ESSER

by Honeywell

Operation and Installation Instructions

Fire Alarm Computer 8008

Intended purpose

This product must only be used for the applications outlined in the catalogue and the technical description. Only connect third-party equipment or components recommended by the manufacturer of the system.

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 here.

- 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:

Danger of death, severe injury or considerable material damage if the relevant safety precautions are not observed.

Important information on the product or a particular section of this manual, which should be read with particular attention.

Information about the operation or a functionality according to the guidelines of VdS Schadenverhütung GmbH.

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.

Operation Instructions

1   General

Thank you for buying a product from Esser by Honeywell.
The quality and reliability of Esser products are well known and ensure the highest level of safety at their installation location for many, many years. This user manual in combination with the instructions provided by your installer will quickly provide you with extensive information about the operation of the 8008 fire alarm control panel. We recommend that you read this user manual thoroughly and keep it together with the technical documentation of the fire alarm control panel. If you have any questions, please contact your installer.

To equip buildings, facilities, commonly-frequented areas and working spaces with a fire warning system can only be carried out economically and with reasonable propriety when correspondingly well-founded safety concepts are developed and accordingly applied..

Wherever the highest requirements are made on a fire warning system, whether in small commercial facilities or in industrial plants, the **Fire Alarm Computer 8008** transforms safety techniques and economy into practical reality. The modular design with different micromodules and individual extension concepts allow the Fire Alarm Computer 8008 to be easily adapted to special requirements. The Fire Alarm Computer 8008 represents the most modern standard of fire warning technology. A reliable fire warning facility is guaranteed by the application of "intelligent" fire detectors connected in an analog loop which is tolerant to short and open circuits.

In this analog loop - **the esserbus®** - up to 127 loop devices each capable of being configured into 127 individual detector zones can be connected with an overall cable length of up to two kilometres. The esserbus® is a two-wire line supplied and monitored at both ends in ring topology. The Fire Alarm Computer 8008 automatically registers the wiring of the analog loop and determines the logical addresses of the individual loop devices. A separate adjustment of the addresses of the individual loop devices is unnecessary.

Subscribers in the esserbus® are automatic and non-automatic intelligent fire detectors, technical alarm modules (TAL) and the specially developed esserbus® transponder input/output devices. These esserbus® transponders are loop devices with freely programmable inputs and outputs, for example for the activation and monitoring of external devices such as display panels, alarm devices, door closers and other connected equipment.

Using the **essernet®** safety network, 31 Fire Alarm Computer 8008 or other network subscribers such as display and operating panels or alarm devices can be connected in a homogenous network. Operation of the fire warning system, e.g. switching off a detector zone, is possible from any fire alarm control panel or operating panel in the essernet®. Signals such as alarm, trouble, disconnection or other events are transferred to all subscribers in the essernet® and can be accessed from any desired position. Data exchange can, according to the transfer rate, be carried out either with a twisted pair or a LAN cable. The essernet® communications protocol guarantees reliable data exchange even if a short or open circuit occurs in the network.

The operation of an installed and operative fire alarm control panel may only be carried out by authorised and trained persons under observance of the safety precautions and, if necessary, in collaboration with other organisations (e.g. fire department).

2   General view
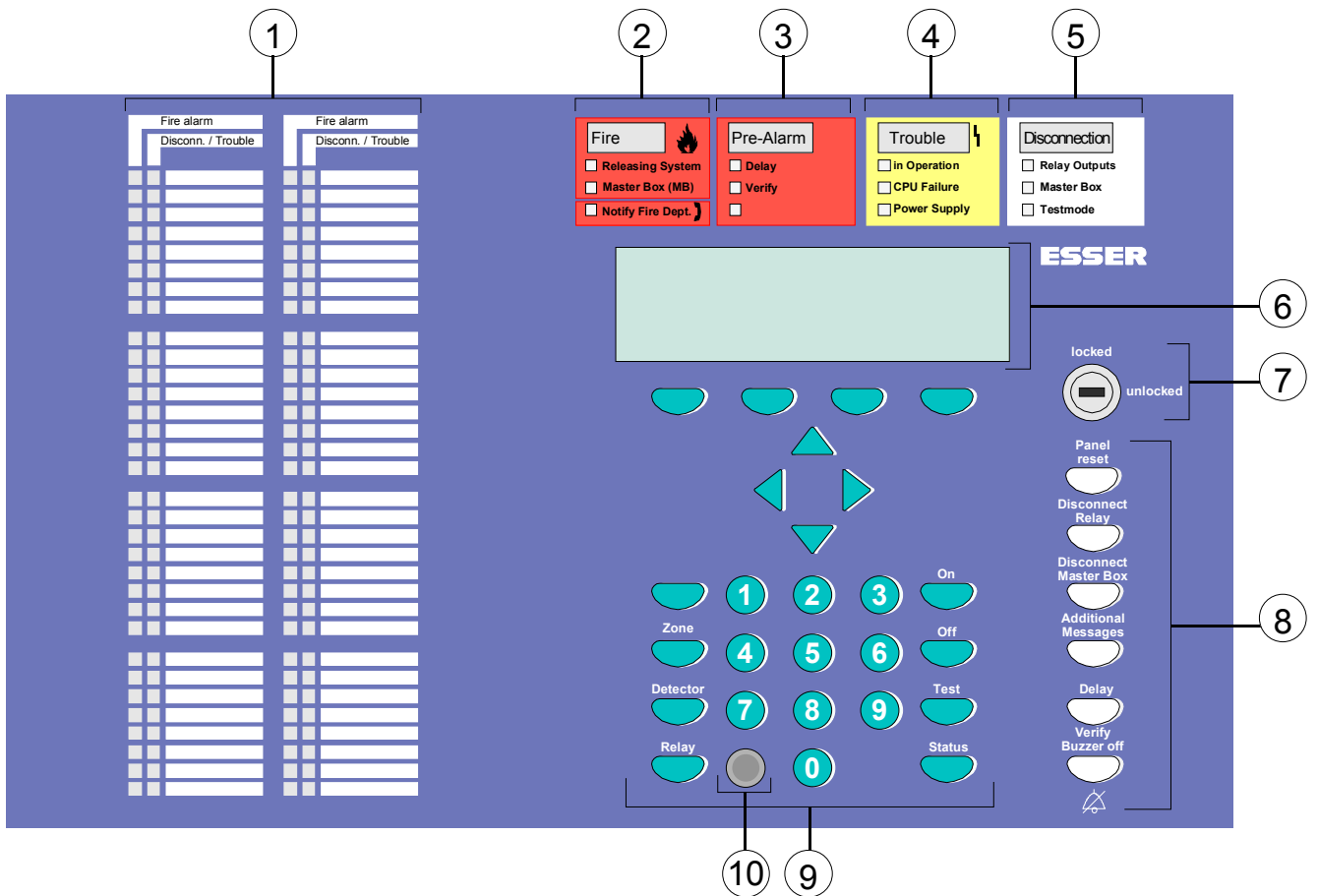
Fig. 1: General view of the display and operating elements

①	Single zone indicator units (GEA)
②	Common display FIRE
③	Common display PRE-ALARM
④	Common display TROUBLE
⑤	Common display disconnection
⑥	Plaintext display
⑦	Key switch
⑧	Operating elements
⑨	Function keys and keyboard
⑩	Opening for programming via Serice PC Connector must locked with dummy plug (supplement) for ESD protection

2.1 Key switch / enabling operation

Key switch in horizontal position
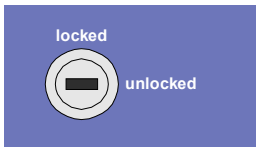
Fig. 2: Keyboard unlocked

- The keyboard is unlocked for the operation of the single Fire Alarm Computer 8008 and other processors interconnected through the essernet[®].

- The display menu is activated.

- If a fire alarm is activated, the activation of the master box (MB) is inhibited. (Works adjustment can be changed by client programming.)

⚠ In case of a fire alarm, activation of the master box (MB) will be disabled by the FACP. The fire brigade will not be alarmed, automatically. In case of an event, the red LED *Notify fire department* will be lit.

Key switch in vertical position

Fig. 3: Keyboard blocked

- The keyboard is blocked. The key can be removed.

- The keys Additional Messages and Verify / Buzzer off can still be operated when the keyboard is blocked.

2.2 Function of the display and operating elements

The display and control panel of the FACP 8008 is available with a standard display and with the larger 1/4 VGA display. In this documentation the display elements are described based on the 4-line standard display. With the larger (1/4 VGA) display, there may be slight differences in the appearance and the information displayed.

> **ℹ** When the fire alarm computer 8008 is used in Chinese-speaking countries or the CIS states, the 1/4 VGA display is always required.
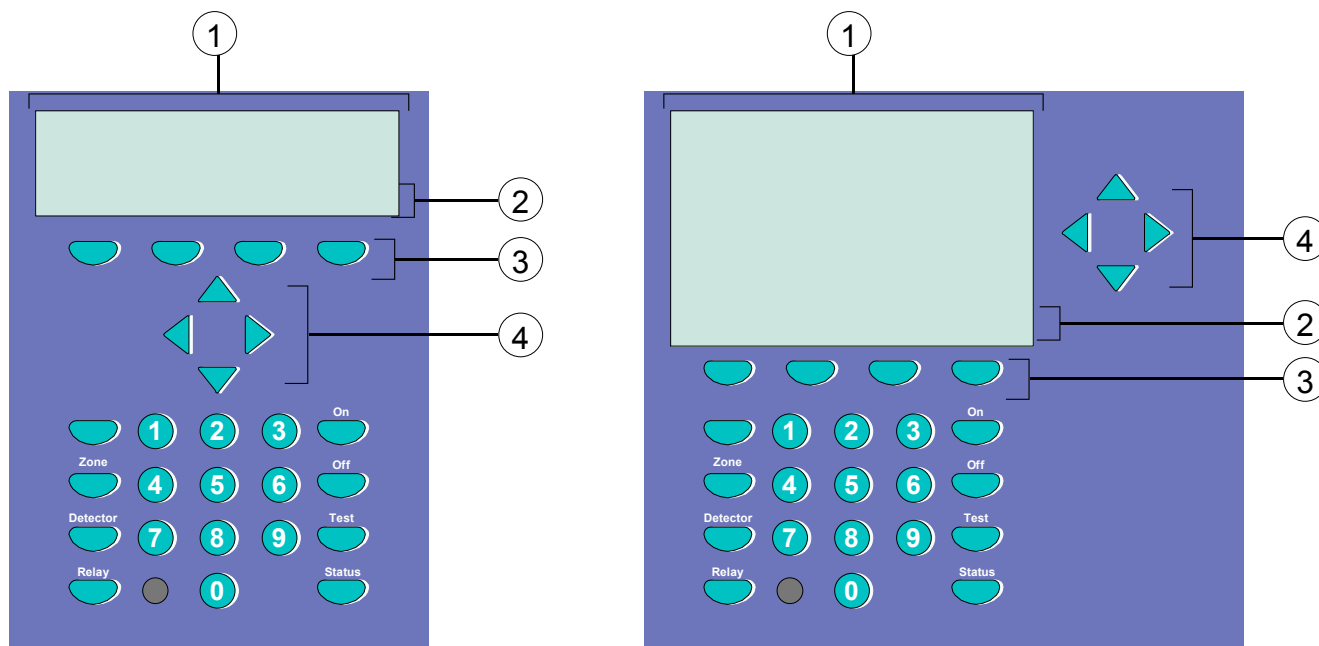
Fig. 4: Operating elements - keypad - display   *Operating elements - keypad - 1/4 VGA display*

①	Plainttext display Standard (4 lines / 40 characters per line) or 1/4 VGA (8 lines / 40 characters per line)
②	Menue
③	Function key
④	Cursor key

All received signals such as fire, trouble or switch-off are shown in the alphanumeric display in alphanumeric form (8 lines, 40 characters per line).

Keyboard

By means of the key switch, the keyboard is unlocked for operation. With these keys, it is possible to control panel functions such as switching detector zones and detectors on and off.

Function keys

With the four function keys, the menu options positioned above them in the alphanumeric display are selected. Depending on the current state of the fire alarm control panel or the operation level, differing menu options are shown in the display.

Common Display Fire

Fig. 5: Common display fire

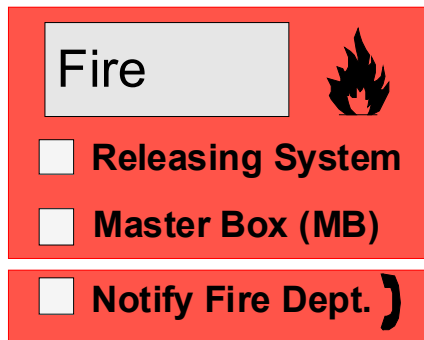The common display *Fire* is activated if at least one fire alarm has been detected. The originating detector or detector zone will be shown on the alphanumeric display.

If evacuation plans or guidelines exist for cases of fire alarm, these plans have to be followed and the premises have to be evacuated, if necessary. Make sure to inform yourself well in advance about existing escape routes and required measures in case of a fire.

Fire

Red LED is permanently on ⇨ **Fire alarm !**
An external alarm is triggered.

Intervention staff is alarmed via the connected transmission unit. If no transmission unit is connected or if it could not be activated, the *Call fire department* LED also lights up.

Fire Releasing System

Red LED is permanently on ⇨ The fire protection system, such as a connected extinguishing control unit, was activated.

Master box (MB)

Red LED is permanently on ⇨ The master box (MB) is activated and the intervention staff (e.g. fire department) has been alarmed..

Notify fire department

Red LED is permanently on ⇨ The master box (MB) has malfunctioned or is switched off and cannot be activated.
Call the fire department immediately!
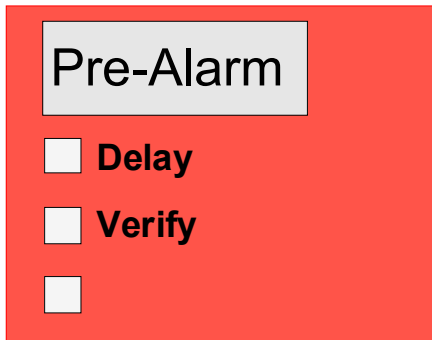
Common Display Pre-Alarm

Fig. 6:Common display pre-alarm

In the Pre-alarm status, the master box (MB) is not activated to route the alarm to the assisting bodies. A Pre-alarm is signalled when an intelligent fire detector reaches the pre-alarm level or when in a programmed twin-loop/twin detector connection a loop or a detector have detected a fire alarm.

The Pre-alarm is automatically reset if no further signals are transmitted. The common display Pre-alarm is extinguished and any activated alarm devices are switched off. If further alarm signals occur, a fire alarm is automatically initiated and the master box (MB) is activated. In the event of a pre-alarm, the reporting location and the cause should always be investigated.

PRE-ALARM

Red LED is permanently on   ⇨   At least one detector or detector zone is signalling the pre-alarm condition.

The activated detector or the activated detector zone is indicated on the alphanumeric display.

The controls programmed for this event in the customer data, such as relay outputs for the controls of internal signal transmitters or evacuation signals, are activated.

On pre-alarm, the master box for alarming the emergency services will not be activated.

Delay

Yellow LED lights   ⇨   An on/off switching interval has been programmed for the delay function.

During this time, the activating of the master box (MB) due to a fire alarm is automatically delayed by the delay time programmed in the customer data base.

Yellow LED blinks   ⇨   An alarm was detected while the *Delay* function was active.

The delay time is started. After this time elapses, the transmission unit is activated, if the alarm signal was not first reset by means of the button *Reset control panel*.

Verify

Yellow LED lights   ⇨   The function Verify has been activated by the Verify/Buzzer off key.

The programmed Verify time for the Verify of the cause of the alarm is running. The master box is only activated after the expiry of the Verify time..

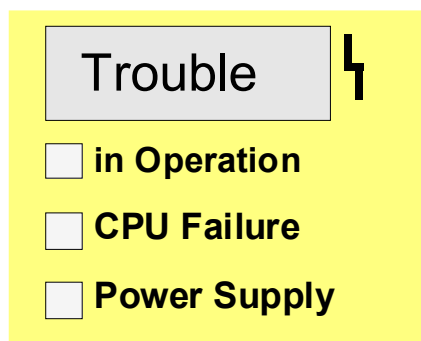The function *delay/Verify* is described in Section 4.7.

Common Display Trouble

Fig. 7: Common display TROUBLE

The common display *Trouble* is activated if at least one malfunction has been detected. The reason will be shown on the alphanumeric display.

Trouble

Yellow LED lights   ⇨   A component of the fire alarm control panel or a monitored relay output such as an external alarm device or a master box has malfunctioned.

Operation

Green LED is permanently on   ⇨   The power supply (battery or mains voltage) is connected. The fire alarm control panel is in an operative condition.

CPU failure

Yellow LED is permanently on   ⇨   The fire alarm control panel is only partially operative due to a malfunction of the control panel functions. Display or operation of the control panel is no longer possible (Exception: Key Buzzer off)

The activating of the master box (MB) and the LED *Master box (MB)* and *Notify fire department* is still operative in the CPU failure mode of the control panel in the case of a fire alarm.

Power supply

Yellow LED is permanently on   ⇨   The power supply (battery or mains voltage) is out of order.

In cases of malfunction or emergency operation, correct functioning of the FACP is no longer ensured. Inform customer/maintenance service!

Common Display Disconnection
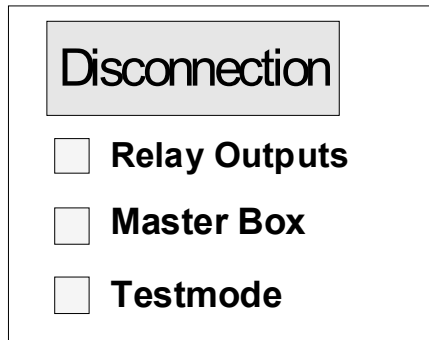
Fig. 8: Common display Disconnection

The common display *Disconnection* indicates that at least one output, input, or other component of the FACP has been disconnected. The disconnection will also be shown on the alphanumeric display.

Disconnection (common display)

Yellow LED is permanently on	⇨	At least one input/output - e.g. a detector zone or relay has been switched off.

Outputs

Yellow LED is permanently on	⇨	At least one relay output (AE) such as an internal control panel relay or the control of an esserbus® transponder has been switched off.

Master box (MB)

Yellow LED is permanently on	⇨	The master box (MB) is switched off, e.g. for servicing, by enablement of the keyboard with the key switch..

⚠ A switched off master box will not transmit an alarm signal in the case of an event!

Testmode

Yellow LED lights	⇨	A component of the control panel (e.g. detector zone) has been set to Testmode for servicing and maintenance work.

⚠ A detector zone in Testmode will not transmit an alarm in the case of an event!

Single Zone indicator units(GEA)
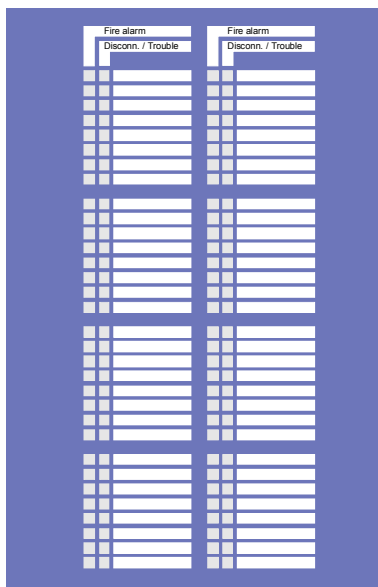
Fig. 9: Single zone indicator units (GEA)

Optical displays (LEDs) for 192 alarm groups can be entered in the operating panel of the 8008 fire alarm computer. *Fire* is signalled by a red LED. Malfunctions and disconnections are signalled by a yellow LED. There is a labelling field for each detector zone which can be marked with the name of the zone or of the area monitored by this group of detectors.

Fire alarm

Red LED is permanently on	⇨	At least one detector and / or one manual call point in the detector zone is signalling an fire alarm
Red LED blinks	⇨	For the zone, which first signalled the fire alarm (initial alarm detection).

Disconnection / Trouble

Yellow LED is permanently on	⇨	The detector zone is switched off. Switching detector zones on/off see Section 4.2.
Yellow LED blinks	⇨	At least one detector of the detector zone has malfunctioned. **Inform customer/maintenance service!**

⚠ Switched off or malfunctioning detector zones will not transmit an alarm in the case of an event!

Panel reset

Panel reset
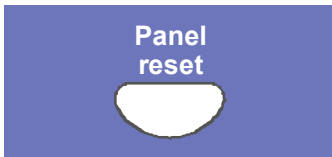
All detected fire alarms, detector zones, displays and technical alarm signals (TAL alarm) are cancelled and returned to normal condition.

Audible Alarm off
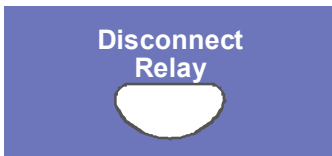
Disconnect Relay

The activation of the relay for this control panel, which was programmed in the customer data with the *Audible alarm off* function, such as the relay with connected acoustical and optical signals, is switched on or off (toggle function). Disconnects are displayed visually in the common display disconnect field.

Disconnect Master Box

Disconnect Master Box

The activating of the master box (MB) is switched on or off (toggle function). Switch-offs are displayed visually in the Common display disconnection field.

⚠ Switched off alarm devices and master boxes will not transmit an alarm in the case of an event. The fire department is not automatically alarmed.

Additional messages

Additional Messages

Additional messages can be shown in the display.

The first and last message with the highest priority are shown in the display approximately 20 seconds after the key was last pressed. By pressing this key the next message of the same or next level will be displayed. The key Additional Messages remains functional when the keyboard is locked (key-operated switch)!

Delay

When this key is pressed, the delay time is enabled/disabled (toggle function)

See Section 4.7 Delay/Verify.

Verify / Buzzer off

Verify

Start of the programmed Verify time up to the delay activating of the master box.
The *Delay/Verify* function is explained in section 4.7.

Buzzer off

Acknowledgement of the control panel buzzer. This key remains active when the keyboard is locked. The buzzer is reactivated in the case of a further event.

See also the description of the *Delay/Verify* functions in Chapter 4.6.

3   Operating status of the fire alarm control panel

The current operating status of the fire alarm control panel 8008 is shown on the operating panel. Six different operating conditions are possible:

3.1   Normal condition

The normal condition refers to an operative monitoring state of the control panel unchanged by external influences.

- The green LED *in Operation* lights

- No further displays or messages

- The operating panel keyboard is locked by the key switch

3.2   Fire

- The control panel is in alarm mode, i.e. it is signalling a fire alarm

- The common display FIRE (red LED) lights

- The master box (MB) has been activated

- The internal control panel buzzer sounds

- External alarm devices, e.g. acoustic alarm devices or control panel buzzers are activated

- The zone which has detected the fire is shown in the display with the programmed additional text

- The red LED of the corresponding zone(s) lights in the single zone indicator units (optional). If several zones signal a fire alarm, the red LED of the zone which first detected the fire blinks (initial alarm detection).

- The red LED Master box (MB) lights when a master box for automatic transmission of the alarm is connected and the fire department has been informed.

- Possibly, the red LED Notify fire department may light.
  The fire department has not been informed via the master box. **Call the fire department immediately!**

3.3 Trouble

The common display TROUBLE (yellow LED) lights and the control panel buzzer sounds intermittently.

- At least one control panel function has failed!

- A message is shown in the display describing the failure/cause

- The yellow LED of the zone in which the malfunction has possibly occurred blinks on the single zone indicator units (optional)

Detector zones/relay loops or inputs/outputs will not signal an alarm in the case of an event. Inform customer/maintenance service!

3.4 CPU failure

The fire alarm control panel is only partially operative!

- No messages on the alphanumeric display

- No evaluation of information

- No activation of external equipment such as alarm sounders

- The transmission unit and the Main Detector (transmission unit) and Call Fire Department LEDs are activated in the event of a fire alarm also when the control panel is in emergency operation.

A comprehensive operation of the fire alarm control panel is no longer provided.
Call customer/maintenance service immediately!

3.5 Disconnection

The normal condition of the control panel has been changed by an external influence.

Displays:

- The common display *disconnection* (yellow LED) lights

- Possibly, a further display in the Common display disconnection field may be signalled, showing which components have been switched off, e.g. Relay, Master box (MB)

- The disconnection is reported in the display as a plaintext message.

- A switched off detector zone is indicated on the single zone indicator units (optional) by a permanently lighting yellow LED

Switched off detector zones, detectors and controls (AE) and other parts of the equipment will not signal an alarm in the case of an event!

3.6 Testmode

The yellow LED *Testmode* lights. The Testmode mode of the control panel has been activated for service and maintenance purposes:

- The function of detectors/detector zones is under inspection

A detector zone in Testmode will not signal an alarm in the case of an event!

4 Operation

The following section describes the most important operating actions for a single fire alarm control panel 8008. If several processors are connected in a network through the essernet®, deviations from this description are possible. In this case, please ask your specialised installer.

The operation of an installed and operative fire alarm control panel may only be carried out by authorised and trained personnel under observance of the safety precautions and, if necessary, in co-operation with the relevant emergency services (e.g. fire department).

4.1 Function keys / selection menu

Overview	Service	Time func.	Info

or param. / add. text

F1	F2	F3	F4
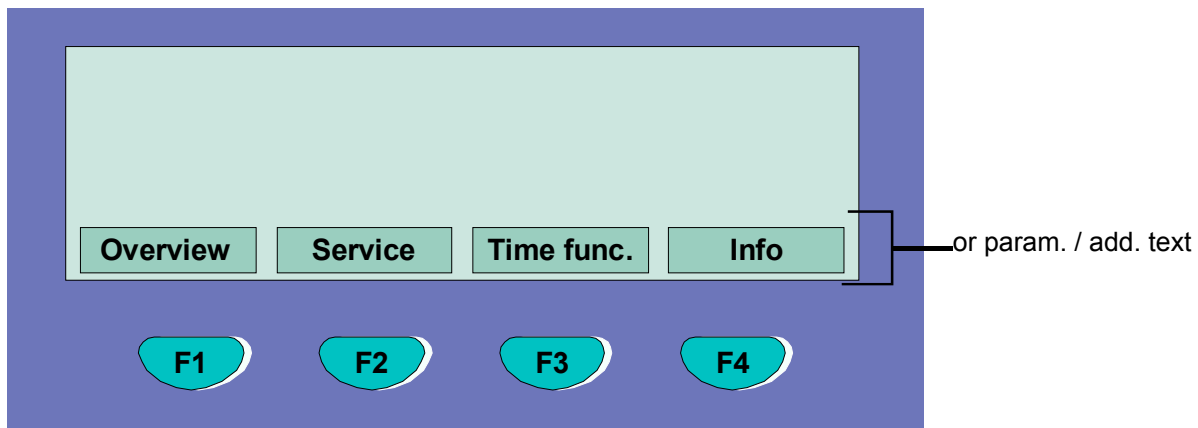
Fig. 10: Function keys / selection menu

Summary of the various menu options

The selection menu allows direct access to logically grouped menu options. When the keyboard is unlocked, up to four menu options are constantly shown in the display, each of which can be selected using the function key located below it.

Status   ⇨   Status display of current messages in order of significance.

Summary   ⇨   Group display and number of the various types of message, such as *fire, trouble, disconnection* etc.

Service   ⇨   Transfer to the service level to operate the primary loop functions such as switching primary loops, sensors etc. on/off.

Installer ⇨ Operating actions for the specialised installer for service and maintenance purposes. (Individual password code required, if a code has been programmed.)

Time funct. ⇨ Entry of time/date and the switching times of the Delay/Verify function

Escape ⇨ Termination of the current input prompt without storing or executing the function

Acknowledge ⇨ Acknowledge the selected menu point/operation

Function ⇨ Confirmation of the execution of the previously selected function

Rem. text ⇨ Query of the additional text display (Remote text) of other fire alarm control panels in the essernet® network. If an event has been detected by a fire alarm control panel in the essernet®, the additional text from the activated fire alarm control panel can be displayed by the remote text function on another fire alarm control panel.

Information and additional text

Info ⇨ Display of any programmed information text relating to the message in the alphanumeric display. If information text exists, i.e. has been programmed for this message, the menu point Info is displayed. If info text has not been programmed, the menu point Info is not displayed.

Param/AT ⇨ Display of the additional text programmed for the current message or a parameter. For a parameter, a works-programmed information text for the current message in the alphanumeric display is shown. It is possible to switch from additional text/parameter display using the function key. If additional text has not been programmed, the menu point Add. text is not displayed.

If information or additional text has been programmed for a message, the additional text (Param/AT) is always displayed first. Pushing the function key during the display of the additional text shows the information text.

4.1.1 Display / display control
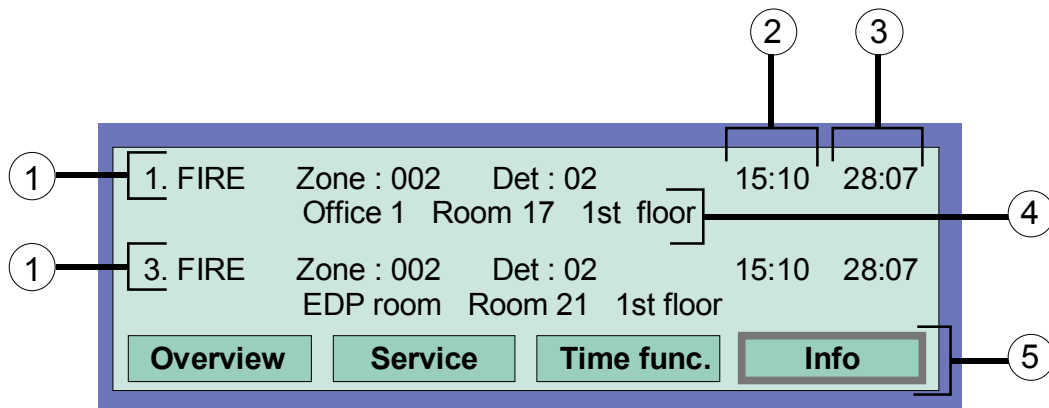
Fig. 11: Example display for a fire alarm (additional display)

①   In all, three fire signals were detected. The display shows the first (1.) and the last signal (in this case 3.) respectively. The display is scrolled by pressing the cursor key, and the next signal (2.) is displayed.

②   Time of this alarm message

③   Date of this alarm message

④   Additional text line
(the additional text programmed for the triggered zone or detector will be displayed)

⑤   Additional information text or parameter / additional text (Param/AT)

Significance of the display to "1. Fire"

- First fire signal on 28.07 at 15:10 hours

- The detector No. 02 in the detector zone No. 02 signals FIRE

- The additional text programmed for this detector zone *"Office 1 Room 17 1st floor"* provides information on the location of the fire

- The display field *Info* shows that an information text has been programmed for this detector zone, which can be accessed by pressing the corresponding function key.

Cursor-Keys
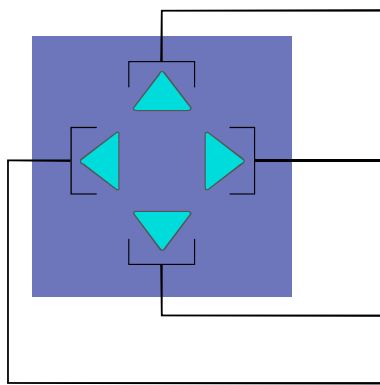
1) First / last message with the next higher priority

2) A next message with equal priority

3) First / last message with the next lower priority

4) Prior message with equal priority

Fig. 12: Cursor keys

Further Displays / Messages

For your information, the following additional messages (if existing) are shown in the alphanumeric display:

MB disconnected	⇨	when the activation of at least one master box (MB) for the warning of the fire department has been switched off, e.g. by enablement of the keyboard
MB trouble	⇨	when at least one master box (MB) has malfunctioned.
Acoustic trouble	⇨	when at least one acoustic alarm device has malfunctioned
Acoustic disconnected.	⇨	when at least one acoustic alarm device has been disconnected
Revision active	⇨	when the fire alarm control panel has been switched to revision on the fire department operating panel

4.1.2 Display priority of the messages in the display

Fig. 13: Additional Message Key

Display priority

The first and last message with the highest current priority are shown in the alphanumeric display of the Fire alarm control panel 8008 respectively. If several messages with equal priority are imminent, these can be queried by pressing the key Additional Messages.

Priority stage	Condition	Display
1	Fire alarm	**FIRE**
2	Fire alarm primary loop	**FIRE**
3	Technical alarm	**T-ALARM**
4	Pre-alarm	**PRE-ALARM**
5	Trouble	**TROUBLE**
6	Trouble primary loop	**LINE TROUBLE**
7	Transfer route switched on (Primary loop)	**LINE ON**
8	System trouble	**SYS TROUBLE**
9	Disconnection	**DISCONNECTION**
10	Disconnection primary loop	**LINE OFF**
11	Trouble relay output AE	**TROUBLE**
12	Switch-off relay output AE	**O/P OFF**
13	Activate AE	**ACTIVATE**
14	Testmode	**TEST**

If the control panel is operated during the display, the corresponding function is carried out. The message with the highest priority reappears in the display automatically approx. 20 seconds after the last key has been pressed.

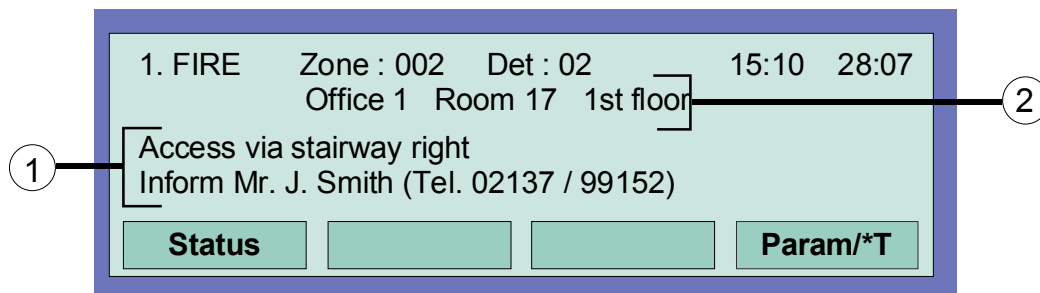### 4.1.3 Info text / additional text and parameter display

Fig. 14: Info text display

① **Info**: Display of any programmed information text relating to the message in the alphanumeric display. If information text exists, i.e. has been programmed for this message, the menu point Info is displayed. If *info* text has not been programmed, the menu point *Info* is not displayed.

② **Param/AT** Display of the additional text programmed for the current message or a parameter. For a parameter, a works-programmed information text for the current message in the alphanumeric display is shown. It is possible to switch between additional text/parameter display using the function key. If additional text has not been programmed, the menu point *Add. text* is not displayed.

If *information or additional text <u>and</u> a parameter* have been programmed for a message, the information and additional text is always displayed first. Pushing the Param./AT function key during the display of the additional text shows the parameter.

Example of an info text display (Fig. 14)

Access to programmed information text for this message programmed in the customer data and related to the zones (max. 4 lines / 40 characters per line) can be attained by pressing the function key Info.In this example, the following two-line info text was programmed for detector zone 02 in a fire condition:

- Access via stairway right !
- Inform Mr. J. Smith (Tel. 02137/ 99152)
- *Info text / additional text and parameter display*

Pressing the Condition function key *returns* the panel to the condition display. The display switches automatically to the preceding menu point approx. 20 sec. after the last operation.

24

4.1.4 Entering time/date

```
Time fct.    Time/Date
             Time          :  10:4▮
             Date          :  Tu. 02.06.99
             Delay on      :  --:--   off:  --:--

   Escape                              Function
```

Fig. 15: Entering time/date

Entering the time or the date is carried out under the menu point Time functions which is accessed by pressing the corresponding function key.

The corresponding input field (hour, minute, day, etc.) is marked using the cursor keys and the desired value is entered on the numeric keypad. When a date is entered *DD.MM.YY*, the day of the week (Mo, Tu, We...) is automatically calculated.

Escape   ⇨   Exits the menu point without storing the changes/inputs

Function   ⇨   The numeric values shown in the display are stored

Approx. 20 seconds after the last operating action, the display switches back automatically to the last menu point <u>without</u> storing the changes/inputs!

Entering times for the function *Delay/Verify*; see Section 4.6!

4.2 Detector zones

4.2.1 Switching on / resetting a detector zone

With switch-on/reset, a detector zone which has been switched off -incl. all fire alarms- is switched into the operative status or an operative detector zone is reset and any imminent messages such as Fire or Trouble are deleted.

Example

Press Key

Zone ➡ **4** ➡ **On**

Fig. 16: Switching on / resetting a detector zone 4 (example)

```
Operation

Zone:      4            Off
Detector:  0            in progress
```
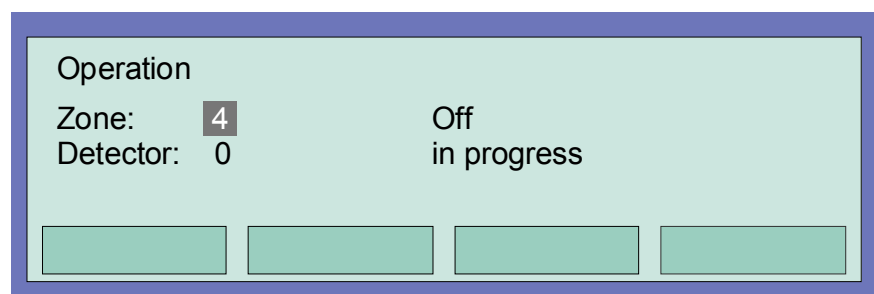
Fig. 17: Display switching on zone 4

4.2.2 Disconnect a detector zone

With the disconnection, the corresponding detector zone -incl. all fire alarms- is disconnected.
The detector zone is selected by means of the corresponding zone number.

