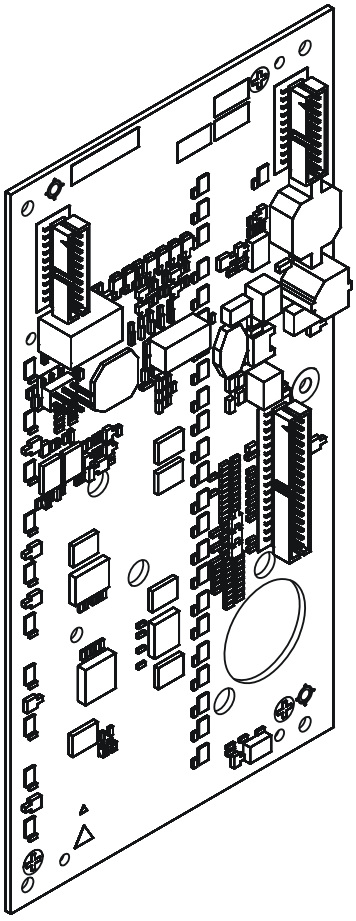
Each address can be assigned only once per station.

The factory settings always apply to the corresponding station type.

16.4 Technical data

Supply input	Voltage	20 … 32 V DC
	Power	Max. 65 mA (20 V)
Supply output	Voltage	20 ... 32 V DC
	Power	Looped through, max. 1 A
LEDs	Number	24 indication panels with one red and one yellow LED each
	Function	Can be configured with Cerberus-Engineering-Tool
Connections	Peripheral data bus (input and output)	Plug-type connection with flat-ribbon cable
Mechanical data	Dimensions (W x H x D)	185 x 95 x 11 mm
	Weight	60 g

17 EVAC-NL operating unit FTO2007-N1



17.1 Description

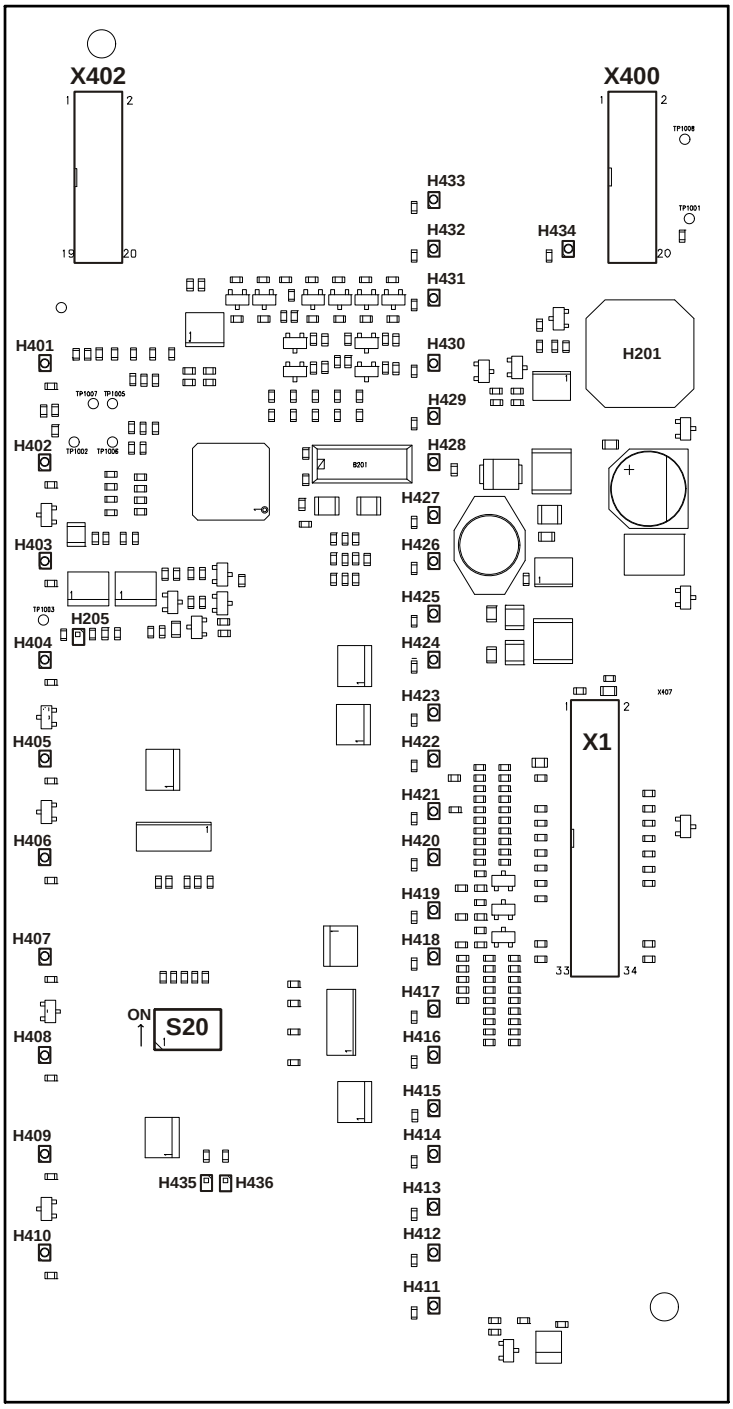
The EVAC-NL operating unit FTO2007-N1 is an evacuation control unit for the Dutch market. It is built in the operating unit or the operating add-on and facilitates the operation of at max. ten evacuation zones. In addition, the EVAC-NL operating unit has indicator and control elements.

As an operating add-on FCM7221-H3, the EVAC-NL operating unit is available with another ten zones, i.e. 20 zone indicators in total. The printed circuit board used is the same, except it is fitted with another indicator panel without control elements.

The EVAC-NL operating unit FTO2007-N1 is connected to the periphery bus and has the following features:

- Controlling the alarm sounders on the C-NET
- Up to ten evacuation zones possible
- Master indication and operation of all EVAC zones
- Key switch (Nordic) to release operation

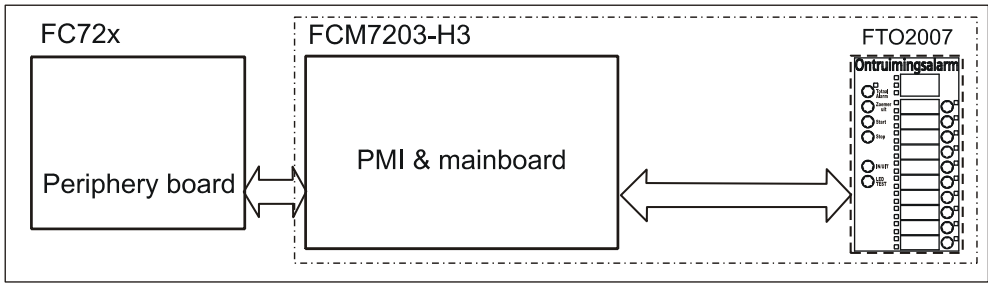
17.2 Views



PCB view of EVAC-NL operating unit FTO2007-N1

X400	Connection peripheral data bus, input
X402	Connection periphery bus, output for additional EVAC
H401 … H434	LEDs for operating indication (designation on PCB)
H205	Watchdog
H201	Buzzer
S20 (1 … 6)	Switch for configuration
X1	Connection for EVAC-NL connector board FTI2002-A1 (only with remote EVAC)

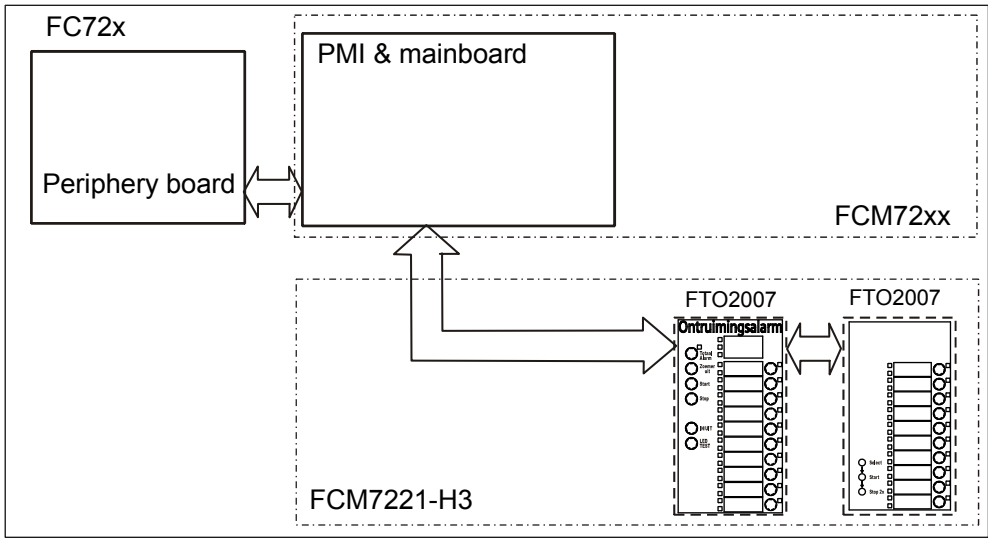
17.3 Pin assignments



Wiring of integrated EVAC 10-zone display

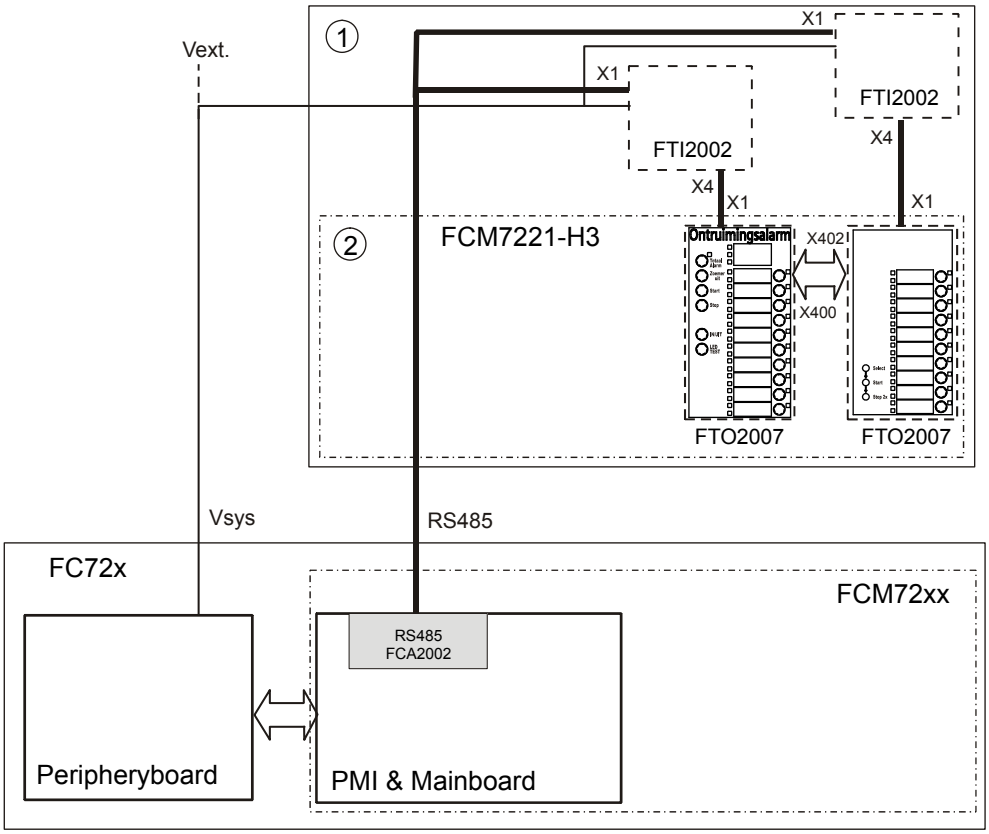
The EVAC-NL operating unit FTO2007-N1 as 10-zone indicator is used as standard in the operating unit of the following fire control panels:

- FC722-HA
- FC724-HA



Wiring of integrated EVAC 20-zone display

The operating add-on FCM7221-H3 (option) is installed in the bottom part of the fire control panel and is connected via the peripheral data bus.



Wiring of the remote EVAC 20-zone indicator via the RS485 interface

1 Any housing (e.g. ECO housing)

2 Operating add-on FCM7221-H3 with 2 x EVAC-NL FTO2007-N1 (option)

The two EVAC-NL operating units FTO2007-NL must be linked via the peripheral data bus for synchronization (X400 – X402). If the LED indicators on the two components do not flash in synch, this indicates that they are not connected to one another.

17.4 Indications

LED	Colour	Function	Condition	Meaning
H401 … H434		Operation indicators		See operating instructions
H205	Yellow	Watchdog	Off	Normal condition
			On	Function failure of the processor

17.5 Adjustment elements

The EVAC-NL indicator is configured with the switch S20.

Setting for one or first EVAC-NL

Switch S20						**Meaning**
1	2	3	4	5	6	
S0	S1	S2	Master	Syn	(Empty)	
			ON	**OFF**		**Device address 1 ***
ON			ON	OFF		Device address 2
	ON		ON	OFF		Device address 3
ON	ON		ON	OFF		Device address 4
		ON	ON	OFF		Device address 5
X	X	X	ON	ON		Mimic display outputs are actuated and polled (LED, keys and key switch)

Blank fields = Switch in 'OFF' position

X = Switch position has no impact

* If working with one **single** EVAC-NL indicator (10 zones) and if working with the **first** EVAC-NL indicator, S20/4 (Master) must always be set to **ON**. If used in the EVAC-NL mimic display driver, the S20/5 (Syn) switch must also be **ON**.

Each address can be assigned only once per station.

The factory setting is always made for the application in question.

Setting for the second and/or any subsequent EVAC-NL indicator

Switch S20						**Meaning**
1	2	3	4	5	6	
S0	S1	S2	Master	Syn	(Empty)	
			OFF	OFF		Device address 1
ON			**OFF**	**OFF**		**Device address 2 ***
	ON		OFF	OFF		Device address 3
ON	ON		OFF	OFF		Device address 4
		ON	OFF	OFF		Device address 5
X	X	X	OFF	ON		Mimic display outputs are actuated and polled (LED, keys and key switch)

Blank fields = Switch in 'OFF' position

X = Switch position has no impact

* = 2 EVAC-NL indicators must not be operated on the same address (per station). On the second or any subsequent indicator, the address must always be set 1 higher (slave). If used in the EVAC-NL mimic display driver, the S20/5 (Syn) switch must also be **ON**.

