



## Third party detector for ESSER-Fire Alarm Panel

**GB** Technical Information

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### Intended purpose

This product may only be used for the applications outlined in the catalogue and in the technical description, and only in conjunction with the recommended and approved external devices and components.

### 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-related user information

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

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

- project engineers who are familiar with the safety guidelines concerning fire alarm and extinguishing systems.
- trained service engineers who are familiar with the components of fire alarm and extinguishing systems and the information on their operation as included in this manual.
- trained installation or service personnel with the necessary qualification for carrying out repairs on fire alarm and extinguishing systems or who are authorised to operate, ground and label electrical circuits and/or safety equipment/systems.

### Safety warnings

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

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



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



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



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

### Dismantling



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

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Training for these products, which will help you work with the devices and provide you with valuable information for planning the system. Information about dates and locations on the website [www.esser-systems.com](http://www.esser-systems.com).

**Additional and updated Information**

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

Updated information and declaration of conformity are available for comparison on the [www.esser-systems.com](http://www.esser-systems.com) homepage.

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# 1 General / Application

This technical information provides an overview of the available detectors for special building-specific applications that can be used in combination with or as integral parts of ESSER fire alarm systems.

Detectors for special applications are detector types that are not suitable for direct connection to ESSER fire alarm control panels or which require special functions for alarm monitoring, resetting or evaluation.

These include, for example:

- Line-type smoke detectors/heat detectors
- Flame detectors
- Aspirating smoke detectors
- Special sensors/evaluation units
- External monitoring units/modules
- Detector types from other manufacturers

These detectors for special applications are an important element in the planning, commissioning and servicing of the fire alarm system. The information and technical specifications detailed in this documentation, when combined with the manufacturer's documentation, are designed to enable a professional and experienced fire alarm system installer to quickly mount and install these detectors.

Corresponding knowledge, skills and qualifications are required. Proper assembly and installation requires a correctly planned fire alarm system (FAS) that conforms to the valid and applicable standards and guidelines.



The object specific design and planning documents of the FAS must be observed.

## **FAS installer**

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

## **System operator / trained person**

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

## 2 Standards and guidelines

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

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

These are examples:

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

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

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

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



The planning and use of the special detectors must take place according to DIN VDE 0833-2. The correct operation and functioning of the devices and the building monitoring cannot be guaranteed in event of improper planning and use.

