ESSER
by Honeywell

Fire Alarm Control Panel IQ8Control C / M

GB   Installation Instruction

Intended purpose

This product must only be used for the applications outlined in the catalogue and the technical description and in combination with external components and systems which have been approved or recommended by Esser by Honeywell.

Warning

In order to ensure correct and safe operation of the product, all guidelines concerning its transport, storage, installation, and mounting must be observed. This includes the necessary care in operating the product.

Safety-relevant user information

This manual includes all information required for the proper use of the products described.

The term 'qualified personnel' in the context of the safety information included in this manual or on the product itself designates:

- project engineers who are familiar with the safety guidelines concerning fire alarm and extinguishing systems.

- trained service engineers who are familiar with the components of fire alarm and extinguishing systems and the information on their operation as included in this manual.

- trained installation or service personnel with the necessary qualification for carrying out repairs on fire alarm and extinguishing systems or who are authorised to operate, ground and label electrical circuits and/or safety equipment/systems.

Safety warnings

The following information is given in the interest of your personal safety and to prevent damage to the product described in this manual and all equipment connected to it.

Safety information and warnings for the prevention of dangers putting at risk the life and health of user and maintenance personnel as well as causing damage to the equipment itself are marked by the following pictograms. Within the context of this manual, these pictograms have the following meanings:

Designates risks for man and/or machine. Non-compliance will create risks to man and/or machine. The level of risk is indicated by the word of warning.

Important information on a topic or a procedure and other important information!

Observe configuration and commissioning information in accordance to the national and local requirements.

Dismantling

In accordance with Directive 2002/96/EG (WEEE), after being dismantled, electrical and electronic equipment is taken back by the manufacturer for proper disposal.

Table of contents

Additional and updated Informations

The described features, specifications and product related informations in this manual correspond to the date of issue (refer to date on the front page) and may differ due to modifications and/or amended Standards and Regulations of the System design, Installation and Commissioning.

Updated informations and declaration of conformity are available for comparison on the www.esser-systems.com homepage.

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1   General / Application

This installation manual describes how to assemble the housing, install within a building and how to install a fire alarm system IQ8Control panel. The instructions form part of the fire alarm system (FAS) and should be kept in an accessible location in the immediate vicinity of the fire alarm control panel (FACP).

The information and technical specifications detailed in this documentation should enable an experienced fire alarm specialist to assemble and install the FACP quickly and safely. Relevant knowledge, skills and qualifications are required. These instructions must be read through carefully and understood before any work is commenced.

Proper assembly and installation, as well as safe working conditions, require compliance with all specified safety and operating information in these instructions, as well as a correctly planned FAS that conforms to the applicable standards and guidelines.

All other applicable documentation must be taken into consideration when designing, commissioning and servicing the fire alarm system.

Object-specific design and planning documents for the FAS and local requirements must be observed.

Associated Documents

798950.10.GB0   Operation instruction FACP IQ8Control
798361.10   Brief instruction FACP IQ8Control
798952   Open Source Information - FACP IQ8Control
                         Online help for the tools 8000 programming software

FAS installer
Installers are a qualified electricians who, due to their professional training, are adequately qualified to install fire alarm systems and are also familiar with the requirements of hazard alarm systems and telecommunications.
The FAS installer installing this system understands and implements the planning and project specifications for this fire alarm system and assesses the implementation of the individual work steps and recognises potential hazards.

System operator / trained person
A 'trained person' is an individual that has been trained in the performance of the operations required to operate a fire alarm system (FAS) or hazard alarm system (HAS). This training must have been provided by a specialist. The trained person must be able to independently operate the system's basic functions, able to ascertain that the system is working properly, and initiate remedial action in case of irregularities or defects.

tools 8000 service and programming software

The commissioning and configuration of the fire alarm system requires the use of the tools 8000 service and programming software.

Depending on the software and system-specific customer data programming of your panel, its functions and display characteristics might differ from the ones described in this manual! The terminal connections and connections shown in this installation manual relate only to the specifications for the panel operating system software for the Federal Republic of Germany [D].

GNU Licence (GPL)

The firmware integrated in this product contains copyright protected third party software, which was licensed under the GPL (GPL software). The following applies in accordance with the GPL:

1. The source code for the GPL software can be downloaded from www.esser-systems.com.

2. The GPL software can be reused, forwarded and modified.

3. The GPL software alone shall be provided to the extent permitted by law without liability for defects and without any express or implied guarantee, including that of the capacity to act or suitability for a specific purpose.

4. A copy of the GPL can be viewed and downloaded at www.esser-systems.com. Please use the contact form on the website for potential queries and additional information.

Open source software – information

The FACP IQ8Control C/M contains open source software subject to modified (2-clause, 3-clause) BSD licenses. For further information refer to the documentation Open Source Information - FACP IQ8Control
(Part No. 798952).

2 Standards and guidelines

The general technical rules must be observed when installing fire alarm systems. Any deviation from those rules is only admissible if the same degree of safety can be ensured with different means. Installations within the European Community are primarily subject to all EU regulations defining the current standards for security systems.

In Germany, systems are considered to be in compliance with the general technical rules or the standards of the EU for security systems if they meet the technical guidelines of the VDE (Verband Deutscher Elektrotechniker, Association of German Electrical Engineers). They may also be considered to be in compliance with the standards of the EU for security systems if they meet the technical guidelines of another comparable institution within the European Community which have been accepted in accordance with directive on low-voltage systems (2006/95/EG). The same must be applied for all applications of additional, product relating guidelines, e.g. EMI-Guideline 2004/108/EG and the Construction Products Regulation 305/2011.

These are examples:

- Standards of the DIN EN 54 "Fire alarm systems", particulary DIN EN 54-2 „Fire alarm control panels" and DIN EN 54-4 „Power supply units".
- Standards of the DIN VDE 0100 issue, particulary DIN EN 0100-410 „Installation of high-voltage sytems with rated voltage up to 1000 V", DIN VDE 100-718, Install low voltage systems – Requirements for sites, rooms and special systems and DIN VDE 0105-100 „Operation of electrical system: General commitments".
- Standards of the DIN EN 62305 or DIN VDE 0185-305 issue, particulary DIN VDE 0185-305-1 „Lightning protection: General standards. DIN VDE 0185-305-2 „Risk-Management", DIN VDE 0185-305-3 „Protection of buildings and persons" and DIN VDE 0185-305-4 „Eletrical and electronic systems in buildings".
- DIN VDE 0701-1 „Maintenance, Modification and Test of electrical devices: General commitments".
- Standards of the DIN VDE 0800 issue, particulary DIN VDE 0800-2 „General commitments, Requirements and Tests for system security", DIN VDE 0800-1 „Communication systems, Earthing and potential compensation", DIN VDE 0800-174-2 "Information systems – design and installation of communication cabling in buildings".
- DIN VDE 0815 „Cables for communication and information systems".
- Standards of the DIN VDE 0833 issue Hazard alarm systems for Fire, Intruder and Hold-up, particulary DIN VDE 0833-1 „General commitments", DIN VDE 0833-2 „Commitments for fire alarm systems (FAS)", DIN VDE 0833-3 „Commitments for Intruder and Hold-up systems" and DIN VDE 0833-4 „Commitments for Voice alarm systems within fire protection".
- Standards of the DIN VDE 0845 issue, particulary DIN VDE 0845-1 „Protection of Communication systems against Lightning, electrostatic charge and overvoltage from high-voltage systems; Actions to avoid over-voltage".
- DIN 14675 Fire alarm systems - mounting and operation.

These technical guidelines must be observed within the European Community. The VDE guidelines must be observed within Germany. The requirements of the local fire departments and competent authorities must also be complied with. In other countries (e.g. U.S.A.: NFPA and UL requirements), the relevant national standards, guidelines and legislation must be observed.

In addition to the above, the guidelines of the German VdS Schadenverhütung GmbH (VdS) may apply for systems installed in Germany.

- VdS 2046 Safety rules for electrical power systems with voltages up to 1000 V.
- VdS 2015 Electrical appliances and systems – rules for damage prevention.
- VdS 2095 Design and installation of fire alarm systems.
- VdS 2833 Overvoltage protection measures for Hazard Alarm Systems.
- Observe national and local building law requirements and regulations (building regulations).

2.1 Approvals

Specification : EN 54-2 : 1997 / A1 : 2006
VdS approval : G 205129
Declaration of Performance: DoP-20827130701

3 Transport damage inspection

Please check all of the packaging and components for damage before commencing the assembly and installation work. Do not assemble or install visibly damaged modules and components!
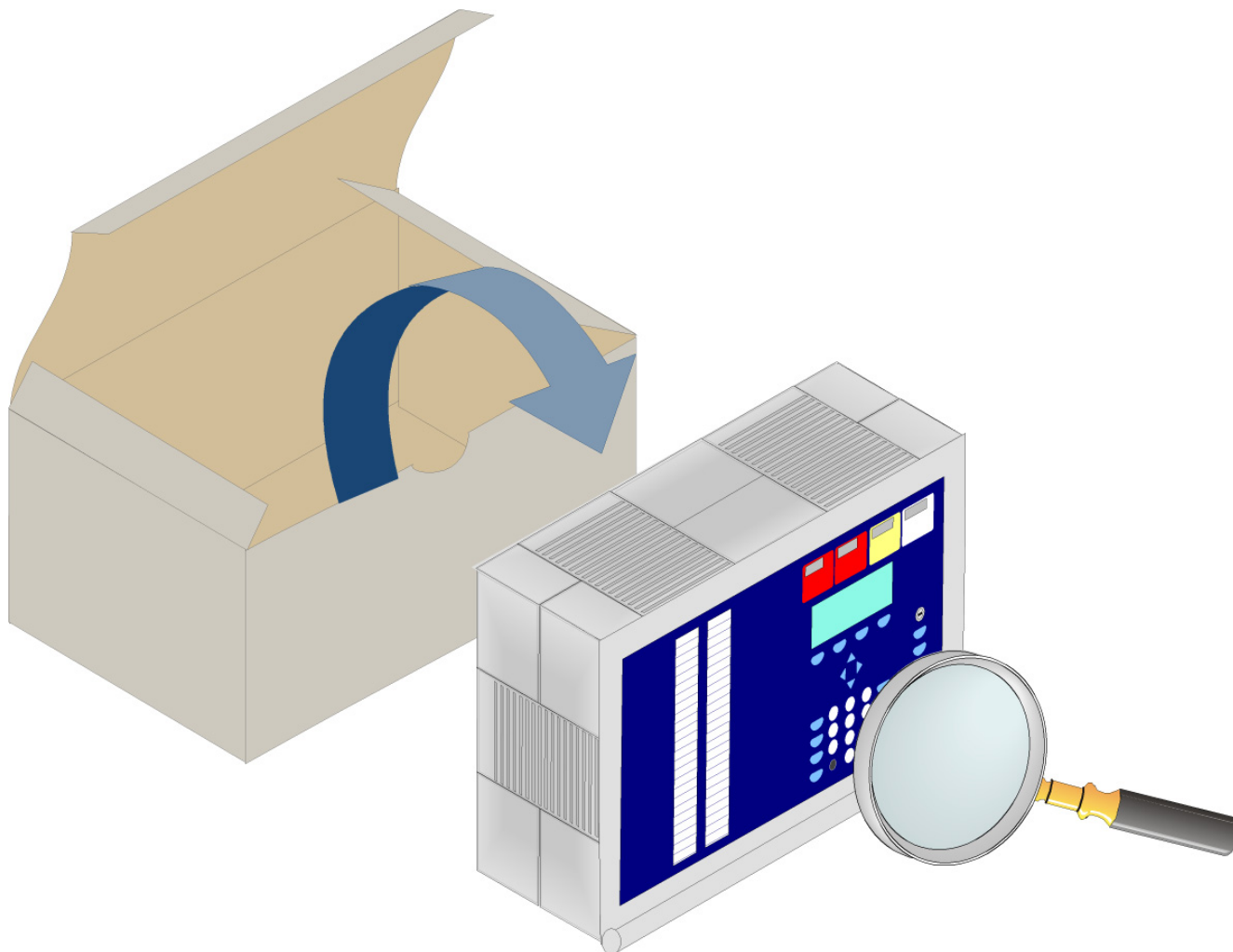

Fig. 1: Checking components for damage sustained during transport

1. The cover contact and both connecting cables for the rechargeable batteries have already been attached to the Basic module.

2. Pull the ribbon cable of the operating module off the connectors of the Basic module.

3. Remove the four connecting screws between the base plate and the housing frame which were screwed in for transport.

4. The housing door (operating module and variants) has already been connected to the housing frame at the factory. To detach the housing door from the housing frame, pull out both retaining pins of the housing door holder.

5. The housing must be mounted on a stable, clean and dry wall surface without mechanical stress. The function of the snap-type connection for the housing door can be impaired if the housing is not correctly mounted.

    Only flat-head screws and dowels with a diameter of 8 mm should be used to secure the central unit's housing. Here, make sure that the screw head fits into the hole of the wall compensation element and does not project.

6. To compensate for slight wall unevenness, you can screw the four wall compensation pieces of the base plate in or out. The additional pack contains a special spanner for the adjusting the wall compensation elements.

    No further fastening points are required between the base plate and the housing frame.

Danger - Electrical shock !

Disconnect all power from the panel before carrying out any installation work. The panel may only be operated while the cabinet is closed. Operation is not allowed while the cabinet is open.

Risk of short circuit

All voltage and signal lines connected to the Basic module must be secured to prevent slipping by using a suitable attachment materials such as plastic cable binders. Make sure the voltage cable will not move and touch the signal lines (SELV). Work on the FACP IQ8Control may only be carried out when it is de-energised (mains and emergency power supply).

4 Configuration variants

The operating module front (7860xx) is available in various language versions. The language is defined with the 2-digits of the part number, e.g. 786002 = English lettering.
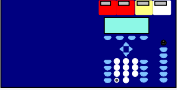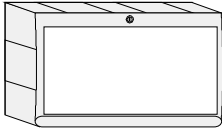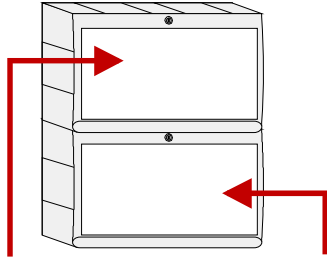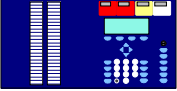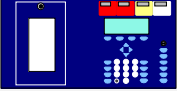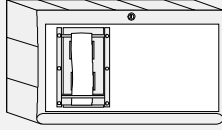
Operating module	IQ8Control C	IQ8Control M	
7860_ _	✓	✓	---
7861_ _	✓	✓	---
7868_ _	✓	✓	---
742100	✓	✓	✓
786000	✓ Extension housing required	---	✓ Not available for operating module 7861 _ _
7863_ _	✓ Extension housing required	✓ Extension housing 789304	

Fig. 2: Configuration variants

4.1 Special configuration – Swiss option Ⓒ

Operating module	IQ8Control C	IQ8Control M	
786261	✔	✔	---
786262	✔	✔	---
786263	✔	✔	---
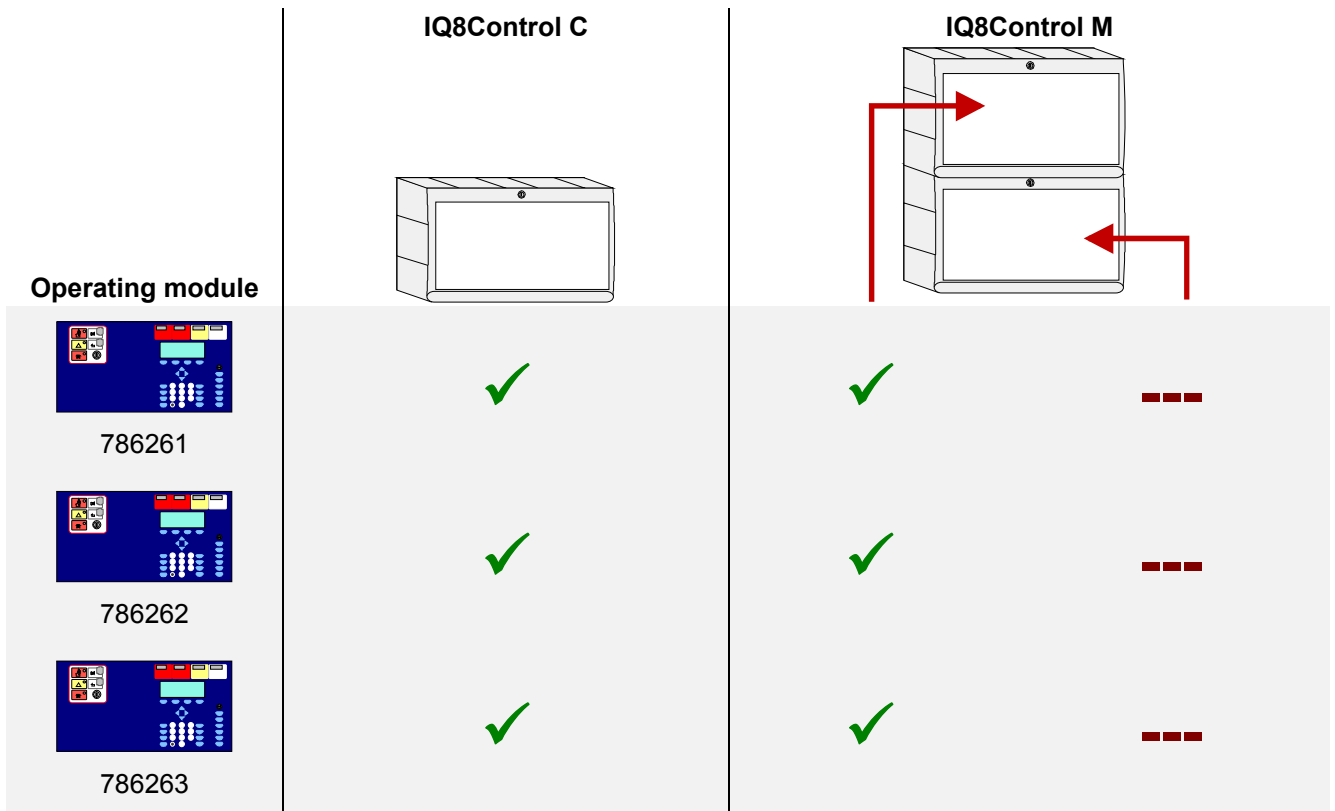
Fig. 3: Operating module – Swiss Ⓒ with integrated Fire department operating panel (FBA)

For country-specific displays and labels as well as further information for Ⓒ refer to operating instructions FACP IQ8Control C/M (Part No. 798950.10.GB0).

4.2 FACP IQ8Control C

The configuration of the FACP IQ8Control C includes:

- 1 Basic module
- 1 Power supply module
- 1 Field device module or 1 Extension module

In the full configuration, two freely selectable micro modules can be employed.

On the Basic module only the upper slot (slot 1) of can be used for a Field device or Extension module.

The lower slot (slot 2) of the FACP IQ8Control C is not used.

①	Micro module	
②	Power supply module	Part No. 802426
A	Field device module	Part No. 772479
B	Field device module with one micro module slot	Part No. 772477
C	Extension module with one micro module slot	Part No. 772478
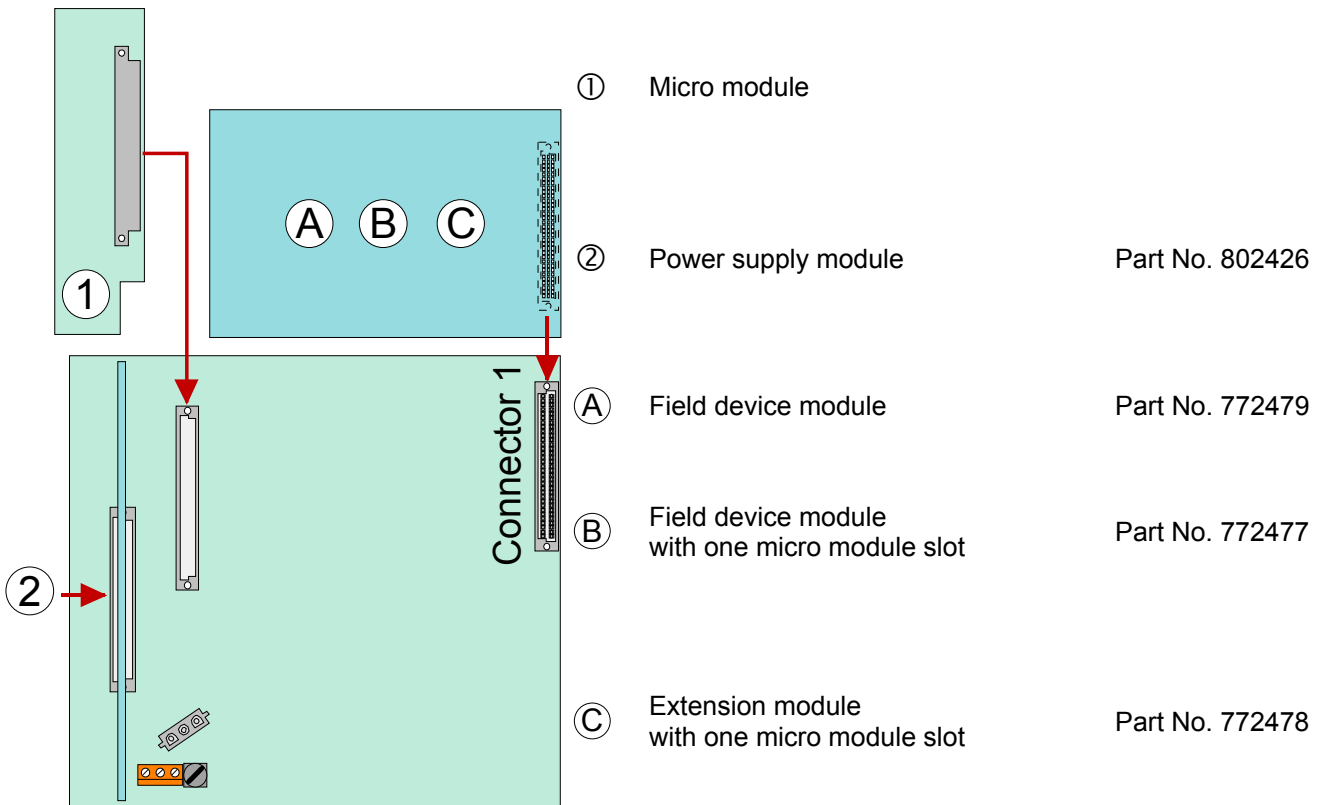
Fig. 4: Configuration FACP IQ8Control C

Configuration of FACP IQ8Control C
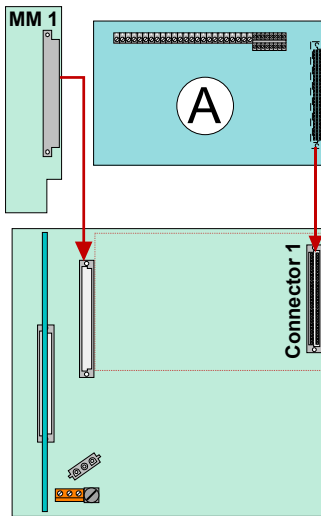
Example 1:

Basic module with a micro module and a Field device module (Part No.772479 without micro module slot) on slot 1 of the Basic module.

Application:

With this configuration, for example, a single control panel with an loop and max. 127 bus devices can be implemented.
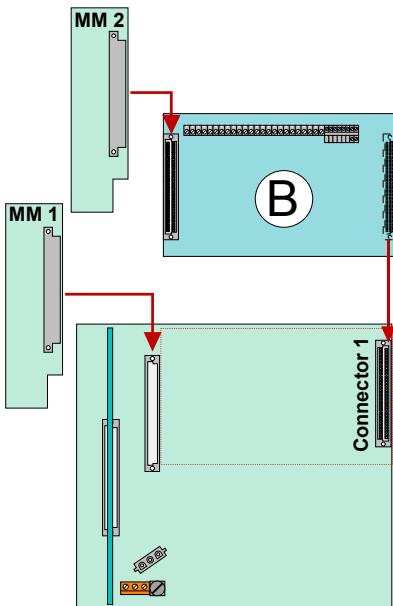
Example 2:

Basic module with a micro module and a Field device module (Part No.772477 with micro module slot) on slot 1 of the Basic module

Application:

With this configuration, for example, a single control panel with two loops and max. 254 bus devices can be implemented

or

This configuration is usually employed in essernet® networks with an loop and max. 127 bus devices.
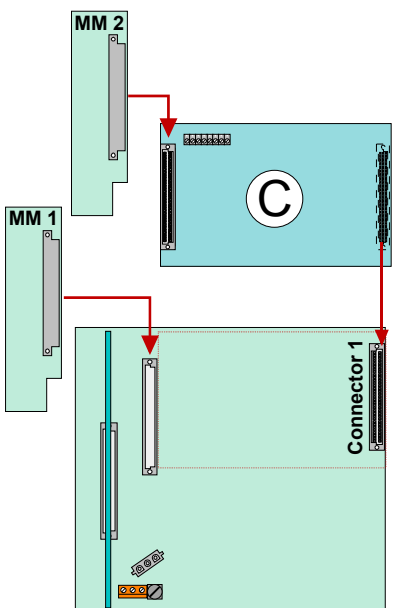
Example 3:

Basic module with a micro module and a Extension module (Part No.772478) on slot 1 of the Basic module.

Application:

This configuration is usually employed in essernet® networks with an loop and max. 127 bus devices.

Without the Field device module, no connection is available for the fire department key pad and the master box. These devices can be connected to a different control panel of the essernet®.

Fig. 5: Configuration FACP IQ8Control C
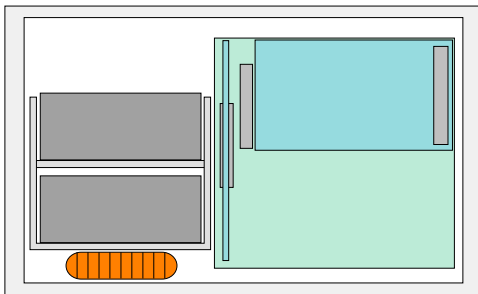
4.3 FACP IQ8Control M

The configuration of the FACP IQ8Control C / M includes:

- 1 Basic module
- 1 Power supply module
- 1 Field device module or 1 Extension module 1

  or

- max. 2 Extension modules - each with three micro module slots

In this full configuration, a total number of slots for 7 (3 + 3 + 1) freely selectable micro module are available.
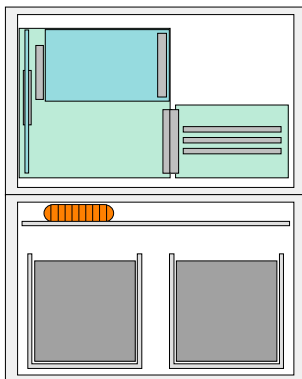
Slot 1

On the Basic module only the upper slot (slot 1) can be used for a Field device or Extension module.

The Field device module must be installed in *Slot 1* of the Basic module.

Slot 2

The lower slot (slot 2) can be used for an Extension module only.
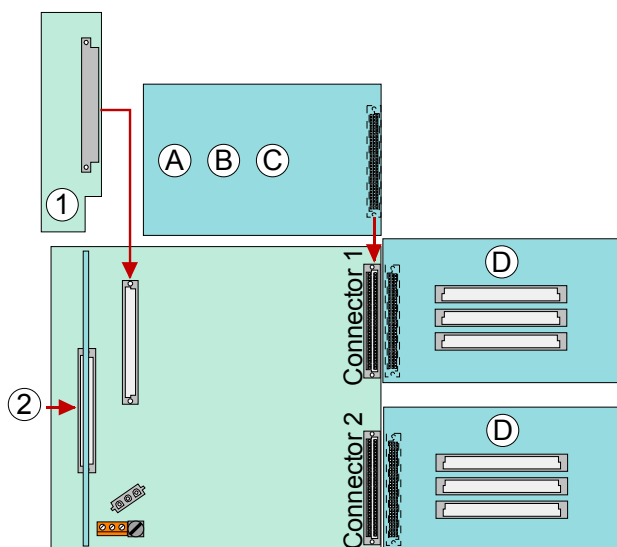
A	Field device module	Part No.772479
B	Field device module with one additional micro module slots	Part No.772477
C	Extension module with one additional micro module slots	Part No.772478
D	Extension module with three additional micro module slots	Part No.772476

Fig. 6: Configuration FACP IQ8Control M
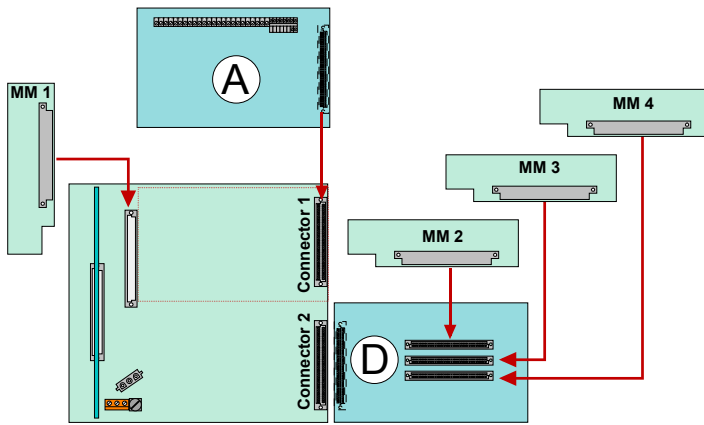
Example: Configuration of FACP IQ8Control M

Example 1:

Basic module with a Field device module (without micro module slot) on slot 1 and one Extension module (with 3 micro module slots) on slot 2.

Application:

With this configuration, e.g. a single control panel with 4 loops and max. 508 bus devices can be implemented.

(A) Field device module (Part No.772479)

(D) Extension module with three additional micro module slots (Part No.772476)

Example 2:

Basic module with a Field device module (without micro module slot) on slot 1 and one Extension module (with 3 micro module slots) on slot 2.

Application:

With this configuration, e.g. a single control panel with 5 loops and max. 635 bus devices can be implemented
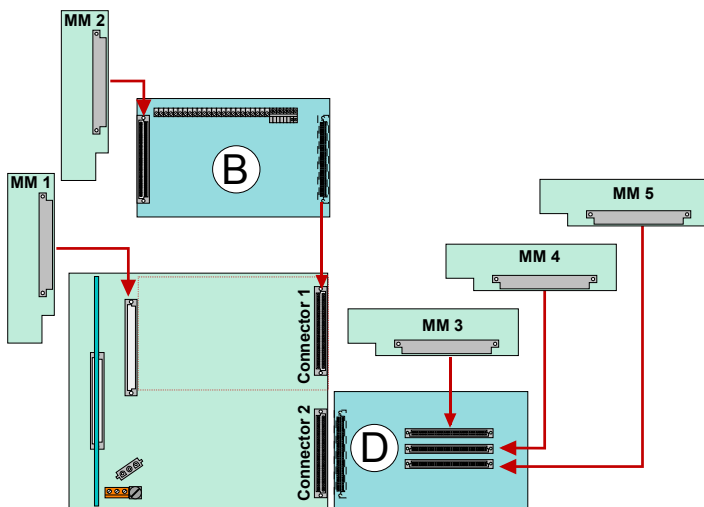
(B) Field device module with 1 additional micro module slot (Part No.772477)

(D) Extension module with three additional micro module slots (Part No.772476)

Fig. 7: Configuration FACP IQ8Control M
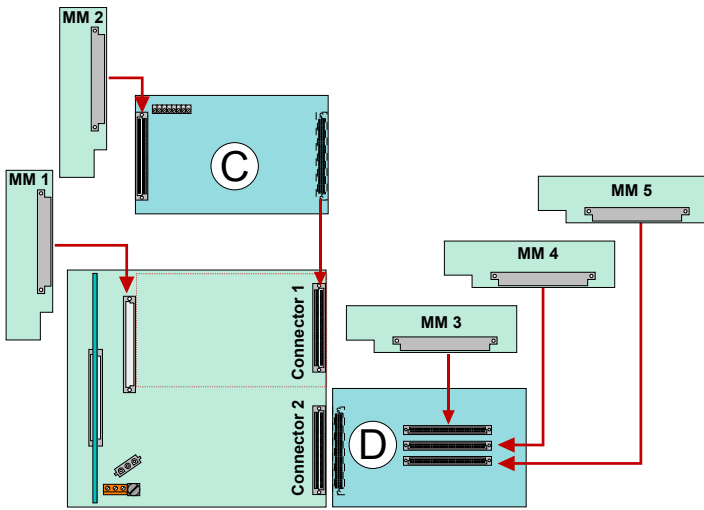
Example: Configuration of FACP IQ8Control M

Example 3:

Basic module with a Field device module (without micro module slot) on slot 1 and one Extension module (with 3 micro module slots) on slot 2.

Application:

With this configuration, e.g. a security network panel with 4 loops and max. 508 bus devices can be implemented.

Ⓒ Extension module with one additional micro module slot (Part No.772478)

Ⓓ Extension module with three additional micro module slots (Part No.772476)
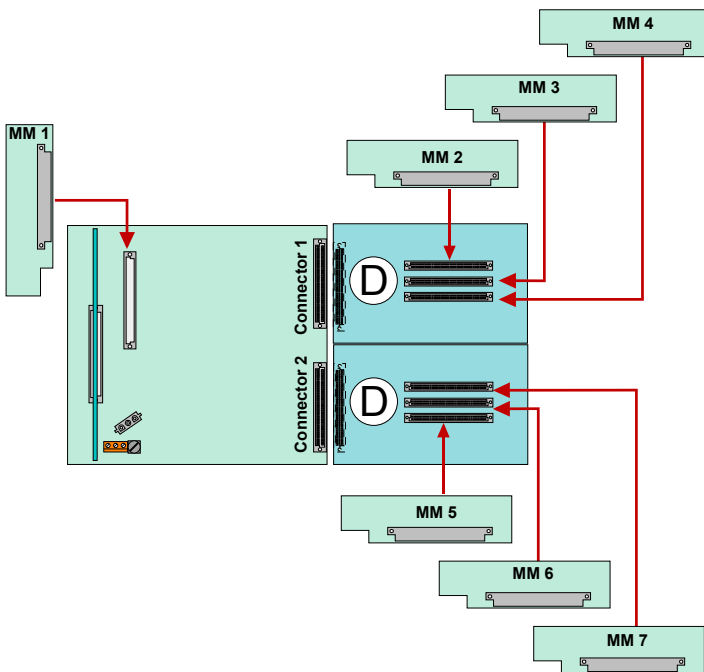
Example 4:

Basic module with two Extension modules (with 3 micro module slots) on slot 1 + 2.

Application:

With this configuration, e.g. a security network panel with 6 loops and max. 762 bus devices can be implemented.

Ⓓ Extension module with three additional micro module slots (Part No.772476).

Fig. 8: Configuration FACP IQ8Control M

Do not install Field device and Extension modules series 01 FACP 8000 C/M (Part No. 772418, 772419, 772420, 772421) at FACP IQ8Control C/M.

Three part housing with integrated printer

The integrated printer and the operating module front are mounted in the upper housing. Due to the depth of the printer, the Basic module and all of the plug-in cards are integrated into a separate housing beneath. The emergency power supply with max. two 24Ah batteries can be installed into the lowest housings.

Extension housing 789304

or

Extension housing 789303

Fig. 9: Three part housing with integrated printer
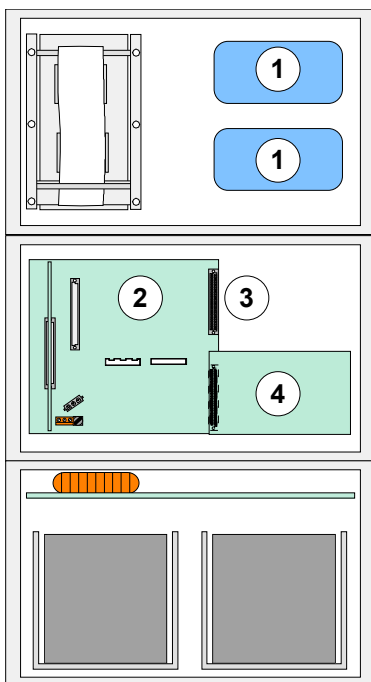
① Assembly area for esserbus® transponders

② Basic module / power supply module / slot for micro module

③ Alternatively Field device module (without micro module slot) — Part No. 772479

or Field device module (with 1 micro module slot) — Part No. 772477

or Extension module (with 1 micro module slot) — Part No. 772478

or Extension module (with 3 micro module slots) on slot 1 — Part No. 772476

④ Extension module (with 3 micro module slots) on slot 2 — Part No. 772476

Fig. 10: Location of the components in a three part housing

Ensure that the arrangement of the assemblies corresponds with the presentation shown here during this configuration. Another distribution is not possible due to the cable length of the operating module front, the integrated printer and the battery connection cable.

Location of the components in a three part FACP housing IQ8Control M
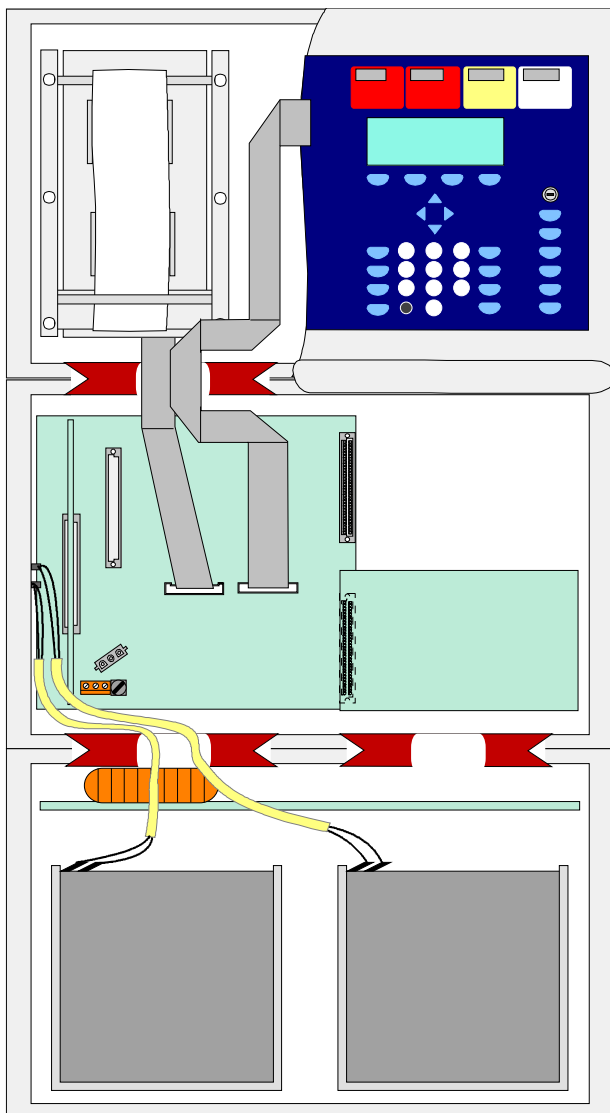
Fig. 11: Location of the components in a three part housing

Mounting plate

The mounting plate (Part No. 057633) allows installation of two esserbus® transponders or one master box in the extension housing (Part No. 789303).
Protect the devices against short circuits with the metal mounting plate with the plastic spacers and the insulation foil.

Mounting plate

Insulation foil

Fig. 12: Mounting plate (Part No. 057633)

4.4 Definition of the Primary loop number

Individual assemblies of the FACP IQ8Control can be switched on/off with the internal primary loop number through the control panel keyboard or programmed with programming software . This internal primary loop number is composed of the control panel number, the slot and the assembly number.

Example: Stand-alone FACP (= Panel No. 01)

Fig. 13: FACP IQ8Control

Subassembly number of the Basic-, Field device or Extension module
(ref. follow pages)

Slot number:

Basic module	= No. 1
Basic module Slot 1	= No. 2
Basic module Slot 2	= No. 3

(only FACP IQ8Control M)

Number of the Fire Alarm Control Panel

Stand-alone FACP	= 01
Security network FACP	= 01 - 31

Example: Primary Loop No. (Panel No. 01)

Primary Loop No.	Subassembly	Position of modules
Basic module		
0111	Common Fault Relay (SaS-Relay)	
0112	Interface - RS485-1 or TTY	
0113	Micro module slot	
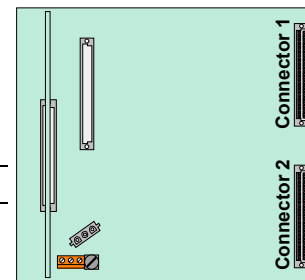
Primary Loop No.	Subassembly	Position of modules
Field device module		
0121	Relay K2, K3 and K4	
0122	Master box (MB) Relay K1	
0123	Micro module slot (only module Part No. 772477)	
0124	Internal primary loop	
Extension module	**with 1 micro module slot Part No. 772478**	
---	*no module available*	
---	*no module available*	
0123	Micro module slot	
---	*no module available*	
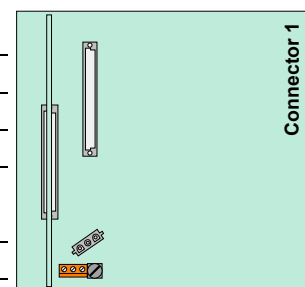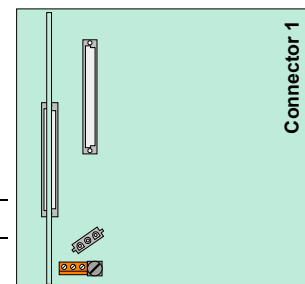
Primary Loop No.	Subassembly	Position of modules
Extension module (only IQ8Control M)	**with 3 micro module slots Part No. 772476**	
0121	Micro module slot 1	
0122	Micro module slot 2	
0123	Micro module slot 3	
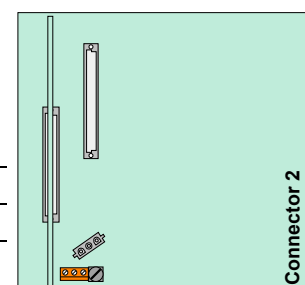
Primary Loop No.	Subassembly	Position of modules
Extension module (only IQ8Control M)	**with 3 micro module slots Part No. 772476**	
0131	Micro module slot 1	
0132	Micro module slot 2	
0133	Micro module slot 3	

The Field device module (if available) must be installed in >Slot 1< of the Basic module.
>Slot 2< of the Basic module is unused on the FACP IQ8Control C.

5 Assembly and installation information

- The fire alarm control panel may only be installed in dry, clean, and adequately illuminated areas with restricted access. The ambient conditions must correspond to class 3k5 in accordance with DIN EN 60721-3-3:1995-09.

- The fire alarm control panel must be mounted to an even mounting surface using suitable mounting material (screws + anchors) and without creating any mechanical tension. The FACP may be operated only when it has been properly mounted to a wall or mounting surface of sufficient load-bearing capacity.

- Strong electrical / electromagnetic and mechanical influences must be avoided. This applies particularly to the installation of the FACP, components and installation cables in the direct vicinity of fluorescent lamps or energy cables and if mounted on vibrating, unstable surfaces such as thin partition walls.

- The system may not be installed in facilities and environments that have harmful effects. Parts of the fire alarm system may be fed through these facilities if the requirements of the DIN VDE 0800 series are fulfilled.

- For cabinet or wall installation, operating modules and visual displays should be installed between 800 mm and 1800 mm above the place where the operator stands.

- The fire alarm system is not suitable for connection to an IT power supply system.

- In standard mode, the FACP is a technical information device (ITE) of class B according to DIN EN 55022: 2007.

- It is highly recommended for correct ESD protection that the dummy plug (factory supplement) of the programming interface plug is inserted into the front of the operation panel.

Configuration and Commissioning

For the configuration and commissioning of the system, the programming software tools 8000 is required in each case in the current program version.

Installer / Installation Specialist

The fire alarm control panel must be installed by a skilled electrician (according to DIN VDE 0833), who, as a result of the appropriate training and experience, can evaluate the work to be carried out and recognise potential dangers. In addition to the specialist qualifications, knowledge of the validity and application of the relevant standards and their use and compliance with is required.

Operator of the Fire Alarm System / Trained Person

For the operation of the fire alarm control panel, a qualified person must be trained in the basic functioning of the system and its technical requirements. A trained person (according to DIN VDE 0833) must be able to operate the fire alarm control panel and to recognise faults. If a fault signal occurs or the functionality is limited, arrangements must be made for the checking and rectification of the cause of the fault.
The functions of the fire alarm control panel depend on the country-specific version of the operating system software used and the programming of the customer data.

5.1 Maintenance / Service

Maintenance is necessary for the proper operation of the fire alarm control panel as the function of the system parts can be affected by environmental conditions and ageing. Maintenance is regulated by national standards (e.g. DIN VDE 0833 in Germany) and guidelines. In addition to the safety directives and notes in this documentation, these standards and guidelines, as well as local requirements for the operational location of the fire alarm control panel must be observed.

Depending on the software and system-specific customer data programming of your panel, its functions and display representations might differ from the ones described in this manual!

The terminal connections and connections shown in this installation manual relate only to the characteristics of the panel operating system software specific to the Federal Republic of Germany [D].

Danger – Electrical shock !
Remove all power from the FACP before carrying out any installation work!

ESD protection
While handling electronic assemblies, the necessary precautions against electrostatic discharge must be taken.

Protective and functional earth
The PE conductor must be connected to the corresponding terminal at the mains supply. Connect the FE terminal of the panel's cabinet with the protective earthing rail (PE rail) of the power distributor panel from which the fire alarm system will be powered.

Commissioning
A complete system check must be carried out after commissioning and for each modification of the customer data programming!