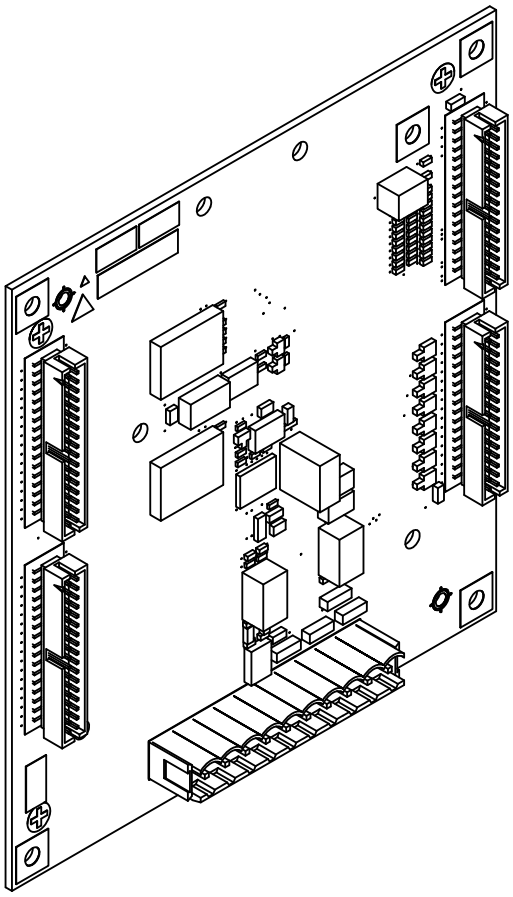
Each address can be assigned only once per station.

The factory setting is always made for the application in question.

17.6 Technical data

Supply input	Voltage	20 … 32 V DC
	Power	Max. 34 mA (21 V)
Supply output	Voltage	20 ... 32 V DC
	Power	Looped through, max. 1 A
LEDs	Number	34 for operation indication 1 for fault (watchdog)
	Function	Can be configured with Cerberus-Engineering-Tool
Connections	Peripheral data bus (input and output)	Plug-type connection with flat-ribbon cable
Mechanical data	Dimensions (W x H x D)	185 x 96 x 12 mm
	Weight	70 g

18 EVAC-NL connector board FTI2002-N1 [NL]



18.1 Description

The EVAC-NL connector board FTI2002-N1 is used as an interface to the EVAC-NL operating unit FTO2007-N1. The EVAC-NL connector board is needed as a connection module from the RS485 interface of the fire control panel to the operating add-on FCM7221-H3 or the mimic display (EVAC) FT2003-N1. The EVAC-NL connector board is installed in the same housing as the EVAC-NL operating unit.

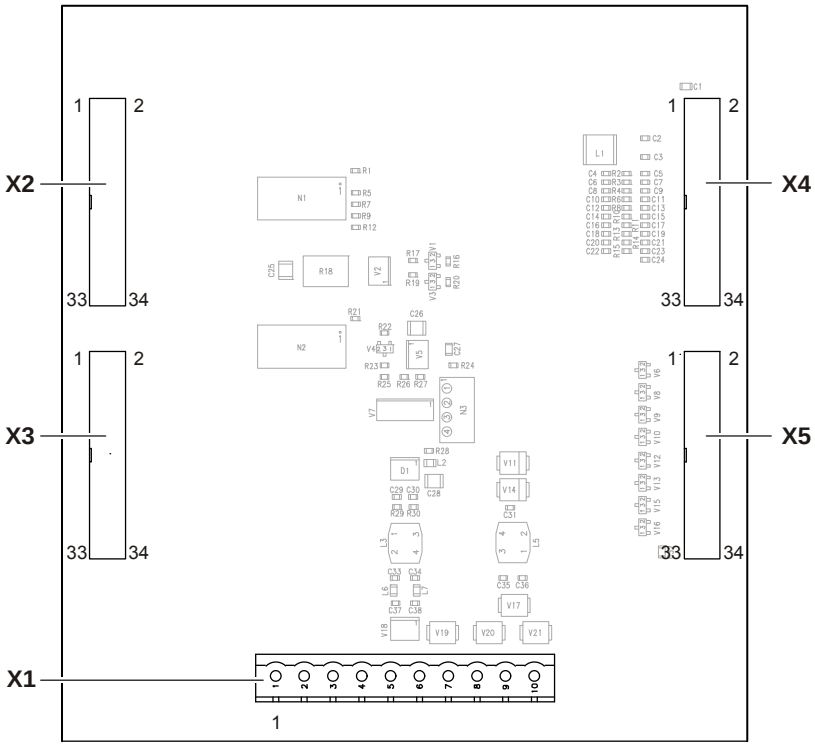
The EVAC-NL connector board FTI2002-NL is used in the following applications:

- As an interface in a remote operating add-on FCM7221-H3
- As an interface in the mimic display driver (EVAC) FT2003-N1 (without operating unit) for EVAC-NL operation and the external operation and indication elements.

The EVAC-NL connector board has the following features:

- Communication interface via RS485 to FS720 fire control panel
- Supply inputs for an external 24V supply
- Monitoring signals for external supply
- Connection for external operating and display elements (mimic display)

18.2 Views

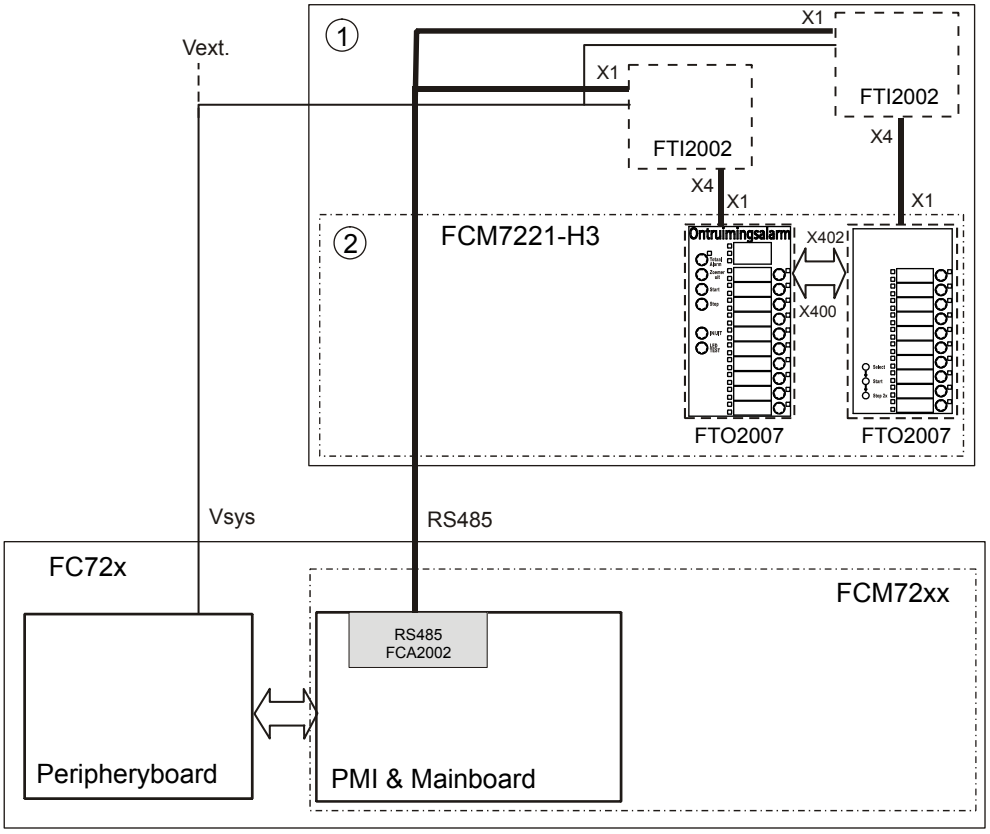


PCB view of FTI2002-EVAC

Element	Des.	Function
Plugs and terminals	X1	Supply, monitoring signals of the power supply and RS485 connection
	X2	Connections of LED mimic display 1 ... 17
	X3	Connections of LED mimic display 18 ... 34
	X4	Connection to EVAC-NL operating unit
	X5	Mimic display operation (16 pcs.)

18.3 Pin assignments

The EVAC-NL connector board FTI2002-N1 is used as an interface from the EVAC-NL operating unit FTO2007-N1 to the RS485 card in the control panel.

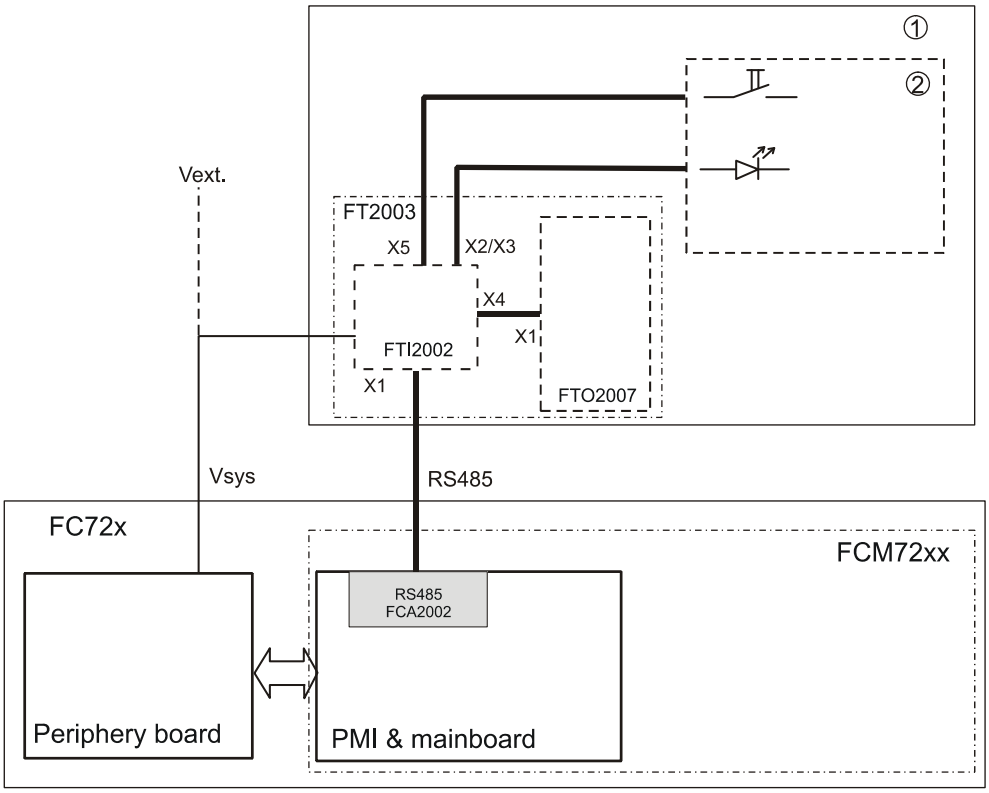


Wiring of the EVAC-NL connector board FTI2002-N1 in a remote EVAC 20-zone indicator

1	Any housing (e.g. ECO housing)
2	Operating add-on FCM7221-H3
FTI2002	EVAC-NL connector board
FTO2007	EVAC-NL operating unit

The two EVAC-NL operating units FTO2007-NL must be linked via the peripheral data bus for synchronization (X400 – X402). If the LED indicators on the two components do not flash in synch, this indicates that they are not connected to one another.

In the EVAC mimic display FT2003-N1, the EVAC-NL connector board FTI2002-N1 is supplied together with the EVAC-NL operating unit FTO2007-N1.

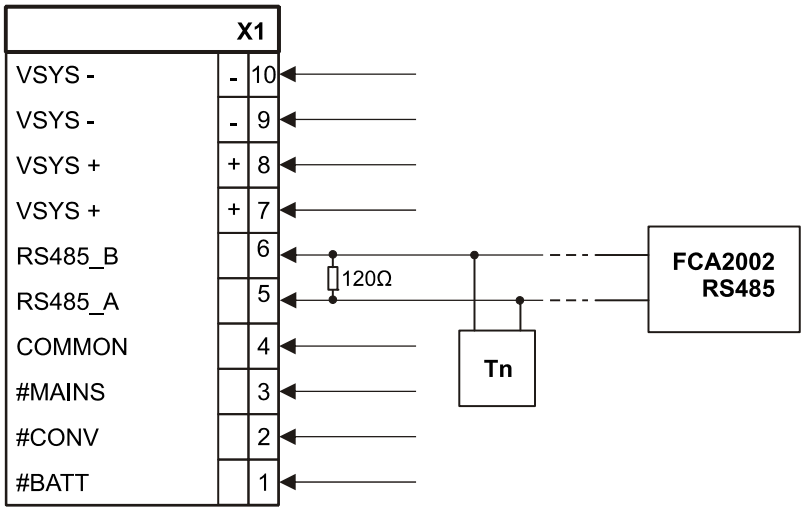


Wiring for EVAC-NL mimic display FT2003-N1

1	Any housing IP30 (e.g. ECO housing)
2	Any mimic display and PMI
FT2003	EVAC-NL mimic display
FTO2007	EVAC-NL operating unit
FTI2002	EVAC-NL connector board

18.3.1 X1 supply

PIN	Designation	Description
10	VSYS–	Supply input from the power supply (–)
9	VSYS–	Supply input from the power supply (–)
8	VSYS+	Supply input from the power supply (+)
7	VSYS+	Supply input from the power supply (+)
6	RS485_B	Input connection B*
5	RS485_A	Input connection A*
4	COMMON	Ground
3	#MAINS	Message input from the power supply: Mains failure
2	#CONV	Message input from the power supply: Converter fault
1	#BATT	Message input from the power supply: Battery fault