Example

Press Key

Zone ➡ **4** ➡ **Off**
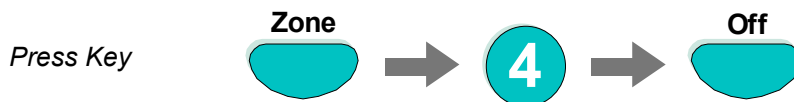
Fig. 18: Switching off / resetting a detector zone 4 (example)

Operation

Zone: 4   Off
Detector: 0   in progress
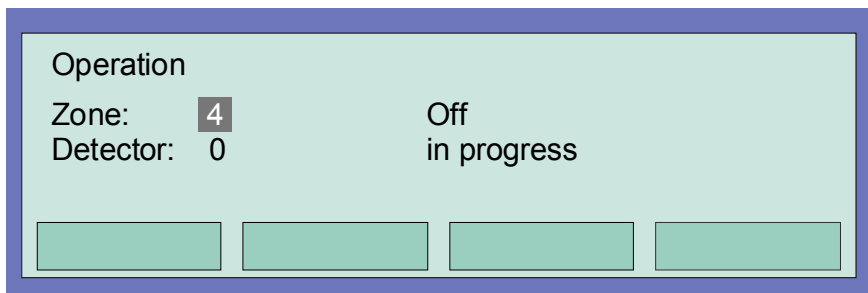
Fig. 19: Display switching off zone 4

In addition to the message on the display, the Disconnect is indicated optically by the common display Disconnect on the control panel and the corresponding continuous lighting of the yellow LED on the single zone indicator unit (if present).

---

1. Disconnect   Zone: 0004   Det: 15   11:10   22:11
                 Additional text (client text)

| Overview | Service | Time funct. | Info |
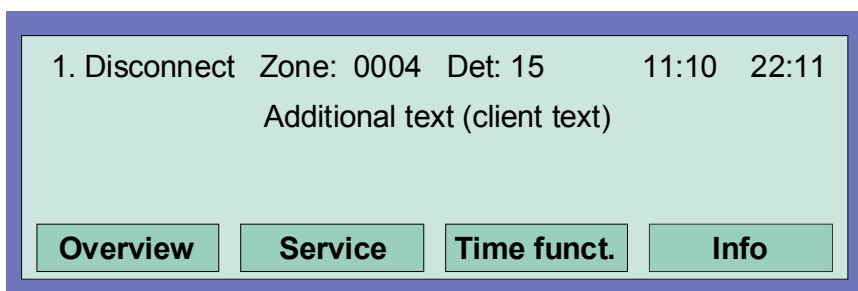
Fig. 20: Disconnect to status display

A disconnected detector zone will not signal an alarm in the case of an event!

4.2.3 Status of a detector zone

With this function, the current status, e.g. *Normal, Alarm* and *Trouble*, of the corresponding detector zone can be interrogated directly.

Example

Press Key
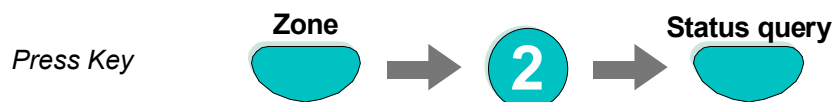
Fig. 21: Status detector zone 2 (example)

| Operation | Zone : 0002 |
| Status: | normal |

End

Fig. 22: Display Status zone 2

4.3 Detectors

Functions relating to detectors are only possible for addressable fire detectors of the detector series 9100 / 9200 and also **IQ8**quad. These fire detectors can be selected and controlled by a detector address.

4.3.1 Switching on / resetting a detector

With switch-on, an individual disconnected detector of the selected detector zone is switched into the operative status or an active detector is reset and any imminent messages such as *Fire* or *Trouble* for this detector are deleted.
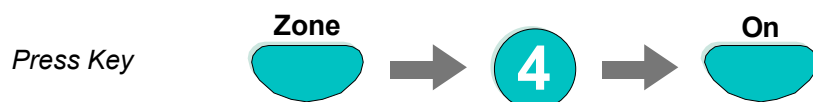
Please note that the zone number has to be entered before the detector number.

Example

Press Key

Fig. 23: Switching on detector zone 2 /detector 12 (example)
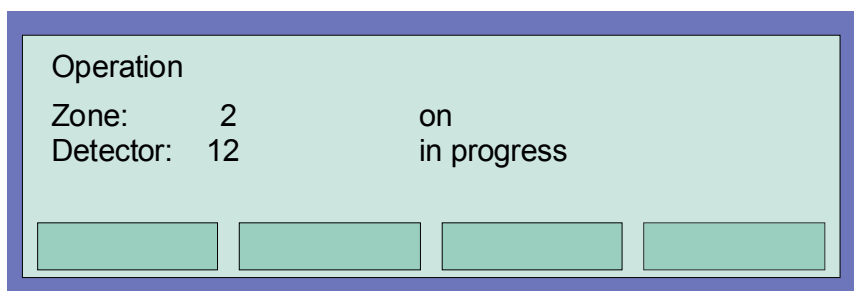
Fig. 24: Display switching on detector zone 2 / detector 12

4.3.2 Disconnect a detector

With the disconnection, an individual detector of the selected detector zone is disconnect. In addition to the message on the display, the disconnection of the detector is indicated optically in the Common display Disconnect field.

Individual detectors within a detector zone can only be disconnected if addressable series 9100 / 9200 and also **IQ8**quad detectors are used. Series 9000 standard fire detectors can not be disconnected individually.

Please note that the zone number has to be entered ahead of the detector number.

Example

Press Key   **Zone** ➡ **2** ➡ **Detector** ➡ **1** ➡ **2** ➡ **Off**

Fig. 25: Disconnect detector zone 2 /detector 12 (example)

```
Operation

Zone:      2            off
Detector:  12           in progress
```
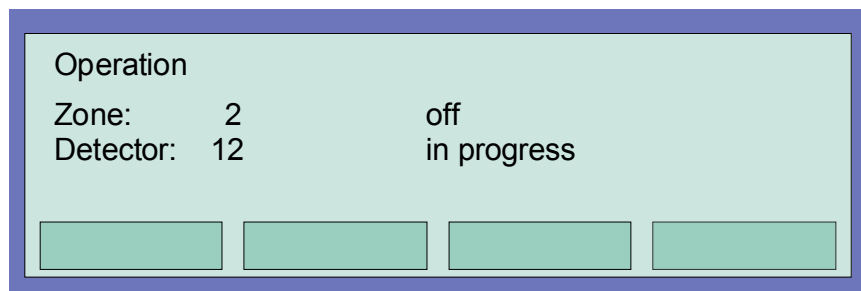
Fig. 26: Display disconnect detector zone 2 / detector 12

⚠ A disconnected detector will not signal an alarm in the case of an event!

4.3.3 Status of a detector

With this function, the current status, e.g. *Normal, Alarm* and *Trouble*, of the corresponding detector can be queried directly.

Individual status query within a detector zone is only possible if addressable series 9100 / 9200 and also **IQ8**quad detectors are used. Series 9000 standard fire detectors can not be queried individually.

Please note that the zone number has to be entered ahead of the detector number.

Example

Fig. 27: Status detector zone 2 /detector 12 (example)

Fig. 28: Display Status detector zone 2 / detector 12

4.4 Controls

4.4.1 Switching on a control

With the switch-on, a previously switched off control (relay, open collector output) is switched back on. In case of an event, the switched-on output will be controlled in accordance with the programmed control conditions.

Example

Press Key
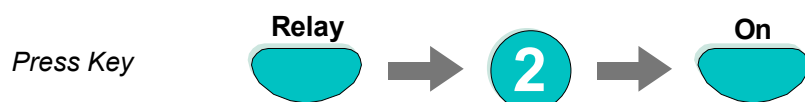
Fig. 29: Switching on Relay 2 (example)


```
Operation
Relay :  2               On
                         in progress
```
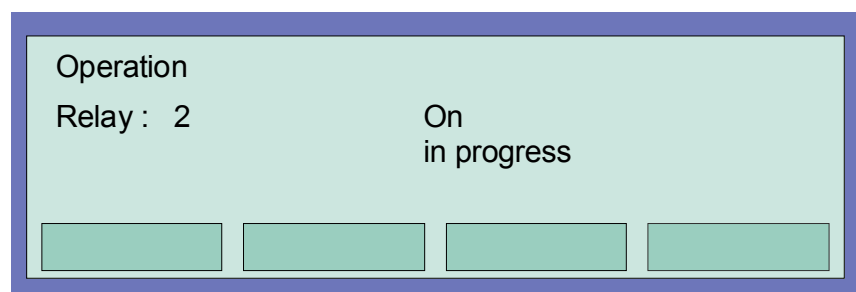
Fig. 30: Display switching on Relay 2

4.4.2 Disconnect a control

With the disconnection, a control (relay, open collector) is disconnected. In addition to the plaintext message in the display, the Disconnection of the control is indicated optically in the Common display disconnect field.

Example

Press Key

Relay → 2 → Off
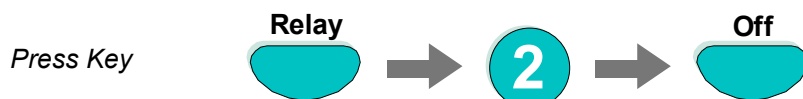
Fig. 31: Disconnect Relay 2 (example)

```
Operation

Relay :  2                Off
                          in progress
```
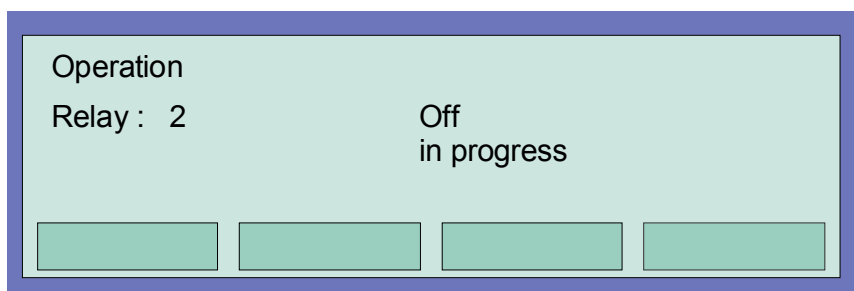
Fig. 32: Display disconnect Relay 2

Relays may be set to *inverse* by means of customer data programming of the 8008 FACP. In this case, the relays will be activated in the normal state of the FACP and deactivated in case of the associated event.

If a relay for which *inverse* activation has been programmed is disconnected, it will be deactivated. Control of external equipment depends on the way in which it is connected to the NO/NC contacts of the relay.

⚠️ The equipment connected to a disconnection control (e.g. alarm devices) are <u>not</u> activated in the case of an event.

4.4.3 Status of a control

With this function, the current status, e.g. *Normal, Activated, Disconnection* or *Trouble* of the corresponding control can be queried directly.

Example

Press Key

Relay ➡ **2** ➡ **Status query**
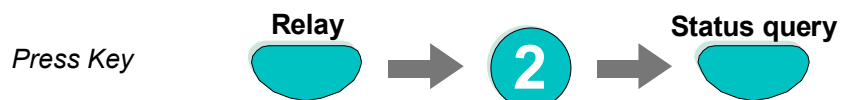
Fig. 33: Status Relay 2 (example)


```
Operation        Relay : 0002
Status query:    0001  message



   End
```

Fig. 34: Display status Relay 2

Relays may be set to *inverse* by means of customer data programming of the 8008 FACP. In this case, the relays will be activated in the normal state of the FACP and deactivated in case of the associated event.

In normal operation of the 8008 FACP, relays programmed for *inverse* activation are indicated as 'active'.

4.5 Common display of the status messages

In the common display *Overview*, all current messages such as *Fire, disconnection, Trouble* and other conditions of the fire alarm control panel are displayed, sorted by priority.

If more messages are imminent than can be shown in the display, it is possible to "scroll" in the display with the cursor keys.
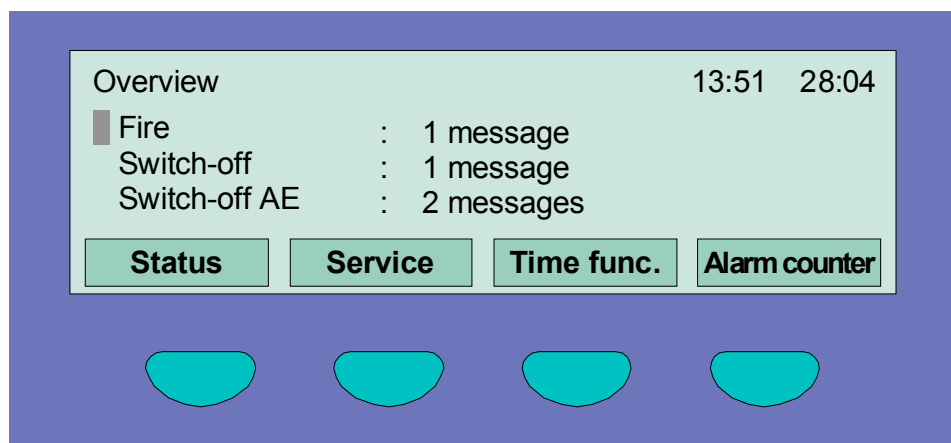
Fig. 35: Display overview

For a detailed status display of a particular message, mark the corresponding message line with the cursor and press the function key *Status.*
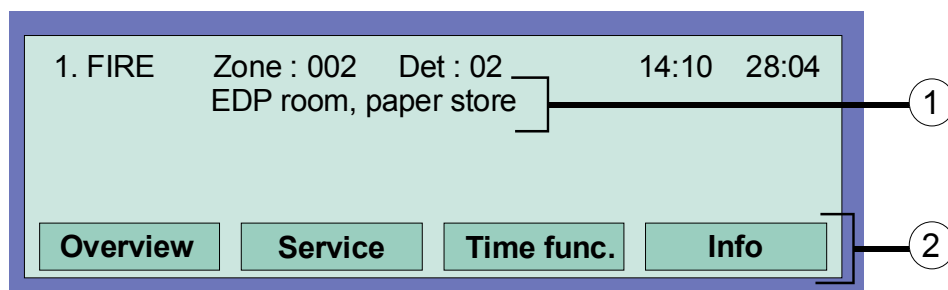
Fig. 36: Display for a detailed status message fire alarm (example)
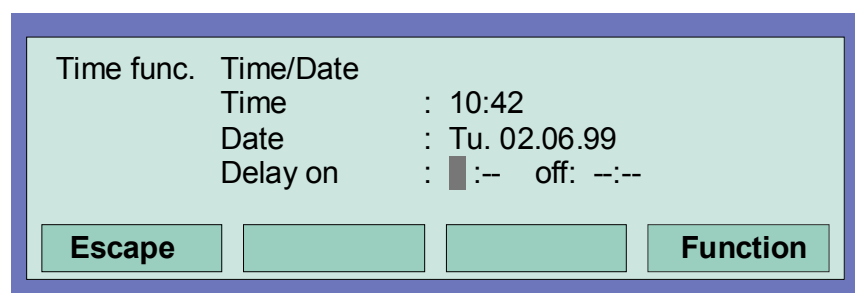
①   Additional text line associated with the triggered zone/detector (example)

②   Additional information or parameters may be displayed by pressing function key *Info*

4.6 Delay and Verify

A switching time can be entered under this menu point *Time functions* by the operator of the fire alarm system in addition to the switching times programmed under the *Delay/Verify* function in the customer data (if programmed by the installer).

If a fire alarm occurs during the active delay function, the master box (MB) is only activated after the expiry of the programmed delay time (max. 600 seconds). If the key *Verify* is pressed during the delay time, the delay of the activating of the master box is extended by the verification time programmed in the customer data (max. 600 seconds). The cause of the alarm can be verified in this period.

After the expiry of the delay and the verification times, the master box (MB) is activated automatically if the alarm state has not been cancelled and the activation of the master box inhibited by pressing the *panel reset* key.

```
┌─────────────────────────────────────────────────┐
│  Time func.  Time/Date                           │
│              Time         : 10:42                │
│              Date         : Tu. 02.06.99         │
│              Delay on     : █ :--   off: --:--   │
│  ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
│  │ Escape   │ │          │ │          │ │ Function │
│  └──────────┘ └──────────┘ └──────────┘ └──────────┘
└─────────────────────────────────────────────────┘
```

Fig. 37: Entering a switching point for the delay time

If a switching time for the function *Delay/Verify* has been programmed in the customer data by the installer of the fire alarm system, the **first switch-on time and the first switch-off time** is accepted as the valid switching time when an additional switching time is entered under this menu *point Time functions*. *Exceptional days* can be specified in the customer data programming on which the automatic, i.e. delay/Verify times programmed by the installer will not take effect.

Example:

Customer data programming:	Switch on **06.30**, switch off 21.30
Operator's entry under this menu point:	Switch on 10.00, switch off **15.00**
Valid switching time:	Switch on 06.30, switch off 15.00

Please consult your installer to find out whether the function *Delay/Verify* has been programmed in the customer data of your fire alarm control panel. If this function is not activated, e.g. for technical reasons or requirements, the functions described in this section can <u>not</u> be used.

4.6.1 Delay

By pressing the *Delay* key, the function *Delay* is started or ended manually (toggle function). The activated delay function is indicated on the operating panel by the continuously illuminated yellow LED *delay*.

Fig. 38: Delay key

If a fire alarm occurs when the delay function is activated, the activation of the master box (MB) is delayed by the delay time programmed in the customer data (max. 600 seconds). The initiated delay time is indicated in the operating panel by the blinking yellow LED

4.6.2 Verify

If the delay time has been started due to a fire alarm, the activation of the master box can be delayed additionally to the delay time (max. 600 seconds) by the verification time (max. 600 seconds) for the *Verify* of the cause of the alarm by pressing this key.

Fig. 39: Verify key

VdS   The guidelines of the Association of German Property Insurance Companys (Verband der Schadenversicherer VdS, Cologne) must be observed for the function *Delay and Verify*.

4.7 Alarm counter

Differentiated display of the detected alarm signals from fire and technical alarm zones for this individual fire alarm control panel and the aggregate value of all other fire alarm control panels interconnected in the essernet®.

```
Alarm counter                    10:24   10:05

Fire alarm    : 6     Sum       : 50
Tech. alarm   : 2     Sum       : 2


 Overview
```
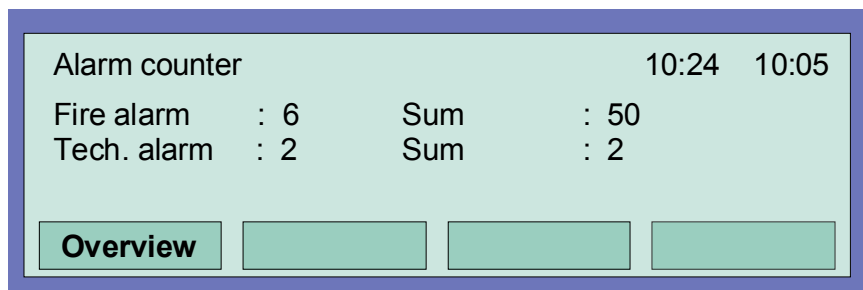
Fig. 40: Display alarm counter

Example display

6 Fire alarms and 2 technical alarms have been detected by this fire alarm control panel up to now. The sum of all alarm signals detected in the essernet® network amounts to 50 fire alarms and 2 technical alarms (TAL alarms).

The alarm counter cannot be reset to - 0000.

38

4.8 Lamp test

The *Lamp test* function is used to test the optical and acoustical signals in the control panel for approx. 10 seconds by activating all LEDs and the built-in buzzer.

Press Key   **Test**
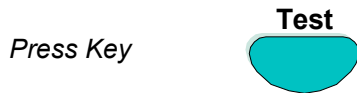
Fig. 41: Lamp test start

- All optical displays (LED) of the operating panel and the single zone indicator unit (if installed) illuminate
- The display area of the alphanumeric display is completely darkened
- The control panel buzzer sounds
- The versions No. of the panel software is then shown on the display

This function ends automatically after approx. 10 seconds!
Pressing the *Test* key again stops the lamp test before the expiry of 10 seconds!

4.9 Service level

The service level allows the operator to carry out operations or to switch off individual fire detectors and primary loops in a functional fire alarm system.

These functions can also be performed on interconnected control panels integrated in the essernet® network, i.e. independently of the control panel.
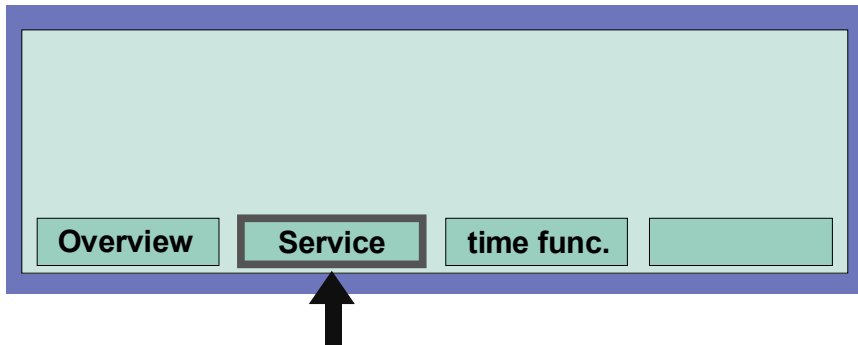
Fig. 42: Function key "Service" in the status level
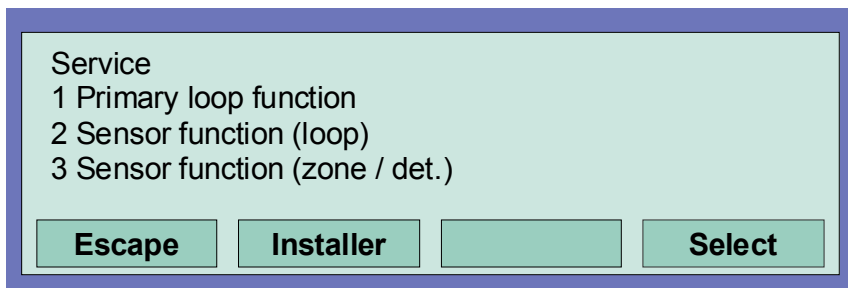
Fig. 43: Display in the service level

The following operations and switch-offs can be carried out in the service level on the fire alarm control panel without entering an authorisation code:

1.	Primary loop functions	(see Section 5.1.1)
2.	Sensor function (loop)	(see Section 5.1.2)
3.	Sensor function (zone/detector)	(see Section 5.1.3)

Enter the number of the desired function or select the menu item with the cursor keys. Then press the *Select* function key in order to execute the function.

The service level is protected from unauthorised access by means of an access code. Any operation of the FACP may only be carried out by authorised and trained persons under observance of the safety precautions and, if necessary, in cooperation with the emergency services (e.g. fire department).

4.9.1   Primary loop functions

Using this function, primary loops including all connected zones and loop devices can be switched on or off at the keypad.
The switching state is indicated on the control panel and the alphanumeric display

```
┌─────────────────────────────────────────────────┐
│ ┌─────────────────────────────────────────────┐ │
│ │  Primary loop / Transfer route              │ │
│ │  Primary loop : ▇                           │ │
│ │                        1 on / off           │ │
│ │                        2 reset              │ │
│ │  ┌──────────┐ ┌───────┐ ┌────────┐ ┌───────┐│ │
│ │  │Func. menu│ │       │ │ Repeat │ │ Select ││ │
│ │  └──────────┘ └───────┘ └────────┘ └───────┘│ │
│ └─────────────────────────────────────────────┘ │
└─────────────────────────────────────────────────┘
```
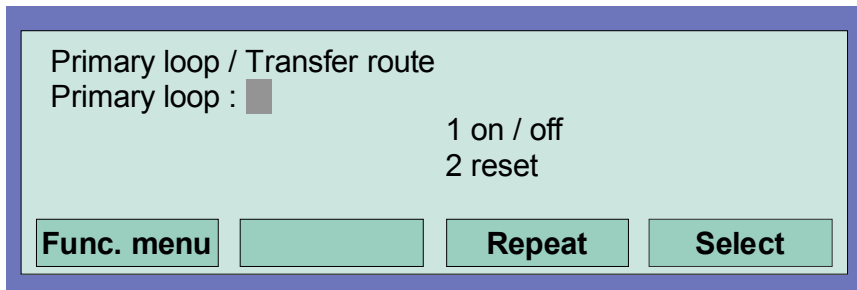
Fig. 44: Entering the primary loop number

Primary loops are:

- all analog loop modules included in this FACP
  (including the analog loop with all associated devices connected to this module)

- all 4-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 basic/peripheral module

Switch on / disconnect Primary loops:

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

- Enter the number of the desired function (1 = switch on/reset, 2 = switch off) or select the menu point with the cursor keys and press the *Function* key

In the case of an input error, the display can be erased by pressing the *Zone* key and the primary loop number can be re-entered.

⚠ When a primary loop, for example a 4-zone module or an analog loop module is disconnected, all zones and loop devices connected to this module are disconnected. Disconnected fire detectors and call points will not activate an alarm in the case of an event!

Primary loop number and slot

Individual assemblies of the FACP 8008 can be switched on/off with the internal primary loop number through the control panel keyboard or programmed with the programming software tools8000.

Definition of primary loop number

The 4-digit primary loop number consists of the Fire alarm control panel number (1, ..., 31), the Slot of the I/O card (1, ..., 5) and the slot number for the micromodule (1, ..., 8) on the I/O card.

0 1   2   3

Slot number of the micromodule on the I/O card

Slot number of the I/O card on the backplane bus board (max. 5)
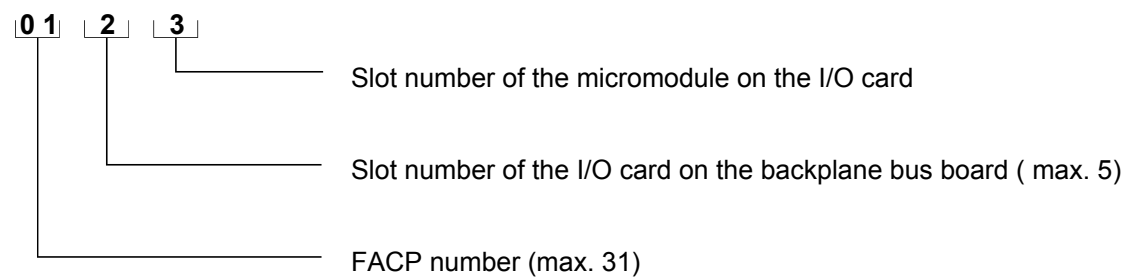
FACP number (max. 31)

Example:

Primary loop number	FACP number	slot number / I/O card	slot number / micromodule
0311	3	1	1
0335	3	3	5
0341	3	4	1

Location of I/O cards and micromodules
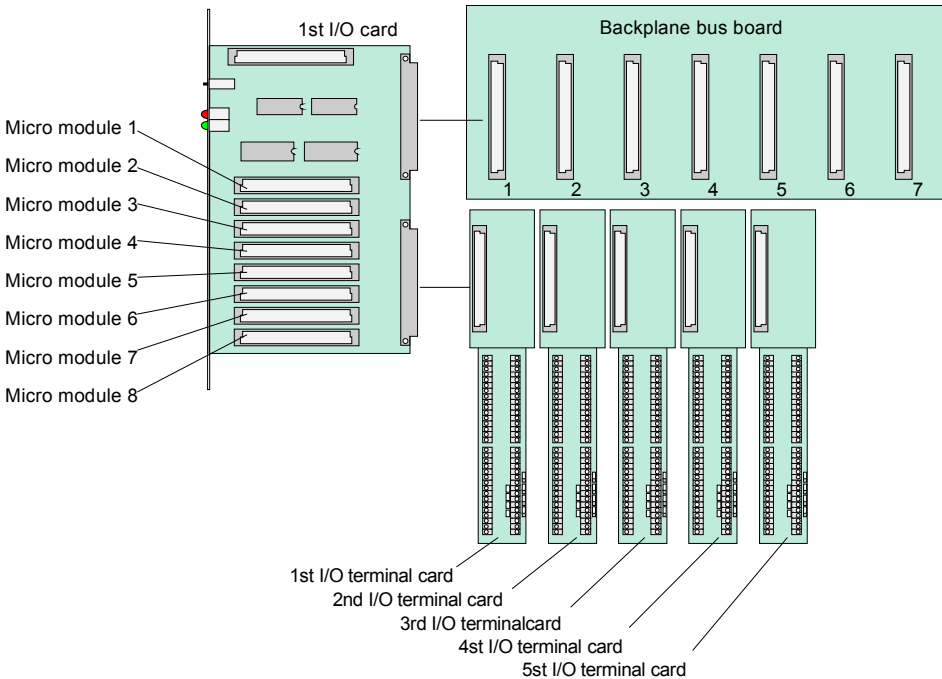
4.9.2 Sensor functions (loop)

Using this function, detector sensors of the multisensor fire detector such as all O sensors (Optical = photoelectric sensor) or all I sensors (I = ionisation smoke sensors) or in OHI multisensor detectors the OI sensor combination in an analog loop can be switched off.

If, for example, OHI multisensor detectors are disconnected with the function *OI sensors off*, only the third sensor - the H sensor (heat detector) - remains active. Disconnecting the heat sensors (H sensors) is not possible.

```
Sensors (loop)
Primary loop  : ▮            1 O -Sensor off
                             2 OI-Sensor off
                             3 I  -Sensor off
                             4 Sensors on

  Escape                               Function
```
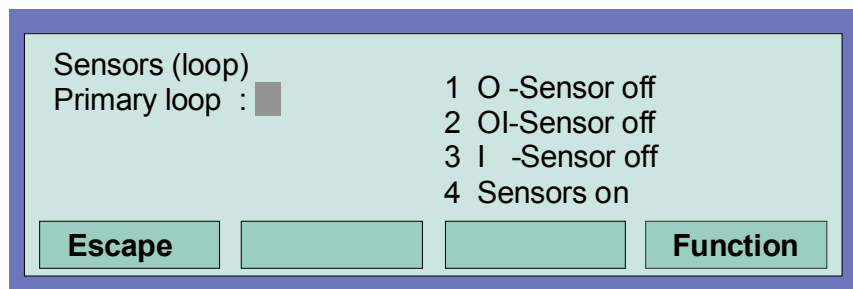
Fig. 45: Sensor functions reladed to primary loops

O detector	⇨	Optical fire detector with a single sensor (photoelectric sensor)
T detector	⇨	Heat detector with a single sensor (Thermosensor)
I detector	⇨	Ionisation smoke detector with a single sensor (Ionisation sensors)
OT detector	⇨	Multisensor fire detectors with two various sensors (OT= Photoelectric and Thermosensor)
O²T detector	⇨	Multisensor fire detectors with three various sensors (O²T = two Photoelectric- and Thermo sensor)
OTI detector	⇨	Multisensor fire detectors with three various sensors (OTI= Photoelectric-, Thermo- and Ionisation sensors)
OTG detector	⇨	Multisensor fire detectors with three various sensors (OTG = Photoelectric-, Thermo- and Gas sensor)

> ℹ️ Switching off sensors is only possible for OH and OHI multisensor fire detectors. If multisensor fire detectors with unifunctional detectors (detectors with only one sensor) are installed together in an analog loop, only the sensors in multisensor detectors are switched off.

Example of switching off sensors in an analog loop:

- Press key "2" to select the Service function (loop) or select the menu point with the cursor keys and acknowledge by pressing the *Select* function key

- Enter the number of the desired function (1 = O sensor off, 2 = OI sensor off, 3 = I sensor off, 4 = all sensors on) or select the function with the cursor keys and press the Function key

Switching on/off not permissible

The switching on/Disconnection of the detector sensors is indicated in the display.

If sensors have already been disconnected in an analog loop, for example I sensor off for all fire detectors or if there are no sensors of the selected type in this analog loop or a zone disconnect has been detected, the message *"Switch on/Disconnect not permissible"* is displayed.

In an analog loop, it is generally only possible to execute a disconnection function, e.g. disconnected sensors or detectors, when no further, lower-order disconnected functions have been carried out; i.e. when individual detector sensors within a detector zone have been disconnected, this detector zone cannot be additionally disconnected, as disconnect functions for this detector zone have been carried out.

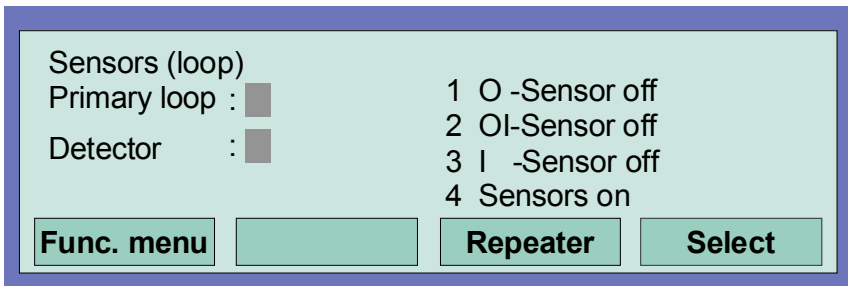However, it is possible to switch off other zones of this analog loop in which sensors/detectors have not been disconnected. In order to change the existing sensor switching status, all disconnected detector sensors must first be switched on, for example with the command All sensors on. After *all detector sensors* have been switched on, a further switching off/sensor disconnect can be performed.

4.9.3 Sensor functions (zone/detector)

Using this function, it is possible to switch off sensors in detector zones or in individual fire detectors in an analog loop.

By entering the zone and detector number, individual sensors can be switched off in each single multisensor detector. If only the zone number is entered (detector number = 0), the desired sensor switch-off is performed for all multisensor detectors in this detector zone.

If sensors have already been switched off in individual multisensor detectors in this zone, the message *"Switch on/off not permissible"* appears. All sensors must first be switched on in this zone before the desired sensors can be switched off. (See also above *Sensor function loop*)

```
Sensors (loop)
Primary loop : ▯          1 O -Sensor off
                          2 OI-Sensor off
Detector     : ▯          3 I  -Sensor off
                          4 Sensors on
 Func. menu          Repeater      Select
```

Fig. 46: Sensor function related to zones/detectors

Switching off sensors is only possible for OH and OHI multisensor fire detectors. If multisensor fire detectors with unifunctional detectors (detectors with only one sensor) are installed together in an analog loop, only the sensors in multisensor detectors are switched off.

If a switch-off has already been performed, e.g. the sensors of a zone have been switched off, this detector zone or the entire analog loop cannot be additionally switched off. It is possible to switch off other detector zones of this analog loop in which detectors or sensors have not been switched off.

Notes

ESSER

by Honeywell

Installation Instructions

Fire Alarm Computer 8008

5   Installation Instructions

The terminal assignment and wiring illustrated in these installation instructions refer exclusively to the facilities of the operating system software for the Federal Republic of Germany [D].

Operation of the fire alarm control panel 8008 is governed by the national version of the operating system software used and the country version programmed in the customer data.

Terminal assignment for connecting the fire department operating panel in the country version for Austria, Switzerland and The Netherlands is described seperately in the Section headed *Operating module terminal card*.

5.1   Standards, guidelines and instructions for installation

- The fire alarm panel may only be installed in a dry, clean room with controlled access and appropriate lighting. The environmental conditions must comply with IEC 721-3-3:1994, class 3k5.

- 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.

- Avoid strong electric or magnetic fields as well as mechanical influences. This applies especially to the presence of fluorescent lighting or energy cabling in the close vicinity of the panel, its components and the associated cabling. Do not mount on vibrating, unstable surfaces such as light partitioning walls.

- Do not install the system in places where adverse conditions prevail. Parts and components of the system may only be installed in or led through locations which allow compliance with DIN VDE 0800.

- Connect the FE (functional earth) and PE (protective earth) terminals of the panel's cabinet with the PE rail of the power distribution panel from which the fire alarm system will be powered.

- Control panels and visual indicators mounted on a wall should be installed at a height of 800 to 1800 mm above the floor.

- The fire alarm system is not suited for connection to IT power supply systems.

- It is highly recommended for a correct ESD protection to insert the dummy plug (factory supplement) of the programming interface plug in the operation panels front

Danger – Electrical shock !

Remove all power from the panel before carrying out any installation work. The panel may only be operated while the cabinet is closed. Its operation is not permitted while the cabinet is open, the housing plates are not installed (e.g. plastic housing of the FACP 8008) or if cabinet openings have been tampered with.

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 PE rail of the power distributor panel from which the fire alarm system will be powered.

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.

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 73/23 EEC of the Council dd. 19 February 1973 –directive on low-voltage systems- (ABL. EG No. L 77 page 29).

These are examples:

- DIN VDE 0100 Installation of power systems with nominal voltages up to 1000 Volt

- DIN VDE 0105 Operation of power installations

- DIN VDE 0108 Installation and operation of power installations in communal facilities

- DIN VDE 0185-103 Lightning protection systems

- DIN VDE 0701 Repair, modification and testing of electrical household appliances and similar equipment

- DIN VDE 0800 Telecommunications

- DIN VDE 0815 Installation cables for communication and data processing systems

- DIN VDE 0833 Hazard detection systems

- DIN 14675 Fire alarm systems

- DIN VDE 0845 Protection of telecommunication systems against lightning, electrostatic discharges, and surge from electric power installations.

These technical guidelines must be observed within the European Community. The VDE guidelines must be observed within Germany. 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 Schadenversicherer GmbH, (Association of German Property Insurers) may apply for systems installed in Germany.