5.2 Assembling the wall housing

The housing is pre-assembled by factory delivery. For easy installation and correct assembly of the wall housing, carry out the following assembly steps in the order described:
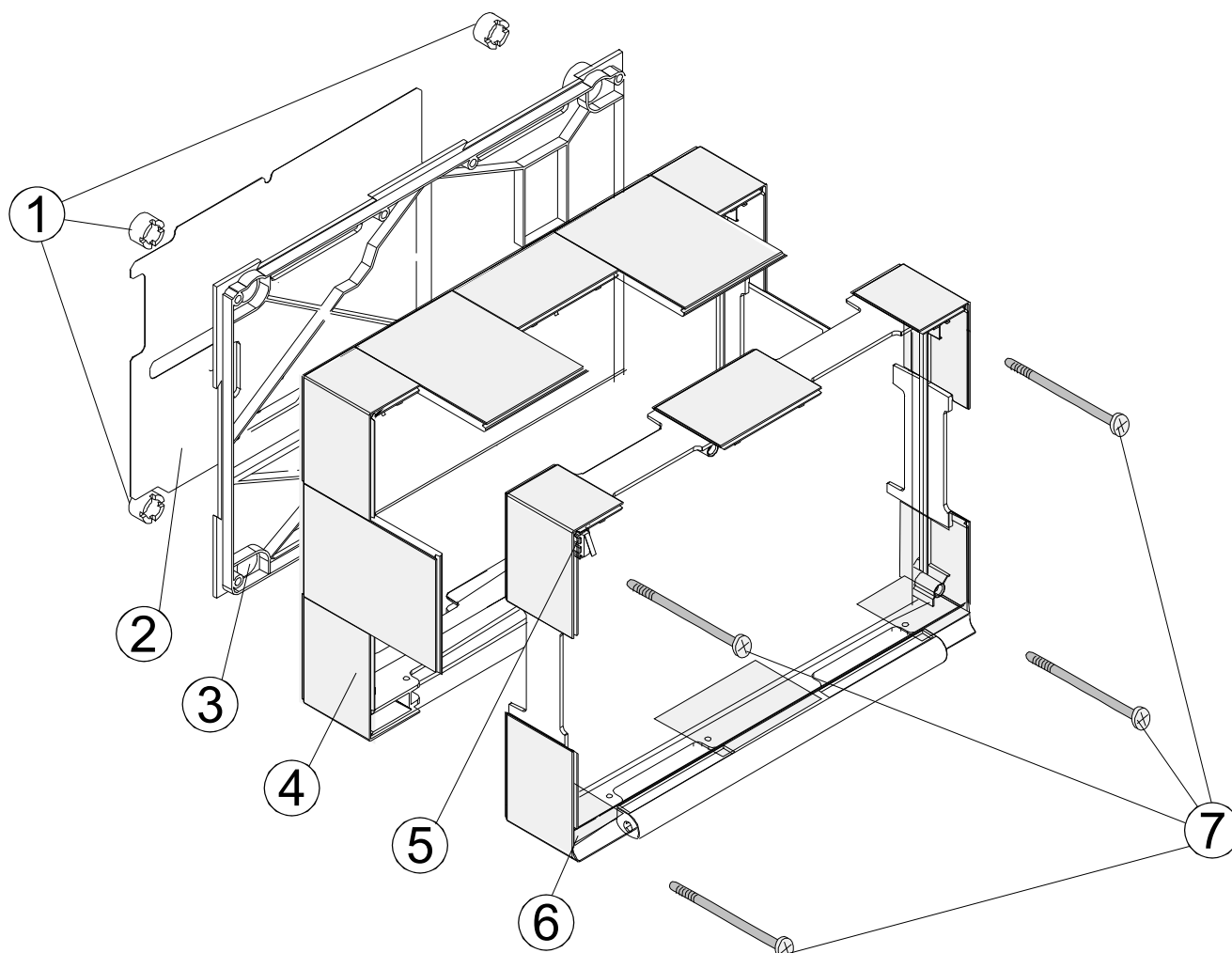
Fig. 14: Assembling the wall housing

- ①   4x wall compensation pieces
- ②   1 x Metal sheet of the base plate for shielding and the PE connection (functional earth)
- ③   1x rear panel
- ④   1x back box
- ⑤   1x housing contact (up to four contacts possible)
- ⑥   1x front frame with operating module and housing door
- ⑦   4x connecting screws

The Basic module is connected to the central housing's rear metal panel via the metal spacers and the metal screws. Without this electrically conductive connection between the Basic module and the rear metal panel, sufficient EMC protection for the FACP is not guaranteed.

5.3 Fitting the panel to the mounting surface
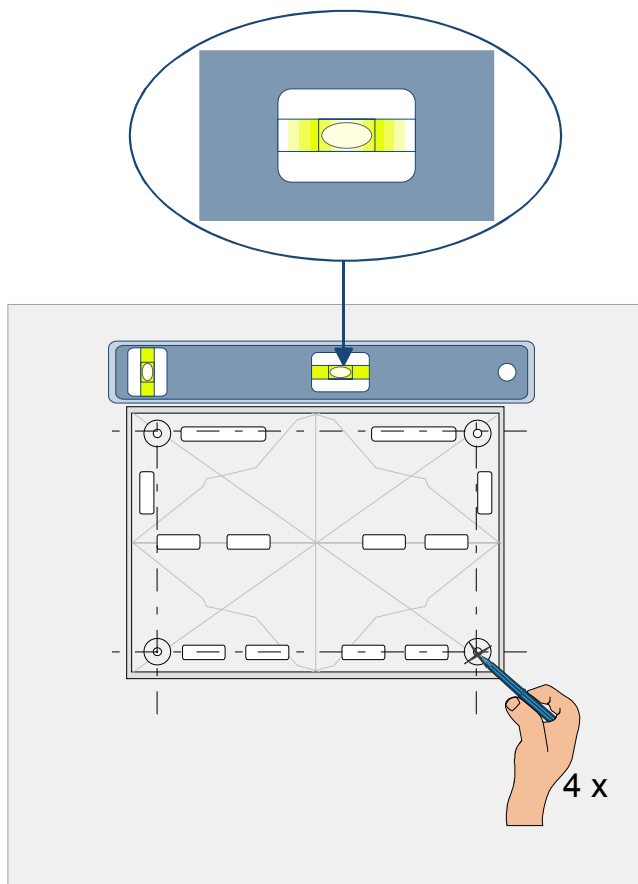
- Chose the place for mounting the panel as specified in the project documentation.

- Observe the installation environment specifications.

- Take note of the position of the cables and corresponding cable entry points

- Hold the rear housing panel horizontally (align using a spirit level) against the mounting surface and mark the four mounting holes.

Fig. 15: Fitting the panel to the mounting surface

Take note of any cables that are routed over the top of the surface/plaster (TS) or behind the surface/plaster (US) before attaching the housing!
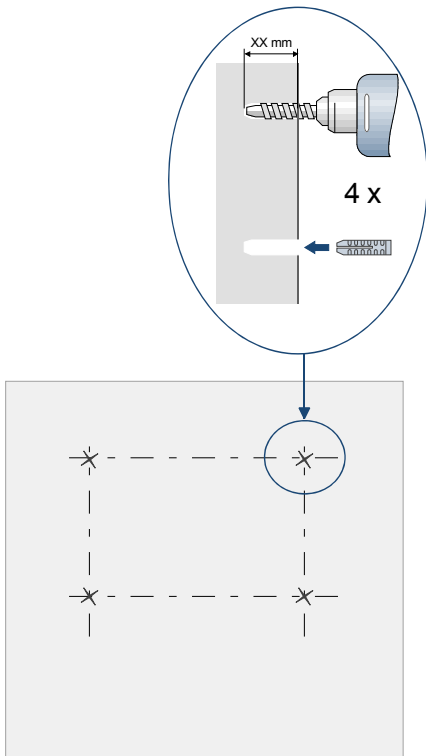
- Drill through the marks for the mounting holes to create four holes and insert suitable anchors.

- The type of anchor best suited to this purposes depends on the mounting surface's material (cavity wall, concrete, wood etc.) and must be chosen accordingly.

- The surface/wall and mounting material's load bearing capacity must be adequate for bearing the entire weight of the selected expansion model (incl. batteries).
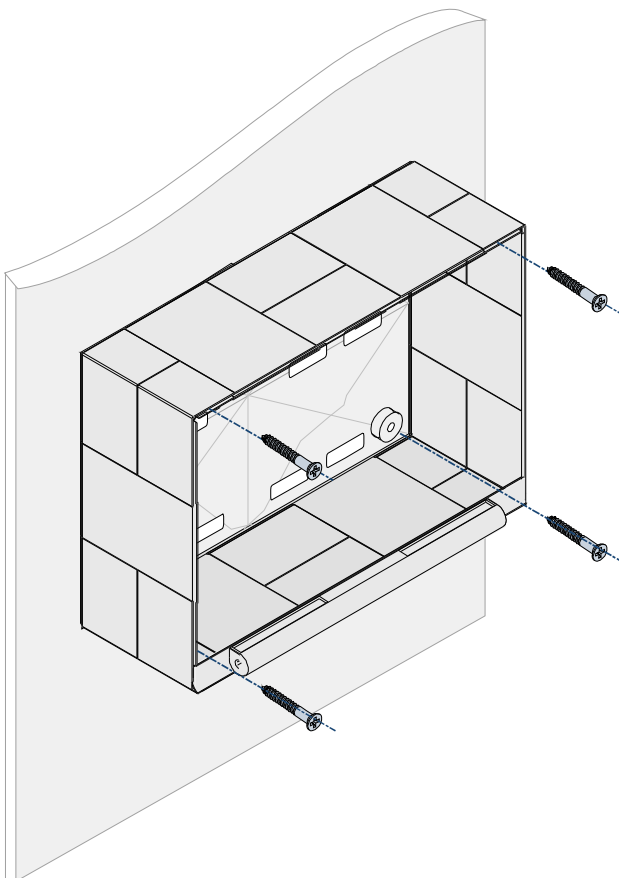
- Please take note of the cable entry points before fitting the housing!

- Hold the housing against the mounting surface and align.

- Screw four screws into the screw anchors and hand tighten.

Fig. 16: Fitting the panel to the mounting surface

The panel must be mounted on a flat surface using appropriate hardware (screws and dowels). Avoid mechanical stressing. It may only be commissioned after correct mounting on a wall or other mounting surface of sufficient strength to support the weight of the unit. Minor unevenness of the mounting surface may be adjusted by the wall compensation device. Apply the delivered key tool from the inside of the housing to adjust the wall compensation devices.
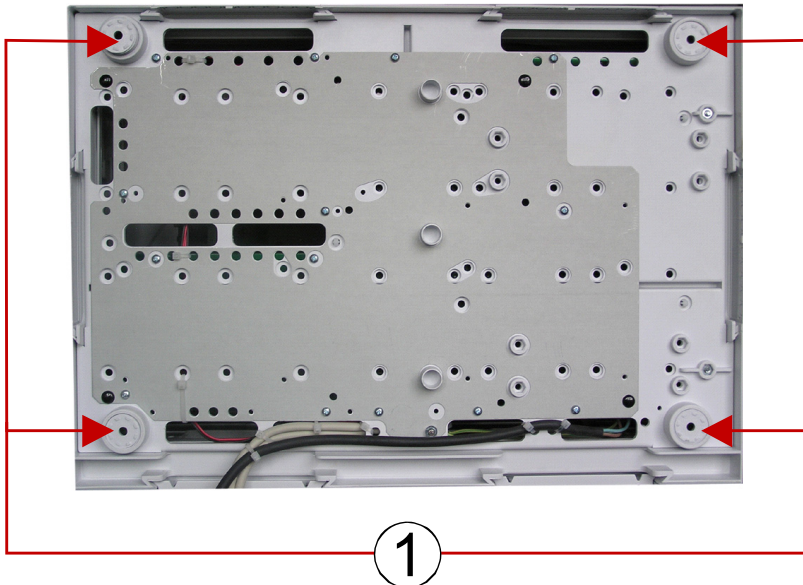
Fig. 17: Rear side of the Standard back box

Plastic key included.
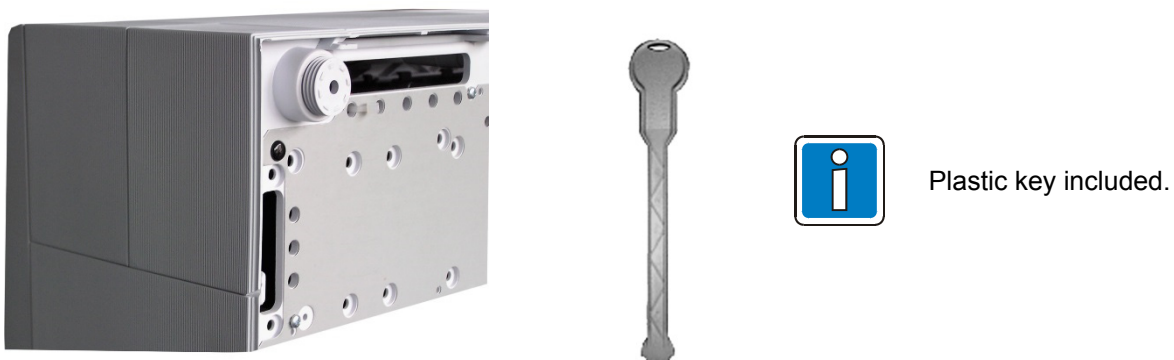
Fig. 18: Wall compensation element for adjusting and key tool

Damage to the system !

Please note that depending on the rechargeable batteries used, a significant weight must be supported by the fastening screws of the extension housing.

5.4 Cable glands

Lead the 230V main power cord through the wall and the cable entry ① provided in the rear of the unit (see Fig.). Fasten it using appropriate devices, e.g. plastic cable straps.

Make sure that the mains and signal cables don't interfere with the rear panel of the cabinet or the cabinet frame which is mounted on the rear panel.

Signal cables must only be led through the other cable entries ②.

IQ8Control M　　　　　　　　　　　　　**IQ8Control C**
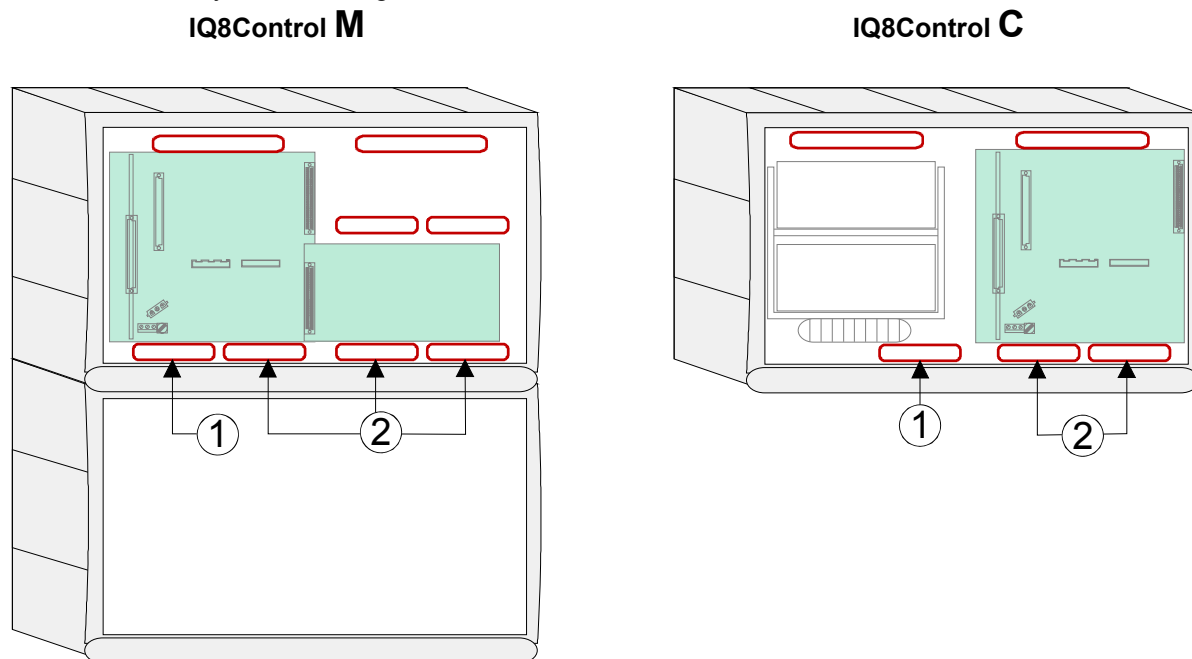
Fig. 19: Cable glands

Danger - Electrical shock !
Disconnect all power from the panel before carrying out any installation work. The panel may only be operated while the cabinet is closed. Operation is not allowed while the cabinet is open.

Danger of damage
Do not constrict or damage the connecting cables between FACP and extension housing. The two housings must be separately fitted to the mounting surface. The connecting pieces are not capable of bearing the weight of the lower housing on their own.

Short circuits

All voltage and signal lines must be secured with suitable fastening material, e.g. plastic cable fasteners so that they cannot come loose or be moved. When doing so, ensure that the power supply line cannot touch the signal lines (SELV) when moved. Work may be carried out on the fire alarm system only when it is de-energised (mains and emergency power supply disconnected).

Connecting cable insulation

The sheathing on all of the connecting cables have to be left intact up to a point inside the housing and only be removed inside the housing.

5.5   Connection between the housings

The compact housing is connected to the extension housing using the connecting pieces provided.

Example of housings fitted vertically on top of each other. Always use two connecting pieces ① with cable entries.

2 x connection pieces with cable glands
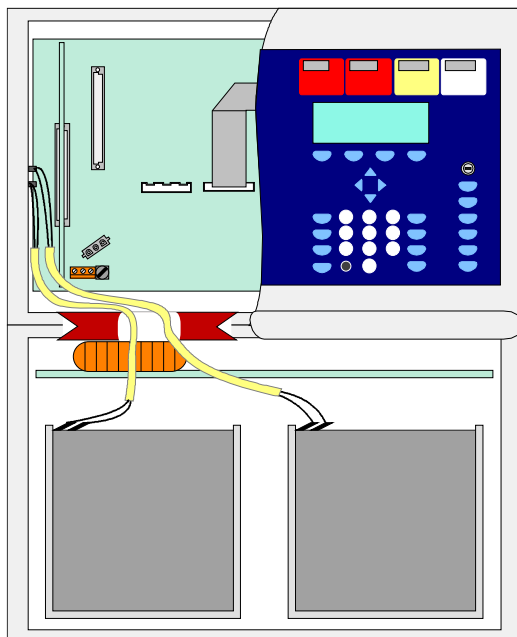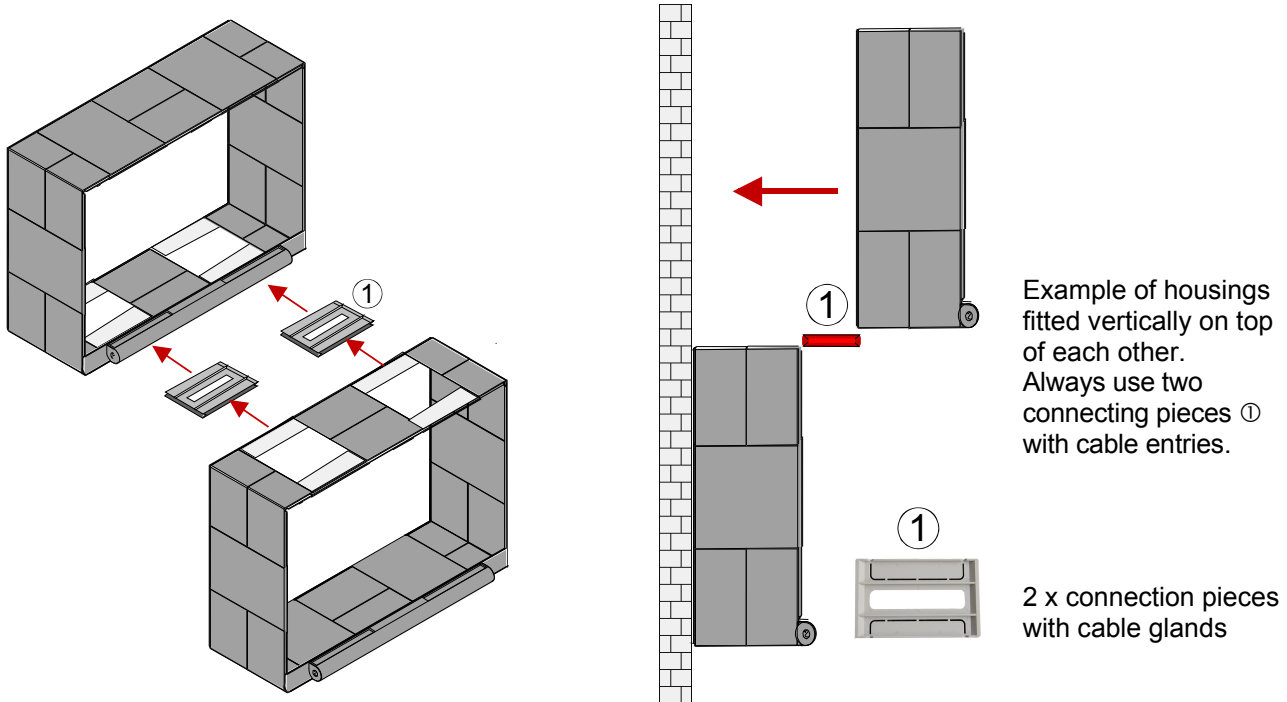
Fig. 20: Knockouts for battery cable

1.   Remove the appropriate 2 plastic plates from panels and extension housing

2.   Push the plastic connector bracket in each originated gap. Observe the arrows on the bracket for the right direction.

3.   Push the upper housing via the guide way of the brackets towards the wall.

4.   Align both connection brackets to ensure that the cables between the housings may be lead through the openings of the brackets.

5.   Each housing must be fixed with suited screws (4x) without twisting stress.

⚠️ **Damage to the system!**
Take care to ensure that no cables are pinched or damaged.
The plastic connection brackets are not suited to carry the weight of the lower housing alone.

5.6   Operating module / Housing door

The operating module/the housing door is installed by the manufacturer on the front housing part. If required for dismantling, loosen the 4 fixing screws ⑦ and remove the front part of the housing.
Depending on the configuration, e.g. with or without an installed printer or an individual zone display, deviation from the illustration here is possible.
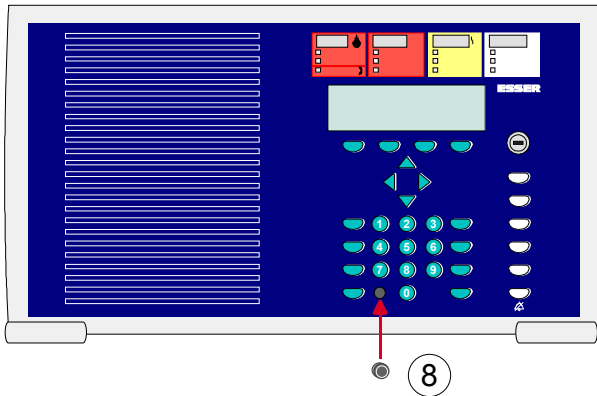
⑧ For correct ESD protection it is highly recommended to insert the dummy plug (insert pack) of the programming interface plug into front of the operation panel.

Fig. 21: Operating module / Housing door

> The operating module is not required for programming the FACP IQ8Control. The service PC can also be directly connected to the programming connector of the Basic module.
> The operating module can be fully simulated with all functions on the service PC. The service and programming software tools 8000/ReCo are required for this.

Opening

The front door key is always required to open the housing front.
It can be opened with the key vertical

Closing

To close the front door, the lock must be in the horizontal position. The key is <u>not</u> required. The front door can simply be pushed closed and engaged in the snap-type fastener.

Example: Housing IQ8Control C

1. Place front frame with integrated door carefully onto the back box.
    Take care to ensure that no cables are pinched or damaged when installing or removing the assembly.
2. Insert the four screws between the back box and the front frame and tighten carefully.
3. Insert housing contact in the upper place of the housing with the contact tab downwards. The contact is connected to the Basic module by factory settings and may be removed for service or maintenance work.
4. Connect the ribbon cable of the operation panel to the corresponding connector on the Basic module.
5. This completes assembly of the housing

5.7   Panel buzzer

If required the internal panel buzzer may be disabled with the solder jumper BR2 on the rear side of the operating panel PCB.

BR2		
BR2	BR2	closed, buzzer enabled (factory setting)
	BR2	open, buzzer disabled
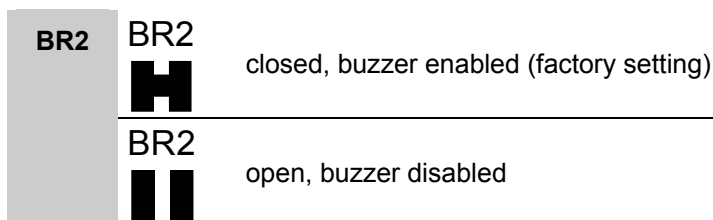
> ⚠ If the buzzer is permanently disabled (BR2 open), the transmission of this audible warning signal to must be ensured (e.g. by indicating this condition at a panel within the essernet®)!

5.8   Housing contact

The housing contact provides the monitoring of the panels housing and may be used additionally for control function by means of service or maintenance work, e.g. to disconnect devices whilst the contact is open.
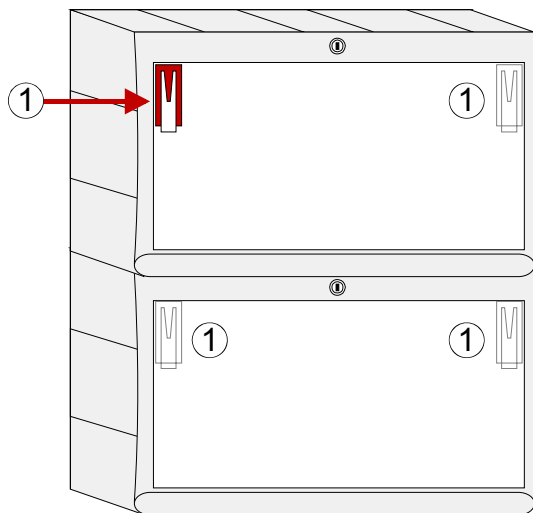
- Max. 2 contacts per housing
  (1 integrated contact by factory configuration)

- Max. 4 contacts per FACP

- Select contact operation via the panels data configuration, e.g.
  - Disconnect master box whilst open contact
  - Access of Service-PC whilst open contact
  - und additional features
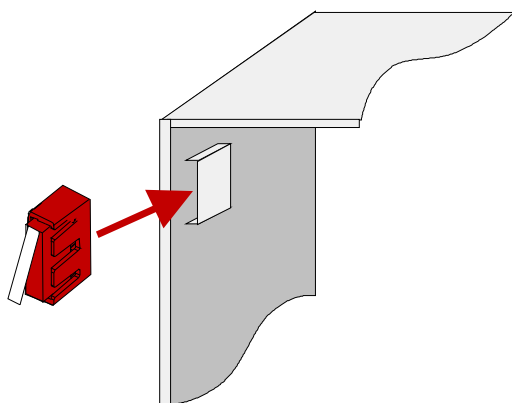
The housing contact must be place to the appropriate insert on the top corner of the housing.

- Housing contact / contact tab points downwards
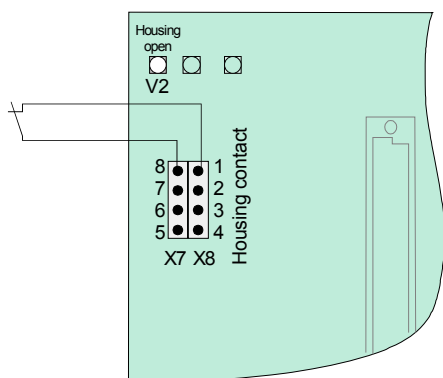
For connecting to the basic module and further information, see Chapter. 6.2.

Fig. 22: Housing contact

6 Electronic devices

The FACP IQ8Control C / M has a modular design so that modules can be replaced/extended at any time.

⚠️ Only remove or insert modules when the FACP is voltage free.
- Switch off the power and battery supply.
- Wait for at least 10 seconds before the modules are replaced or supplemented.
- Take suitable measures to discharge static electricity.
- Check correct installation (modules and connection cables).
- Switch on the power and battery supply.
- If necessary, check/supplement the customer data using the programming software tools 8000.

6.1 Power supply module (Part No. 802426 index G or higher)

The power supply module is installed on the Basic module of the FACP. This module accommodates the entire voltage supply for the Fire Alarm Control Panel and the +12 V DC power supply for external devices. Maximum current load from external users will depend on control panel configuration. The power supply module is suited to connect 2 batteries (2 x 12 V / 24 Ah). In case of an AC power (230 V DC) loss the panel operation will be supplied without discontinuation (refer chapter 6.1.2). If necessary, additional supply is possible from a monitored external power supply unit.
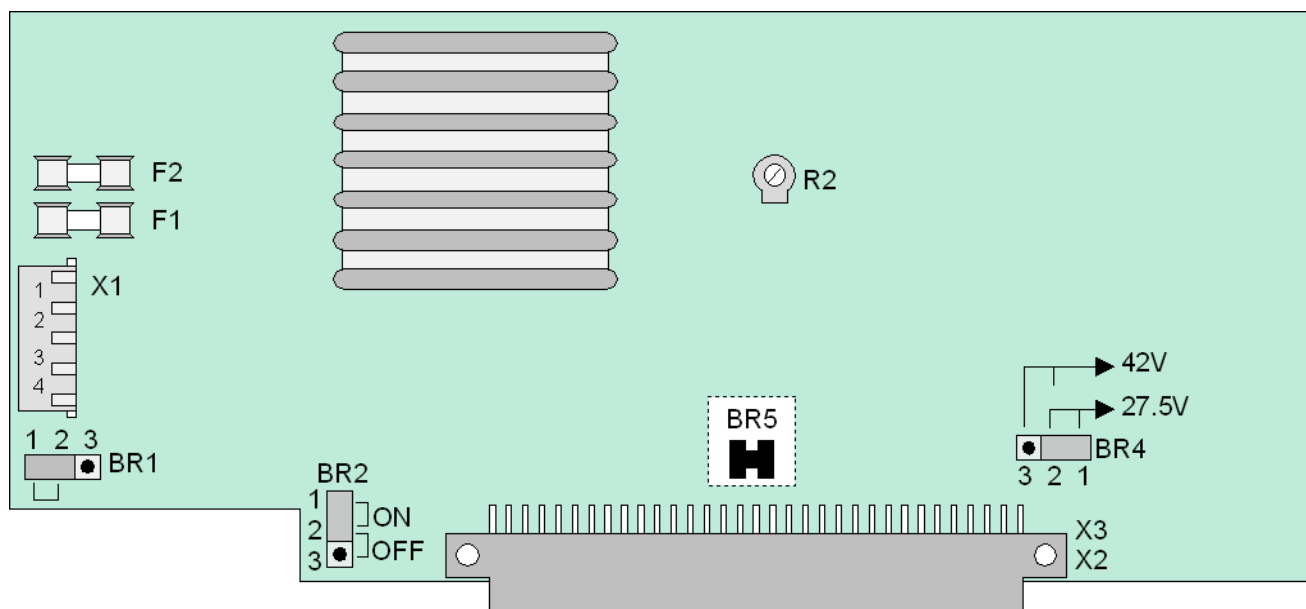
Fig. 23: Power supply module (Part No. 802426 from index G)

X1	Plug connector for transformer (secondary)
X 2/3	Basic module connector
F1	Fuse for the FACP internal power supply: T 4 A to the loop 27,5 V DC (esserbus®) or 42 V DC (esserbus® PLus)
F2	Fuse for secondary side: T 5 A
R 2	Potentiometer for adjusting the battery charging voltage to +13.65 V DC (@ 25 °C)

⚠️ The power supply module must only be installed or removed with the Fire Alarm Control Panel in a de-energised state.
Danger of damage
When you are installing or replacing the power supply module, observe the BR5 solder bridge/jumper (on the rear side of the circuit board). This jumper is used to set whether the power supply unit is installed in an FACP 8000C/M or an IQ8Control C/M.

ℹ️ The battery charging voltage is set to the abovementioned values by the manufacturer. If the FACP is used at other ambient temperatures (refer to technical data), then the battery charging voltage must be adjusted accordingly using potentiometer R2.

Earth fault monitoring
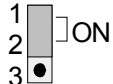
BR 1		
	Earth fault monitoring enabled (factory default = ON)	ON 1 2 3
	Earth fault monitoring disabled (not VdS appropriate)	OFF 1 2 3

Information for powered loop systems
In case of an earth fault with $+U_{zone}$ a ground fault message occurs and additionally the fault message "U_{zone} <" will be displayed for each loop. In the alarm condition, the zone voltage is lower than the required 42 V. The alarm device may not sound an alarm at full volume.

Undervoltage protection (U_{Batt} < 9,5 V DC)

BR2		
	Undervoltage protection activated (factory setting = ON) The panel switches off automatically if, in case of charging, the battery voltage is $\leq$ 9.5 DC.	1 2 ON 3
	Under voltage protection disabled	1 2 3 OFF

Selection of the loop voltage

BR 4		
	esserbus® loop with 27,5 V voltage	3 2 1
	esserbus® PLus loop with 42 V voltage For esserbus® PLus module Part No. **80**4382 and appropriate loop devices with Part No. **80**xxxx required	3 2 1

⚠ **Damage to the system !**
Mixed operation with esserbus® and esserbus® PLus function is not possible!

Selection of the Fire Alarm Control Panel

Solder jumper on the rear side of the PCP to select the CPU power supply.

BR5		
	Factory default of a separately delivered power supply module (Prepared for mounting in the FACP 8000 C / M)	BR5 ▮ ▮
	Operation in FACP IQ8Control C/M ➜ Jumper BR 5 closed	BR5 ▬

6.1.1 Specification Power supply module (Part No. 802426)

Main voltage	:	230 V AC (+10% / -15%)
Rated current	:	0,7 A
Rated frequency	:	50 Hz to 60 Hz
Output voltage	:	12 V DC
Current for ext. devices	:	max. 2 A
Permissible current consumption with 2 x 24 Ah batteries and 72 hour emergency power supply	:	max. 650 mA
Battery capacity	:	max. 2 x 12 V DC / 24 Ah (= 48 Ah)
Battery charge voltage	:	13,65 V DC @ 25 °C
Ambient temperature	:	-5 °C to +45°C
Storage temperature	:	-5 °C to +50°C
Protection class	:	I according to DIN EN 60950
Compatibility	:	Part No. 802426 Index G or higher

The power supply module is suited for the FACP IQ8Control C/M with the required Basic module (Part No. 772481/-82).

The required loop voltage (27,5 V or 42 V for esserbus® PLus) must be selected on the power supply module with jumper BR4!

Undervoltage protection : ≤ 9,5 V DC
(with jumper BR2 switch-on / off)

For FACP IQ8Control C/M it is possible to use the power supply module from hardware version Index G as a replacement module. Pay attention to the settings on the power supply module of FACP IQ8Control C/M and the Index of the hardware that is used!

Damage to the system!

Before connecting the alternating voltage (230V AC) read the identification plate (sticker in and on the housing of FACP) . It is not permitted to connect a voltage other than that shown on the identification plate.

6.1.2 Mains connection and earth connections

The control panel may only be connected to the mains by a qualified electrician and in compliance with all relevant standards and regulations. The corresponding connection terminals are located on the basic module.
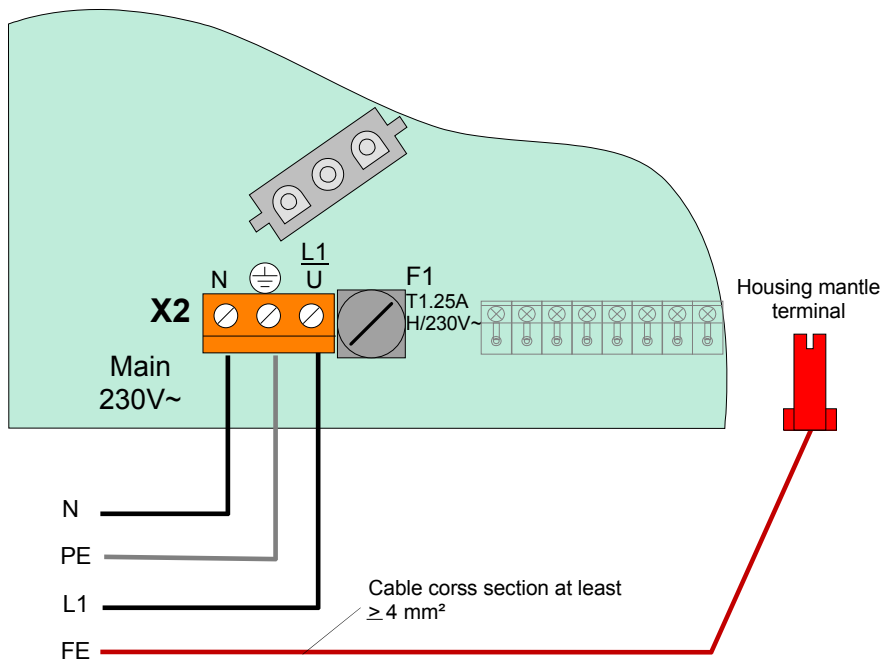
Fig. 24: Connection of the rated voltage (230 V AC) and earth connections on the basic module

Requirements

- Use a suitable cable, e.g. NYM 3 x 1.5 mm^2 (max. 2.5 mm^2), or cable with the same characteristics for connecting the system to the mains.
- Connect the fire alarm control panel to the AC mains power supply via a separate mains isolator or a suitably rated circuit breaker. The rated voltage (e.g. 230 V AC) is specified on the FACP type plate.
- Use a separate FI unit if FI circuit breakers are used.
- Mark the fuse protection for the mains supply for the fire alarm system control panel accordingly (in red, label as 'FACP'). Observe national standards and guidelines!
- Make sure to correctly connect the protective earth (PE) and functional earth (FE).
- Observe local power supply provider regulations.
- The fire alarm control panel has been fitted with <u>fine</u> surge protection in accordance with EN 54 and the VdS guidelines. Should coarse protection be required, this must be installed by the installer for the specific system.

⚠️ Observe the rated voltage (e.g. 230 V AC) specifications on the FACP type plate!
Connecting cable insulation
The cable sheath (jacket) of all of the connecting cables must be left intact up to a point inside the housing and only be removed inside the housing.
Fuses
The fuses of the FACP or external power supply units cannot prevent an unexpected fault in electrical modules; rather, these fuses are intended to protect users and their surroundings from damage. Fuses must therefore never be repaired or bridged or replaced with any fuses other than the stated type!
Danger of damage!
The mounting surface and mounting material must be strong enough to hold the relevant battery type used.
Protective and functional earth
For the device to function properly, the network side protective earthing (PE) connection must be connected to the correct terminal. The functional earth (FE) must also be connected to the protective earthing rail (PE rail).

6.1.3 Protective and Functional earth

Wiring FACP IQ8Control C
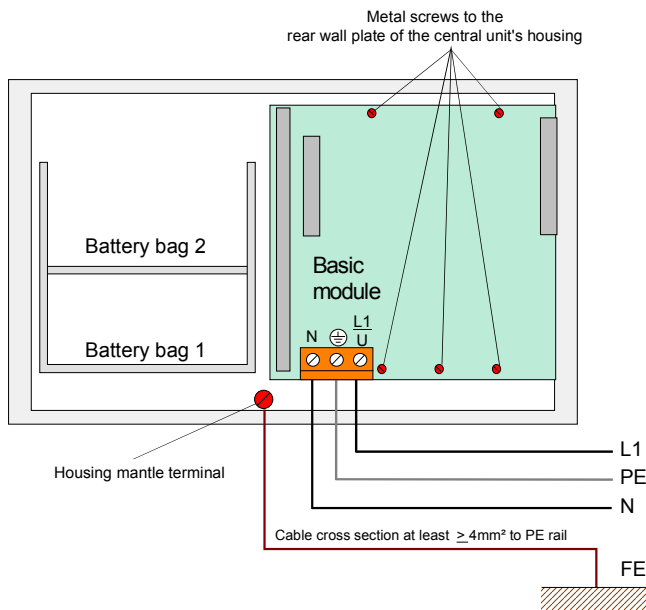
The primary PE-connection (protective earth) of the mains supply must be connected to the appropriate terminal of the FACP to ensure a proper operation of the system.

The FE (functional earth) and PE (protective earth) terminals of the panel's housing must be connected with the PE rail of the power distributor panel from which the fire alarm system will be powered.

Use copper cable with a cross section of at least ≥ 4 mm^2 depending on the length of the cable run.

The FACP IQ8Control is a protection >class I DIN EN 60950< device.

Wiring FACP IQ8Control M
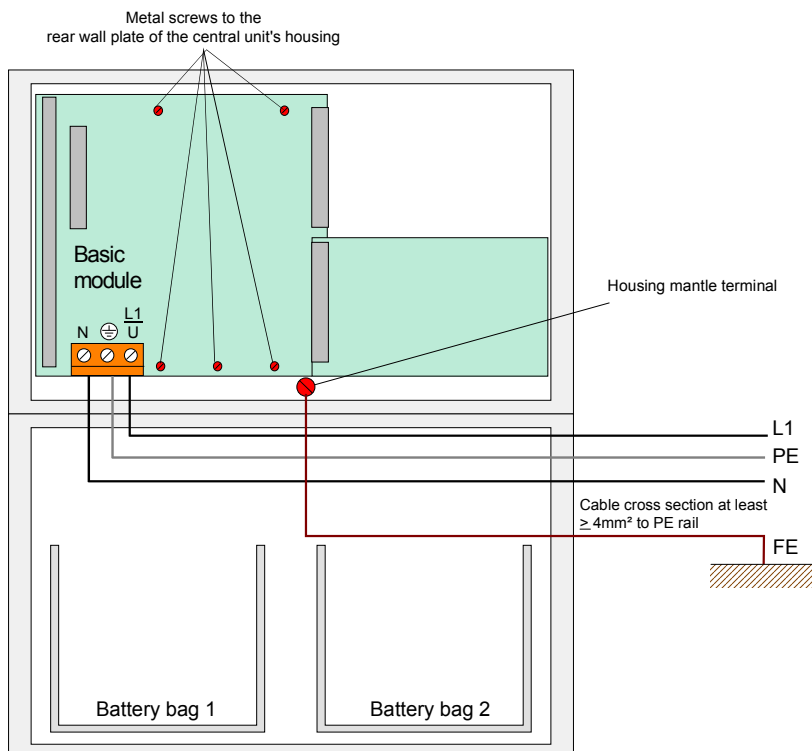
Fig. 25: Protective and Functional earth

⚠️ The basic module is connected to the rear panel of the cabinet by means of metal spacers and screws. This electrically conducting connection between base module and rear panel is essential for correct functional earthing of the FACP IQ8Control C/M.

6.1.4 Emergency power supply

In case of loss of the mains voltage the control panel will be powered without a interruption by the connected battery. Depending on the capacity of the battery a backup time of up to 72 hours can be realised. After that time the external alarm devices must be still operable in an alarm condition. The activation of these devices must be still possible with a minimum battery voltage of 10.5 V DC.

First Commissioning

New batteries must be charged at least 24 hours before operation. If the date of manufacturing is dated back about more than 9 month a battery charge time of min. 48 hours is required.

Deep discharging

The power supply unit periodically monitors the charge of the batteries connected. If this battery test reveals a battery voltage of below 10.0 V DC under load, battery trouble will be signalled. The battery charge is controlled by means of a temperature-dependent resistor (NTC). As soon as the voltage of the batteries goes below 9.5 V DC the battery backup will get disconnected to protect the control panel. The control panel is no longer operational!

Eliminate the trouble condition of the mains power supply and turn/switch on the control panel. The connected batteries will get charged automatically if the voltage of the batteries during the battery test without external load is higher than 10.5 V DC. A battery failure will be indicated if the voltage of the batteries does not exceed this level. Discharged batteries must either be recharged with an external power supply or replaced, including in pairs if necessary. This Function can be enabled / disabled with the jumper BR2 on the power supply module.

§ The battery manufacturer and VdS Schadenverhütung GmbH guidelines on the total discharge of batteries must also be observed.

⚠ Exhausted batteries (off-load voltage $U_{battery}$ < 10,0V DC) will not charge correctly!
Observe the information and technical specifications of the battery manufacturer and the VdS-guidelines for deep charged batteries.

ℹ The fire alarm control panel might also issue battery fault warnings for reasons other than totally discharged or defective batteries. Such warnings could also indicate excessive contact resistance (> 200 mOhm) at the battery terminal clamps or connecting cables.

6.1.5 Approved batteries

This device is approved and released with the following batteries. To ensure safe operation, only these types of batteries are recommended for the supply of emergency power:

Voltage (V)	Capacity (Ah)	Manufacturer	Designation
12	12	Sun Battery	SB 12-12.0
12	24	Sun Battery	SB 12-24.0

6.1.6   Checking the batteries

Monitoring the batteries according to EN 54

In event of a failure of the rated voltage (230 V AC) and maximum load on the batteries, the supply of power must be guaranteed to ensure proper operation of the fire alarm control panel as well as the connected components and external devices.

While in a resting state, only a low current generally flows through an FACP. For this reason, an increased contact resistance at the connection terminals of the batteries will not be detected even if the rated voltage fails. It is therefore necessary to test the batteries.

In event of an alarm, if all external alarm devices are triggered, the battery voltage could collapse in event of a rated voltage failure and the FACP could switch off completely. Complete alarm notification is then no longer guaranteed.

The maximum resistance at which this function is still guaranteed depends on various factors related to the FACP and the way it is used. This resistance value is therefore set at the factory to 200 mΩ. In accordance with the requirements of EN 54, an increase in the resistance must be indicated within four hours.

The FACP IQ8Control has an integrated, standard-compliant test function for monitoring the batteries and their connection lines within the required times and for indicating a fault. This check is performed only while the rated voltage (230 V AC) is present and when the charge level of the batteries is high; it is performed automatically roughly every 15 minutes (factory setting) by the fire alarm control panel in addition to testing the batteries for deep discharging (final discharging voltage).

Fault display

If the resistance of the batteries and their connection lines is too high, if a battery voltage lies below the final discharging voltage (battery not connected, deep-discharged or defective, or fuse defective) or if a fault exists in the resistance measurement (no load present), the fault message >Battery Fault< is displayed on the FACP.

Extension of the battery connection lines is only possible with limitations.
Exceeding the maximum permissible measurement tolerance of 200 mΩ leads to a fault message.

The internal resistance of the batteries increases with age. This change is taken into account and compensated for with the measurement tolerance.