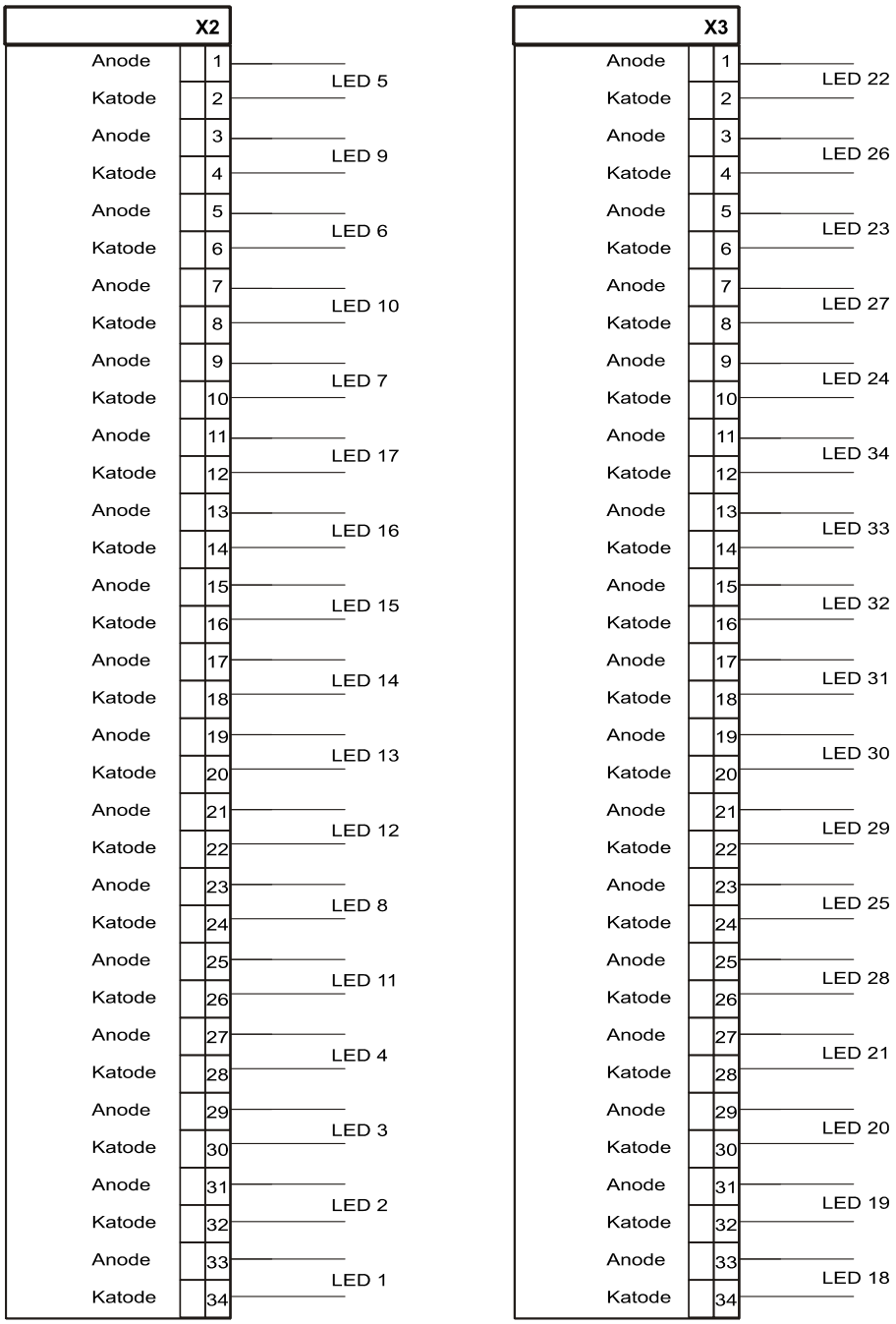


Tn = Last participant

!	*NOTICE*
	*** Note the polarity of connections A and B.** The last participant connection must have a resistance of 120 Ω.

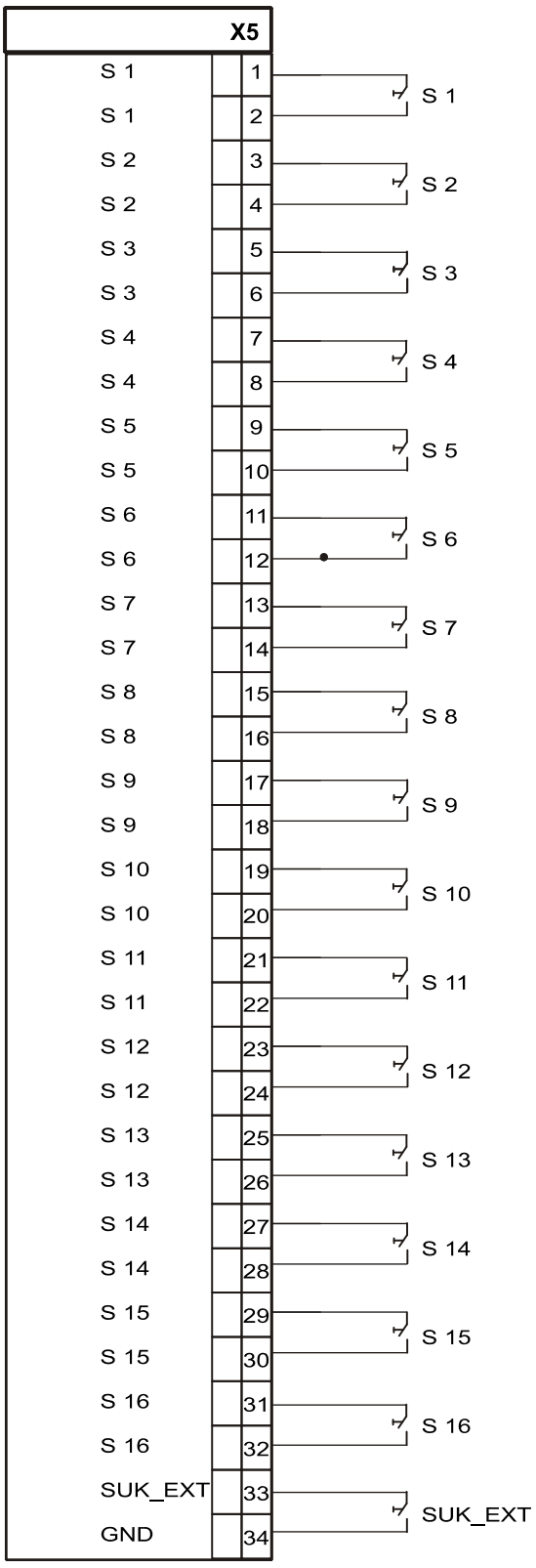
18.3.2 X2 and X3 LED mimic display

PIN	Designation	Description
1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33	3V3_LED	LED power supply
2	LED5, LED22	Indicator LED 5 and LED 22
4	LED9, LED26	Indicator LED 9 and LED 26
6	LED6, LED23	Indicator LED 6 and LED 23
8	LED10, LED27	Indicator LED 10 and LED 27
10	LED7, LED24	Indicator LED 7 and LED 24
12	LED17, LED34	Indicator LED 17 and LED 34
14	LED16, LED33	Indicator LED 16 and LED 33
16	LED15, LED32	Indicator LED 15 and LED 32
18	LED14, LED31	Indicator LED 14 and LED 31
20	LED13, LED30	Indicator LED 13 and LED 30
22	LED12, LED29	Indicator LED 12 and LED 29
24	LED8, LED25	Indicator LED 8 and LED 25
26	LED11, LED28	Indicator LED 11 and LED 28
28	LED4, LED21	Indicator LED 4 and LED 21
30	LED3, LED20	Indicator LED 3 and LED 20
32	LED2, LED19	Indicator LED 2 and LED 19
34	LED1, LED18	Indicator LED 1 and LED 18


X2
Anode 1
Katode 2
Anode 3
Katode 4
Anode 5
Katode 6
Anode 7
Katode 8
Anode 9
Katode 10
Anode 11
Katode 12
Anode 13
Katode 14
Anode 15
Katode 16
Anode 17
Katode 18
Anode 19
Katode 20
Anode 21
Katode 22
Anode 23
Katode 24
Anode 25
Katode 26
Anode 27
Katode 28
Anode 29
Katode 30
Anode 31
Katode 32
Anode 33
Katode 34
LED 5
LED 9
LED 6
LED 10
LED 7
LED 17
LED 16
LED 15
LED 14
LED 13
LED 12
LED 8
LED 11
LED 4
LED 3
LED 2
LED 1
X3
Anode 1
Katode 2
Anode 3
Katode 4
Anode 5
Katode 6
Anode 7
Katode 8
Anode 9
Katode 10
Anode 11
Katode 12
Anode 13
Katode 14
Anode 15
Katode 16
Anode 17
Katode 18
Anode 19
Katode 20
Anode 21
Katode 22
Anode 23
Katode 24
Anode 25
Katode 26
Anode 27
Katode 28
Anode 29
Katode 30
Anode 31
Katode 32
Anode 33
Katode 34
LED 22
LED 26
LED 23
LED 27
LED 24
LED 34
LED 33
LED 32
LED 31
LED 30
LED 29
LED 25
LED 28
LED 21
LED 20
LED 19
LED 18

18.3.3 X5 mimic display operation

PIN	Designation	Description
1	S1	Outer button 1
2	S1	Outer button 1
3	S2	Outer button 2
4	S2	Outer button 2
5	S3	Outer button 3
6	S3	Outer button 3
7	S4	Outer button 4
8	S4	Outer button 4
9	S5	Outer button 5
10	S5	Outer button 5
11	S6	Outer button 6
12	S6	Outer button 6
13	S7	Outer button 7
14	S7	Outer button 7
15	S8	Outer button 8
16	S8	Outer button 8
17	S9	Outer button 9
18	S9	Outer button 9
19	S10	Outer button 10
20	S10	Outer button 10
21	S11	Outer button 11
22	S11	Outer button 11
23	S12	Outer button 12
24	S12	Outer button 12
25	S13	Outer button 13
26	S13	Outer button 13
27	S14	Outer button 14
28	S14	Outer button 14
28	S15	Outer button 15
30	S15	Outer button 15
31	S16	Outer button 16
32	S16	Outer button 16
33	SUK_EXT	Key switch (external)
34	GND	GND key switch


X5
S 1
S 1
S 2
S 2
S 3
S 3
S 4
S 4
S 5
S 5
S 6
S 6
S 7
S 7
S 8
S 8
S 9
S 9
S 10
S 10
S 11
S 11
S 12
S 12
S 13
S 13
S 14
S 14
S 15
S 15
S 16
S 16
SUK_EXT
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
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24
25
26
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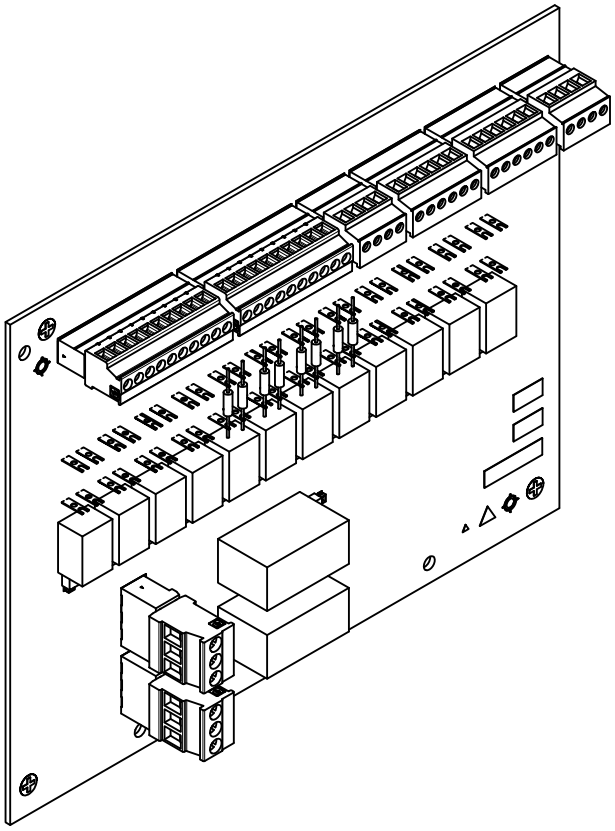
28
29
30
31
32
33
34
S 1
S 2
S 3
S 4
S 5
S 6
S 7
S 8
S 9
S 10
S 11
S 12
S 13
S 14
S 15
S 16
SUK_EXT

18.4 Technical data

Supply	Operating voltage	20 … 32 V DC
	Operating current	Max. 1 A (21V) Depending on configuration
Connection terminals	Supply, monitoring and RS485 connection	
	● Execution	Screw terminals
	● Admissible cable cross-section	0.2 ... 1.5 mm²
	Inputs and outputs	
	● Mimic display connections and peripheral data bus	Plug connection for ribbon cable
Mechanical data	Dimensions (L x W x H)	130 x 121 x 32 mm
	Weight	90 g

19 RT interface FCI2005-N1 [NL]

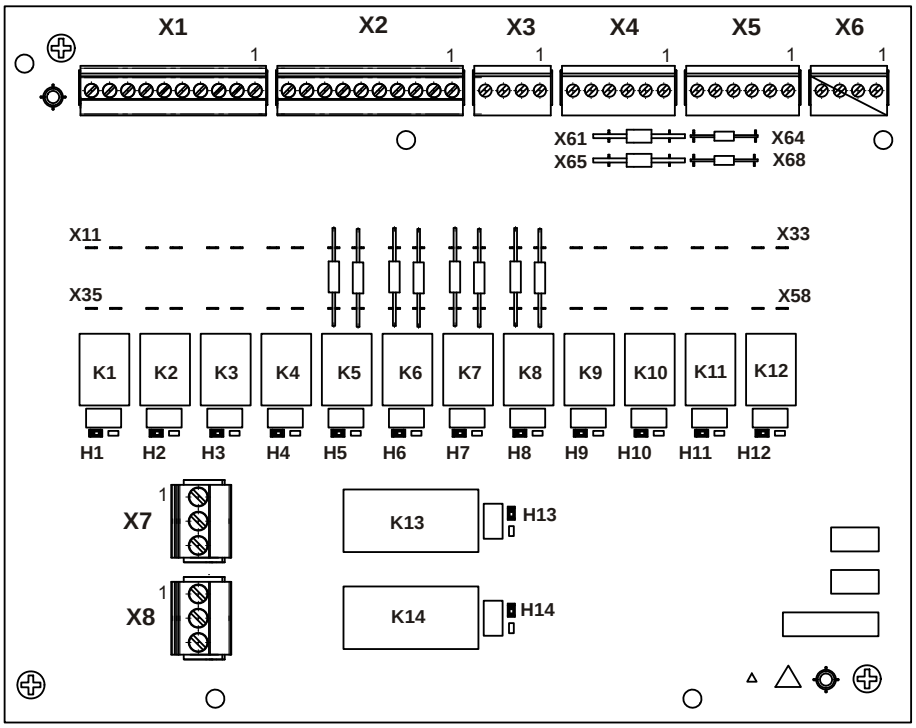


19.1 Description

The RT interface FCI2005-N1 allows a large number of different functions to be controlled in electrical isolation. The RT interface is controlled and fed via the configurable inputs and outputs of the periphery board. The RT interface is tailored to the Dutch market.

The RT interface is directly built in on the mounting plate on top of the periphery board, or next to the periphery board on the housing rear panel if there is enough space.