These are e.g:

- 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

5.2 Overview

Connection capabilities and periphery

IDE

External Devices

essernet®

FACP 8000C

Optical Waveguide
(LWL)

max. 1 km

Fire Detectors
e.g.
Series 9200 and/or **IQ8**Quad

MFAB

Fire departement operating panel

TAL Module

LCD Display Panel

Input

esserbus®
transponder

esserbus®

Output

esserbus®
transponder

Fire dep.t
key box.

max. 2 km

max. 1 km

Repeater

max. 1 km

Parallel
Panel

Fire Detector zone
e.g. Series 9000

FACP 8008
1/4-VGA

Diagnostic Detector zone
e.g. Series 9100

External Devices

Fig. 47: Peripheral devices and connections

5.3 Location of modules

View with panel housing open, without plug-in cards.
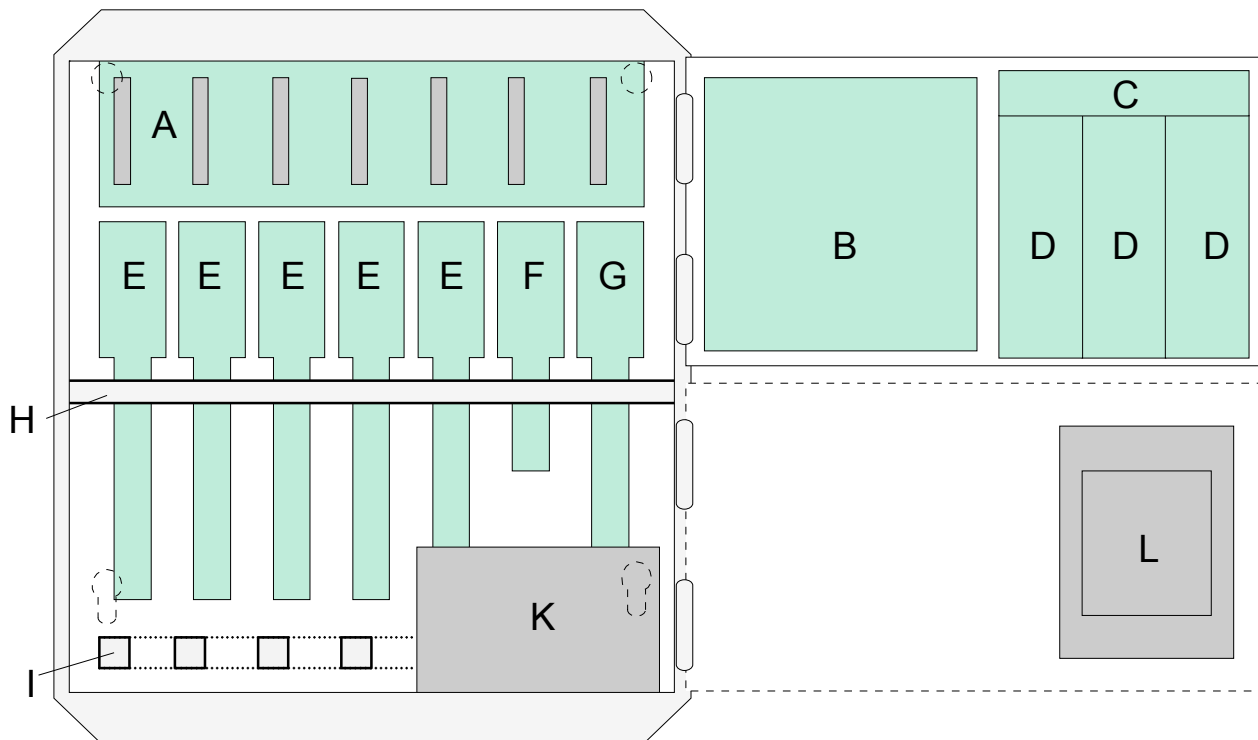
Housing S1 open, showing modules

A	Backplane bus board
B	Indicating and operating panel card (A/B card)
C	Bus board-single zone indicator units
D	Single zone indicator units
E	I/O terminal card
F	Power supply terminal card
G	Operating module terminal card
H	Housing cross arm
I	Protective earth (PE), terminal strip
K	Space for 2 batteries (max. 2 x 40 Ah)
L	Integrated heat transfer printer

Fig. 48: S1 housing with modules

5.4 Kit / housing variants
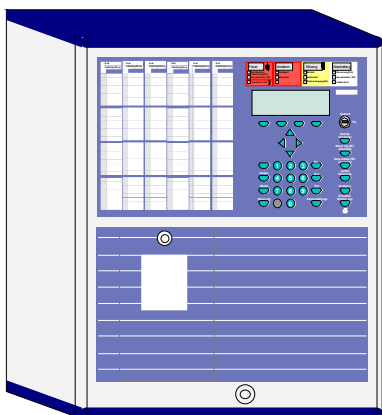
Housing S1
(w x h x d)
486 x 643 x 293 (mm)
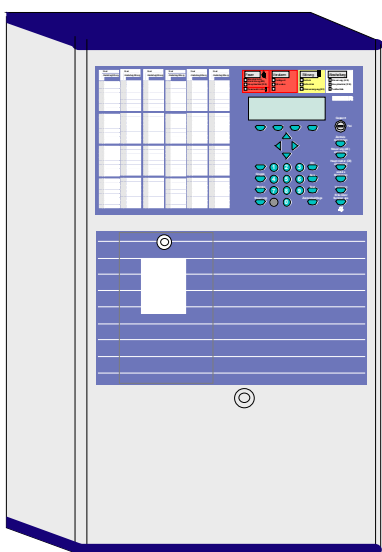
Housing S1-E
(w x h x d)
486 x 643 x 293 (mm)

Fig. 49: 8008 fire alarm computer variants
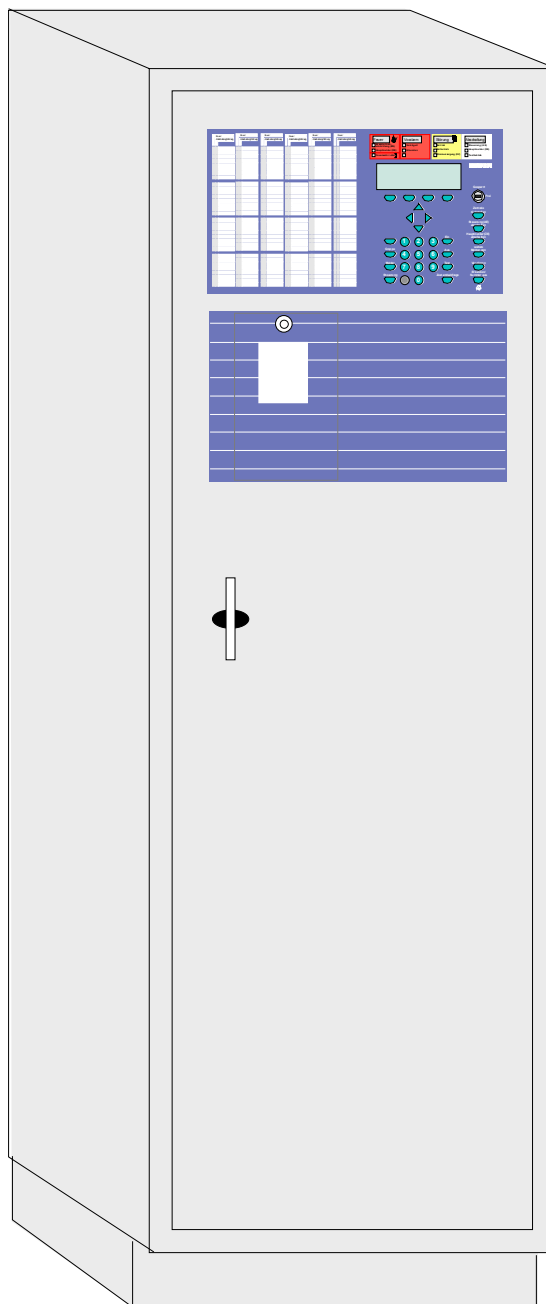
Upright cabinet
(w x h x d)
700 x 2000 x 525 (mm)

For further information about 19-inch installations refer to manual 798635.

5.5 Assembly of the operating panel slide-in module

Example

Quantity	Description	Part No.
3	GEA module (64 zones)	784141
1	Operating panel standard (German) or ¼ VGA operating panel (German)	768420 or 768414

M 4 x 5mm

oder

M 4 x 5mm

Zentralengehäuse   Schwenkrahmen
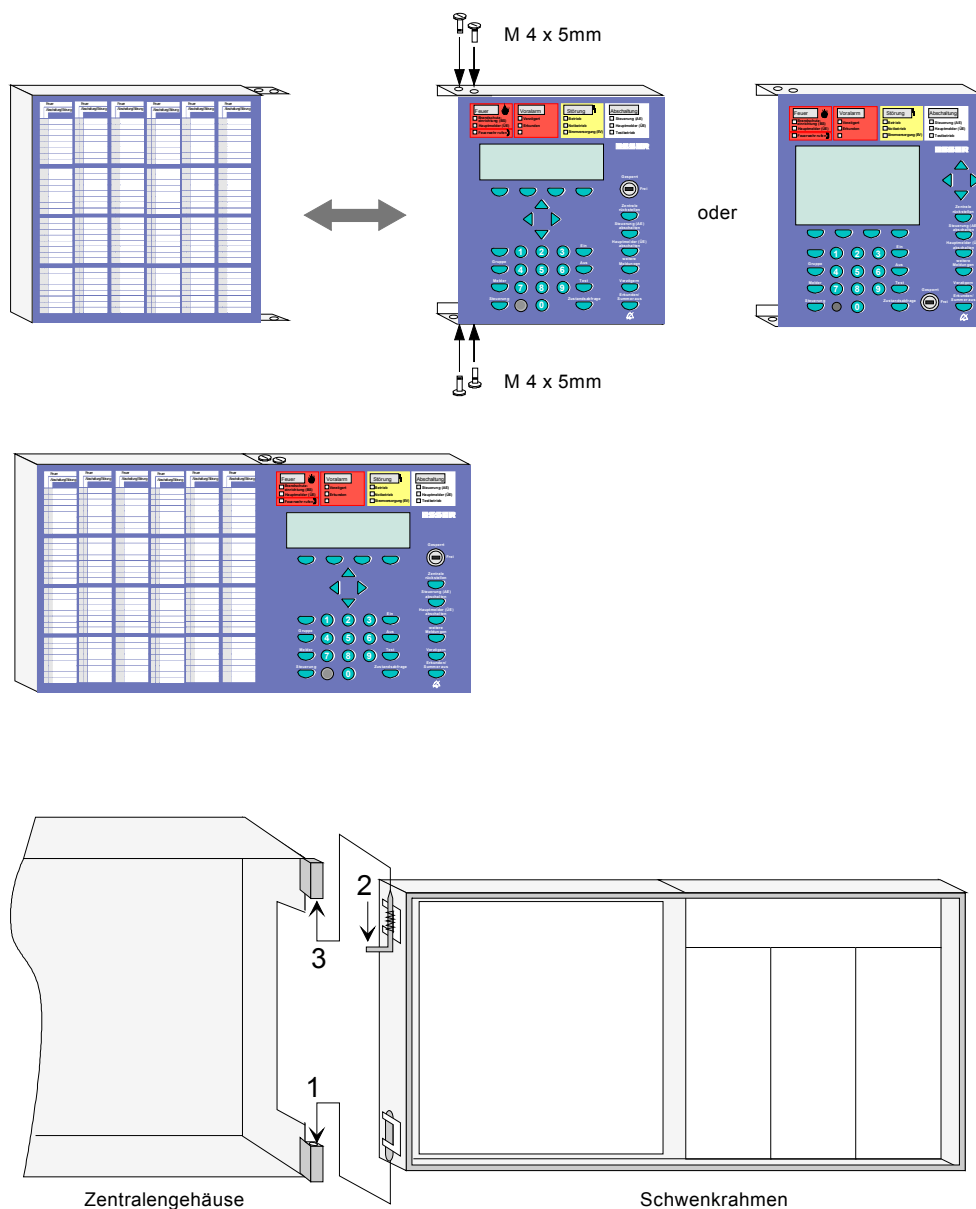
1.   Insert the bolt in the bracket of the control panel housing.

2.   Press the spring contacts together and

3.   allow to lock into the bracket of the control panel housing.

Fig. 50: Mounting reference of operating panel slide-in module

5.6 Cable entry

Signal cables   Main power cord
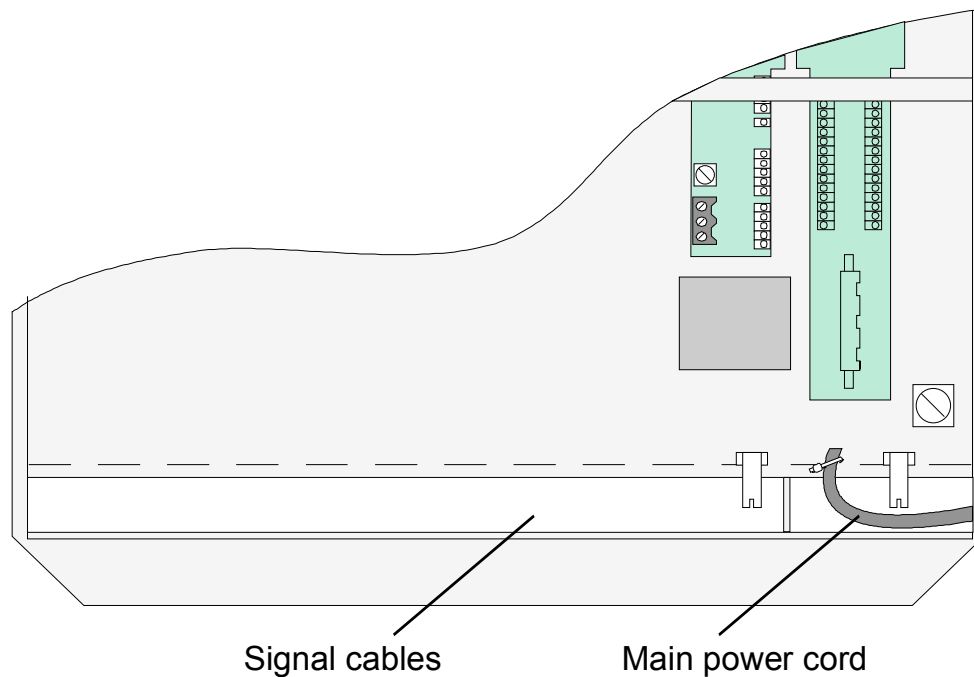
Fig. 51: Cable entry

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

2. 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.

To prevent short circuits
All power and signal lines connected to the base module must be secured using appropriate fasteners, e.g. plastic cable binders.
Make sure the mains cable will not move and touch the signal lines. Remove all power (mains and battery) from the fire alarm system before any work is carried out.

Cable Isulation
Make sure to lead all cables complete with their outer sheaths intact into the cabinet. Only remove the insulation from those sections which are inside the cabinet.
Power supply

The fuses of the panel 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.
Therefore, never repair or bridge the fuse that is installed (e.g. T1A H/250V) or replace it with anything other than the stated type!

5.7 Location of plug-in cards
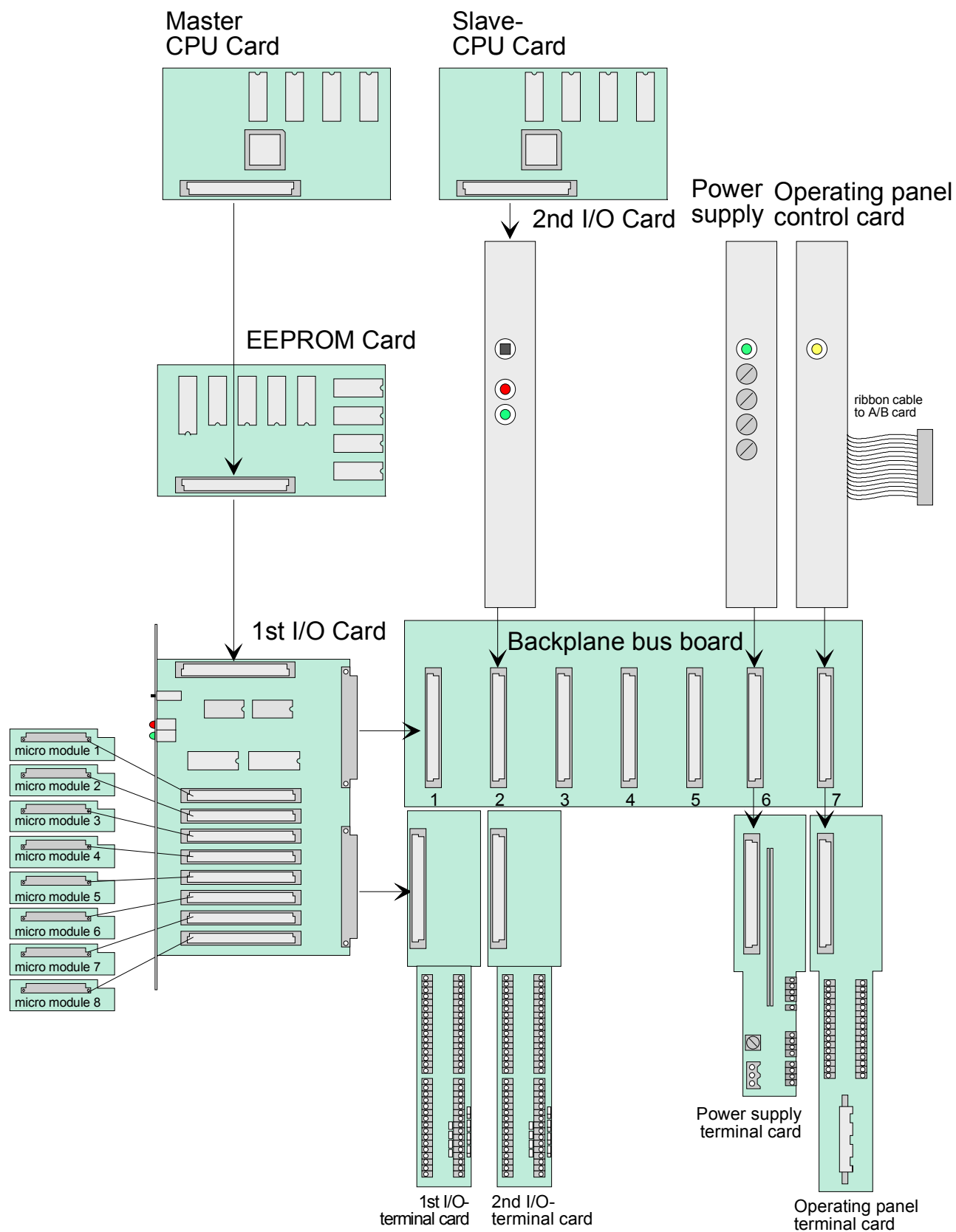
Fig. 52: Location of plug-in cards

The basic control panel configuration comprises:

Part No.	Description	Quantity
772330	Wall case assy	1
772440	Indicating and operating panel card (A/B card)	1
771456	Operating module control card	1
771478	Operating module terminal card	1
771451	Backplane bus	1
771796	I/O card	1
771450	I/O terminal card	1
771794	CPU card	1
771671	Power supply terminal card	1
772186	Filler panel (not necessary with integral printer)	1
771788	EEPROM card	1

A second CPU card is not required for normal, non-redundant operation.

Configuration of redundant control panel

A second CPU card may be used for operating the redundant control panel. This configuration relates to specific national requirements or systems featuring more than 512 detectors per control panel in accordance with the guidelines of the *Association of German Property Insurance Companies (VdS, Cologne)*.
To operate a redundant control panel, a second I/O card and an additional CPU card with special system software (for slave mode operation) is required.

Part No.	Description
771749	CPU card, selectively Master/Slave
770392	Operating system (Master)
770393	Operating system (Slave)

PC programming for control panel configuration

Control panel processor configuration is programmed with the PC program for entering customer data Customer data editor 8008. The programmed number of I/O cards as well as slot assignment for the I/O cards with the various micromodules must match the actual configuration of the control panel.

Customer data programming must be modified accordingly if micromodules or other extension cards are subsequently added to the functional fire alarm control panel.

5.8 I/O-card
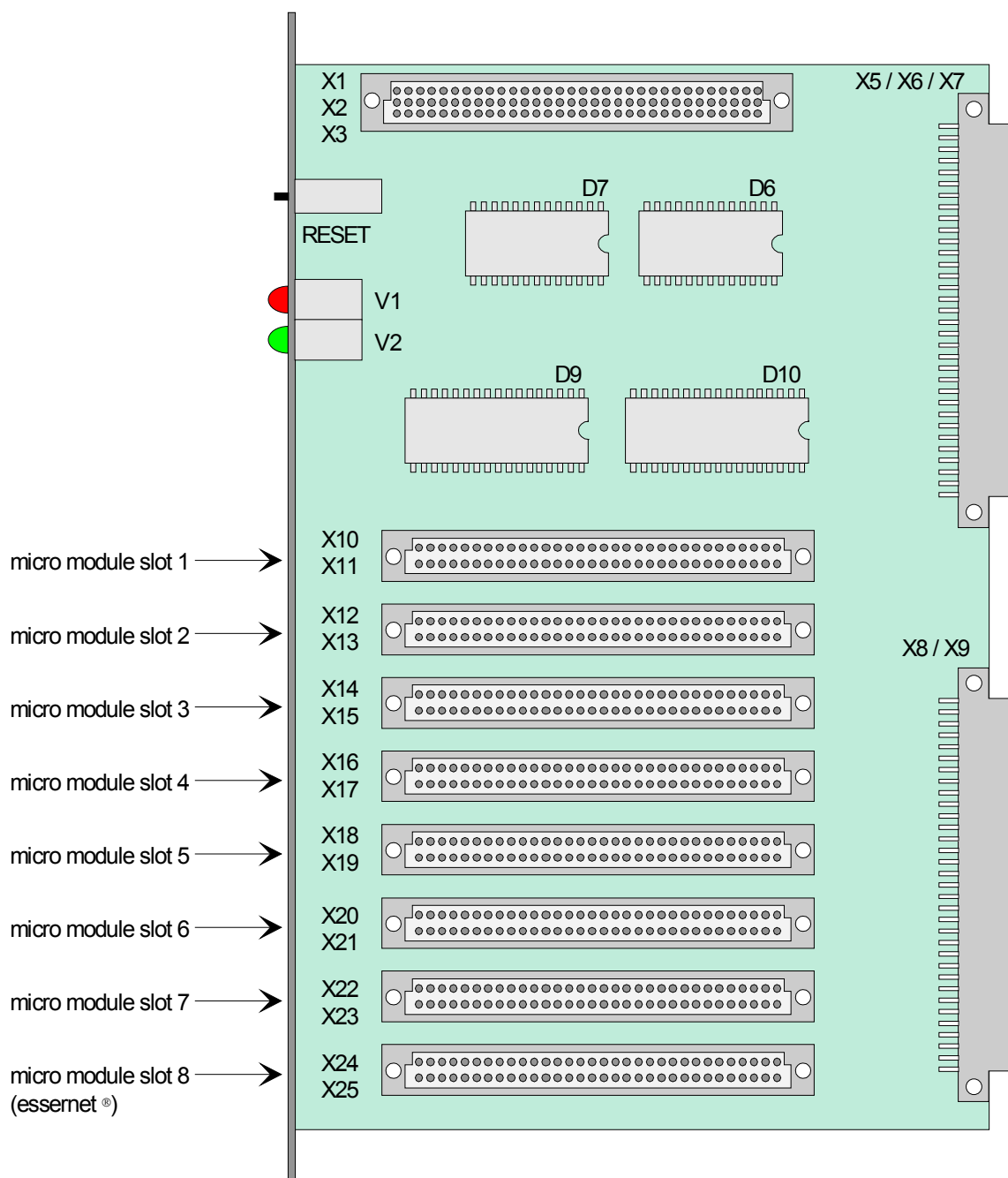
Fig. 53: I/O card

The FACP 8008 is able to accommodate five I/O cards. Each I/O card has eight micromodule slots for micromodules in freely selectable configuration.

X 1/2/3	Slot for CPU card and/or EEPROM card
X 5/6/7	96-way connector strip to backplane bus board
X 8/9	64-way connector strip to I/O terminal card
X 10 to X 25	Eight slots for freely selectable micromodules. Please note the restrictions underlying slot assignment for master module and the essernet® Module (refer to Section on *Micromodules*)
Reset	A control panel reset (warm start) may be initiated by pressing the reset button of any I/O card
V 1/ V2	LED to indicate function and operating mode of the CPU card fitted to this I/O card (refer to table below)

CPU card

The CPU card is fitted at slot *X1,2,3* on the first I/O card of each 8008 fire alarm control panel. The CPU card accommodates the microprocessor and the (master) operating system software for controlling the functions of the control panel.

If a redundant control panel configuration is required, you must install a second CPU card with special (slave) operating system software. This second CPU card is fitted to slot *X1,2,3* on the second I/O card *(also refer to Section on CPU card)*

EEPROM card

The EEPROM card is fitted to slot *X1,2,3* of a freely selectable I/O card in the FACP 8008. The EEPROM card is imperative for operating the fire alarm control panel. If the control panel is configured with only one I/O card, the EEPROM card may be fitted between the CPU card and the I/O card. *(Also refer to Section on CPU card)*

Reset function

If a reset is initiated with the cover contact open (outer housing), all interfaced primary loops/detector zones will be switched on and controls set to the initial position programmed in the customer data. When the control panel is put into operation, you should initiate the reset function after connecting the mains or battery voltage. This will set the control panel to a defined initial position.

I/O-card (for activating a master box)

Micromodules in freely selectable configuration may be fitted to any of the I/O-cards (five max.) in a control panel. This means that in full configuration an FACP 8008 comprises forty (5 I/O cards x 8 micromodules per I/O card) freely selectable micromodules.

Master box interface module (for activating a master box)

A maximum of ten master boxes may be connected in one fire alarm control panel and in one control panel system interlinked via the essernet®. The ten master box interface modules necessary for this purpose are only supported at the micromodule slots of the first two I/O cards (I/O card no. 1 and no. 2). Master box interface modules cannot be operated on I/O card no. 3 to no. 5.

essernet®-module (for linking several fire alarm control panels)

The essernet® micromodule can only be operated at the lower micromodule slot no. 8 of an I/O card. For this slot, the EMC protection provided on the I/O terminal card may be jumpered. It is necessary to jumper the EMC protection to operate the essernet® micromodule. EMC protection must be provided for the essernet® loop (LAN cable) in accordance with the local installation requirements using external protection modules, e.g., medium or coarse protection.

Only use protection modules approved for EMC protection. Refer to information sheet on Lighting and overvoltage protection for hazard alarm systems.

If no essernet® micromodule is used on the I/O card, micromodule slot no. 8 may be used for another micromodule. Jumpering the EMC protection is not permissible for any other micromodule. If jumpered, the EMC protection must be reinstated for this micromodule slot.

Connecting micromodules

Each I/O card in the control panel must have a separate I/O terminal card. This terminal card has eight screw terminals for each micromodule slot to connect external devices and controls. Assignment of these eight screw terminals will depend on the micromodule used.

Assignment of the eight screw terminals for each micromodule is described in the Section on *Micromodules*.

Meaning of the two light-emitting diodes V1 and V2

The (master) CPU card is operated exclusively at slot (X1,2,3) on the first I/O card.
Operating status of the CPU card(s) is shown at LED V1 and V2 on the I/O card(s).

I/O card no. 1 with (master) CPU card

Normal mode	red LED (V1)	off	Normal mode
	green LED (V2)	steady	
CPU failure	red LED (V1)	steady	Trouble with control panel (continuous reset)
	green LED (V2)	Without defined status	(no indication function)
Master / slave CPU-card transposed	red LED (V1)	steady	This first I/O card is fitted with a (slave) CPU card or, if master and slave CPU cards are being used, the two cards have been transposed.
	green LED (V2)	Flashing at 2.5 Hz	

I/O card no. 2 with (Slave-) CPU card

A second CPU card (slave) is required for redundant control panel configuration. The (slave) CPU card is operated at slot (X1,2,3) of the second I/O card.

Standby mode	red LED (V1)	steady	(Slave) CPU card in standby mode
	green LED (V2)	flashing (1 Hz)	
Slave mode	red LED (V1)	off	
	green LED (V2)	steady	This second I/O card is fitted with a (master) CPU card or, if master and slave CPU cards are being used, the two cards have been transposed.
Master / slave CPU-card transposed	red LED (V1)	steady	
	green LED (V2)	flashing at 2,5Hz	

I/O terminal card – Index A
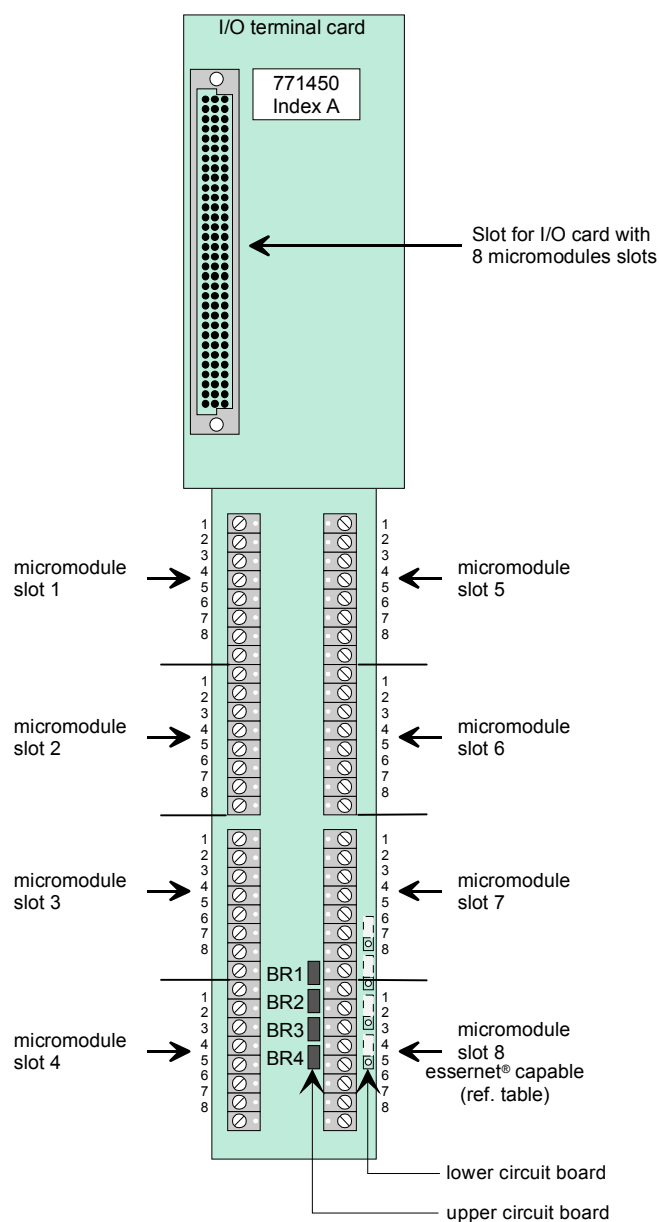
Fig. 54: I/O terminal card 771450 A

Micromodule type Slot No. 8	Jumpers upper circuit board		Jumpers lower circuit board	
All micromodules (no essernet® micromodule)	BR1 to BR 4	closed	BR1 to BR 4	On top
essernet® micromodule	BR1 to BR 4	opened	BR1 to BR 4	on bottom

I/O terminal card – from Index C or higher

I/O terminal card

771450
Index C

Slot for I/O card with
8 micromodules slots

GND Connector for next I/O terminal card
771450 from Index C or power supply unit
(Part No. 771669)

X2   X1

micromodule
slot 1

micromodule
slot 5

micromodule
slot 2

micromodule
slot 6

PL3   PL2
PL4   PL1

micromodule
slot 3

micromodule
slot 7

micromodule
slot 4

micromodule
slot 8
essernet® capable
(ref. table)
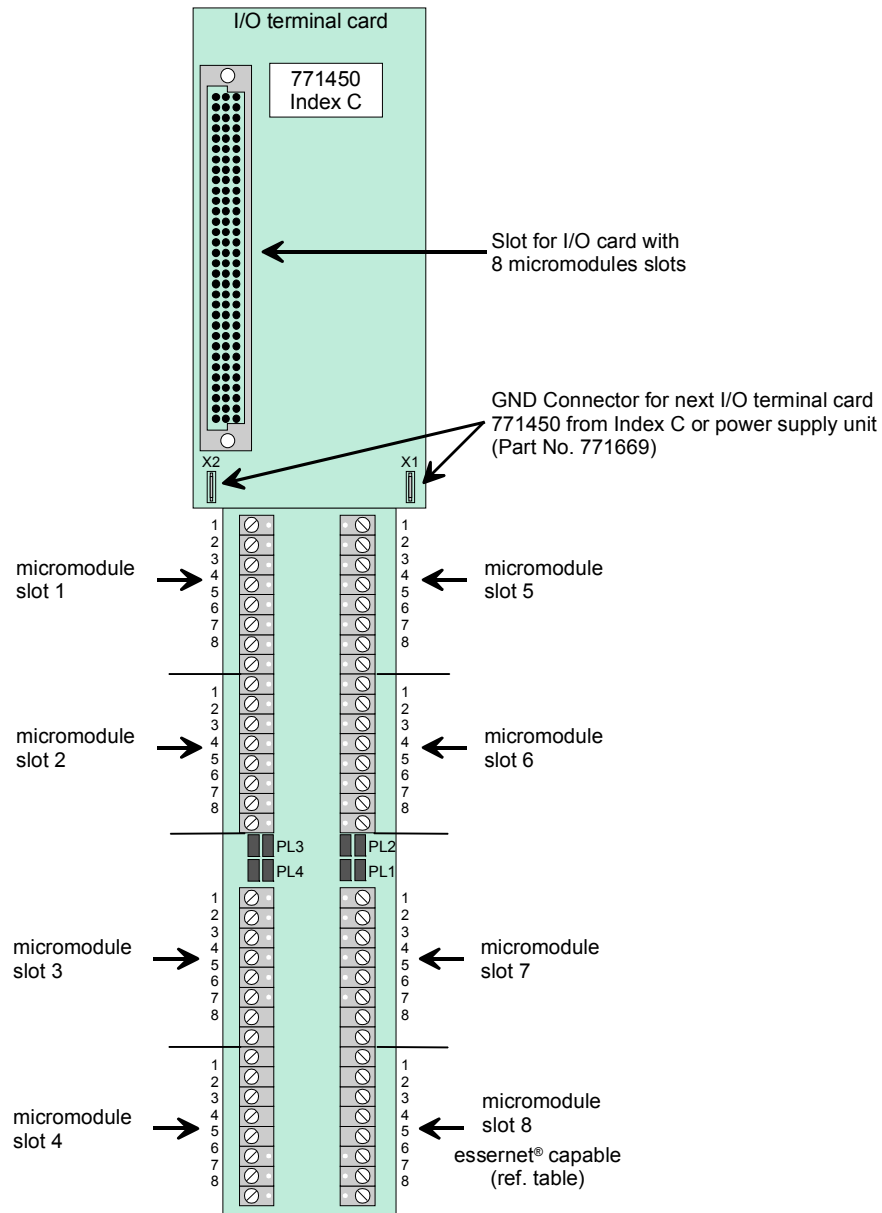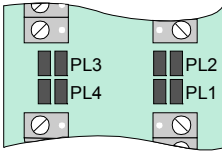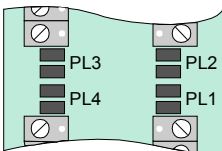
Fig. 55: I/O terminal card 771450 C

Micromodule type Slot No. 8	Jumper PL1 to PL4	
All micromodules (no essernet® micromodule)		All jumpers in vertical position
essernet® micromodule		All jumpers in horizontal position

Required GND wiring for I/O terminal card 771450 from index C or higher

The GND connection between I/O terminal card from index C or higher and the power supply terminal card is required. Use following flexible cable for wiring:

①	Flexible wire LIYV, 520mm, blue, Ø 1 mm²
②	Flexible wire LIYV, 100mm, blue, Ø 1 mm²
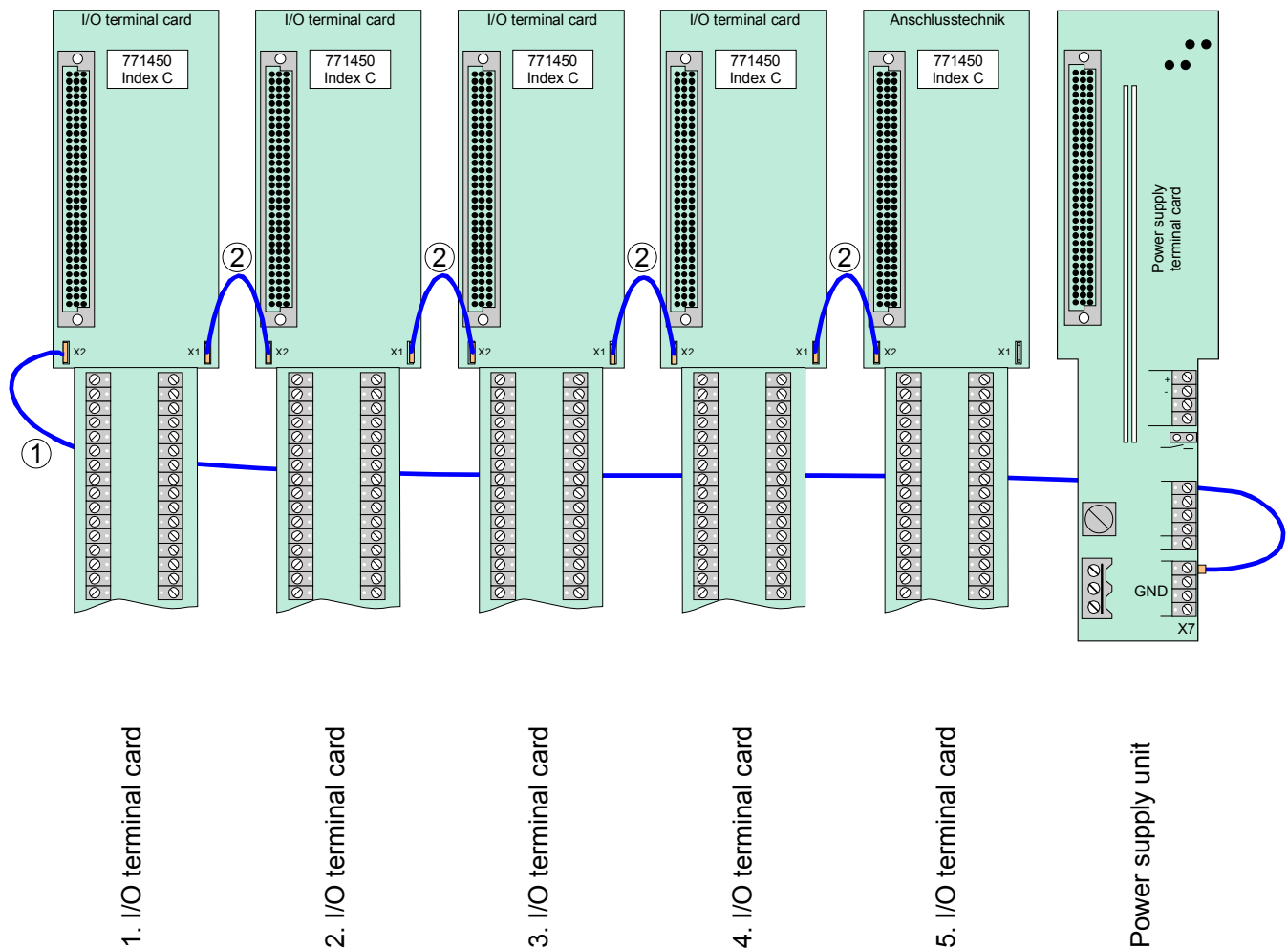
Fig. 56: GND cable connection of I/O terminal card 771450 C

> ⚠ The operation of I/O terminal cards with different index (index A and C) ist <u>not</u> possible. Replace installed I/O terminal cards if necessary.