Battery Monitor Module (Pat No. 788051.10)

The battery monitor module is inserted between the 12 V battery to be monitored and the associated connection contact of the basic module of the FACP.

Please see the documentation (Part No. 798253.10) for installation as well as for additional information about the battery monitor module "BatMon 12".
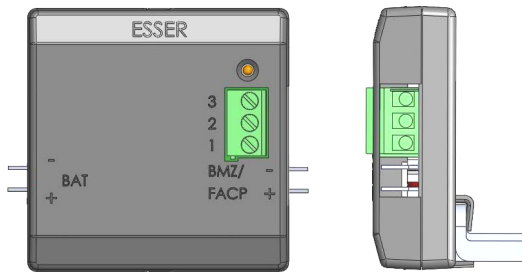
Fig. 26: Battery monitor module - overview

Mounting
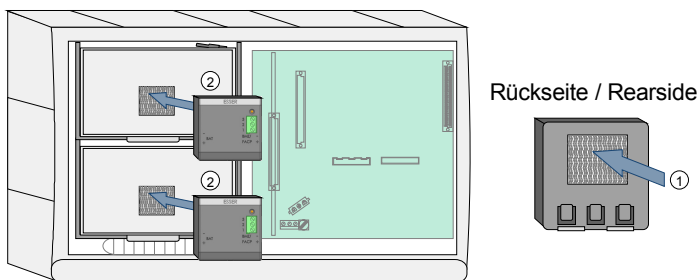
Up to 2 batteries may be place inside the compact housing FACP IQ8Control C.

- Place batteries as shown and insert fastener.

- The module is fastened to the batteries using the enclosed hook-and-loop strip.

- Adhere one part of the hook-and-loop strip to the back side of the module ① and the other part to the batteries ②, then line up the two parts of the strip and fasten the module in place.

Fig. 27: Mounting in the compact housing FACP IQ8Control C
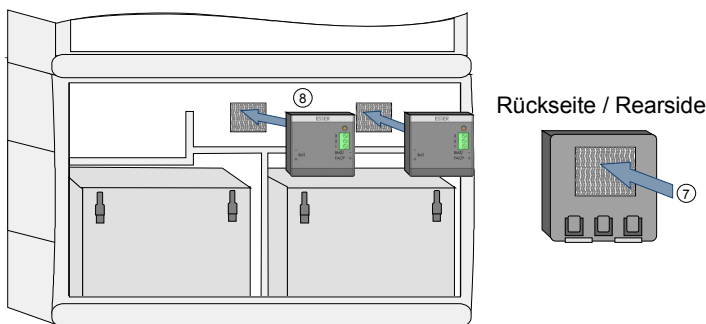
Up to 2 batteries 12 V / 24 Ah may be placed inside the lower housing part of the FACP IQ8 Control M or in the extension housing (Part No. 783000 / 01).

- Place batteries as shown and insert fastener.

- The module is fastened to the batteries using the enclosed hook-and-loop strip.

- Adhere one part of the hook-and-loop strip to the back side of the module ⑦ and the other part to the rear wall of the housing ⑧, then line up the two parts of the strip and fasten the module in place.

Fig. 28: Mounting in the housing of the FACP IQ8Control M or in the extension housing

Damage to the system!
- Please note that depending on the rechargeable batteries used, a significant weight must be supported by the fastening screws of the extension housing. It is not permissible to install the rechargeable batteries without these fastening clamps.
- Use only the enclosed connector cable. The use of other cables or extensions is prohibited!
- Only use a T 4 A fuse in order to ensure reverse polarity protection.
- Ensure the correct polarity (+/-) when connecting the cable! The battery monitor cable is not suitable for connecting a 24 V DC emergency power supply!

- The battery monitor modules "BatMon 12" (Part No. 788051.10) can be installed in existing IQ8Control fire alarm control panels.
- Each battery requires one module.

Wiring of two batteries
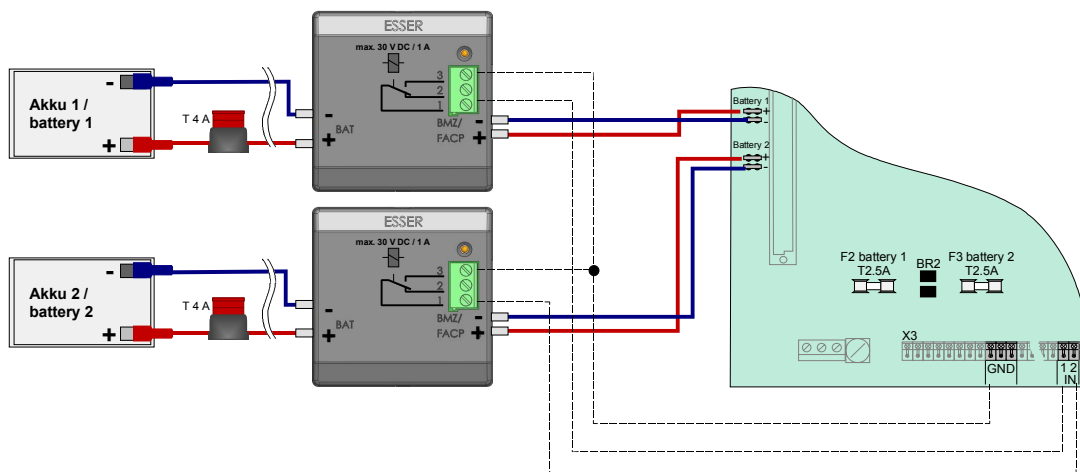
Fig. 29: Wiring of two batteries

Battery 1	max. 12 V DC / 24 Ah
Battery 2	max. 12 V DC / 24 Ah
BR2	Open ➔ battery 1 + 2 monitoring enabled (factory setting)
F2	Fuse (slow blow) T 2.5 A – battery charge current, battery 1
F3	Fuse (slow blow) T 2.5 A – battery charge current, battery 2
Fx	Fit usual battery fuse 12 V DC / T 4 A or T 10 A (delivered with sub-package)

⚠️ Only replace the Fx fuse with a fuse of the same type if it requires replacing!

Wiring of a single battery
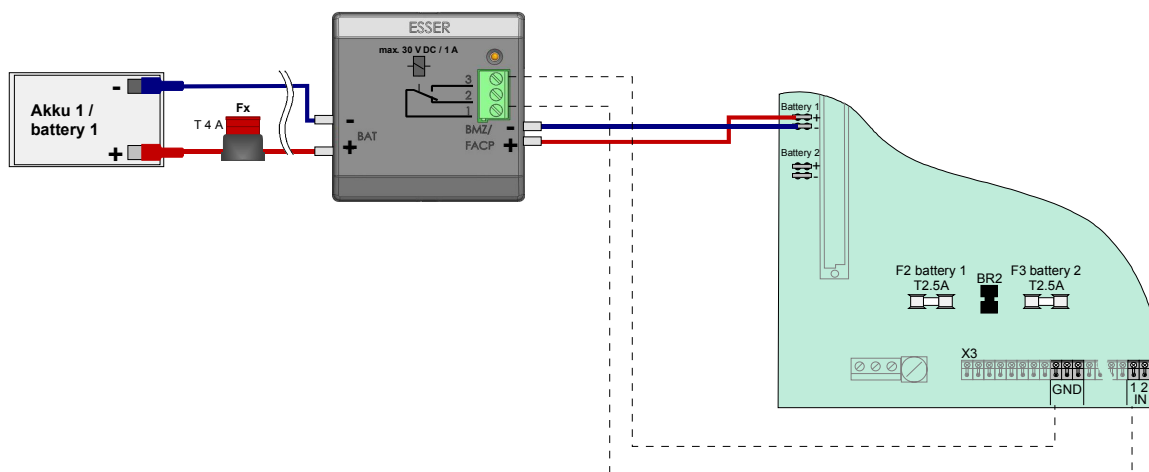
Fig. 30: Wiring of a single battery

Battery 1	max. 12 V DC / 24 Ah
BR2	Closed ➔ battery 2 monitoring disabled
F2	Fuse (slow blow) T 2.5 A – battery charge current, battery 1
Fx	Fit usual battery fuse 12 V DC / T 4 A or T 10 A (delivered with sub-package)

ℹ️ If a single battery is connected without closing jumper BR2, a battery fault will occur next time and an internal control panel battery test is performed.

6.2 Basic module

The power supply module and a free selectable micro module may be installed on the appropriate Basic module connectors. >System connector 1< provides the connection of a Field device module or Extension module. The slot >System connector 2< is only available for the FACP IQ8Control M.
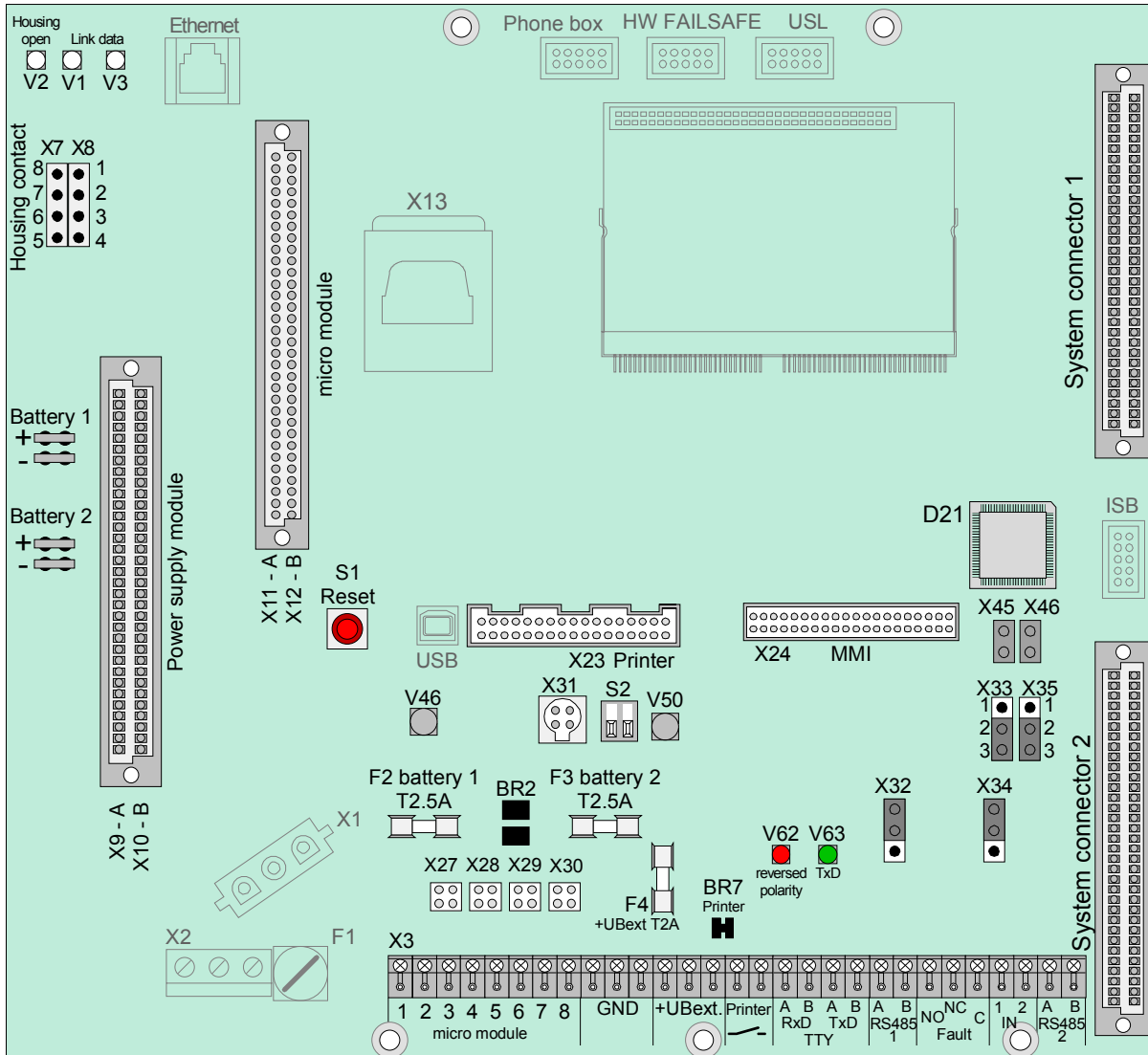
Fig. 31: Basic module

Part No. 772481 ➔ Basic module IQ8Control C

Part No. 772482 ➔ Basic module IQ8Control M

> ⚠ **Risk of short circuit!**
> All voltage and signal cables connected to the Basic module must be secured to prevent slipping by using a suitable attachment materials such as plastic cable binders. Make sure the voltage cable will not move and touch the signal lines (SELV). Work on the FACP IQ8Control may only be carried out when it is de-energised (mains and emergency power supply).

BR2	Solder jumper to set whether the two batteries are connected and the monitoring for the free battery connection should be switched off.
	Open (default) ➔ Connection of two batteries >Battery 1+2<
	closed ➔ Connection of a single battery only to connector >Battery 1<. (The power charge and monitoring of >Battery 2< is disabled)
BR 3 / BR 4	Solder/jumper for wiring the LCD indicator panel via the RS 485 interface
BR7	Solder jumper for enabling an internal printer
D21	Integrated circuit, replacement not required
F1	Mains fuse T1.25A H / 230 V DC
F2	Fuse T2,5A ➔ battery charge current, battery 1
F3	Fuse T2,5A ➔ battery charge current, battery 2
F4	Fuse T2A ➔ 12 V DC power supply +Ub_{ext} for external devices
V46	lights during emergency operation ➔ Limited functionality of the Panel
S2	DIL switch ➔ Operating mode "OFF" (factory default)
	➔ Service mode "ON" (software update via USB interface)
V62 / V63	LED V62 lits red ➔ Reversed polarity of the connected TTY cable
	LED V63 lits green ➔ to check data communication if the TTY-interface is enabled
X1	Transformer connection (primary site)
X2	AC mains connector terminal L1/U, N, PE; for cable with 1,5 - 2,5 mm^2
X3	Connector for the micro module slot, the internal serial interface TTY / RS 485-1, the common trouble relay, inputs *I1* and *I2*, the control voltage for the built-in printer and the power supply (12 V DC, Ub_{ext}) for external equipment
	The RS 485-2 interface connection is not supplied!
X7/X8 (LED V2)	Cover contact connection (FACP housing). LED V2 lights while the cover is open.
X9-A, 10-B	Connector for the power supply module (Part No. 802426 from Index G)
X11-A, 12-B	Micro module slot for a selectable micro module
X23	Connector for the built-in printer via a 26 pole ribbon cable (For installation in cabinet the ribbon cable Part No. 750756 max. 50 cm or 750757 max. 120 cm is required)
X24	Connector for the operation panel via a 40 pole ribbon cable
X27, 28, 29, 30	Jumpers to configure the EMI protection for an essernet® micro module.
X31	Connector for the Service-PC (optional panel interface required)
X32	Pos 1/2 ➔ RS485-1 terminating resistance activated
	Pos 2/3 ➔ RS485-1 terminating resistance not activated
X34	Pos 1/2 ➔ RS485-2 End of line resistor activated (do not alter factory default) — The RS485-2 interface is not supplied for this panel version.
	Pos 2/3 ➔ RS485-2 terminating resistance not activated
X33/35	Jumper for the RS 485-2 interface (do not alter position)
X45, X46	Jumper for factory settings only (do not alter ISB)
USB	Connector for the service-PC and USB-Interface for a System software update.
Ethernet, Phone box, HW FAILSAFE, USL, ISB, Smart card	Internal devices and terminals for future system developments

Connection of the AC mains voltage and emergency power supply

For connecting the mains voltage (230 V AC) and emergency power supply, see Chapter 4.1.
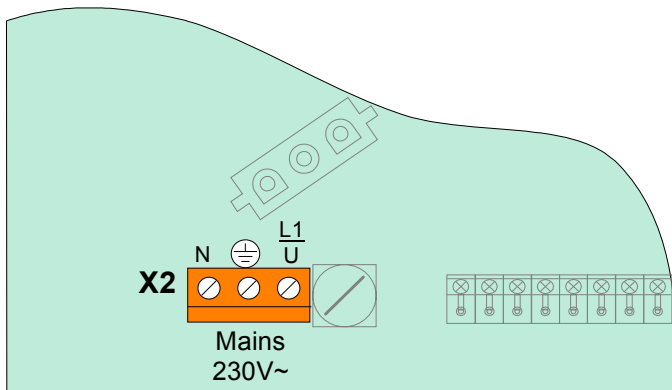
Fig. 32: Connection of the AC mains voltage and batteries

Disconnect all power from the panel before carrying out any installation work! Observe before connecting the AC mains voltage (e.g. 230 V AC) the specifications given on the panels nameplate (adhesive label) inside the housing.

Connection terminals
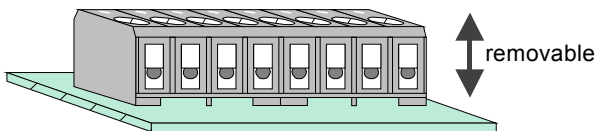
removable

Observe permitted torque (max. 0.4 Nm) of the terminals!

Fig. 33: Connection terminals removable

DIL Switch S2

S2

OFF
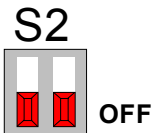
Normal operation ➔ Position "OFF" (factory setting)

S2

ON
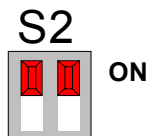
Service mode ➔ Position "ON"
The LED V50 lits for an optical indication
The service mode will be activated <u>after a panel reset</u> and displayed at the operation panel.

Reset Button S1

S1
Reset
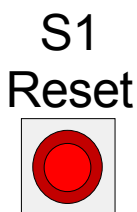
Press the RESET button to restart the panel. Alarm and fault messages are reset, all detector zones and primary loops are switched on and all changed switch settings are read in.

A panel cold start using the RESET button is only possible when the housing contact (panel housing) is open. If the panel interface was connected to the USB input, the connection is detected only after a reset.

6.3 Software

System requirements:

Firmware: from V3.01R000
Programming software tools 8000:   from V1.15

6.3.1 Firmware Update

The system software (Firmware) of the FACP IQ8Control may be updated directly at the panel via the integrated USB interface. Therewith the FACP IQ8Control may be detected from the Service-PC it is required to install the appropriate USB driver <usbcf.inf> (e.g. XP and Windows 7 etc.) first.

Connect the Service-PC via the USB cable to the USB connector on the Basic module. Switch on the Service-PC ➔ the USB connection will be detected automatically and corresponding USB driver requested. The driver <usbcf.inf> is delivered on the CD-ROM tools 8000.
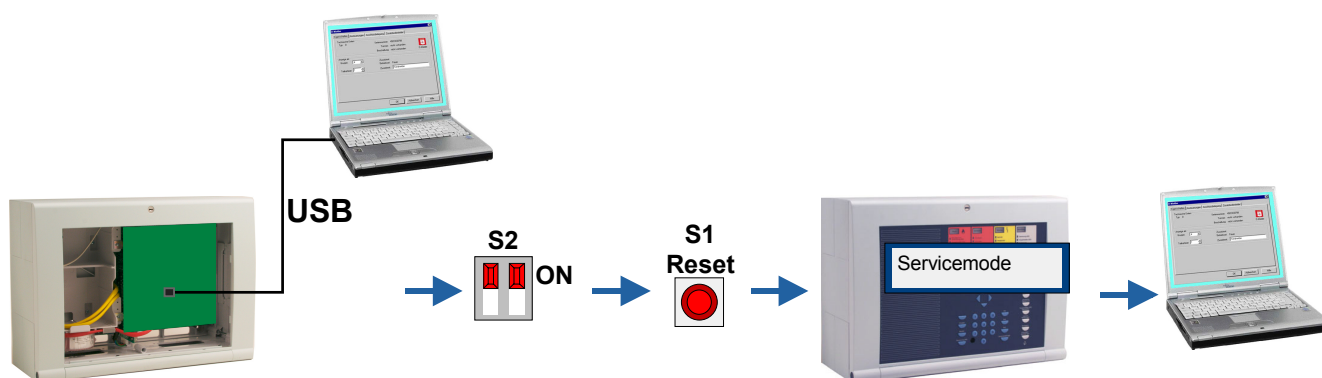
Fig. 34: System software (Firmware)

Always save Customer data on Service-PC.
The programmed customer data will not be affected by the firmware update. Depending on the complexity of the firmware update it might be necessary to reload the customer data with tools 8000 from the Service PC in a compatible data format to the updated FACP.

The description of the programming software relates to tools 8000 from V1.15. Irrespective of this a panel configuration with a former version from V3.09 is possible. Details of the configuration procedure may be differ from the given programming examples.

1. Open panel housing

2. Set DIL switch S2 (1+2) on the Basic module in Pos. ON (LED V50 lits).

3. Press reset button S1 ➔ FACP reset

4. Wait until FACP is resetted and the display message „Servicemode" appears.

5. Connect USB cable (Part No. 789863) to the USB-connector of the FACP IQ8Control an.

6. Start tools 8000 software on the Service PC and select >Tools / actualize panel software<.
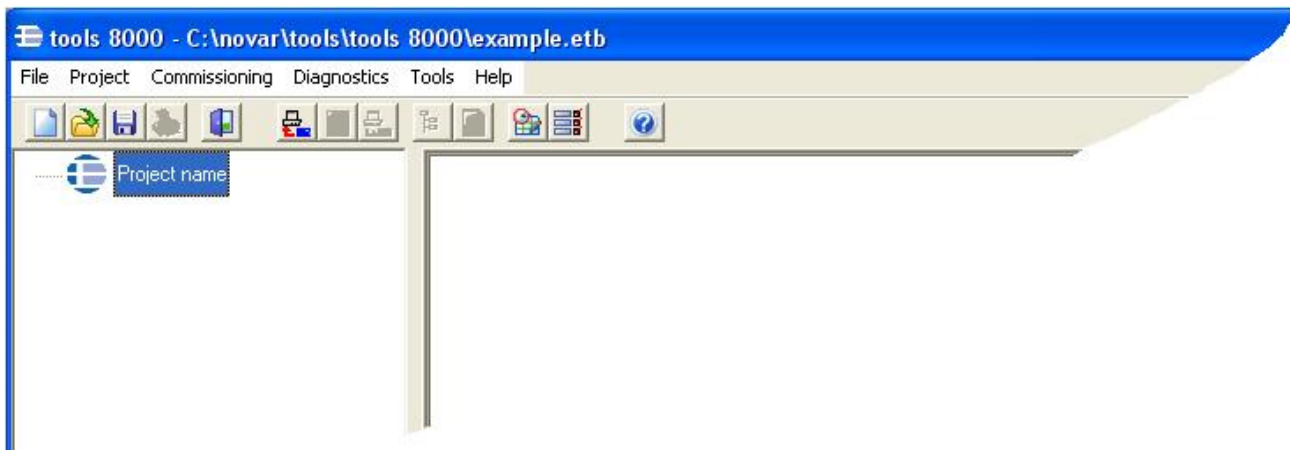
7. After the firmware update the message >Update successful< appears on the Service-PC

8. Remove USB-plug from the Basic module and set DIL-switch S2 in position OFF ➔ the FACP IQ8Control will be automatically resetted and returns to the normal operation mode.

6.3.2 Customer data programming

The Fieldbus- und panel interface PLus (Part No. 789862.10) <u>or</u> panel interface RS232 (Part No. 769828) incl. accessories is required to configure the panels Customer data.

The software tools 8000 provides the configuration of the FACP IQ8Control functions and customizing the system to all requirements. Detailed informations to the configuration of the FACP IQ8Control is given in the Online-Help file in tools 8000.

6.3.3 Fieldbus- und panel interface PLus (Part No. 789862.10), USB

Therewith the interface may be detected from the Service-PC it is required to install the appropriate USB driver >usbefi.inf< (e.g. XP and Windows 7 etc.).
Connect Service-PC and the interface with the USB-cable. Switch ON the Service-PC ➔ the USB connection will be detected automatically and corresponding USB driver requested.
The USB-driver >usbcf.inf< is delivered on the CD-ROM with the programming software tools 8000.
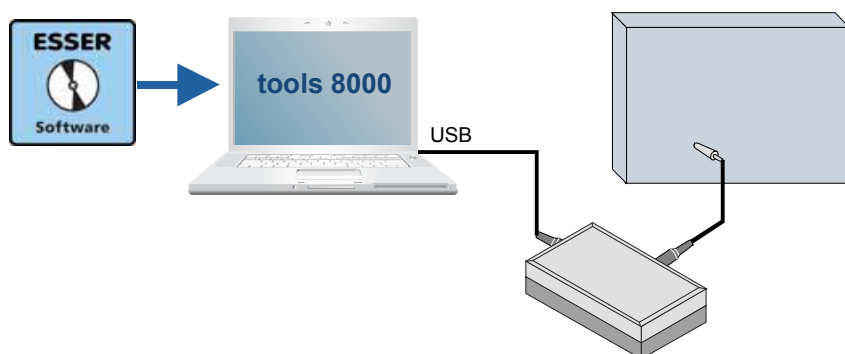
Fig. 35: Fieldbus- und panel interface PLus (Part No. 789862.10), USB

6.3.4 Panel interface RS232 (Part No. 769828), serial
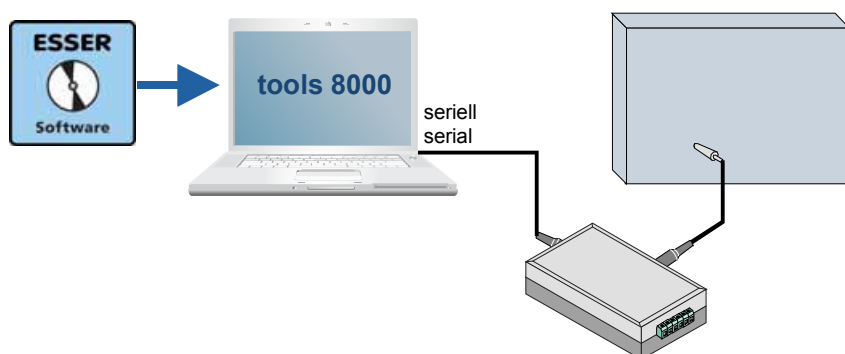
Fig. 36: Panel interface RS232 (Part No. 769828), serial

For safety, <u>always</u> save your data on the hard disk of the service PC.
The saved customer data can then be transferred quickly and easily from the service PC to the FACP IQ8Control.

6.3.5 Housing contact
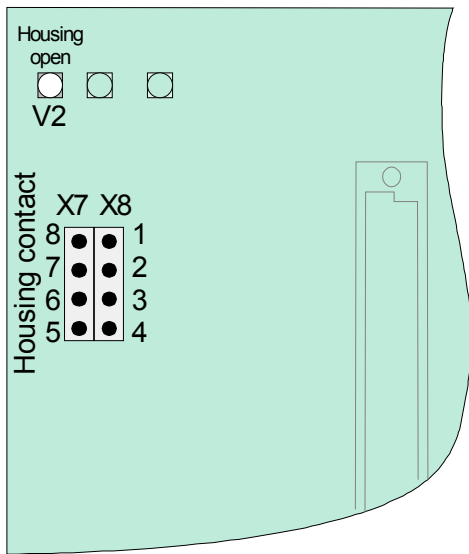
Depending on the panel housing used, up to four cover contacts can be connected to the connection terminals of the Basic module.

A single contact per housing is integrated by factory settings. The opened housing contact is indicated by the illuminated LED V2.
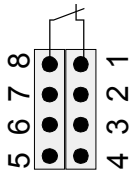
Connection of one housing contact
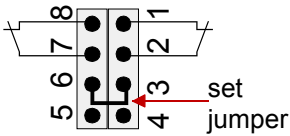
Connection of two housing contacts
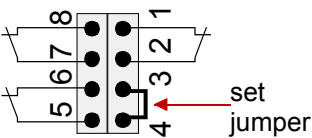
Connection of three housing contacts
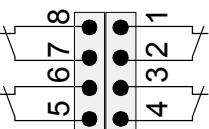
Connection of four housing contacts

Fig. 37: Housing contact

The cover contact must be opened when the service PC is connected, otherwise the PC is not recognised by the FACP.

6.3.6 Serial interface

The serial interface on the Basic module may be configured as a TTY interface (20 mA) or as an RS485 interface.

The required interface to connect external devices is selected by the Service software tools 8000.

TTY interface
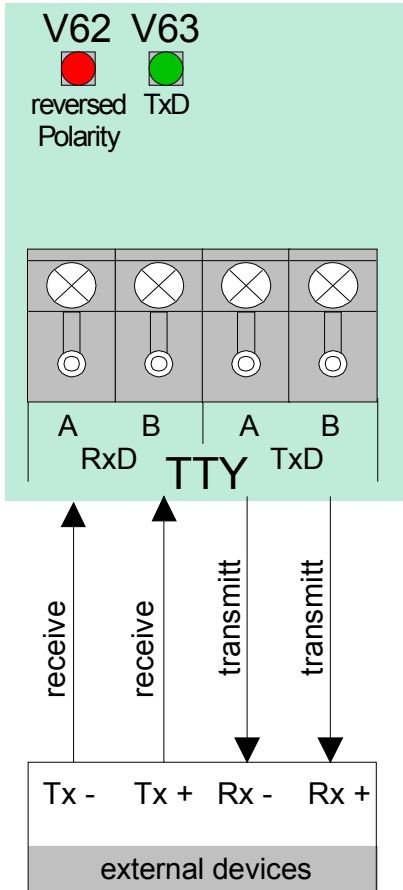
These four terminals may be used for connecting an external device, e.g. a protocol printer or the kit for a redundant transmission path* (Part No. 784749), via the TTY interface (20 mA).

Cable length between external device and interface max. 1000 m.

In operation (green LED)

If wired correctly, the green LED (TxD) will blink at the transmission frequency to provide visual indication of proper interface wiring.

Reverse polarity indicator (red LED)

If the connection cables are transposed at the terminals, red LED (Reversed polarity) will light up.

* This option may be installed inside the FACP housing with the Top-hat rail mounting kit (Part No. 788652).

Fig. 38: TTY interface

RS485 interface

An external device, such as an LCD display panel, can be connected to the A/B terminals via the RS485 interface.
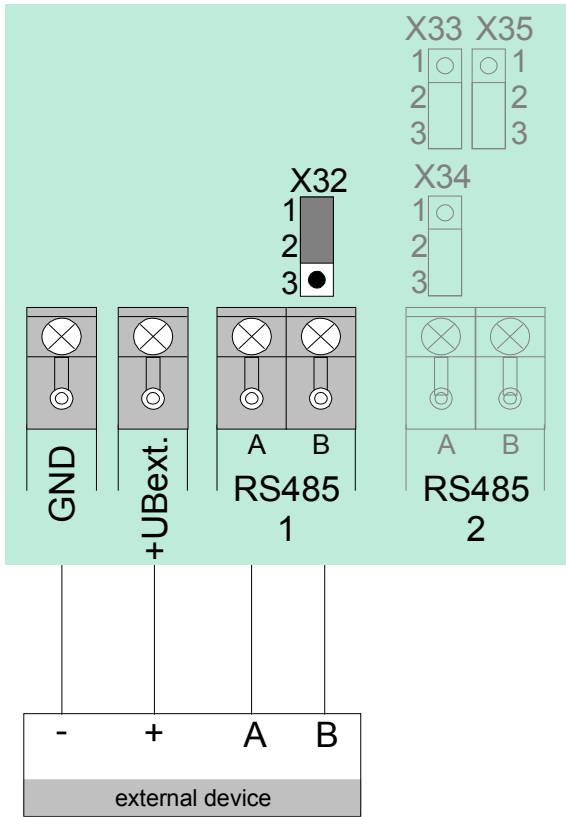
- The RS485 BUS must be connected with an EOL resistor at <u>both</u> ends of the loop.

- If the FACP incl. basic module is the last device on a loop end, the integrated EOL resistor can be activated with the X32 jumper.

Fig. 39: RS485 interface

RS 485-1

A/B	Connection interface – total length max. 1000 m	
X32	closed	➔ RS 485 termination resistance activated
	open	➔ RS 485 termination not activated

RS 485-2

A/B	
X33/35	Do not alter position of the jumpers!
X34	Do not connect terminals!

Common trouble relay (SaS)
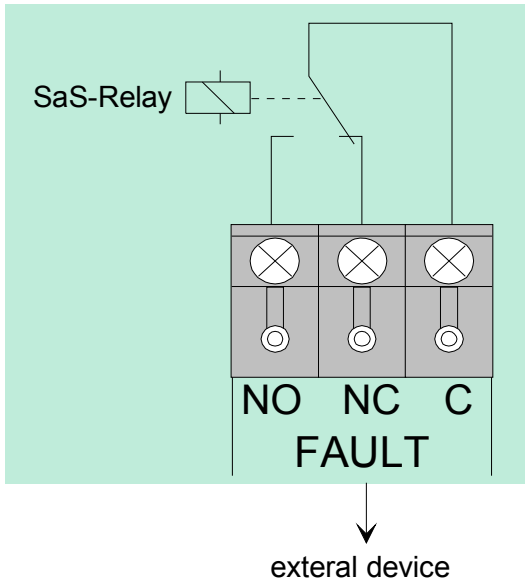
Contact   :   change-over (EMI protected)
Breaking capacity :   30 V DC / 1A
Function   :   Common trouble (SaS-relay FAULT)

If the control panel detects at least one trouble incident, relay activation will be interrupted and the relay will change its control status.

Normally energized mode of the relay contact

The relay is activated when the FACP is in the normal mode. This application provides a fault message even in the emergency operation of the panel. In case of a total power loss, a fault message can be transmitted via the dry relay contact.

Fig. 40: Common trouble relay

⚠️ Do not connect relays (AE) of the FACP with alternating voltage. Even in the case of a >dry relay contact< it is not possible to switch an external AC-voltage.

Inputs IN1 and IN2
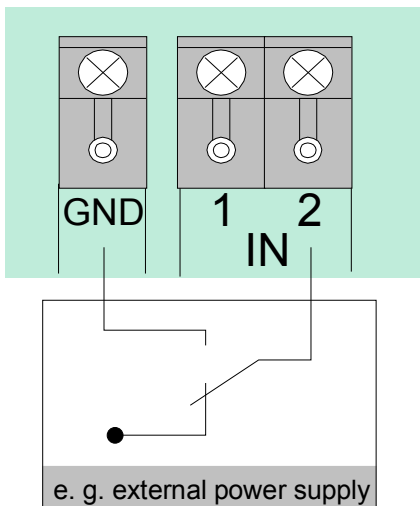
Monitored inputs IN1 and IN2 allow you to monitor two external devices, such as an external power supply.

An external contact is required for activating an input and will be open in the normal mode. This contact is used to switch input IN1 or IN2 to GND in order to send a trouble message to the FACP.

For each input, customer data may be used for entering specific additional text of 25 characters in length that will be shown on the display and protocol printer in the event of an incident.

Fig. 41: Inputs IN1 and IN2

6.3.7 Micro module slot

Terminals (1-8) are provided at the micro module slot on the Basic module for connecting the freely selectable micro module. Assignment of the eight screw terminals will depend on the micro module type used.
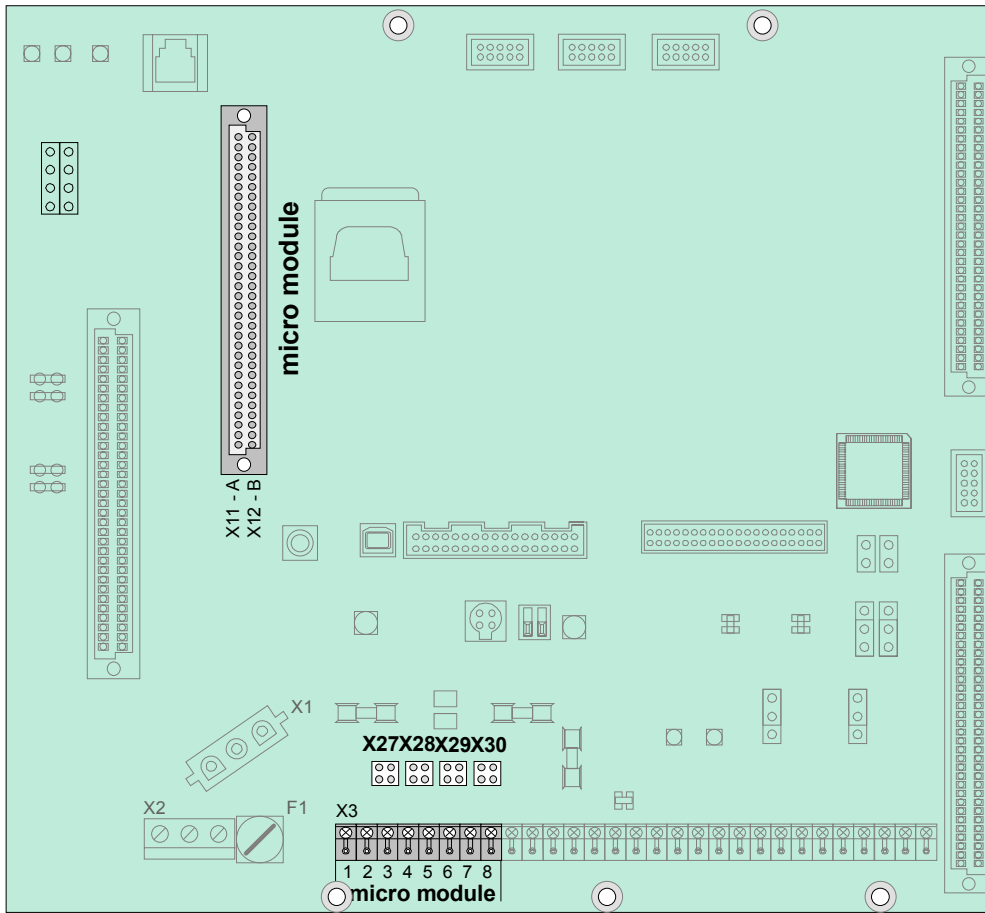
Fig. 42: Micro module slot, connection terminals and Location of Jumpers

All jumpers in horizontal position
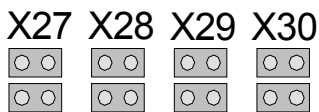
Required configuration for all micro modules apart from essernet® (factory setting)
EMC protection for this micro module connection terminal is activated

All jumpers in vertical position
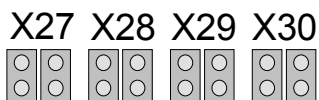
Only required for essernet® micro module.
The EMC protection is activated on the micro module for essernet® and therefore switched off on the basic module.

 The micro module must be configured with the appropriate jumper and DIL-switches and additionally programmed in the panels customer data.

6.3.8 Technical data Basic module

Operating voltage	: Internal via the power supply module, +5 V DC / + 12 V DC	
Quiescent current	: approx 215 mA @ 12 V DC without operating module approx 230 mA @ 12 V DC incl. operating module approx 295 mA @ 12 V DC incl. operating module ¼ VGA	
Emergency mode operation	: available	
Fuses	: F1 = T1,25 A H/230 V AC	➔ mains voltage, primary
	F2 = T2,5 A	➔ battery 1
	F3 = T2,5 A	➔ battery 2
	F4 = T2 A / 12 V DC	➔ power supply for external devices
Power supply for external devices	: max. 12 V DC/ 2 A (terminal +Ubext / GND)	
Common fault relay	: 1 dry change-over contact Contact rating max. 30 V DC / 1A Relay operation with common fault programmable in the customer data	
TTY -interface or RS485-1 interface	: 20 mA, max. 1000 m cable length : max. 1000 m cable length	

⚠️ Do not connect relays (AE) of the FACP with alternating voltage. Even in the case of a >dry relay contact< it is not possible to switch an external AC-voltage.

Compatibility	: Part No. 772481 ➔ Basic module IQ8Control C Part No. 772482 ➔ Basic module IQ8Control M
	The Basic module is suited for the Fire Alarm Control Panels IQ8Control C/M with the required power supply module (Part No. 802426 from index G).
	The required loop voltage (27,5 V or 42 V for esserbus® PLus) must be selected on the power supply module.
	For the Fire Alarm Control Panel system 8000 the basic module may be used as replacement device. This requires the power supply module (Part No. 802426 from index G).

6.4   Field device module

The Field device module required in order to configure a stand-alone FACP in accordance to the appropriate standards and guidelines. The Field device module integrates all of the input and output modules that are necessary in addition to the modules on the Basic module to operate as a Fire Alarm Control Panel to DIN VDE 0833. This are e.g. terminals to connect a Fire department notifying system, a master box and programmable relays.

There are two different kinds of Field device module available for the FACP IQ8Control:

1)   Part No.772477 - Field device module with one micro module slot

2)   Part No.772479 - Field device module without micro module slot

⚠️   **The FACP <u>must not</u> be operated with series 01 Field device modules.**

Features

- Terminals for a Fire Department Notifying System (8 Inputs / 8 Outputs)

- Terminals for a Master box (manned centre link) incl. relay to switch the required power supply and monitored input to indicate the triggered master box.

- Three freely programmable relays – alternatively
  - monitored und positive switching,
  - positive switching
  - or dry change-over contact

- Emergency operation for all four relays available

ℹ️   Do not use the relays for the monitored activation of alarm devices.
Monitoring of the relays is only used to detect interruptions and short circuits.

If a control panel is required to function in accordance with DIN 0833, you should program the relays with the >common fire< (K2), >common alarm< (K3) and >common disconnection< (K4) in the customer data of the control panel. In the emergency mode the relays will be triggered with the assigned function.

If several Fire Alarm Control Panels are connected together in the essernet®, the master box can be connected to one of the other FACPs.

⚠️   Do not connect relays (AE) of the FACP IQ8Control with alternating voltage. Even in the case of a >potential free relay< mode it is not possible to switch an external AC-voltage.

Field device module (Part No.772479) without micro module slot
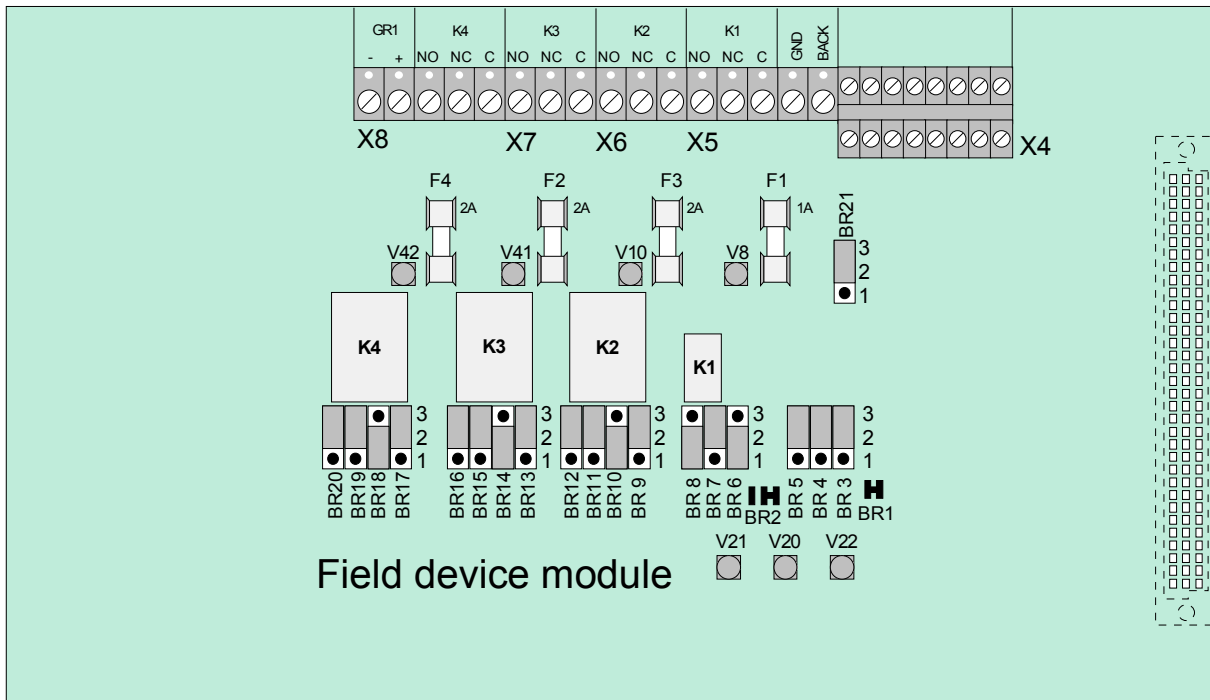
Fig. 43: Field device module (Part No.772479)

Field device module (Part No.772477) with micro module slot
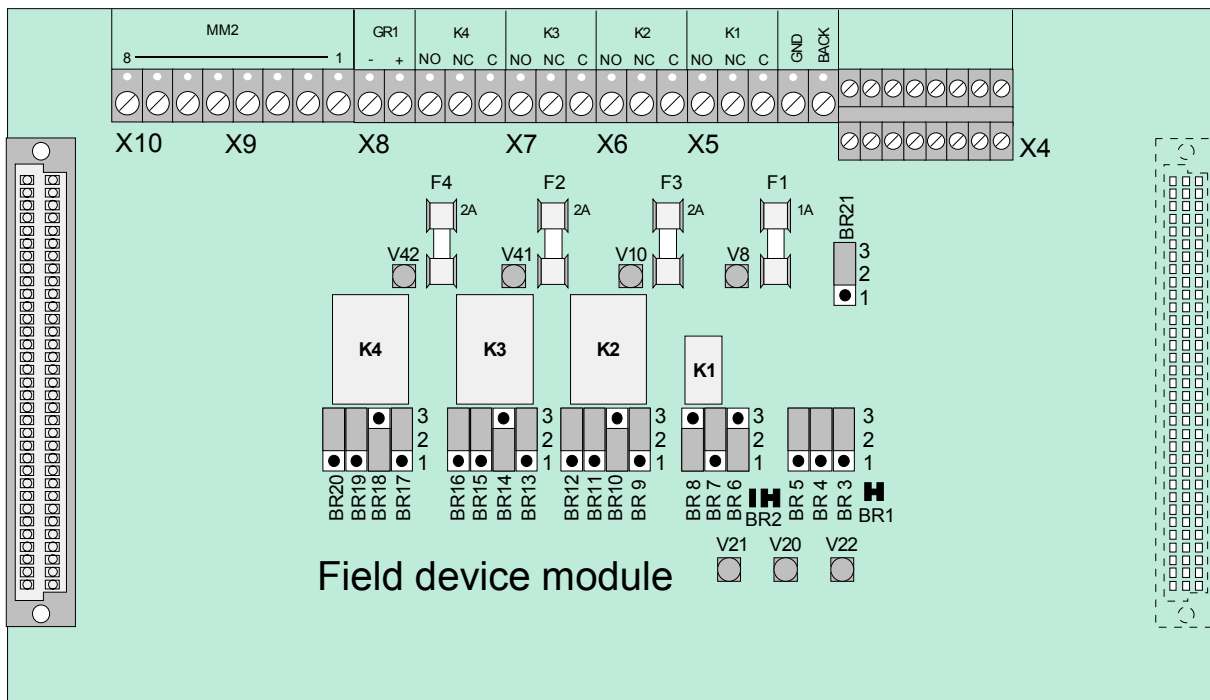
Fig. 44: Field device module (Part No.772477)

The Field device module (if available) <u>must always</u> be placed on the >System connector 1< of the Basic module.