### 3 Fire Alarm System wiring

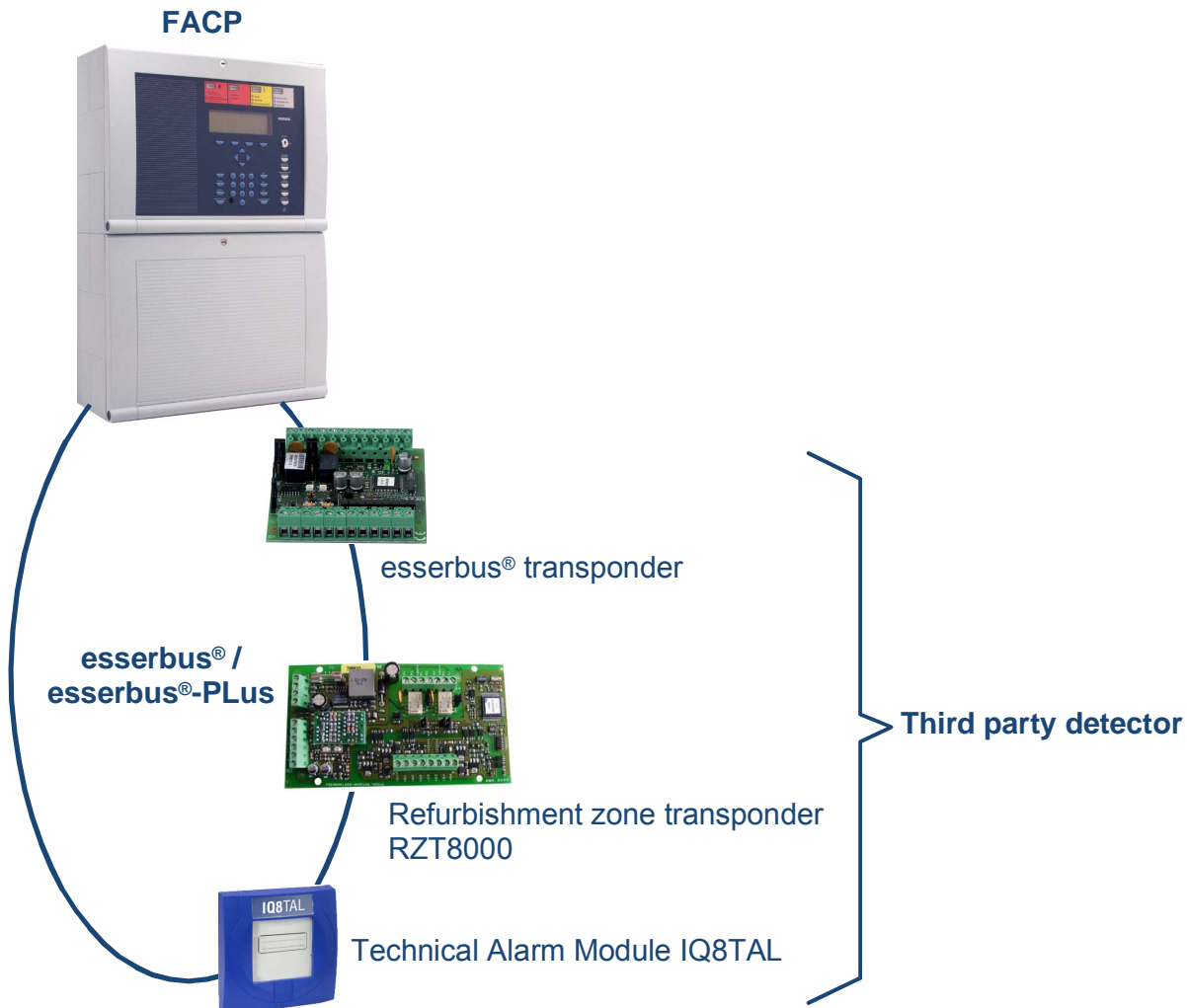


Fig. 1: Overview



The components used in existing fire alarm systems are sometimes replaced during maintenance and alteration measures.

If these components are no longer listed in the product group catalogue, please contact the Technical Support department to inquire about availability and check on replacement possibilities, if required.

#### External power supply

Most detectors for special applications require a 24 V DC voltage for operation.

External power supply units can be used if a fire alarm system with an operational voltage of 12 V DC is used as a concentrated evaluation unit or the quiescent current consumption of one or several detectors for special applications is too large.

The external power supply units must also have an emergency power supply whose emergency power capacity at least ensures the same bridging period as the batteries in the fire alarm control panel.

The mains supply must be secured via the separate FACP supply separator. Any interruption of the external power supply unit must be displayed on the FACP.

#### Reset

Detectors for special applications have different reset behaviours after an alarm is triggered, so reliable resetting of the fire alarm on the FACP cannot always be guaranteed.

For this reason, the reset function for detectors for special applications has been integrated into the esserbus® transponder (Part No. 808623/808623.10) – see Chapter 3.1).

### 3.1 esserbus® transponder

The esserbus® transponder works as a loop device on the loop (esserbus® / esserbus® Plus) of the ESSERI fire alarm control panels (FACP). It cannot be connected to other panel systems.

#### System requirements

- Up to 100 esserbus® transponders per fire alarm control panel. The total number of all connected esserbus® transponders and RZT 8000 refurbishment zone transponders on one FACP is limited to max. 100 devices.
- Up to 31 esserbus® transponders can be aggregated into a separate zone on one loop.

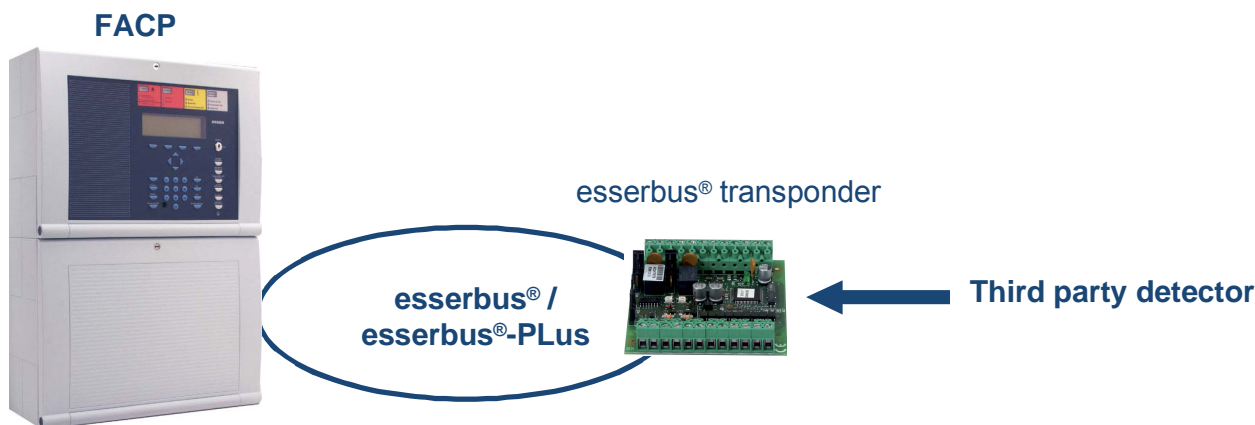


Fig. 2: Schematic wiring

#### 3.1.1 esserbus® alarm transponder (Part No. 808623)

This transponder with integrated isolator provides four conventional zone inputs and two relays. The two relays can be programmed with operating mode >Reset Relay< in the customer data of the fire alarm control panel. This requires the transponder software from Version V2.05 and the tools 8000 service and programming software from Version V1.16.

#### 3.1.2 esserbus® transponder for UniVario (Part No. 808623.10)

This transponder must be used only to connect the UniVario third party detector in connection with the termination element EOL-UV (Part No. 808626.10). This requires the transponder software from Version V2.05 and the tools 8000 service and programming software from Version V1.14.



#### Connection cable

Use cable I-Y (St) Y n x 2 x 0,8 mm with special designation or fire detection cable!  
The shielding must be connected for EMI protection of the communication cable!

#### External power supply

The external power supply (+U<sub>b,ext</sub>) must always be connected to this device.  
The esserbus®-transponder with housing (e.g. Part No. 788600) must be mounted in a close range to the power supply unit. Alternatively it is possible to mount the transponder inside of the power supply housing or the Fire Alarm Control Panel.



For detailed information refer to the manual of the esserbus® transponder and Product catalogue Fire.

**Service and programming software tools 8000**

With this function, the two relays of the esserbus® transponder can be configured individually e.g. as reset relays, for example to reset special detectors.