19.2 Views



PCB view of RT interface FCI2005

Element	Des.	Function
Connector	X1	Relay 1 … 5 switching contacts
	X2	Relay 6 … 10 switching contacts
	X3	Relay 11 + 12 switching contacts
	X4	Relay supply Vsys+ and relay coils 1 … 5
	X5	Relay supply Vsys+ and relay coils 6 … 10
	X6	Relay coils 11 … 14
	X7	Relay 13 switching contacts
	X8	Relay 14 switching contacts
LEDs	H1	Relay 1 indication
	H2	Relay 2 indication
	H3	Relay 3 indication
	H4	Relay 4 indication
	H5	Relay 5 indication
	H6	Relay 6 indication
	H7	Relay 7 indication
	H8	Relay 8 indication
	H9	Relay 9 indication
	H10	Relay 10 indication
	H11	Relay 11 indication

Element	Des.	Function
	H12	Relay 12 indication
	H13	Relay 13 indication
	H14	Relay 14 indication

19.3 Pin assignments

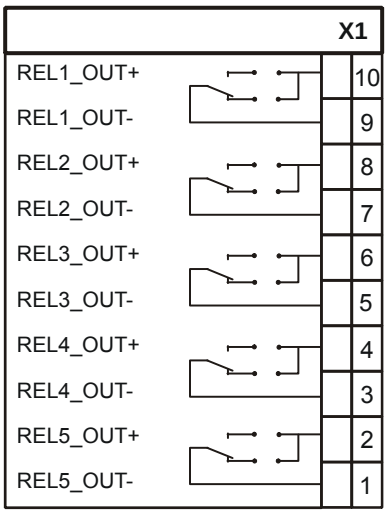
19.3.1 X1 relay 1 … 5 switching contacts

PIN	Designation	Description
10	REL1_OUT+	Relay 1 switching contact (configurable as NO or NC)
9	REL1_OUT-	Relay 1 switching contact
8	REL2_OUT+	Relay 2 switching contact (configurable as NO or NC)
7	REL2_OUT-	Relay 2 switching contact
6	REL3_OUT+	Relay 3 switching contact (configurable as NO or NC)
5	REL3_OUT-	Relay 3 switching contact
4	REL4_OUT+	Relay 4 switching contact (configurable as NO or NC)
3	REL4_OUT-	Relay 4 switching contact
2	REL5_OUT+	Relay 5 switching contact (configurable as NO or NC)
1	REL5_OUT-	Relay 5 switching contact

NO = Normally open

NC = Normally closed

Admissible cable cross-section: 0.14 ... 1.5 mm²



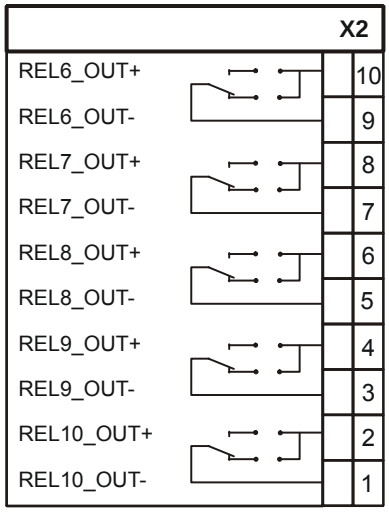
19.3.2 X2 relay 6 … 10 switching contacts

PIN	Designation	Description
10	REL6_OUT+	Relay 6 switching contact (configurable as NO or NC)
9	REL6_OUT-	Relay 6 switching contact
8	REL7_OUT+	Relay 7 switching contact (configurable as NO or NC)
7	REL7_OUT-	Relay 7 switching contact
6	REL8_OUT+	Relay 8 switching contact (configurable as NO or NC)
5	REL8_OUT-	Relay 8 switching contact
4	REL9_OUT+	Relay 9 switching contact (configurable as NO or NC)
3	REL9_OUT-	Relay 9 switching contact
2	REL10_OUT+	Relay 10 switching contact (configurable as NO or NC)
1	REL10_OUT-	Relay 10 switching contact

NO = Normally open

NC = Normally closed

Admissible cable cross-section: 0.14 ... 1.5 mm²



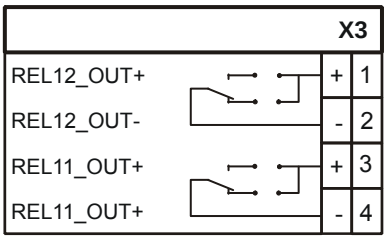
19.3.3 X3 relay 11 + 12 switching contacts

PIN	Designation	Description
1	REL12_OUT+	Relay 12 switching contact (configurable as NO or NC)
2	REL12_OUT-	Relay 12 switching contact
3	REL11_OUT+	Relay 11 switching contact (configurable as NO or NC)
4	REL11_OUT-	Relay 11 switching contact

NO = Normally open

NC = Normally closed

Admissible cable cross-section: 0.14 ... 1.5 mm²



19.3.4 X4 relay supply Vsys+ and relay coils 1 … 5

PIN	Designation	Description
6	20V-30V/VSYS+	Supply Vsys+ (connected to X5, PIN 6)
5	REL1_IN-	Relay coil 1, active low
4	REL2_IN-	Relay coil 2, active low
3	REL3_IN-	Relay coil 3, active low
2	REL4_IN-	Relay coil 4, active low
1	REL5_IN-	Relay coil 5, active low

Admissible cable cross-section: 0.14 ... 1.5 mm²

19.3.5 X5 relay supply Vsys+ and relay coils 6 … 10

PIN	Designation	Description
6	20V-30V/VSYS+	Supply Vsys+ (connected to X4, PIN 6)
5	REL6_IN-	Relay coil 6, active low
4	REL7_IN-	Relay coil 7, active low
3	REL8_IN-	Relay coil 8, active low
2	REL9_IN-	Relay coil 9, active low
1	REL10_IN-	Relay coil 10, active low

Admissible cable cross-section: 0.14 ... 1.5 mm²

19.3.6 X6 relay coils 11 … 14

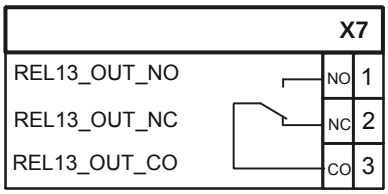
PIN	Designation	Description
4	REL11_IN-	Relay coil 11, active low
3	REL12_IN-	Relay coil 12, active low
2	REL13_IN-	Relay coil 13, active low
1	REL14_IN-	Relay coil 14, active low

Admissible cable cross-section: 0.14 ... 1.5 mm²

19.3.7 X7 relay 13 switching contacts

PIN	Designation	Description
1	REL13_OUT_NO	Relay 13 switching contact, normally open
2	REL13_OUT_NC	Relay 13 switching contact, normally closed
3	REL13_OUT_CO	Relay 13 switching contact, common

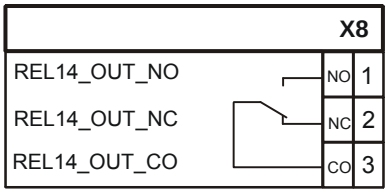
Admissible cable cross-section: 0.2 ... 2.5 mm²



19.3.8 X8 relay 14 switching contacts

PIN	Designation	Description
1	REL14_OUT_NO	Relay 14 switching contact, normally open
2	REL14_OUT_NC	Relay 14 switching contact, normally closed
3	REL14_OUT_CO	Relay 14 switching contact, common

Admissible cable cross-section: 0.2 ... 2.5 mm²



19.3.9 Connection of cable tree to periphery board

RT interface		Wiring harness		Periphery board 4 loops		Periphery board 2 loops	
PIN	**Designation**	**Cable color**	**Signal**	**PIN**	**Designation**	**PIN**	**Designation**
X4-6	20V-30V/VSYS+	White/green	Supply (+)	X8-7	VSYS_01	X8-5	VSYS_01
X4-5	REL1_IN-	Blue/red	Manual	X7-1	AL_NO	X7-1	AL_NO
X4-4	REL2_IN-	Gray/pink	Auto	X8-1	I/O1	X8-1	I/O1
X4-3	REL3_IN-	--	Alarm 2	--	--	--	--
X4-2	REL4_IN-	Violet	Fault	X7-6	FAU_NC	X7-6	FAU_NC
X4-1	REL5_IN-	Black	Alarm 1	X8-2	I/O2	X8-2	I/O2
X5-6	20V-30V/VSYS+	--	Supply (+)	X8-15	VSYS_02	X9-5	VSYS_02
X5-5	REL6_IN-	--	Alarm 2	--	--	--	--
X5-4	REL7_IN-	Red	Fault	X8-3	I/O3	X8-3	I/O3
X5-3	REL8_IN-	Blue	Isolation	X8-4	I/O4	X8-4	I/O4
X5-2	REL9_IN-	Pink	Technical sprinkler	X8-5	I/O5	X9-1	I/O5
X5-1	REL10_IN-	Gray	Supervision sprinkler	X8-6	I/O6	X9-2	I/O6
X6-4	REL11_IN-	Yellow	Fire alarm sprinkler	X8-9	I/O7	X9-3	I/O7
X6-3	REL12_IN-	Green		X8-10	I/O8	X9-4	I/O8
X6-2	REL13_IN-	Brown		X8-11	I/O9	--	--
X6-1	REL14_IN-	White		X8-12	I/O10	--	--

19.4 Indications

LED	Color	Function	Condition	Meaning
H1	Green	Relay 1	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H2	Green	Relay 2	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H3	Green	Relay 3	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H4	Green	Relay 4	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H5	Green	Relay 5	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H6	Green	Relay 6	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H7	Green	Relay 7	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H8	Green	Relay 8	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H9	Green	Relay 9	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H10	Green	Relay 10	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H11	Green	Relay 11	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H12	Green	Relay 12	Off	Quiescent condition, depending on configuration NO or NC
			On	Relay switched
H13	Green	Relay 13	Off	Quiescent condition
			On	Relay switched
H14	Green	Relay 14	Off	Quiescent condition
			On	Relay switched

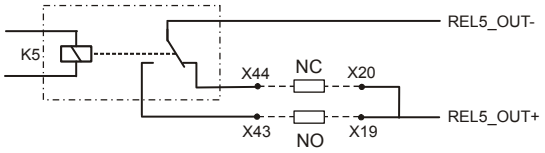
NO = Normally open

NC = Normally closed

19.5 Adjustment elements

The switching contacts of the relays K1 … K12 must be configured as 'normally open' (NO) or 'normally closed' (NC). The application-specific settings are made by inserting a wire jumper or a resistor between the corresponding solder pins.

The following figure shows the setting of the relay K5 as an example.



Example: Setting the switching contacts

Settings

NO = wire jumper or resistor between solder pins X19 and X43

NC = wire jumper or resistor between solder pins X20 and X44

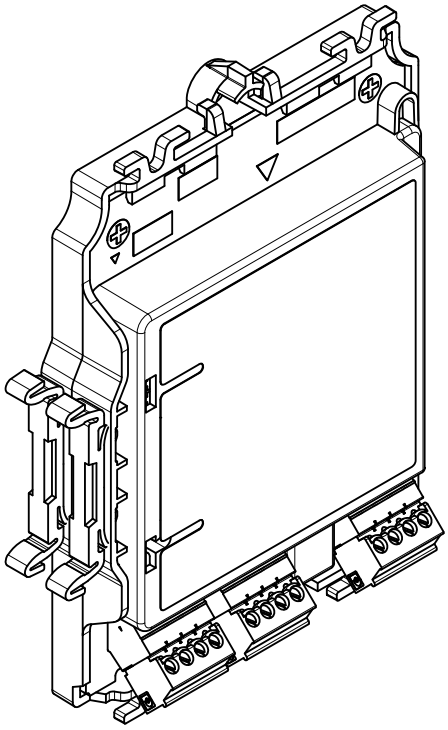
Settings for Holland (default)

Relay	Contact	Solder pins	NO/NC	Resistance
K5	REL5_OUT+	X19 … X43	NO	680 Ω
		X20 … X44	NC	3.3 kΩ
K6	REL6_OUT+	X21 … X45	NO	680 Ω
		X22 … X46	NC	3.3 kΩ
K7	REL7_OUT+	X23 … X47	NO	680 Ω
		X24 … X48	NC	3.3 kΩ
K8	REL8_OUT+	X25 … X49	NO	680 Ω
		X26 … X50	NC	3.3 kΩ

19.6 Technical data

Power supply input	Designation	'20V-30V VSYS+'
	Voltage	Min. 17 V DC … max. 30 V DC
	Quiescent current	Typically 0 mA
	Quiescent current (all relays switched)	Max. 240 mA
Relays 1 … 12	Designation	'REL1' … 'REL12'
	Design	Relay reversed polarity
	Operating current/relay	Max. 12 mA
	DC switching voltage	Max. 30 V DC
	DC switching current	Max. 2 A
	AC switching voltage	Max. 125 V AC
	AC switching current	Max. 0.5 A
Relays 13 + 14	Designation	'REL13', 'REL14'
	Design	Relay reversed polarity
	Operating current/relay	Max. 30 mA
	DC switching voltage	Max. 30 V DC
	DC switching current	Max. 5 A
	AC switching voltage	Max. 250 V AC
	AC switching current	Max. 5 A
LEDs	Status indication relay	Lights up when relay is switched
Connection terminals	All connectors:	
X1 … X6	• Design	Screw clamps, grid 3.81 mm
	• Admissible cable cross-section	0.14 … 0.06 in^2 rigid/flexible
X7 + X8	• Design	Screw clamps, grid 5 mm
	• Admissible cable cross-section	0.2 … 2.5 mm^2 rigid/flexible
Mechanical data	Dimensions (L x W x H)	190 x 150 x 36 mm
	Weight	240 g

20 Sounder module FCA2005-A1



20.1 Description

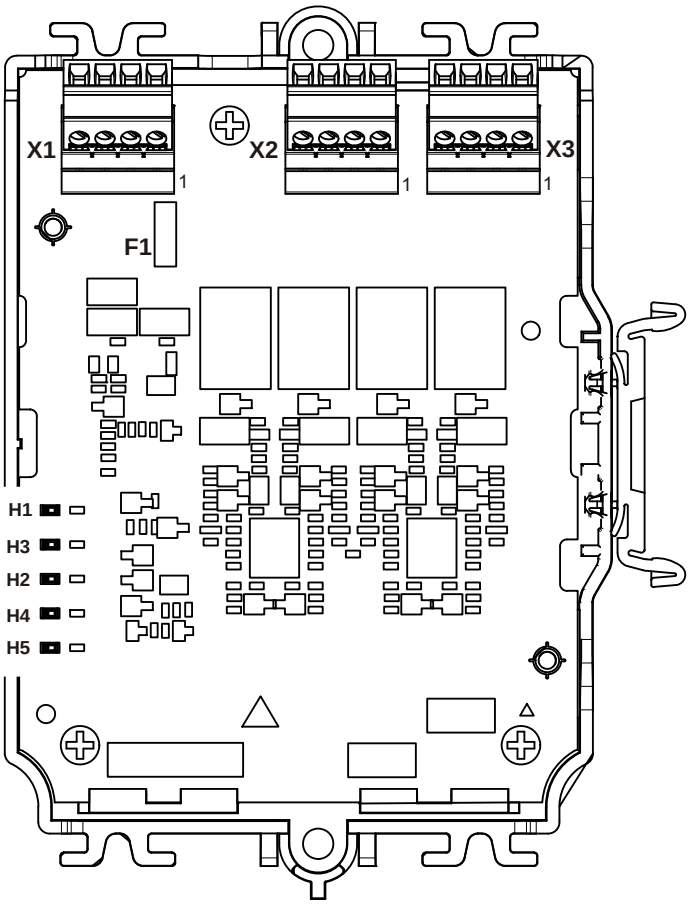
The sounder module FCA2005-A1 makes it possible to assign a monitored horn output of the periphery board FCI2002-A1 or FCI2004-A1 to up to four horn outputs. Each of these four lines has the same features as the sounder output of the periphery board and may control and monitor alarming devices. Supply is ensured via the supply output of the periphery board.