Relay K1	Relay for connecting a master box. May also be used as a freely programmable relay. Selection of operating mode and emergency function by means of jumpers. (Monitoring range 50 Ω to 1 kΩ)
	Contact rating when used as a >non-monitored change-over contact< < 30 V DC/ max.1 A
Relay K2,3,4	Relay with common function. May also be used as a freely programmable relay. Selection of operating mode and emergency function by means of jumpers.
	Contact rating when used as a >non-monitored change-over contact< < 30 V DC/ max. 2 A
X4	8 inputs for connecting a fire department operating panel – top – IN 1 - 8
	8 outputs for connecting a fire department operating panel – bottom – OUT 1 - 8
X5	Connection terminals for (master box relay, K1)
	for connecting the master box power supply, incl. confirmation input for verifying master box activation
X6	Connection terminal for relay K2
X7	Connection terminal for relay K3
X8	Connection terminal for relay K4
	GR1 = Internal primary loop input (primary line no. <u>XX</u>24, XX= FACP no.)
	Normal operation ➜ R = 10 kΩ
	Fire alarm ➜ R $\leq$ 5 kΩ
	Trouble ➜ R = 1 kΩ
X9 / X10	Terminals for the micro module slot (only Field device module Part No. 772477)
F1 **F2 to F4**	T1A – Fuse for Relay K1 T2A – Fuse for Relay K2, K3, K4
V8, V10, V11, V12	The LED lights while the corresponding relay is activated or when is has been programmed for inverse control in the customer data programming
V20 to V22	yellow LED V 20 will light up when the Fire Alarm Control Panel is operating in CPU failure mode
	green LED V 21 will light up when the cover contact (control panel housing) is open
	red LED V 22 will light up if a fire alarm is detected while the control panel is operating in CPU failure mode
BR1 and BR2	Solder bridges for setting the master box control in emergency operation
BR3 to BR5	Jumpers for setting the CPU failure mode function for relays K2, K3, K4
BR6 to BR20	Jumper to select the operation mode of relay K1 and relays K2, K3, K4
BR21	Coding jumpers for fire department operating panel with >fire control off / revision< function (Terminals X4/IN8)
	Jumper in position 2-3 >fire control off / revision< not active / off (factory setting)
	Jumper in position 1-2 >fire control off / revision< active / on

⚠️ Do not connect relays (AE) of the FACP IQ8Control with alternating voltage. Even in the case of a >potential free relay< mode it is not possible to switch an external AC-voltage.

Connection terminals
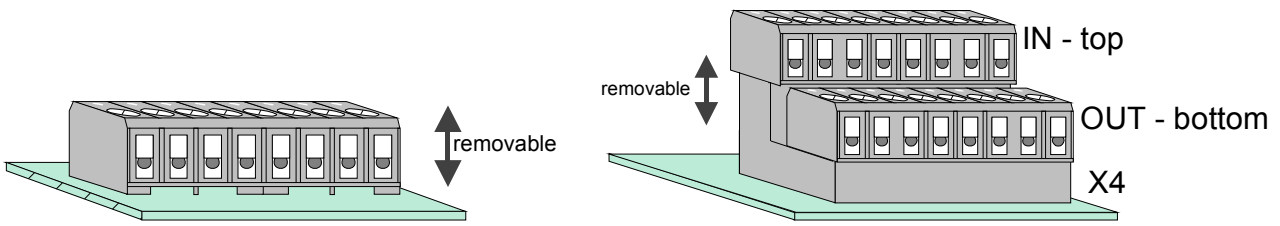
Fig. 45: Connection terminals   *Connection terminals fire department operating panel*

Observe permitted torque (max. 0.4 Nm) of the terminals!

Connection of the micro module

Eight connecting terminals are provided for the micro module slot of the Field device module. The actual connection of the eight terminals depends on the type of module used.

If an essernet® micro module is used, this module may only be inserted into the micro module slot of the basis module. The essernet® micro module requires adaptation of the terminal card on the basis module. The EMI protection must be implemented by external EMI-protection devices.

Primary loop input Pri+/Pri-

Monitored primary loop input Pri+/Pri- (terminal X8) has the purpose of monitoring CPU failure in the essernet®. These terminals are used, for example, to connect the common fire relay of another Fire Alarm Control Panel. In the event of trouble in the essernet® micro module, a fire alarm signal may still be sent via the relay contact to the primary loop input of this control panel. The display at this Fire Alarm Control Panel will then show the message >Prim. loop fire< in the event of an incident occurring.
The primary loop input can be switched off or on and reset via the corresponding primary loop number.
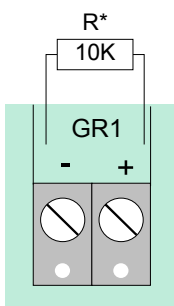
R* = monitored end-of-line resistor 10 kΩ

R= 10 kΩ ➜ Normal status
R= 5 kΩ ➜ Fire alarm, display >Prim. loop fire<
R= 1 kΩ ➜ Trouble

Primary loop no.: xx24 (xx = Panel no. 01-31)

Fig. 46: Primary loop input Pri+/Pri-

6.4.1 Connecting fire department operating panel
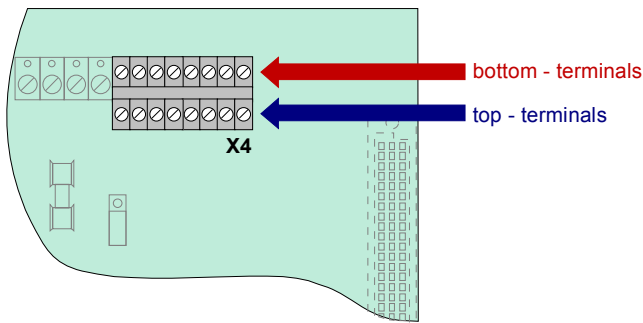
- Wiring differs from area to area and is governed by the requirements of the regional fire department.
- A 12 V DC voltage is required for operation.

bottom - terminals

top - terminals

X4

top terminals

X4

IN8 IN7 IN6 IN5 IN4 IN3 IN2 IN1

FD call LED on (IN1 on GND) (closer)

do not use

do not use

MB disconnected

acoustic signals off

check MB

reset FACP

fire control off / revision
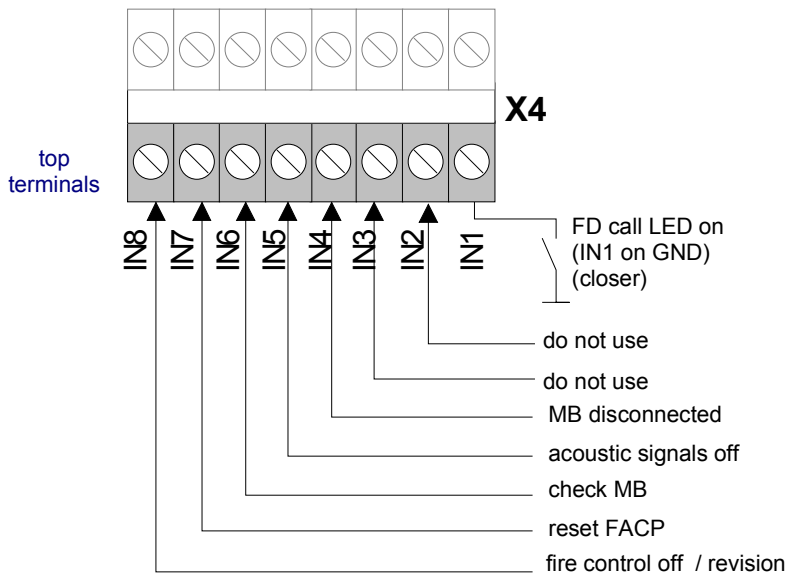
If the terminal IN8 (fire control off / revision) is not used, jumper BR21 must always be fitted at position 2-3 !

Current load per output (OUT1 to OUT 8) max. 25 mA.

Observe permitted torque (max. 0.4 Nm) of the terminals!

do not use

fire control off (revision)

MB activation prevent

acoustic signals off

MB disconnected

common fire

extinguishing system activated

MB activated

OUT8 OUT7 OUT6 OUT5 OUT4 OUT3 OUT2 OUT1

bottom terminals

X4
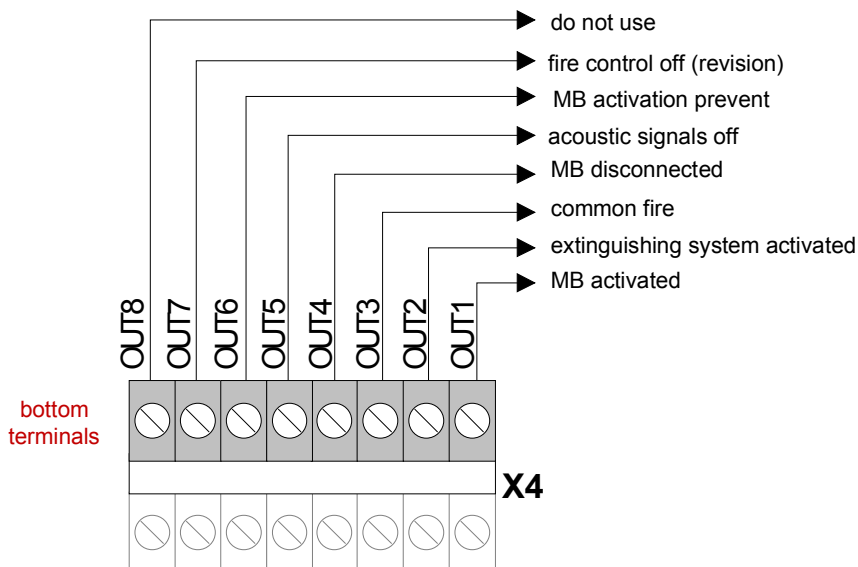
Fig. 47: Connection terminals fire department operating panel

6.4.2 Connecting master box (Relay K1)

Relay K1 for the connection of a master box is part of the peripheral module.

The control configuration of relay K1 can be set to

- monitored and switching the positive potential
- switching the positive potential
- or as a non-monitored change-over contact

by means of jumpers.
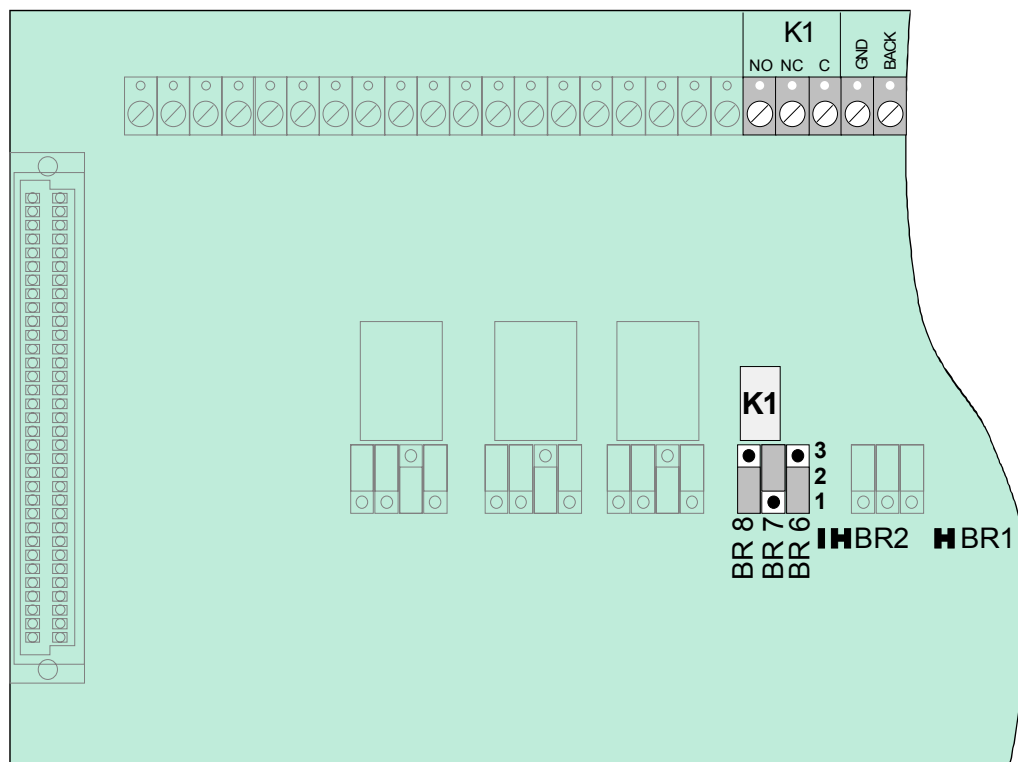
Fig. 48: Location of the master box relay K1 and the jumpers BR 6 to 8 on the Field device module

Setting the operating mode for relay K1

Jumpers	Function
BR 1 **H**	Activation of master box relay (K1) also in the event of a fire alarm with the control panel in the CPU failure mode (factory setting)
BR 1 **II**	No activation of the master box relay (K1) in the event of CPU failure-fire
BR 2 **IH**	No activation of the master box relay (K1) in the event of a fire alarm when the cover contact on the control panel housing is open (factory setting)
BR 2 **HI**	Activation of master box relay (K1) even with cover contact open (outer housing)

Operating mode 1 ➔ Relay K1 positive switching and monitored

Fig. 49: Terminal of the master box relay K1

BR8 BR7 BR6	**Relay K1**		
	positive switching (+12 V DC_{intern} / max. 1 A) and monitored		
R*	Monitored end-of-line resistor R = 680 Ω (factory setting) Monitoring capability of internal resistor in master box 50 to 1000 Ω (refer to customer data programming)		
S*	Dry confirmation contact in master box		

⚠ • **Diode V***

From **Hardware index B** the diode V* is integrated in the Field device module.

• Observe permitted torque (max. 0.4 Nm) of the terminals!

Operating mode 1 ➔ Relay K1 – positive switching and monitored
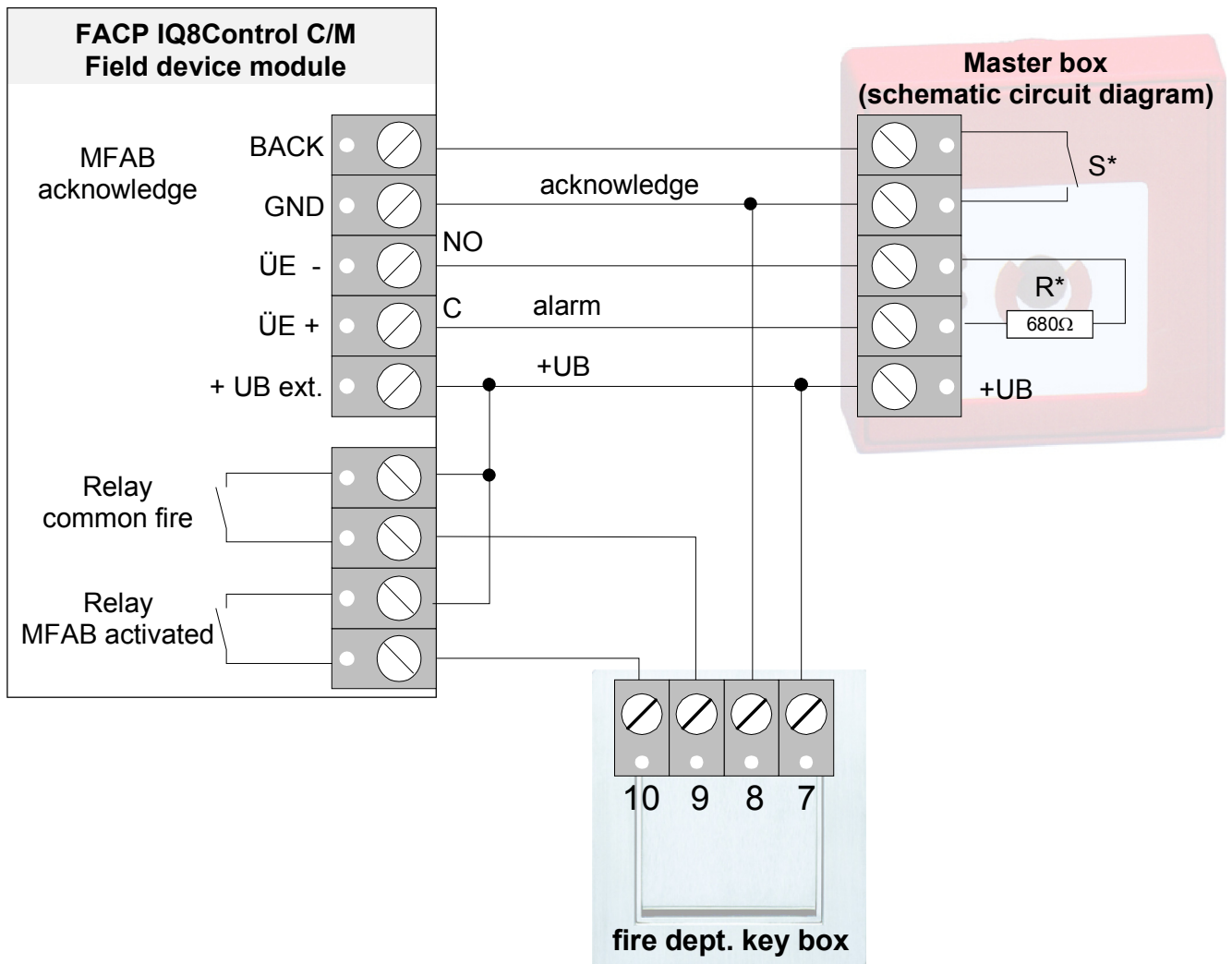
Fig. 50: Wiring example master box with FDKB adapter

Operating mode 2 ➔ Relay K1 positive switching, not monitored

BR8   **BR7**   **BR6**   **Relay K1**

Positive switching (+12 V DC$_{intern}$ / max. 1 A), not monitored
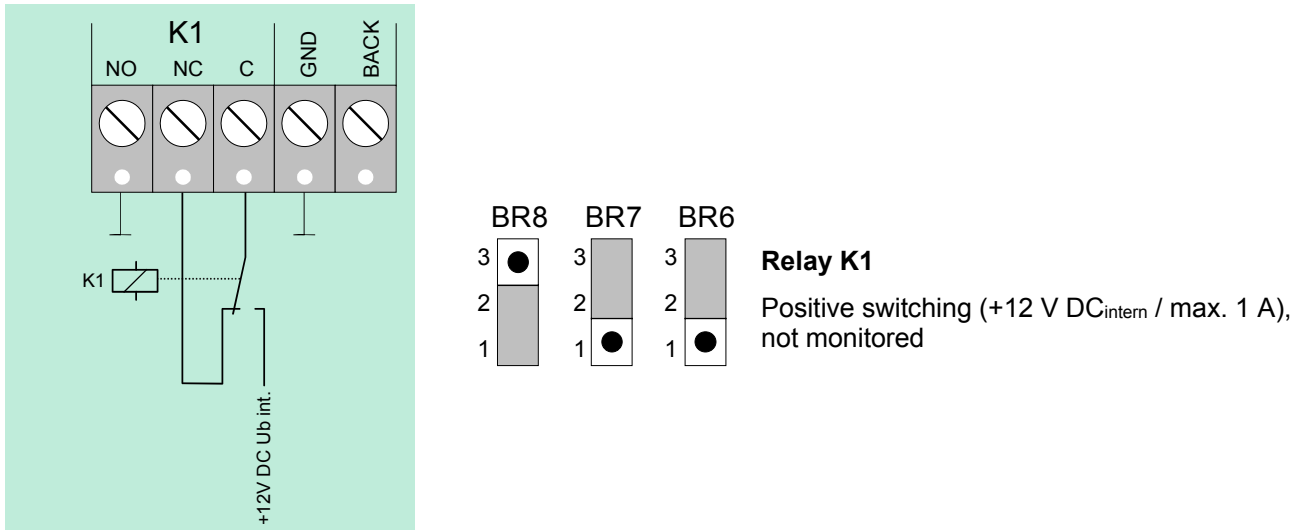
Fig. 51: Terminal of the master box relay K1

Operating mode 3 ➔ Relay K1 not monitored change-over contact

BR8   **BR7**   **BR6**   **Relay K1**

Potential-free, not monitored change over contact

External voltage < 30 V DC, max. 1 A
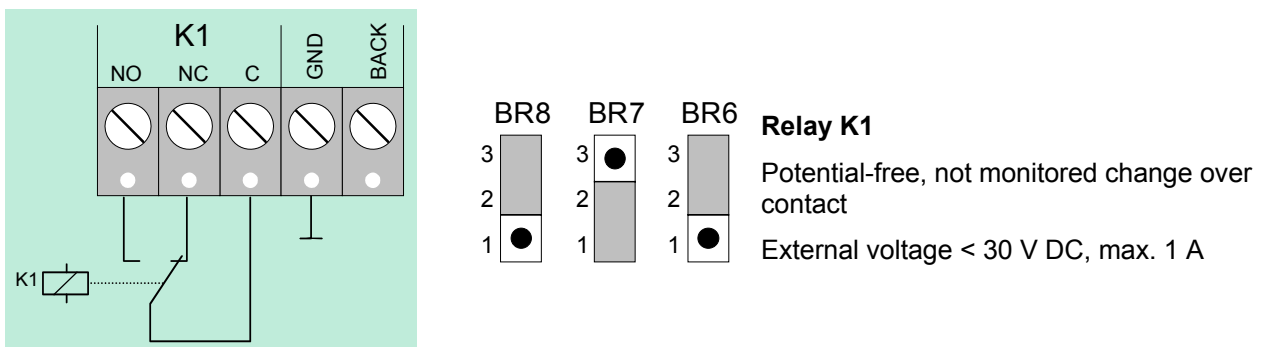
Fig. 52: Terminal of the master box relay K1

- The IQ8Control FACP's relays may only be connected to DC voltages. No AC voltage may be applied, not even when a relay is programmed as a >non-monitored change-over contact<.

- Observe permitted torque (max. 0.4 Nm) of the terminals!

6.4.3 Connecting Relays K2, K3, K4

Location of the relay K2,K3,K4 and the jumpers BR9 to 20 on the Field device module
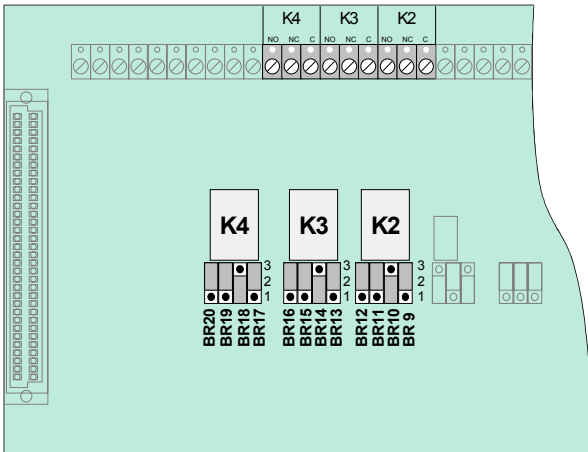
Jumpers are used for adjusting the three relays K2, K3 and K4 to a variety of requirements.
The three relays may be coded independently of each other as >positive-switching< and >monitored, positive-switching< or as >potential-free change-over contact<.

Fig. 53: Connecting the Relays K2,K3,K4

Relay	K2	K3	K4
Positive switching / monitored	BR 12 BR 11 BR 10 BR 9	BR 16 BR 15 BR 14 BR 13	BR 20 BR 19 BR 18 BR 17
Positive switching / not monitored	BR 12 BR 11 BR 10 BR 9	BR 16 BR 15 BR 14 BR 13	BR 20 BR 19 BR 18 BR 17
Change-over contact / not monitored	BR 12 BR 11 BR 10 BR 9	BR 16 BR 15 BR 14 BR 13	BR 20 BR 19 BR 18 BR 17

CPU failure mode function of relays K2, K3 and K4
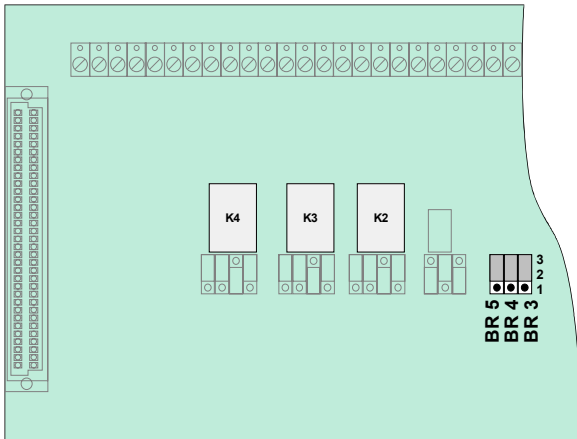
Fig. 54: Location of the emergency mode jumpers BR3 to 5 on the Field device module

K2	K3	K4	
3 ● 2 1 **BR 4**	3 ● 2 1 **BR 3**	3 ● 2 1 **BR 5**	**Jumper X in position 1/2** No activation of the relay while the Fire Alarm Control Panel is in CPU failure mode (state on leaving factory).
3 2 1 ● **BR 4**	3 2 1 ● **BR 3**	3 2 1 ● **BR 5**	**Jumper X in position 2/3** Relay also activated while the Fire Alarm Control Panel is in CPU failure mode. Used if a common function is programmed for the relays, such as >common fire<, >common alarm< and >common disconnection<.

6.4.4 Technical data Field device module

Operating voltage	:	Internal via the power supply module, +5 V DC / + 12V DC
Quiescent current	:	approx. 15 mA @ 12 V DC
Fuse F1	:	T1A – slow blow (relay K1)
Fuse F2, F3, F4	:	T2A - slow blow (relays K2 to K4)
Relay K1	:	Relay for connecting a master box. May also be used as a freely programmable relay. Selection of operating mode and emergency function by means of jumpers. Contact rating when used as a >non-monitored change-over contact< contact rating < 30 V DC/ max.1 A. No dry contact cause of the integrated EMI protection.
Relay K2, K3, K4	:	Relay with common function. May also be used as a freely programmable relay. Selection of operating mode and emergency function by means of jumpers. Contact rating when used as a >non-monitored change-over contact<, contact rating < 30 V DC/ max.2A No dry contact cause of the integrated EMI protection.
Fire department operating panel	:	8 digital inputs 8 outputs - max. 12 V DC / 20 mA per output
Internal primary loop	:	monitored 10 kΩ (normal) / 5 kΩ (FIRE) / 1 kΩ (fault) Application e.g. for essernet®-emergency operation
Compatibility	:	Part No.772479 ➜ Field device module without micro module slot Part No.772477 ➜ Field device module with micro module slot

⚠️ The IQ8Control FACP's relays may only be connected to DC voltages. No AC voltage may be applied, not even when a relay is programmed as a >non-monitored change-over contact<!

6.5   Extension module

Depending on the module type up to three slots for micro modules are integrated on the Extension module. Connections are available for each micro module. The pin assignment of the eight screw terminals depends on the employed type of micro module. The pin assignment of the connectors is described for each micro module.
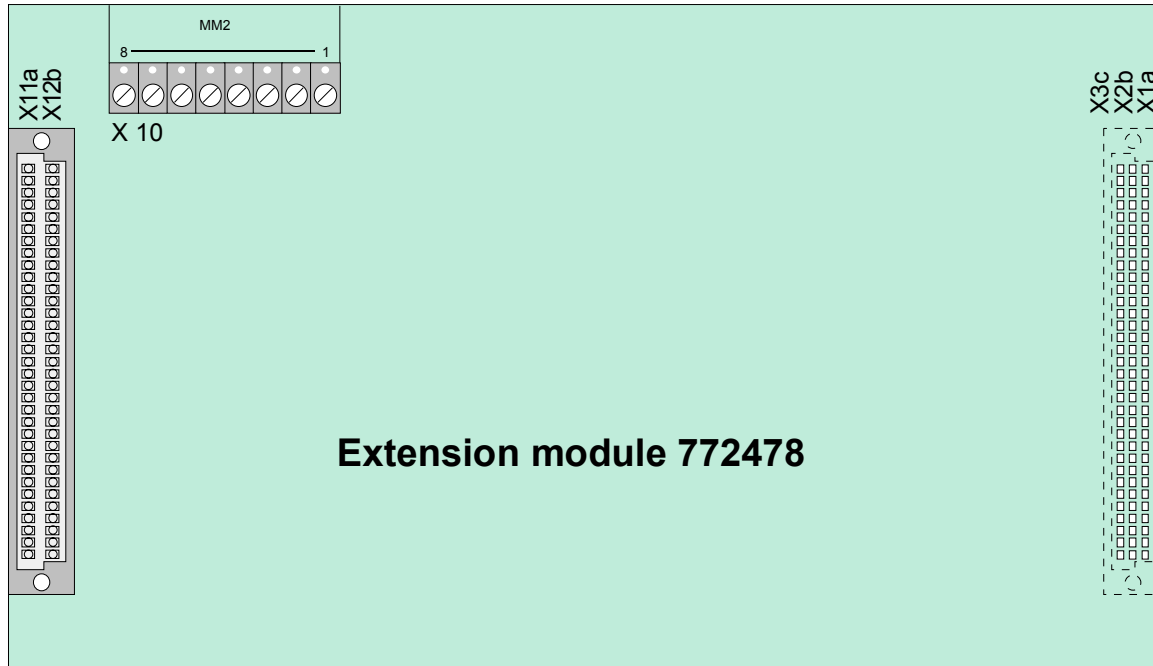
Fig. 55: Extension module (Part No.772478) with one micro module slot
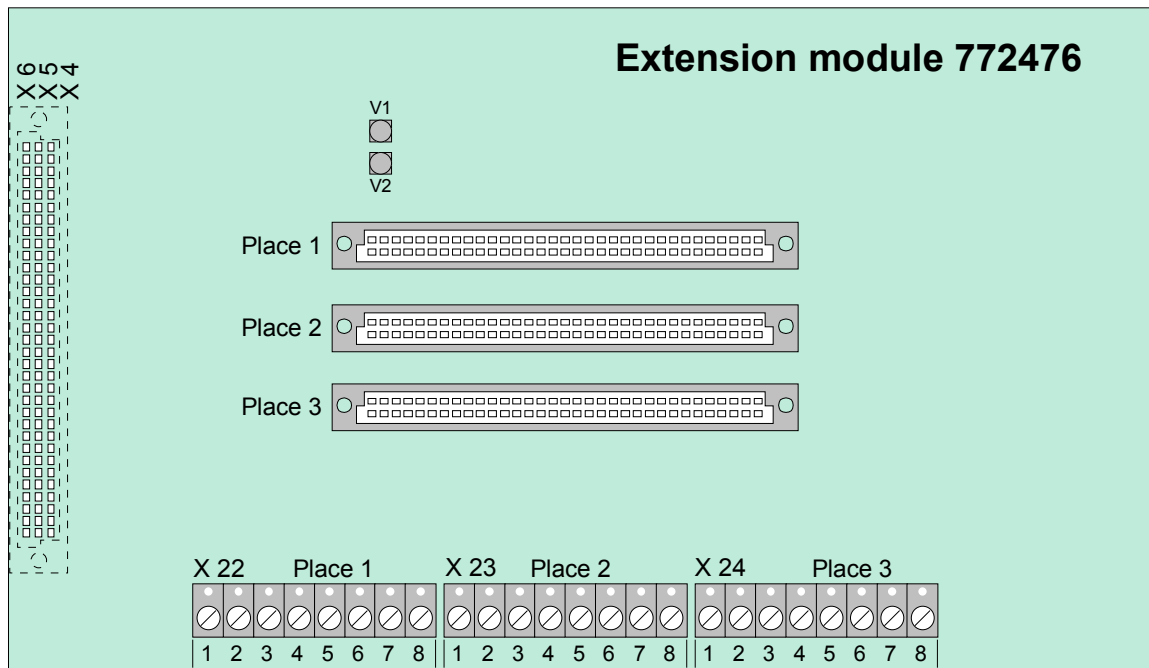
Fig. 56: Extension module (Part No.772476) with three micro module slots (only IQ8Control M)

IQ8Control C

The Field device module with a single micro module slot (Part No. 772478) must be placed on the >System connector 1< of the Basic module. This connector is normally used by the Field device module. Without the field device module a system configuration in accordance to the standards is not possible (refer to Chapter 4).

IQ8Control M

Up to two connectors are available for Extension modules (Field device and or Extension module). Normally the lower >connector 2< is used to connect an Extension module. If required the upper >connector 1< may be used too for an Extension module. In this case the integration of an Field device module is impossible. In this case mounting of the field device is not possible anymore (see Chapter 4).

Extension module with a single micro module slot (Part No. 772478)

This Extension module must be configured in the panels data programming as a Field device module.

X 1a/2b/3c	connector >System connector 1 or 2< of the Basic modules	Refer to note!
X11a/12b	Connector for a micro module (Do not connect an essernet® micro module) Refer to note!	Refer to note!
X 10	Terminals for the micro module wiring.	

Extension module with three micro module slots (Part No.772476)

Only FACP IQ8Control M configurable.

LED V1	ON – Common fire alarm	
LED V2	ON – CPU failure	
place 1	Micro module slot only for micro module	Do not connect an essernet® micro module. Refer to note!
place 2	Micro module slot only for micro module	
place 3	Micro module slot only for micro module	
X22	terminal for micro module slot 1	
X23	terminal for micro module slot 2	
X24	terminal for micro module slot 3	
X 4/5/6	Plug contact of >System connector 1 or 2< of the Basic module	Refer to note!

> If an essernet® micro module is installed, this module can only be operated on the micro module slot of the Basic module.

6.5.1 Technical Data Extension module

Operating voltage   :   Internal via the power supply module, +5 V DC

Quiescent current   :   approx. 10 mA

Compatibility   :   Part No.772478 ➔ Extension module with one micro module slot
                                   Part No.772476 ➔ Extension module with three micro module slots

7   Micro module

The FACP IQ8Control C / M has a modular design, so that micro modules can be replaced/extended at any time.

Only remove or insert micro modules when the FACP is voltage free.

- Switch off the power and battery supply.
- Wait at least 10 seconds before the micro modules are replaced or supplemented.
- Take suitable measures to discharge static electricity.
- Check correct installation (micro modules and connection cables).
- Switch on the power and battery supply.
- If necessary, check/supplement the customer data using the programming software tools 8000.

7.1   Loop modules

The following two loop modules are available for the Fire Alarm Control Panel **IQ8**Control C/M:

esserbus® loop module (Part No.784382 / 784382.10 / 784382.D0)
To connect fire detectors series 9200 and IQ8Quad as well as esserbus® transponders. To operate this loop module, the loop voltage on the power supply module (Part No. 802426) must be set to 27.5 V with the relevant jumper.

esserbus® PLus loop module (Part No.804382 / 804382.10 / 804382.D0)
Fire Alarm Control Panels IQ8Control C/M with esserbus® PLus are based on the standard esserbus® functionality with the additional function to connect and power audible alarm devices directly to the loop. For this operation of the loop module it is necessary to set the loop voltage of the Power supply module (Part No.802426) with the appropriate jumper to 42 V. The audible alarm devices connected to esserbus® PLus are supplied by the loop voltage and do not need an external power supply.

Basic data on loop of esserbus® and esserbus® PLus
- Less than 127 loop devices or 127 zone isolators per loop
- Loop may be divided into 127 individual detector zones (customer data programming)
- No more than 32 fire detectors per detector zone
- Capability of combining loop and spur loop operation. No sub-spur branching!
- Recommended type of cable for loop:
  Use clearly identified communications cable I-Y (St) Y n x 2 x 0.8 mm or fire alarm cable!
- Max. impedance of the loop incl. spur measured with respect to the load factor for IQ8Quad fire detectors: max. 3500 m[1].
  For cable diameter with 0,8 mm and a max. Loop resistance of 130 Ω (measured from terminal A+ to B+).
- Max. 8 communications transponder per loop
  max. 16 communications transponder per FACP
- max. 32 esserbus® transponders per loop.
  max. 100 esserbus® transponders per FACP
   OR
- max. 32 Smoke aspirating systems TITANUS PRO / TOP SENS® EB per loop.
  max. 100 Smoke aspirating systems per FACP.

[1] see table chapter 7.1.3.

Damage to the system!
It is only possible to operate the esserbus® PLus devices compatible with the higher loop voltage (42 V DC). Mixed operation of Standard and esserbus® PLus function within one FACP is not possible! Loop devices compatible with esserbus® PLus (transponders, detectors MCP´s etc.) are identified by the Part No. 80xxxx.

These 80xxxx devices are also fully compatible to the existing devices with Part No. 78xxxx and may be used in standard esserbus® installations.

Mode of loop operation

The esserbus® /esserbus® PLus is a monitored two-wire loop fed from two sides and exhibiting loop topology. The use of zone isolators allows you to combine ring and spur loops as well as divide the loop into 127 detector zones with a total of 127 loop devices. All esserbus® loop devices remain functional in the event of interruption (break in wire) in the loop. If a short circuit occurs, only the faulty element between two zone isolators will be disconnected. Even during this malfunction all other loop devices remain operational.

On the esserbus® it is possible to group special fire detectors and manual call points or manual release devices in separate detector zones. You may also simultaneously operate esserbus® transponders in separate detector zones on the loop. The esserbus® transponders are decentralised input/output modules capable of being installed as loop devices on the esserbus®.

Commissioning a functional loop requires use of the service PC and the software tools 8000 This Service software initiates an automatic wiring recognition function on the loop and addresses all esserbus® loop devices automatically. There is no longer any need to set addresses manually. For further information on programming, please refer the online help for the service- and programming software tools 8000.
To indicate a data communication between FACP and detectors the corresponding LED on the basic module flashes. The green LED of the IQ8Quad fire detector flashes each 30 seconds.

Operation of zone isolators

A short circuit on the loop will cause the cut-off relays to open in the relevant zone isolator and disconnect the faulty segment (e.g., a detector zone) from the loop. The disconnected detectors will be shown on the display with trouble message Com.trbl (communication trouble). All other loop devices on the loop, as well as the fire detectors or esserbus® transponders whose zone isolator has triggered, will remain operational. The zone isolators do not work on an open circuit, e.g. break in wire. Bi-directional ring interrogation keeps all loop devices on the loop functional.

Use of zone isolators

1. Always upstream of the point where the loop crosses into another fire compartment

2. On changing from special fire detectors to manual call points (and vice versa)

3. At least in the 32nd fire detector of a detector zone

§ With the built-in battery monitor module, the IQ8Control FACP now satisfies the expanded requirements of EN 54-4/A2, as well as the amended requirements for the display and operating concept according to EN 54-2.

In accordance with the VdS device approval of the IQ8Control FACP, the emergency operation fire function now replaces a redundant CPU in accordance with VDE 0833-2 for systems with more than 512 detectors or a monitoring area up to 48,000 m². This integrated emergency redundancy also allows further processing of an alarm in the essernet® in event of the failure of a central processor without the need for additional hardware or software.

7.1.1 esserbus® loop module (Part No. 784382 / 784382.10 / 784382.D0)

The loop module allows for esserbus® connection and is configured with Programming software tools 8000 from V1.15.
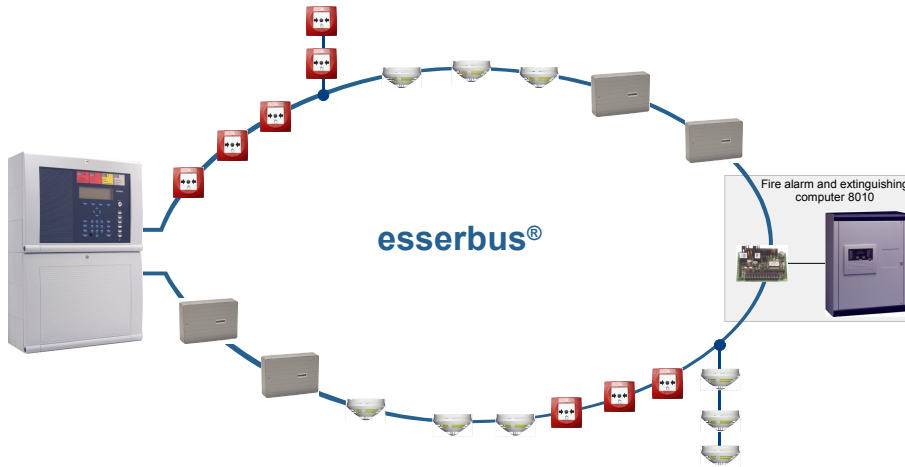
Fig. 57: Exampleesserbus®
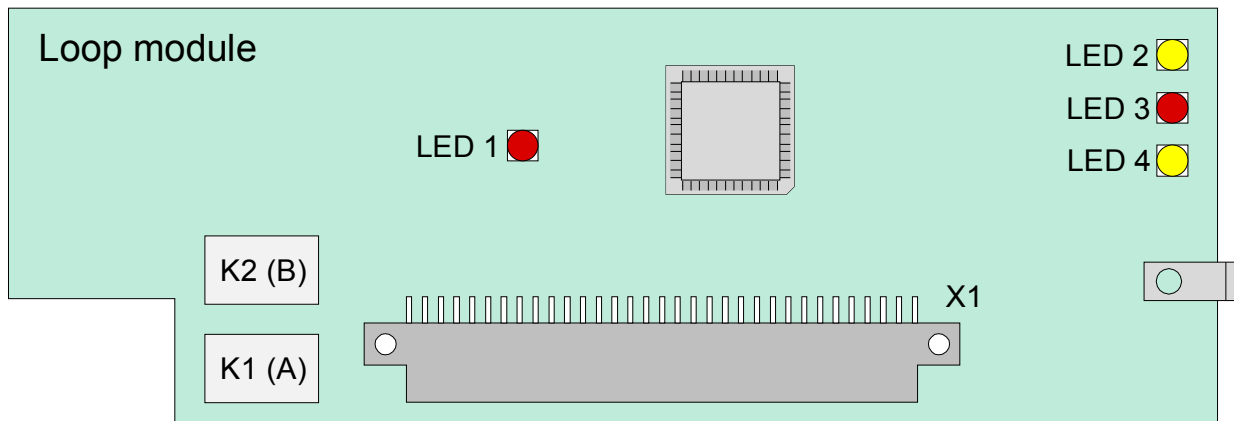
Fig. 58: Loop module (Part No. 784382 / 784382.10 / 784382.D0)

- Connect cable shielding of the loop only at one side.
- When using the module in door control systems, place the enclosed labels on or in the FACP housing (see chapter 14.1).

X 1	64-way plug connector to micro module slot of the Basic module, Field device module or Extension module
K1, K2	Bi-directional loop interrogation by loop isolators (K1 = A+, A- / K2 = B+, B-)
LED 1	(SMD) red, flashing ➜ in normal mode in time with communication on the loop (SMD) red, lit ➜ Short circuit on loop
LED 2	(SMD) yellow, lit ➜ Module faulty
LED 3	(SMD) red, flashing ➜ + 24 V power supply failure or communication to control panel processor interrupted (SMD) red, lit ➜ Module in CPU failure mode (control panel CPU failure)
LED 4	(SMD) yellow, flashing ➜ Processor program running – normal mode (SMD) yellow, flashing rapidly ➜ Module in test mode

7.1.2 esserbus®-PLus loop module (Part No. 804382 / 804382.10 / 804382.D0)

This module provides the "esserbus® PLus" loop mode, e.g. for direct connection of audible loop devices. Note that the esserbus® PLus operation requires special components and panel settings. Observe load factor see table chapter 7.1.3.

⚠️ Mixed operation of Standard and esserbus® PLus function is <u>not</u> possible!
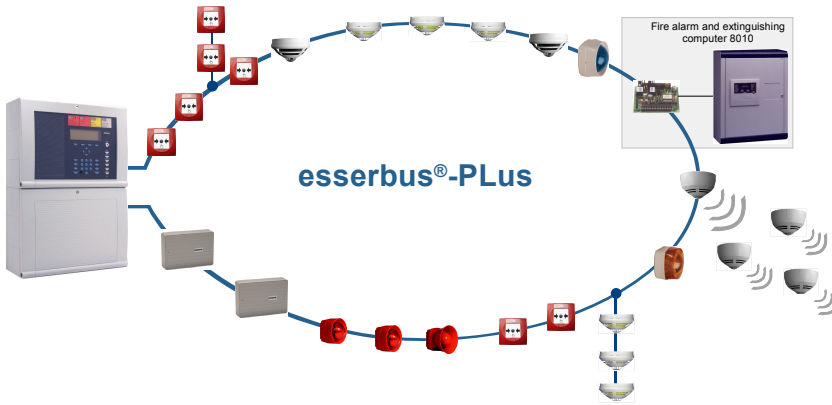
Fig. 59: esserbus®-PLus
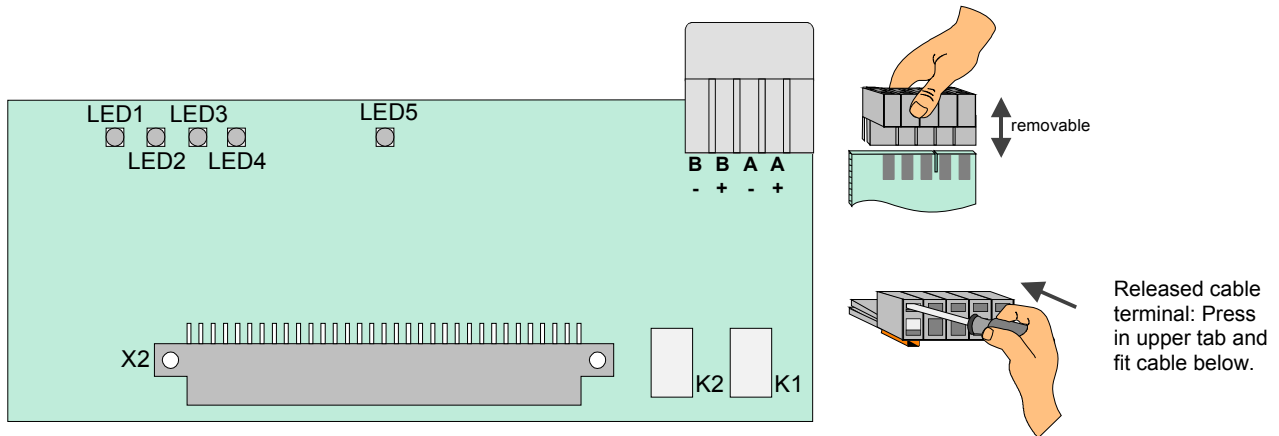
Fig. 60: Loop module (Part No. 804382 / 804382.10 / 804382.D0)

ℹ️
- Connect cable shielding of the loop only at one side.
- When using the module in door control systems, place the enclosed labels on or in the FACP housing (see chapter 14.1).