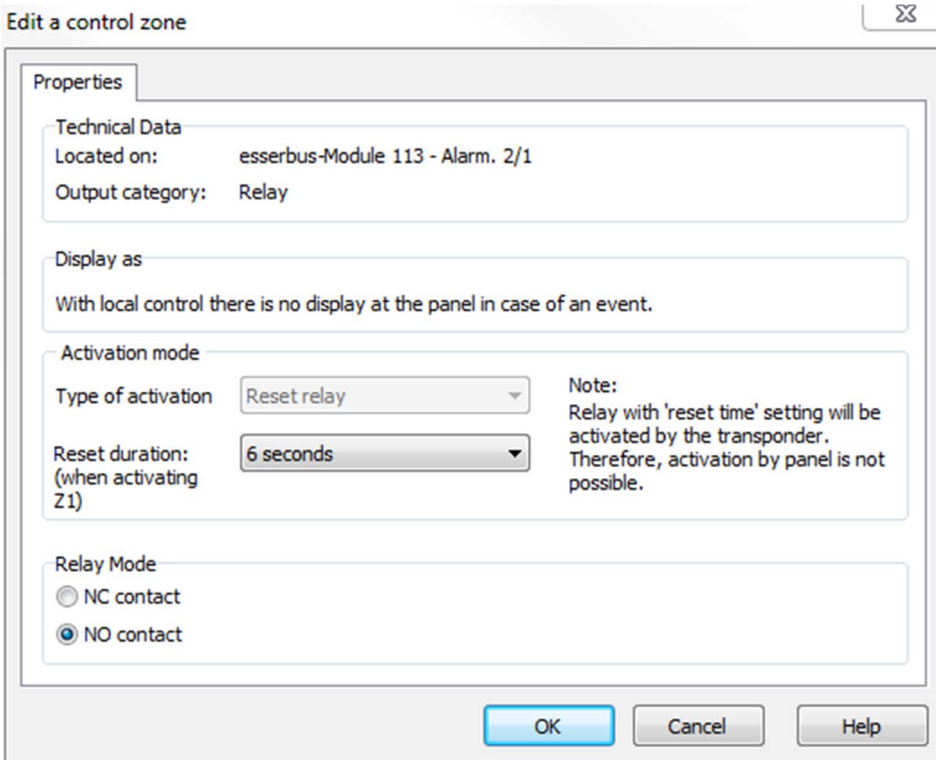


Fig. 3: Edit the control zone of a transponder: Reset relay 1 (Example)

**Activation behaviour**

Activation type: For this operating mode the **>Self control<** function of the transponder is set automatically and the respective relay output is activated for the specified reset time if the associated input (G1 for relay 1 /G2 for relay 2) of the transponder was triggered. The control zone number is removed from the control zone number table. Activation by the fire alarm control panel is thus no longer possible.

Reset time Choose a reset time (= activation time for the relay) between >1 and 14 seconds<.

**Contact behaviour**

Make/break contacts: Set whether the relay output is to be operated as a make or break contact upon activation. The setting chosen here must correspond to the setting of the bridges for the operating mode of the relay (make/break contact) on the transponder or the respective assembly.



Each special detector requires a separate zone input. Wiring several special detectors via one zone input is not permitted.



## Specifications

### esserbus® alarm transponder (Part No. 808623)

#### Loop

Rated voltage	: 8 V DC ... 42 V DC
Rated current	: approx. 90 µA @ 19 V DC

#### External power supply

Operating voltage	: 10 V DC ... 28 V DC
Current consumption	: max. 120 mA @ 12 V DC
Quiescent current	: approx. 12 mA @ 12 V DC

#### Inputs

Current consumption	: max. 25 mA @ 9 V DC
Length of connection cable	: max. 1.000 m
Monitoring detector input	: EOL-I or 10 kΩ / ±40%

#### Relays

Contact rating	: 30 V DC / 1 A
Monitoring relay	: EOL-O or 10 kΩ / ±40%
Ambient temperature	: -10 °C ... +50 °C
Storage temperature	: -25 °C ... +75 °C
Ambiente humidity	: ≤ 95 % rel. humidity (non-condensing)
Protection rating	: IP 40 (with housing)
Weight	: approx. 28 g
Dimensions (w x h x d)	: 82 x 72 x 20 (mm)
Specification	: EN 54-17 : 2005
VdS Approval	: G 210020
Declaration of Performance	: DoP-21057130701

All given specifications relates to an ambient temperature of 25 °C.

## Specifications

### esserbus® transponder for UniVario (Part No. 808623.10)

#### Loop

Rated voltage	:	8 V DC ... 42 V DC
Current consumption	:	approx. 90 µA @ 19 V DC

#### External power supply

Operating voltage	:	10 V DC ... 28 V DC
Current consumption	:	max. 120 mA @ 12 V DC
Quiescent current	:	approx. 12 mA @ 12 V DC

#### Input

Current consumption	:	max. 25 mA @ 9 V DC
Length of connection cable	:	max. 100 m
Monitoring	:	EOL-UV

#### Relays

Contact rating	:	30 V DC / 20 mA
Monitoring	:	EOL-O or 10 kΩ / ±40%
Ambient temperature	:	-10 °C ... +50 °C
Storage temperature	:	-25 °C ... +75 °C
Ambiente humidity	:	≤ 95 % rel. humidity (non-condensing)
Protection rating	:	IP 40 (with housing)
Weight:	:	approx. 28 g
Dimensions (w x h x d)	:	82 x 72 x 20 (mm)
Specification	:	EN 54 - 17 : 2005 / - 18 : 2005
VdS Approval	:	G 210020
Declaration of Performance	:	DoP-21057130701

### End-of-line unit EOL-UV (Part No. 808626.10)

Ambient temperature	:	-20 °C ... +80 °C
Storage temperature	:	-25 °C ... +85 °C

All given specifications relates to an ambient temperature of 25 °C.