The sounder module may only be fitted and operated in the fire control panel.

It can be fitted as follows:

- Engaged on a 35 mm top hat rail
- Screwed onto an even surface (mounting plate)
- Clamped into a FDCH291 / FDCH292 housing. This housing can also be screwed onto an even surface (mounting plate).

20.2 Views



PCB view of sounder module FCA2005-A1

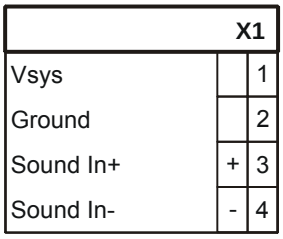
Element	Des.	Function
Plugs and terminals	X1	Supply input and input sounder from the periphery board
	X2	Sounder 1 and 2 outputs
	X3	Sounder 3 and 4 outputs
LEDs	H1	Supply control
	H2	Sounder 2 fault
	H3	Sounder 1 fault
	H4	Sounder 3 fault
	H5	Sounder 4 fault
Fuses	F1	Fuse supply input 2 (2 A/T); Schurter OMT 125

20.3 Pin assignments

20.3.1 X1 supply input and sounder input from the periphery board

X1 sounder module			Periphery board 2 loops		Periphery board 4 loops	
PIN	**Designation**	**Description**	**PIN**	**Designation**	**PIN**	**Designation**
1	+Vsys	Supply input from the periphery board (+)	X8-5	VSYS_01 (+)	X8-7	VSYS_01 (+)
2	Ground	Supply input from the periphery board (-)	X8-6	GND_01 (-)	X8-8	GND_01 (-)
3	Sound In +	Sounder input from the periphery board (+)	X6-1	SOUND1+	X5-1	SOUND1+
4	Sound In -	Sounder input from the periphery board (-)	X6-2	SOUND1-	X5-2	SOUND1-

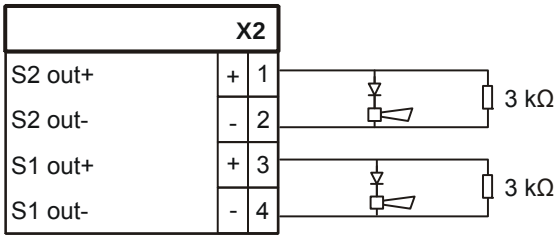
Admissible cable cross-section: 0.08 ... 1.5 mm²



20.3.2 X2 sounder 1 and 2 outputs

PIN	Designation	Description
1	S2 out+	Sounder line 2 (+) output
2	S2 out-	Sounder 2 (-) output
3	S1 out+	Sounder line 1 (+) output
4	S1 out-	Sounder 1 (-) output

Admissible cable cross-section: 0.08 ... 1.5 mm²

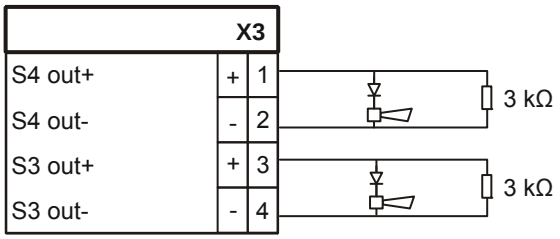


The terminating resistor of 3 kΩ also has to be connected even when the output is not used.

20.3.3 X3 sounder 3 and 4 outputs

PIN	Designation	Description
1	S4 out+	Sounder line 4 (+) output
2	S4 out-	Sounder 4 (-) output
3	S3 out+	Sounder line 3 (+) output
4	S3 out-	Sounder 3 (-) output

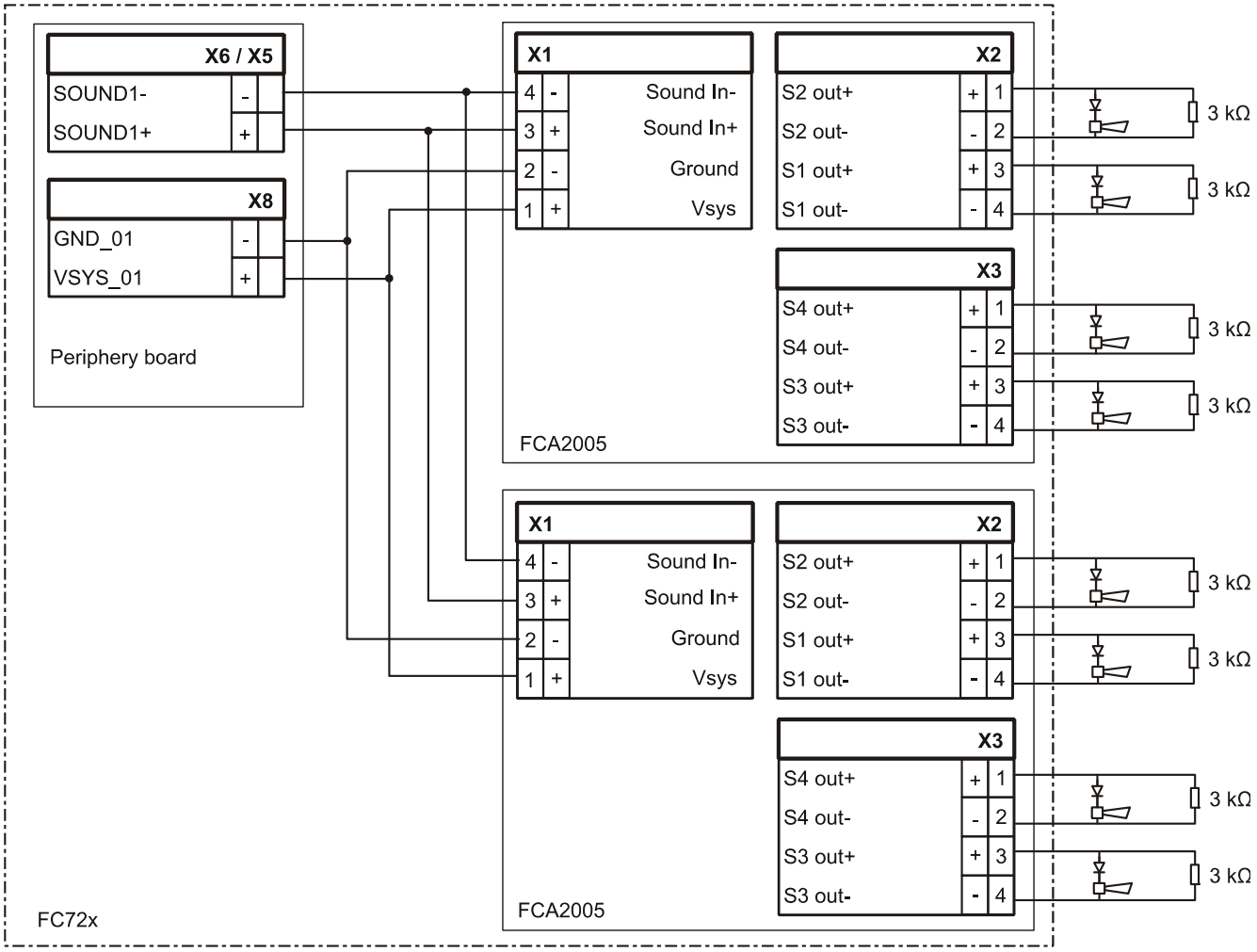
Admissible cable cross-section: 0.08 ... 1.5 mm²



The terminating resistor of 3 kΩ also has to be connected even when the output is not used.

20.3.4 Cascading of two sounder modules

A maximum of two sounder modules may be cascaded.



Cascading of two sounder modules FCA2005-A1

20.4 Indications

LED	Color	Function	Condition	Meaning
H1	Green	Power supply	Off	No supply (fuse may be defective)
			On	Normal condition
H2	Yellow	Sounder 2 fault	Off	Normal condition (default)
			On	Sounder 2 fault (open line, short-circuit)
H3	Yellow	Sounder 1 fault	Off	Normal condition (default)
			On	Sounder 1 fault (open line, short-circuit)
H4	Yellow	Sounder 3 fault	Off	Normal condition (default)
			On	Sounder 3 fault (open line, short-circuit)
H5	Yellow	Sounder 4 fault	Off	Normal condition (default)
			On	Sounder 4 fault (open line, short-circuit)

20.5 Technical data

Supply input	Designation	'Vsys', 'Ground'
	Operating voltage	21 … 28.6 V DC
	Quiescent current	20 mA, typical
	Operating current	Max. 2 A, safeguarded with 2AT **
Monitored sound input	Designation	'Sound In+', 'Sound In-'
	Individual sounder module:	
	● Resistance value standby	4900 Ω
	● Tolerance	+/- 300 Ω
	Two sounder modules parallel:	
	● Resistance value standby	2450 Ω
	● Tolerance	+/- 300 Ω
Monitored sound output 1, 2, 3, 4	Designation	● 'S1 out+', 'S1 out-'
		● 'S2 out+', 'S2 out-'
		● 'S3 out+', 'S3 out-'
		● 'S4 out+', 'S4 out-'
	Execution	Relay reversed polarity
	Output voltage	21 … 28.6 V DC
	Output current	Max. 1 A / sounder (observe maximum current)**
	Guaranteed output current (monitored for short-circuit and open line)	15 mA when U_{outmin} = 16 V
	Monitored for (if output inactive)	● Short-circuit ● Open line
	Monitoring resistance	3 kΩ *
	With tolerance	+/- 500 Ω
	Max. connection distance	1000 m
Connection terminals	All connectors:	
	● Execution	Screw terminals
	● Admissible cable cross-section	0,8 … 1.5 mm^2
Mechanical data	Dimensions (L x W x H)	132 x 90 x 24 mm
	Weight	120 g

* The monitoring resistance must also be connected when the sound output is not used.

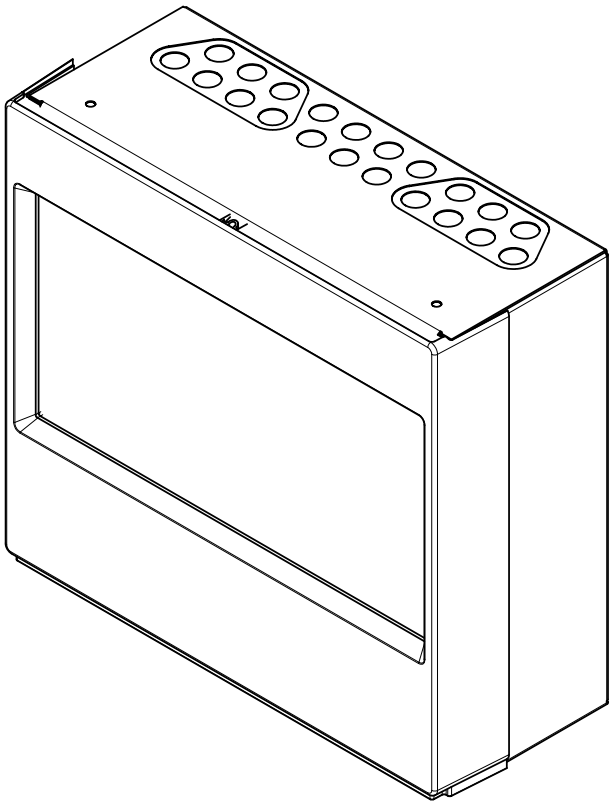
** The operating current is max. 2 A (fuse protection 2AT) although the max. output current per sounder is 1 A.

$I_{total\ max.}$ 2 A = I_{Out1} + I_{Out2} + I_{Out3} + I_{Out4}

If the sounder module FCA2005 is fed via the FS20 peripheral board (output VSYS), the availability of a maximum current of 1 A (1 A fuse) on this output must be observed. The maximum operating current $I_{total\ max}$ is only 1 A in this case.

NOTICE! Some voltage ranges of certified horns are limited to 28 V. This maximum voltage can only be guaranteed if the control panel temperature is always > 5 °C.

21 Housing



21.1 Description

The empty housings are used for extensions, add-ons or for building in options. They have the following features:

- Delivered as set, including cover and carrier plate
- Construction identical to the housings of the different station types
- The housings have the same cable breakout openings as the stations
- Easy wall mounting
- Can be screwed onto the stations of the same construction type from below or above
- Fixation points for cable ties
- Built-in top hat rail for mains separation terminals and accessories

Comment

There is an overview of the components or batteries which can be fitted in document A6V10210355, system description and in document A6V10210362, planning.

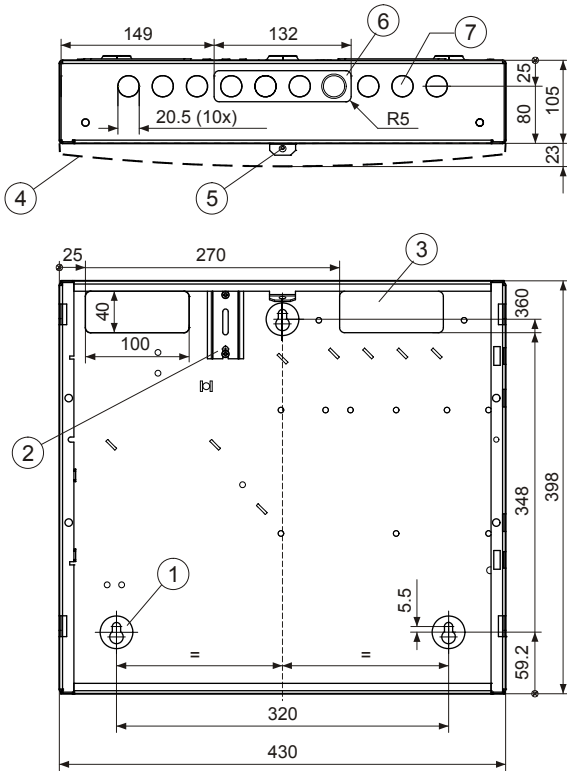
21.2 Views

The empty housings consist of the following components:

- Rear panel made of sheet metal
- Cover made from synthetic material
- Carrier plate covered with design foil

21.2.1 Housing (Eco)

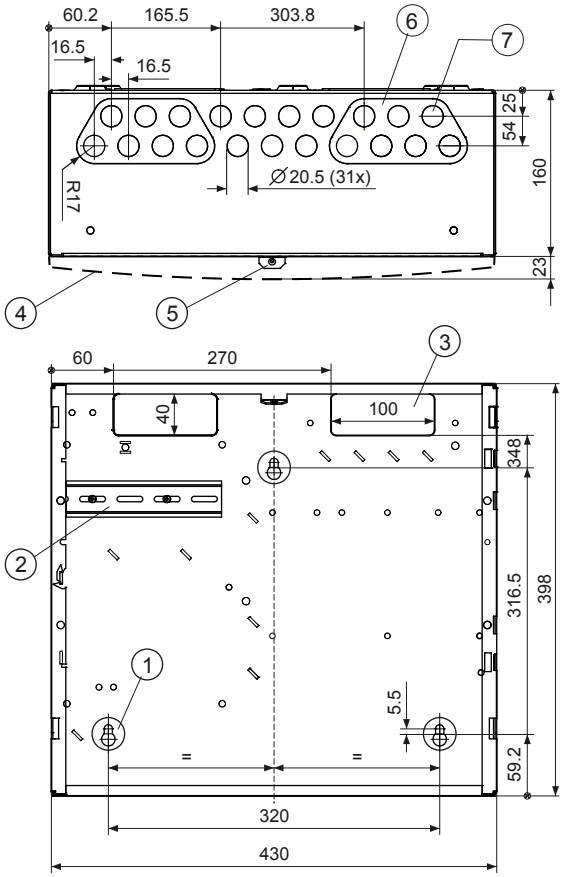
Housing dimensions (Eco) FH7201-Z3



1	Fixation holes (3 pcs.)
2	Top hat rail, length 70 mm
3	Breakout openings for cable entries from the back (2 pcs.)
4	Cover cap
5	Flap with screw for the fixation of the cover
6	Breakout opening for cable entries from the top
7	Breakouts Ø 20 mm for cable gland grommets (10 pcs.)