X 1/2	64-way plug connector to micro module slot of the Basic module, Field device module or Extension module	
K1, K 2	Bi-directional loop interrogation by loop isolators (K1 = A+, A- / K2 = B+, B-)	
LED 1	(SMD) red, flashing ➜	+42V power supply failure or communication to control panel processor interrupted
	(SMD) red, lit ➜	Module in CPU failure mode (control panel CPU failure)
LED 2	(SMD) yellow, flashing ➜	Processor program running – normal mode
	(SMD) yellow, flashing rapidly ➜	Module in test mode
LED 3	(SMD) red, lit ➜	esserbus® PLus Mode activated +42 V loop voltage
LED 4	(SMD) yellow, flashing ➜	Module reset
	(SMD) yellow, lit ➜	Module defect
LED 5	(SMD) red, flashing ➜	in normal mode in time with communication on the loop
	(SMD) red, lit ➜	Short circuit on loop

The esserbus® PLus cable is directly connected to the terminals on loop module (Part No. 804382 / 804382.10 / 804382.D0)

Example:

esserbus® PLus cable terminal ⇒ (Part No. 804382 / 804382.10 / 804382.D0)

The cable screen must be connected to the mantle terminal (inside panel housing).
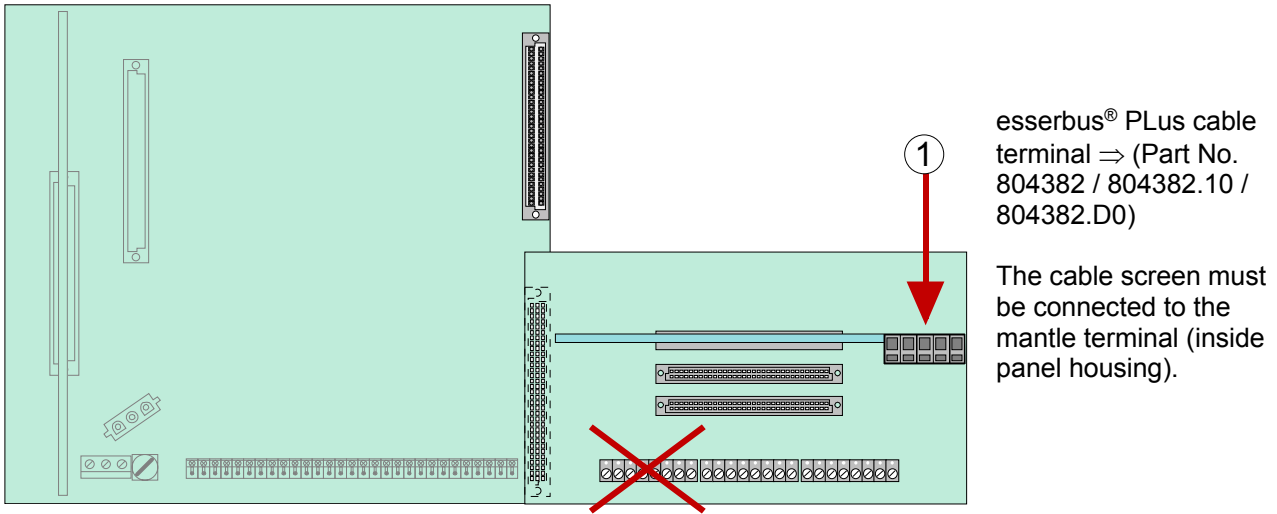
Fig. 61: esserbus® PLus cable terminal ⇒ (Part No.804382 / 804382.10 / 804382.D0)

Requirements components for the esserbus® PLus loop:

Part No	Description
802426	Power supply module with selectable 27.5 V / 42 V loop voltage 27,5 V ➜ for esserbus® or 42 V ➜ for esserbus® PLus
804382 / 804382.10 / 804382.D0	Loop module for esserbus® PLus connection. • max. 4 loop modules per Fire Alarm Control Panel (see table chapter 7.1.3) • It is only permitted to connect suitable devices for the higher loop voltage 42 V e.g. transponders or fire detectors with Part No. 80xxxx to the esserbus® PLus loop

⚠ **Damage to the system !**

esserbus® PLus must be installed with the appropriate loop devices. Mixed operation of standard esserbus® and esserbus® PLus with one control panel is not possible because the higher loop voltage of 42 V.
The loop devices compatible with esserbus® PLus are indicated by the Part No. 80xxxx.

7.1.3 Maximum line lengths based on the total load factor of a loop

FACP	max. loop lenght	Loop 1	Loop 2	Loop 3	Loop 4	Loop 5	Loop 6
IQ8Control M up to 4 loops	up to 700 m	91 to 96	91 to 96	91 to 96	91 to 96	X	X
	800 m	85 to 90	85 to 90	85 to 90	85 to 90	X	X
	900 m	79 to 84	79 to 84	79 to 84	79 to 84	X	X
	1000 m	73 to 78	73 to 78	73 to 78	73 to 78	X	X
	1100 m	67 to 72	67 to 72	67 to 72	67 to 72	X	X
	1300 m	61 to 66	61 to 66	61 to 66	61 to 66	X	X
	1500 m	55 to 60	55 to 60	55 to 60	55 to 60	X	X
	1600 m	49 to 54	49 to 54	49 to 54	49 to 54	X	X
	2000 m	1 to 48	1 to 48	1 to 48	1 to 48	X	X
	2100 up to 3500 m	0	0	0	0	X	X
IQ8Control M up to 6 loops	up to 700 m	46 to 48	46 to 48	46 to 48	46 to 48	46 to 48	46 to 48
	800 m	43 to 45	43 to 45	43 to 45	43 to 45	43 to 45	43 to 45
	900 m	40 to 42	40 to 42	40 to 42	40 to 42	40 to 42	40 to 42
	1000 m	37 to 39	37 to 39	37 to 39	37 to 39	37 to 39	37 to 39
	1100 m	34 to 36	34 to 36	34 to 36	34 to 36	34 to 36	34 to 36
	1300 m	31 to 33	31 to 33	31 to 33	31 to 33	31 to 33	31 to 33
	1500 m	28 to 30	28 to 30	28 to 30	28 to 30	28 to 30	28 to 30
	1600 m	25 to 27	25 to 27	25 to 27	25 to 27	25 to 27	25 to 27
	2000 m	1 to 24	1 to 24	1 to 24	1 to 24	1 to 24	1 to 24
	2100 up to 3500 m	0	0	0	0	0	0

7.1.4 Technical Data loop module

	Part No. 784382 / 784382.10 / 784382.D0 (esserbus®)	Part No. 804382 / 804382.10 / 804382.D0 (esserbus® PLus)
Internal voltage supply	Internal +12 V and +27,5 V	Internal +12 V and +42 V
Quiescent current (with 127 loop devices)	60 mA @ 12 V	60 mA @ 12 V
Emergency operation	yes	yes
Terminals	removable, for max. 1,5 mm²	
Recommended connecting cable	• Telephone cable I-Y (ST) Y n x 2 x 0.8mm with special designation or fire detection cable • Loop resistance 65 Ω @ 1000 m loop length (measured from terminal A+ to B+) • Total loop resistance max. 130 Ω (measured from terminal A+ to B+) • Up to 3500 m total loop length is possible for IQ8 fire detectors or alarm devices with consideration of the load factor	

> • The permitted loop length depends on the number and type of the loop devices and may differ from the max. loop length.
> • max. 2 loop modules Part No. 804382 / 804382.10 / 804382.D0 per IQ8Control C as well as max. 4 or 6 modules per IQ8Control M
> • Part No. **7**84382 / **7**84382.10 / **7**84382.D0 ➔ loop module (esserbus®) loop module to connect fire detectors and esserbus®-transponder. The required loop voltage 27.5 V must be selected via the jumper on the power supply module Part No. 802426 of the FACP
> • Part No. **80**4382 / **80**4382.10 / **80**4382.D0 ➔ loop module (esserbus®-PLus) loop module to connect Fire detectors and esserbus®-transponder and alarm devices. The required loop voltage 42 V must be selected via the jumper on the power supply module (Part No. 802426) of the FACP.
> • Do not exceed the max. admissible total load factor of 96 (per loop)

7.1.5 essernet® module

The essernet® module permits networking up to 31 essernet® devices, such as e.g. ESSER Fire Alarm Control Panel System and management systems. Additionally optional gateways are available to connect standard devices to the network.
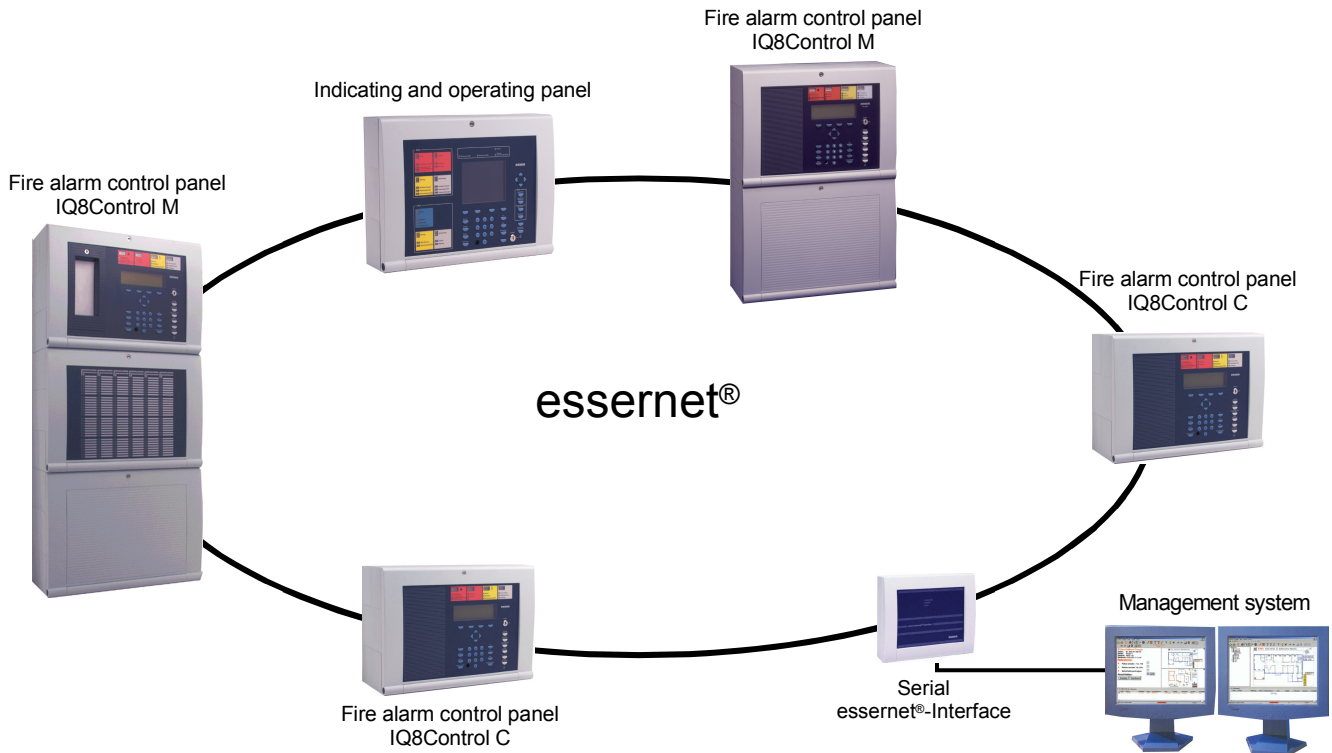
Fig. 62: Example - essernet® with different devices

Terminal card assignment
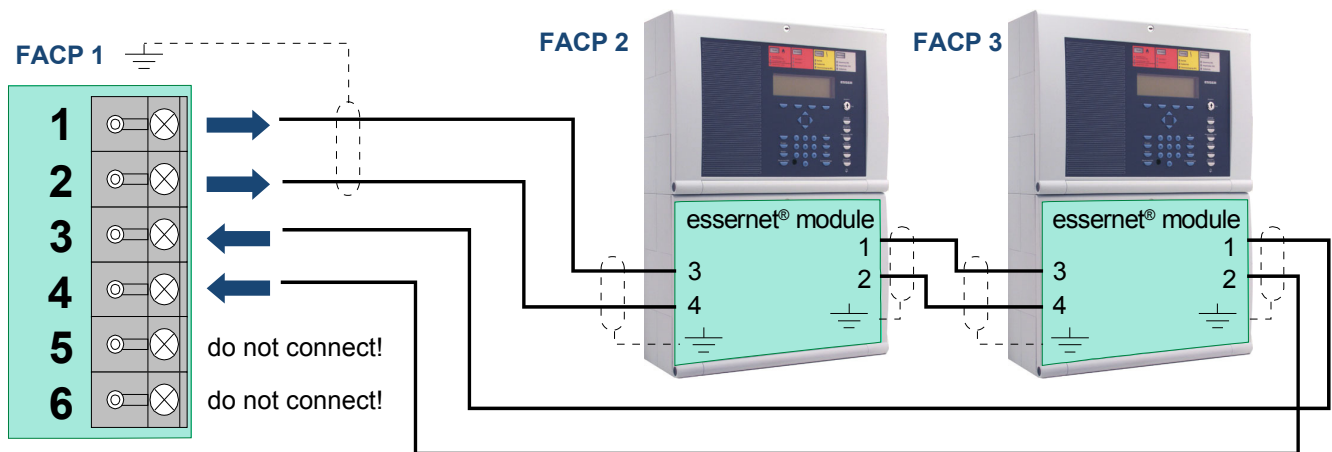
Fig. 63: Connection principle (copper cable, conventional) incl. cable shielding in essernet®

In a essernet® you may only use essernet® modules with the same transmission speed.

The EMI-protection / the extended EMI-protection of the LAN network must be implemented by external EMI protection devices.

7.1.6 essernet® micro module (Part No. 784840 / 784840.10 and 784841 / 784841.10)

The essernet® micro module must be placed on the micro module slot of the Basic module. There for it is required to set the corresponding jumpers on the Basic module to configure the terminals for the essernet® micro module.

- essernet® micro module 62,5 kBd (Part No. 784840)
- essernet® micro module 500 kBd (Part No. 784841)
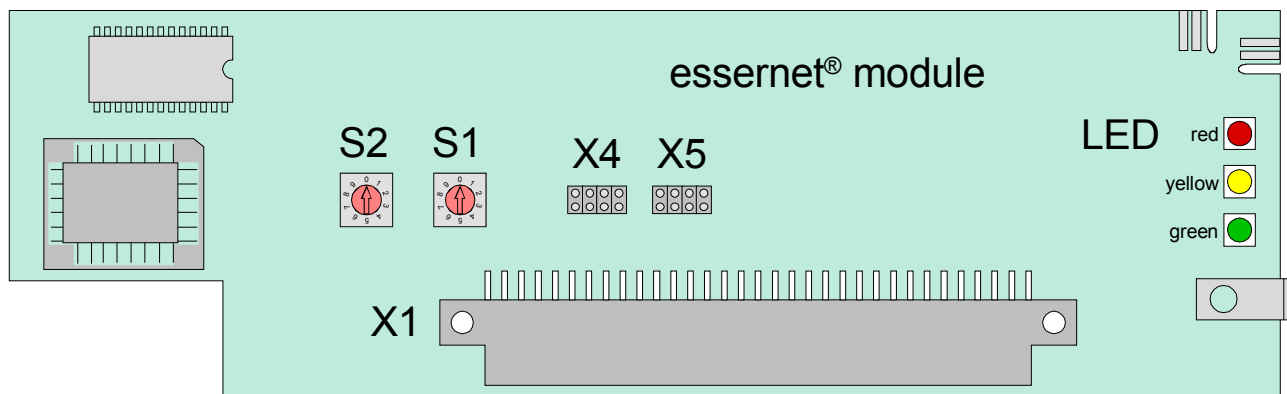
Fig. 64: essernet® micro module (Part No. 784840 / 784841)

or
- essernet® micro module 62,5 kBd (Part No. 784840.10)
- essernet® micro module 500 kBd (Part No. 784841.10)
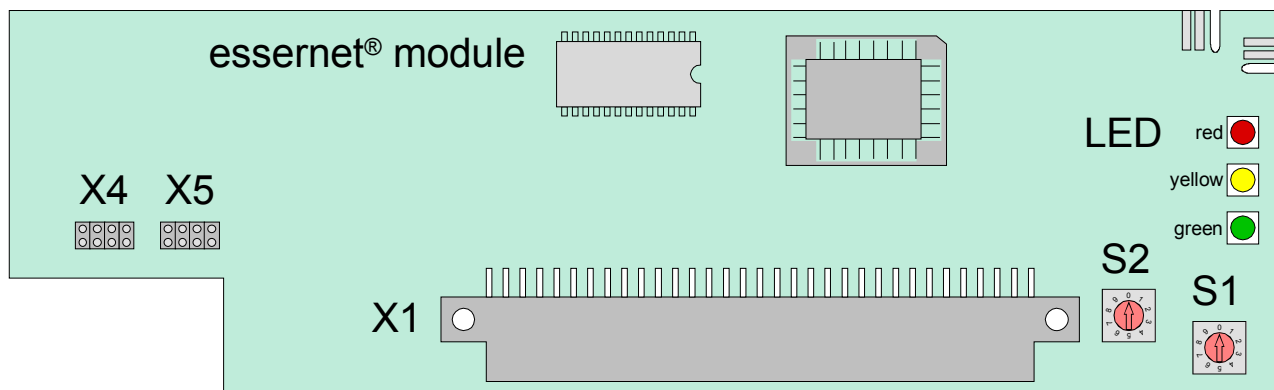
Fig. 65: essernet® micro module (Part No. 784840.10 / 784841.10)

System conformity according to EN 54-13 requires increased sensitivity in the monitoring of line connections. This has been appropriately taken into consideration in the essernet® modules (Part No. 784840.10 and 784841.10).

The software of the modules remains fully compatible with earlier versions.

If a new essernet® module is installed into an existing system or if an additional fire alarm control panel with an essernet® module (Part No. 784840.10 or 784841.10) is integrated into an existing network, there may be - depending on the configurations of these line connections - an increase in the number of fault messages.

Common reasons for such faults include corroded connection points and loose terminal connections that were still within the tolerance ranges of the earlier versions of the essernet® modules.

If you encounter such fault messages, the entire line network must be carefully inspected.

Compliance with EN 54-13 requires that the greatest of care be taken when setting up such networks, which have a significant impact on the manner of line installation and the connection types.

S1	Rotary address switch to select panel address factor x1
S2	Rotary address switch to select panel address factor x10
X1	64 pin connector for the micro module slot inside the FACP
X4 / X5	jumpers for configuration of the terminals IN/OUT (terminal 1+2 and 3+4)

X4 — copper cable connected
X4 — fibre optics converter
terminal card

X5 — fibre optic cable connected
X5 — fibre optics converter
terminal card
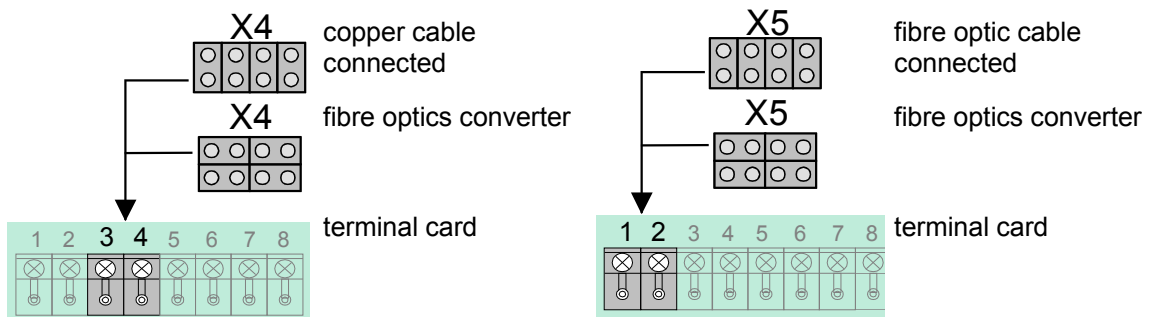
ℹ	If data is transferred via fibre optic, two fibre optic fibre converters are always required for a data path between the devices. The documentation 798636 and 798963.10 contains more information about fibre optic converters.
LED	Status and error indication
red	on - communication error between essernet® micro module and FACP
green	flashing - communication with other network devices
yellow	on - communication error (A/B mode) unidirectional communication
ℹ	• All other LED display combinations mean that there is a fault in the essernet® module or that measuring operation is active. • Connect cable shielding to the appropriate terminals ! • The data signalling rate and connection cable to be used is governed by the module type installed. In a network you may only use essernet® modules with the same data signalling rate.

7.1.7 Technical data essernet® micro module

	essernet® micro module 62.5 k (Part No. 784840 / 784840.10)	essernet® micro module 500 k (Part No. 784841 / 784841.10)
Operating voltage	: Internal via the power supply module, + 5 V DC	Internal via the power supply module, +5 V DC
Current consumption	approx. 150 mA @ 12 V DC	
Emergency operation	: yes	
Connector	: A single essernet® micro module may be connected per FACP on the appropriate micro module slot on the Basic module. Observe jumper X4 / X5!	
Network devices	: max. 16	max. 31
Transmission speed	: up to 62.5 kBd	up to 500 kBd
Required cable	: Telephone cable I-Y (ST) Y n x 2 x 0.8 mm, Cable length max. 1000 m. Other cable types such as paper-wrapped cables, control lines (NYM) or smaller cross-sections are not suitable.	IBM type 1 max. 1000 m between two network devices. IBM type 2 (Earth cable) max. 1000 m between two network devices. IBM type 6 (flexible) max. 200 m between two network devices
	The cable must be twisted and shielded. The signal wires are protected against interference through connection of the cable shielding.	
Transmission	: Token-Passing protocol similar to DIN 19245 - 1 (Profi BUS)	
Topology	: loop topology (wire-breakage und short circuit tolerance)	
Compatibility	: essernet® micro module 62.5 kBd (Part No. 784840)	
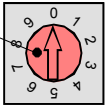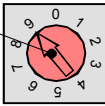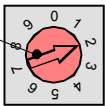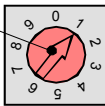
⚠ Do not operate hardware with index up to B2 with hardware from index B3 in a common panel.

Setting the essernet® address

The address of Network Micro Modules type 1 and 2 with hardware revision E and higher is set as a decimal number by means of two rotary switches. Use an appropriate screwdriver for setting switches S1 (x1) and S2 (x10). The actual address is represented by the total of both values.

Adressing example e.g. Panel, address 9 or 21

Micro module address	Schalterstellung		Address factor	Value $\Sigma = S1 \times 1 + S2 \times 10$
	S2	S1		
9	0	9	S1 = x 1	9 x 1 + 0 x 10 = 9
			S2 = x 10	
21	2	1	S1 = x 1	1 x 1 + 2 x 10 = 21
			S2 = x 10	

Jumper configuration for the essernet® micro module type

If an essernet® micro module is used in the micro module slot, the integrated EMC filter must be set with jumpers X27 to X30.

All jumpers in horizontal position
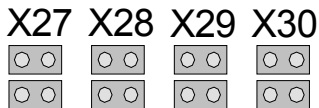
Required configuration for all micro modules apart from essernet® (factory setting).
EMC protection for this micro module connection terminal is activated.

All jumpers in vertical position
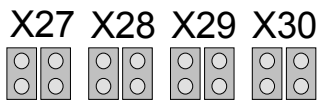
Only required for essernet® micro module.
The EMC protection is activated on the micro module for essernet® and therefore switched off on the basic module.

 EMC protection of the essernet® cabling has to be ensured by appropriate external devices.

7.1.8 Features and installation informations

- The outward and return lines of the essernet®connection must always be routed separately from one another other; i.e. they must not be installed in one multipair cable or in one cable duct. Joint installation may affect the function or, if the cable/cable duct is destroyed, can cause complete failure of the connection if the outward and return cables become disconnected.

- Attach the cable shielding for the essernet® connecting cables to the corresponding terminal block!

- The respective overvoltage protection should be used for both essernet® module types.

- Always avoid installing an essernet® loop together with power supply cables, motor control cables, phase control cables or other performance-related switching cables. Observe corresponding standards and guidelines.

essernet®-modul 62, 5 kBd:

- Use communication cable I-Y (St) Y n x 2 x 0,8 mm with appropriate labelling or designated fire protection cable - max. length 1000 m.

- For this transmission speed a suitable cable must be use, twisted-pair cable with plastic insulation.
  Other cables, e.g. paper covered cable, control leads (NYM) or smaller diameter are not suitable. For each A+B connector a separate pair of wires must be used. If a fourfold twisted-pair wire is used the second pair must not be connected.

- Two essernet®-repeater allow a distance between two devices of max. 3000 m.

essernet®-module 500 kBd:

- Use IBM cable Typ1 / 1A or similar, max. length 1000 m.

- Two essernet®-repeater allow a distance between two devices of max. 3000 m.

- Alternatively for distances of max 400m between two devices cable CAT 5 with shielding or similar may be used.

7.1.9 Possible error sources

- Interruptions or interchanged connections in the essernet® connection line.

- Damaging the line (for the essernet® module 500 kBd) due to insufficient bending radii.

- Incorrect setting of the essernet® address on the DIL switch of the essernet® module (display: SYS fault. essernet® cont: xx), yellow LED on the essernet®module is lit up.

- Loop is too long or attenuation too high. Typical loop resistances for loop lengths:
  IBM cable approx. 100 ohms/km or transmission cable I-Y (ST) Y n x 2 x 0.8 mm approx. 70 ohms/km.

- The FACP or the unrecognised device is in emergency mode or is switching on, e.g. after a reset.

- FACP or essernet® device is not receiving any power or the connecting line is disconnected at both ends.

Error messages

- The following states are reported only after the essernet® module has been restarted and are saved until the next restart.
  - Wrong address setting
  - Hardware error
  - Measuring mode

- The states >Communication fault<, >Short circuit/interruption< and >Normal operation< are not saved.

> **EMC fine protection**
> When using the essernet® micro module attention should be paid to the setting of the jumpers which is required for the essernet® adjustment.
>
> The overvoltage protection/the extended EMC protection must be produced using special protection modules for the LAN cable. See fire detection technology product group catalogue.

7.1.10 FOC transmission line in the essernet®

Alternatively, the essernet® can be set up with fibre optic cables. Optional fibre-optic converters are required for this.

This FOC converter (Part No. 784763 / 784764 / 784765) converts electrical signals into optical signals for reliable data transmission under difficult transmission conditions in which, for example, copper cables cannot be used. It is possible to use both FOC and conventional copper cable within one network simultaneously. The connection of fire alarm system control panels through FOC requires at least one FOC converter and one essernet® module per FACP. Depending on the type of fibre optics used, FOCs can be used to connect two fire alarm control panels spaced a max. of 3,000 metres apart. The FOC converter can optionally be supplied with the FOC connection type F-ST (Part No. 784763) or F-SMA (Part No. 784764).

The FOC converter must be fitted directly inside the control panel housing or the same control cabinet as the housing. When doing so, the FOC converter must be fitted directly to the DIN rail (Part No. FX808387) without using any additional fastening material.
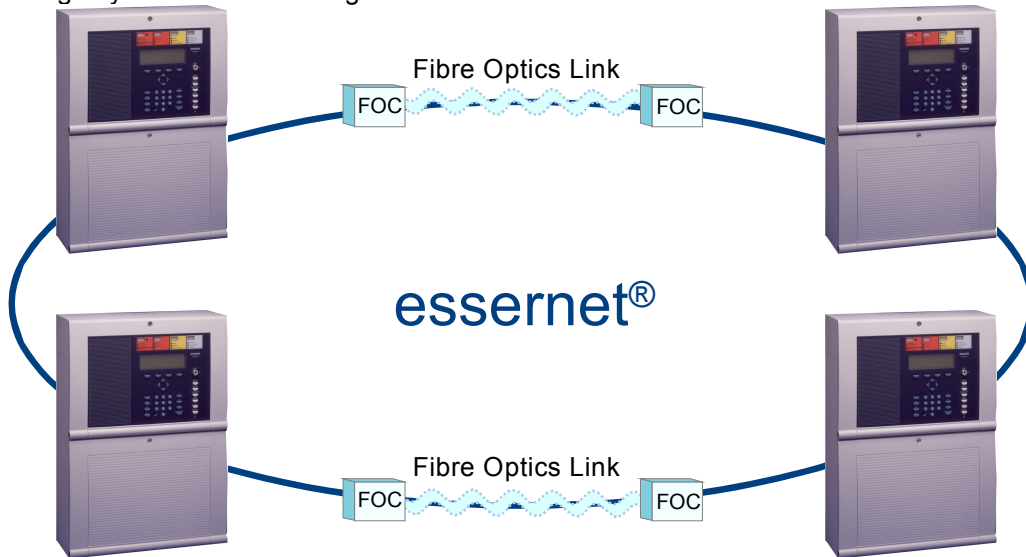
Fig. 66: Schematic wiring of an fibre optics cable

Please refer to the manual (Part No. 798636 / 798963.10) for detailed information about fibre optic wirings.

Requirements / restrictions

- Each loop segment needs to be equipped with two multimode optical fibres.

- The fibres must be connected directly and without interruption
  (e.g. they cannot be connected using multiplexers).

- Fibre type G50 / 125 μm, with a max. attenuation of 6 dB, corresponds to a max. length of approx. 2000 m and fibre type G62,5 / 125 μm, with a max. attenuation of 9 dB, corresponds to a max. length of approx. 3000 m.

- Maximum of 16 FOC lines per essernet® when using a transmission speed of 62,5 kBd.

- Maximum of 31 FOC lines per essernet® when using a transmission speed of 500 kBd.

7.1.11 Specification

Main voltage	:	24 V DC
Quiescent current	:	37 mA
Weight	:	100 g
Dimension (w x h x d)	:	27 x 93 x 113 mm

8 Relay module

8.1 3-relay module / 3-relay common trouble module

Micro module for activating external devices (not potential free), with monitoring capability. You may connect up to three external devices to this micro module.

Relay assignment is programmed with the service PC and Programming software tools 8000 software. For each relay, you may enter a specific additional text comprising 25 characters per line for output on the display and protocol printer.
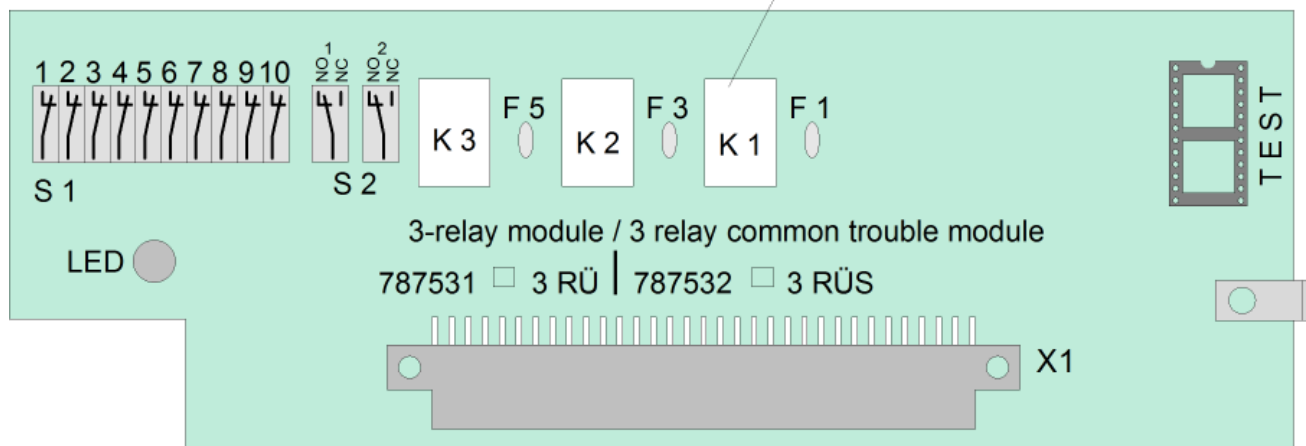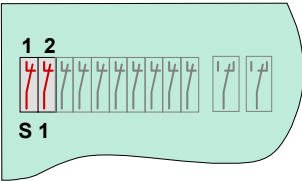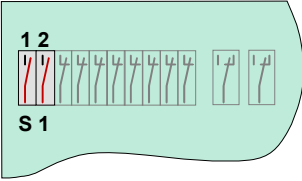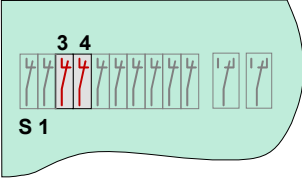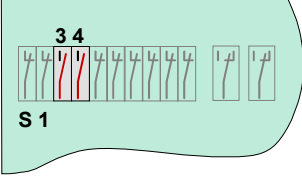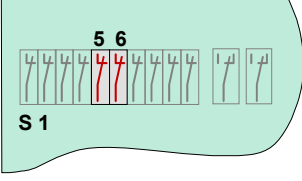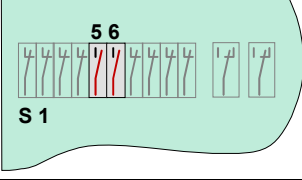
Fig. 67: 3-relay module / 3-relay common trouble module

X 1	64-way plug connector to micro module slot of the Basic module, Field device module or Extension module
K1, K2, K3	K 1 (for 3-relay common trouble module type used as common trouble relay) K 2 and K 3 freely programmable, max. contact rating max. 30 V DC /1 A
S1, S2	coding switch for selecting monitored / non- monitored setting, or for special application
TEST	Test socket for in-factory adjustments only!
LED	No indicator function (in-factory testing purposes)
F1, F3, F5	Electronic fuse (multifuse): to reset, de-energise for approx. 30 seconds at the relevant screw terminals on the terminal card

Adjustment of the relays

Relay	Status	Contacts switch S 1	Contact
K 1	10 kΩ monitored		closed
	not monitored		open
K 2	10 kΩ monitored		closed
	not monitored		open
K3	10 kΩ monitored		closed
	not monitored		open

No AC voltages may be applied to the relays built-into the Fire Alarm Control Panel. This applies also to those relays operated in the >non-monitored< mode.

The >monitored / non-monitored< mode for individual relays must be programmed in addition to the setting on the micro module using the service PC.

Wiring an external device without loop monitoring

Example with relay K2 (terminal 5 and 6), non-monitored mode

Fig. 68: Schematic wiring of an external device without loop monitoring

L = inductive load

D_1 = series diode BY251 (notice relays current max. 2 A)

D_2 = recovery diode e.g. 1N4007 o.ä.
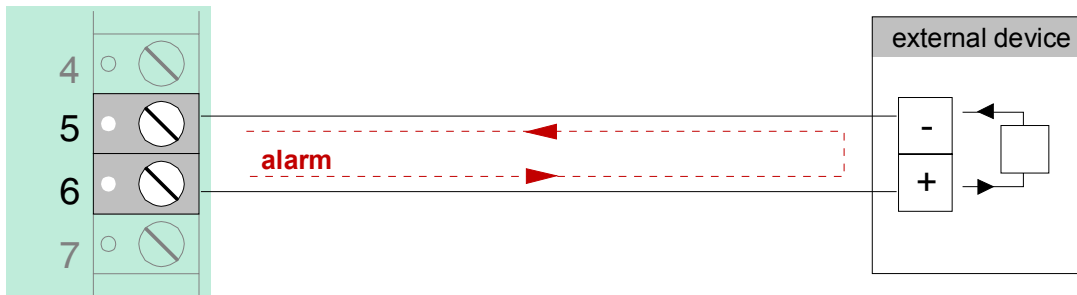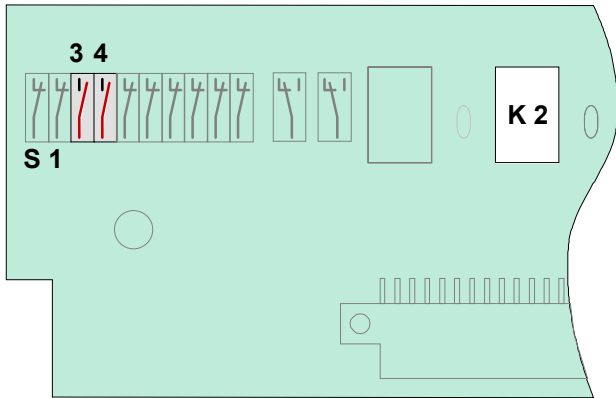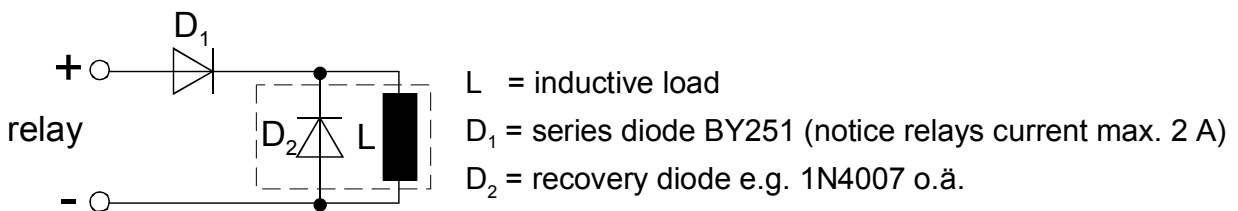
Fig. 69: Schematic wiring of inductive loads

Connecting an external device with loop monitoring

Monitored activation of external devices involves monitoring the loop for an end-of-line resistor of 10 kΩ. In the event of an incident, polarity changes between monitoring and activation voltage at the (relay) connection terminals. The relay switches over from monitoring the loop to activating the external device.

It is imperative to fit a protective diode (e.g. 1N4004 / 1A) in order to prevent the monitoring current, for example, from activating external devices while monitoring is in progress.

Example using relay K2 (terminal 5 and 6), monitored mode
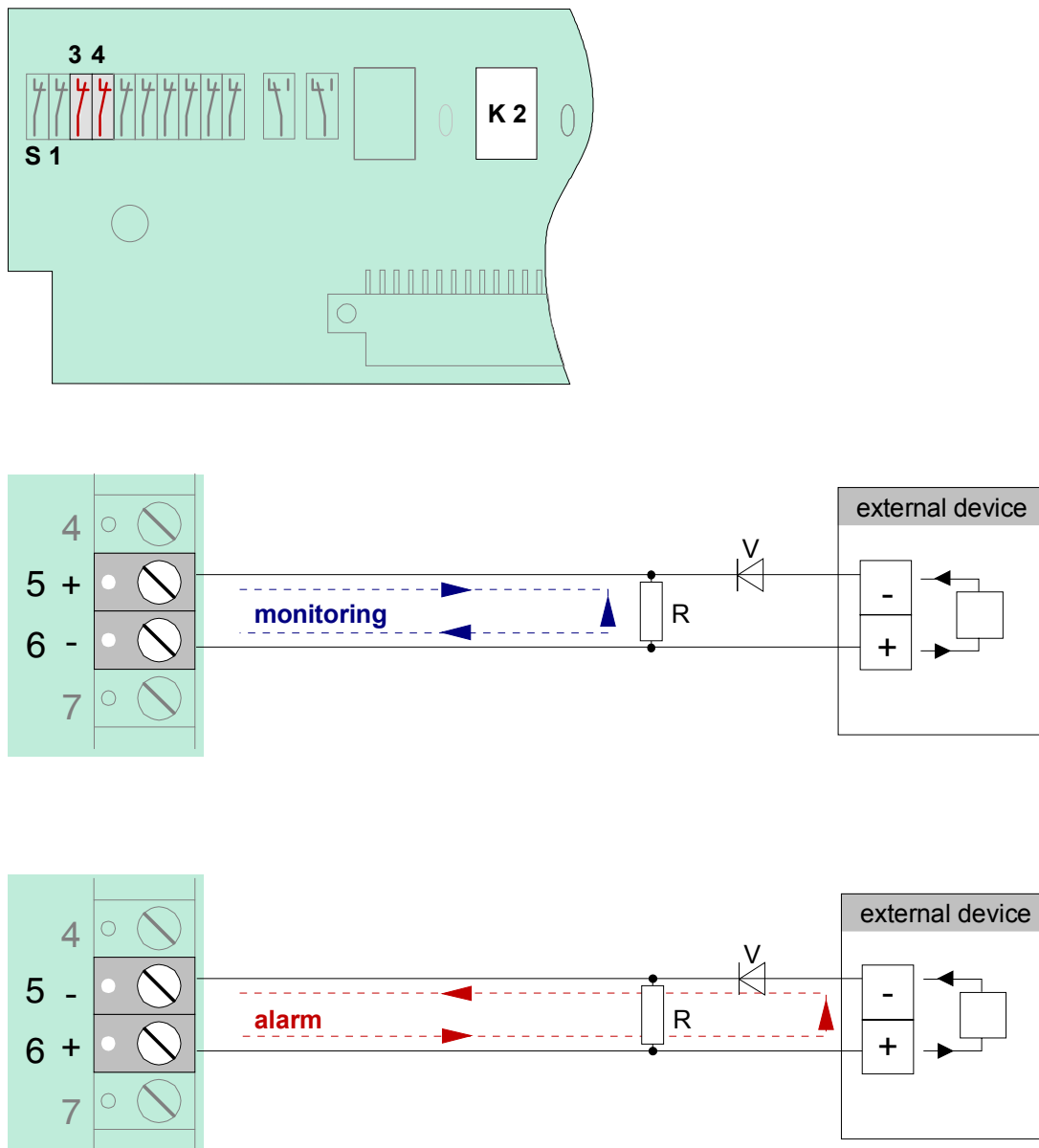
Fig. 70: Schematic wiring of an external device with loop monitoring

- R = 10 kΩ end-of-line resistor.
- V= protective diode (e.g. 1N4004/1A), required for an external device if no diode is available in the external device.
- Observe permitted torque (max. 0.4 Nm) of the terminals!

Application examples (A)
Three relays with a common external voltage (default setting).

This application involves feeding an external voltage (e.g. +12V) to terminals 3 and 4 on the terminal card, this voltage then being switched via the relay to the external device for activation in the event of an incident occurring.
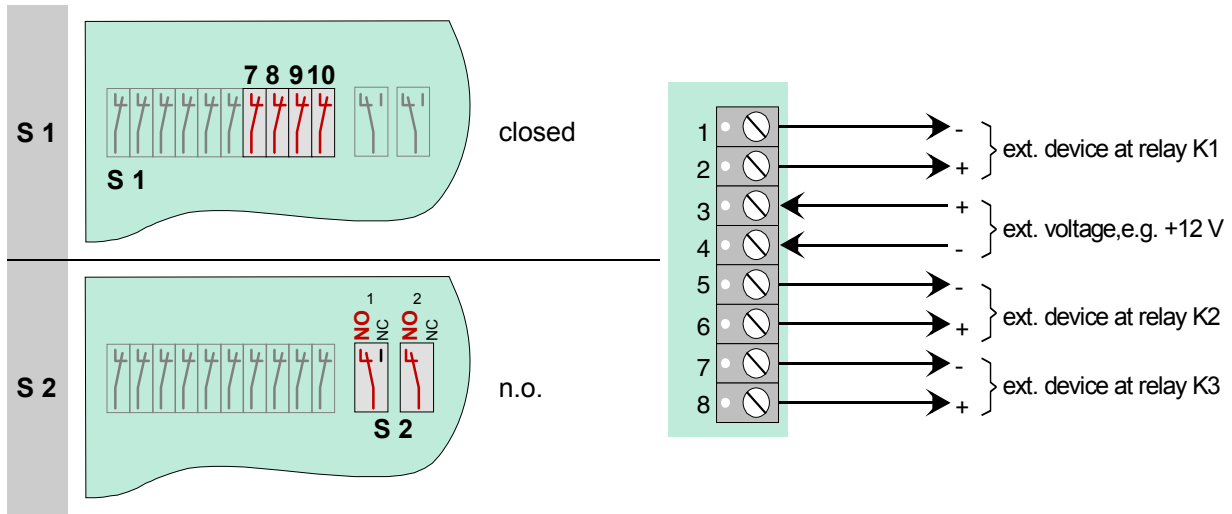
Fig. 71: Application examples (A)

Application examples (B)

Two relays with two differing external voltages

This application permits the switching of two different external voltages (e.g., +12V and +24V). This involves relays K1 and K2 on the micro modules!