### 3.2 Refurbishment Zone Transponder RZT 8000

The RZT 8000 third-party detector connecting module has four inputs for zones and two relay outputs. It may be used for connecting four additional standard zones with non-addressable third-party detectors to the loop. The two relay outputs are available for general control purposes.

- Output current max. 125 mA per zone
- Optional use of the extended display functionality for detector states >prealarm< or >detector malfunction<
- Variable reset delay of the zone (0 to 15 seconds)
- The zones can be operated in 2-zone dependency
- Two relays with programmable operating modes
- Programmable with the service and programming software tools 8000
- Programmable surveillance of the external DC power supply

Part No.	Description
808630.10	Refurbishment Zone Transponder RZT 8000 (24 V DC), configurable
808631.10*	Refurbishment Zone Transponder RZT 8000 (12 V DC)

\* connection to ESSER FACP with 24 V voltage via DC/DC-voltage converter (Part No. 781336)

#### System requirements

- Max. 100 RZT 8000 refurbishment zone transponders per fire alarm control panel. The total number of all RZT 8000 refurbishment zone transponders and esserbus® transponders on one panel is limited to 100 devices.
- Up to 31 RZT 8000 refurbishment zone transponders can be aggregated into a separate zone on one loop.

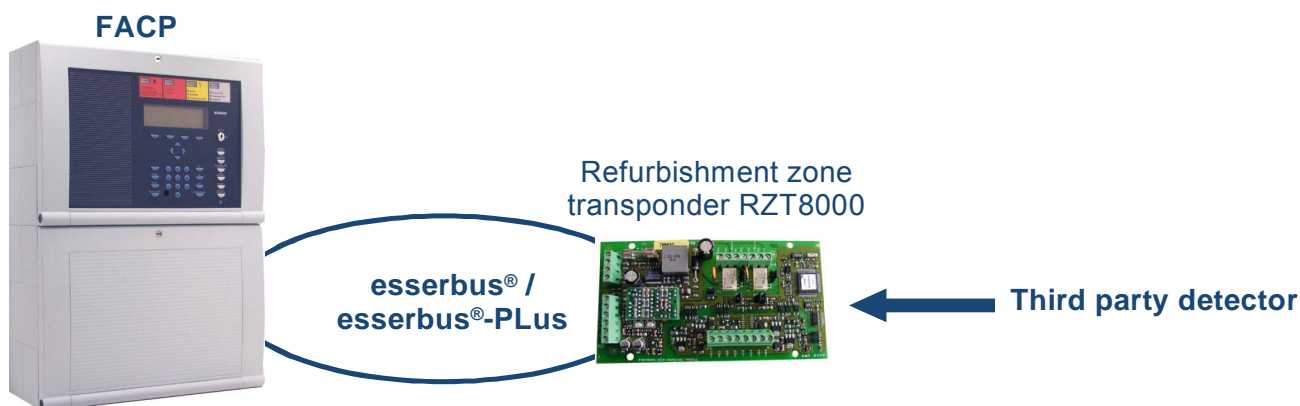


Fig. 4: Connection diagram for refurbishment zone transponder RZT 8000

#### Setting the monitored external power supply (UB<sub>ext</sub>)

Monitoring of the external power supply for the refurbishment zone transponder (Part No. 808630.10) can be adjusted to 12 V DC or 14 V DC to suit certain third-party detectors. This change must also be made in the tools 8000 programming software.



- For further information to the Refurbishment Zone Transponder RZT 8000 refer to Documentation 798807.10.
- The components used in existing fire alarm systems are sometimes replaced during maintenance and alteration measures. If these components are no longer listed in the product group catalogue, please contact the Technical Support department to inquire about availability and check on replacement possibilities, if required.

## Specifications

### Refurbishment Zone Transponder RZT 8000

#### Loop

Rated voltage	:	8 V DC ... 42 V DC
Rated current @ 19 V DC	:	≤ 250 µA

#### External power supply

Rated voltage	:	
Part No. 808631.10	:	10.5 V DC ... 13.8 V DC
Part No. 808630.10	:	10.5 V DC ... 15 V DC
Current consumption	:	max. 1.25 A @ 12 V DC

#### Zone input

Rated voltage	:	
- Part No. 808630.10	:	24 V DC
- Part No. 808631.10	:	12 V DC
Rated current	:	125 mA per zone (current limitation)

#### Relay

- Contact rating	:	max. 30 V DC / 1 A or 48 V AC / 0,5 A
- Programmable monitoring	:	10 kΩ / ± 40%
Ambient temperature	:	-5 °C ... +50 °C
Storage temperature	:	-25 °C ... +75 °C
Ambiente humidity	:	≤ 95 % rel. humidity (non-condensing)
Protection rating	:	IP 40 (in housing - refer to accessories)
Weight	:	approx. 150 g
Dimensions (w x h x d)	:	150 x 82 x 20 (mm)
Specification	:	EN 54-18 : 2005 / -17 : 2005
VdS approval	:	G 207098
Declaration of Performance	:	DoP-20615130701

All given specifications relates to an ambient temperature of 25 °C.