The I/O terminal card accommodates the terminals for connecting the eight micromodules fitted to the relevant I/O card. The connection terminals are grouped into a terminal block for each micromodule. The micromodule slots (1-8) are numbered to match the numbers of the terminal blocks (1-8). A terminal block with eight connection terminals is provided for each individual micromodule.

Terminal assignment for the different micromodules is described in Section Micromodules, further on in this publication. While the customer data are being programmed you may also display the terminal assignment for the micromodules with the service PC.

For customer programming, the programming software tools8000, version V1.00 or higher, is required.

- Each micromodule slot on the I/O card is allocated to a specific screw terminal block on the I/O terminal card.

- To connect the essernet® to screw terminal block no. 8, you must jumper the built-in fine EMC protection using the eight coding plugs.

- The essernet micromodule can only be operated at slot no. 8 on the I/O card.

- Master box interface modules may only be operated at the micromodule slots of the first two I/O cards.

Assignment of the terminal connections on the I/O module will depend on the micromodules installed on the I/O card.

EMC protection

For use of the essernet® micromodule, the essernet® adaptation must be activated by means of the eight jumpers on the I/O module. The EMC protection must be established with special protecting devices for the LAN cable.

Multiple alarm circuits on one power supply unit

If several optical/acoustical signal transmitters, e.g. via the 3-relay micromodule (Part No. 787531), 4-relay micromodule (Part No. 787530), the 4-zone / 2-relay esserbus® transponder (Part No. 808613) or the 12-relay esserbus® transponder (Part No. 808610) are connected and receive their power from a common power supply unit, then provisions must be made by the installer for a graduated safety concept.

Generally, several safety fuses with different cutout values and different response characteristics are switched in series. The response behavior is also dependent on the bias of the fuses.

In order to implement this connection according to standards, provisions must be made so that in the event of a short circuit, not the power supply fuse is triggered, but rather a fuse for the respective alarm area.
Therefore, it is absolutely necessary that each individual alarm area be protected by a separate external fuse. The 8-slot fuse card (Part No. 382040), for example, can be used for this purpose.

The cutout values are dependent on the number and type of devices in use and must always be determined for the specific object.

Recommendation: Lower cutout value ⇨ faster response behavior

5.9 Power supply series 3/4 (Part No. 784026)
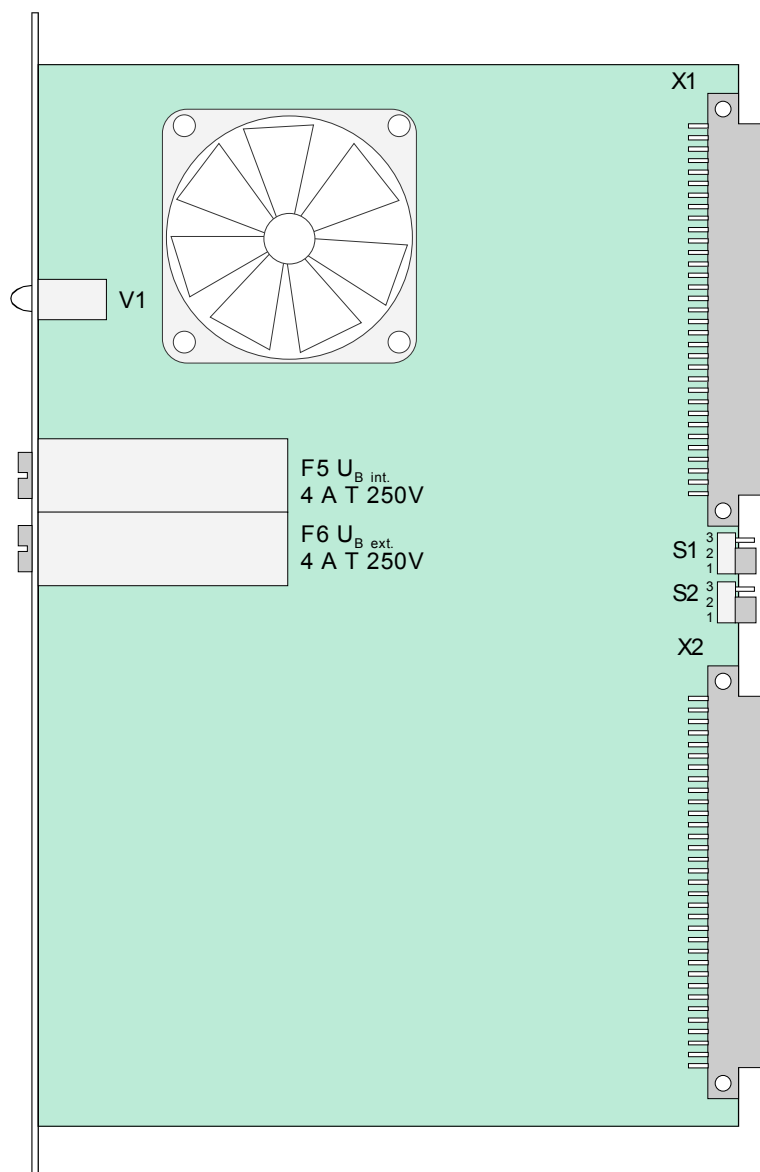
Fig. 57: Power supply - series 3/4 (Part No. 784026)

S 1	Setting for the connected batteries		
	⬜	⇨	1 battery connected
	⬜	⇨	2 batteries connected
S 2	Setting for the earth fault identification		
	⬜	⇨	earth fault identification off
	⬜	⇨	earth fault identification on

The FACP 8008 is equipped with a primary switched-mode power supply unit. The power supply is rated for a battery capacity of 2 x 40 ampere hours [Ah].

X 1	96-way connector strip to backplane bus board
X 2	48-way connector strip to the power supply terminal card
LED	The green LED will light up when mains voltage is being applied or the power supply is working perfectly on the primary side
F 5	Fuse Ub int. T 4 A H/ 250V
F 6	Fuse Ub ext. T 4 A H/ 250V

Power supply trouble / backup power supply
In the event of a failure of the mains supply, the control panel is switched over to backup power without interruption. Mains fault is indicated on the text display and by the relevant LED on the operating panel of the FACP 8008. Depending on control panel configuration and the battery capacity connected it is possible under the guidelines of the Association of German Property Insurance Companies (VdS) to achieve a period of 72 hours backup power.

Battery monitoring
Battery voltage is measured automatically by the control panel at specific intervals. Battery fault will e indicated if the battery voltage falls below 11 V DC.
The - factory-fitted - thermistor (NTC) on the power supply terminal card is essential for temperature compensated battery charging.
On the (standard) control panel housing S1 the thermistor can be installed directly at the relevant onnection terminals on the power supply terminal card. On control panels in extension housing S1E or in an upright cabinet, this thermistor must be installed next to the batteries being monitored.

 The primary (mains) fuse F1 and the battery connection cable are located on the PCB terminal card.

Power supply series 4 specials

The selection of a battery type is required in the customer data of the FACP 8008. When you make the correct selection, the best charging process is chosen for the battery that is connected.

 A mistaken battery type selection destroys the battery possibly.

Location of the plug-in power supply card

backplane bus board
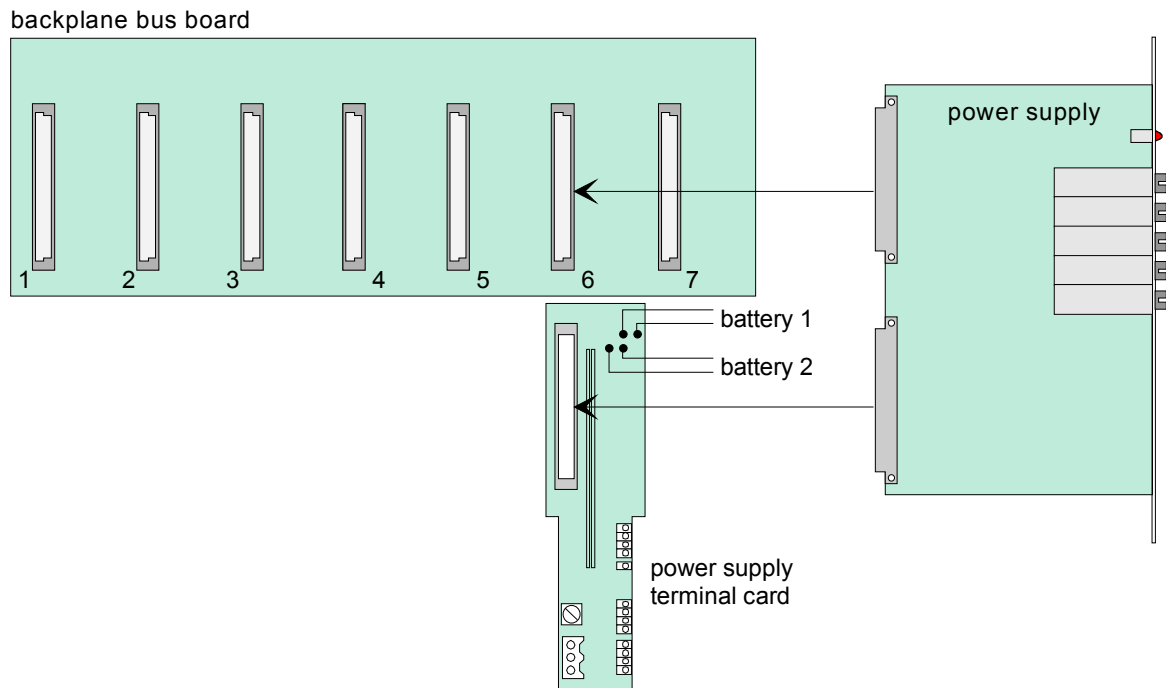
Fig. 58: Location of power supply card

- A control panel is only able to accommodate one power supply unit.
- The power supply unit is fitted to slot no. 6 on the backplane bus board
- The mains voltage and (battery) backup power supply is connected at a separate power supply terminal card.

The power supply unit is operated in conjunction with a special power supply terminal card at slot no. 6 on the backplane bus board. Note that the power supply cannot be installed at the other slots!

The mains L/N/PE supply lead is connected via a separate upstream mains filter. From this mains filter, the mains supply line is connected to the screw terminals on the power supply terminal card. The protective earth (PE) conductor is connected to the mantle terminal on the control panels housing.

> The power supply unit must be installed or removed with the control panel in a de-energized state. This is achieved by disconnecting the mains supply lead at the power supply terminal card (or by removing mains fuse F1) and the backup power supply.

Terminal card power supply (Part No. 771669)

- Connect mains voltage. (This power supply will start only with mains voltage)

- Switch on mains voltage

- Green LED Operation lights up after 2 to 3 seconds

- After another 5 seconds the fire alarm computer starts up

- Connect batteries
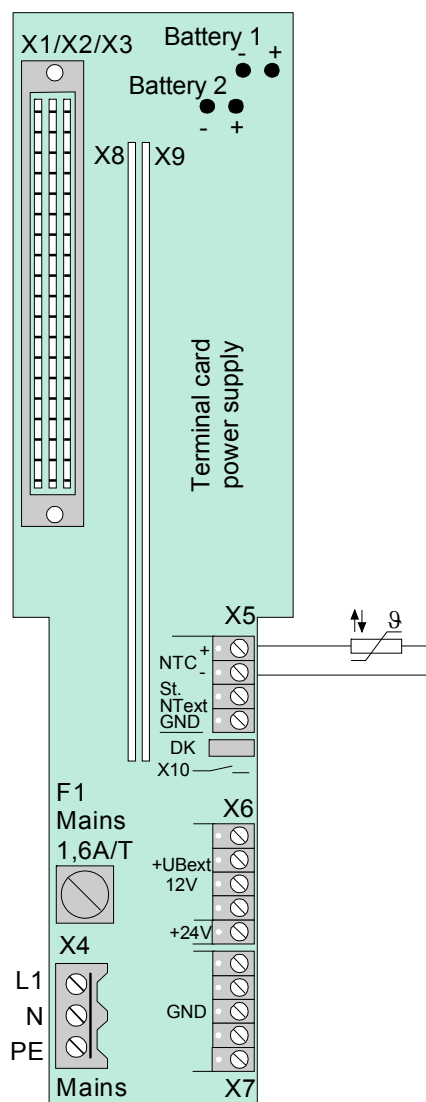
Fig. 59: Terminal card power supply (Part No. 771669)

X 1 / X 2 / X 3	48-way connector strip to the power supply
X 4	230V AC / 50-60 Hz mains connection with mains filter
X 5	NTC connection for temperature-controlled battery charging (15 k, Part No. 720549) Trouble input (Tr.pwrext) for monitoring an external power supply
X 6 / X 7	Voltage supply for external devices; + 12V DC / max. 4A and +24V DC / max. 1A
X 10	Plug for connecting the cover contact (outer housing of fire alarm control panel)
F 1	Primary (mains) fuse T 1.6 A H/ 250 V
Batt. 1 / 2	Connection cable for two batteries to 12 V DC backup power supply (max. battery capacity 2 x 40 Ah)

The +24V connection is supported only for the power supply 784026. Make sure to use the connecting sequence of the power supply.

Cover contact (CC)

The cover contact on the control panel housing may be connected here to the power supply terminal card or on the operating panel terminal card. The cover contact <u>must</u> be connected at one of these two points.

Contact open	:	Control panel processor housing is open, master box activation is inhibited (with factory programming). Pressing the reset button (I/O card) with the cover contact open will initiate a control panel cold start.
Contact closed	:	Control panel processor housing closed (normal mode)

PC programming is only possible for the control panel when the cover contact is open.

Trouble input (Tr.pwrext)

These terminals may be used for connecting a potential-free contact for monitoring an external power supply. In the event of external power supply trouble, the plaintext display will show the message *SYS-TRBL power supply ext. pwr.spply*.

External contact open	:	Normal mode
External contact closed	:	Trouble message

5.9.1 Mains connection and grounding

Connection of the 230 V AC mains voltage for the power supply of the fire alarm computer.
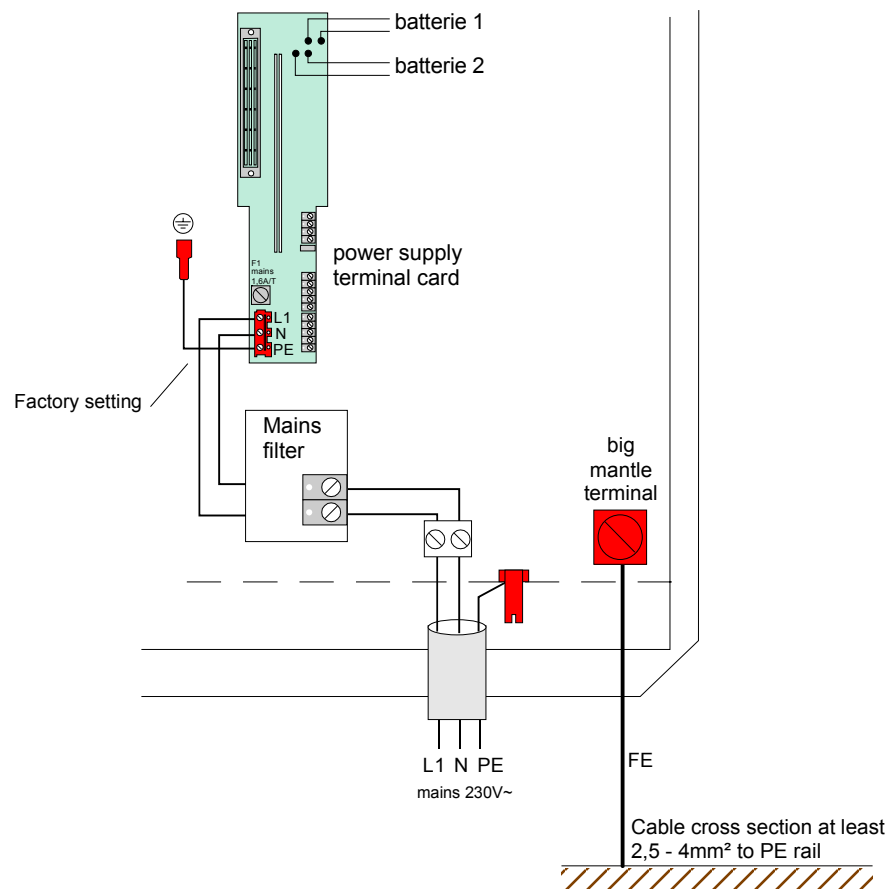
Fig. 60: Mains connection and grounding

- The 230 V AC mains supply must be installed in accordance with local regulations by a qualified technician.

- The L1 and N mains supply lead is connected to the relevant connection terminals of the mains filter. It is imperative to connect a protective earth conductor (PE) to the mantle terminal of the outer housing. Connect only one PE-cable to each mantle terminal !

- The fire alarm system must be supplied from the 230 V AC mains through a separate isolator (contact distance > 3 mm) or an appropriately labelled safety switch. In systems fitted with earth fault devices, a separate protection device must be installed for the fire alarm system.

- The fuse for the power supply of the fire alarm system must be clearly labelled e.g. for germany with the red marking 'FACP'. Pay attention for national rules and guidlines.

- Cables are provided for two batteries to supply backup power. A max. battery capacity of 12 V DC/40 Ah may be fed in at one connection. If only one battery is used for supplying backup power, you must use the connection cables for Battery 1. Always ensure correct polarity when connecting a battery (red = positive pole ; blue = negative pole).

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

- Use appropriate cable for mains connection, e.g. NYM 3 x 1.5mm^2 (max. 2.5 mm²) or a cable type of similar specifications.

- The installation must comply with local regulations on electrical safety.

5.9.2 Operating module control card
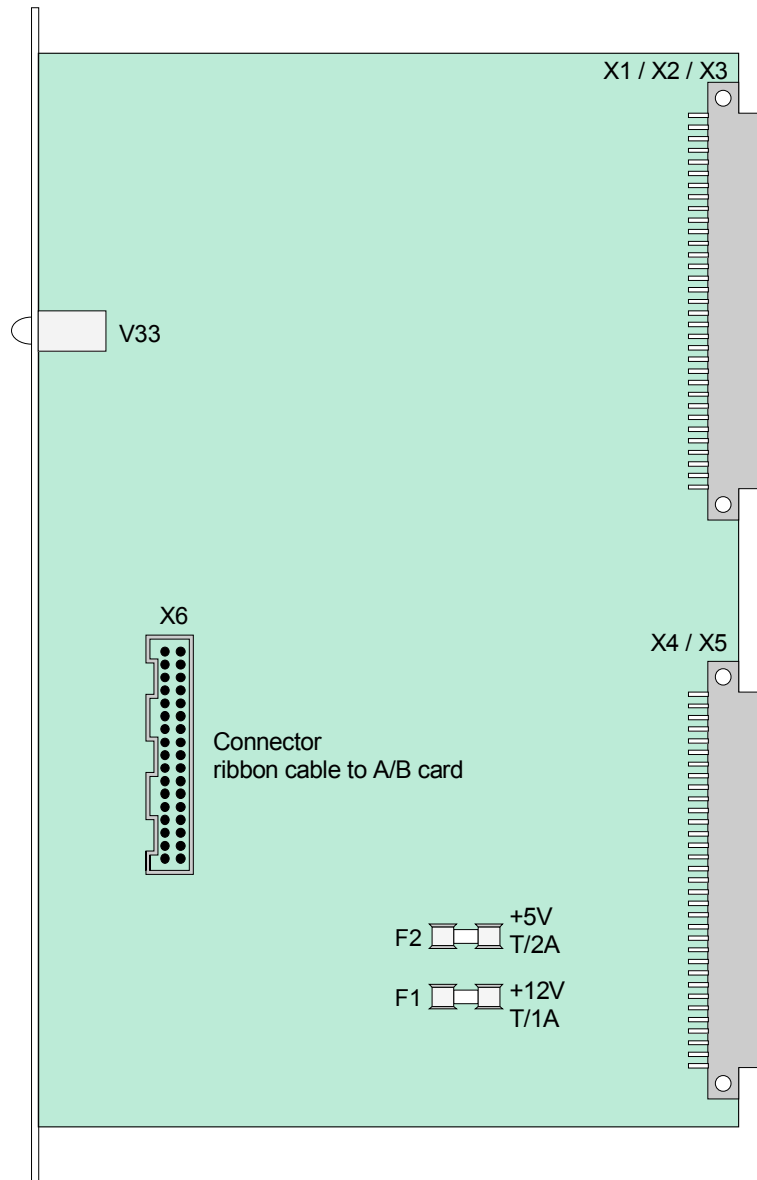
Fig. 61: Operating module control card

X 1 / X 2 / X 3	96-way connector strip to backplane bus board
X 4 / X 5	64-way connector strip to operating module terminal card
X 6	40-way connector strip to A/B card on the control panel, connection via ribbon cable 15 cm in length
F 2	Fuse - internal supply voltage for control panel (+ 5 V DC, T/2A)

The operating module control card has the purpose of activating the indicating and operating panel (A/B card) of the FACP 8008.

The corresponding terminal card contains the terminals for a fire department control panel and the external power supply of the internal log printer.

The fire alarm computer can be programmed with the service PC only when the lid contact is open.

Location of operating module control card

Backplane bus board

Ribbon cable
to A/B card

Operating panel terminal card
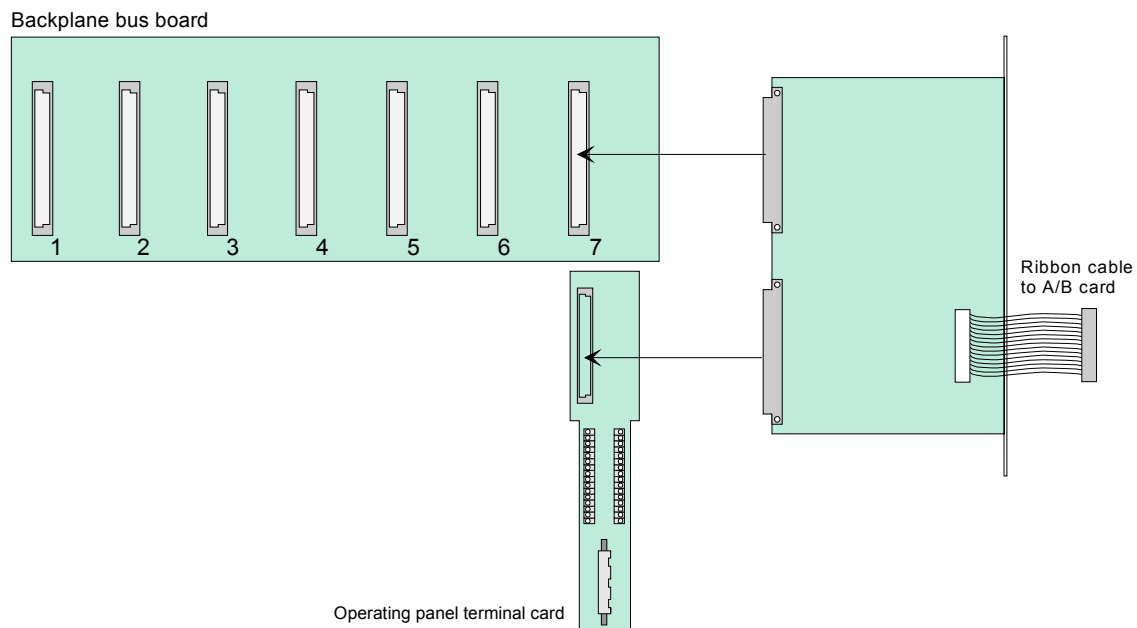
Fig. 62: Location of operating module control card

The operating module control card is required for activating the indicating and operating panel card (A/B card) on the hinged frame. A fire alarm control panel will accommodate one operating panel control card.

The operating panel control card is fitted at slot no. 7 on the backplane bus board. A ribbon cable of 15 cm in length is used for connection to the indicating and operating panel card on the hinged frame.

Operating module terminal card

The connection terminals or plug-in contacts on the operating module terminal card may be used for connecting a protocol printer, a fire department operating panel, the supply voltage for the master box and an external power supply.
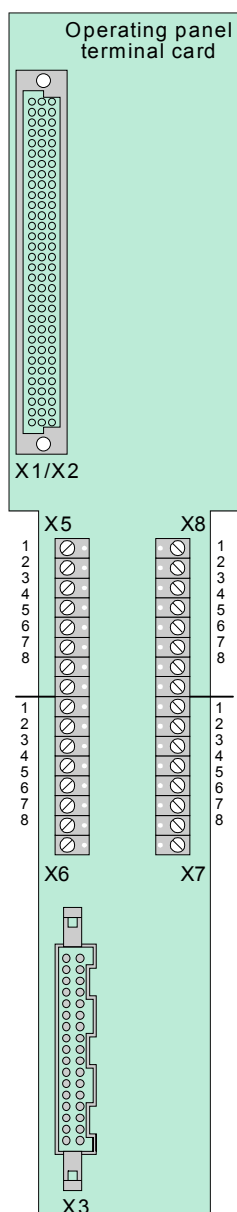
Fig. 63: Operating panel terminal card

X 1 / X 2	64-way connector strip to the operating module control card
X 3	34-way connector strip for connecting the integrated protocol printers. Connection using ribbon cable provided No voltage supply - data signals only !

Terminal designation of the terminal card of the operating module (country function Germany D)

The terminal designation of this terminal card is dependent on the country function programmed in the customer data of the fire alarm control panel. The terminal designation shown on this page corresponds to the country function Germany. The terminal designation for the country functions Austria, Switzerland and The Netherlands is described on the following pages.

X5			X8	
+12V DC Voltage supply fire department operating panel	1	1		IN 1 (GND) = LED on "Notify Fire Dept."
GND	2	2		Do not connect
Do not connect	3	3		Do not connect
From power supply --> +Ub ext. for the panel-mounted printer	4	4		MFAB disconnection
Do not connect	5	5		Acoustic signals off
Do not connect	6	6		Check MFAB
+12V Ub Ext. Voltage supply for the panel-mounted printer	7	7		Reset FACP
Do not connect	8	8		Revision *

int. Relay contact

X6			X7	
GND	1	1		MFAB triggered
Do not connect	2	2		Extinguishing system triggered
Do not connect	3	3		Common fire alarm
Do not connect	4	4		MFAB disconnected
Do not connect	5	5		Acoustic signals off
Do not connect	6	6		Prevent MFAB activation
GND	7	7		Do not connect
DK**	8	8		Do not connect

*   If the *inspection*-function is not used, the unused input must be connected to *GND*.

**   Connect cover contact (CC) on control panel housing here or to power supply terminal card.

Operating voltage connection for integrated printer/fire department operating panel (screw terminal X 5)

Integrated printer: Terminal X5/4 may be used for connecting the supply voltage (12 V DC) for the integrated printer from the control panel power supply or an external power supply. The operating voltage is switched via an internal relay contact from terminal X5/4 to terminal X5/7.

Fire department: operating panel: Terminal *X5/1* provides the voltage supply (+12V DC Ubint) for the fire department operating panel. The internal supply voltage is protected by the F5/MT3.15A fuse on the power supply.

Additional connections (screw terminal X 6)

Input open: Normal status

Input switched to GND: Trouble message

Terminal X6/8: Connection for cover contact (control panel housing) Cover contact may be connected here or on the power supply terminal card.

Outputs to fire department operating panel connection (screw terminal X7)

Eight outputs for connecting fire department operating panel Switching power 12 V DC/ max. 25 mA per output

Inputs for connecting fire department operating panel (screw terminal X8)

Eight digital inputs for connecting fire department operating panel

Connection terminal assignment (X8) for the fire department operating panel will depend on the country version programmed in the customer data.

Connection terminal assignment (X8) after modifying country version

PC customer data programming may be used for adjusting to the different national requirements the way the fire alarm control panel operates. The drawing below describes terminal assignment for screw terminal X8 for connecting a fire department operating panel in relation to the country version programmed for *Austria, Switzerland* and *The Netherlands*.

Country version for Austria

X8

1	⊘	← EN lead A
2	⊘	← EN lead B
3	⊘	← Verify on
4	⊘	← Delay on/ off
5	⊘	← do not use
6	⊘	← Buzzer off
7	⊘	← reset FACP
8	⊘	← Inspection *
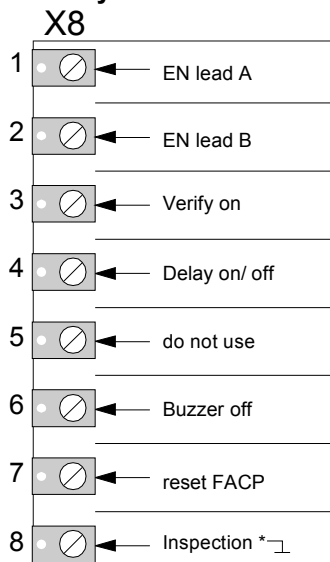
EN line A/B (Austria only)

The optional essernet® switchover module, if fitted, is monitored via this input. Trouble is indicated when this input is no longer connected to ground (GND).

The display then shows the message :
Trouble: Line xxx
            Line A
            Line B

This message is stored and can be reset by switching on the appropriate primary loop.

Country version for Netherlands

X8

1	⊘	← do not use
2	⊘	← do not use
3	⊘	← do not use
4	⊘	← Delay on/off
5	⊘	← Buzzer off/ verification
6	⊘	← do not use
7	⊘	← do not use
8	⊘	← Common relay disconnect
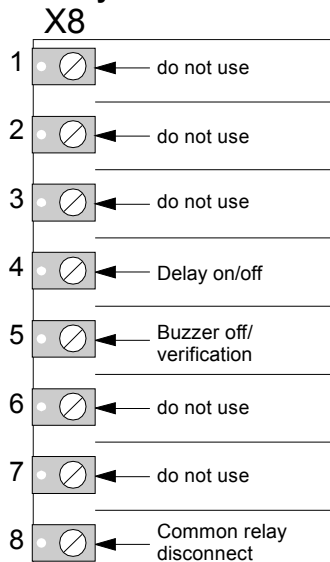
Country version for Switzerland

X8

1	⊘	← do not use
2	⊘	← do not use
3	⊘	← Buzzer off
4	⊘	← Delay on/off
5	⊘	← Verify on/off
6	⊘	← Reset telephone dialer
7	⊘	← Reset FACP
8	⊘	← do not use
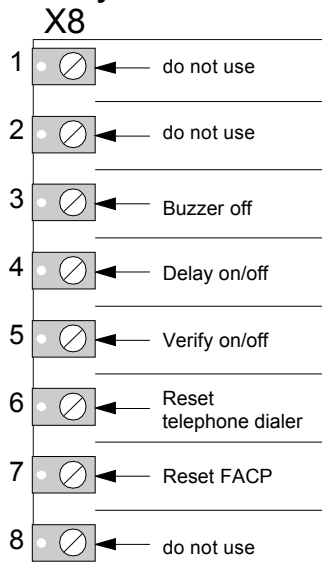
5.10 CPU card

The (master) CPU card accommodates the microprocessor for controlling the control panel functions and the operating system software. The (master) CPU card is essential for operating the fire alarm control panel. It is always fitted at the first I/O card in the control panel (backplane bus slot no. 1). Programming or connection assignment is not necessary for this card.

If the control panel is configured with only one I/O card, the EEPROM card is between the I/O card and CPU card.
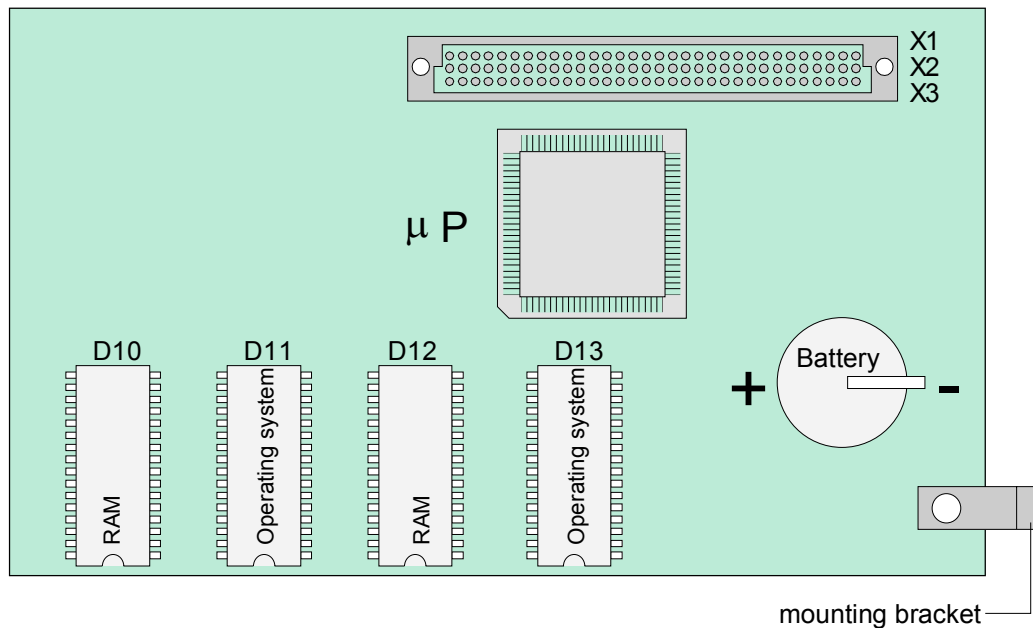
Fig. 64: CPU card

X 1 / X 2 / X 3	96-way connector strip to the I/O card
D 10 / D 12	RAM modules, factory-fitted
D 11	Pin base for operating system EPROM
D 13	Pin base for operating system EPROM
Battery	Lithium battery (3.3V)

Trouble with the CPU card or transposition of the master/slave CPU card will be indicated by the LED (V1, V2) on the relevant I/O cards.

Viewed from side: I/O card / EEPROM card / CPU card
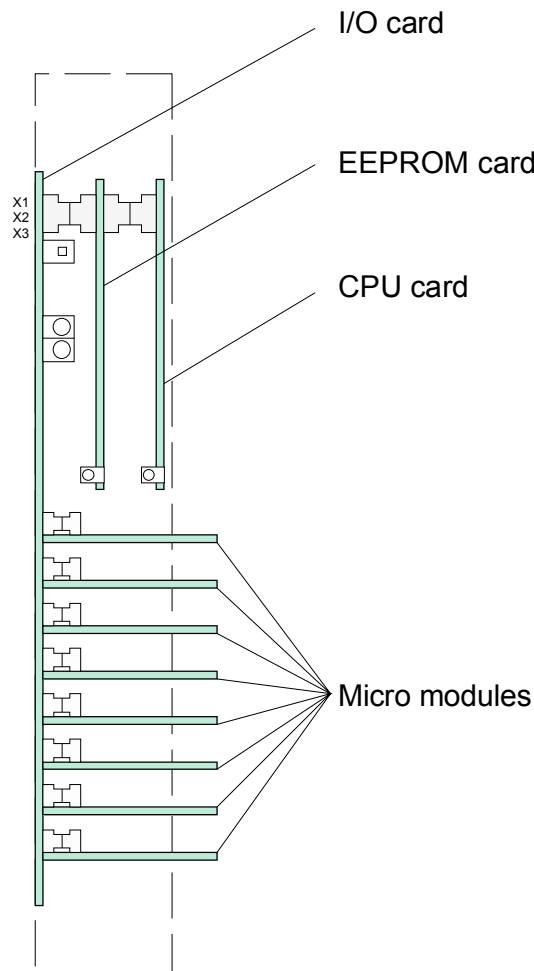
Fig. 65: Position of the EEPROM card / CPU card on the I/O card

Redundant control panel configuration

If a redundant control panel configuration is required, a second (slave) CPU card with appropriate software may be fitted to the second I/O card (backplane bus slot no. 2). In the event of (master) CPU card failure, all functions will be assumed without interruption by the (slave) CPU card.

Systems installed to the guidelines of the Association of German Property Insurance Companies (VdS, Cologne) necessitate a redundant control panel configuration in conjunction with 8008 fire alarm control panels with more than 512 detectors per control panel.

5.11 EEPROM card

The EEPROM card is required for 8008 fire alarm control panels of *01 series* and higher. On leaving the factory, the EEPROM card is equipped with seven customer data EEPROMs. This configuration permits full configuration of the control panel. Extending the control panel does not require any EEPROM retrofitting.
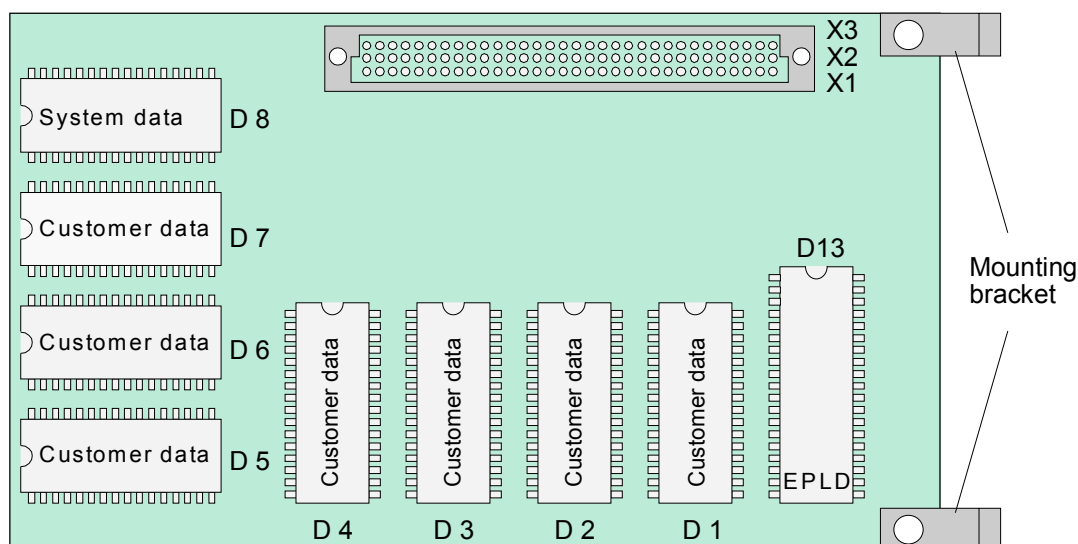
Fig. 66: EEPROM Card

X 1 / X 2 / X 3	96-way double connector strip to the I/O card and CPU card
D 1 to D 7	Customer data EEPROM, type 28C256 (7 x 32k) When changing an EEPROM only use the types approved by the manufacturer
D 8	System data EEPROM, factory-fitted
D 13	EPLD, factory-fitted

The EEPROM card may be fitted to any I/O card (terminal strip X1, 2, 3) in the control panel.