Relay K3 is not used!
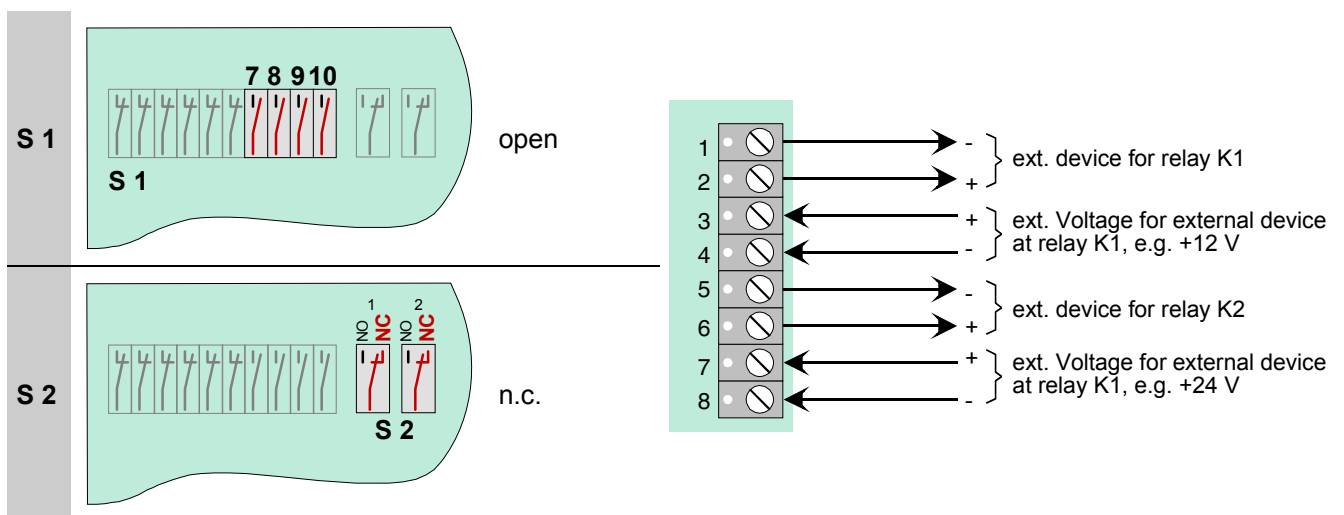
Fig. 72: Application examples (B)

8.2   4- Relay module

This micro module accommodates four freely programmable, non-monitorable, potential-free relays for activating external devices and system components.

Relay assignment is programmed with the service PC and programming software tools 8000. For each relay, you may enter a specific additional text comprising 25 characters per line for output on the display and protocol printer.
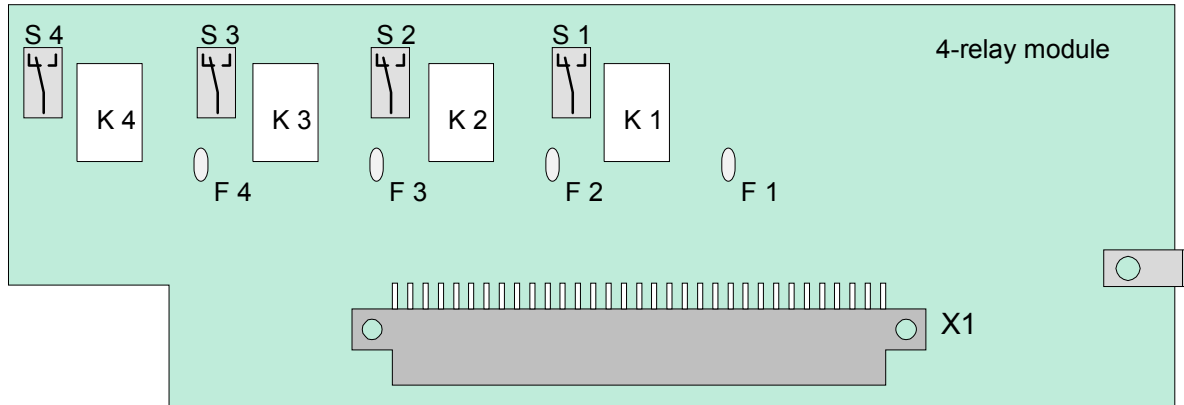
Example of switch position

NO contact   NC contact
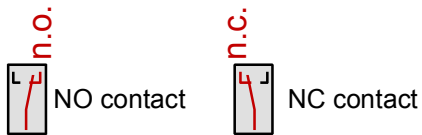
Fig. 73: 4- Relay module

X 1	64-way plug connector to micro module slot of the Basic module, Field device module or Extension module
K1 to K4	freely programmable, potential-free relay contacts (max. contact rating max. 30 V DC/ 1 A).
S1 to S4	Switch for setting the NC or NO contact function for each relay.
F1 to F4	Electronic fuse (multifuse): to reset, de-energise for approx. 30 seconds at the relevant screw terminals on the terminal card.

⚠️ No AC voltages may be applied to the relays built-into the Fire Alarm Control Panel. This applies also to those relays operated in the >non-monitored< mode.

Terminal card assignment

1	↞	} ext. device at relay K1
2	↠	
3	↞	} ext. device at relay K2
4	↠	
5	↞	} ext. device at relay K3
6	↠	
7	↞	} ext. device at relay K4
8	↠	
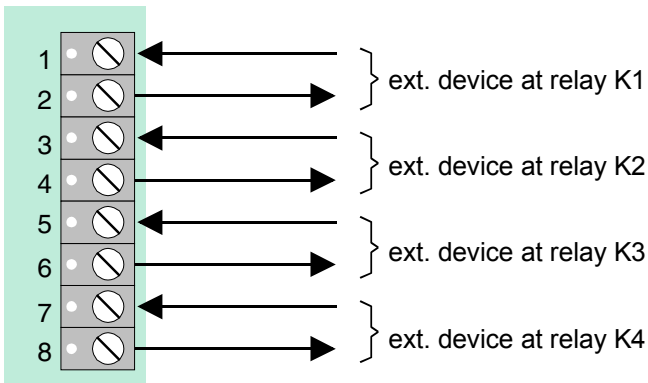
Fig. 74: Terminal card assignment

⚠ Observe permitted torque (max. 0.4 Nm) of the terminals!

Schematic circuit diagram (example using relay K1)
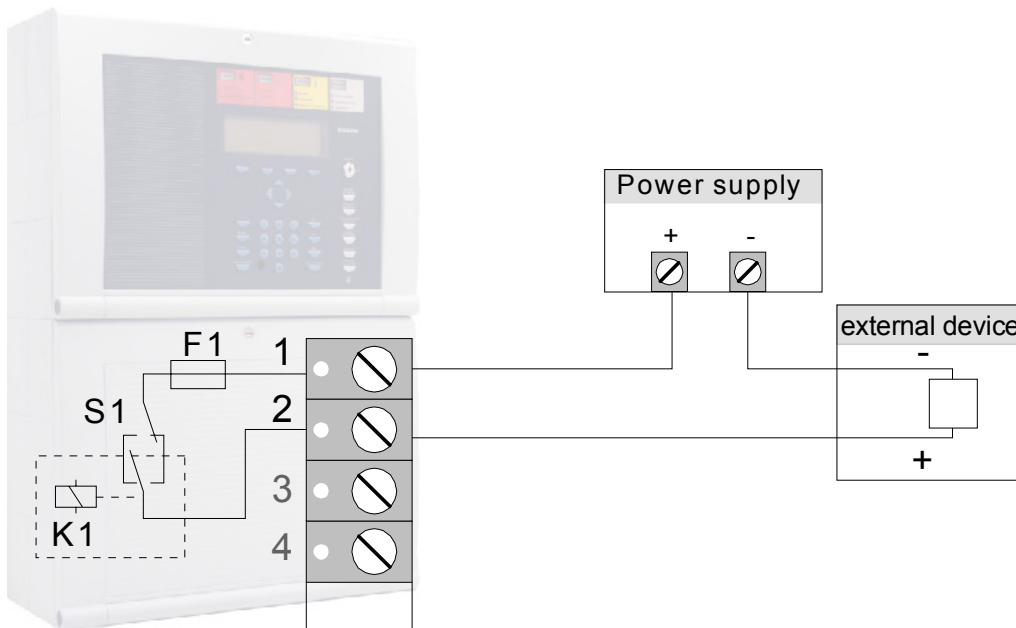
Fig. 75: Schematic wiring external devices

L = inductive load

D_1 = series diode BY251 (notice relays current max. 2 A)

D_2 = recovery diode e.g. 1N4007 o.ä.
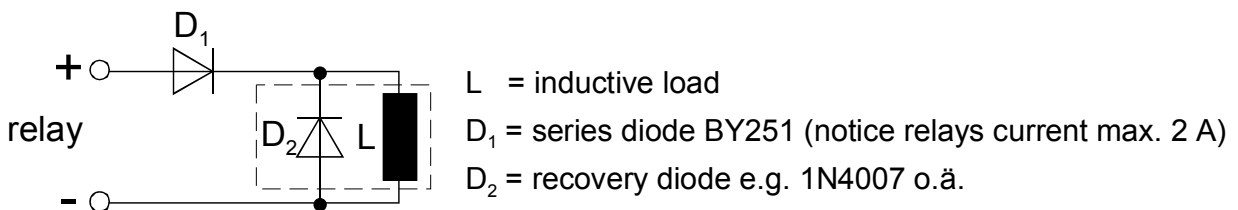
Fig. 76: Schematic wiring of inductive loads

8.2.1 Technical Data Relay module

4-relay module (Part No. 787530)

Operating voltage	: Internal via the power supply module, + 5 V DC / +12 V DC
Quiescent current	: approx. 10 mA @ 12 V DC
Fuse (F1, F2, F3, F4)	: Multifuse 1 A (for Relay K1 to K4)
Relay (K1, K2, K3, K4)	: 4 programmable contacts - normally Open or normally close (not monitored)
Contact rating	: max. 30 V DC / 1 A per output

		3-relay module (Part No. 787531)	3-relay common fault module (Part No. 787532)
Voltage	:	Internal via the power supply module, + 5 V DC / +12 V DC	Internal via the power supply module, + 5 V DC / +12 V DC
Quiescent current consumption	:	5 mA@ 12 V DC	15 mA@ 12 V DC
Relay	:	3 monitored, normally open or normally close contacts	2 monitored, normally open or normally close contacts plus a common fault relay (energized in normal operation)
Contact rating	:	max. 30 V DC / 1 A per output	max. 30 V DC / 1 A per output
Fuse	:	Multifuse 1 A (per relay)	Multifuse 1 A (per relay)

Compatibility	: The Relay modules may be operated on a free selectable micro module slot of the FACP IQ8Control.
	For System 8000 fire alarm control panels the relay module may be used as a replacement devices.

Damage to the system!

- No AC voltages may be applied to the relays built-into the FACP IQ8Control. This applies also to those relays operated in the >non-monitored< mode!
- Observe Schematic wiring of inductive loads!

8.3 Serial interface module

8.3.1 RS 232 / TTY module

This module provides either a serial RS 232 or TTY interface (20mA) for exchanging data with external devices connected. Assignment of the serial interface type is programmed with the service PC and software tools 8000. You may enter a specific additional text comprising 25 characters per line for output on the display and protocol printer.
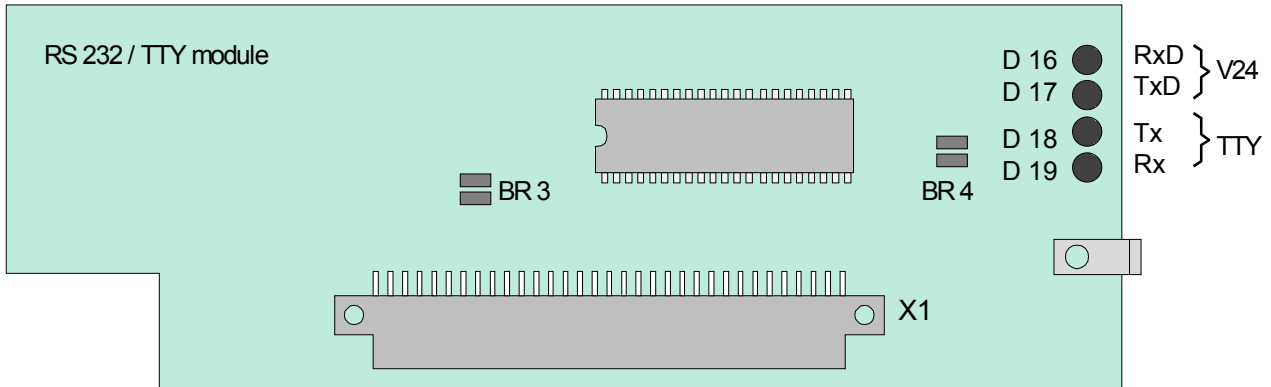
Fig. 77: RS 232 / TTY module

X 1	64-way plug connector to micro module slot of the Basic module, Field device module or Extension module
BR 3	open – do not alter factory settings
BR 4	Solder jumper for activating control LED D16 to D19. Factory setting (jumper = open) should only be altered for testing the interface as a result of the higher level of current required by the LED
D 16, D 17	Control LED for data communication with RS 232 interface (observe BR 4)
D 18, D 19	Control LED for date communication with TTY interface (observe BR 4)
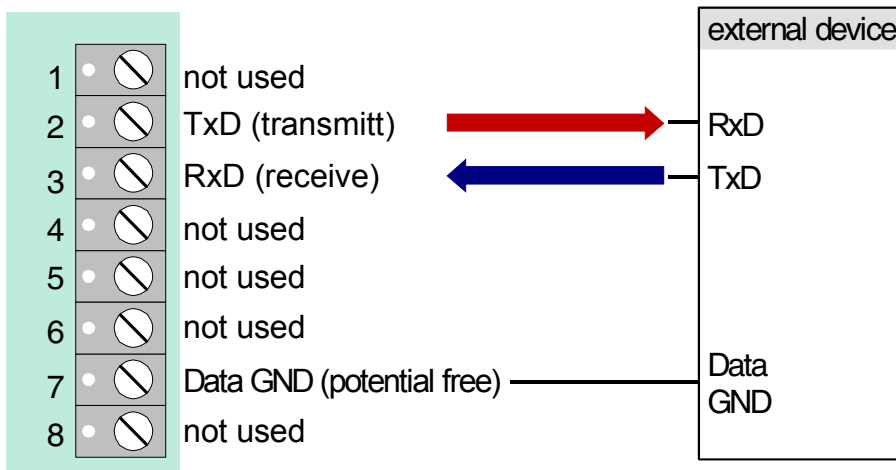
Fig. 78: Assignment of terminal card RS232 module

Max. cable length for RS 232 is 15 m, recommended cable: I-Y (St) Y x 2 x 0.8 mm

Observe permitted torque (max. 0.4 Nm) of the terminals!
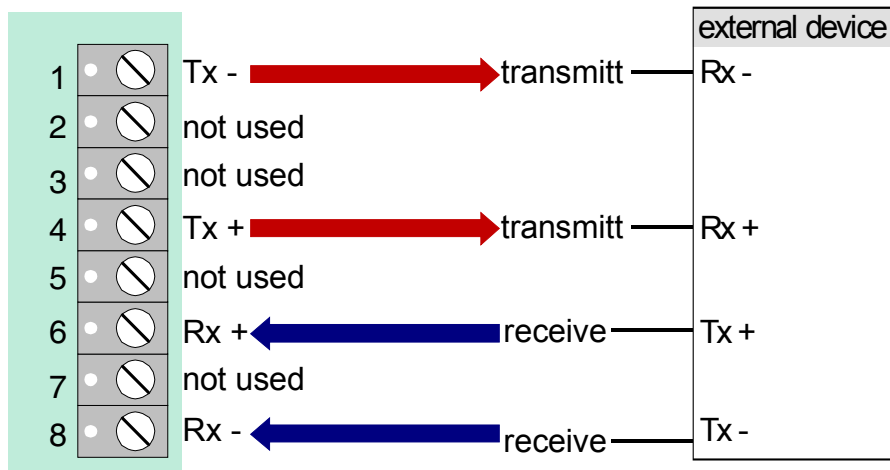
Fig. 79: Assignment for terminal card TTY module

If solder jumper BR3 is closed on the module, TTY interface may not be used.

Max. cable length for TTY is 1000 m, recommended cable: I-Y (St) Y x 2 x 0.8 mm

Observe permitted torque (max. 0.4 Nm) of the terminals!

8.3.2 Technical data interface modules

RS 232/TTY module (Part No. 784842)

Operating voltage	: Internal via the power supply module, + 5 V DC / +12 V DC
Quiescent current	: TTY-mode approx. 55 mA @ 12 V DC
	RS232-mode approx. 35 mA @ 12 V DC
Interface type	: TTY (20mA) or RS232 selectable in panels date configuration
Transmission speed	: max. 19200 bit/s
Interface cable length	: TTY ➔ max. 1000 m
	RS 232 ➔ max. 15 m

9 Master box activation module

Micro module for activating a master box (MB) and alerting the relevant emergency services, such as the fire department. With the Fire Alarm Control Panel, a connection for a master box module is integrated in the Field device module. If a Field device module is not fitted, an MFAB control module can be used for the connection of a master box. Up to 10 MFAB may be operated within a common FACP.
The required operation must be programmed with the service PC and Programming software tools 8000.
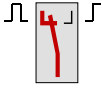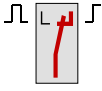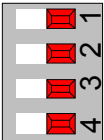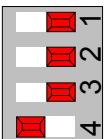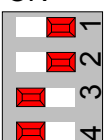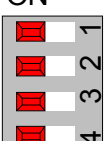
Fig. 80: Master box activation module

X1	64-way plug connector to micro module slot of the Basic module, Field device module or Extension module
K1	Relay for switching the MFAB power supply, e.g., +12 V or +24 V (DC) max. contact rating max. 30 V DC / 1 A
F1	Electronic fuse (multifuse): to reset, de-energise for approx. 30 seconds at the relevant screw terminals on the terminal card
S1	Setting the master box activation mode: Switch set to left ➡ Activation intermittent Switch set to right ➡ Activation continuous
S2	DIL switch to select the activation time of the MFAB (see table next Page)
BR1, BR3	Hardware adjustment of MFAB activation (see following pages).

DIL switch S2

The time for the duration of the activation of the MFAB can be selected using DIL switch S2.

Selecting the activation time for the MFAB		
ON (switches 1,2,3,4 right)	activation for approx. 6 seconds	
ON (switches 1,2,3 right, 4 left)	activation for approx. 2,5 seconds	This selection only becomes active when "intermittent activation" is selected on switch S1!
ON (switches 1,2 right, 3,4 left)	activation for approx. 1,5 seconds	
ON (switches 1,2,3,4 left)	activation for approx. 0,25 seconds	

CPU failure mode function

Even when the Fire Alarm Control Panel is in the CPU failure mode the master box will still be activated in the event of a fire alarm. It is not possible to reset the master box while the FACP is in the CPU failure mode!

Switching off the master box

The activation of the MFAB can be inhibited, for example for service or maintenance work, on the control panel keyboard of the Fire Alarm Control Panel.

An automatic switch-off of activation can be programmed in the customer data. When the cover contact is opened, the master box will not be activated in the case of an event.

⚠ A switched off master box will not transmit an alarm message to assisting organisations (e.g. fire department) in the case of an event.

Wiring of the terminal card
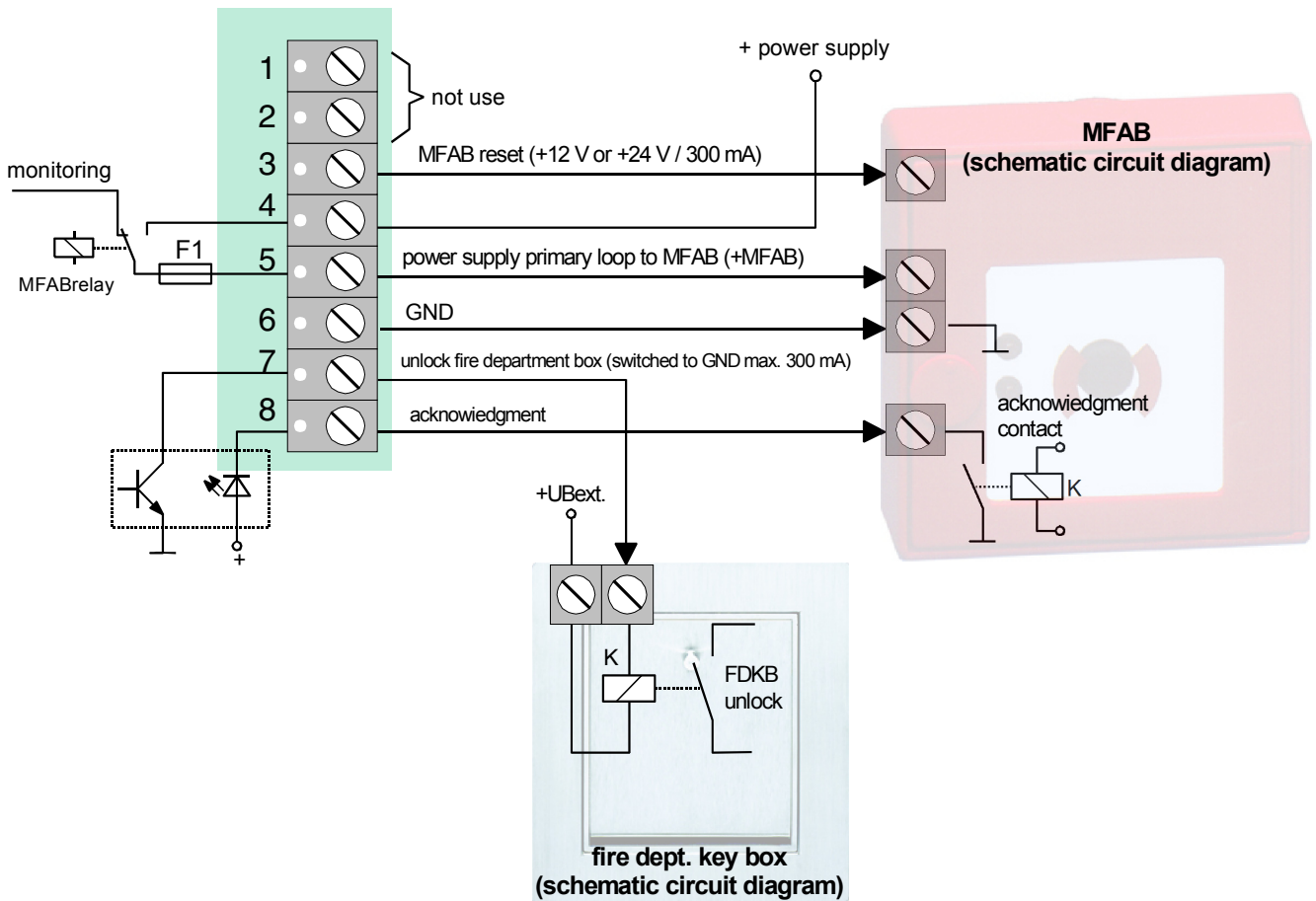
Fig. 81: Wiring of the terminal card

The signal to enable the fire service key box (FDKB) is activated when the MFAB acknowledge signal (terminal 8 = acknowledge) from the Fire Alarm Control Panel is detected.

Optical displays of the master box

An activated master box can be identified by a steadily lit red LED Main Detector (MFAB) on the operating panel of the FACP. Intervening personnel such as the fire department have been notified.

If it has been impossible to activate a MFAB due to an event, possibly because the MFAB was switched off, this is indicated on the control panel by the steadily lit red LED Notify fire department.

Inhibiting MFAB activation

The master box or master box relay will not be activated if,

- the cover contact is open. Factory setting of solder jumper on module: BR2 = open ; BR3 = closed. The customer data of the FACP must be programmed under menu point Functional designation of the MFAB control module to suppress the activation of the master box when the cover contact is open.

- the operating panel keyboard has been enabled for operation (key-operated switch).

- the master box is disconnected.

- there is trouble with the master box.

Activation of the MFAB in dependency on the cover contact (BR2 and BR3)

The hardware adjustment of the activation of the MFAB is determined by the two solder bridges BR2 and BR3 on the MB control module.

Factory setting Germany Ⓓ configuration

BR2 = open BR3 = closed	The activation of the MFAB occurs in dependency on the customer data programming. If, for BR3 = closed example, activation has been suppressed in the menu point Functional designation of the MFAB control module when the cover contact is open, the master box will not be activated in the case of an event when the cover contact is open.

Configuration for the Netherlands ⓃⓁ

BR2 = closed BR3 = open	The activation of the MFAB <u>occurs</u> independently of the customer data programming. If, for example, activation has been suppressed in the menu point Functional designation of the MFAB control module when the cover contact is open, the master box will still be activated in the case of an event by hardware when the cover contact is open.

9.1.1 Technical Data Master box activation module (Part No. 784385)

Operating voltage	:	Internal via the power supply module, + 5 V DC / +12 V DC
Quiescent current consumption	:	approx. 10 mA @ 12 V DC (without monitoring) approx. 15 mA @ 12 V DC (monitored)
Emergency operation	:	yes
Fuses	:	Multifuse 1 A
Relay K1	:	1 monitored change-over contact (e.g. MFAB activation) contact rating max. 30 V DC / 1 A Monitored resistance 50 to 1000 Ω
Activation time (relay K1)		Continuously or pulsed (0,25 s / 1,5 s / 2,5 s or 6 s)
Output "MFAB reset"	:	max. 300 mA (+12 V DC or +24 V DC), short-circuit proof
Output "FDKB unlock"	:	max. 300 mA short-circuit proof
Compatibility	:	The Interface modules may be operated on a free selectable micro module slot of the FACP IQ8Control. For FACP 800x the MB interface module may be used as a replacement devices.

9.2   Overview – micro module terminals
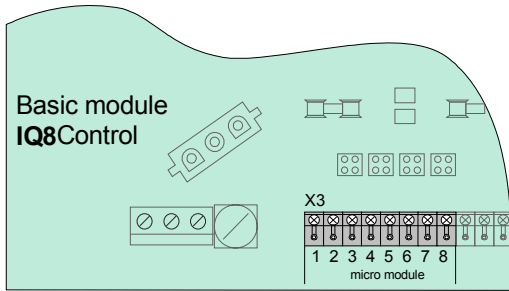
Fig. 82: Overview – micro module terminals

esserbus® module **(Part No. 784382 / 784382.10 / 784382.D0)** for max. 127 loop devices, e.g. Fire detectors series IQ8Quad, 9200 and esserbus®-transponders, dividable in 127 individual zones Quiescent current: approx. 25 mA. Total current for loop devices max. 40 mA	
esserbus® PLus module **(Part No. 804382 / 804382.10 / 804382.D0)** or max. 127 loop devices, e.g. Fire detectors IQ8Quad, series 9200, esserbus®-transponders and loop compatible alarm devices, dividable in 127 individual zones Quiescent current: approx. 25 mA. Total current for loop devices max. 180 mA	
Master box activation module (Part No. 784385) To connect and control the MFAB operation. Quiescent current: approx. 15 mA.	
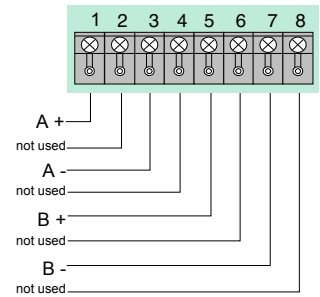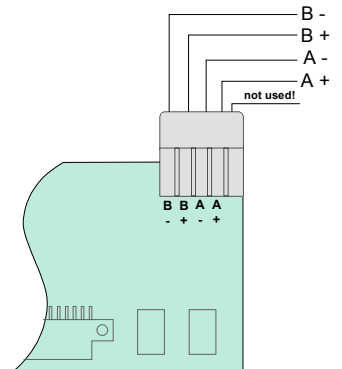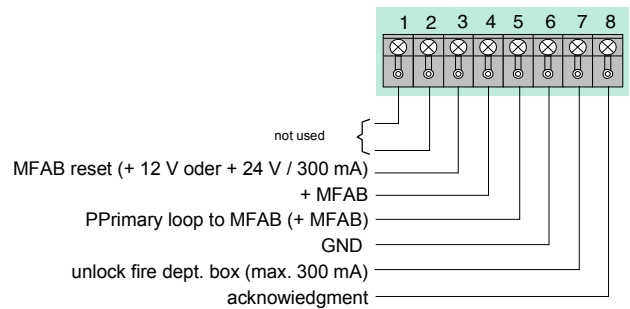
⚠️ Observe permitted torque (max. 0.4 Nm) of the terminals!

RS232 / TTY module (Part No. 784842)
Serial interface, alternatively RS232- or TTY
(20 mA) to connect external devices e.g. management
systems, Printers, Remote indicator panels etc.

Quiescent current: approx. 35 mA @i RS232
approx. 55 mA @i TTY

1	2	3	4	5	6	7	8

not used
TxD (transmitt)
RxD (receive)
not used
not used
not used
Data GND (potential free)
not used

1	2	3	4	5	6	7	8

Tx - (transmitt)
not used
not used
Tx + (transmitt)
not used
Rx + (receive)
not used
Rx - (receive)
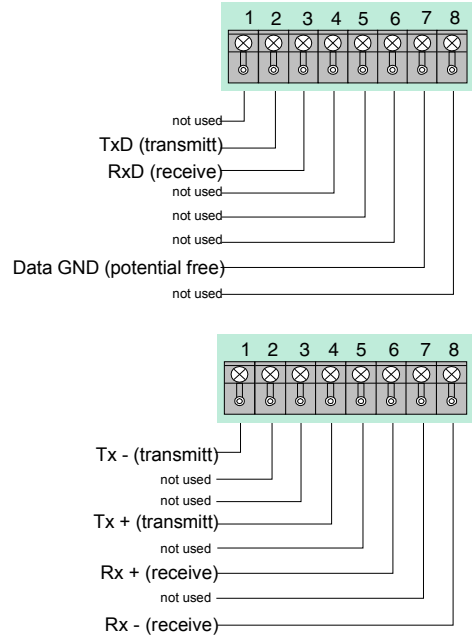
3 Relay module (Part No. 787531)
Three bistable relay (monitoring possible) with
programmable operation mode normally open or normally
close.

Contact rating: max. 30 V DC / 1 A
Quiescent current: approx. 5 mA

1	2	3	4	5	6	7	8

ext. device to relay K 1 { - / +
ext. voltage e. g. +12 V { + / -
ext. device to relay K 2 { - / +
ext. device to relay K 2 { - / +
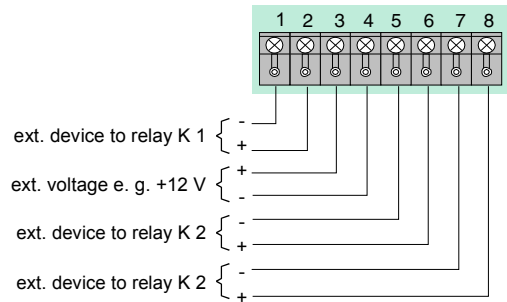
3 Relay common fault module (Part No. 787532)
Three bistable relay (monitoring possible) with
programmable operation mode normally open or normally
close and an additional common fault relay (energized in
normal mode).
Contact rating: max. 30 V DC / 1 A
Quiescent current: approx. 15 mA

1	2	3	4	5	6	7	8

ext. device to relay K 1 { - / +
ext. voltage for ext. device to Relay K 1 e. g. +12 V { + / -
ext. device to relay K 2 { - / +
ext. voltage for ext. device to Relay K 2 e. g. +24 V { + / -

⚠ Observe permitted torque (max. 0.4 Nm) of the terminals!

94
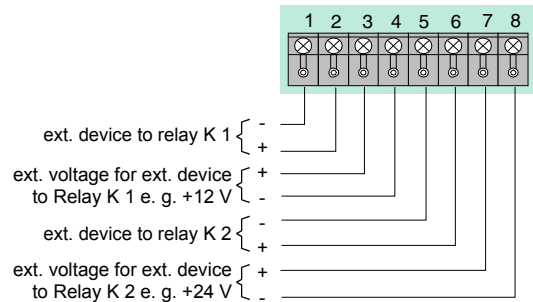
4 Relay module (Part No. 787536)
Four dry relay contacts (not monitored) with programmable
operation mode normally open or normally close.

Contact rating: max. 30 V DC / 1 A
Quiescent current: approx. 10 mA.
Total current per module max. 1 A

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

ext. device to relay K 1
ext. device to relay K 2
ext. device to relay K 3
ext. device to relay K 4
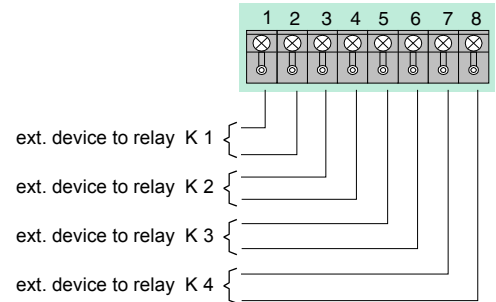
essernet® module 62.5 kBd (Part No. 784840.10)
network module for max. 16 network devices;
telephone cable IY (ST) Y x 2 x 0.8mm
Cable length between two devices max. 1000 m
Quiescent current: approx. 170 mA.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

L 1+
L 1-
L 2+
L 2-
not used
not used
not used
not used
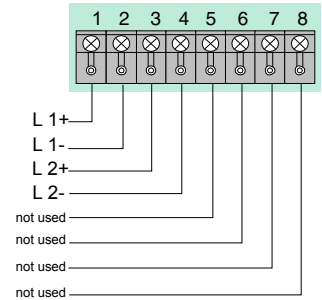
essernet® module 500 kBd (Part No. 784841.10)
network module for max. 31 network devices; cable IBM type 1 or
similar cables;
Cable length between two devices max. 1000 m
Quiescent current: approx. 150 mA

⚠ Observe permitted torque (max. 0.4 Nm) of the terminals!

10   Installer level – Commissioning / Maintenance

The Commissioning / Maintenance as well as Operations and Fire Alarm Control Panel functions which should only be performed by specialised installers or authorised persons are integrated under the menu options >Installer< in the FACP IQ8Control C/M. The service level is protected from unauthorised access by a numeric authorisation code. This authorisation code is dependent on the >country function< programmed in the customer data. Pressing the Installer function key moved from the service level to the installer level.

Before entry to the installer level, the authorisation code must be entered. (Exception: The requirement of the authorisation code has been deleted by the programming of the Customer data). The authorisation for operations in the Installer level remains active until the keyboard cover (key switch) is closed or no keyboard operation is carried out in the installer level for more than ten minutes. During this period, access is possible to the various display levels without further authorisation.

- The menu options >Installer< is only displayed in the service level !
- Indicated Display messages may differ due to object related programming.

A complete system check must be carried out after commissioning and for each modification of the customer data programming!

Authorisation code (by factory default)

The authorisation code programmed at works level through the Country function can be changed individually in the Customer data programming.

Code:	123	Country functions for (Germany, Great Britain, Switzerland and others)
	20290	Country function for The Netherlands (NL)
	---	Country function for Austria (no works programmed authorisation code)

Accsess Installer level

Code: * * * *

| Escape | | Delete | Select |

Fig. 83: Entry of the authorisation code

- Press the function key >Service< (The display changes to the service level)

- Press the function key >Installer<

- Enter the authorisation code (e.g. -123- for the Country function Germany on the keyboard)

- Press function key >Select<

- The Function menu of the installer level appears

Correcting an input error

An incorrect entry can be corrected with the >Delete< function key. Following the fourth incorrect entry, the keyboard is blocked for approx. 60 seconds.

Installer code unknown

If the installer code is unknown or has been forgotten, it can be easily queried with the service PC. For this purpose, the Customer data is obtained from the control panel by the tools 8000 software. The max. 8-digit authorisation code is then displayed under menu options >Customer data - installer code<.

Storage of the Customer data which has only been queried to obtain the installer code is not necessary.

The function menu of the installer level appears with four menu points:

The function menu of the installer level with its four menu points appears after the successful entry of the code:

```
Installer
1 Primary loop functions
2 Detector simulation
3 Control simulation
4 Printer function
┌──────────┐┌──────────┐┌──────────┐┌──────────┐
│  Escape  ││          ││Event mem.││  Select  │
└──────────┘└──────────┘└──────────┘└──────────┘
```
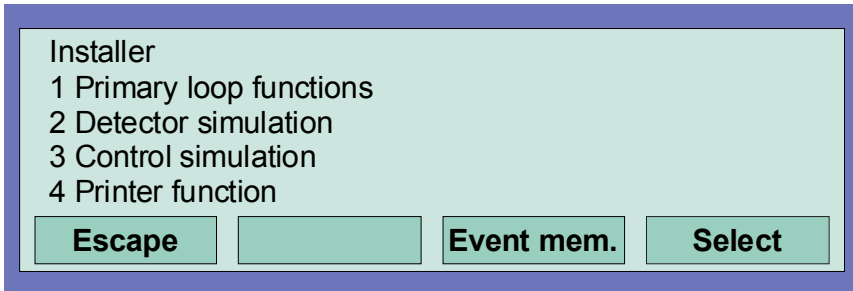
Fig. 84: Function menu

Pressing the *Escape* function key exits the installer level to the status display.

1. Primary loop function

- Switching on/resetting a primary loop
- Switching off a primary loop
- Test operation of an loop
- Detector replacement in an loop

2. Detector simulation

- Alarm simulation of a fire detector
- Pre-alarm simulation of a fire detector
- Trouble simulation of a fire detector
- End test (simulation)

3. Control simulation

- Activate simulation of a control (relay/open collector output)
- Trouble simulation of a control (relay/open collector output)
- End test (simulation)

4. Printer functions

- Switching off the internal or external protocol printer
- Switching on the internal or external protocol printer
- Print out the event memory / repeat printout
- Display event memory

10.1 Primary loop function

Primary loop function

Under this menu point, the internal primary loops of this Fire Alarm Control Panel or other FACP in an essernet® can be switched on or off and checked by a manual test function. Additionally, it is possible to replace single detectors in operative loops e.g. during maintenance work.

Primary loops are:

- all ring modules included in this FACP
  (including the loop connected to this module with all bus devices)
- all four-zone-modules included in this FACP
  (including all detector zones and detectors connected to this module)
- certain modules, such as relays or the interface on the basis/peripheral module

Connector and corresponding Primary loop number

Individual assemblies of the FACP can be switched on/off with the internal primary loop number through the control panel keyboard or programmed with programming software. This internal primary loop number is composed of the control panel number, the slot and the assembly number (see Chapter 3.4).


```
Primary loop / transfer route        1 Switch on / reset
Primary loop : 121                   2 Switch off
                                     3 Test
                                     4 Replace detector

  Escape                                       Function
```
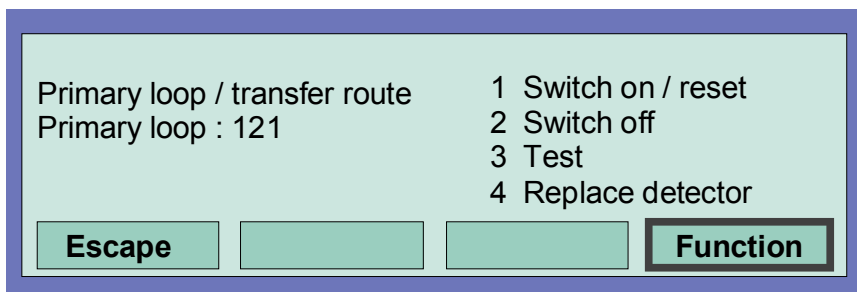
Fig. 85: Switching on / resetting a primary loop

- N Enter the number of the primary loop to be switched on and press the *Select* function key

- Enter the number of the desired function (1 = Switching on/reset) or select the menu options >Switching on/Reset< with the cursor keys and press the >Function key<

The primary loop is switched on and indicated on the display with a message.

Switching off a primary loop

- Enter the number of the primary loop to be switched off and press the Select function key

- Enter the number of the desired function (2 = Switching off) or select the menu options >Switching off< with the cursor keys and press the >Function< key

The primary loop is switched off and indicated on the display with a message. In the switched off state of a primary loop, the yellow LED >Collective switch-off< lights in addition to the display message. The displays and controls programmed in the Customer data of the Fire Alarm Control Panel for the function Switch-off are activated.

⚠️ When a primary loop is switched off, all detector zones and fire detectors connected to this module are also switched off.
Switched off fire detectors will not signal an alarm in the case of an event !

10.2 Testing (the loop)

```
Primary loop / transfer route        1  Switch on / reset
Primary loop : 121                   2  Switch off
                                     3  Test
                                     4  Replace detector

   Escape                                          Function
```
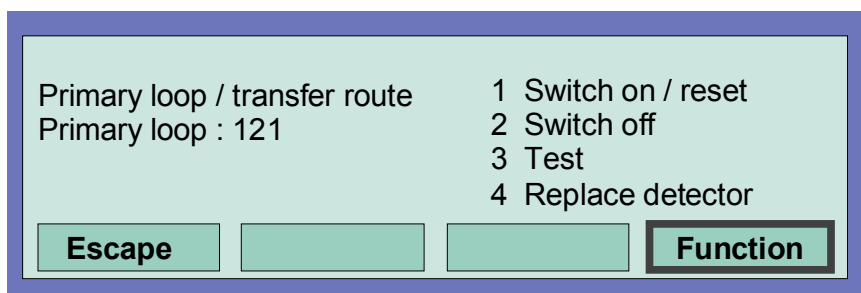
Fig. 86: Testing the loop

- Enter the number of the loop to be tested and press the *Select* function key.

- Enter the number of the desired function (3 = Testing) or select the menu options >Test operation< with the cursor keys and press the >Function< key.

⚠️ An loop in test operation will not signal an alarm in the case of an event!

The Function >Testing< is not carried out when ...

- the loop is switched off.

- the loop module is defective.

Testing an loop

The test operation must be carried out individually for each loop or detector zone. The simultaneous testing of several loops/detector zones is impossible.
By this menu point, the selected loop (including all detectors and esserbus® transponders) or single detector zones in the loop are tested for the following functions:

- Malfunctions of one or more detectors / esserbus® transponders.

- Malfunction of the switch-on control (SOC) by automatic detectors.

- Conformance of the addresses with the Customer data programming
  (if necessary, the detector data is automatically updated).

- Conformance of the loop wiring with the Customer data programming.

- Conformance of detector types and external wiring with the Customer data programming.

10.3 Detector replacement

Replacement of fire and diagnostic detectors (4-zone module)

Diagnostic fire detectors can be replaced without adjustment of the detector address on the base circuit board or overwriting data with the service PC. The menu options >Detector replacement< is inoperable for these detectors.

Replacement of intelligent detectors Series 9200 (loop)

Any number of detectors series 9200 / IQ8Quad or esserbus® transponders in an loop can be replaced. The replacement of detectors can be carried out in many cases without the service PC. (See table)

At the control panel

| Using the table on next page, find out whether the replacement can be carried out without the service PC. | →no→ | connect service-PC and carry out automatic wiring ring loop. |

↓ yes

Enter the installer code, select primary loop function, enter the primary loop number and select function 2 "swich off"

At the location of the detector

Exchange all detectors which are to be replaced in the loop. Screw the new detectors tightly into the detector bases, do not damage connecting cables.

At the control panel

Enter the installation code, select primary loop function, enter the primary loop number and select function 4 "replace detector".
On the primary loop all zones and the Primary loop are indicated on the display with "TEST"

Wait until the display "TEST" for the primary loop go out.

Have malfunctions occurred? —yes→ Which trouble code appears in the display ? see section 11 (detector malfunctions).

↓ no

Is this malfuntion due to the replacement of detectors? —no→ Check the execution of the replacement and reactivate Replace detector function.

↓ yes

Replacement of detectors is completed.

Switch the primary loop, detector zone or detector. Replacement of detectors is completed.

Fig. 87: Flow diagram of detector replacement

Type/extent of the detector replacement	without Service-PC *	displayed trouble code
The type and external switching of the exchanged detector are in conformance. For example, if a defective OHI-detector without a detector base output is replaced with a new OHI-detector without a detector base output.	yes	---
The detector type changes , the external switching remains the same. For example, an optical smoke detector is replaced with an OHI- detector and the existing external wiring is not changed.	yes	St : 081-087/ 095
During the replacement of detectors, the external switching is removed; the detector type remains unchanged. For example, an OHI-detector with a relay output is replaced with an OHI-detector without a relay output. The change in the external switching from relay to LED outputs (or the converse) is not recognised.	no	St : 088
During the replacement of detectors, the external switching is added, the detector type remains unchanged. For example, an OHI-detector without a relay output is replaced with an OHI-detector with a relay output. The change in the external switching from relay to LED outputs (or the converse) is not recognised.	yes	St : 089
An isolating circuit is removed, the detector type remains unchanged. For example, an OHI-detector with an isolating circuit (zone isolator) is replaced with an OHI-detector without an isolating circuit.	no	St : 088
An isolating circuit is inserted, the detector type remains unchanged.	yes	St : 090
The wiring of the loop is changed. For example, during the replacement of detectors, a new detector is inserted in an additional spur loop.	no	St : 066
Replacement of <u>identical</u> esserbus® transponders. A defective esserbus® transponder Type 12 relay is replaced with an identical esserbus® transponder. The programming of the 12 relay outputs is not changed.	yes	---
Replacement of <u>dissimilar</u> esserbus® transponders. An esserbus® transponder is replaced by another type or the designation / programming of the outputs is changed.	no	St : 080
Replacement of an esserbus® transponder with an automatic detector and the converse.	no	St : 080
Replacement of a manual call point with an esserbus® transponder and the converse.	no	St : 080

* Operation without Service-PC available in the installer level of the Fire Alarm Control Panel IQ8Control C/M.

10.4 Simulation of detector states

Under this menu point, the state of addressable detectors of the series 9200 and IQ8Quad (no esserbus® transponder) can be simulated for test purposes. In all non-addressable detectors (Series 9000 / ES Detect), the detector zone state is simulated. With the simulation of a detector state for test purposes, all programmed displays and controls corresponding to this detector and state in the Customer data of the Fire Alarm Control Panel are activated.

Self-control of the detectors series 9200 / 9200 / IQ8Quad

An intelligent fire detector can be operated in connection with a detector base output (relay or open collector). If a control has not been programmed in the Customer data of the Fire Alarm Control Panel for this detector, the integrated detector base output is activated during the simulation of the "Alarm" state.