### 3.3 Technical Alarm Module IQ8TAL

The Technical Alarm Module IQ8TAL (Part No. 804868) is designated for hazard alarms in dry workplaces not subject to explosion hazards.

The technical alarm module IQ8TAL is a complete loop device of the ESSER-Fire Alarm Systems and provides the coverage and transmission of plant alarms.

The IQ8TAL has an integrated isolator, a contact input and a relay output. The relay may be configured either as >normally closed< or as >normally open< contact. There is no separate supply voltage required for the IQ8TAL operation.

The optional IP protection kit (Part No. 704965) can be used to increase the IP type of protection to IP55.

The supplied key is suitable to test the function of the IQ8TAL and to reset the unit by again und the terminals 7 / 8 are suitable to connect conventional manual call points or Third party detectors e.g. manual call points for Ex-areas (Part No. 761697). The last detector must be terminated with a 10 KOhm ( $\pm 5\%$ ) or the integrated End-of-line resistor.

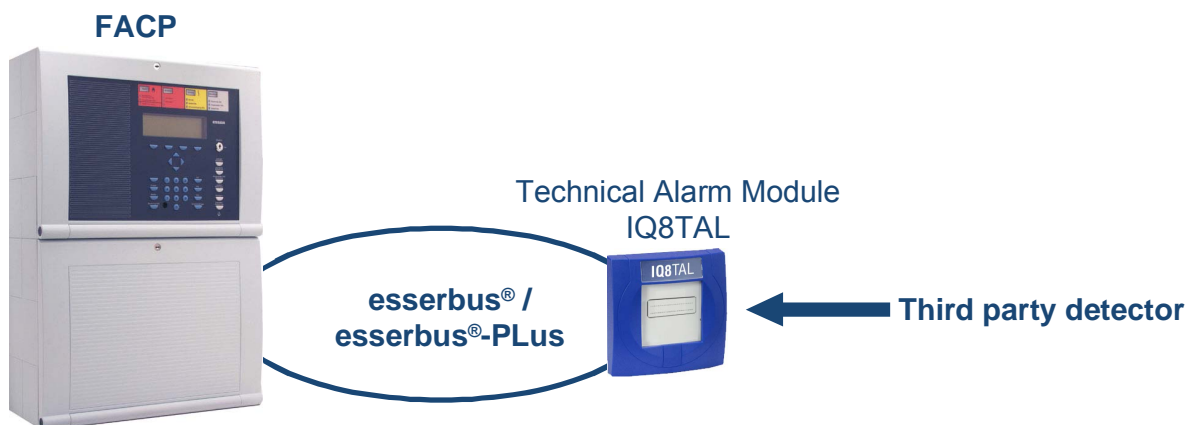


Fig. 5: Connection diagram for Technical Alarm Module IQ8TAL

#### Features

- integrated contact input and relay output
- operation voltage via loop connection
- Test and reset functions
- optional protection kit for higher IP-rating available
- Invers monitoring capability by configuration (1 K resistor normal / 10 K resistor alarm)



For further information to the IQ8TAL refer to Documentation (Part No. 798928) and the Product catalogue Fire.

## Specifications

### IQ8TAL (Part No. 804868)

Power supply	:	8 V DC ... 42 V DC
Quiescent current	:	approx. 45 $\mu$ A @ 19 V DC
Alarm current	:	approx. 9 mA @ 19 V DC, pulsed
No. of detectors	:	max. 127 TAL per loop
Alarm indicator	:	red LED
Operation indicator	:	green LED
Connection terminals	:	max. 1,5 mm <sup>2</sup> (AWG 30-14)
Application temperature	:	-20 °C ... +70 °C
Storage temperature	:	-30 °C ... +75 °C
Ambiente humidity	:	$\leq$ 95 % rel. humidity (non-condensing)
Protection rating	:	IP 43 (in housing) IP 55 (with option)
Housing	:	PC/ASA plastic
Colour	:	blue (similar RAL 5015)
Weight	:	approx. 110 g
Housing dimensions (w x h x d)	:	88 x 88 x 27 (mm)
Dimensions with back box	:	88 x 88 x 63 (mm)
Specification	:	EN 54-17 : 2005/ -18 : 2005
VdS approval	:	G 209138
Declaration of Performance	:	DoP-20792130701

All given specifications relates to an ambient temperature of 25 °C.

## 4 Line-type smoke detectors

When installing line-type smoke detectors it is very important to observe all the setting and installation instructions of the respective manufacturer.

The transmitter unit emits a beam of light invisible to the human eye, which is continuously sent to the receiver; the setup is similar to that of a photoelectric barrier. If there is a fire the smoke generated partially blocks the beam. This attenuates the light, reducing the intensity of the signal and thus triggering the alarm. When hot air and gases generated by a fire rise to the level of the light beam and come into contact with cooler layers of air the resulting turbulences can cause a “flicker effect” in the beam which can also trigger an alarm.

### Application

- Industrial plants, power plants
- Shopping malls, hotels
- Historical buildings where as little cable as possible should be installed, such as churches, museums
- Large rooms and high buildings such as airports
- Production plants in which the products and shelves change continuously

### Line of sight

Care must be taken to ensure that the beam path between transmitter and receiver is uninterrupted at all times. In particular, ensure that the beam is not interrupted by moving objects such as ceiling cranes in production buildings as this can cause error messages and trigger false alarms.

### Layers of hot air

Layers of hot air that collect under roof surfaces can prevent smoke from rising to the smoke detector at ceiling level. The detectors must thus always be installed so that they project below any possible layer of hot air that can collect under the ceiling.