If the control panel is only equipped with one I/O card, install the EEPROM card between the first I/O card (slot 1 on backplane bus board) and the (master) CPU card.

Programming or assigning connection is not necessary for this card.

5.12 Technical data

Power supply

Nominal voltage	:	110 V AC to 230V AC
Nominal frequency	:	50 Hz to 60 Hz
Nominal current	:	2,9 A
Output voltage	:	12 V DC
Continuous current	:	max. 4A @ 12 V DC
Battery capacity	:	max. 2 x 12 V DC / 40 Ah
Battery charging voltage	:	13,8 V DC @ 20 °C
Ambient temperature	:	- 5 °C to + 45 °C
Storage temperature	:	- 10 °C to + 50 °C
Environmental conditions:	:	class 3k5 acc. to IEC 721-3-3 : 1994
Protection class	:	I acc. to DIN EN 60950 - 1
Protection rating	:	IP 30
Housing	:	sheet-steel

I/O-card

Power consumption without CPU card, EPROM-card and micromodules	:	110 mA

CPU-card (master)

Power consumption, normal mode	:	160 mA
Power consumption, CPU failure	:	100 mA

CPU-card (slave)

Power consumption, standby mode	:	100 mA
Power consumption, slave mode	:	160 mA

EEPROM-card

Power consumption	:	80 mA
EEPROM-type	:	28C256 (32K) Only use EEPROM approved by manufacturer!

Notes

ESSER
by Honeywell

Micromodule

Fire Alarm Computer 8008

6 Micromodules

Micromodules may be used for adapting the configuration and mode of operation of FACP 8008 fire alarm control panels to suit specific properties. Several different micromodules are available for a variety of possible applications.

In a full configuration, up to 40 micromodules can be plugged into five I/O cards. The slot and the number of I/O cards, in addition to the *allocation* of the individual I/O cards with the various micromodules must be specified in the customer data programming. The customer data programming must match the actual configuration of the control panel.

The terminals for the micromodules are located on the corresponding I/O terminal card on the respective I/O card.
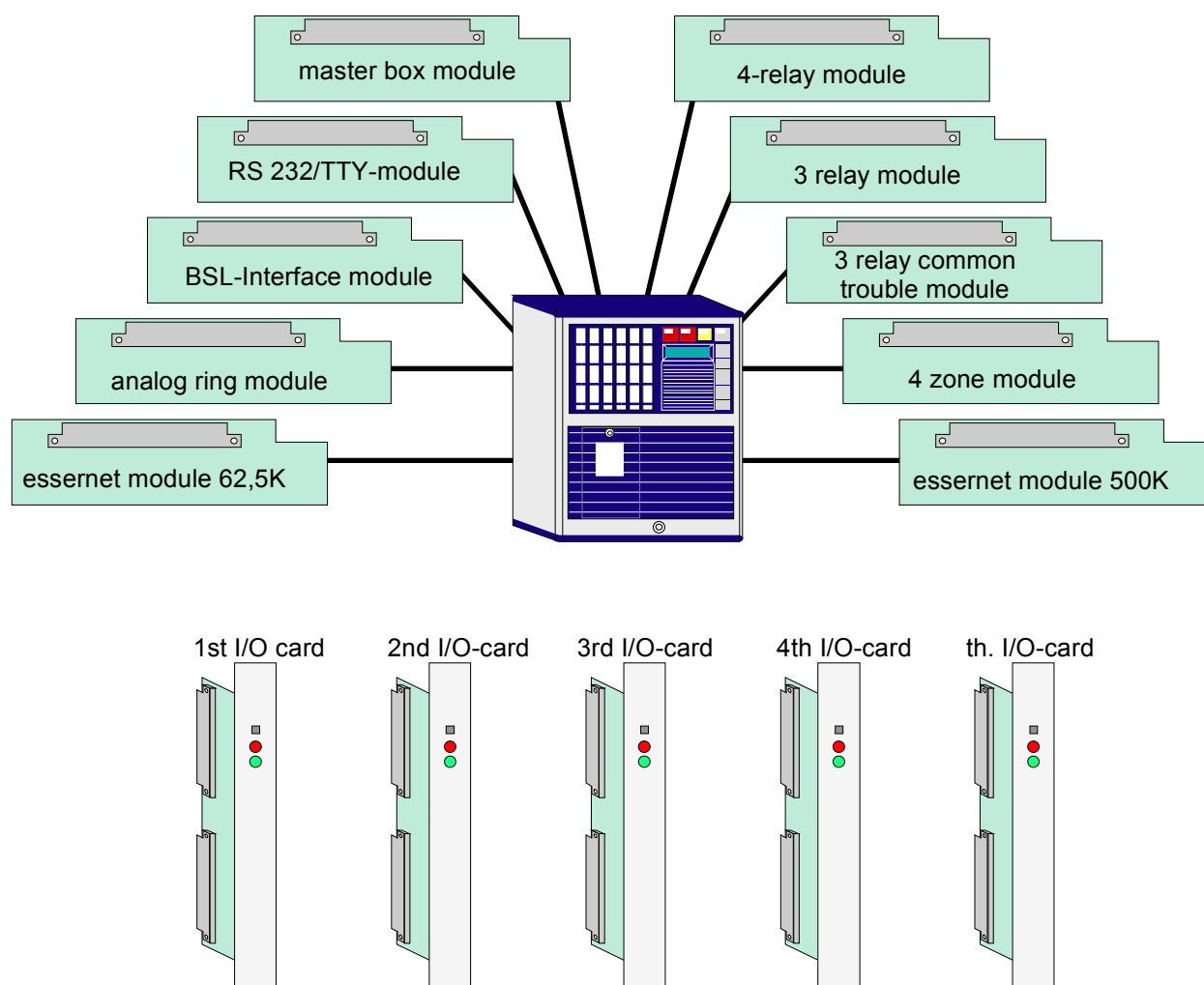
Fig. 67: Micromodules of the 8008 fire alarm computer

> Please observe the technical specifications when installing an MFAB micromodule and the essernet® micromodules in an 8008 fire alarm control panel.
> (Refer to Section *Installation instructions forFACP 8008*)

6.1 4-zone module

Micromodule for connecting four fire detector zones or technical alarm zones (TAL) configured in limit monitoring or diagnostic technology (EDD).
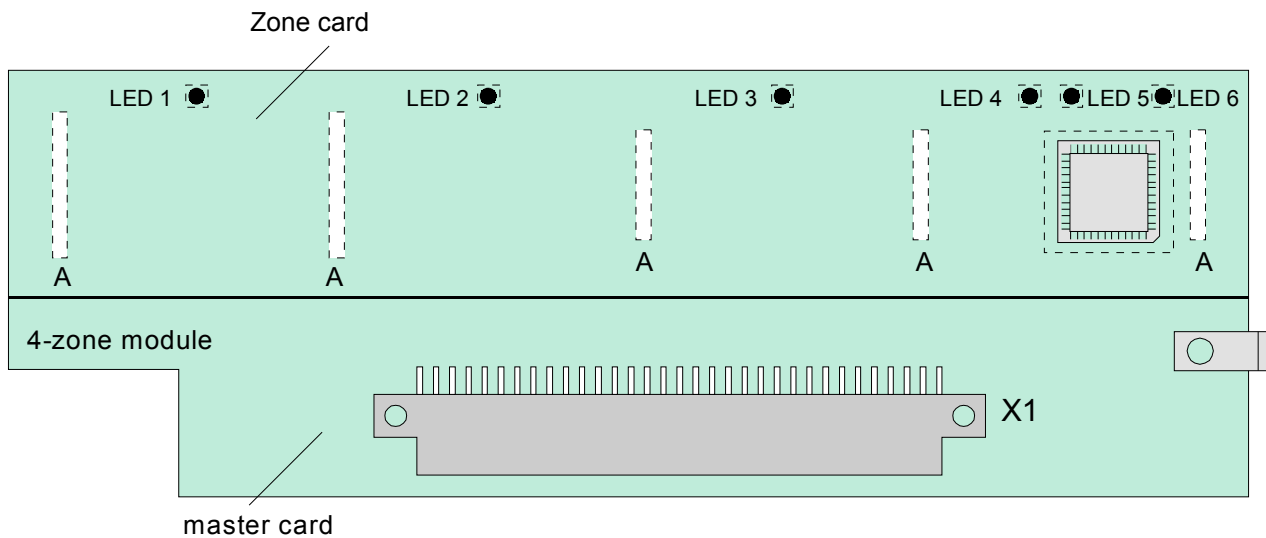
Fig. 68: 4-zone module

Master board

X 1	64-way connector strip to I/O card, FACP 8008	
LED 5 Yellow (SMD)	LED off	⇨ Normal status
	LED on	⇨ Module faulty
LED 6 Red (SMD)	LED on / off	⇨ Module trouble
	LED flashing (Pause 50ms)	⇨ CPU failure mode or internal 12V/24V supply failed
	LED flashing slowly	⇨ Normal mode
	LED flashing rapidly	⇨ Addressing in progress

Zone card

A	Plug connector to master board	
LED 1 to LED 4	LED for detector zone 1 to 4	
	(SMD) LED yellow off	⇨ Normal status
	(SMD) LED yellow on	⇨ Current limiter activated for detector zone

The following modes are possible:

1. Fire detector zone for connecting special fire detectors and manual call points with or without switch-on control (ESK)

2. EDD diagnostic detector zone for connecting addressable fire detectors with individual detector addressing and disconnection facility

3. Non-addressable TAL zones for connecting technical alarm modules

4. Addressable TAL zones configured in diagnostic detection technology for connecting technical alarm modules

Terminal card assignment

The detector zone number (1 to 4) corresponds to the numbering on the 4-zone module. The consecutive detector zone numbering of the fire alarm control panel is defined in the customer data programmed with the service PC.
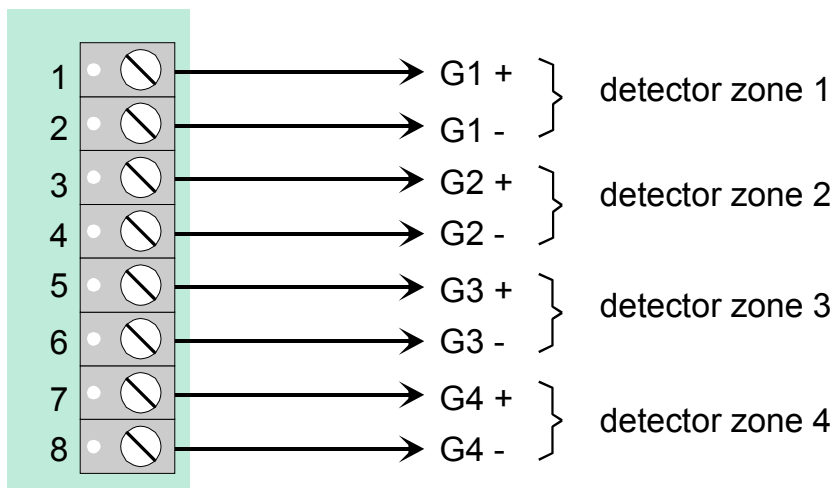
Fig. 69: Assignment for terminal card, 4-zone module

VdS One zone may include a maximum of 32 automatic or 10 non-automatic fire detectors. All detectors of one zone must be used in the same mode. Automatic and non-automatic fire detectors should be connected to different zones. VdS guidelines do not allow mixed mode operation!!

Factory settings

On initial works delivery of the fire alarm control panel, the installed 4-zone BM modules are not programmed in the customer data and are therefore not fitted with terminating resistors.

ℹ️ Zone assignment and operating mode are programmed using the service PC and *Customer Data Editor 8008* software. For each detector zone, you may enter a specific additional text comprising 25 characters per line for output on the plaintext display and protocol printer.

6.2 Analog loop module

The analog loop module for connecting fire alarms of the series 9200 / **IQ8**Quad and esserbus® transponders. The analog loop module enables connection of the esserbus® loop. The analog loop is configured with the programming software *tools8000* form Version 1.0 or higher.
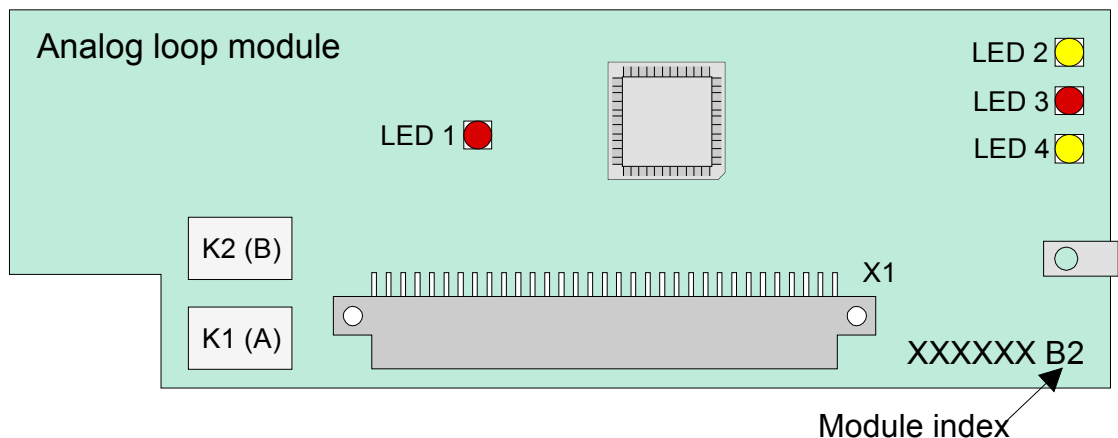
Fig. 70: Analog loop module

> Module index from B2 or C1 necessary.
> Exception: Don´t install modules with Index C !

Terminal card assignment

1		A +
2		Do not connect
3		A -
4		Do not connect
5		B +
6		Do not connect
7		B -
8		Do not connect
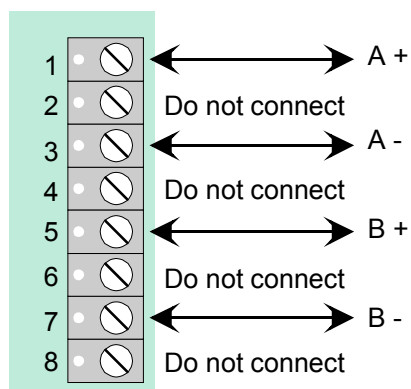
Fig. 71: Terminal card assignment for analog loop module

X 1	64-way plug connector to I/O card	
K1, K 2	Bi-directional ring interrogation by switching over the two relays (K1 = A+,A- / K2 = B+, B-)	
LED 1	(SMD) red flashing	⇨ In normal mode in time with communication on the loop
	(SMD) red lit steadily	⇨ Short circuit on loop
LED 2	(SMD) yellow lit steadily	⇨ Module faulty
LED 3	(SMD) red flashing	⇨ +24V supply voltage failure or communication to control panel processor interrupted
	(SMD) red lit steadily	⇨ Module in CPU failure mode (control panel CPU failure)
LED 4	(SMD) yellow flashing	⇨ Prozessor program running - normal mode
	(SMD) yellow flashing rapidly	⇨ Module in test mode

Example illustrating ring spur loop wiring with automatic detector addressing
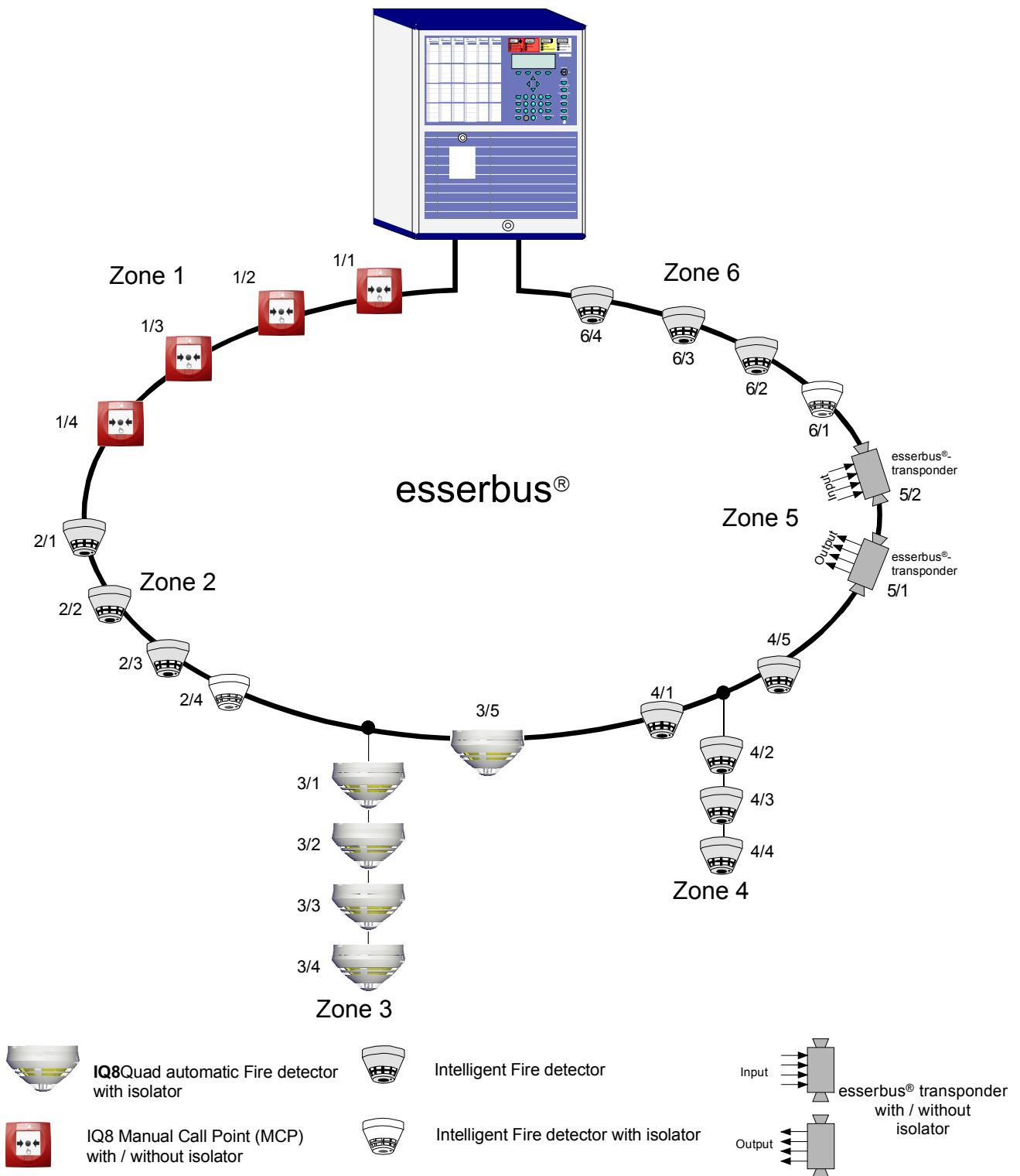
Fig. 72: Example illustrating ring spur loop wiring

6.3 Master box activation module

Micromodule for activating a master box (MFAB) and alerting the intervention forces, such as the fire department.

With the **FACP 8008** fire alarm control panel, the master box module is operated at the micromodule slots of the first two I/O cards (I/O card 1 and 2).

You may install a max. of ten master box activation modules in an FACP 8008 control panel or a control panel system in the essernet®.

Fig. 73: Master box activation module

X1	64-way connector strip to I/O card
K1	Relay for switching the MFAB supply voltage, e.g., +12V or +24V (DC) Max. contact rating max. 30 V DC/ 1A
F1	Electronic fuse (multifuse): to reset, de-energize 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 intermitted
		right	⇨ activation continuous

BR1, BR3	hardware adjustment of MFAB activation (see following page(s))

Configuration of the transmission unit control time

The time for the duration of the activation of the MFAB can be selected using DIL switch S2. This selection only becomes active when "intermittent activation" is selected on switch S1.
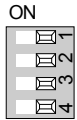
activation for approx. 6 seconds
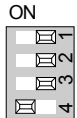
activation for approx. 2,5 seconds
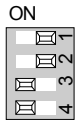
activation for approx. 1,5 seconds
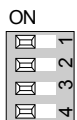
activation for approx. 0,25 seconds

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 fire alarm control panel 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.

- Enable keyboard (key-operated switch)
- Press Control (MFAB No.) Off to switch off the master box.
  (The control numbers 1 to 10 are reserved for master boxes.)

An automatic switch-off of activation can be programmed in the customer data. When the fire alarm control panel is opened (cover contact), 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!
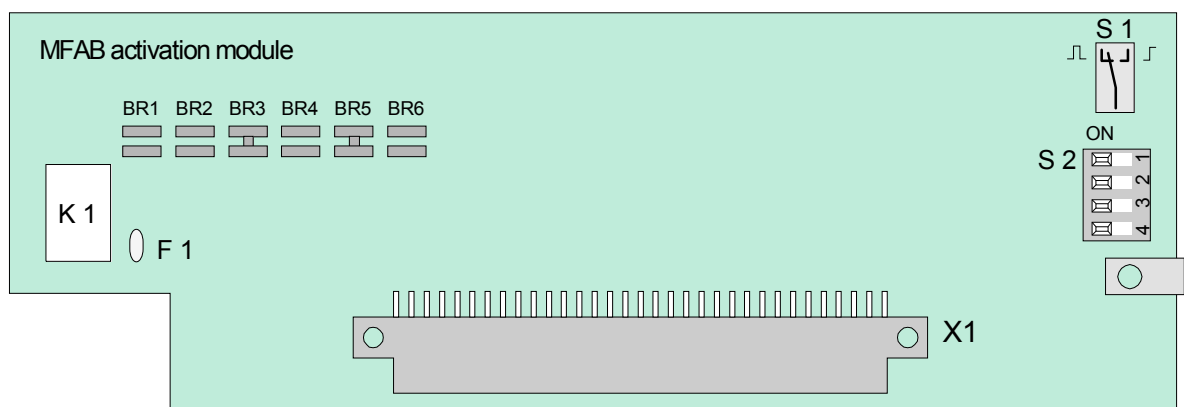
Wiring of the terminal card
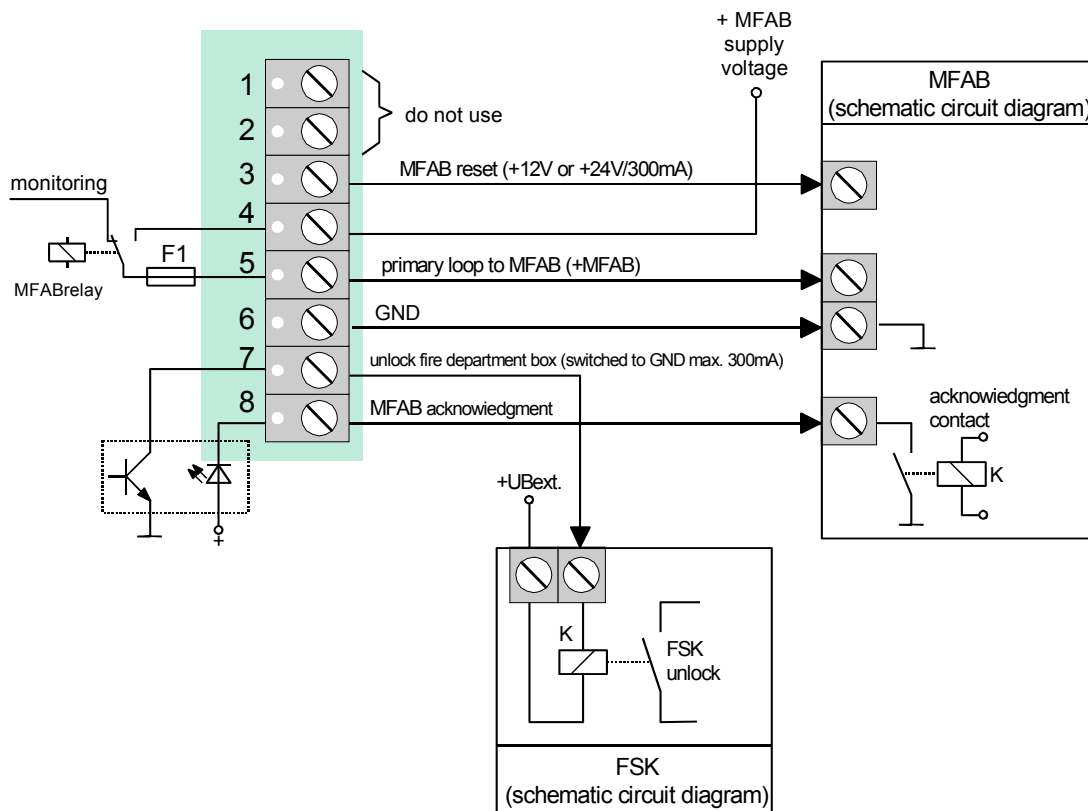
Fig. 74: Assignment for terminal card, master box activation module

The signal to enable the fire service key box (FSKB)is activated when the master box acknowledge signal (terminal 8 = MFAB 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 control panel of the fire alarm control panel. Intervening personnel such as the fire department have been notified.
If it has been impossible to activate a master box 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 (lock on outer hosing) is open. (factory setting of solder jumper on module: BR2 = open ; BR3 = closed). The customer data of the fire alarm control panel 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

- malfunction of master box

Activation of the MFAB independency on the cover contact (BR2 and BR3)
The activation of the master box is configured by the two solder bridges BR2 and BR3 on the MFAB control module.

Factory setting Germany (D) configuration

BR2 = open	The MFAB operation is programmed in the customer data configuration. If e.g. the MFAB must not be triggered in case of an open housing contact, the configuration
BR3 = closed	may be programmed in the MFAB data sheet *Functional designation of the MFAB control module*.

Configuration for the Netherlands (NL)

BR2 = closed	The MFAB activation is carried out by no means of the customer data configuration. The MFAB will be triggered automatically by hardware control if a
BR3 = open	fire alarm has been detected.

The MFAB relay will be assigned to a function with the service PC by using the software Customer data editor 8008. An individual additional text with 25 characters per line can be edited for the MFAB relay, which is shown on the panels display and may be printed by the connected protocol printer.

6.4 essernet® module type 1, 62,5 kBd (Part No. 784840) / essernet® module type 2, 500 kBd (Part No. 784841)

The address of essernet® micromodules type 1 and 2 with hardware revision E and higher is set with two rotary switches.
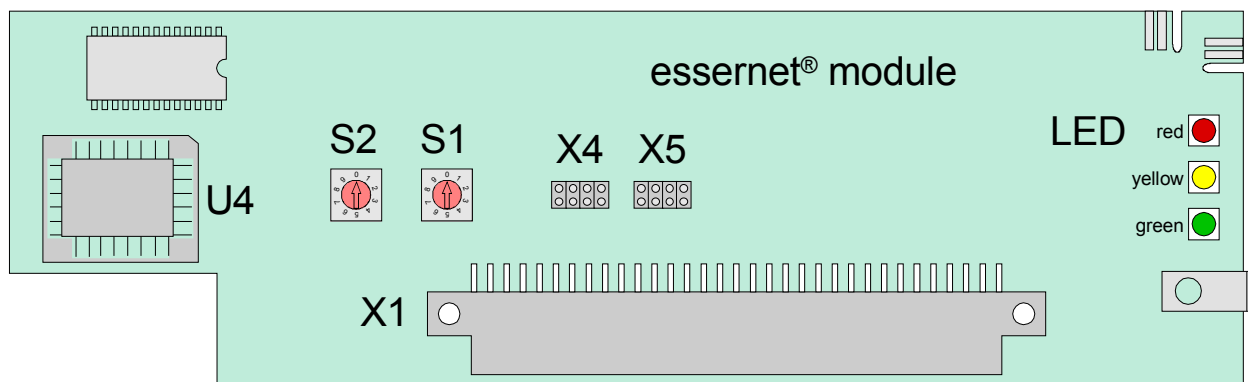
Fig. 75: essernet® micromodule (Part No. 784340 or 784341)

U4	Operating system software, V 4.00 or higher
S1 / S2	rotary address switch
X1	64-way connector for the micromodule slot of the I/O card
X4	jumpers for configuration of the terminals, connector 3/4
	copper cable connected / fibre optic cable connected
X5	jumpers for configuration of the terminals, connector 1/2
	copper cable connected / fibre optic cable connected

LED	Operating mode		
red	**yellow**	**green**	**status**
off	flashing	on	*Incorrect address setting*
on	flashing	off	*hardware failure*
off	flashing	off	*hardware failure*
on	on or off	flashing	*communication error*
on or off	on	flashing	*short circuit/open line*
off	off	flashing	*normal operation*
flashing	flashing	flashing	*test mode (only for factory testing)*

- The messages incorrect address setting, hardware failure, and test mode are only shown after switching on the essernet® micromodule. These indications will remain until the module is re-started.

- The messages communication error, short circuit/open line, and normal operation are only shown while the relevant state persists.

Setting the essernet®-address (Example)

S2	S1	Adress
 Pos. 0	 **Pos. 9**	address **09**
 Pos. 2	 **Pos. 1**	address **21**

Exception

If the essernet® micromodule is used in combination with a PC plug-in card (Part No. 784867), e.g. in a EDWIN or Gebanis system, the following <u>must</u> be observed:
The required address must be increased by an **offset of +40** in order to prevent malfunction of the essernet®.

 Pos. 6	 **Pos. 5**	Example address 25 (+Offset 40) = **65**

EMC-protection

For use of the essernet micromodule, the essernet adaptation (see Chapter 5.8) must be activated by means of the eight jumpers on the I/O module. The EMC protection must be established with special devices for the LAN cable.

Compatibility
essernet® micromodule type 1 (784840, 64kBd)

All hardware revisions up to and including B2 are compatible with each other and with the repeaters up to revision A. Hardware revision E of micromodules and repeaters is compatible with micromodule revision B3 and later. Hardware revisions up to and including B2 and hardware revisions of B3 and later should not be used in mixed operation as this might lead to communication problems.

essernet® micromodule type 2 (784841, 500 kBd)

All hardware revisions of the modules and repeaters delivered to date are compatible with each other and with revision E.

The essernet® micromodules with hardware revision E and later are class A information devices (ITE) as per DIN EN 55022: 1999-05. This device may cause radio interference in a residential environment. The user may be legally obliged to take appropriate action in any case of interference. A residential area is defined as an area in which the operation of broadcast radio or television receivers must to be anticipated in a range of 10 m from the device in question.

6.5 RS 232 / TTY module (serial interface)

This module provides either a serial RS 232 or TTY interface (20mA) for exchanging data with external devices connected.
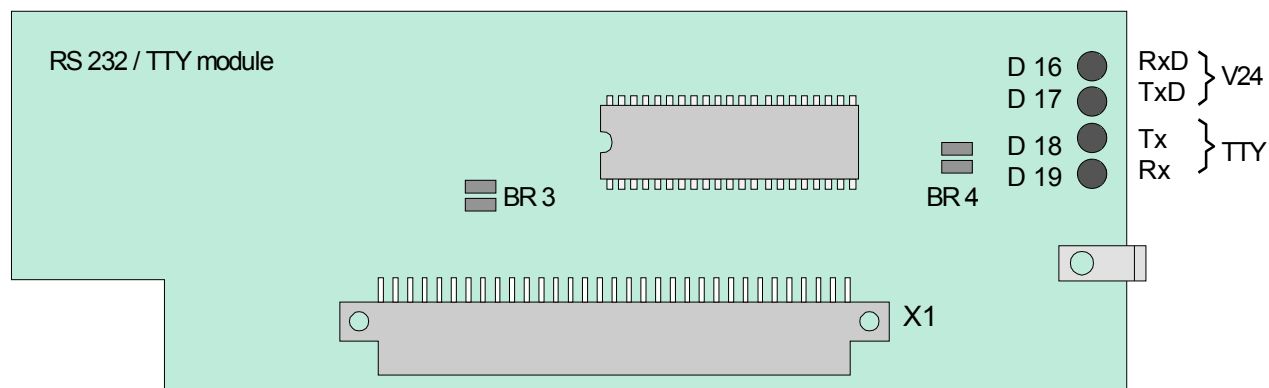
Fig. 76: RS 232 / TTY-micromodule (Part No. 784842)

X 1	64-way plug connector to micromodule slot of the basic module
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)

The required interface type RS232 or TTY(20mA) is programmed using the service PC and programming software tools8008.

Assignment of terminal card RS232 module
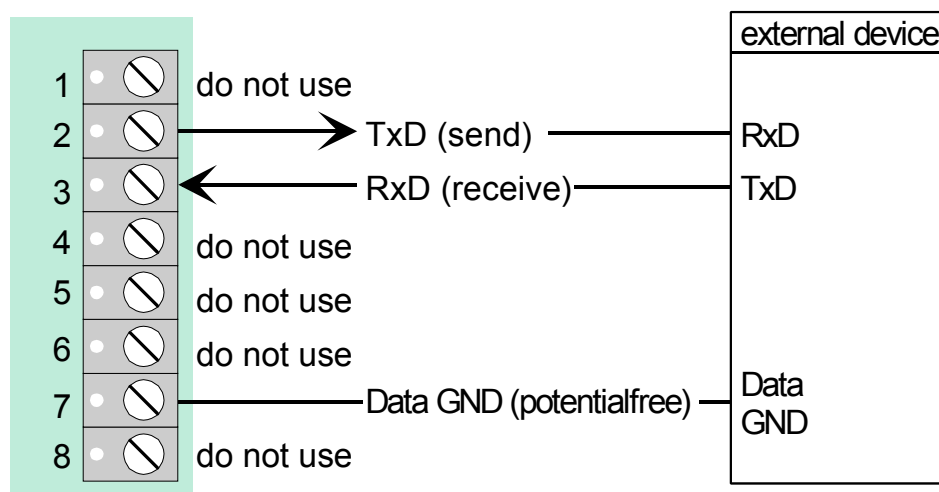
Fig. 77: Assignment for terminal card RS232 module

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

Assignment for terminal card TTY module
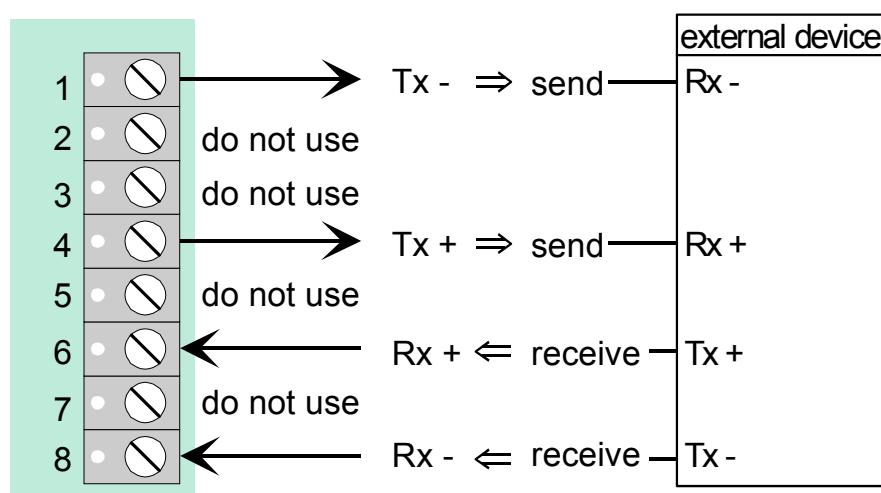
Fig. 78: Assignment for terminal card TTY module

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

Max. cable length for TTY is 1000 m. Only use recommended cable I-Y (ST) Y 2 x 2 x 0.8   mm.

6.6 4-Relay module (Part No. 787530)

This micromodule accommodates four freely programmable, non-monitorable, potential-free relays for activating external devices and system components.
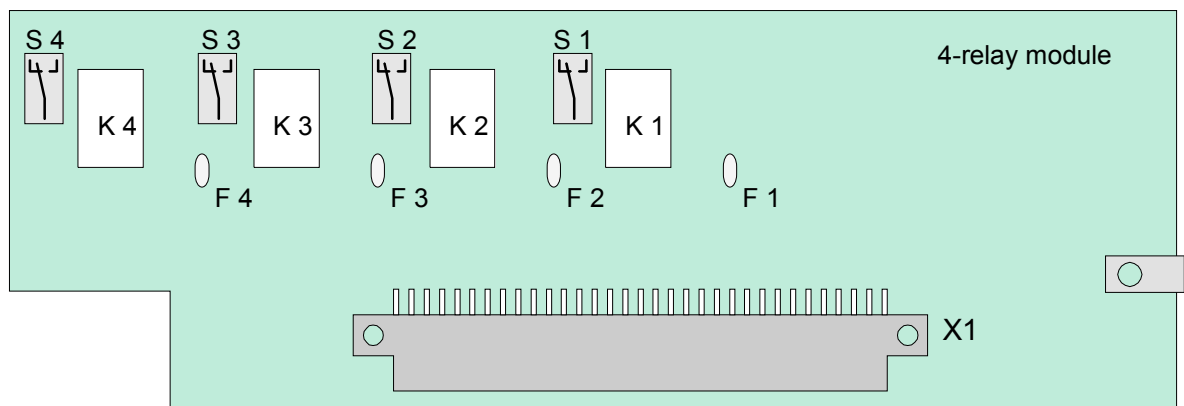
Fig. 79: 4-Relay micromodule (Part No. 787530)

X 1	64-way plug connector to micromodule slot of the basic module
K1 to K4	freely programmable, potential-free relay contacts (max. contact rating 30V DC/ 1A)
S1 to S4	Coding switch for setting the NC or NO contact function for each relay

Position		⇨ Normally close (NC)
		⇨ Normally open (NO)

F1 to F4	Electronic fuse (multifuse): to reset, de-energize for approx. 30 seconds at the relevant screw terminals on the terminal card.