21.2.2 Housing (Standard)

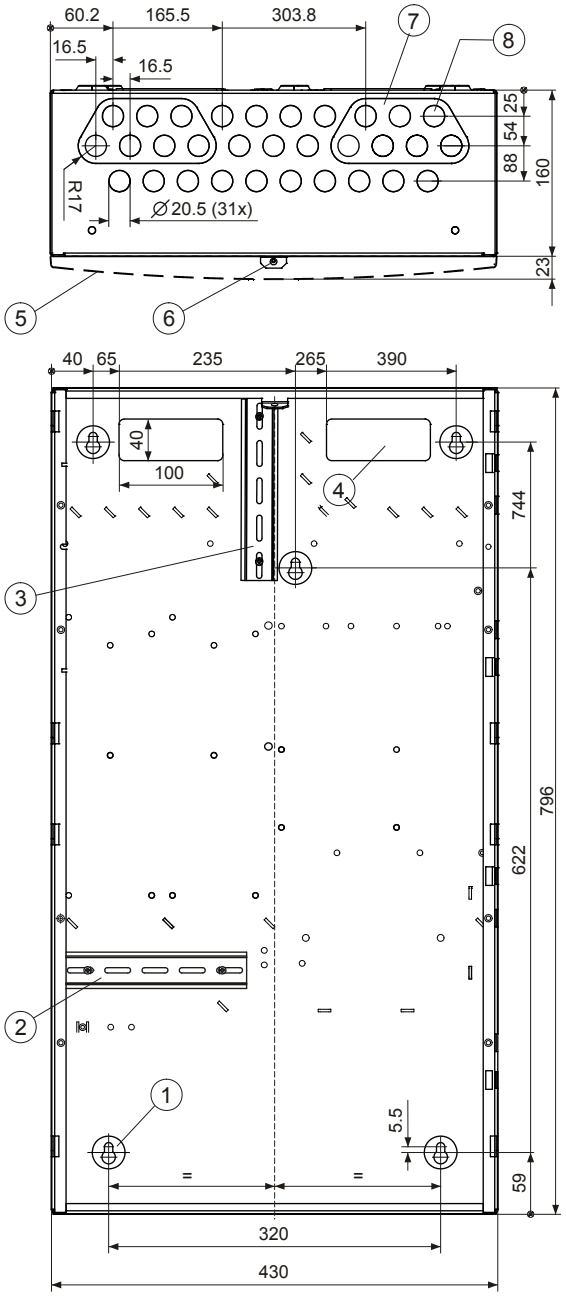
Dimensions of housing (Standard) FH7202-Z3



1	Fixation holes (3 pcs.)
2	Top hat rail, length 150 mm
3	Breakout openings for cable entries from the back (2 pcs.)
4	Cover cap
5	Flap with screw for the fixation of the cover
6	Breakout opening for cable entries from the top
7	Breakouts Ø 20 mm for cable gland grommets (21 pcs.)

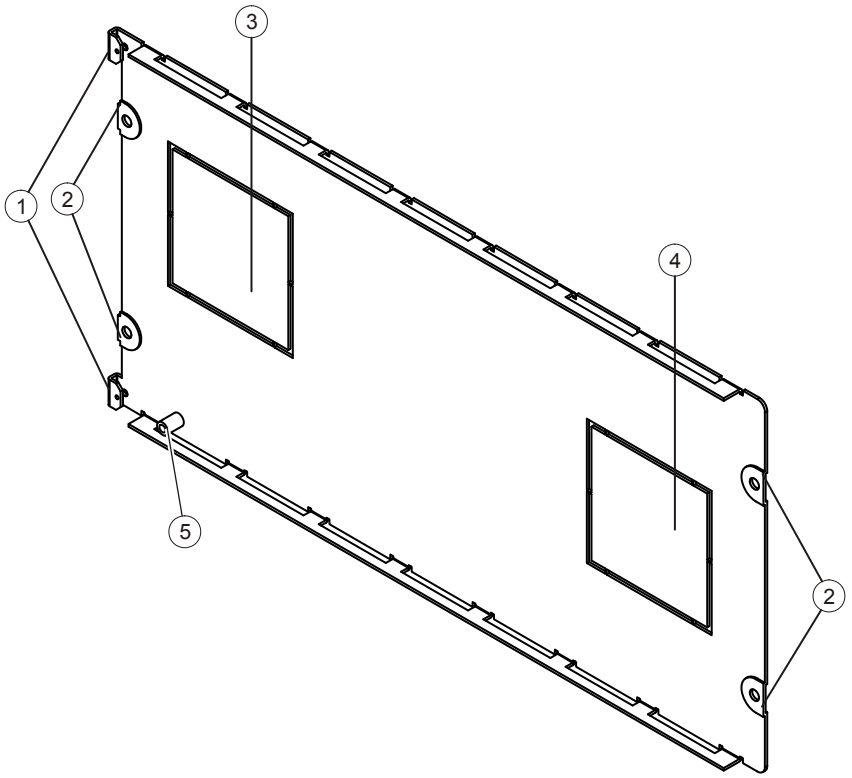
21.2.3 Housing (Comfort)

Dimensions of housing (Comfort) FH7203-Z3



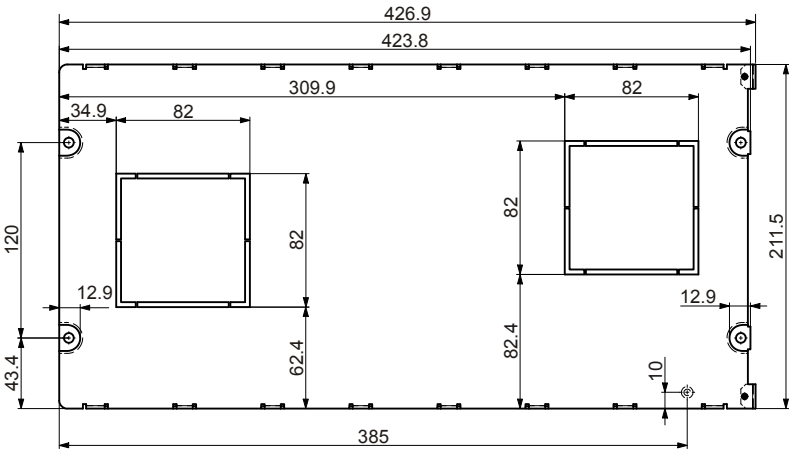
1	Fixation holes (5 pcs.)
2	Top hat rail for mains separation terminals and socket, length 175 mm
3	Top hat rail for relays and accessories, length 175 mm
4	Breakout openings for cable entries from the back (2 pcs.)
5	Cover caps
6	Flap with screw for the fixation of the top cover
7	Breakout opening for cable bushings from the top (2 pcs.)
8	Breakouts Ø 20 mm for cable gland grommets (31 pcs.)

21.2.4 Operating unit carrier



Carrier plate, interior view

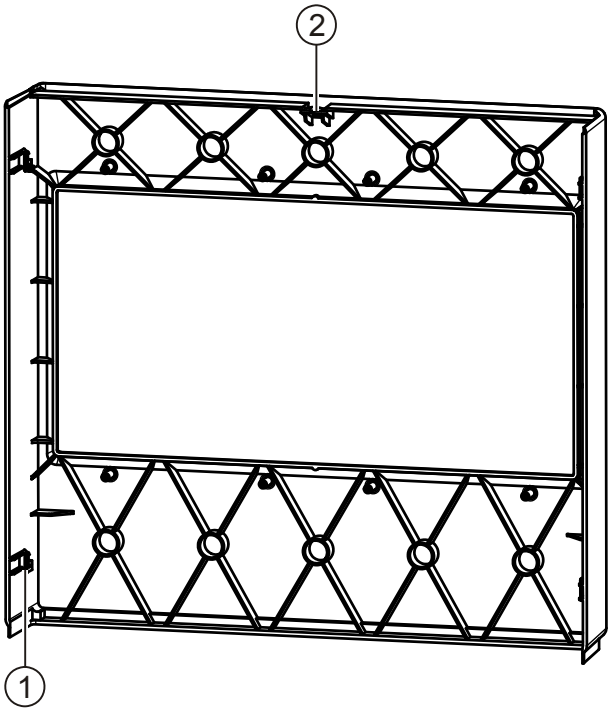
1	2 hinges for fixation on the housing
2	4 holes to fix the carrier plate on the housing
3	Breakout opening on right for event printer
4	Breakout opening on left for event printer
5	Welded-on screw bushing M4-12



Carrier plate dimensions

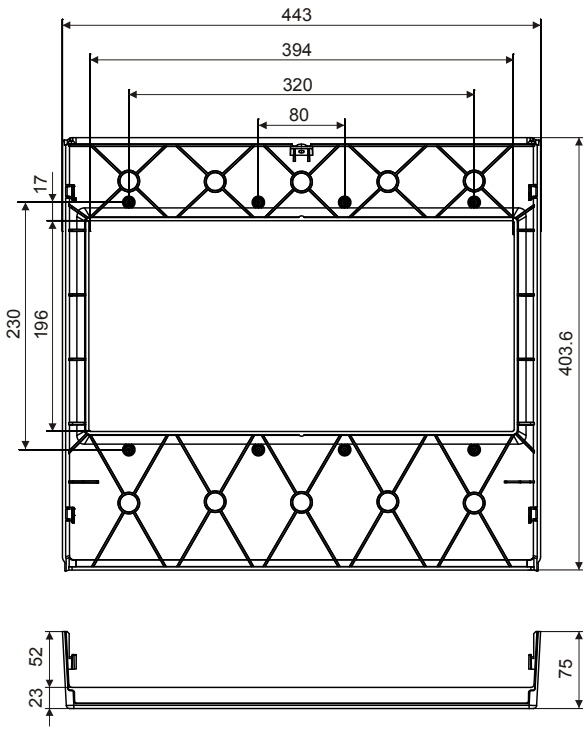
21.2.5 Cover cap

Cover cap Cerberus FHA7201-A3



View of cover cap from rear

1 Support cams (4 pcs.) 2 Fixing screw



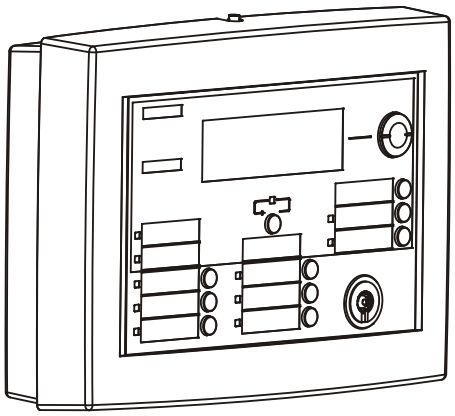
Dimensions of the cover

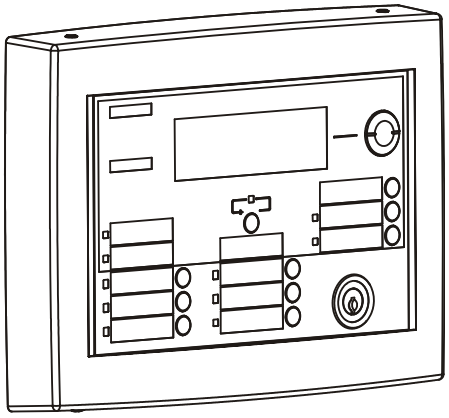
21.3 Technical data

Housing	Housing material	Steel sheet, electrolytically tin-plated
	Surface treatment	Powder-coated
	Color	RAL 7035 (light gray)
	Protection category	IP30
Cover cap	Material	ABS
	Color	RAL 9010 (pure white)
Weight	FH2001 housing (Eco)	3.8 kg
	FH2002 housing (Standard)	5.4 kg
	FH2003 housing (Comfort)	9 kg
	Cover cap	0.64 kg
Overall dimensions (W x H x D)	FH2001 housing (Eco)	430 x 398 x 80 (103)* mm
	FH2002 housing (Standard)	430 x 398 x 160 (183)* mm
	FH2003 housing (Comfort)	430 x 796 x 160 (183)* mm
	Cover cap	443 x 403 x 75 mm
Miscellaneous	CE conformity mark	Yes

* = depth indication in brackets with mounted cover

22 Floor repeater terminal FT2010





22.1 Description

The floor repeater terminal FT2010 is used for users whose indication and operation requirements are restricted to the main functions. Applications include e.g. sister stations in hospitals. The floor repeater terminal FT2010 is connected directly to the C-NET detector line.