- The response time of Line-type smoke detectors depends on the installation site, the ceiling construction, the height of the room, the quantity of smoke and air movement.
- Therefore, the detector must be installed below any heat buffer that is to be expected so that the smoke can enter the recording area of the detector range.
- If it is not possible to determine the installation height without any doubt, the optimum position for the detector should be determined with smoke tests.
- When installing the detector the installation instructions of the manufacturers must be followed!

**Distance between transmitter and receiver**

When line-type smoke detector units are installed directly facing one another the maximum permitted distance between transmitter and receiver is 100 m.

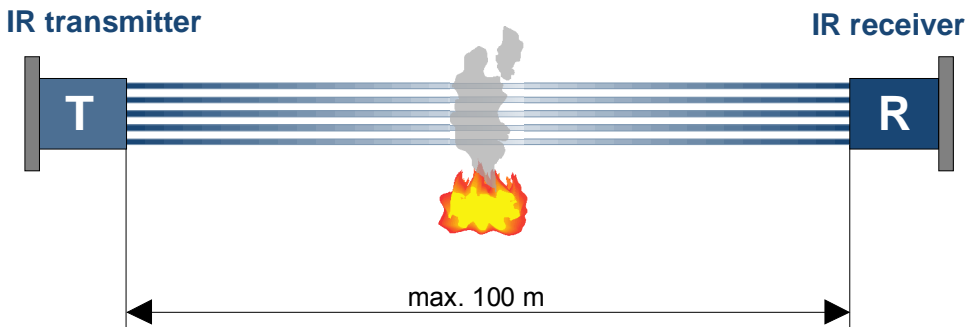


Fig. 6: Direct beam between transmitter and receiver

It is also possible to redirect the monitoring beam with a so-called “retro” mirror. The advantage of this configuration is that transmitter and receiver can then be installed together in one wall location as a single assembly. However, this naturally means that the beam must travel twice as far, thus shortening the maximum permitted distance – in this case to the location of the mirror on the opposite wall.

**Indirect reflected beam between transmitter and receiver via a mirror**

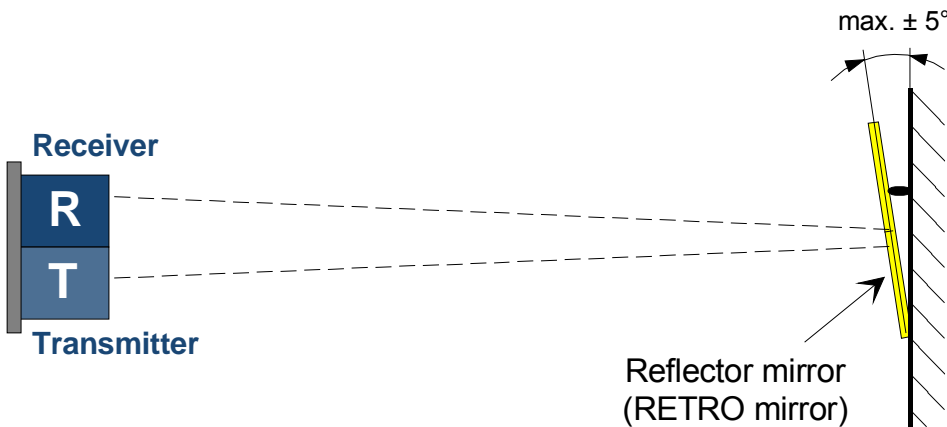


Fig. 7: Arrangement of receiver and transmitter unit if a reflector mirror is used



## 4.1 Linear smoke detector OSID

The linear smoke detector OSID (Open-area Smoke Imaging Detection) uses a complex mathematical analysis algorithm based on pixel level to analyse the infrared (IR) and ultraviolet (UV) radiation on smoke particles between two or more detectors. This technology was specially developed for large and open spaces and allows for early detection and response.

The detector uses two wavelengths for particle detection, so that possible particle sizes can be detected and differentiated. The shorter UV waves are highly effective for both small and large particles, while the longer IR waves are only effective for larger particles.



Fig. 8: Linear smoke detector OSID

### Performance features

- Easy and fast installation → low installation costs
- High tolerance against tremors, building movements and strong drafts
- Reliable differentiation between real smoke and other disturbances
- such as dust, steam, birds and insects, etc.
- High tolerance at high temperature differences
- Low false alarm rate
- Easy DIP switch configuration
- Limited servicing requirements
- Configurable alarm thresholds
- Both wired and battery-operated transmitters available
- 3D volumetric coverage and dirt monitoring
- Internal event memory for up to 10,000 events

Part No.	Description
761300	OSID receiver/image sensor – 7° coverage
761301	OSID receiver/image sensor – 38° coverage
761302	OSID receiver/image sensor – 80° coverage
761303	OSID transmitter/light source standard power, battery version
761304	OSID transmitter/light source standard power
761305	OSID transmitter/light source high power
761310	OSID installation kit

The algorithmic analysis of the attenuation of both wavelengths makes it possible for the detector to suppress existing disturbances such as dust particles, building movements or penetrating solid bodies as far as possible as potential alarm triggers.

### 3D volumetric coverage

Receivers/image sensors with a viewing angle of 80° and 38° have an imaging chip that allows the use of up to seven transmitters per receiver. In contrast to conventional linear smoke detectors, in this case only the receiver needs to be wired.