The allocation of the relays is programmed with the service PC and the programming software *tools8000*, version V1.00 or higher. A separate text with 25 characters per line can be entered for each relay for display on the clear text display and the log printer.

Do not connect relays (AE) with alternating voltage.

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 →
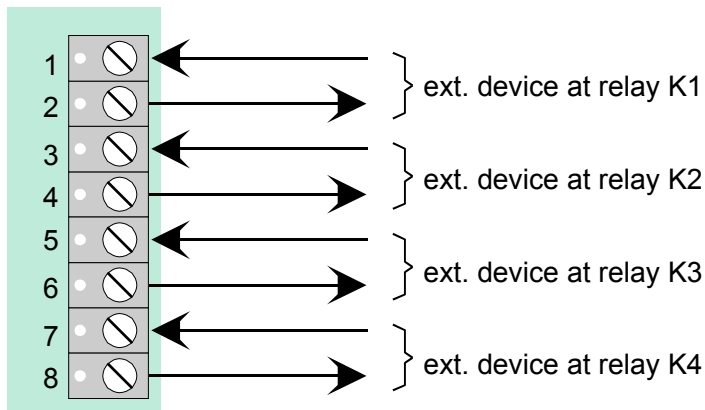
Fig. 80: Terminal card assignment 4-relay micromodule

Schematic circuit diagram (example using relay K1)
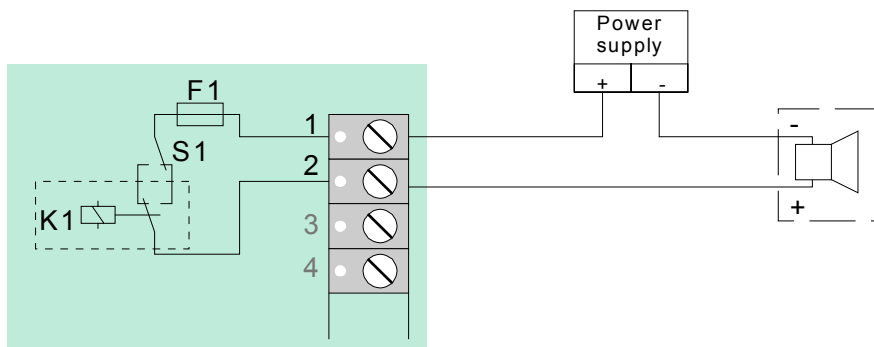
Fig. 81: Schematic circuit diagram – audible alarm device

Multiple alarm circuits on one power supply unit

If several optical/acoustical signal transmitters, e.g. via the 3-relay micromodule (Part No. 787531), 4-relay micromodule (Part No. 787530), the 4-zone / 2-relay esserbus® transponder (Part No. 808613) or the 12-relay esserbus® transponder (Part No. 808610) are connected and receive their power from a common power supply unit, then provisions must be made by the installer for a graduated safety concept.

Generally, several safety fuses with different cutout values and different response characteristics are switched in series. The response behavior is also dependent on the bias of the fuses.

In order to implement this connection according to standards, provisions must be made so that in the event of a short circuit, not the power supply fuse is triggered, but rather a fuse for the respective alarm area.
Therefore, it is absolutely necessary that each individual alarm area be protected by a separate external fuse. The 8-slot fuse card (Part No. 382040), for example, can be used for this purpose.

The cutout values are dependent on the number and type of devices in use and must always be determined for the specific object.

Recommendation: Lower cutout value ⇨ faster response behavior

6.7 3-relay module / 3-relay common trouble module

Micromodule for activating external devices (not potential free) such as a flashing lamp or audible alarm device, with monitoring capability. You may connect up to three external devices to this micromodule.

With the 3-relay module (787532), relay K1 is connected as common trouble relay, that is, in the normal activated.
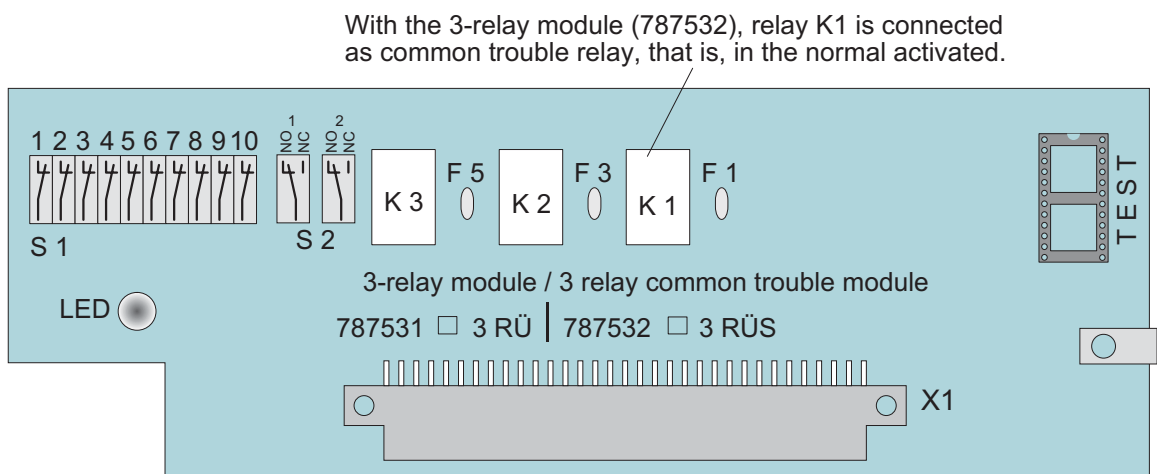
Fig. 82: 3-relay-/3-relay-SaS-micromodule (Part No. 787531 and 787532)

X 1	64-way plug connector to micromodule slot of the basic module
Relay	K 1 (for 3-relay common trouble module used as common trouble relay)
	K 2 and K 3 freely programmable, max. contact rating 30 V DC /1 A
S1, S2	coding switch for selecting monitored / non- monitored setting, or for special application
TEST	Test socket only. For in-factory adjustments!
LED	No indicator function (in-factory testing purposes)
F1, F3, F5	Electronic fuse (multifuse): to reset, de-energize for approx. 30 seconds at the relevant screw terminals on the terminal card
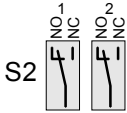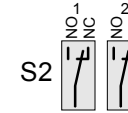
Relay assignment is programmed with the service PC and Customer Data Editor 8008 software. For each relay, you may enter a specific additional text comprising 25 characters per line for output on the alphanumeric display and protocol printer.

Do not connect relays (AE) with alternating voltage.

Switch S1 / S2 Adjustment of the relays

Relay	Status	Contacts switch S 1	open	closed	* Application example A	* Application example B
K 1	10 kΩ monitored	1 + 2	---	X	S2	S2
K 1	not monitored	1 + 2	X	---		
K 2	10 kΩ monitored	3 + 4	---	X		
K 2	not monitored	3 + 4	X	---		
K3	10 kΩ monitored	5 + 6	---	X	Relay without function!	
K3	not monitored	5 + 6	X	---		

* see examples on the following page(s)

> The *monitored / non-monitored* mode for individual relays must be programmed in addition to the setting on the 4-relay micromodule using the service PC in menu item *Function assignment* of the customer data editor.

Wiring an external signalling device without loop monitoring

Example with relay K2 (terminal 5 and 6), non-monitored mode
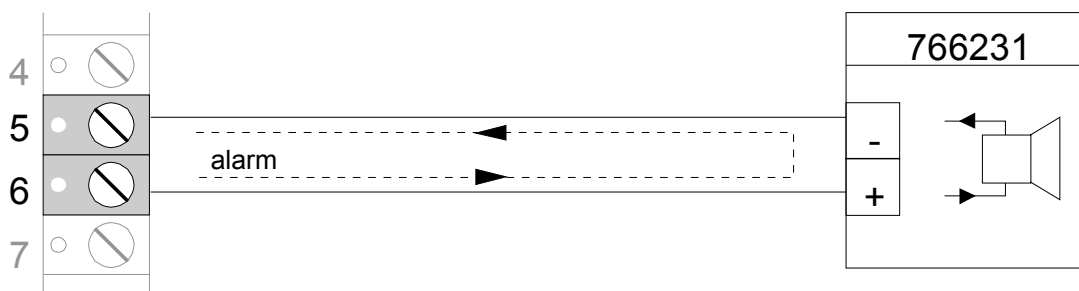
Fig. 83: Wiring an external signalling device without loop monitoring

Connecting an external signalling 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, such as a signalling 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 signalling devices while monitoring is in progress.

Example

using relay K2 (terminal 5 and 6), monitored mode
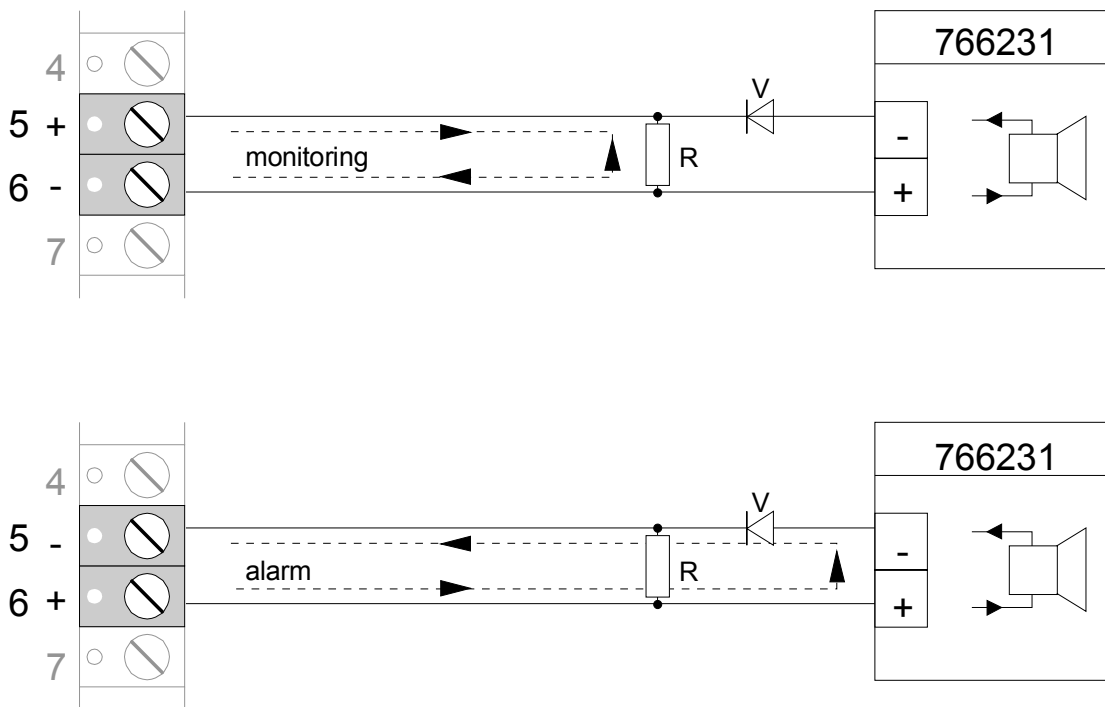
R = 10kΩ end-of-line resistor , V= protective diode (1A)

Fig. 84: Wiring with relay K2 (terminal 5 and 6), monitored operating mode

Example (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.

Switch	Contacts	Position
S 1	7, 8, 9, 10 closed	7 8 9 10
S 2	1 + 2 (NO)	1 2 NO NC NO NC

Terminals:
- 1 → − ⎫ ext. device at relay K1
- 2 → + ⎭
- 3 ← + ⎫ ext. voltage, e.g. +12 V
- 4 ← − ⎭
- 5 → − ⎫ ext. device at relay K2
- 6 → + ⎭
- 7 → − ⎫ ext. device at relay K3
- 8 → + ⎭
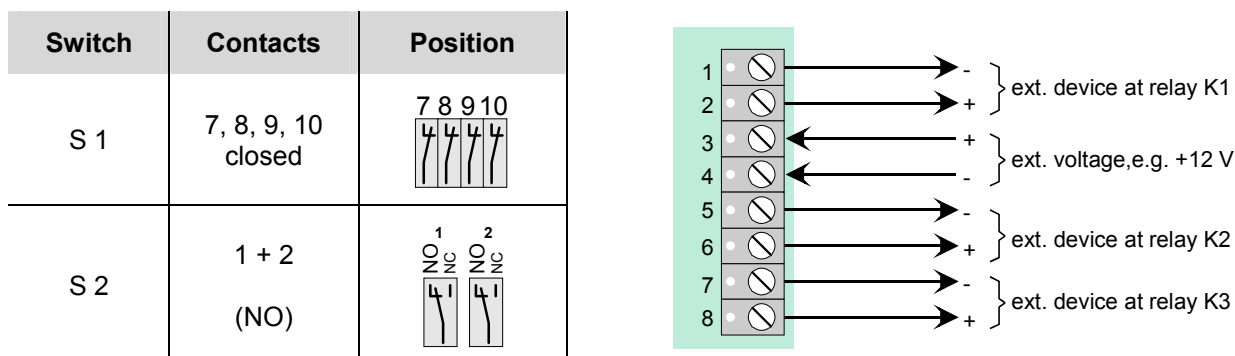
Fig. 85: three relays with a common external voltage (default setting)

Example (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 micromodules!
Relay K3 is not used!

Switch	Contacts	Position
S 1	7, 8, 9, 10 open	7 8 9 10
S 2	1 + 2 (NO)	1 2 NO NC NO NC

Terminals:
- 1 → − ⎫ ext. device for relay K1
- 2 → + ⎭
- 3 ← + ⎫ ext. Voltage for external device
- 4 ← − ⎭ at relay K1, e.g. +12 V
- 5 → − ⎫ ext. device for relay K2
- 6 → + ⎭
- 7 ← + ⎫ ext. Voltage for external device
- 8 ← − ⎭ at relay K1, e.g. +24 V
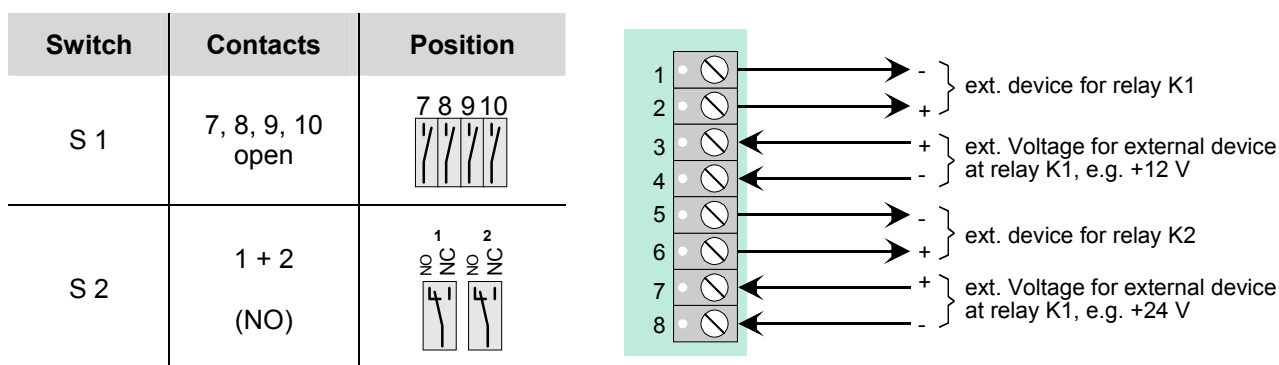
Fig. 86: two relays with two differing external voltages

6.8 BSL interface module (Part No. 787533)

The BSL interface module has the purpose of activating an extinguishing controller from the fire alarm control pane. This module also accommodates a freely programmable, monitored relay (K1) for a freely selectable control function.
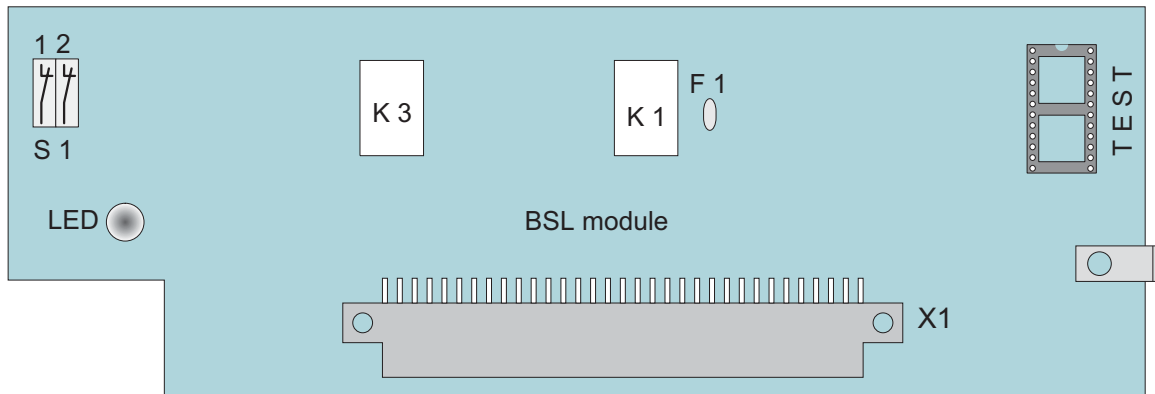
Fig. 87: BSL interface module (Part No. 787533)

X 1	64-way connector strip to I/O terminal card	
S 1	Setting for freely programmable relay K1 (monitored/not monitored)	
	Contact 1/2 open	⇨ Relay K1 not monitored
	Contact 1/2 closed	⇨ Relay K1 monitored (monitoring resistance 10 kΩ)
K 1	Freely programmable, potential-free relay	
K 2	Monitored input for trouble message from extinguishing system control	
K 3	Relay for activating the extinguishing system (with appropriate internal wiring)	
F 1	Electronic fuse (multifuse): to reset, de-energize for approx. 30 seconds at the relevant terminal card	
LED	Without indicator function	
TEST	Test socket for in-factory adjustment!	

The allocation of the relays is programmed with the service PC and the programming software *tools8000*, version V1.00 or higher. A separate text with 25 characters per line can be entered for each relay for display on the clear text display and the log printer.

Terminal card assignment
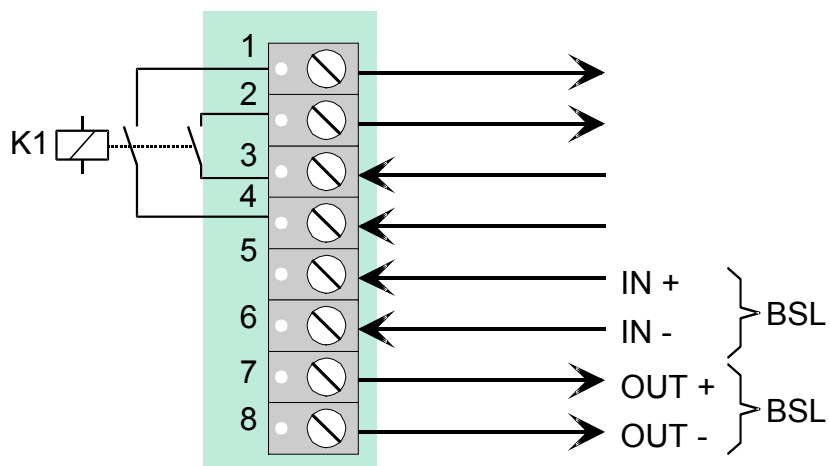
Fig. 88: Terminal card assignment, BSL interface module

Schematic circuit diagram
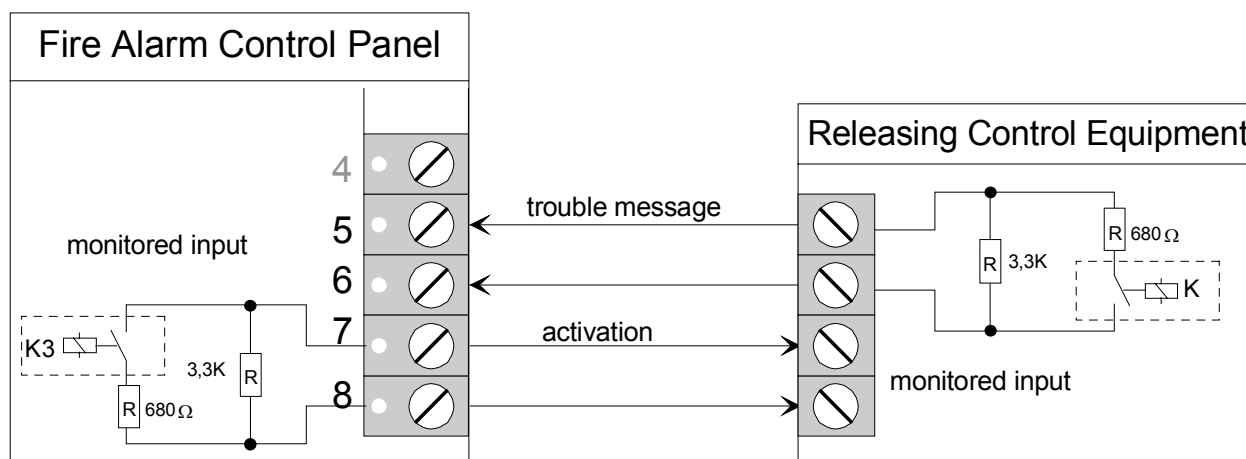
Fig. 89: Schematic circuit diagram – extinguishing system

7 esserbus® transponder

esserbus® transponders are input/output modules for extending the control panel inputs/outputs. As devices on the analog loop - the esserbus® - they may be operated jointly in separate detector zones with fire detectors on the esserbus®.

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 on a standard C-mounting rail in the fire alarm control panel, or at decentralised level at any location in the analog loop in a special plastic housing (Part No. 788600 / 788601). The internal voltage supply is fed to the esserbus® transponder from the zone voltage of the analog loop.

The following esserbus® transponders are available at present:

Type	Designation	Part No.
eK-12REL	with 12 relay outputs	808610
eK-32AE	with 32 outputs to drive LED	808611
eK-1Grp	with one detector zone input	808614
eK-4Grp/2Rel	with 4 detector zone inputs and 2 relay outputs or a BSL interface for controlling extinguishing systems	808613
eK-KOM-LMST	communications transponder for a 8010 fire alarm and extinguishing computer. This communications transponder is installed inside the housing and immediately on the processor board of the 8010 fire alarm and extinguishing computer.	808615
eK-FSA	The FSA-transponder for a stand-alone fire door control or as a loop device connected fire alarm system 8000.	808619
Third party module RZT 8000	For an individual connection of automatic and non-automatic fire alarm detectors supplied by other manufacturers	80863X

8 Technical Data

8.1 esserbus® Analog loop module (Part No. 784382)

Recommended connecting cable	:	Line transmission cable IY-St-Y; 0.8 mm cable cross section
		Max. analog loop resistance 75Ω with 0.8 mm cable cross section (measured from A+ to B+) 130Ω with 0.6 mm cable cross section
		These values correspond to a total length of a analog loop of approx. 2000m
Power consumption	:	25 mA
Short-circuit current limit	:	60 mA
CPU-failure function	:	Processor with capability of operating in CPU failure mode
Internal voltage supply	:	+12V and +26V via connector strip

RS 232/TTY module (serial interface)

Total power consumption (TTY)	:	approx. 55 mA
Total power consumption (RS 232)	:	approx. 35 mA
Transmission speed	:	max. 19200 bit/s

Master box activation module

Total power consumption		
without monitoring	:	10 mA
Monitored	:	15 mA
Contacts	:	1 change-over contact
Switching current	:	1 A
Switching voltage	:	max. 30 V DC
"Reset MFAB" output	:	max. 300 mA (+12V bzw.+24V DC) short-circuit resistant
"Reset MFAB" output	:	max. 300 mA short-circuit resistant
Fuse F1	:	Multifuse 1,1 A (on operating panel control card)

4-relay module

Total power consumption	:	10 mA
Contacts	:	4 programmable NC contacts or NO contacts (cannot be monitored)
Switching current	:	max. 1 A
Switching voltage	:	max. 30 V(DC)
Fuse	:	Multifuse 1,1 A (per relay)

3-relay module / 3-relay-SaS-module

		3-relay module	3-relay common trouble module
Total power consumption	:	5 mA	15 mA
Contacts	:	3 monitored, programmable NC contacts or NO contacts	2 monitored, programmable NC contacts or NO contacts plus trouble message relay
Switching current	:	1 A	1 A
Switching voltage	:	max. 30 V DC	max. 30 V DC
Fuse	:	1 Multifuse 1,1 A (per Relay)	1 Multifuse 1,1 A (per Relay)

4-zone module

Total power consumption	:	25 mA
Connection	:	4 fire or diagnostic detector zones
Detectors	:	max. 32 detectors / zone
Supply	:	intern 12V DC
Current limitation	:	100 mA / zone
CPU failure characteristics	:	Processor with CPU failure mode capability

BSL module

Supply voltage	:	5V or 12V DC internal
Power consumption	:	max. 2,7 mA
Switch-contacts	:	Relay K1 , potential-free, freely programmable, Switching power 30 V DC/1A
Monitored input	:	3,3 kΩ (± 10%) ⇒ normal mode ≤ 680Ω ⇒ trouble message

essernet®-module Type 1 - 62,5 kBd

Total power consumption	:	ca. 150 mA
Cable type	:	Transmission speed 62.5 kbit/s 2-wire telephone cable IY (St) Y 0.8 mm with twisted pairs and plastic insulation, max. cable length 1000m. Other cable types, e.g. paper-covered wires, control cables (NYM) or smaller diameters are not suitable.
essernet® devices	:	max. 31 network devices
Transmission	:	Token-passing method
	:	Protocol similar to DIN 19245 Part 1 (Profibus)
Topologie	:	Ring structure ⇒ open and short-circuit tolerant

essernet®-module Type 2 - 500 kBd

Total power consumption	:	ca. 150 mA
Cable type	:	Transmission speed up to 500 k bits/s IBM Type 1 max. 1000m between two devices IBM Type 2 (earthing cable) max. 1000m between two devices IBM Type 6 (flexible) max. 200 m
essernet® devices	:	max. 31 network devices
Transmission	:	Token-passing method
	:	Protocol similar to DIN 19245 Part 1 (Profibus)
Topologie	:	Ring structure ⇒ open and short-circuit tolerant

Connecting information:

An essernet® micromodule can only be operated in the basis module's micromodule slot of the 8008 FACP. When connecting an essernet® module the factory installed EMC protection of the fire control panel must be disabled. EMC protection of the essernet® has to be provided by special LAN protective devices.

esserbus® transponder eK-12-REL

12 freely programmable, potential-free relays, either NC contact or NO contact

Switching power	: < 30 V DC / 1A per relay
External switching voltage, capable of being monitored	: 12 V DC or 24 V DC

esserbus®- transponder eK-32AE

32 freely programmable outputs for activating light-emitting diodes (LED), such as in a remote indicating panel.

Switching power	: 12 V DC / 10 mA per output
External switching voltage, capable of being monitored	: 12 V DC

Lamp test function for checking the indicator LED

esserbus®-transponder eK-1GRP

1 input for connecting a non-addressable fire detector zone

External voltage supply	: 10,5 V DC to 28 V DC
Rated voltage	: 12 V DC or 24 V DC
Power consumption	: max. 28 mA
Detector zones voltage	: 9 V DC
Line length in detector zone	: max. 1000m
External switching voltage, capable of being monitored	: 12 V DC or 24 V DC

esserbus® transponder eK-4 IN/2OUT

4 inputs for connecting four non-addressable fire detector zones plus two freely programmable relay outputs or as a BSL interface. For programming as a BSL interface, the customer data editor and FACP software version V2.38 are required

External voltage supply	:	10,5 V DC to 28 V DC
Rated voltage	:	12 V DC or 24 V DC
Power consumption	:	max. 28 mA
Detector zone voltage	:	9 V DC
Line length in detector zone	:	max. 1000m
Relay / contact rating	:	30 V DC / 1A
External switching voltage, capable of being monitored	:	12 V DC or 24 V DC

esserbus® transponder eK-KOM-LMST

Communications transponder for the 8010 fire alarm and extinguishing computer. For connection to the analogue analog loop.

Analogue analog loop	:	nominal current: < 150 mA
Ext. power supply	:	quiescent current: < 3 mA, supplied by the 8010 fire alarm and extinguishing computer
Mounting location	:	Inside the housing of the 8010 fire alarm and extinguishing computer
Software requirements	:	programming software *tools8000* Version V1.00 or higher
FACP software	:	version 2.38 or higher

Notizen

Commissioning / Servicing

Fire Alarm Computer 8008

9 Commissioning / Servicing

9.1 Status display

In normal operation of the fire alarm control panel 8008, the central display shows the status with messages sorted according to their priority. In the case of an alarm, trouble or switch-off, the display always shows the first and last message with equal priority.


```
1. SWITCHED OFF  Zone: 0004  Det.:15    11:10    22:11

              Additional text line (client text)



    Overview        Service      Time func.        Info
```
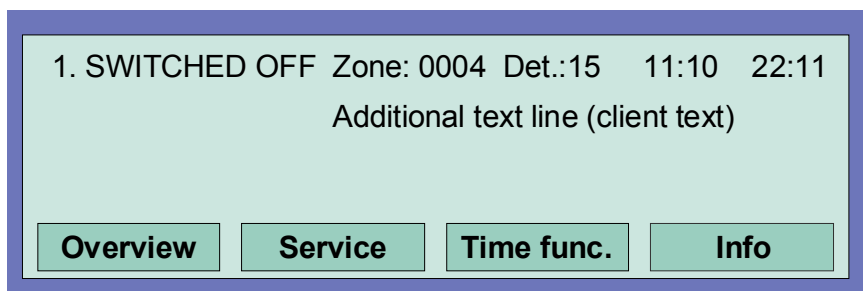
Fig. 90: Status display

Using the cursor keys of the keyboard, the various messages of the display can be selected and revealed.

If no key is pressed for longer than 20 seconds, the display returns automatically to the message with the highest priority.

1) Initial / last message with next higher priority

2) Next message with equal priority

3) Initial / last message with next lower priority

4) Prior message with equal priority
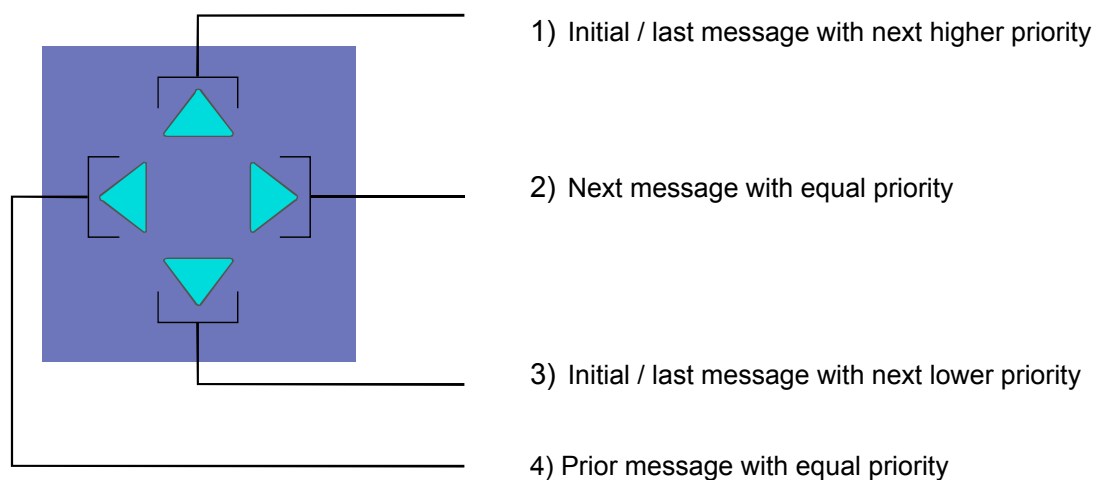
Fig. 91: Cursor keys

Pressing the function key Overview moves to the overview display.

In the overview display, the number of all transmitted signals is shown separated according to the type of signal (alarm, trouble, switch-off and other events) for rapid information on the status of the equipment.
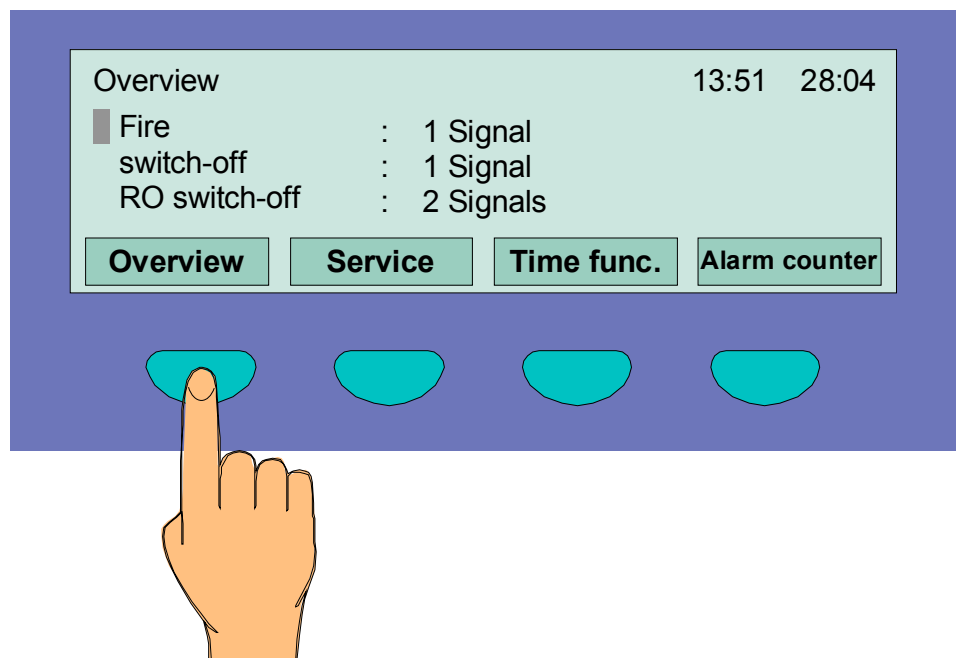
Fig. 92: Overview display (press selected button to switch to the status display).

10 Installer level

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 fire alarm control panel 8008. 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.

The menu options *Installer* is only displayed in the service level!

 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. (<u>Exception</u>: 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.

Works programmes authorisation code

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

The authorisation code programmed at works level through the Country function can be changed individually in the PC Customer data programming of the FACP 8008.

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 programming software tools8000, version V1.00 or higher. The max. 8-digit authorisation code is then displayed under menu options *FACP Settings|Properties*. Storage of the Customer data which has only been queried to obtain the installer code is not necessary.

Entry of the authorisation code for the installer level

```
Accsess Installer level

Code:  *  *  *  *


  [ Escape ]  [        ]  [ Delete ]  [ Select ]
```
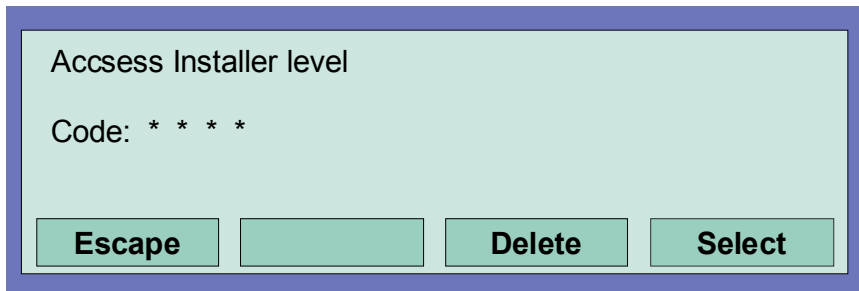
Fig. 93: Entry of the authorisation code

xyz

- 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.

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

```
Installer
1 Primary loop functions
2 Detector simulation
3 Control simulation
4 Printer function
┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
│  Escape  │ │          │ │Event mem.│ │  Select  │
└──────────┘ └──────────┘ └──────────┘ └──────────┘
```
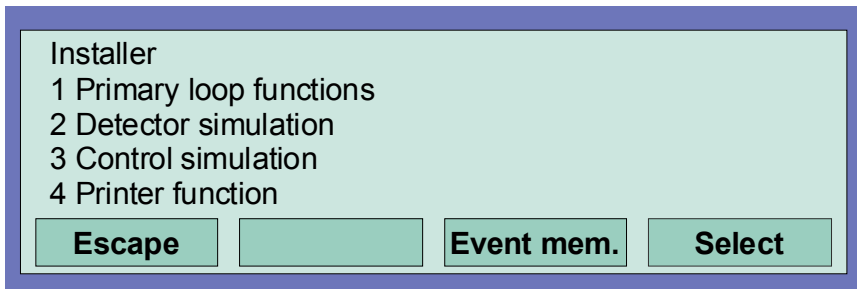
Fig. 94: The function menu with four menu points

1. Primary loop function

2. Detector simulation

3. Control simulation

4. Printer function

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

The Function menu in the installer level

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

1. Primary loop function

- Switching on/resetting a primary loop
- Switching off a primary loop
- Test operation of an analog loop
- Detector replacement in an analog 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 Installer level; Primary loop function

Primary loop function

Under this menu point, the internal primary loops of this fire alarm control panel or other fire alarm control panels in an essernet® network can be switched on or off and checked by a manual test function.
Additionally, it is possible to replace single detectors in operative analog loops, (e.g. during maintenance work) without changing the Customer data programming with the service PC.

Primary loops are:

- the Analog loop module, including all connected analog detector zones and esserbus® transponders all analog ring modules included in this FACP
  (including the analog 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 I/O card

⚠️ When a primary loop is disconnected, all detectors and loop devices connected to this module are disconnected. Disconnected primary loop will not activate an alarm or fauls message in the case of an event!

Primary loop number and slot

Individual assemblies of the FACP 8008 can be switched on/off with the internal primary loop number through the control panel keyboard or programmed with the customer data editor tools8000.