The floor repeater terminal comes in two versions:

- FT2010-A1 with plastic rear panel, and an attachment depth of 79 mm
- FT2010-C1 with flat rear panel made from steel plate and an attachment depth of 45 mm

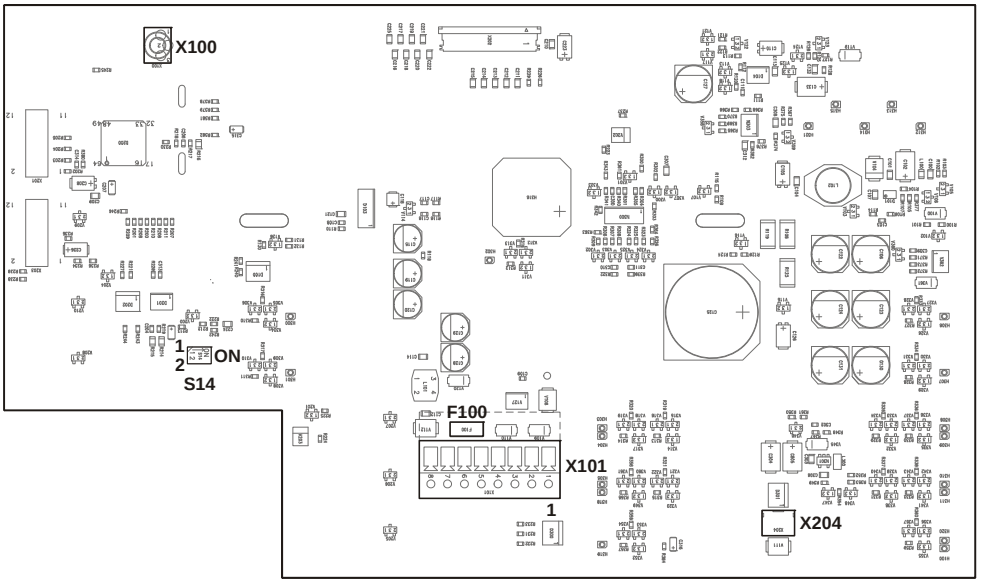
The floor repeater terminal has the following features:

- Connection to the C-NET detector line
- Power supply possible via the C-NET detector line
- External AC or DC supply possible
- 8-line display with 40 characters per line and backlight
- Operation enabled by key switch
- Operation: Acknowledge and reset
- Buzzer
- Six configurable LEDs and keys (with Cerberus-Engineering-Tool)
- Insertable inscription strips

Notes:

- A description of how to operate and label the key switches and LEDs can be found in document 009310, operation.
- Templates for the inscription strips can be found in document A6V10217440, inscription strips.

22.2 Views



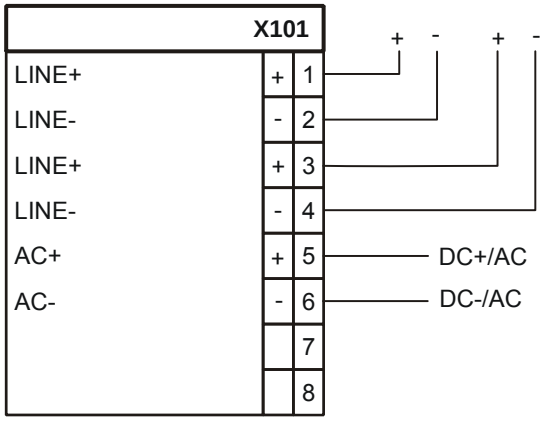
PCB view of floor repeater terminal FT2010

X100	Connection to detector exchanger and tester (MC-LINK)
X101	Connection to detector line and external supply
X204	9V battery connection [FR]
S14	DIP switch
F100	Fuse for external supply, 1 A/T (not exchangeable)

22.3 Pin assignments

22.3.1 X101 detector line and external supply

PIN	Designation	Description
1	LINE+	Detector line (+)
2	LINE–	Detector line (-)
3	LINE+	Detector line (+)
4	LINE–	Detector line (-)
5	AC+	External supply DC+/AC
6	AC-	External supply DC-/AC
7		Not connected
8		Not connected



22.4 Adjustment elements

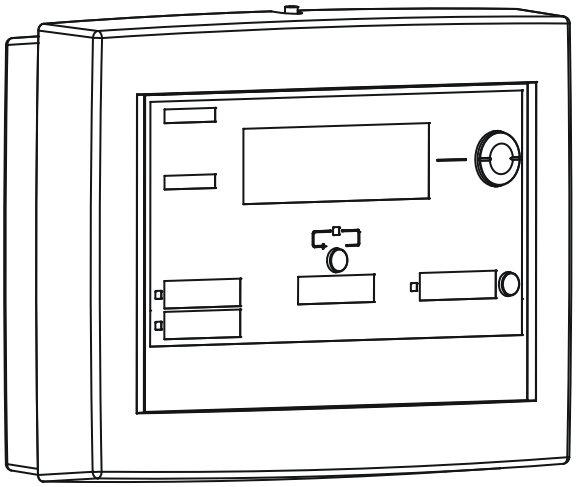
DIP switch S14	Des.	Function	Position	Meaning
1	3TE_OFF	Acoustic signaling in case of failure of the C-NET supply and external supply	ON	Acoustic signaling deactivated
			OFF	Acoustic signaling activated (ex-works default setting)
2	WD_OFF	No function; switch must always be in position 'OFF'.	OFF	Ex-works default setting

22.5 Technical data

Supply	Optional	• Via external supply • Via C-NET detector line
External supply	Designation	'AC+', 'AC–'
	Voltage	• 15 … 18 V AC • 20 … 30 V DC
	Power consumption	10 … 50 mA
Detector line	Designation	'LINE+', 'LINE–'
	Voltage	12 … 32 V DC
	Power consumption	
	• Without external supply	4 … 40 mA
	• With external supply	Max. 5 mA
	Maximum current connection factor	
	• Without external supply	160
	• With external supply	20
	Quiescent current connection factor	
	• Without external supply	20
	• With external supply	20
	Address connection factor	1

	Separator connection factor	1
	Protocol	C-NET
Functional data	Display	6 lines of 40 characters each
	Acoustic signaling	Tone interval can be configured with Cerberus-Engineering-Tool
Connections	Detector line and external supply	
	• Execution	Screw terminals
	• Cable cross-section	0,8 … 1.5 mm^2
Ambient conditions	Operating temperature	-8 … +42 °C
	Storage temperature	-20 … +60 °C
	Protection category	IP30
	Max. application height	4000 m above sea level
Mechanical data	Dimensions (W x H)	283 x 207 mm
	Depth of FT2010-A1	79 mm
	Depth of FT2010-C1	45 mm
	Weight of FT2010-A1	800 g
	Weight of FT2010-C1	1100 g
Standards	Safety	EN 60950
	QA Standards	• Siemens Standard SN 36350 • ISO 9001 • ISO 14001
	CE conformity mark	Yes

23 Floor repeater display FT2011



23.1 Description

The floor repeater display FT2011 is used for users whose indication requirements are restricted to the main functions. Applications include e.g. sister stations in hospitals. The floor repeater display FT2011 is connected directly to the C-NET detector line.

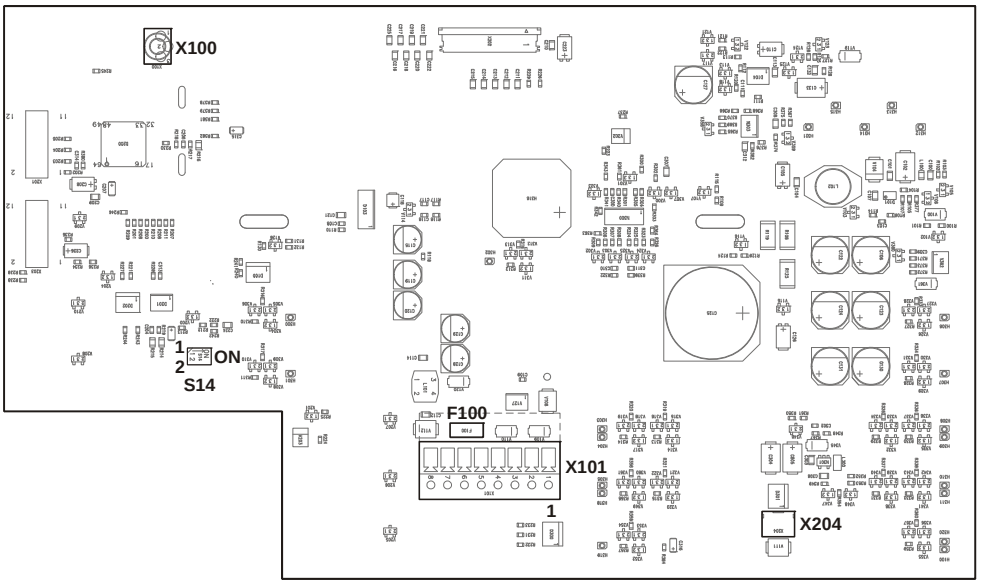
It displays the following features:

- Connection to the C-NET detector line
- Power supply possible via the C-NET detector line
- External AC or DC supply possible
- 8-line display with 40 characters per line and backlight
- Buzzer
- Insertable inscription strips

Notes:

- A description of how to operate and label the key switches and LEDs can be found in document 009311, operation.
- Templates for the inscription strips can be found in document A6V10217440, inscription strips.

23.2 Views



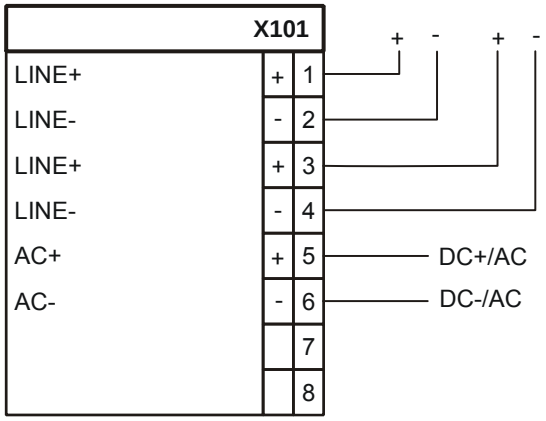
PCB view of floor repeater display FT2011

X100	Connection to detector exchanger and tester (MC-LINK)
X101	Connection of detector line and external supply
X204	9V battery connection [FR]
S14	DIP switch
F100	Fuse for external supply, 1 A/T (not exchangeable)

23.3 Pin assignments

23.3.1 X101 detector line and external supply

PIN	Designation	Description
1	LINE+	Detector line (+)
2	LINE–	Detector line (-)
3	LINE+	Detector line (+)
4	LINE–	Detector line (-)
5	AC+	External supply DC+/AC
6	AC-	External supply DC-/AC
7		Not connected
8		Not connected



23.4 Adjustment elements

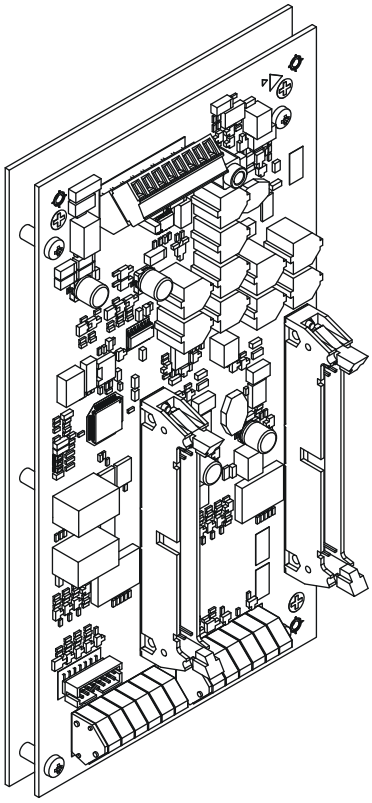
DIP switch S14	Des.	Function	Position	Meaning
1	3TE_OFF	Acoustic signaling in case of failure of the C-NET supply and external supply	ON	Acoustic signaling deactivated
			OFF	Acoustic signaling activated (ex-works default setting)
2	WD_OFF	No function; switch must always be in position 'OFF'.	OFF	Ex-works default setting

23.5 Technical data

Supply	Optional	• External supply • Detector line
External supply	Designation	'AC+', 'AC–'
	Voltage	• 15 … 18 V AC • 20 … 30 V DC
	Power consumption	10 … 50 mA
Detector line	Designation	'LINE+', 'LINE–'
	Voltage	12 … 32 V DC
	Power consumption	
	• Without external supply	4 … 40 mA
	• With external supply	Max. 5 mA
	Maximum current connection factor	
	• Without external supply	160
	• With external supply	20
	Quiescent current connection factor	
	• Without external supply	20
	• With external supply	20
	Address connection factor	1

	Separator connection factor	1
	Protocol	C-NET
Functional data	Display	6 lines of 40 characters each
	Acoustic signaling	Tone interval can be configured with Cerberus-Engineering-Tool
Connections	Detector line and external supply	
	• Execution	Screw terminals
	• Cable cross-section	0,8 … 1.5 mm^2
Ambient conditions	Operating temperature	-8 … +42 °C
	Storage temperature	-20 … +60 °C
	Protection category	IP30
	Max. application height	4000 m above sea level
Mechanical data	Dimensions (W x H x D)	283 x 207 x 79 mm
	Weight	800 g
Standards	Safety	EN 60950
	QA Standards	• Siemens Standard SN 36350 • ISO 9001 • ISO 14001
	CE conformity mark	Yes

24 Mimic display driver FT2001-A1



24.1 Description

The mimic display driver FT2001-A1 is operated on the C-NET detector line and permits simple display of events, e.g. alarms and faults. 48 driver outputs are available, to which the LED ribbon cable F50F410 can be connected, for example.

The synoptic driver is supplied without housing. It is mounted on a carrier plate that permits installation in any housing. The housing used (by the customer) must have at least protection category IP30.

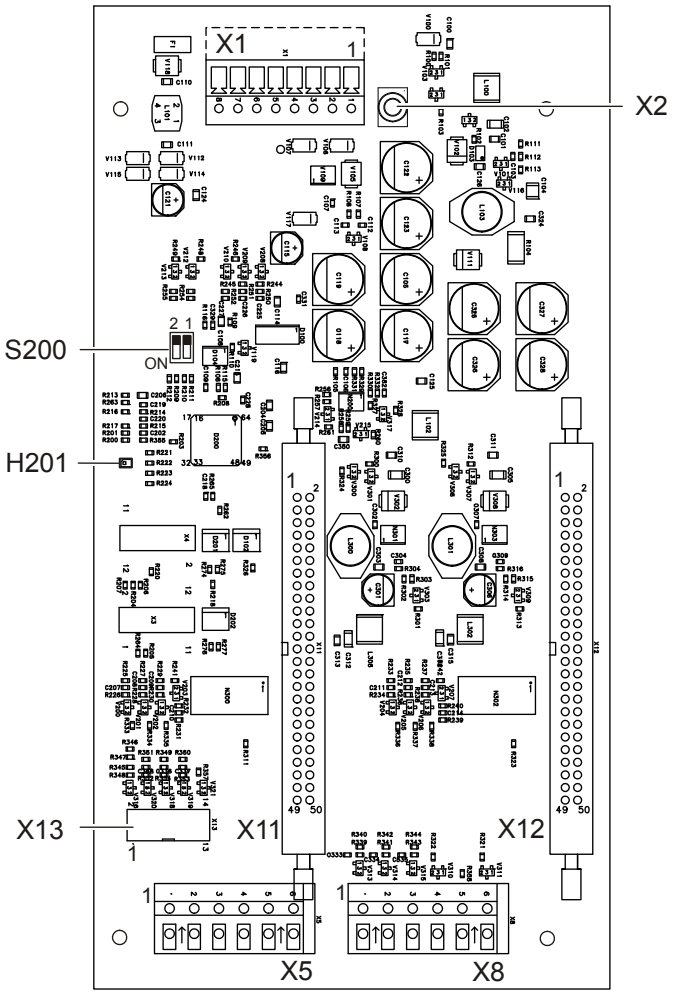
The mimic display driver is powered via the C-NET or via an external power supply.