Detector simulation		
Zone : ▪	Alarm	
Detector :	Pre-alarm	
	Trouble	
	End test	
Status		**Repeat** ↑ * **Select**

*

By pressing the >Repeat< key, the displayed detector number is incremented by the value "+1", without the need of entering the number of the new (next higher) zone/detector number on the keyboard.
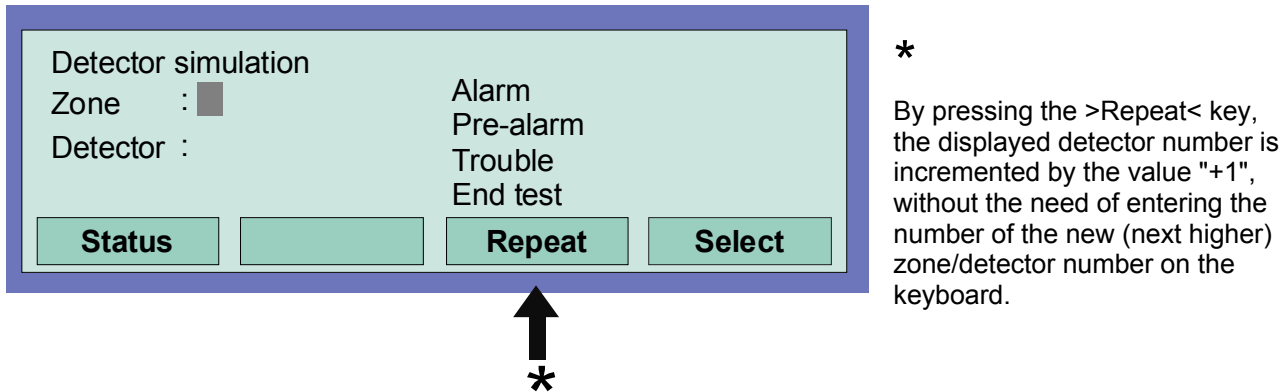
Fig. 88: Entering the zone and detector number

Detector simulation		
Zone : 12	1 Alarm	
Detector : 20	2 Pre-alarm	
	3 Trouble	
	4 End test	
Status		**Function**
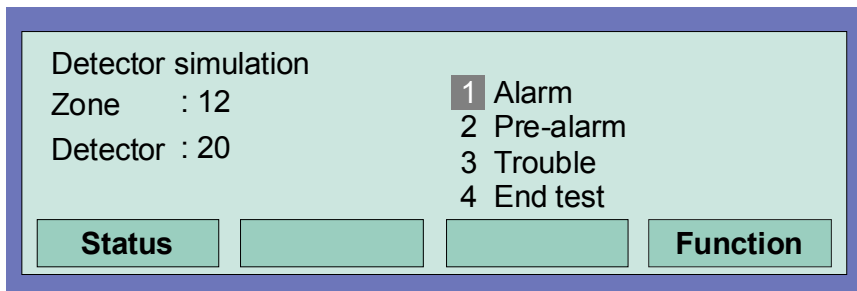
Fig. 89: Selection of the detector status for simulation

- Enter the zone and detector number of the fire detector or technical alarm module.
- Press the >Select< function key.
- Enter the number for the desired function (1 = Alarm, 2 = Pre-alarm, 3 =Trouble, 4 = End test) or select with the cursor keys and press the function key >function< to acknowledge the input.

To end this simulation

Each individual detector (or zone) whose operating state has been simulated must be terminated with the >End test< function!

ℹ️ This function pertains exclusively to the detectors of this (local) control panel. The simulation of detector states in the essernet® network is impossible. Simulation of individual detectors or zones is not supported via communications transponder (Part No. 808615) of the 8010 extinguishing control system.

Dependant on the customer data programming, the master box and any other external alarm devices are activated during the state simulation of a fire detector.

10.5 Simulation of control states

Under this menu point, the state of any control, such as relays or open collectors, can be simulated for test purposes. The simulation of control states in an essernet® is impossible. The function pertains exclusively to controls which are allocated to this Fire Alarm Control Panel and are programmed in the customer data with a control zone number, such as:

- Relay or open collectors of the micro modules of these FACP

- Detector base outputs of fire detectors Series 9200 / IQ8Quad

- Controls of esserbus® transponders in the loop

With the simulation of a control state, all programmed displays and controls for this control and state are activated or deactivated. (Observe customer data programming).

Control simulation	
Control : ▮	Activation
	Trouble
	End test
Status		**Repeat**	**Select**

*
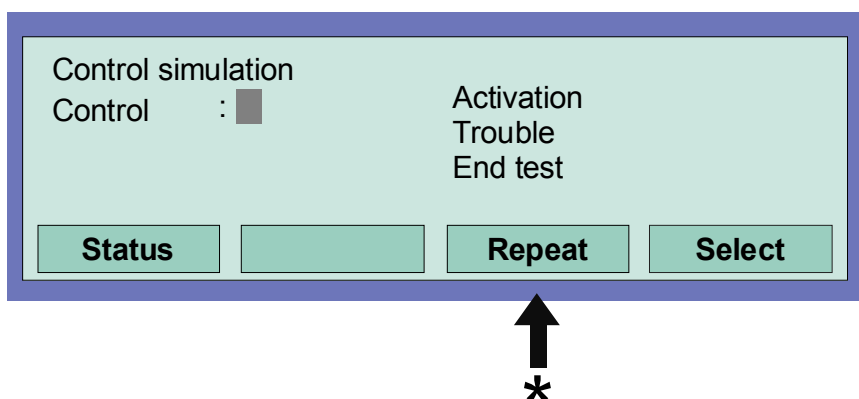
By pressing the >Repeat< key, the displayed control number is incremented by the value "+1" without the need of entering the new (next higher) control number on the keyboard.

Fig. 90: Entering the control number

Control simulation	
Control : 15	1 Activation
	2 Trouble
	3 End test
Status			**Function**
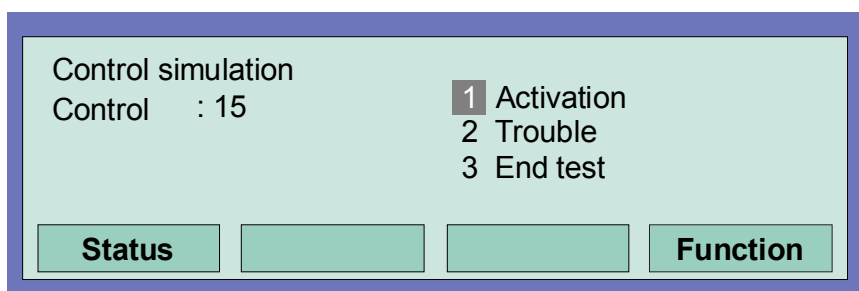
Fig. 91: Selecting a function

- Enter the control number of the corresponding open collector or relay

- Press the Select function key

- Enter the number for the desired function (1 = Activate, 2 = Trouble, 3 = End test) or select with the cursor keys and press the function key >function< to acknowledge the input

To end this simulation, each individual control whose operating state has been simulated must be terminated with the >End test< function!

> ℹ️ For the master box controls (Control numbers 1 to 10), a simulation is impossible! Simulation of individual detectors or zones is not supported via communications transponder (Part No. 808615) of the 8010 extinguishing control system.

10.6 Query of additional and info texts of other control panels (remote text)

With this function, the programmed additional and info text for controls, detector zones or detectors of any Fire Alarm Control Panel in the essernet® can be queried and shown on the display.
This remote text query can also be carried out by the operator. If an event is imminent for which additional or info text has been programmed, this is automatically displayed as remote text.

```
┌─────────────────────────────────────────────────────┐
│                                                       │
│  1. ACTIVATED   Control : 015        10:10   22.07    │
│                                                       │
│  1. ACTIVATED   Control : 001        10:16   22.07    │
│                                                       │
│  ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐ │
│  │ Operator │ │          │ │Func. menu│ │Rem. Text │ │
│  └──────────┘ └──────────┘ └──────────┘ └──────────┘ │
└─────────────────────────────────────────────────────┘
```
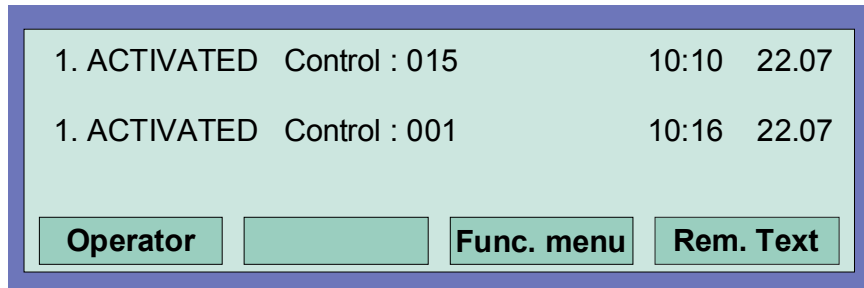
Fig. 92: Status display with the " Rem. Text" menu point

```
┌─────────────────────────────────────────────────────┐
│                                                       │
│  Text request from                                    │
│  control panel XX                                     │
│                                                       │
│  ┌────────┐ ┌────────┐ ┌────────┐ ┌────────┐          │
│  │        │ │        │ │        │ │        │          │
│  └────────┘ └────────┘ └────────┘ └────────┘          │
└─────────────────────────────────────────────────────┘
```
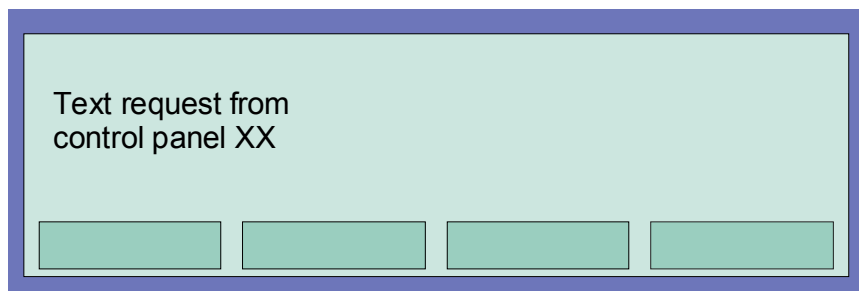
Fig. 93: Access to programmed additional and info text

If additional or info text has not been programmed for this detector or control in the other FACP, an empty line is displayed by the >Rem.text< function.

10.7 Printer function

Under this menu point, the protocol printer connected to the Fire Alarm Control Panel (internal printer and/or external serial printer) can be switched on or off. In addition, the contents of the internal event memory of the control panel can be printed out on a local protocol printer.

The activation of other control panel printers in the essernet® is impossible.

Internal protocol printer

The internal protocol printer is selected with a (max.) four-digit number. This number consists of the control panel number (e.g. 1 to 31 in an essernet®) and the number "01".

Example: panel number 01 ➔ Nr. of the internal protocol printer 01**10**
　　　　　　panel number 05 ➔ Nr. of the internal protocol printer 05**10**

External protocol printer

The external protocol printer is selected by the primary loop number of the RS 232/TTY module to which the printer is connected. The primary loop number consists of the number of the FACP, the micro module board and the slot in which the RS232 / TTY-Module is fitted.

Switching off the protocol printer

By the first activation of the menu options >Printer function<, the printer number is automatically allocated to the internal protocol printer if installed. This allocation can be removed by pressing the >Zone< key.
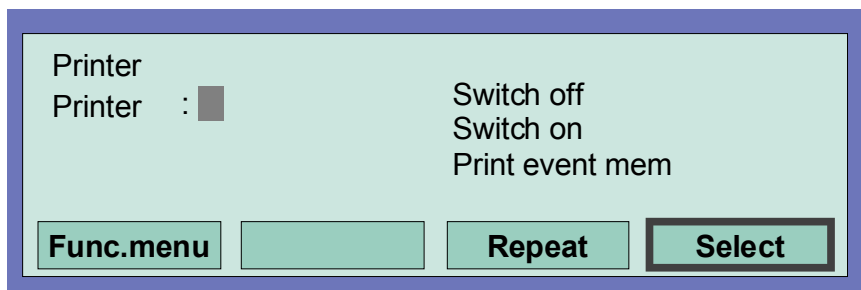
Fig. 94: Function menu

- Enter the number of the printer which is to be switched off (primary loop number of the serial interface) and press the >Select< function key

- Enter the number of the desired function (1 = Switching off) or select the menu options Switching off with the cursor keys and press the >Function< key

Switching on the protocol printer

```
Printer
Printer    : 0110          Switch off
                           Switch on
                           Print event mem

 Func.menu                   Repeat      Select
```
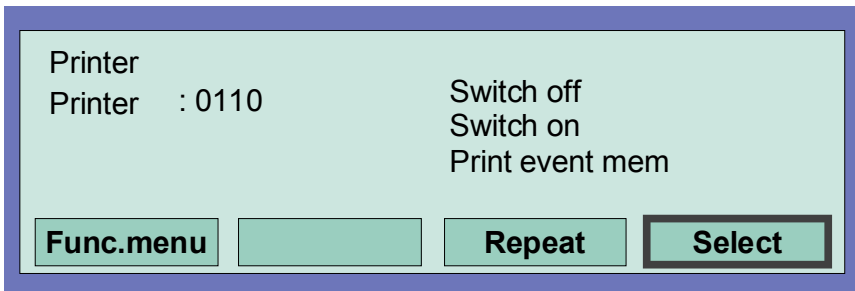
Fig. 95: Entering the number of the external (serial) printer

- Enter the number of the printer which is to be switched on and press the >Select< function key.
Enter the number of the desired function (2 = Switching on) or select the menu options >Switching on< with the cursor keys and press the >Function< key.

Printing out the event memory

The last 200 entries of the 10,000-entry circulating archive are printed on the log printer from the internal event memory.

```
Printer
Printer    : 0110          Switch off
                           Switch on
                           Print event mem

 Func.menu                   Repeat      Select
```
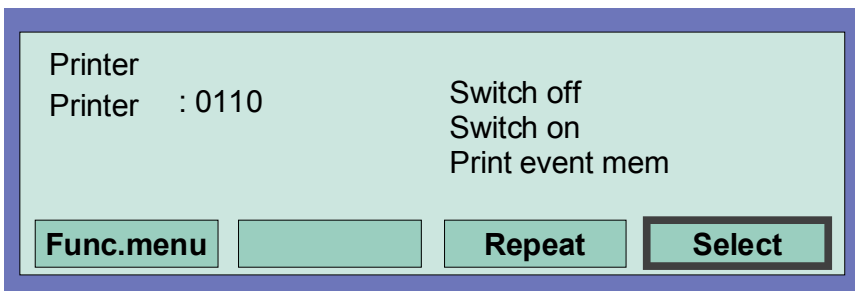
Fig. 96: Printer function – printing out the event memory

- Enter the number of the protocol printers on which the contents of the event memory are to be printed out and press the >Select< function key.

- Enter the number of the desired function (3 = Print event memory) or select the menu options >Event mem.< with the cursor keys and press the >Function< key.

A switched off protocol printer will not print messages or events!

10.8 Display of the event memory

At the installer level, the event memory of the Fire Alarm Control Panel can be shown on the display by pressing the >Event mem< key. The last 200 events, such as alarms, malfunctions, switch-offs and operating authorisations are stored in the event memory in chronological order. The display shows the latest event.

The events are automatically numbered with consecutive report numbers. The higher the report number, the more recent is the event (report number 001 = oldest event).

Event memory	Signal 078
TROUBLE	
Zone : 004 Detector : 01	10:12 17.10
3rd floor, conference room	wire brk.
End		**Print**	
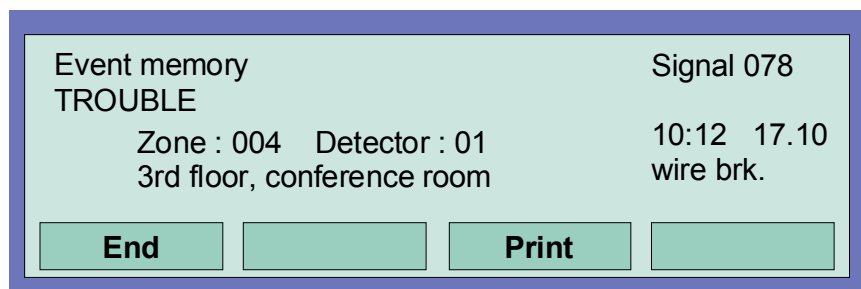
Fig. 97: Event memory

It is possible to browse the event memory for individual events using the cursor keys.

10 events forward

To next younger event

10 events backwards

Fig. 98: Cursor keys

To next older event
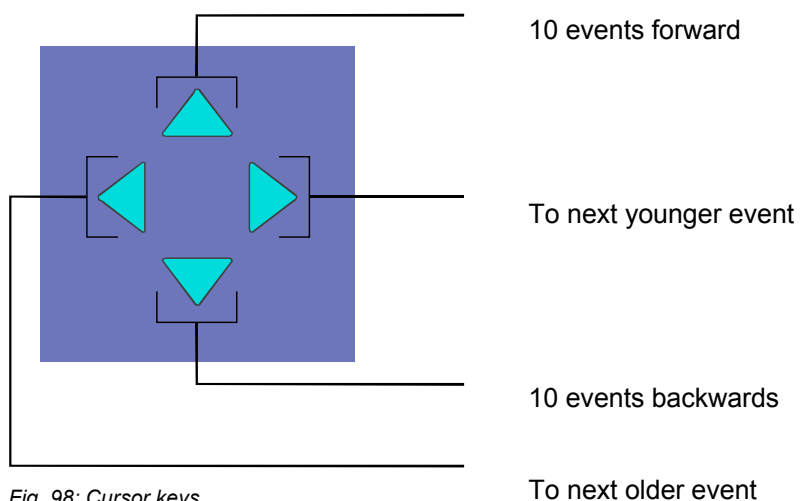
Printing the contents of the event memory

Pressing the >Printing< function key moves automatically to the >Printer functions< menu.
This allocation can be removed by pressing the >Zone< key and the desired printer number, e.g. for an external protocol printers, can be entered. All entries (max. 200) of the event memory are printed out ordered from the most recent to the oldest event. (see "Printing out the event memory").

11 Diagnostic display

11.1 Diagnostic display IQ8Control C/M

The diagnostic display enables, e.g. a fast check of the power supply values of this FACP Panel IQ8Control C/M for service and maintenance work. In the panel display, a diagnostic field with individual measured values (analog measurement channels) which are automatically determined by the control panel is displayed.

Key press sequence for switching on the diagnostic display Test-Test-F4-3

Press key   Test → Test → F4 → 3
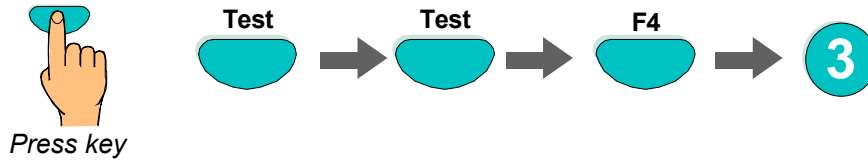
Analog 0	Analog 1	Analog 2	Analog 3
Analog 4	Analog 5	Analog 6	Analog 7
Analog 8	Analog 9	Analog 10	Analog 11
Analog 12	Analog 13	Analog 14	Analog 15

Fig. 99: Panel power supply values

The display is structured in a matrix for a quick survey. The significance of the individual analog channels see table below.

Analog channel	Description	Voltage limits	Range of values
Analog 0	Micro module on the Basic module	---*	---*
Analog 1	Micro module plug 1 on the Extension module	---*	---*
Analog 2	Micro module plug 2 on the Extension module	---*	---*
Analog 3	Micro module plug 3 on the Extension module or Micro module plug on the peripheral module	---*	---*
Analog 4	Micro module plug 1 on the Extension module	---*	---*
Analog 5	Micro module plug 2 on the Extension module	---*	---*
Analog 6	Micro module plug 3 on the Extension module	---*	---*
Analog 7	Test channel	2,5 V ± 2 %	120 to 135
Analog 8	Power supply, Secondary voltage 12V DC	10V to 15V	82 to 152
Analog 9	Battery _1	10V to 14V	121 to 168
Analog 10	Battery _2	10V to 14V	121 to 168
Analog 11	Ub$_{extern}$ 12V DC	10V to 15V	82 to 152
Analog 12	ULinie + 27,5V oder +42 Volt	26V to 29V	108 to 149
Analog 13	Ground fault	10,5V to 14,6V	60 to 120
Analog 14	Monitoring IN1 (e. g. External power supply)	4 V	65 to 255
Analog 15	Monitoring IN2 (e. g. External power supply)	4 V	65 to 255

(1* = Analog 0-3, 2* = Analog 4-6)

* = values relating to the fitted micro module
1* = System connector 1
2* = System connector 2

Switch off the diagnostic display with function key F1 or F4

Press key   F1 → F4
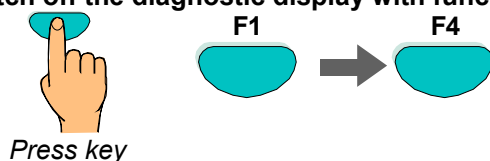
11.2 The essernet® diagnostic line

The essernet® connection of the various units in the network can be checked with this diagnostic line.
The essernet® diagnostic line (L:xxx) indicates which connections are functioning correctly (standard operation) and which have malfunctioned. Non-existent units/ control panels are represented by the character "?".

The status display at the beginning of the line (0,S,E or B) indicated whether data calibration is in progress between two control panels. This is always the case when signals are updated in the essernet®, for example when a switched off control panel is switched back on or when a new control panel is integrated in the essernet® and its data is automatically updated. Which control panel is conducting this data calibration can be determined by the two-digit control panel number (part: xx).

Switching on the essernet® diagnostic line

Press key   Test → Test → F4 → 1
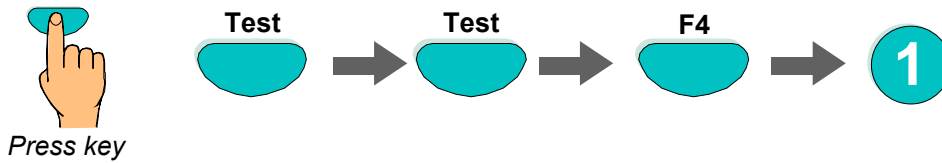
Approx. 5 seconds after switching on, the essernet® diagnostic line appears in the display.

Once selected, the diagnostic line remains visibly in the display in all menu levels, for example when changing to the status display, the installer level or when scrolling the contents of the display, until it is deactivated.

Switching off the essernet® diagnostic line

Press key   Test → Test → F4 → 2
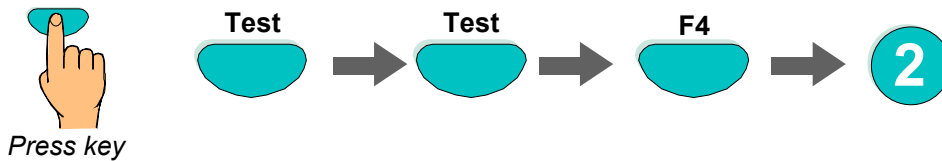
After approx. 5 seconds, the display of the essernet® diagnostic line is switched off.

Display contents and their significance


```
0   Zxx   Pxx   L:00021?????????????????????????????
```

essernet® status list for control panel No. 1 to 31
 — 0 = essernet connection OK
 — 1 = no data from terminal 3 + 4 (short circuit/open connection)
 — 2 = no data from terminal 1 + 2 (short circuit/open connection)
 — 9 = no communication between FACP and essernet® module
 — ? = customer data not programmed

Control number (01 to 31) of the FACP with which data calibration is in progress

Decimal display (00 to 99) of the communication status (only factory use)

Status of the data calibration
 — 0 = data calibration OK
 — S = Control panel is transmitting
 — E = Control panel is receiving
 — B = Data calibration terminated/faulty

Fig. 100: Display and significance

Example of essernet® diagnostic line with four Fire Alarm Control Panels

In the illustrated example, four Fire Alarm Control Panels are interconnected in the essernet®.
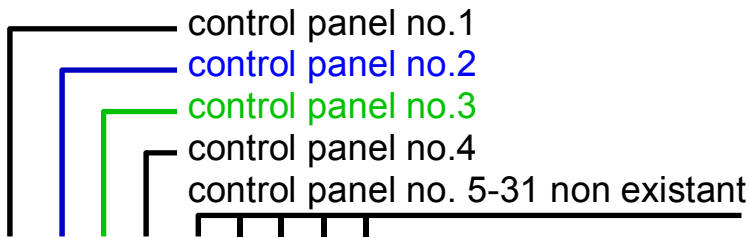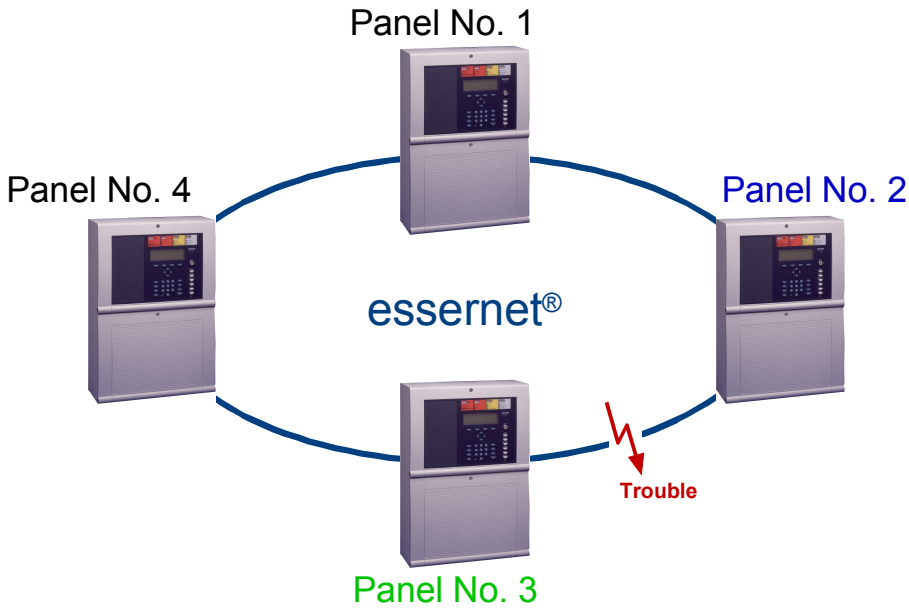
Fig. 101: Example essernet® diagnostic line with four control panel

The connection between control panel No. 2 and No. 3 is faulty due to an open line, a short circuit or incorrect wiring.

Panel no. 5 to 31 are displayed with the ?-sign, because the they are not programmed in the customer data.

During the display of the essernet® diagnostic line, status messages such as >MB switched off< or >Acoustics switched off< are not shown in this line of the display.

11.3 Checking the essernet® devices and connections

An additional check of the essernet® devices/connections can be carried out using the essernet® micro modules (Part No. 784840.10 / 784841.10 - from index "E" onwards).

Switching on the display on the fire alarm control panel:

Press key   Test → Test → F3 → 6
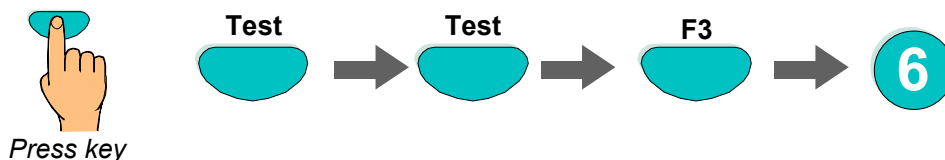
The display will automatically alter from indication on side 1+2. By turning the key switch (unlock keyboard) the display is set to normal indication mode.

Display page 1	Value (example)	Meaning
Terminal 12	1555	Number of telegrams received without error at terminals 1+2 of the essernet® micro module. Automatic update of the values: - essernet® micro module 62.5 kBd: every 45 seconds - essernet® micro module 500 kBd: every 10 seconds
Terminal 34	1551	Terminals 3+4 (see "Terminal 12")
Fault 12 [%]	0	Percentage display of the faulty telegrams which are received at terminals 1+2 of the essernet® micro module. Automatic update of the values: - essernet® micro module 62.5 kBd: every 45 seconds - essernet® micro module 500 kBd: every 10 seconds
Fault 34 [%]	0	Terminals 3+4 (see "Fault12")
FtMax 12 [%]	6	Maximum percentage value of the faulty telegrams received at terminals 1+2 since the panel was last restarted. This function enables a measurement over a longer period and is reset to "0" after every restart of the FACP.
FtMax 34 [%]	8	Terminals 3+4 (see "FtMax 12")
Rep. Telegr	4	Number of repetition requests. Repetition requests for telegrams are a sign that there are faults on a module or on the transmission path.
PanelNo.	10	Display of the micro module address which has been set on the essernet® module. This address must correspond to the customer data of the FACP.
Display page 2		
Level 12	33	Value range at terminal 1+2 from 0 to 100. Values from 10 to 100 ➔ normal operation Values below 10 ➔ fault The yellow LED onto the module lits. Furthermore the message will be displayed as >common fault< and indicated in the display with >Sys. fault essernet<.
Level 34	66	terminals 3+4 (refer to "Level 12")
- - - -	---	---
Version	500000	Software V5.00R00 of the essernet®- module
PanelNo	10	Address setting of the essernet® module – This address must match the selected address in the FACP software configuration.

 The counters are reset when the FACP is restarted.

11.4 Display of the analogue values

For service and maintenance work, the current analogue values for all micro modules and components of the device module can be displayed to check the FACP. The following tables show the individual micro modules, each with the valid range of analogue values. A fault is detected if the current measured value is outside the valid value range during checking.

Analogue value is too large: Short circuit/the current flow is too high in this component

Analogue value is too small: Interruption/contact problem in this component

Switching on the display

Press key

Test → Test → F3 → "IO No."
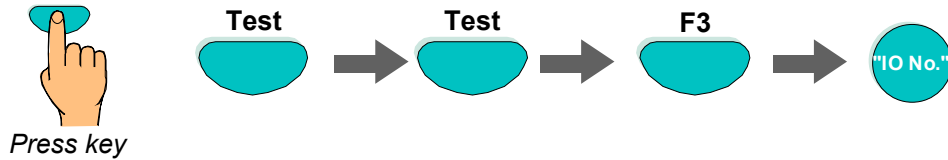
"IO no." IQ8 Control: 1 = basic module
                          2 = extension module plug 1
                          2 = extension module plug 2

selected module (I/O no.)

	1	Ana	1	Ana	2	Ana	3	Ana	4	Ana	5
	2	Ana	1	Ana	2	Ana	3	Ana	4	Ana	5
	3	Ana	1	Ana	2	Ana	3	Ana	4	Ana	5
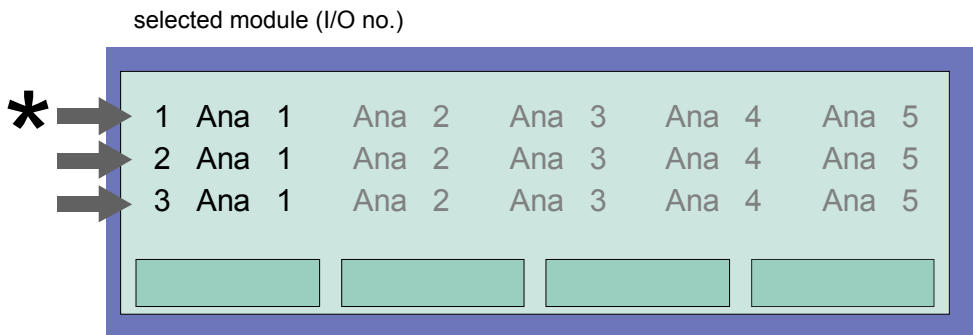
* with basic module	*with device module	*with extension module
1 SAS relay	**1** 3 relay	**1** Micro module slot 1
2 Serial interface	**2** Transmission device	**2** Micro module slot 2
3 Micro module	**3** Primary loop	**3** Micro module slot 3

Fig. 102: Diagnostics display

Switching off the display

Press key

F1 or F4
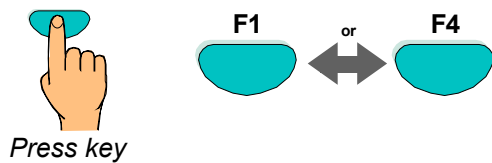
* 3 relay module/3 relay module CF

Analog channel	Function	Normal value range FACP IQ8Control
Ana 1	Relay 1	93 ... 141
Ana 2	Relay 2	93 ... 141
Ana 3	Relay 3	93 ... 141
Ana 4	Not occupied	00
Ana 5	Not occupied	00

* Ana 1 ... Ana 3 = "0" in the case of inverse, unmonitored or activated relays

* Master box activation module

Analog channel	Function		Normal value range FACP IQ8Control
Ana 1	Monitoring input	50 to 300 Ohm	27...100
		301 to 1000 Ohm	35...150
Ana 2	Not occupied		00
Ana 3	Not occupied		00
Ana 4	Not occupied		00
Ana 5	Not occupied		00

* Ana 1 = "0" in the case of activated transmission device

* Loop module

Analog channel	Function	Normal value range FACP IQ8Control
Ana 1	Emergency mode monitoring, module	00 ... 27
Ana 2	Not occupied	00
Ana 3	Not occupied	00
Ana 4	Not occupied	00
Ana 5	Not occupied	00

* Ana 1 = "0" if module is not in emergency mode

* Master box, internal (device module)

Analog channel	Function	Normal value range FACP IQ8Control
Ana 1	Monitoring input, master box (K1)	14 ... 185
Ana 2	Not occupied	00
Ana 3	Not occupied	00
Ana 4	Not occupied	00
Ana 5	Not occupied	00

* Ana 2 = "0" with activated master box *

* 3 relay, internal (device module)

Analog channel	Function	Normal value range FACP IQ8Control
Ana 1	Relay 1 (K2)	70 ... 120
Ana 2	Relay 2 (K3)	70 ... 120
Ana 3	Relay 3 (K4)	70 ... 120
Ana 4	Not occupied	00
Ana 5	Not occupied	00

* Ana 1 ... Ana 3 = "0" with inverse or activated relays *0

Primary loop, internal (device module)

Analog channel	Function	Normal value range FACP IQ8Control
Ana 1	Monitoring input	70 ... 120
Ana 2	Not occupied	00
Ana 3	Not occupied	00
Ana 4	Not occupied	00
Ana 5	Not occupied	00

12 Meaning of the three digit error codes / test mode

A three digit error code is displayed in the display in case of a failure of an intelligent fire detector. The meanings of these codes and measures for correcting the error condition are given in the following table.

Error indication in case of detector replacement

During detector replacement, the display shows error codes which have to comply with the modifications done. If error messages remain after the detector replacement has been completed the cause of the trouble can be identified quickly with the help of the 3 digit error code (ref. tables below).

Trouble Code No.	Possible cause	1st. measure	2nd. measure
001 002 003	Detector is faulty.	Exchange detector.	Return faulty detector to manufacture.
004	Strong electromagnetic disturbances or detector faulty.	Check the detector with programming software tools 8000, check installation place if necessary.	Return detector for controlling to manufacture.
005	Ambient light too bright at location where detector is installed.	Check whether detector is exposed to source of bright light. Change location if necessary.	If fault re-occurs on this detector, detector should be returned to manufacture for inspection.
006 007 008	Detector is contaminated or moist.	Clean detector and check with tools 8000.	---
009	Strong electromagnetic disturbances of the visual sensor in the area of 8 - 60 kHz ($>$ 50 V / m).	Disturbance is caused by an electrical consumer in immediate proximity of the detector. Moving detector if necessary.	One coupling of the disturbance about the record circuit. Checks whether record circuit was transferred parallely to power lines.
010	1) An electrically leading substance caused a short-circuit in the I-chamber.	Clean I-chamber and check it with programming software tools 8000. Noticing salt or fraying deposits.	Replace detector and return to manufacture.
	2) CO sensor is overloaded with a high CO concentration.	Check if the detector is exposed to a high CO load. If necessary, reset the detector and recheck. The CO sensor should have at least 15 minutes to return to its quiescent values before rechecking. Check the CO concentration at the location of the detector and move the detector if necessary.	Return faulty detectors to the manufacturer.
	3) Strongly pulsed high frequency fields.	If necessary, check installation location.	Return detector to manufacturer for checking.
	4) Short circuit on the CO sensor.	Replace detector.	Return faulty detectors to the manufacturer.
011	1) Detector is contaminated with dust or similar.	Clean detector and check it with programming software tools 8000.	Using another detector type.
	2) CO sensor is faulty.	Replace detector.	Return faulty detectors to the manufacturer.

Trouble Code No.	Possible cause	1st. measure	2nd. measure
012	1) Detector is soiled or damp.	Clean detector and check it with programming software tools 8000.	Check the installed detector if the surrounding area is humid. Use protective measures if necessary, e.g. series 9x00 detectors: surface mount adapter 781495 or 781497/98 uses base adapter.
	2) CO sensor is faulty.	Replace detector.	Return faulty detectors to the manufacturer.
013	1) Air speed too high at site of installation. 2) Detector is soiled with conductive substance and may be installed in damp environment.	Clean detector and check it with programming software tools 8000.	Using another detector type.
	3) CO sensor has temporarily left its working range (e.g. due to oversaturation).	Reset detector and recheck.	If the error occurs again, return detector to manufacturer for checking.
014	Short-circuit at the temperature sensor.	Replace detector and return to manufacture.	---
015	1) Faulty bonding of the temperature sensor. 2) First installation at a cool place.	Adjust detector to ambient temperature with programming software tools 8000.	Replace detector and return to manufacture.
016	see 001	---	---
017	1) Detector is soiled with a conductive substance or installed in damp surroundings. 2) Faulty detector.	Clean detector and check it with programming software tools 8000.	Replace detector and return to manufacture.
	3) CO sensor is faulty. It is possible that the rel. humidity is always at a very low value in the area surrounding the detector.	Replace detector.	Return faulty detectors to the manufacturer.
018	1) Detector is soiled with a conductive substance or installed in damp surroundings. 2) Faulty detector.	Clean detector and check it with programming software tools 8000.	Replace detector and return to manufacture.
019	1) Detector is soiled with oily substance.	Clean detector and check it with programming software tools 8000.	---
	2) CO sensor is faulty.	Replace detector.	Return faulty detectors to the manufacturer.
020 021	Current levels not correct on loop.	Check numbers of detectors, loop resistor and loop length.	Check detector base wiring.
022	Detector unable to correctly activate its base circuit board.	Check detector base wiring.	---

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Trouble Code No.	Possible cause	1st. measure	2nd. measure
023	Detector unable to correctly activate its base circuit board.	1) Fault occurs while loop is being switched on: switch off loop and switch back on again after 1-2 minutes. 2) Fault occurs while switching the base output: check for connection of the freewheeling diode necessary for an inductive load. Pay attention to switching capacity of output. 3) Check whether the detector is installed in a damp environment.	Take any necessary protective measures, e.g. use mounting plate 781495 or base adapter 781497/98.
024	Detector unable to correctly activate its base board.	Check whether detector is installed in a damp environment.	Clear detector and re-check. Take protective measure if necessary, e.g., using mounting plate 781495 or 781497/98.
025	A manual call point has detected a short-circuit on its external detector zone.	Check wiring of this detector zone for short circuit.	---
026	An detector has recognised a wire break on its external detector zone.	Check wiring of this detector zone for open circuit.	---
027	Error during measurement of light absorption	Inform customer service	---
028	The detector has detected a short-circuit behind its cut-off relay.	Two detectors present with this trouble ⇒ search for loop short circuits between the two detectors.	One detector present with this trouble ⇒ loop short circuit between detector and panel.
029	The sounder of the IQ8Quad detector is defective.	Replace IQ8Quad detector and return to manufacture.	---
030	The IQ8Quad detector cannot emit the specified signal tone.	1. Check that the acoustic signal is supported by the IQ8Quad detector. 2. Check if the customer data has been programmed correctly.	Notify Customer Service.
033	see 001	---	---
034	esserbus® transponder is defective	see 001	see 001
035	esserbus® transponder is defective	see 001	see 001
036	Starke elektromagnetische Störungen oder Melder ist defekt.	see 004	see 004
037	esserbus® transponder has identified fault with its external voltage.	Check whether the external switching voltage of the esserbus® transponder is in the correct voltage range.	---
038	esserbus® transponder has identified fault with its external voltage.	Check whether the external switching voltage of the esserbus® transponder is in the correct voltage range.	---

Trouble Code No.	Possible cause	1st. measure	2nd. measure
039	Communication between esserbus® transponder and FACP ➔ disturbed for 100 seconds.	Notify Customer Service.	---
041	Monitoring of the esserbus® transponder for relay 1 has identified a fault.	With 10 kOhm terminating resistance: The degree of resistance measured is outside of the monitoring range.	With EOL-O end-of-line: The set monitoring current does not correspond to this measurement value; cable impedance is too high.
042	Monitoring of the esserbus® transponder for relay 2 has identified a fault.	With 10 kOhm terminating resistance: The degree of resistance measured is outside of the monitoring range.	With EOL-O end-of-line: The set monitoring current does not correspond to this measurement value; cable impedance is too high.
043	Communication between esserbus® communication transponder 808615 and the 8010 fire and extinguishing panel has been malfunctioned for over 100 seconds.	Check correct functioning of the 8010 fire and extinguishing panel. Correct any malfunctions of the fire and extinguishing panel and switch on the esserbus® - communication transponder via the FACP keyboard.	Notify Customer Service.
044	Communication between FACP and esserbus® communication transponder for the 8010 fire and extinguishing panel has been malfunctioned.	Notify Customer Service.	---
048	see 001	---	---
052 / 053	see 020	---	---
060	see 028	---	---
060	Short circuit detected behind the isolator of the esserbus® transponder.	see 028	see 028
062	Failure of the internal data communication of the esserbus® transponders CPU.	Switch-on transponder or loop. If error occurs again refer to 2nd measure.	Press reset button on the transponder board, or disconnect transponders power supply. If error occurs again replace transponder.
063	Detector data assignment incomplete or EEPROM failure.	Repeat detector data assignment on the relating loop.	If error occurs again replace transponder
066	Loop wiring has been changed.	Connect service PC and perform wiring recognition.	---
067	Detector cannot be addressed with serial number. The detector changed at this location is faulty or absent.	Check location to see whether detector is absent or improperly installed in detector base. Switch on loop, perform test on detector zone.	Change detector. Activate >Detector change< function in panel.
068	The detector that was positioned at this location has been installed at a different location. One or more detectors on the loop have been interchanged.	If this change is desired, you must activate the >Detector change< function at the FACP.	If this change is not desired, connect service PC and run a wiring recognition. Re-program customer data.

Trouble Code No.	Possible Cause	1st. measure	2nd. measure
069	There are more detectors on the loop than programmed in the customer data.	If this change is not desired, connect service PC and run a wiring recognition. Re-program customer data.	If this change is not desired, connect service PC and run a wiring recognition. Re-program customer data.
070	Error during detector data allocation.	Perform detector data assignment again.	---
080	This detector change may only be performed with the service PC because this detector required customer data that cannot be generated in the FACP itself.	If this change is not desired, connect service PC and run a wiring recognition. Re-program customer data.	---
081	The detector has been replaced with an OTI-detector. The sensor type has changed in comparison with the customer data.	Check whether detector type change is desired; if it is, activate loop.	Otherwise install detector you require and re-start >Detector change<
082	The detector has been replaced with an OT-detector. The sensor type has changed in comparison with the customer data.	Check whether detector type change is desired; if it is, activate loop.	Otherwise install detector you require and re-start >Detector change<
083	The detector has been replaced with an I-detector. The sensor type has changed in comparison with the customer data	Check whether detector type change is desired; if it is, activate loop	Otherwise install detector you require and re-start >Detector change<
084	The detector has been replaced with a TM-detector. The detector type has changed in comparison with the customer data.	Check whether detector type change is desired; if it is, activate loop.	Otherwise install detector you require and re-start >Detector change<
085	The detector has been replaced with a TME-detector. The detector type has changed in comparison with the customer data.	Check whether detector type change is desired; if it is, activate loop.	Otherwise install detector you require and re-start >Detector change<
086	The detector has been replaced with a TD-detector. The detector type has changed in comparison with the customer data.	Check whether detector type change is desired; if it is, activate loop.	Otherwise install detector you require and re-start >Detector change<
087	The detector has been replaced with an O-detector. The detector type has changed in comparison with the customer data.	Check whether detector type change is desired; if it is, activate loop.	Otherwise install detector you require and re-start >Detector change<
088	Detector circuitry has been changed at detector location. Now detector has neither external circuit (relay / LED) nor isolating relay.	If this change is desired, connect service PC and run a wiring recognition. Re-program customer data.	---

Trouble Code No.	Possible Cause	1st. measure	2nd. measure
089	Detector circuitry has been changed at detector location. Now detector has external circuit. (relay / LED).	Check whether this detector location is to have an external circuit. isolating relay. If it is, activate loop.	Otherwise install detector you require and re-start >Detector change<
090	Detector circuitry has been changed at detector location. Now detector has an isolating relay.	Check whether this detector location has an isolating relay. If it has, activate loop.	Otherwise install detector you require and re-start >Detector change<
091	The IQ8Quad detector circuit has been changed at the detector location. Voice output is now also possible.	Check if the detector type change is desired; if yes, reprogram the customer data and switch on the loop.	Otherwise, install desired detector and restart >Detector replacement<
092	The IQ8Quad detector circuit has been changed at the detector location. An optical alarm is now also possible.	Check if the detector type change is desired; if yes, reprogram the customer data and switch on the loop.	Otherwise, install desired detector and restart >Detector change<
093	The IQ8Quad detector circuit has been changed at the detector location. Voice output is no longer possible.	Check if the detector type change is desired; if yes, reprogram the customer data and switch on the loop.	Otherwise, install desired detector and restart >Detector change<
094	The IQ8Quad detector circuit has been changed at the detector location. An optical alarm is no longer possible.	Check if the detector type change is desired; if yes, reprogram the customer data and switch on the loop.	Otherwise, install desired detector and restart >Detector change<
095	A O^2T-detector has been installed at detector location. The detector type has changed in comparison with the customer data.	Check whether detector type change is desired; if it is, activate loop.	Otherwise install detector you require and re-start >Detector change<
096	The IQ8Quad detector circuit has been changed at the detector location. An optical and/or acoustic alarm is no longer possible.	Check if the detector type change is desired; if yes, reprogram the customer data and switch on the loop.	Otherwise, install desired detector and restart >Detector change<
097	The IQ8Quad detector circuit has been changed at the detector location. An optical and/or acoustic alarm is now also possible.	Check if the detector type change is desired; if yes, reprogram the customer data and switch on the loop.	Otherwise, install desired detector and restart >Detector change<

Ionisation smoke detector or fire detector with ionisation sensor may only be installed/maintained by authorised persons with handling license issued under the Radiation Protection Ordinance (German: Strahlenschutzverordnung - StrlSchV).