Definition of primary loop number

The 4-digit primary loop number consists of the Fire alarm control panel number (1, ..., 31), the Slot of the I/O card (1, ..., 5) and the slot number for the micromodule (1, ..., 8) on the I/O card.

| 0 1 | 2 | 3 |

Slot number of the micromodule on the I/O card (max. 8)

Slot number of the I/O card on the backplane bus board (max. 5)

Fire Alarm Control Panel No. (max. 31)
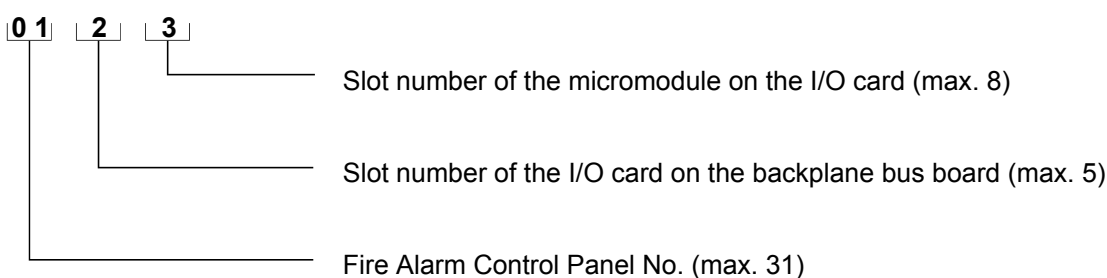
Fig. 95: Example – primary loop number

Example:

Primary loop number	Fire Alarm Control Panel number	I/O card Slot number	Micromodule Slot number
0311	3	1	1
0335	3	3	5
0341	3	4	1

Location of I/O cards and micromodules

Backplane bus board

1. I/O card

1. Micro module slot
2. Micro module slot
3. Micro module slot
4. Micro module slot
5. Micro module slot
6. Micro module slot
7. Micro module slot
8. Micro module slot

1   2   3   4   5   6   7

1. I/O Terminal card
2. I/O Terminal card
3. I/O Terminal card
4. I/O Terminal card
5. I/O Terminal card
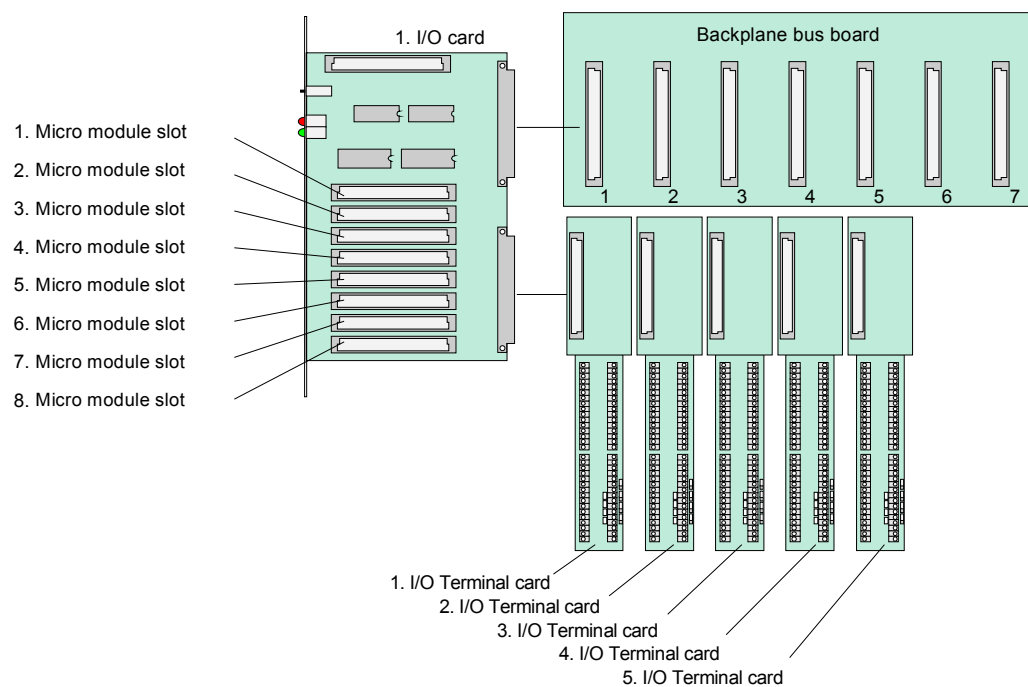
Fig. 96: Location of I/O cards and micromodules

10.1.1 Switching on / resetting a primary loop

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

   Escape                                       Function
```
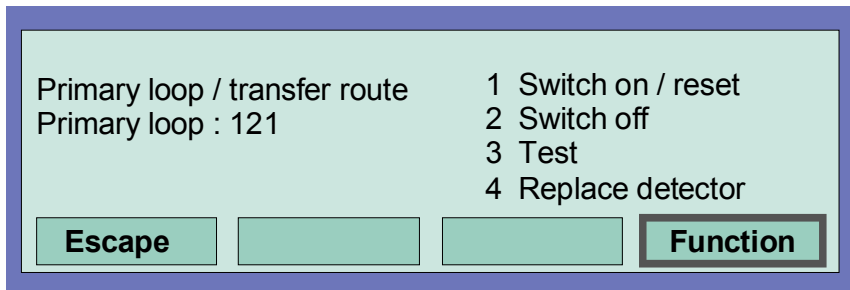
Fig. 97: Switching on / resetting a primary loop

- 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 alphanumeric 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 alphanumeric 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 detectors and detector groups connected to this module (see above) are automatically switched off. Switched off fire detectors will not signal an alarm in the case of an event !

10.1.2 Testing (the analog loop)

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

Fig. 98: Testing the analog loop

- Enter the number of the analog 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 analog loop in test operation will not signal an alarm in the case of an event !

The Function *Testing* is not carried out when ...

- the analog loop is switched off.

- the analog loop module is defective.

Testing an analog loop

The test operation must be carried out individually for each analog loop or detector zone. The simultaneous testing of several analog loops/detector zones is impossible.
By this menu point, the selected analog loop (including all detectors and esserbus[®] transponders) or single detector zones in the analog 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 analog loop wiring with the Customer data programming.

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

10.1.3 Detector replacement

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

Diagnostic fire detectors (Series 9100) 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 / IQ8quad (Analog loop)

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

At the control panel

```
┌─────────────────────────────┐        ┌─────────────────────────┐
│ Using the table on next page,│  no    │ connect service-PC and  │
│ find out whether the         │───────▶│ carry out automatic wiring│
│ replacement can be carried   │        │ analog ring loop.       │
│ out without the service PC.  │        └─────────────────────────┘
└─────────────────────────────┘
              │ 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    │
│ analog ring 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──▶ ┌─────────────────────┐
              │ no                               │ Which trouble code  │
              ▼                                  │ appears in the      │
                                                 │ display ? see       │
                                                 │ section 11 (detector│
                                                 │ malfunctions).      │
                                                 └─────────────────────┘
                                                         │
                                                         ▼
                                                   ◇ Is this malfuntion due to the  ◇──no──▶ ┌────────────────────┐
                                                     replacement of detectors?             │ Check the execution │
                                                         │ yes                             │ of the replacement  │
                                                         ▼                                 │ and reactivate      │
┌─────────────────────────────┐  ┌──────────────────────────────┐                         │ Replace detector    │
│ Replacement of detectors is │  │ Switch the primary loop,     │                         │ function.           │
│ completed.                  │  │ detector zone or detector.   │                         └────────────────────┘
└─────────────────────────────┘  │ Replacement of detectors is  │
                                 │ completed.                   │
                                 └──────────────────────────────┘
```
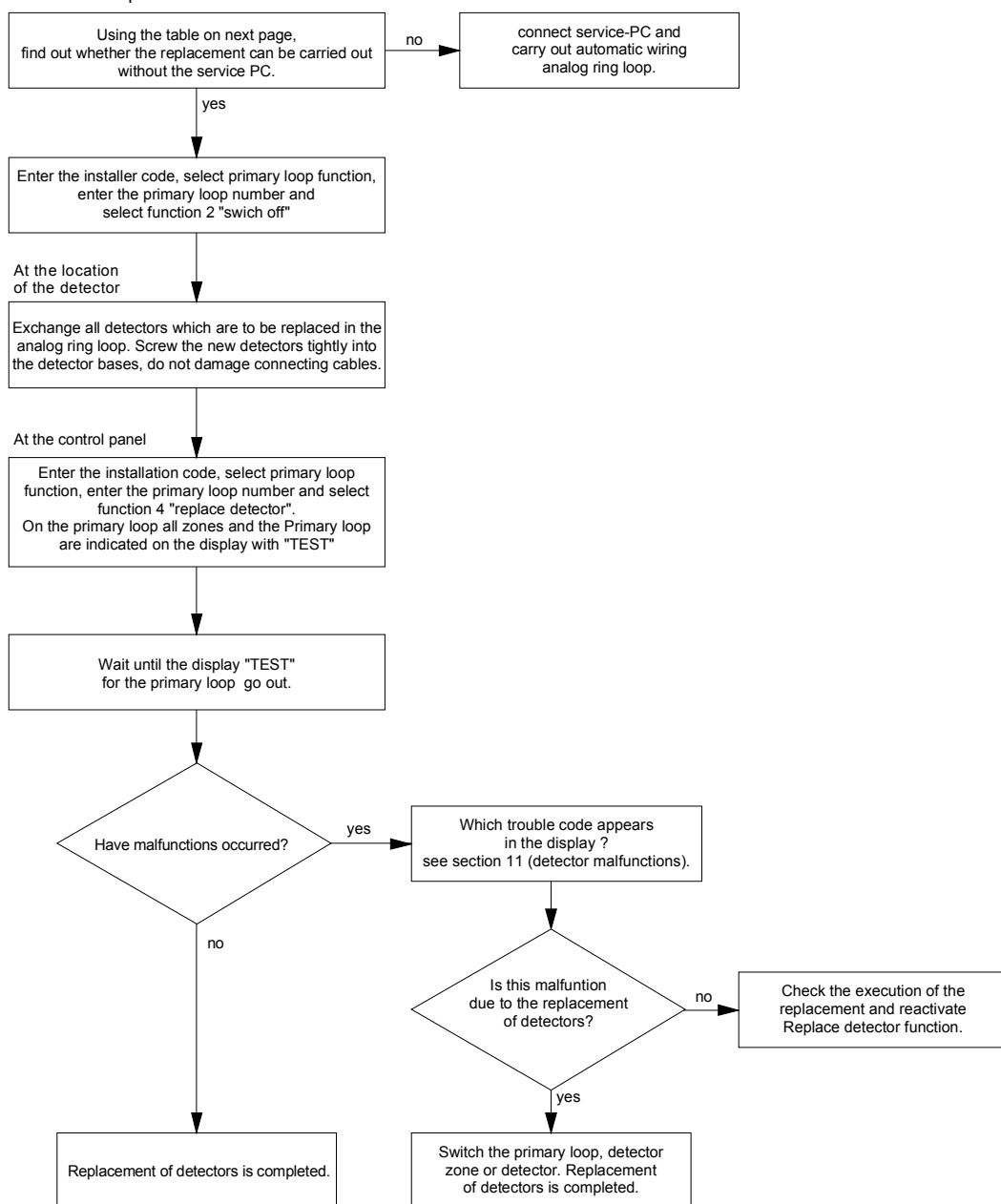
Fig. 99: Flow diagram of detector replacement

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 analog 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 identical 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 dissimilar 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

* *possible in the installer level of the fire alarm control panel.*

10.1.4 Simulation of detector states

Under this menu point, the state of addressable detectors of the Series 9100 and 9200 (no esserbus[®] transponder) can be simulated for test purposes. In all non-addressable detectors, 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 client data of the fire alarm control panel are activated.

> ℹ️ This function pertains exclusively to the detectors of this (local) control panel. The simulation of detector states in the essernet[®] network is impossible.

> ℹ️ Simulation of individual detectors or zones is not supported via communications transponder 788615 of the 8010 releasing control system.

Self-control of the intelligent fire detectors Series 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 client data of the fire alarm control panel for this detector, the integrated detector base output is activated during the simulation of the "Alarm" state.
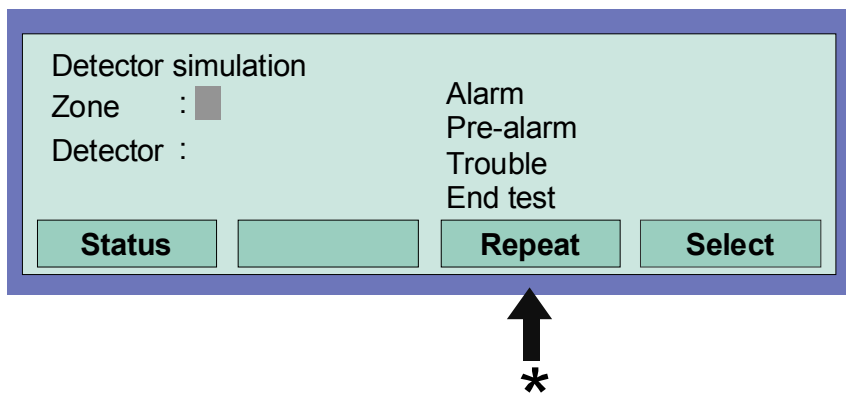

Fig. 100: Entering the zone and detector number

* 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.

> ℹ️ Dependant on the programming of the control panel, the master box and any other external alarm devices are activated during the state simulation of a fire detector!

Detector simulation
Zone   : 12
Detector : 20

1 Alarm
2 Pre-alarm
3 Trouble
4 End test

Status | | | **Function**

Fig. 101: Selection of the detector status for simulation

- Enter the zone and detector number of the fire detector or TAL 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 !

10.1.5 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® network 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 micromodules

- Detector base outputs of intelligent fire detectors (Series 9100)

- Detector base outputs of intelligent fire detectors (Series 9200 / IQ8quad)

- Controls of esserbus transponders in the analog 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)

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 788615 of the 8010 releasing control system.
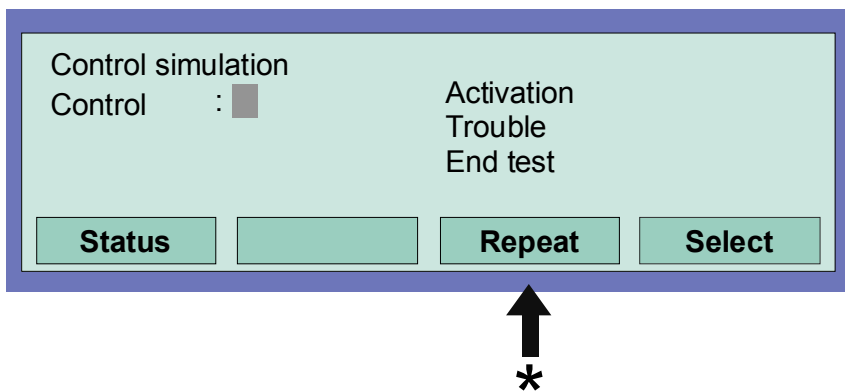
Control simulation
Control   :▮   Activation
                               Trouble
                               End test

| Status | | Repeat | Select |

Fig. 102: Entering the control number

* 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.

- 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

Control simulation
Control   : 15   1 Activation
                               2 Trouble
                               3 End test
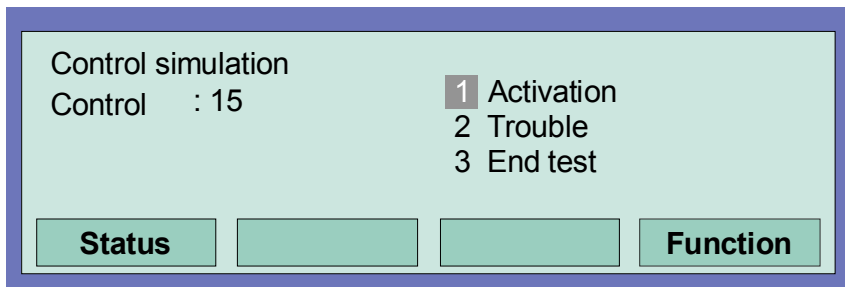
| Status | | | Function |

Fig. 103: Selecting a function

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

10.1.6 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 FACP in the essernet® network 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
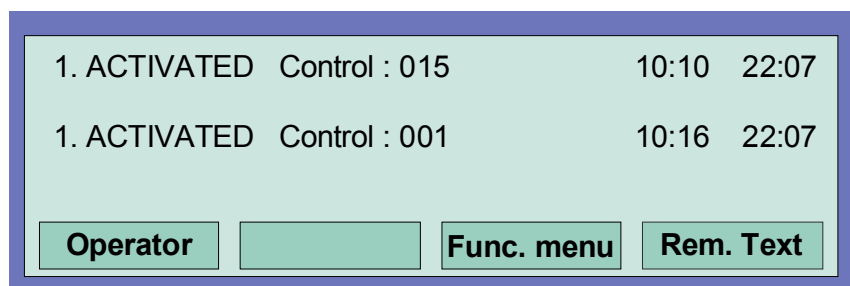
```
1. ACTIVATED   Control : 015            10:10   22:07

1. ACTIVATED   Control : 001            10:16   22:07


  Operator                    Func. menu    Rem. Text
```

Fig. 104: Satus display with the " Rem. Text" menu point
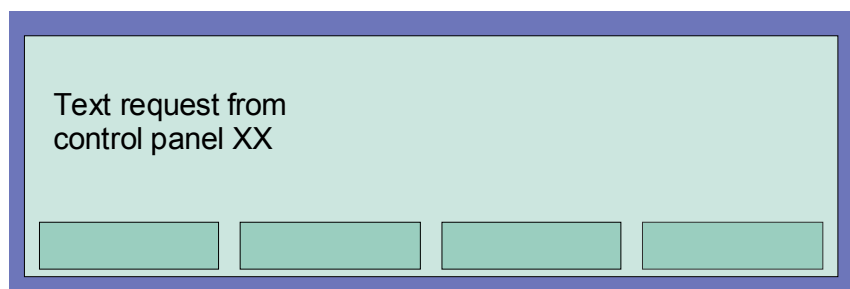
```
Text request from
control panel XX
```

Fig. 105: Access to programmed additional and info text

If additional or info text has not been programmed for this detector or control in the other fire alarm control panel, an empty line is displayed by the *Rem.text* function.

10.1.7 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® network 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® network) and the number "01".

Control panel number	No. of the internal protocol printer
01	0101
02	0201
03	0301
"	"
"	"
"	"
31	3101

External protocol printer

The external protocol printer is selected by the primary loop number of the interface micromodule (RS 232/TTY module) to which the printer is connected. The number of the interface module consists of the number of the fire alarm control panel, the micromodule board and the slot in which the RS232/TTY-Module is fitted in the same way as the primary loop number.

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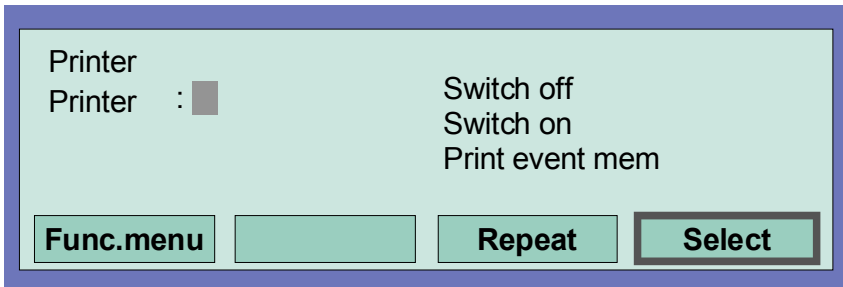
```
Printer
Printer   :          Switch off
                     Switch on
                     Print event mem

  Func.menu              Repeat      Select
```

Fig. 106: 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

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

Switching on the protocol printer

```
Printer
Printer   : 132      Switch off
                     Switch on
                     Print event mem

  Func.menu              Repeat      Select
```
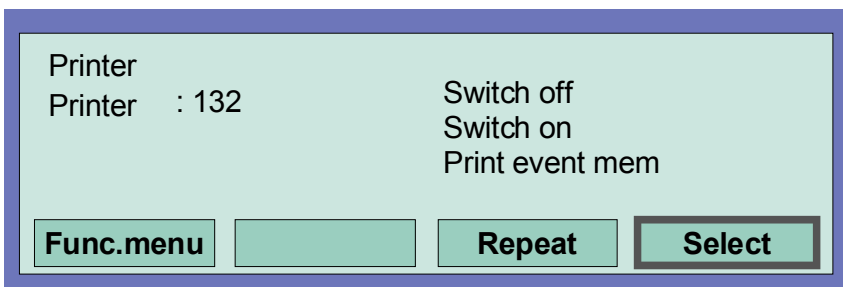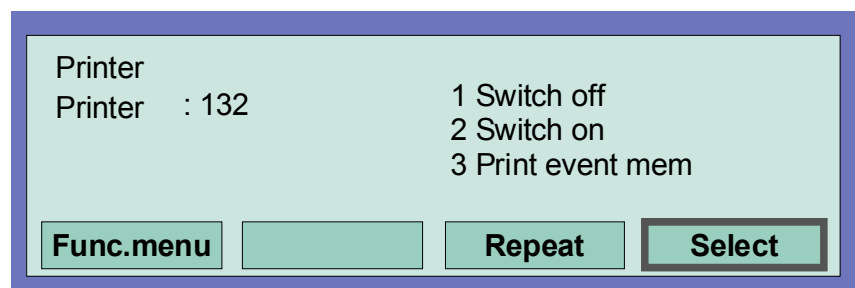
Fig. 107: Entering the number of the external (serial) printer

- 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 contents of the internal event memory of the control panel (max. 200 entries) is printed out on the protocol.

```
Printer
Printer    : 132          1 Switch off
                          2 Switch on
                          3 Print event mem

  Func.menu                     Repeat        Select
```

Fig. 108: 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

10.1.8 Display of the event memory

At the installer level, the event memory of the fire alarm control panel can be shown on the control panel 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).
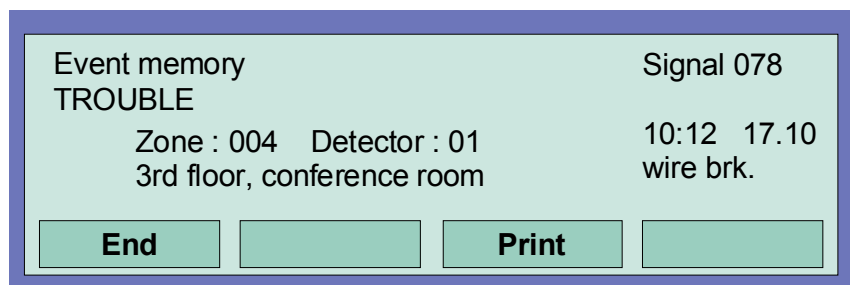
Event memory TROUBLE	Signal 078
Zone : 004 Detector : 01 3rd floor, conference room	10:12 17.10 wire brk.
End		**Print**	

Fig. 109: Event memory

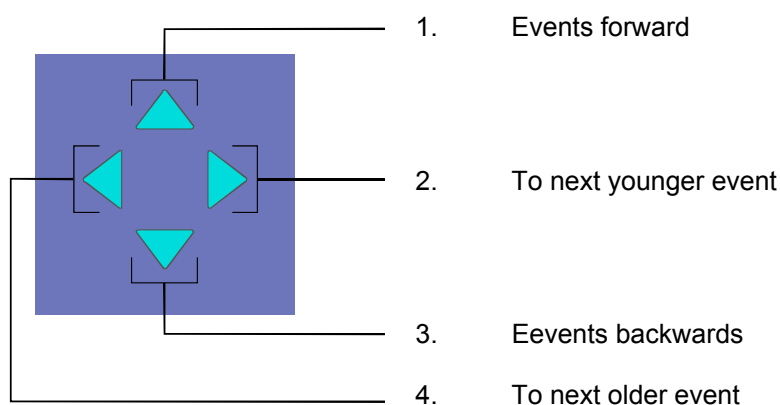|	
	1. Events forward
	2. To next younger event
	3. Eevents backwards
	4. To next older event

Fig. 110: Cursor keys

Printing the contents of the event memory

Pressing the *Printing* function key moves automatically to the *Printer functions* menu. If an internal protocol printer is installed, the printer number is automatically allocated to this Printer. 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 Power supply values of Fire Alarm Control Panels

The diagnostic display enables, e.g. a fast check of the power supply values of this fire alarm control panel for service and maintenance work. In the control 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** |
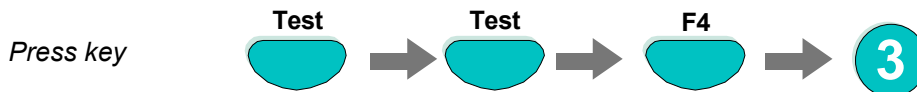
Analog 0	Analog 1	Analog 2	Analog 3
Analog 4	Analog 5	Analog 6	Analog 7
Analog 8	Analog 9	Analog 10	Analog 11
Analog 12	Analog 13	Analog 14	Analog 15

Fig. 111: Panel power supply values

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

Analog chanel	Designation	Normal value	Nominal value
Analog 0 to 5	No entry	currently not supported	---
Analog 6	UB_{int} Battery test	7 - 16	11
Analog 7	UB_{ext} Battery test	7 - 16	11
Analog 8	Power supply	7 - 16	11
Analog 9	Battery	8 – 16	11
Analog 10	UB_{int}	7 - 16	11
Analog 11	UB_{ext}	7 - 16	11
Analog 12	UB_{Linie}	9 - 16	11
Analog 13	Ground Fault	4 – 10	6
Analog 14	External power supply	6 - 16	11
Analog 15	No entry	currently not supported	---

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 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® network 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**
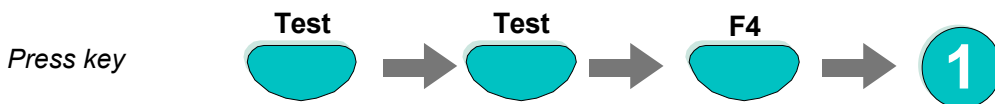
Approx. 5 seconds after switching on, the essernet® diagnostic line appears in the display.

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??????????????????????????
```
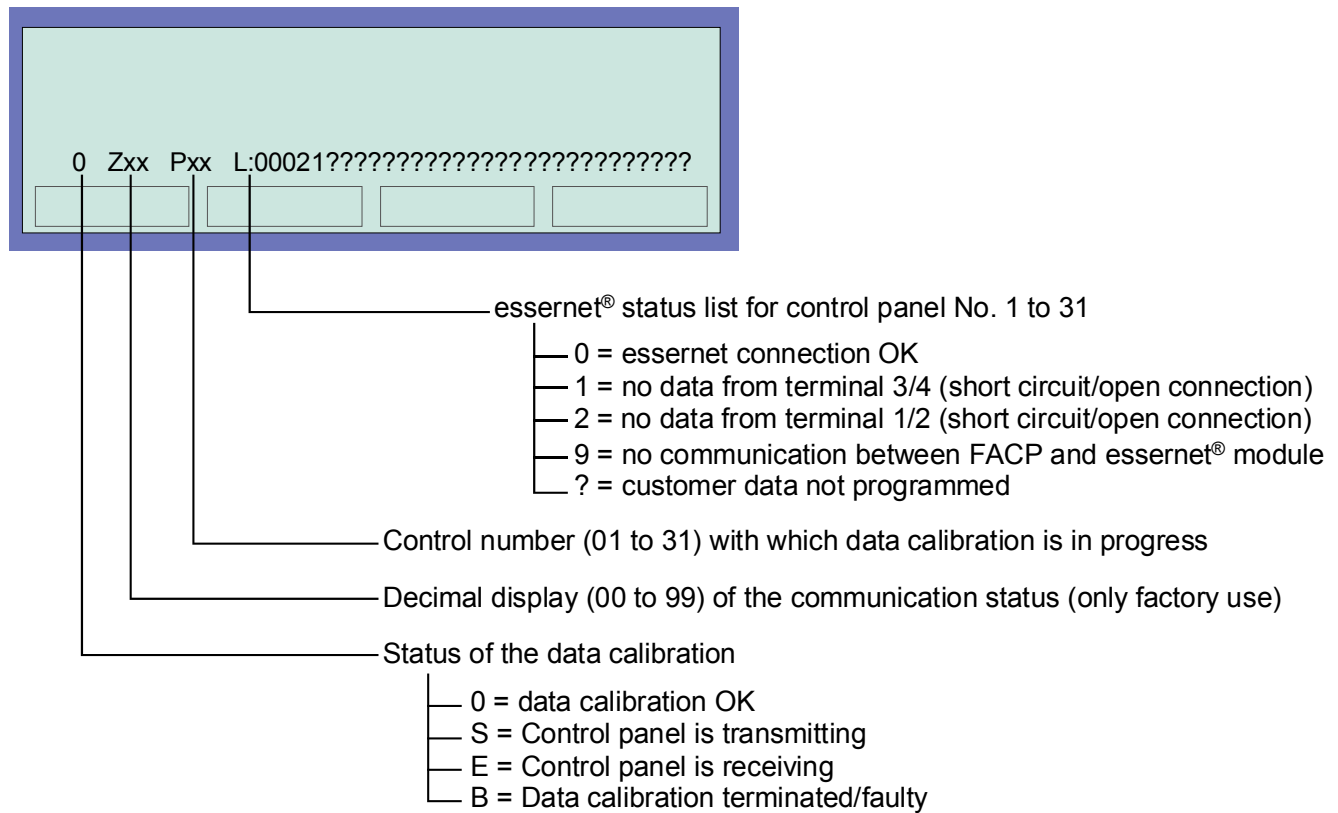
essernet® status list for control panel No. 1 to 31

    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) 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. 112: Display and significance

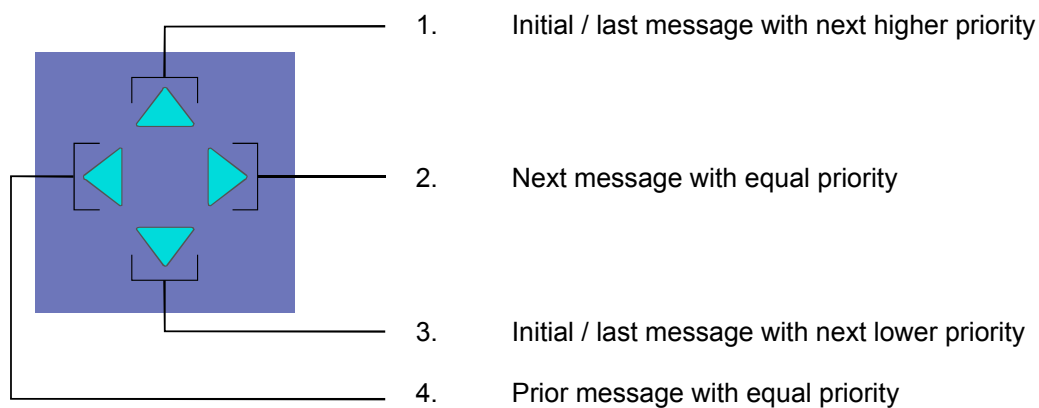|	
1.	Initial / last message with next higher priority
2.	Next message with equal priority
3.	Initial / last message with next lower priority
4.	Prior message with equal priority

Fig. 113: Cursor keys

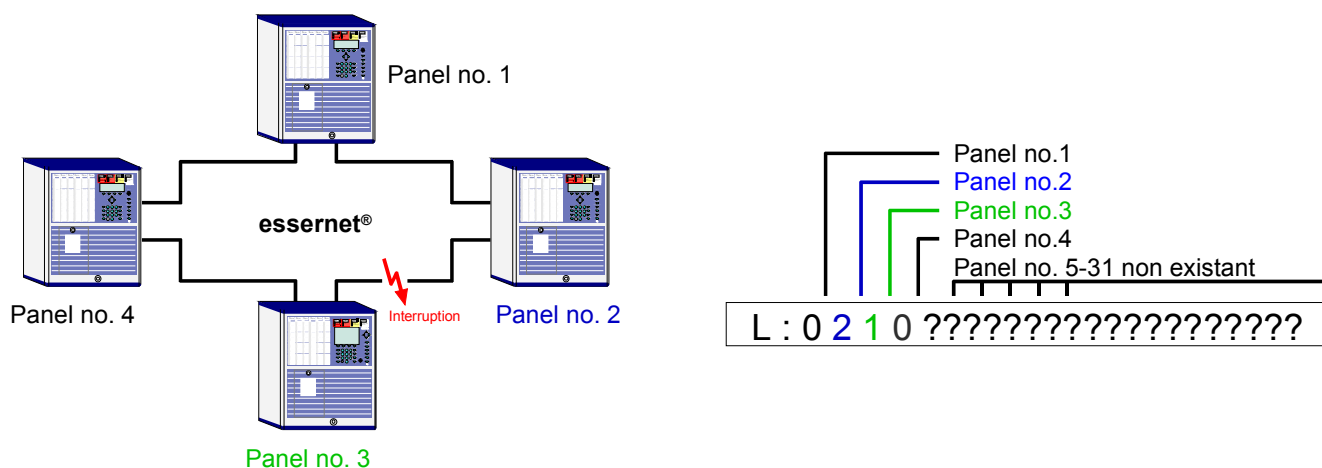**Example of essernet® diagnostic line with four fire alarm control panels**

Fig. 114: Exaple essernet® diagnostic line with four control panel

In the illustrated example, four fire alarm control panels are interconnected in the essernet®.

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. 5-31 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.

12 Meaning of the 3 digit error codes

A 3 digit error code is displayed in the alphanumeric display in case of a failure of an intelligent fire detector (series 9200 / **IQ8**Quad). 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 alphanumeric 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).

Possible causes and corrective measures in case of detector malfunctions

Trouble code no.	Possible cause	1st measure	2nd measure
001 002 003	Detector is faulty	Exchange detector	Return faulty detector to Esser by Honeywell
004	Strong electromagnetic disturbances or detector faulty	Check of the detector with the programming software tools8000, check installation place if necessary	Return detector for controlling to Esser by Honeywell
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 Esser by Honeywell for inspection
006 007 008	Detector is damply or soiled.	Clean detector and check it with the programming software tools8000	---
009	Strong electromagnetic disturbances of the visual sensor in the area of 8-60kHz (>50V/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	An electrically leading substance caused a short-circuit in the I-chamber	Clean I-chamber and check it with the programming software tools8000. Noticing salt or fraying deposits	Replace detector and return to Esser by Honeywell
011	Sensor is soiled with dust	Clean detector and check it with the programming software tools8000	Using an other detector type
012	Detector is soiled or damp.	Clean detector and check it with the programming software tools8000	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

Trouble code no.	Possible cause	1st measure	2nd measure
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 the programming software tools8000	Using an other detector type
014	Short-circuit at the temperature sensor	Replace detector and return to Esser by Honeywell	---
015	1) Faulty bonding of the temperature sensor 2) First installation at a cool place	Adjust detector to ambient temperature with the programming software tools8000	Replace detector and return to Esser by Honeywell
016	see 001	---	---
017 018	1) Detector is soiled with a conductive substance or installed in damp surroundings 2) Faulty detector	Clean detector and check it with the programming software tools8000	Replace detector and return to Esser by Honeywell
019	Detector is soiled with oily substance	Clean detector and check it with the programming software tools8000	---
020 021	Current levels not correct on analog 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	None
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.

Trouble code no.	Possible cause	1st measure	2nd measure
025	A manual call point has detected a short-circuit on its external D-line	Check wiring of this D-line for short circuit.	none
026	An analog D-detector has recognised a wire break on its external D-line	Check wiring of this D-line for open circuit.	none
027	see 011	---	---
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
033 034 035	see 001	---	---
036	see 004	---	---
037 038	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	none
039	Communication between esserbus® transponder and panel has been disturbed for 100 seconds	Notify Esser by Honeywell Customer Service	none
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 Esser by Honeywell Customer Service
044	Communication between FACP and esserbus® communication transponder for the 8010 fire and extinguishing panel has been malfunctioned	Notify Esser by Honeywell Customer Service	none
048	see 001	---	---
052 053	see 020	---	---
060	see 028	---	---
066	Loop wiring has been changed	Connect service PC and perform configuration check	Match customer data programming
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

Trouble code no.	Possible cause	1st measure	2nd measure
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 panel	If this change is not desired, connect service PC and run a configuration check. Re-program customer data
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 configuration check. Re-program customer data	---
070	The allocation of the detector was changed at the installation place	If this change is not desired, connect service PC and run a configuration check. Re-program customer data	---
080	This detector change may only be performed with the service PC because this detector required customer data that cannot be generated in the panel itself	If this change is not desired, connect service PC and run a configuration check. Re-program customer data	---
081	An OTI-detector has been installed at detector location. The sensor type has changed in comparison with the customer data	Check whether detector type change is desired; if it is, activate analog loop	Otherwise install detector you require and re-start *Detector change*
082	An OT-detector has been installed at detector location. The sensor type has changed in comparison with the customer data	Check whether detector type change is desired; if it is, activate analog loop	Otherwise install detector you require and re-start *Detector change*
083	An I-detector has been installed at detector location. The sensor type has changed in comparison with the customer data	Check whether detector type change is desired; if it is, activate analog loop	Otherwise install detector you require and re-start *Detector change*
084	A TM-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 analog loop	Otherwise install detector you require and re-start *Detector change*
085	A TME-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 analog loop	Otherwise install detector you require and re-start *Detector change*
086	A TD-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 analog loop	Otherwise install detector you require and re-start Detector change

Trouble code no.	Possible cause	1st measure	2nd measure
087	A O-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 analog 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 not desired, connect service PC and run a configuration check. Re-program customer data	---
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*
095	A O^{2}T-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 analog loop	Otherwise install detector you require and re-start *Detector change*

Ionization smoke detector or fire detector with ionization sensor may only be opened by authorized persons with handling license issued under the Radiation Protection Ordinance (German: Strahlenschutzverordnung - StrSchV).