As the transmitters can be easily adjusted for obstructions along the walls and arranged at varying heights, optimal coverage is achieved. The radiation length of the 80° and 38° receivers reaches from 8 to 120 m. The horizontal and vertical viewing angles of the receiver allow for 3D area coverage.

Furthermore, optical filtering, high-speed image recording and intelligent software algorithms ensure that the detector processes images, offering maximum state-of-the-art stability and sensitivity whilst also remaining resistant to extreme lighting fluctuations.

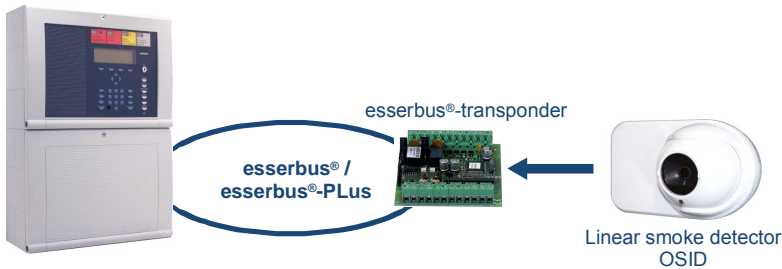
Image sensor	Field of vision		Detection range				Max. number of light sources
	Horizontal	Vertical	Standard light source		High-performance light source		
			Min.	Max.	Min.	Max.	
10°	7°	4°	30 m	150 m	---	---	1
45°	38°	19°	15 m	60 m	30 m	120 m	7
90°	80°	48°	6 m **	34 m	12 m **	68 m	7

\*\* Maximum distances are measured from the centre point of the image sensor field of vision. See manufacturer's documentation for further information.

**Connection to the esserbus® transponder (Part No. 808623)**

Required power supply: 24 V DC

The external power supply for the system is connected via the esserbus® transponder and can be monitored for trouble.



**Zone input:** Zone inputs G1 and G2 are used to connect the system.  
 G1 = >Fire<, G2 = >Fault not latched<  
 These zone inputs are monitored with an end-of-line unit EOL-I for >Quiescent< and otherwise an End-of-line resistor 1 kOhm for >Alarm< (Setting can be changed via tools 8000.)  
 Unused zone inputs should be wired with a 10 kOhm load resistance.

**Relays:** Relay K1 programmed with operating mode >Reset relay<.  
 K1 → reset relay (normally open potential-free), reset time = 5 seconds

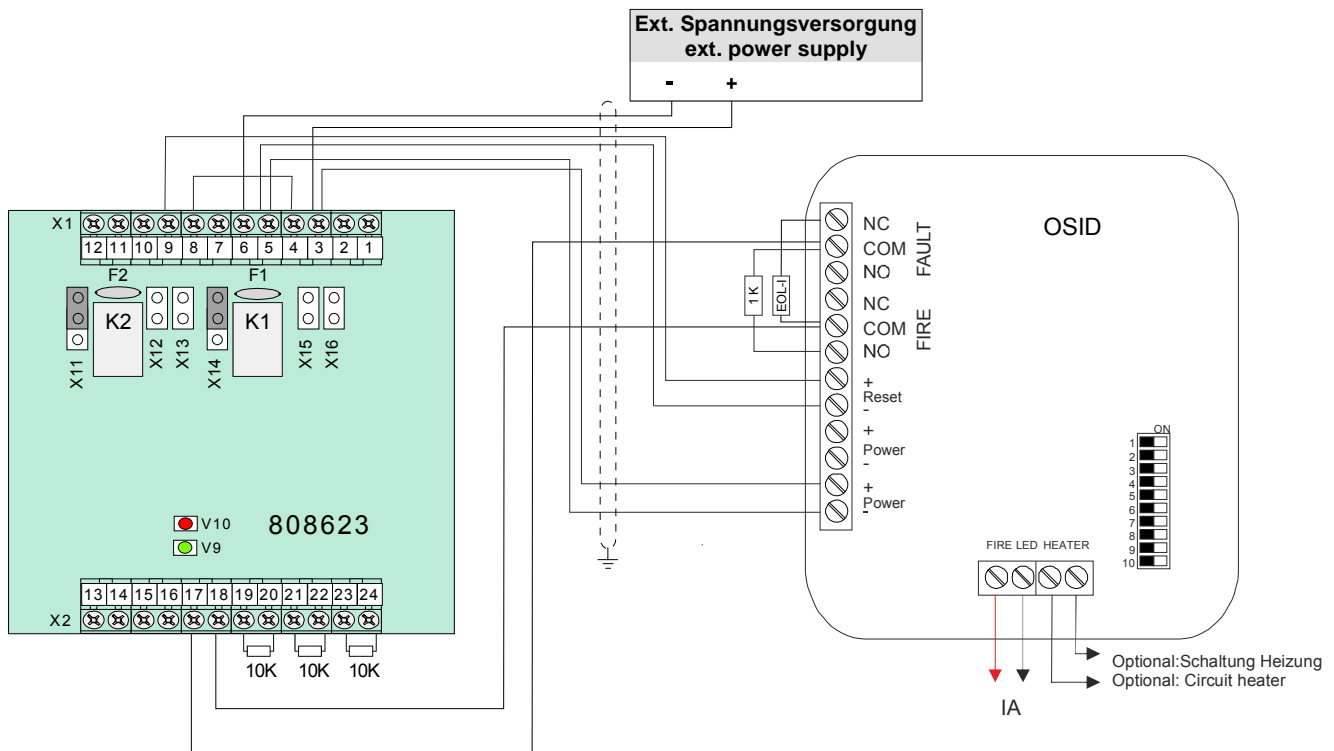


Fig. 9: Wiring example of OSID to the esserbus® transponder (Part No. 808623)



Pay attention to the position of the bridges on the esserbus® transponder.  
 Connect cable shielding!  
 The power supply of the detector requires an electrical isolation from the FACP!  
 An external power supply is required for the esserbus® transponder.