12.1 Trouble messages in the display

Up to three works-programmed trouble messages with 8 characters each can be displayed in the second line of the display. If a clear text trouble message applying to an event is displayed, this trouble message is shown automatically in the display or can be activated with the function key >Param/AT<.

Trouble text	Possible cause	1st. measure	2nd. measure
UBext	UB_{ext} fuse blown. Short circuit in UB_{ext} power supply.	Check whether fuse blown or short circuit.	---
UBint	power supply Short circuit in UB_{int} power supply.	Check fuse or remove components until message disappears.	---
ULinie	U_{line} fuse blown.	Check fuse and replace if necessary.	---
short	Brief loss of mains power.	Check mains supply and mains fuse.	---
long	Loss of mains power.	Check mains supply and mains fuse.	---
ext. PSU	Failure of supplementary external power supply.	Check external power supply unit.	Check monitor line.
paper out	The internal printer has run out of paper.	Replace the printer paper roll.	---
not ready	The paper retaining lever has not been returned to its original position after paper change.	Set lever to correct position.	---
not voltage	The internal printer has no power supply.	Check wiring of UB_{ext} and fuse.	---
short cct	A short circuit has been detected in the corresponding primary loop.	Check the indicated primary loop (see Prloop No.).	---
short/open	A short or open circuit has been detected in the corresponding primary loop.	Check the indicated primary loop (see Prloop No.).	---
com. err	A communications error has been detected in the corresponding primary loop.	Check detector contacts, replace detector and/or necessary module if start-up.	---

Trouble text	Possible cause	1st. measure	2nd. measure
start-up	An error has been detected when an loop was switched on; normal operation is impossible.	Localise the source with programming software tools 8000 switch on or reconfigure the loop.	---
Detector >	When an loop was switched on, more detectors were found than programmed in the customer data or more detectors were found in an EDD detector zone than programmed in the customer data.	Localise the source with programming software tools 8000, switch on or reconfigure the loop For EDD detector zones, check the number of detectors and reprogram the customer data if necessary.	---
Detector <	When an loop was switched on, fewer detectors were found than programmed in the customer data.	Localise the source with programming software tools 8000, switch on or reconfigure the loop.	---
Topolog.	The wiring configuration of this loop cannot be precisely determined.	Localise the source with programming software tools 8000, switch on or reconfigure the loop.	---
Serial No	A detector has been found in the corresponding loop which is not programmed in the customer data.	Have detectors been exchanged and is the error plausible?	If yes, execute the Exchange detector function for this loop to update data.
Line A	The 1st ring is inoperable in a redundant essernet® wiring. The 2nd ring is in operation.	Check essernet® wiring	Check the essernet® switchover module and replace if necessary.
Line B	The 1st ring is inoperable in redundant essernet® wiring.	Check essernet® wiring	Check switch over module and replace if necessary.
AD conv.	Fault of the A/D converter card on the Basic module or the A/D converter of the loop module is defective.	Replace Basic module or micro module.	---

Trouble text	Possible cause	1st. measure	2nd. measure
int. det. err	A dirty detector was found during an EDD zone test.	Clean or replace detector.	---
reset	A detector could not be reset during an EDD zone test.	Replace detector.	---
no SOC	The switch-on control of a detector was impossible during an EDD zone test.	Replace detector.	---
Addr. err.	A detector with Address 0 was found during an EDD zone test.	A non-addressable fire detector has been connected in an EDD detector zone.	the address board in the detector base is defective or the illicit address 0 has been selected.
no 24V	Loss of line voltage for the indicated module.	Check U_{line} fuse and replace if necessary.	Replace module.
DAC err.	Defective D/A converter in the indicated module.	Replace module.	---
Request	No valid value can be obtained from an EDD detector zone or a monitored relay	Voltage interference on the line.	Check cable screening and wiring.
U_{linie} <	Loop voltage difference, measured from A>B, is too high. Sounder activation is impossible.	Module damaged, loop resistance too high.	check loop devices.
WireRes	Loop resistance too high. Sounders are unable to operate with full sound pressure.	Check length of cable, max. 3500 m for IQ8Quad detector with consideration of the load factor.	Check terminals from all loop devices.
Err. 42 V	Loss of 42 V DC loop voltage.	mains supply not in +42 V DC mode.	loop module damaged.
I-MesDef	Internal module failure.	Module damaged.	Sounder damaged.
base	The wireless base has been removed from corresponding detector base.	Insert wireless base in detector base	---
Batt<30	Battery below rated voltage	Replace battery within 30 days	---
Batt<7	Battery below rated voltage	Replace battery within 7 days	---

13 System overview

The modular design with different micro modules and individual extension concepts allow the Fire Alarm Computer IQ8Control C and IQ8Control M to be easily adapted to special requirements. This provides the range from a stand-alone panel up to 31 Fire Alarm Control Panels Computer or other network subscribers such as management system, Fire department indicator panel by using the essernet® safety network.

The Field device modules required in order to configure a stand-alone FACP in accordance to the appropriate standards and guidelines. The connections for the Fire Alarm Control Panel, the master box and the three freely programmable relays are integrated on the Field device module. If several Fire Alarm Control Panels are connected together in the essernet®, the master box can be connected to one of the other FACPs.
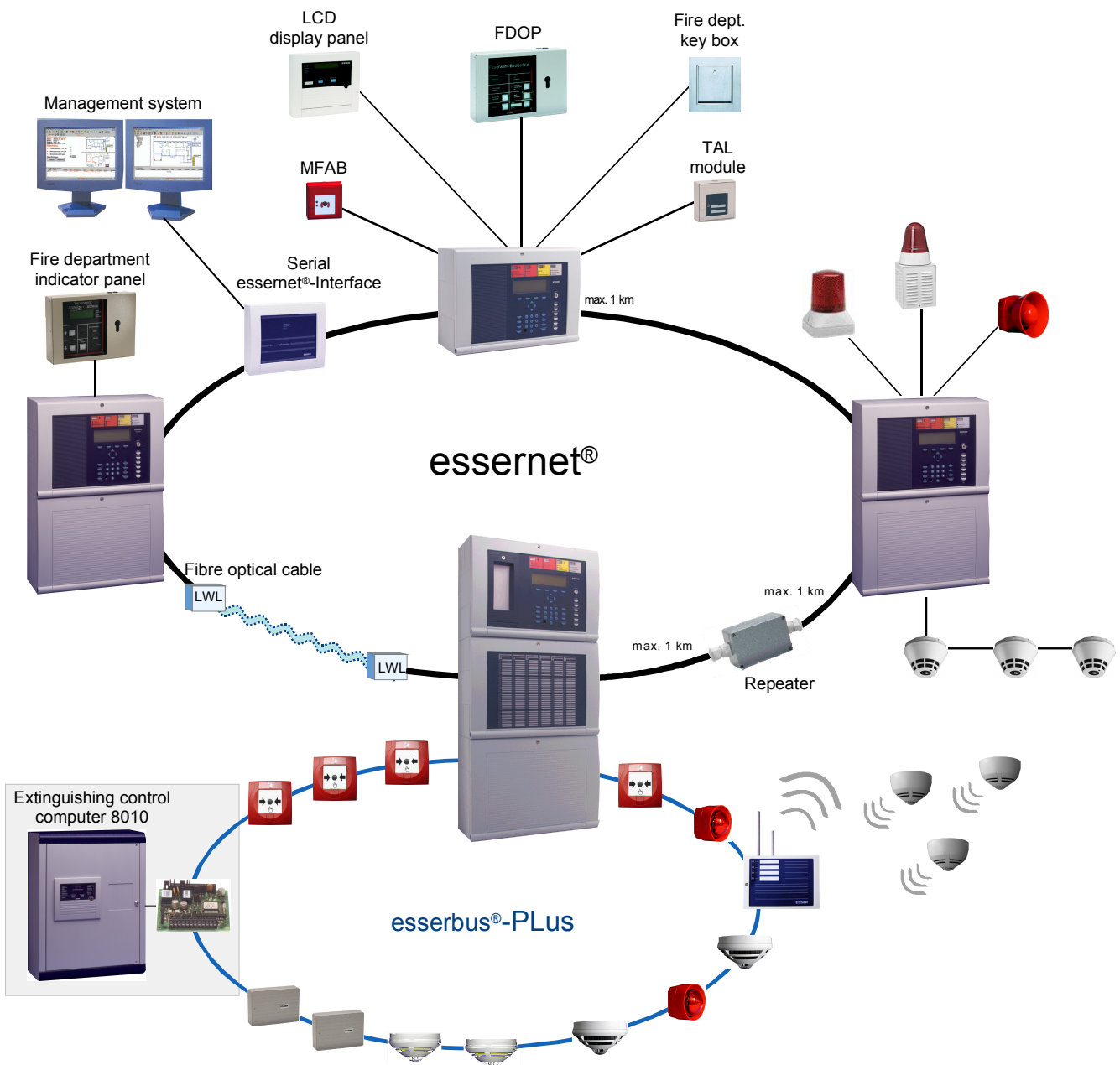
Fig. 103: System overview

Additional extensions

The FACP panel configuration may be extended to suit requirements by adding supplementary input/ output modules, esserbus® transponders. Transponders may be installed at special integrated slots or on standard C-Top rails in the housing. Optional plastic housings conforming to protection class IP 40 are available for the decentralized installation of transponders on the loop.

14 Function for fire alarm control panels

The fire alarm control panel can be programmed to activate door control systems by installing an door control transponder. The esserbus® door control transponder is operated as a bus device on the loop of the FACP. The corresponding detector zones for activating the door controls are programmed in the panel's customer data. This requires operating system software from V3.01 and programming software tools 8000 from V1.15 upwards.

For further information about door control systems and the door control system functions, refer to technical information about door control systems (Part No. 798840) on the website www.esser-systems.com.
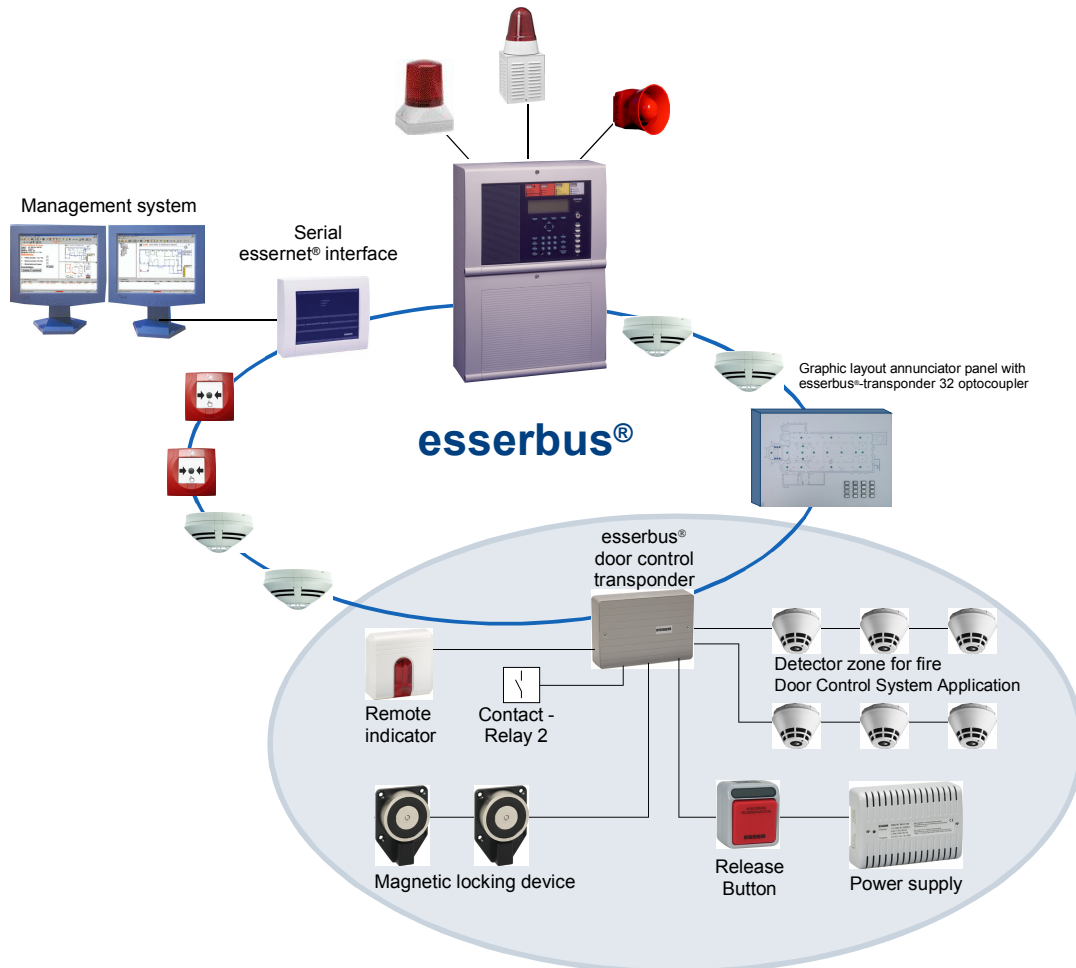
Fig. 104: Door control system control (schematic diagram)
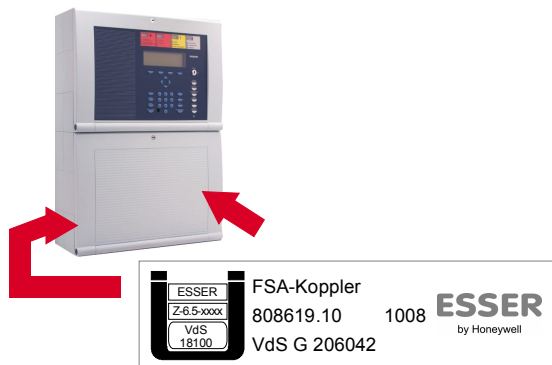
14.1 Use of the loop module in door control systems

When using analogue loop modules in door control systems, the label enclosed in the module must be attached onto or in the FACP.

Fig. 105: Example of label with the conformity mark

15   IQ8Wireless

The IQ8Wireless wireless components enable wireless connection of fire detectors and/or acoustic and optical alarm signalling units and can be used either as part of the FACP loop or as a stand-alone wireless control facility in fire alarm control systems with conventional detector zones.
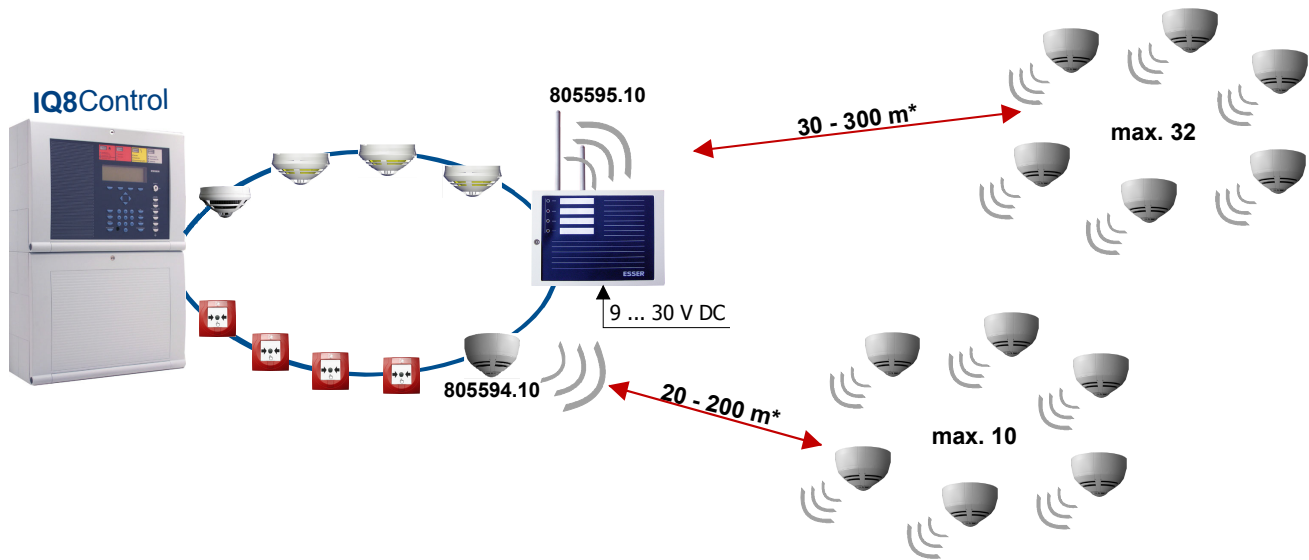

Fig. 106: IQ8Wireless devices (schematic view)

System requirements

- Programming software tools 8000 from V1.15
- System software from version V3.04 R001 onwards is required for connection to the loop as a databus subscriber.

Accessories

Part No.	Description
805593.10	IQ8Wireless detector base for automatic Fire detectors series IQ8Quad (without integrated alarm device)
805594.10	IQ8Wireless gateway
805595.10	IQ8Wireless transponder for wall mounting
805597	4 Lithium batteries (type AA / 3,6 V) for power supply
805601.10	IQ8Wireless universal Interface (red), without cover
805602.10	IQ8Wireless universal Interface (white), without cover
805603	IQ8Wireless Mounting frame for Alarm device IQ8Alarm (red + white)
805604	IQ8Wireless Mounting frame for automatic Fire detectors IQ8Quad (white)
805605	Cover for IQ8Wireless Interface 805601 und 805602 (red + white)

For the operation of the intelligent Fire alarm detectors series IQ8Quad <u>with</u> integrated alarm device use components (Part No. 805602.10 and 805604).

For additional information about the IQ8Wireless devices refer to the technical manual or visit the Homepage www.esser-systems.com.

16   Important battery information

Battery information relating to power consumption and batteries (Art. No. 805597) for use in IQ8Wireless RF components

- Insert batteries into the RF devices shortly before initial operation (assigned to the RF transponders)! Unassigned RF devices consume approx. 4 times more power.

- Bear in mind the sufficient remaining field strength!
  Operation with low field strength causes the power consumption to be somewhat higher. Similar RF devices which were put into operation at the same time may subsequently register low battery voltage (batt. < 30) on the FACP after different running times.
  The probability of interferences (e.g. caused by electromagnetic pollution or alternating field strength) rises very high relating to the reduced field strength. If the wireless transmission is interrupted and a wireless devices must leave the frequency hopping mode, it is operated in the basic channels until the assigned transponder is able to take this device into the frequency hopping mode again. In this mode the current consumption may increase up to 4 times higher.

- How often a RF transponder has to search for one of its RF devices in the base channel can be determined using the Service PC on the >disturbance< counter in the programming software tools 8000.

- If the 12/24 V DC power supply to a RF transponder should malfunction, the radio operation of the transponder terminates and all the assigned RF devices search in the base channel for this RF transponder. This causes the RF devices' power consumption to be up to approx. 4 times higher.

- In the case of an alarm, the detectors in the RF devices consume somewhat more power.

- In an uncharged state, the approved batteries (Art. No. 805597) have a very low self-discharge rate (1 % annually @ 25°C ± 10°C). Storage outside this temperature range causes the self-discharge rate to increase. The nominal capacity of the batteries decreases, for example, at low temperatures and is 20-30 % lower during operation near to the freezing point.

- Due to "passivation effects" batteries which are more than 3 years old should no longer be used. Batteries are labelled accordingly.
  Code 1 (e.g. F.02.277.E)
      F   = France
      02   = produced year
      277 = produced day 277th day
      E   = charge
  or Code 2 (e.g. 05 049 A 066)
      05   = produced year
      049 = produced day
      A 066 = charge

- For initial operation, the batteries are inserted and <u>then</u> charged automatically for a short time and with a very high current. In rare cases, this may cause low battery voltage
  (batt. < 30) to be immediately displayed on the FACP.
  Remedy: Activate the RF devices once more using the FACP.

- For functioning devices, the battery voltage is checked approx. every 12 hours automatically and approx. 2 minutes after insertion of the batteries/after activation (detector zone/detector) of a RF device.

- Do not touch the battery poles or contacts of the RF devices with bare fingers! A layer of grease causes transfer resistance to build up between the batteries and contacts. This transfer resistance may lead to the FACP prematurely or incorrectly displaying low battery voltage (batt. < 30).

- Improper storage of the RF devices and batteries may be the cause of such transfer resistance (e.g. due to corrosion). If necessary, clean contacts before inserting the batteries (e.g. with isopropanol solution).

- Only change the batteries as a set (4 items) in order to ensure an equal charge. The registered low battery voltage (batt. < 30) on the FACP always relates to the battery with the smallest capacity.

- For RF devices which register low battery voltage after a long operating time, the malfunction may be repaired during inspection by agitating the batteries used for a short amount of time (a few hours). When the RF device is activated, no "low battery voltage" message appears. Completely replace the set of batteries for the corresponding RF device!

17   Top hat rail mounting kit (Part No. 788652)

In the FACP IQ8Control C / M can be installed a top hat rail mounting kit (optional). This mounting kit comprises of a mounting base, a standard 35 mm top hat rail (C-profile mounting), M5 x 30 bolts, M5 x 50 screws and insert nuts. In order to facilitate mounting and removal, the top hat rail is fitted to the mounting base by means of two screws.

Variant 1

With the kit a maximum of two optional module housings (Part No.788603 or 788603.10) can be installed inside the panel housing. The module housing for top hat rail mounting accepts all the format 72 x 65 mm or 82 x 72 mm (W x H) FACP boards e.g. esserbus® transponder, Kit redundant transmission path.

Variant 2

In addition to the module housing, an optical fibre converter (Part No.784763 / 64) with a clip for top hat rail mounting may be installed inside the panel housing.

Mounting

Mounting example – Variant 1:
Top hat rail mounting kit with module housings (optional)
Components of the Top hat rail mounting kit
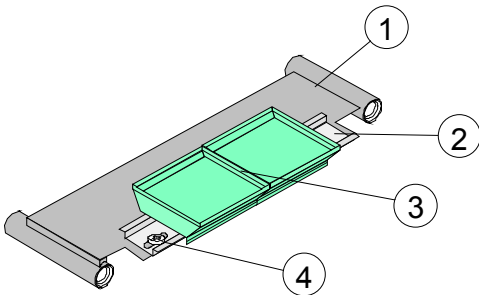
Fig. 107: Components of the Top hat rail mounting kit

①   Mounting base for Top hat rail

③   Fastening screws for Top hat rail

②   2 x Module housing Part No.788603 / 788603.10 (optional)

④   Standard Top hat rail, 35 mm

See product group catalogue 'fire alarm technology' and documentation on the mounting rail installation kit for further information.

18 esserbus® transponder

esserbus® transponders are input/output modules for extending the control panel inputs/outputs. It is possible to install up to 32 esserbus® transponders in separate detector zones (separated by zone isolators). Mixing the operation of fire detectors and esserbus® transponders is not permissible within one detector zone.

The esserbus® transponders is installed either at special fitting locations or with the top hat rail mounting kit (Part No. 788652) in the Fire Alarm Control Panel, or at decentralised level at any location in a special plastic housing (e.g. Part No. 788600).

For additional information refer to the Product catalogue fire and documentation of the esserbus® transponder.

For esserbus® PLus loops with a loop voltage of 42 V it is required to connect the appropriate transponders or devices with the Part No. 80xxxx (see Chapter 5.1.2).

19   Extension housing

Four different extension housings and an additional Mounting plate are available for individual extension of the FACP IQ8Control C/M.

| Part No.	Description
789300	**Extension housing for batteries** Housing complete with battery rear panel, space for two rechargeable batteries with an individual capacity of 12 V / 24 Ah. Neutral front and fastening material for fitting to the central housing.
789301	**Extension housing for batteries and GEA 192 MG** Housing complete with battery rear panel, space for two rechargeable batteries with an individual capacity of 12 V / 24 Ah. Front panel with built-in group / individual display (GEA) for 192 detector groups and fastening material for fitting to the central housing.
789302	**Extension housing for GEA 192 MG** Housing complete with standard rear panel for fitting additional subassemblies such as esserbus® transponders. Front panel with built-in group / individual display (GEA) for 192 detector groups and fastening materials for fitting to the central housing.
789303	**Extension housing** Housing complete with standard rear panel for fitting additional subassemblies such as esserbus® transponders. Neutral front and fastening material for fitting to the central housing.
057633	**Mounting plate** Mounting plate for master box types or two esserbus® transponders
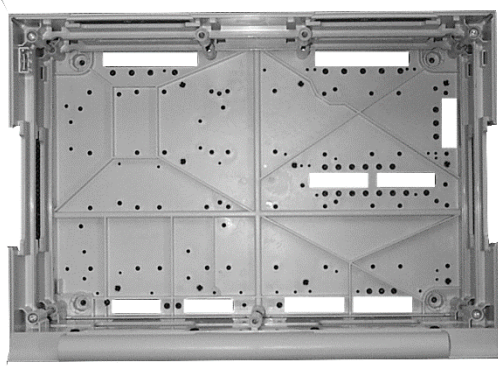
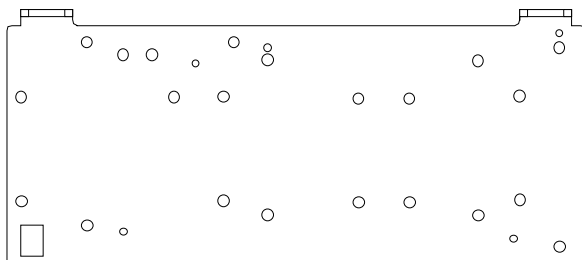*Fig. 108: Standard rear panel*
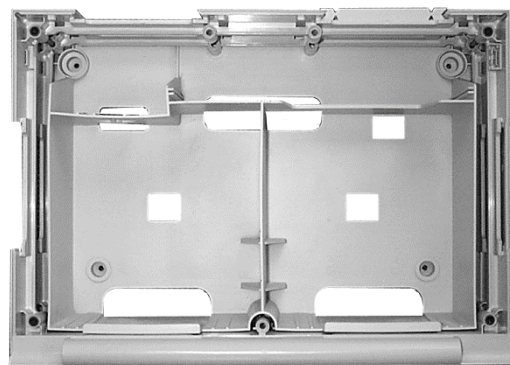
Battery rear panel

Fig. 109: Mounting plate (Part No. 057633)

The extension housing is assembled / mounted similar to the central housing. The individual assembly steps are described in the section "Assembling the central housing".
The following must also be observed when assembling the extension housing:

- The connection pieces between the central and extension housings can be pushed into the housing only from the rear side due to the door hinge. If an extension housing is fitted at the bottom to an already securely installed central housing, the central housing must be removed from the assembly surface.

- A separate drilling template is available for each of the two housing variants with the standard or battery rear panel. The drilling template is enclosed in the central unit's additional pack.

- The fastening holes in the mounting surface must be drilled precisely and without offset to the side. Otherwise, use of the connecting pieces between the two housings is no longer possible in the event of major deviations.

> If the extension housing with the battery rear panel is used, please note that depending on the rechargeable batteries used, a significant weight must be supported by the fastening screws of the extension housing. Longer 8 mm flat-head screws should always be used here.
> Each housing must be separately secured with suitable fastening materials such as screws and dowels. Attachment of the extension housing only via the connection pieces between the central and extension housing is not permissible.

19.1 Extension housing for two batteries (Part No. 789300 / -01)

Up to 2 batteries 12 V / 24 Ah may be placed inside the lower housing part of the IQ8Control M or in the extension housing (Part No. 789300 / -01). The required battery fastener (plastic device) is delivered with the panel equipment.
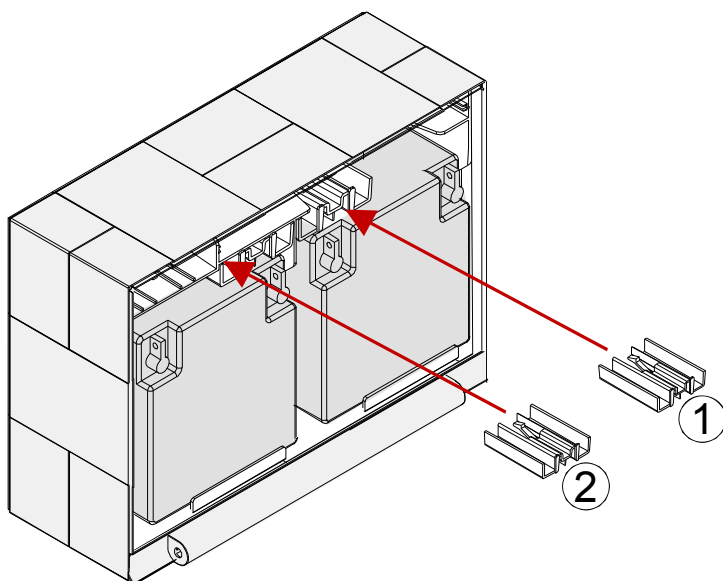
- Place batteries as shown and insert fastener.
- Assemble the additional battery mount ① and ②.

Fig. 110: Mechanical battery

> **Damage to the system!**
> Please note that depending on the rechargeable batteries used, a significant weight must be supported by the fastening screws of the extension housing. It is not permissible to install the rechargeable batteries without these fastening clamps.

> See Chapter 4.1.3.

20 Power supply for the built-in printer

The internal power supply of the built-in printer is provided by the basic module terminals of the FACP.
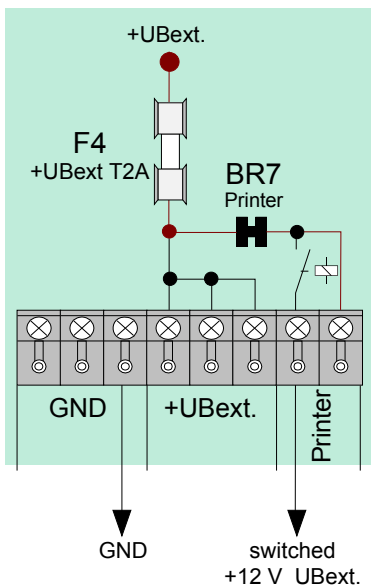

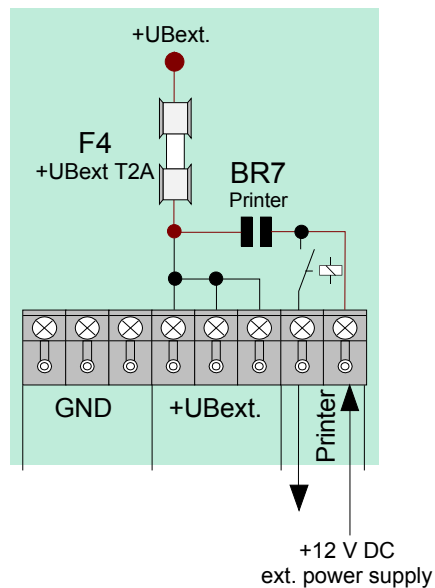*Fig. 111: Internal Power supply for the built-in printer*

Fig. 112: External Power supply for the built-in printer

⚠️ To use an external 12 V DC power supply unit (e.g. Part-No. 805683) open solder jumper **BR7**! Observe permitted torque (max. 0.4 Nm) of the terminals!

Accessories for the built-in printer

Paper for Printer	(Part No. 736235) (Part No. 736233 / -34)	Dimensions: W = 58 mm, L = 25 m

21 Mounting / Replacing of the Panel front + Printer

21.1 Heat transfer Printer without paper take-up unit (Part No. 7868xx)
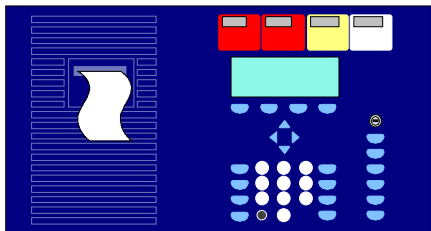
Fig. 113: Panel front (Part No. 7868xx[1])

Fig. 114: Mounting Panel Front

Fig. 115: Insert paper roll

Panel front for heat transfer Printer without paper take-up unit.

[1] Language identification, e.g. 00=German, 01=English etc. (refer to catalogue Fire Alarm systems)

Damage to the system

Remove all power from the panel before carrying out any installation work (battery and mains power supply).

Mounting / Replacing

1. Remove all power from the panel before carrying out any installation work (batteries and mains supply).

2. Open housing and remove all electrical connections to the mounted control panel.

3. Release mounting brackets and remove the existing operating panel carefully.

4. Insert operating panel and fasten it with the appropriate clamps to the frame. Fit printer in the mounting bracket ① and fix it with the supplied screws ②.

5. Connect printer ④ (Ribbon cable and +12 V DC power supply).

6. Release paper clamp ③ of the internal printer and insert paper roll.

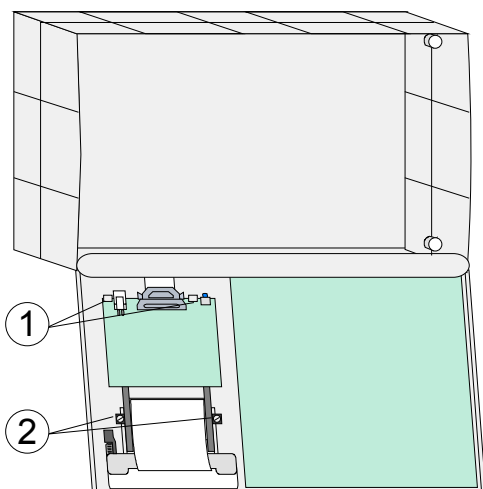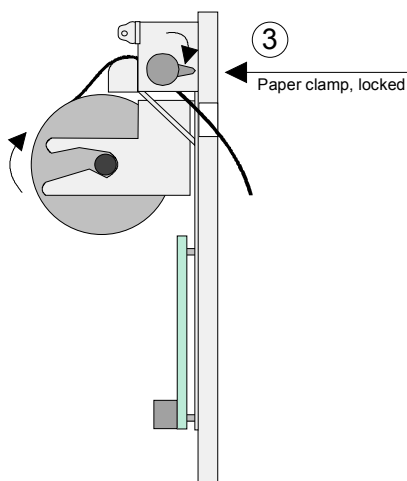7. Lead paper for approx. 5 cm through the opening of the front. Lock paper clamp again.

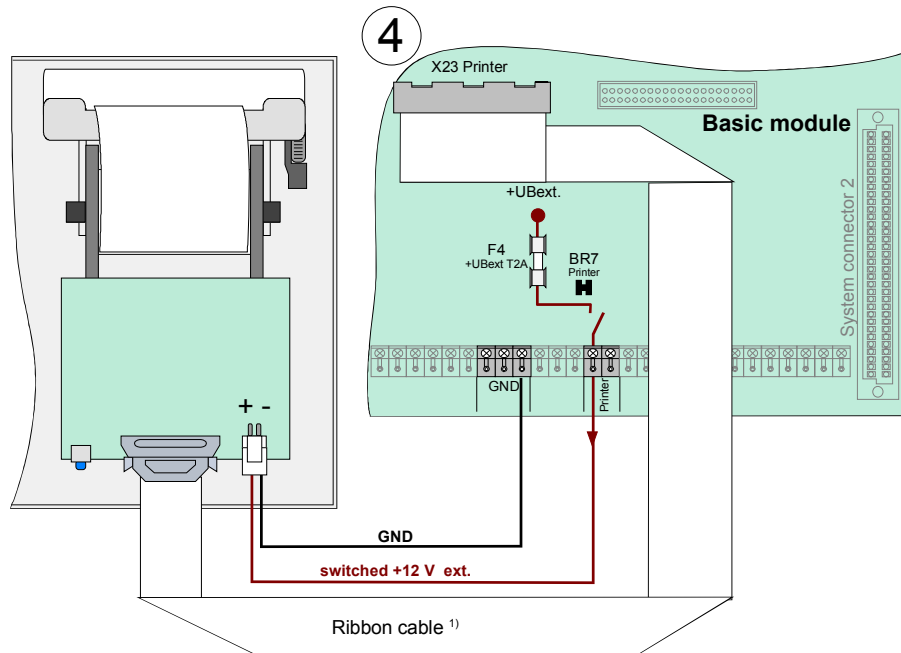**Wiring FACP IQ8Control with Panel front (Part No. 7868xx)**

Fig. 116: Wiring Printer

[1] *Ribbon cable, length 50 cm (Part No. 750756) / Ribbon cable, length 120 cm (Part No. 750757)*

⚠ Observe permitted torque (max. 0.4 Nm) of the terminals!

Customer data programming with tools 8000

The printer must be programmed with the tools 8000 programming software as a >Pixi II Thermal printer< in the panel configuration.

Fig. 117: Programming

21.2 Printer <u>with</u> paper take-up reel (Part No. 7863xx)
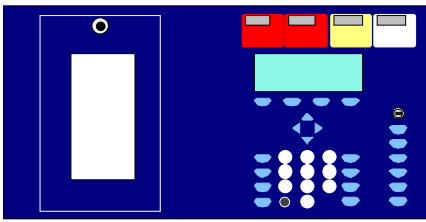

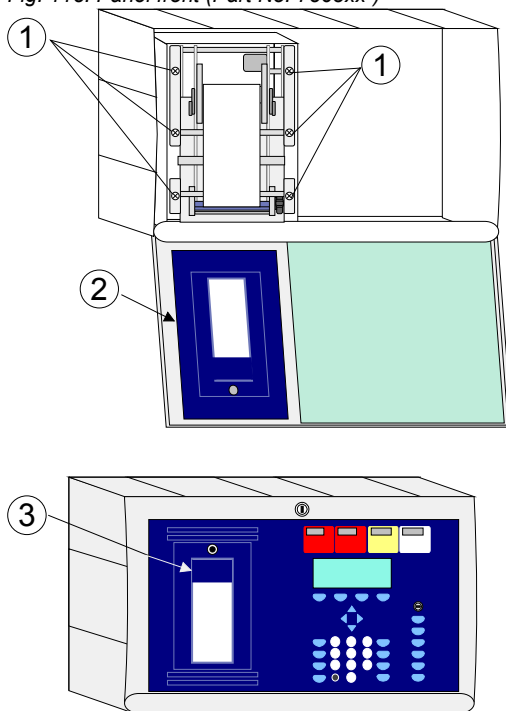Fig. 118: Panel front (Part No. 7863xx[1])

Fig. 119: Mounting / Replacing

Panel front with heat transfer printer <u>with</u> paper take-up reel.

Panel front for heat transfer printer <u>with</u> paper take-up reel (Part No. 7863xx) and printer kit for IQ8Control C / M (Part No. 784792)

[1] Language identification, e.g. 00=german, 01=English etc. (refer to catalogue Fire Alarm systems)

⚠ **Damage to the system**
Remove all power from the panel before carrying out any installation work (battery and mains power supply).

Mounting / Replacing

1. Open housing and remove all electrical connections to the mounted control panel (if existing).
2. Remove the printer by releasing the six screws ①.
3. Insert new printer in the mounting frame and fit screws ①.
4. Connect printer ④ (Ribbon cable and +12 V DC power supply) (ref. next Page Fig. 125)
5. Release paper clamps (**B+F**) of the printer and insert paper roll. Clamp **F** must be manually locked again.
6. Release the inserted acrylic plastic sheet ② at clampers and insert the new with the blue pad ③, for covering the paper run.
7. Close housing.

Fig. 120: Paper roll and paper take-up reel
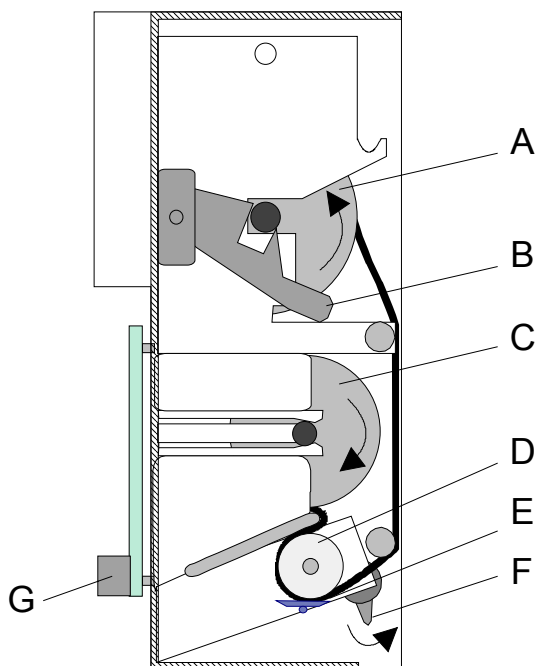
A Paper take-up reel

B Paper clamp, released

C Paper roll

D Rubber drum

E Printing head

F Head clamp, released

G Board with terminals for the power supply connection and ribbon cable (Centronics)
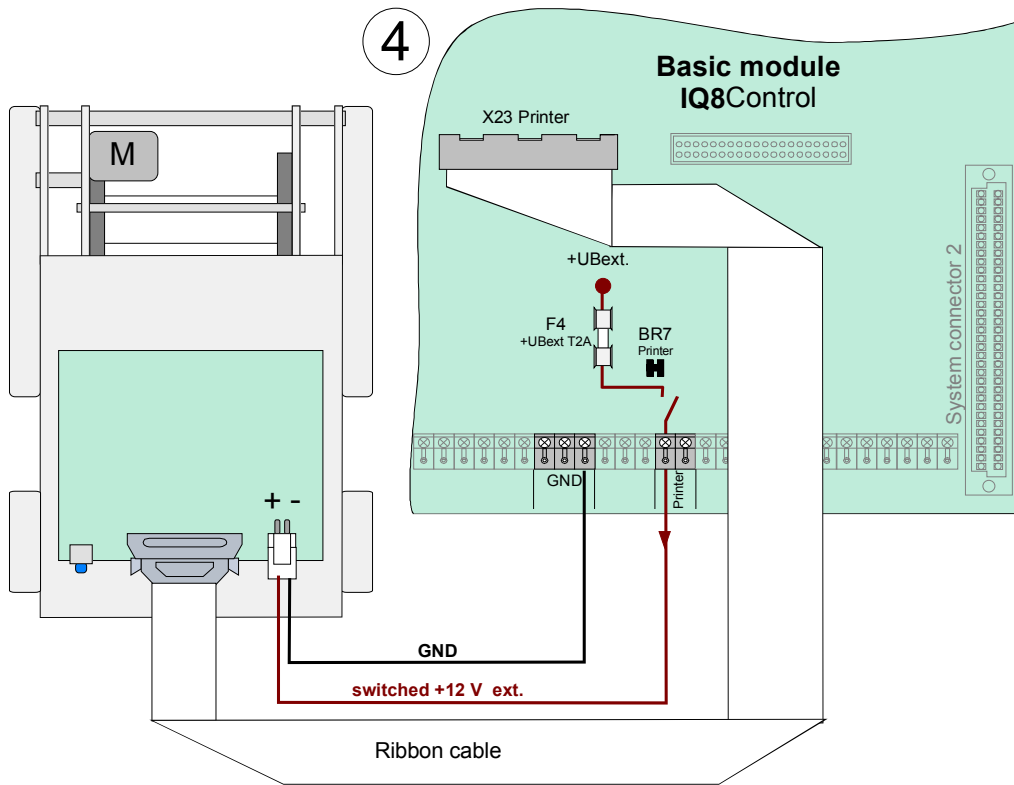
Wiring FACP IQ8Control

Fig. 121: Wiring Printer <u>with</u> paper take-up reel

⚠️ Observe permitted torque (max. 0.4 Nm) of the terminals!

Customer data programming with tools 8000

The printer must be programmed with the tools 8000 programming software from V1.15 or higher as a >Printer with take up reel for Serial 2< in the panel configuration.
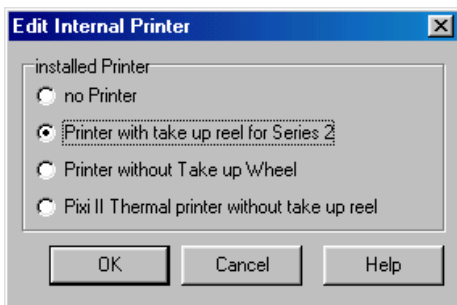

Fig. 122: Selecting the printer

22   Fire protection housing F30

The fire protection housing provides the installation of Fire Alarm Control Panels IQ8Control in accordance to the German MLAR and LAR requirements within corresponding ambient conditions.

Cabling of fire protection equipment must remain in operation at least for 30 minutes to meet the Fire resistance rating standard F30 for:

- Fire Alarm Control Panels incl. alarm transmission devices

- Systems for alert and notification of Visitors and Employees, if this function is required for alarm conditions

Fire alarm systems stipulated by constructional law with esserbus® PLus alarm devices, may be operated with DiBt approved fire protection housings in accordance to DIN 4102-2. This housing is a part of the systems VDS-approval and ensures the operation of connected alarm devices above the required 30 minutes.

Furthermore the fire protection housing complies to the German fire load guideline §40 paragraph 2 of the MBO, whereby a FACP IQ8Control may be operated in escape routes. Other housings and cases do not meet the approval and must not be used for this application.

i	• At least a single FACP incl. alarm transmission device must be installed in a fire protection housing.
	• The front door of the housing is closed in normal operation mode. Due to this the user operation level 1 (in acc. to EN 54-2) is not accessible. Possibly a Fire department operation panel is required by the local authorities.
	• The housing fan provides a continuous air exchange and causes an ambient noise of min. 51 dB. Therefore it is recommended not to mount this housings nearby workplaces.
	• Consider manufactures installation manuals of the housing to mount the FACP!
	• Warranty is detailed in manufacturers information, company Priorit AG.

Housing type versions

788033	Fire protection housing F30 R, wall mounting
788034	Fire protection housing F30 L, wall mounting
788035	Fire protection housing F30 R, standing
788036	Fire protection housing F30 L, standing

i	Refer to product catalog fire systems for additional information.

CE

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Technical changes reserved!

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