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} supply voltage	Check whether fuse blown or short circuit	---
UBint	supply voltage Short circuit in UB_{int} supply voltage	Check whether fuse blown or short circuit	---
ULine	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 supply voltage	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	---
start-up	An error has been detected when an analog ring loop was switched on; normal operation is impossible	Localise the source with the service program92graf or 92TOOLswitch on or reconfigure the analog ring loop	---

Trouble text	possible cause	1st measure	2nd measure
Detector >	When an analog ring 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 the service program 92graf or 92TOOL, switch on or reconfigure the analog ring loop For EDD detector zones, check the number of detectors and reprogram the customer data if necessary	---
Detector <	When an analog ring loop was switched on, fewer detectors were found than programmed in the customer data	Localise the source with the service program 92graf or 92TOOL, switch on or reconfigure the analog ring loop	---
Topolog.	The wiring configuration of this analog ring loop cannot be precisely determined	Localise the source with the service program 92graf or 92TOOL, switch on or reconfigure the analog ring loop	---
Serial No.	A detector has been found in the corresponding analog ring 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 analog ring loop to update data
Line A	The 1st ring is in operable in 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
CPU -1-	A CPU changeover has been executed in redundant operation because the master CPU is defective	Replace master CPU	FACP 8008 only
CPU -2-	The slave CPU has failed during redundant operation	Replace slave CPU	FACP 8008 only
EEPROM	EEPROM write error in event memory	Replace EEPROM card	FACP 8008 only
Test chan.	Monitoring of the 4-zone BM module is no longer possible due to a hardware failure	Replace 4-zone BM module	---

Trouble text	possible cause	1st measure	2nd measure
AD conv.	A/D converter card on the basic module is faulty or the A/D converter of a 4-zone BM module in an analog ring is defective	Replace basic module or micromodule	---
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
Ulinie <	Loop voltage difference, measured from A>B, ist 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 cable length depends on number of sounders. Check with calculation diagramms	Check terminals from all loop devices
Err. 42 V	Loss of 42 V loop voltage	mains supply not in +42 V mode	analog loop module damaged
I-MesDef	Internal module failure	Module damaged	Sounder damaged

12.2 Error messages in CPU failure mode

The Fire Alarm Control Panel 8008 carry out an automatic self test when the control panel program starts and subsequently each hour. If an error is determined during the self test which endangers stable running of the program, the control panel program is terminated and the control panel enters the CPU failure mode. The CPU failure mode of the control panel is indicated by the steadily lit CPU failure LED on the operating panel and possibly by an error message on the control panel display.

12.2.1 Customer data - fault


```
CPU - BYPASS - MODE
CPU Failure
Customer data fault
```
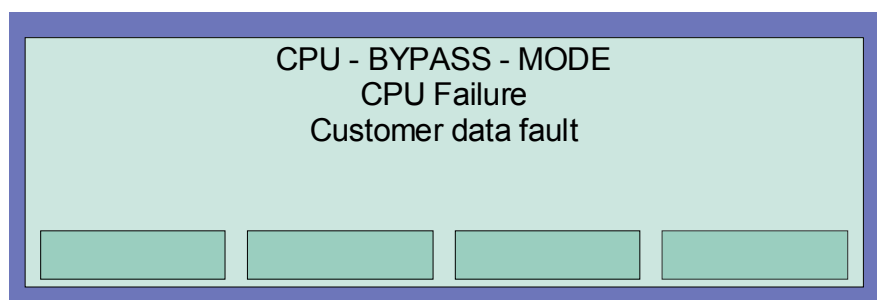
Fig. 1: Display, Customer data - fault

Explanation	Measure
If this error occurs immediately after the transfer of the customer data from the service PC, a transmission error has occurred during the transfer of the customer data; e.g. transmission cable unplugged, service PC switched off.	Disconnect the control panel from all power (mains and battery voltage) and open the cover contact. Connect the power supply and repeat the transfer of the customer data from the service PC.
If this error occurs during normal operation of the control panel, a customer data EEPROM is defective.	In FACP 8008, replace all customer data EEPROMs or return with a description of the fault and install a new EEPROM card.

12.2.2 Customer data - fault: NO EEPROM, EEPROM is missing or defective

```
CPU - BYPASS - MODE
CPU Failure
Customer data fault
NO EEPROM, EEPROM missing or defective
```
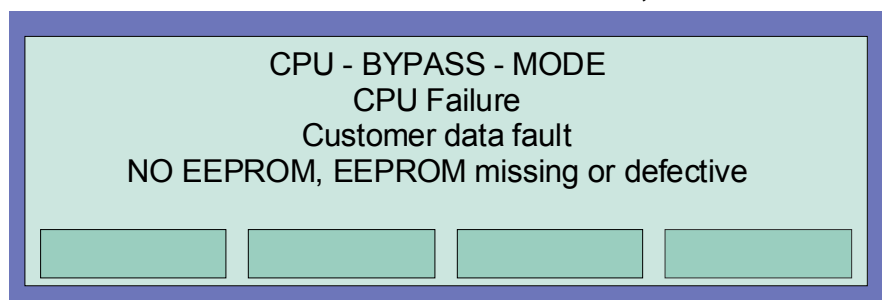
Fig. 115: Display, Customer data - fault, NO EEPROM, EEPROM missing or defective

Explanation	Measure
The EEPROM of the EEPROM card is missing or defective.	Insert a new EEPROM in slot D8 or return the EEPROM card to the manufacturer with a description of the fault and install a new EEPROM card.

12.2.3 Customer data - fault: EEPROM is defect

```
CPU - BYPASS - MODE
CPU Failure
EEPROM defect
```
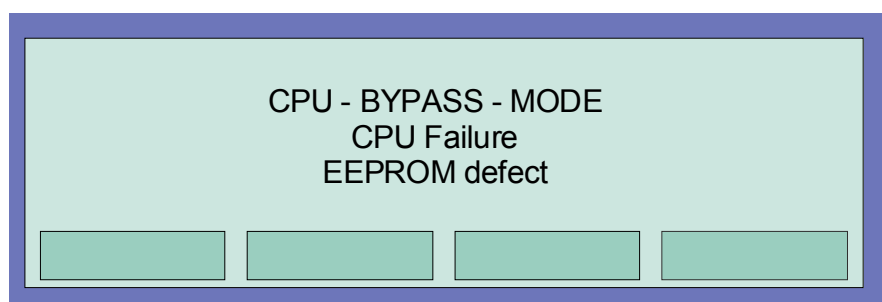
Fig. 116: Display, Customer data - fault, EEPROM defect

Explanation	Measure
The EEPROM in slot D8 of the EEPROM card is missing or defective.	Insert a new EEPROM in slot D8 or return the EEPROM card to the manufacturer with a description of the fault and install a new EEPROM card.

12.2.4 Customer data - fault: EPROM is defect

```
CPU - BYPASS - MODE
CPU Failure
EPROM defect
```
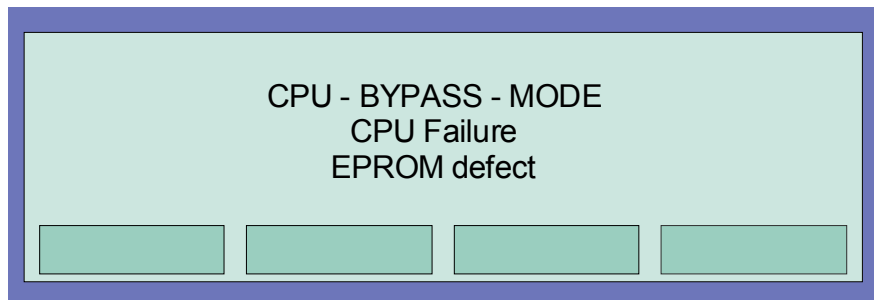
Fig. 117: Display, Customer data - fault, EPROM defect

Explanation	Measure
The EPROM is incorrectly fitted in the CPU card or the control panel program stored in the EPROM is damaged.	Check whether the EPROM has been exchanged, pins are bent or the EPROM has been fitted wrong way round in the socket. If necessary, insert the EPROM correctly.
	Insert a new control panel program or return the CPU card with a description of the fault to the manufacturer and install a new CPU card.

12.2.5 Customer data - fault: RAM is defect

```
CPU - BYPASS - MODE
CPU Failure
RAM defect
```
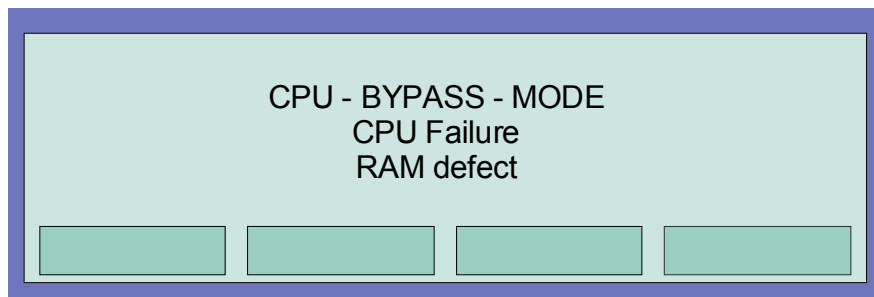
Fig. 118: Display, Customer data - fault, RAM defect

Explanation	Measure
The working storage of the CPU card is defective.	Insert new RAMs in slots D10 and D12 or return the CPU card to the manufacturer with a description of the fault and install a new CPU card.

12.2.6 Customer data - fault: Out of memory

```
CPU - BYPASS - MODE
CPU Failure
Out of memory
```
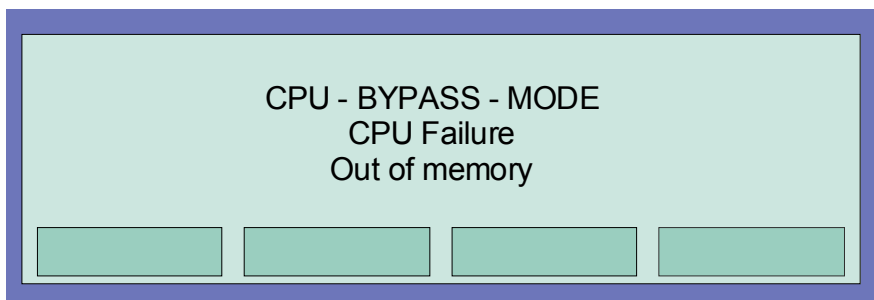
Fig. 119: Display, Customer data - fault, out of memory

Explanation	Measure
Critical error of the control panel program, the working storage is incorrectly managed.	Notify service office. Send the customer data of the control panel with a description of the fault and the control panel version to manufacturer. Install a new version of the operating system software and program the customer data with the latest version of the customer data editor.

12.2.7 Customer data - fault: Program did not start


```
                CPU - BYPASS - MODE
                    CPU Failure
                Program did not start
```
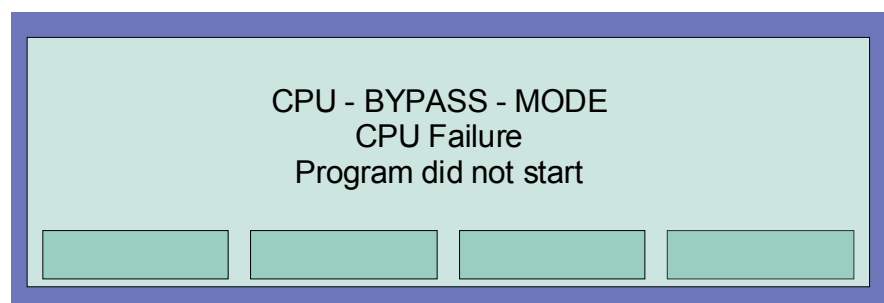
Fig. 120: Display, Customer data - fault, Program did not start

Explanation	Measure
The reset key of the control panel has been pressed too often at short intervals.	Do not press the reset key several times at short intervals. It is usually sufficient to press the reset key just once after the control panel has been powered.
Heavy EMP load on the control panel, e.g. by electromagnetic storm in close proximity.	Use a mains filter and I/O terminal card with EMP protection in the FACP.
Critical error of the control panel program.	Notify service office. Send the customer data of the control panel with a description of the fault and the control panel version to the manufacturer.
	Install a new version of the operating system software and program the customer data with the latest version of the customer data editor

Typical wiring

Fire Alarm computer 8008

13 Typical Wiring

13.1 Fire department operating panel – standard (Part No. 784710)
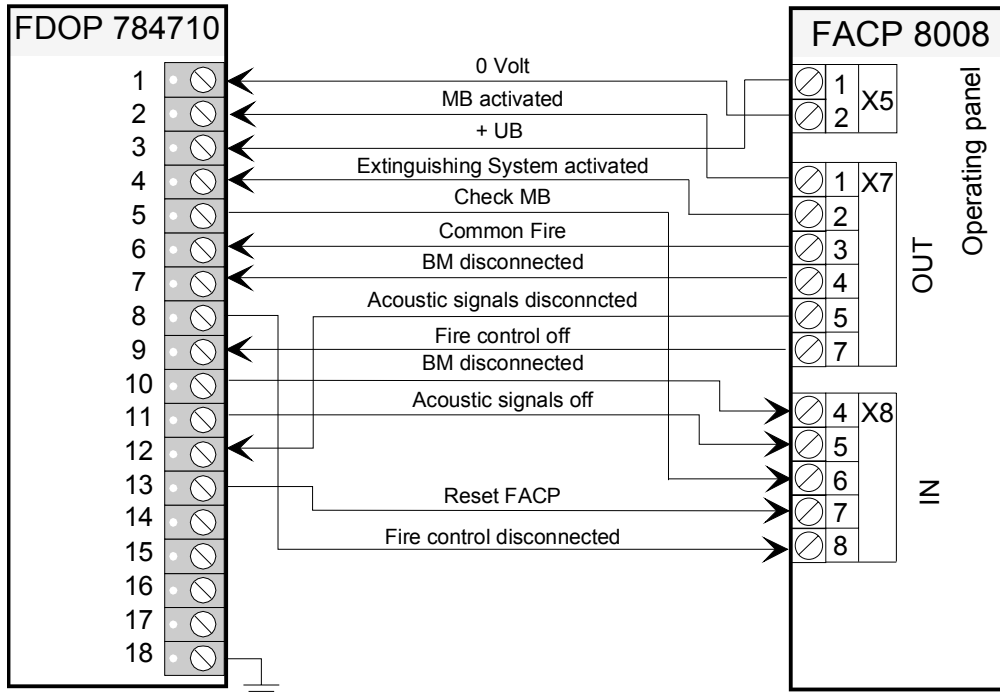
Fig. 121: Connection of fire department control panel to FACP 8008

Notes on programming:

- programming software tools8000, version V1.00 or higher
- Operating system of the fire alarm computer version V2.38 or higher required
- Set the fire department control panel in the central control panel
- Select *Germany (Standard)* under country function
- Set the function *Reset LED master detector to FACP* for the *transmission unit* module

For further information on the fire department control panel, see 798599

13.2 Connection of fire detectors to the 4-zone fire detector module

4 detectors with limiting value and/or diagnostic technology can be connected to the 4-zone module (EDD).

Detector base - standard (Part No. 781590)
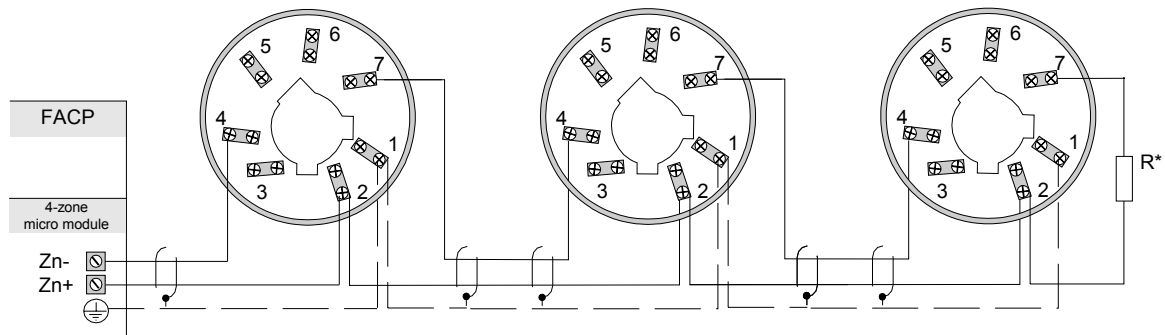
Fig. 122: Wiring – detector base 781590

Detector base - addressable (Part No. 781594)
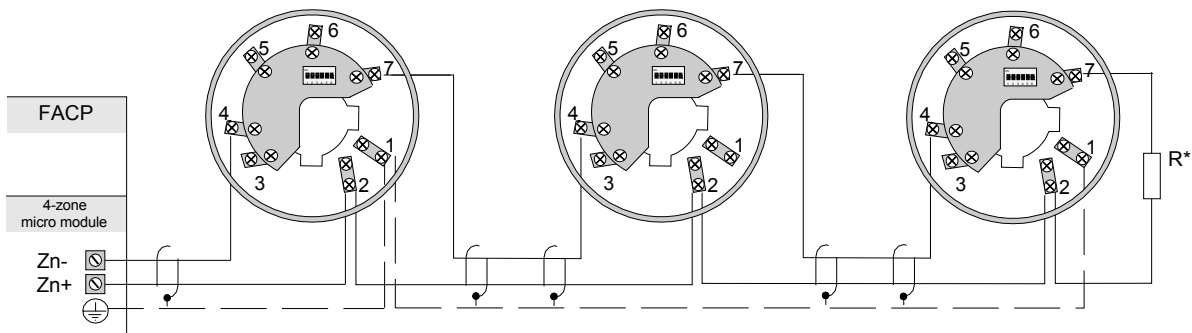
Fig. 123: Wiring – detector base 781594

R*   10 kΩ End-of-Line device in the last detector of the zone.
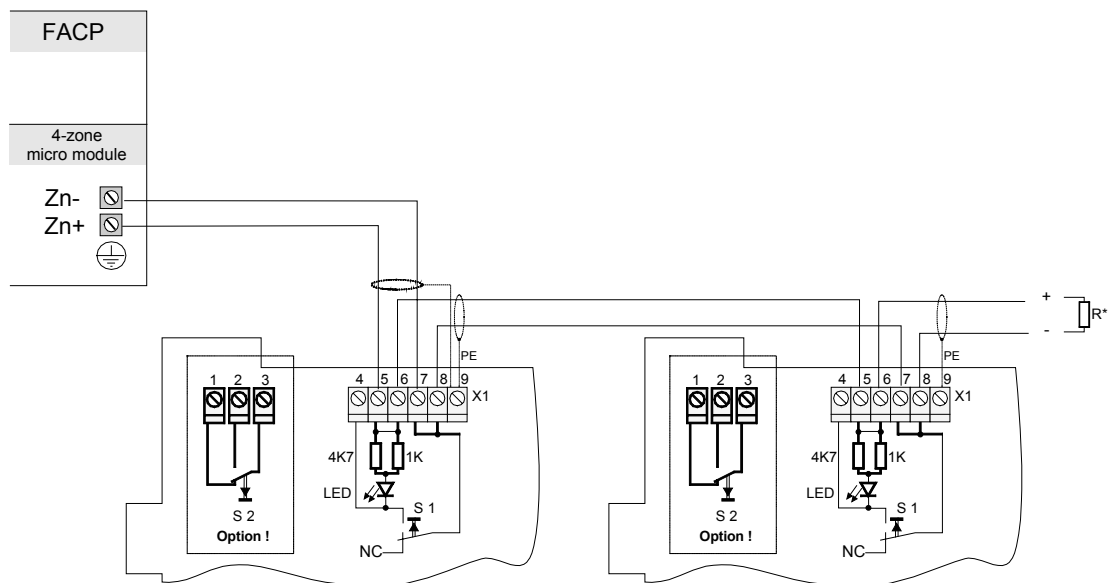
Manual Call Point – standard series 9000

Fig. 124: Wiring – MCP standard

Manual Call Point - addressable series 9100
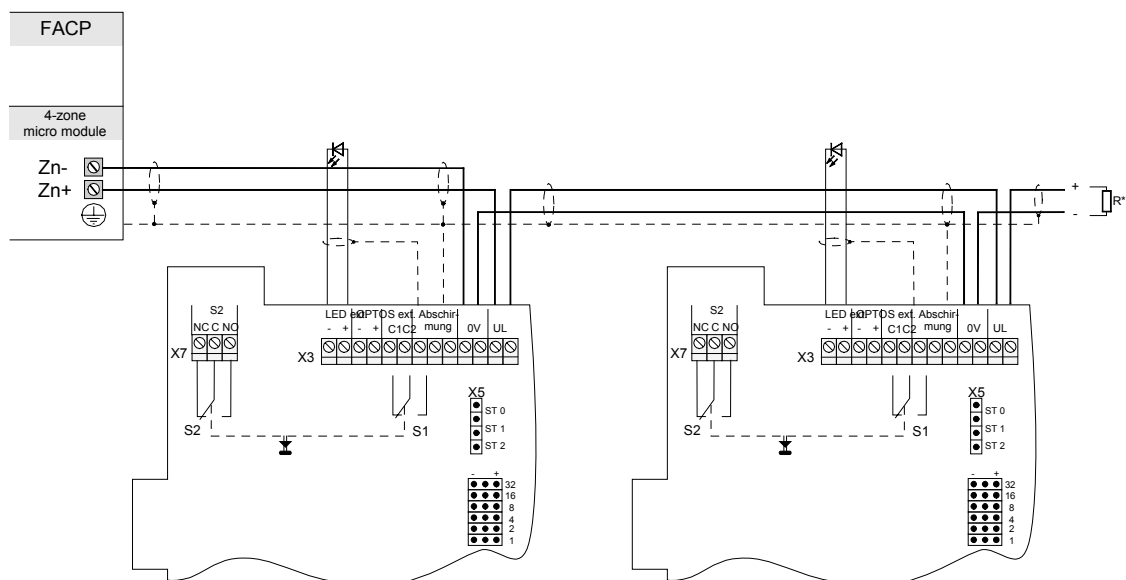
Fig. 125: Wiring – MCP

R*   10 kΩ End-of-Line device in the last detector of the zone.

13.3 Connection and wiring of an analog ring loop

Schematic circuit diagram
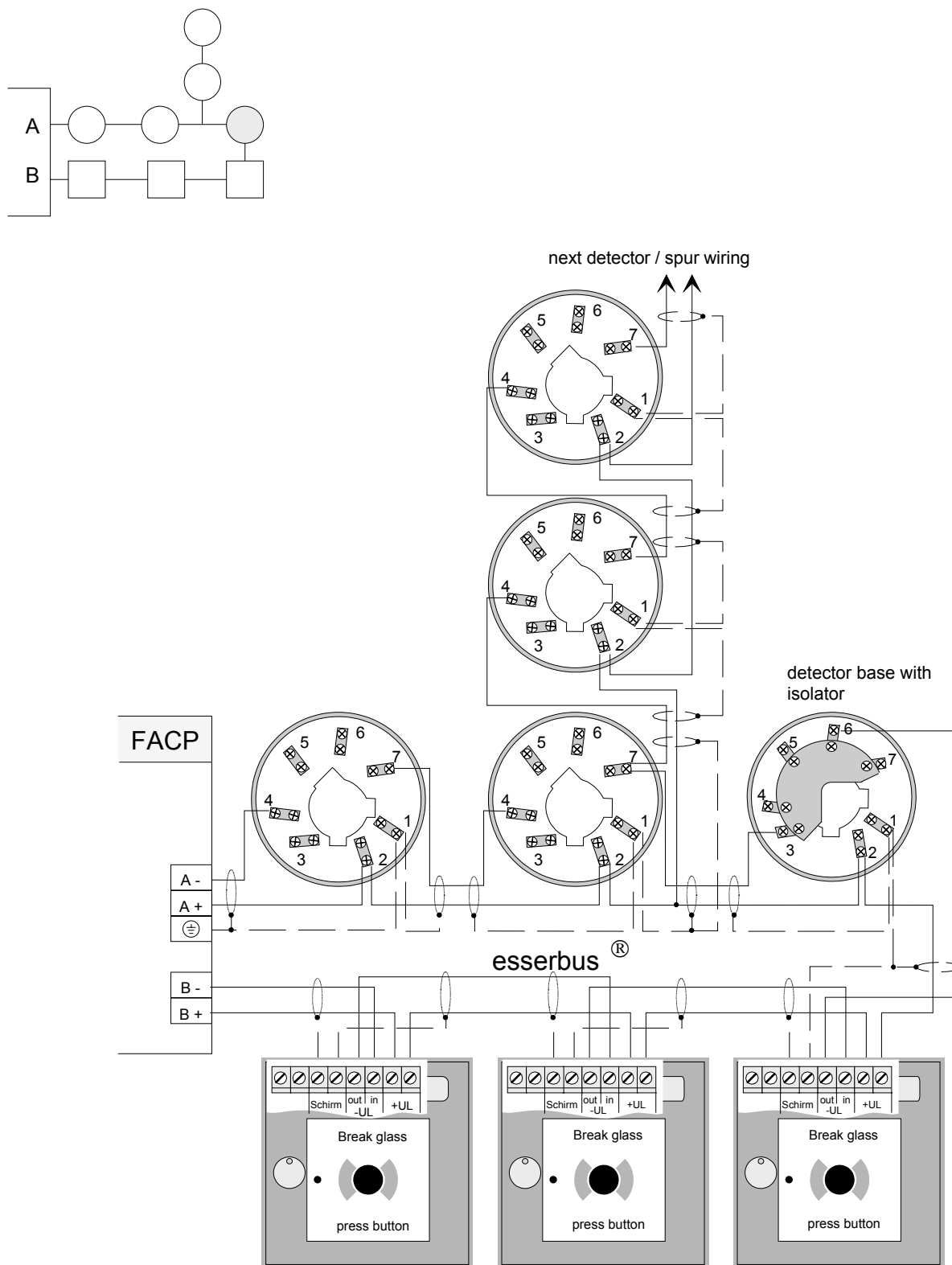
Fig. 126: Wiring of an analog loop

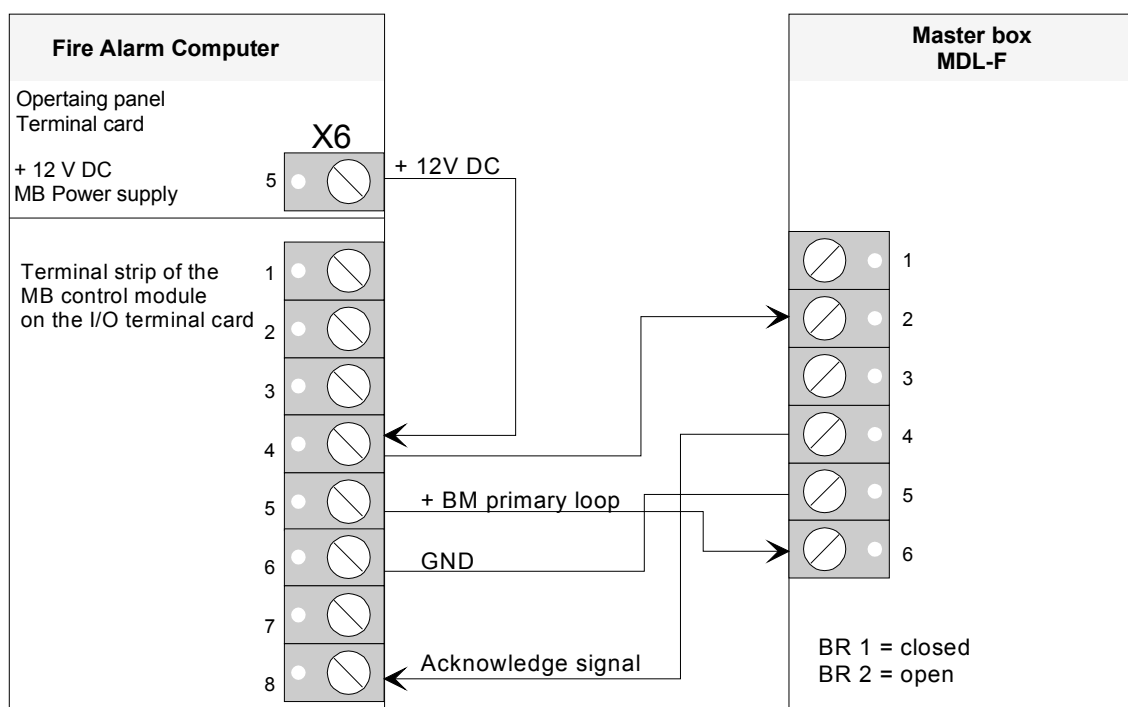## 13.4 Connection of a master box type MDL-F (standard)

Fig. 127: Connection of a master box type MDL-F (standard)

13.5 Printer

13.5.1 Mounting / Replacing the printer

In the FACP 8008, the internal printer is mounted on the lower pivoting frame of the S1 or S1E housing. The pivoting frame for the operating panel cannot be used to mount the printer, as the necessary free room in the control panel housing is limited by the I/O cards.
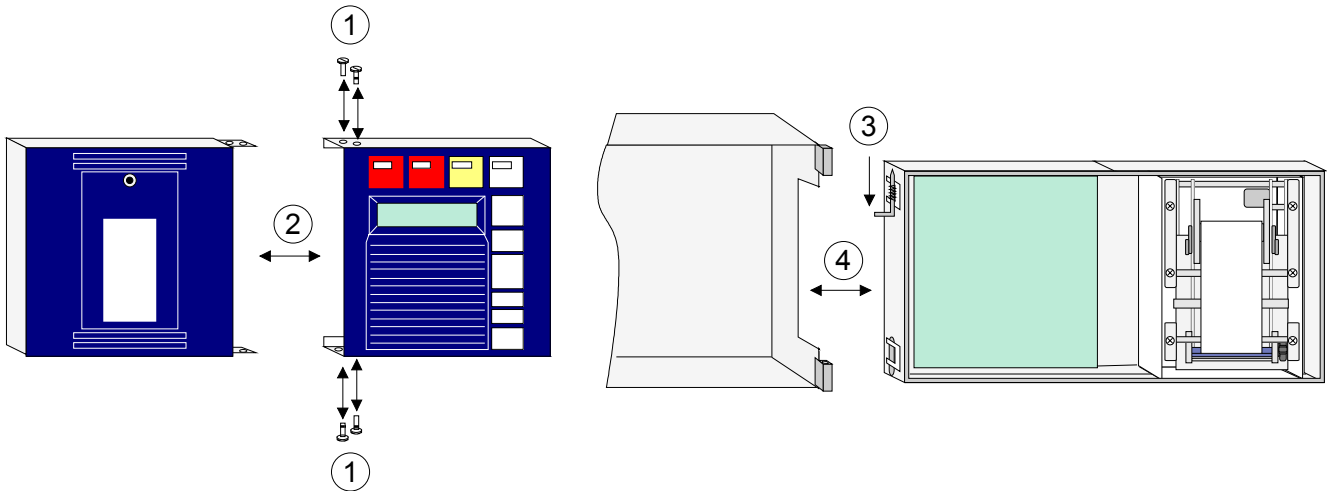

Fig. 128: Schematic diagram

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 (if existing).

3. Remove the mounted panel (if existing) by releasing the screws (1), assemble the new panel front with the integrated printer (2), insert and pull tight the screws (1).

   Note: By releasing the two spring retainers (3) the panel front can be dismounted from the housing (4) for the installation.

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

5. Release paper clamps **(B+F)** of the printer and insert paper roll. Clamp **F** must be manually locked again (see next Page).

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

13.5.2 Exchange the printer paper (heat transfer printer)

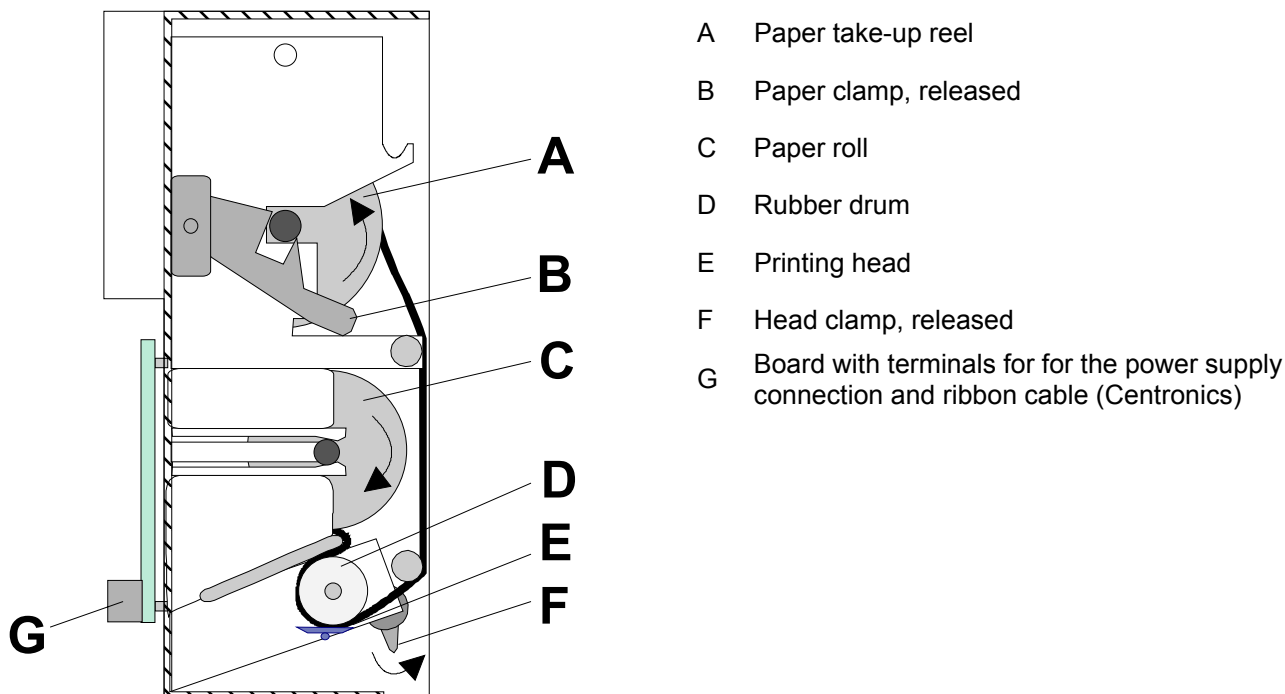Mounted heat transfer printer with paper take-up reel (part-no. 784883)

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 for the power supply connection and ribbon cable (Centronics)

Fig. 129: Transfer printer with paper take-up reel

Loading / replacing the paper roll

1. Open the printer cover.
2. Lift the printer head from the rubber drum by means of the printer head tensioning spring.
3. Insert the paper between the grey rubber drum and the printer head.
4. Insert the paper roll.
5. Fasten the paper end in the take-up spool.
6. Turn the take-up spool and manually advance it by approx. one revolution.
7. Lower the paper tensioning lever
8. Position the paper on top of the guiding roller of the paper tensioning lever and insert the paper take-up spool.
9. Lift the paper tensioning lever.
10. Return the printer head to its normal operating position by means of the printer head tensioning spring.
11. Close the printer cover. The printer is now operative.

Only lift the printer head from the rubber drum by means of the printer tensioning spring.

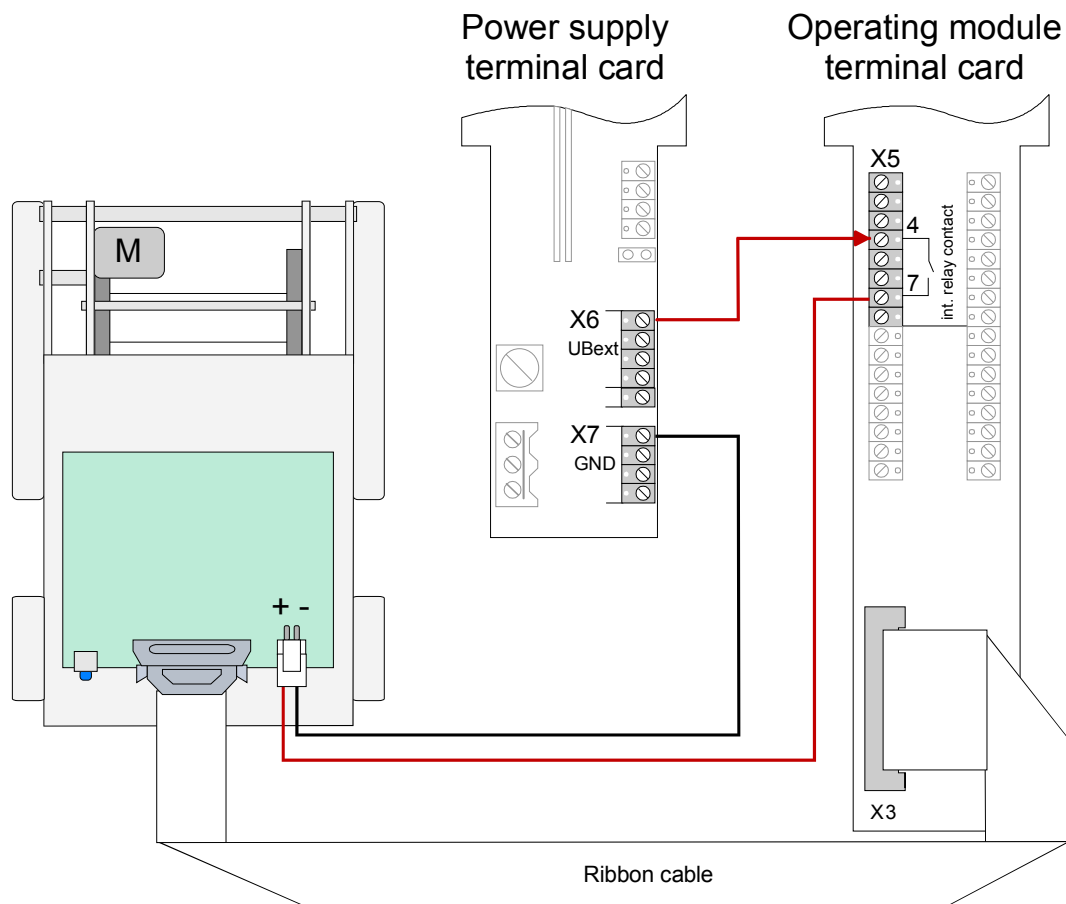## 13.5.3 Connecting the internal printer (Part No. 784883)

Fig. 130: Wiring internal printer

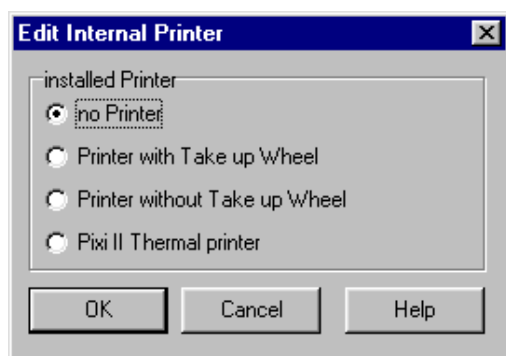**Important note to the Customer data editor FACP 8008**

Fig. 131: Programmier-Software tools800 - Drucker-Dialog

The connected printer must be selected in the central control panel of the fire alarm computer with the service PC and the programming software *tools8000*, version V1.00 or higher.

Notes