Properties

- 48 freely programmable driver outputs
- Configuration of the driver outputs with Cerberus-Engineering-Tool
- Communication via C-NET
- Power supply via C-NET or an external DC/AC supply
- Connections for buzzer, 'buzzer OFF' button and lamp test
- Connection for operating LED
- Two plug-type connections for one ribbon cable each with 24 user-positionable LEDs

24.2 Views

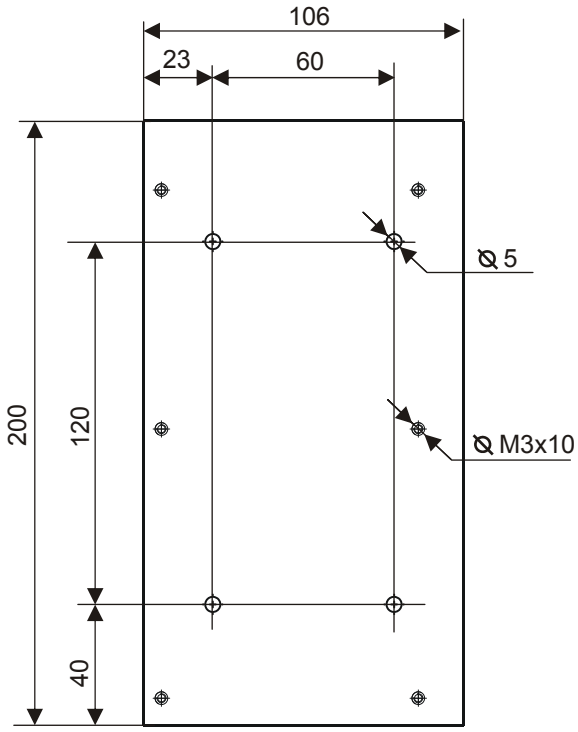
24.2.1 PCB



PCB view of FT2001-A1

Element	Designation	Function
Plugs and terminals	X1	Connection terminal line (C-NET) and external supply
	X2	Jack socket MC-Link cable for software update
	X5	Connection terminal for expanded periphery
	X8	Connection terminal for supply monitoring and operating LED
	X11	Connector driver output 1 … 24
	X12	Connector driver output 25 … 48
	X13	Not used
LEDs	H201	Display update mode
Switch	S200	DIP switch for manual activation of the update mode

24.2.2 Carrier

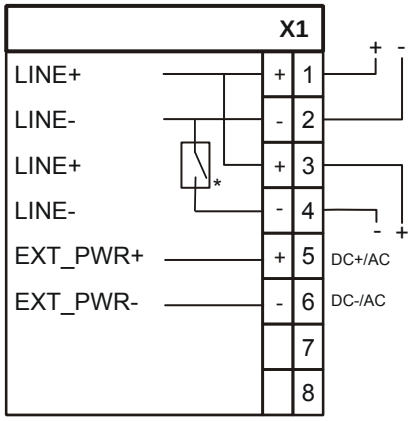


Dimensions of carrier plate for FT2001

24.3 Pin assignments

24.3.1 X1 detector line and external supply

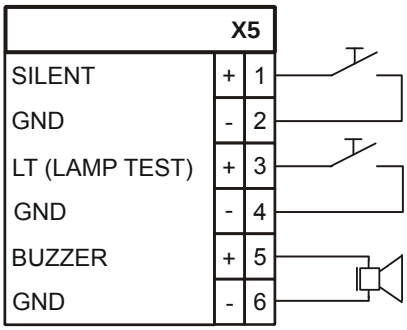
PIN	Designation	Description
1	LINE+	Detector line +
2	LINE-	Detector line -
3	LINE+	Detector line +
4	LINE-	Detector line -
5	EXT_PWR+	Input for external supply DC+ / AC
6	EXT_PWR-	Input for external supply DC- / AC
7		Not used
8		Not used



* Integrated line separator

24.3.2 X5 expanded periphery

PIN	Designation	Description
1	SILENT	Connection +, 'Local buzzer OFF' button
2	GND	Connection -, 'Local buzzer OFF' button
3	LT	Connection +, 'Lamp test' button
4	GND	Connection -, 'Lamp test' button
5	BUZZER	Connection + (12 V) for buzzer
6	GND	Connection - (12 V) for buzzer



24.3.3 X8 monitoring external supply and operating LED

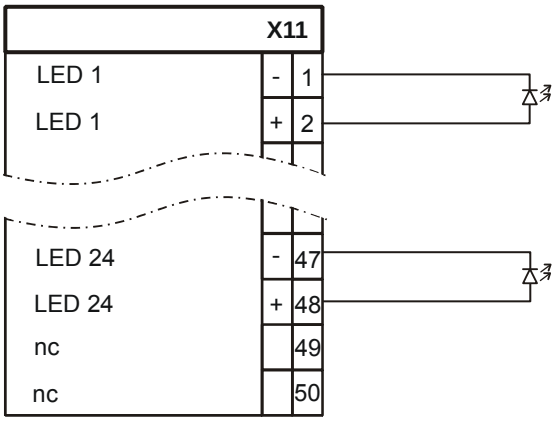
PIN	Designation	Description
1	#BATT	Message input from the external power supply: Battery malfunction (not used)
2	#CONVERT	Message input from the external power supply: Converter fault (not used)
3	#MAINS	Message input from the external power supply: Mains failure (not used)
4	#LED_1	Signal for operating LED 'LED_1'
5	LED_PWR	Supply + for 'LED_1' and 'LED_2'
6	#LED_2	Signal 'LED_2' (not used)

	X8	
#BATT	-	1
#CONVERT	-	2
#MAINS	-	3
#LED_1	-	4
LED_PWR	+	5
#LED_2	-	6

24.3.4 X11 driver outputs 1 ... 24

PIN	Designation	Description
1(-), 2(+)	LED 1	External LED power source or logic output
3(-), 4(+)	LED 2	External LED power source or logic output
5(-), 6(+)	LED 3	External LED power source or logic output
7(-), 8(+)	LED 4	External LED power source or logic output
9(-), 10(+)	LED 5	External LED power source or logic output
11(-), 12(+)	LED 6	External LED power source or logic output
13(-), 14(+)	LED 7	External LED power source or logic output
15(-), 16(+)	LED 8	External LED power source or logic output
17(-), 18(+)	LED 9	External LED power source or logic output
19(-), 20(+)	LED 10	External LED power source or logic output
21(-), 22(+)	LED 11	External LED power source or logic output
23(-), 24(+)	LED 12	External LED power source or logic output
25(-), 26(+)	LED 13	External LED power source or logic output
27(-), 28(+)	LED 14	External LED power source or logic output
29(-), 30(+)	LED 15	External LED power source or logic output
31(-), 32(+)	LED 16	External LED power source or logic output
33(-), 34(+)	LED 17	External LED power source or logic output
35(-), 36(+)	LED 18	External LED power source or logic output
37(-), 38(+)	LED 19	External LED power source or logic output
39(-), 40(+)	LED 20	External LED power source or logic output
41(-), 42(+)	LED 21	External LED power source or logic output
43(-), 44(+)	LED 22	External LED power source or logic output
45(-), 46(+)	LED 23	External LED power source or logic output
47(-), 48(+)	LED 24	External LED power source or logic output
49(-), 50(+)	nc	Not connected

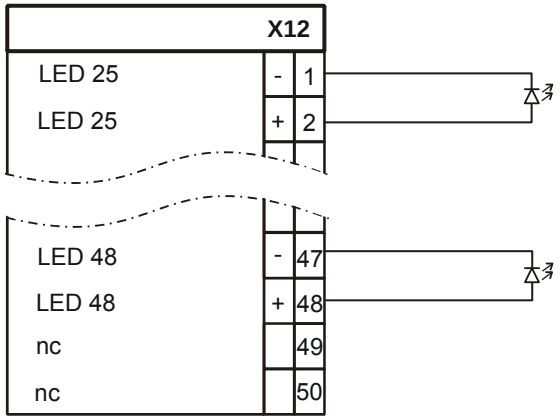
The ribbon cable with the LEDs is connected to the periphery plug X11 depending on the application.



24.3.5 X12 driver outputs 25 ... 48

PIN	Designation	Description
1(-), 2(+)	LED 25	External LED power source or logic output
3(-), 4(+)	LED 26	External LED power source or logic output
5(-), 6(+)	LED 27	External LED power source or logic output
7(-), 8(+)	LED 28	External LED power source or logic output
9(-), 10(+)	LED 29	External LED power source or logic output
11(-), 12(+)	LED 30	External LED power source or logic output
13(-), 14(+)	LED 31	External LED power source or logic output
15(-), 16(+)	LED 32	External LED power source or logic output
17(-), 18(+)	LED 33	External LED power source or logic output
19(-), 20(+)	LED 34	External LED power source or logic output
21(-), 22(+)	LED 35	External LED power source or logic output
23(-), 24(+)	LED 36	External LED power source or logic output
25(-), 26(+)	LED 37	External LED power source or logic output
27(-), 28(+)	LED 38	External LED power source or logic output
29(-), 30(+)	LED 39	External LED power source or logic output
31(-), 32(+)	LED 40	External LED power source or logic output
33(-), 34(+)	LED 41	External LED power source or logic output
35(-), 36(+)	LED 42	External LED power source or logic output
37(-), 38(+)	LED 43	External LED power source or logic output
39(-), 40(+)	LED 44	External LED power source or logic output
41(-), 42(+)	LED 45	External LED power source or logic output
43(-), 44(+)	LED 46	External LED power source or logic output
45(-), 46(+)	LED 47	External LED power source or logic output
47(-), 48(+)	LED 48	External LED power source or logic output
49(-), 50(+)	nc	Not connected

The ribbon cable with the LEDs is connected to the periphery plug X12 depending on the application.



24.4 Indications

LED	Colour	Function	Condition	Meaning
LED_1 (X8)	(Green)	Operating LED	Lit up	Normal condition
			Fast flashing (0.5 s)	Communication error C-NET or degraded mode of the control panel
			Slow flashing (1 s)	Voltage error of the external supply or not yet configured
H201	Yellow	Update mode	Off	Normal status (update mode inactive)
			Flashes	Update mode active

24.5 Adjustment elements

DIP switch S200 activates update mode manually via the MC-Link connection.

Firmware update mode is generally started automatically and the switch S200 does not have to be changed over. If update mode is not started automatically, it is possible to switch over manually with S200.

Switch	Function	Position	Meaning
S200-1	Firmware update mode	ON	Update mode active
		OFF	Update mode inactive
S200-2	Not connected		

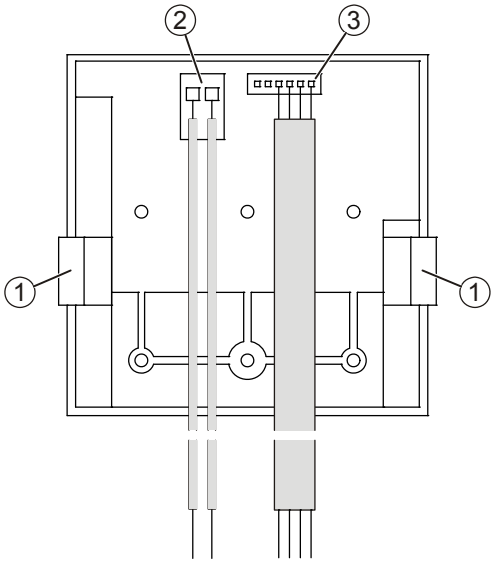
24.6 Technical data

C-NET	Operating voltage	12 … 32 V DC
	Operating current	Max. 45 mA
	Quiescent current	Max. 5 mA
	Capacitive load to ground	Max. C = 500 nF
	Capacitive load to ground with external supply	Max. C = 100 nF
Supply input	External supply input	14 … 32 V DC, electrically isolated
		11 … 22 V AC, electrically isolated
Key figures	Address connection factor	AK = 1
	Quiescent current connection factor	RK = 16
	Maximum current connection factor	
	● Without external supply	
	– With 24 LEDs	MK = 52 ... 80
	– With 36 LEDs	MK = 68 ... 130
	– With 48 LEDs	MK = 80 ... 165
	● With external supply	MK = max. 16
Outputs	Operating LED (X8)	'LED_1'
	● Max. output current	2.5 mA constant at Usys (12 … 32 V)
	Driver outputs (X11/X12)	
	● With LED operation	Max. 2.5 mA and 2.5 V DC
	Buzzer (X5)	Max. 5 mA and 12 V DC
Connections	● Peripheral data bus (input and output)	Plug-type connection with flat-ribbon cable
	● Connection terminals	0.08 … 1.5 mm^2
Ambient conditions	Operating temperature	0 … 40 °C
	Storage temperature	-20 … +60 °C
	Air humidity	≤ 95 % rel.
Mechanical data	Dimensions (W x H x D)	106 x 200 x 45 mm
	Weight	232 g
	Housing (by customer)	Min. protection category IP30
Standards and approvals	VdS	Pending
	LPCB	Pending
	Standards	● SN36350 (Siemens standard) ● EN 54-17 ● EN 54-18

25 Event printer FTO2001-A1

25.1 Pin assignments

25.1.1 Connection on printer side



Wiring on event printer (view of rear side)

1 Fastening clamps
2 Supply connection
3 Connecting the data cable

25.1.2 Connection on station side

The event printer must be directly connected to the power supply.

Connection of the event printer to power supply (70 W)

Connector	From printer	To	Power supply terminal X1
2	Positive supply (red)	=>	X1, PIN 4 (Usys +)
	Negative supply (blue)	=>	X1, PIN 3 (Usys -)

Pin assignment for 70 W power supply unit

Connection of the event printer to power supply (150 W)

Connector	From printer	To	Power supply terminal X1
2	Positive supply (red)	=>	X1, PIN 4, 5, 6, 7 or 8 (+24 V)
	Negative supply (blue)	=>	X1, PIN 1, 2 or 3 (0 V)

Pin assignment for 150 W power supply unit

Connection of event printer to RS232 module

Connector	From printer	To	Terminal X3 of RS232 module
3	Data (white)	=>	(X3) PIN 6 (CTS)
	Data (brown)	=>	(X3) PIN 4 (RXD)
	Data (green)	=>	(X3) PIN 2 (TXD)
	Data (yellow)	=>	(X3) PIN 5 (0 V)

Pin assignment for RS232 module

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