When installing the detector the installation instructions of the manufacturers must be followed!

## Specifications

### Linear smoke detector OSID (Part No. 76130X)

Operational voltage	: 20–30 V DC
Current consumption	
Image sensor	: 4 mA @ 24 V DC (1 transmitter) 7 mA @ 24 V DC (7 transmitters)
Light source	: 350 µA @ 24 V DC
Integrated battery	: Operating life approx. 5 years
Detection range	: Up to 150 m
Setting angle	: + / 60° (horizontal), + / 15 (vertical)
Max. permissible misalignment	: + / 2°
Alarm display	: Red LED
Fault indicator / operating display	: Yellow / green LED
Connecting terminals	: 0.2 mm ... 4 mm <sup>2</sup> (AWG 26-12)
Ambient temperature	: -10°C to +55°C
Storage temperature	: -30°C to +75°C
Ambiente humidity	: ≤ 95 % rel. humidity (non-condensing)
Protection class	: IP44 (standard housing) IP66 (option)
Housing	: Metal
Colour	: white
Weight	: approx. 610 g (image sensor) approx. 585 g (light source, battery-operated) approx. 535 g (light source, ext. voltage)
Dimensions (W x H x D)	: 198 x 130 x 96 (mm)
Specification	: EN 54-12
VdS approval	: G 211072
Declaration of Performance	: DoP-21057130701

All given specifications relates to an ambient temperature of 25 °C.

## 4.2 Line optical smoke detectors FIRERAY 50 RV / 100 RV

The line optical smoke detectors FIRERAY 50 RV and 100 RV (Part No. 761315 / 761316) are used to monitor open areas. The detector consists of a joint transmitter/receiver unit (FIRERAY 50 RV / 100 RV) and a reflector mirror for retro operation. The transmitter transmits a modulated infrared light ray, which cannot be seen by the human eye, to the reflector mirror opposite. This reflects the infrared light ray back to the receiver.

Part No	Description
761315	Line optical smoke detector Fireray 50 RV with one reflector mirror
761316	Line optical smoke detector Fireray 100 RV with four reflector mirrors



Fig. 10: Fireray 50 RV

Fireray 100 RV

The detector is triggered – with a preset alarm level – when the transmitted signal weakens when smoke enters the area between the detector and the reflector mirror. A defect in the detector is recognised automatically when the reflected signal can no longer be received.

The operating security of the detector is enhanced by a microprocessor-controlled error compensation system. If the optical lens is soiled even just slightly, e.g. by smoke or dust particles, the trouble/alarm level is automatically adapted to the local or specific ambient conditions. If automatic error correction is no longer possible, depending on the detector configuration, a trouble or alarm situation is recognised and displayed.

### Scope of delivery

- FIRERAY 50 RV (Part No. 761315)  
with one reflector mirror (10 x 10 cm) for a monitoring range of  $\geq 5$  to  $\leq 50$  metres
- FIRERAY 100 RV (Part No. 761316)  
with four individual reflector mirrors (10 x 10 cm) for a monitoring range of  $\geq 50$  to  $\leq 100$  metres
- Test filter to check detector sensitivity
- 8-pole connection cable

### Accessories

Mounting unit for ceiling brackets 761404 and 761405 (Part No. 761407).  
For more information, see the Product catalogue Fire.



If the permissible right angle ( $\pm 5^\circ$ ) is exceeded when you are installing the reflector mirror, this can cause false alarms or cause the alarm not to be triggered in case of an incident.



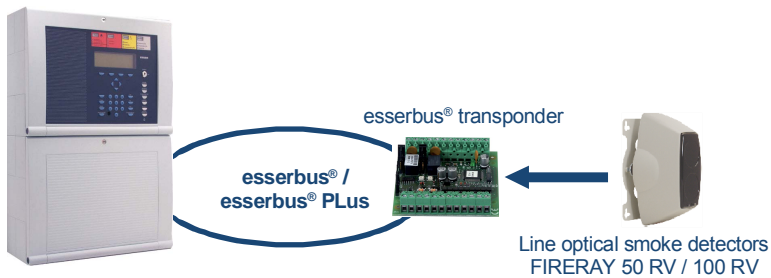
The optical axis between the transmitter/receiver unit and the reflector mirror must remain free at all times. To prevent disruptions caused by reflecting objects, these must be at least 1.25 m away from the side of the detector and reflector mirror.

When installing the detector the installation instructions of the manufacturers must be followed!

### Wiring via the esserbus® transponder (Part No. 808623)

Recommended power supply: 24 V DC

The external power supply for the Fireray 50 RV and 100 RV is connected via the esserbus® transponder and can be monitored for trouble.



**Zone input:** Zone input G1 or G2 can be used to connect the detector. These zone inputs are monitored with an end-of-line unit EOL-I for >Quiescent< and otherwise an End-of-line resistor 1 kOhm for >Alarm< (setting can be changed via tools 8000). Unused zone inputs should be wired with a 10 kOhm load resistance.

**Relay:** The two relays K1 and K2 can, for example, be programmed with operating mode >Reset relay<.

K1 → Reset relay (normally open), Reset time = 2 seconds

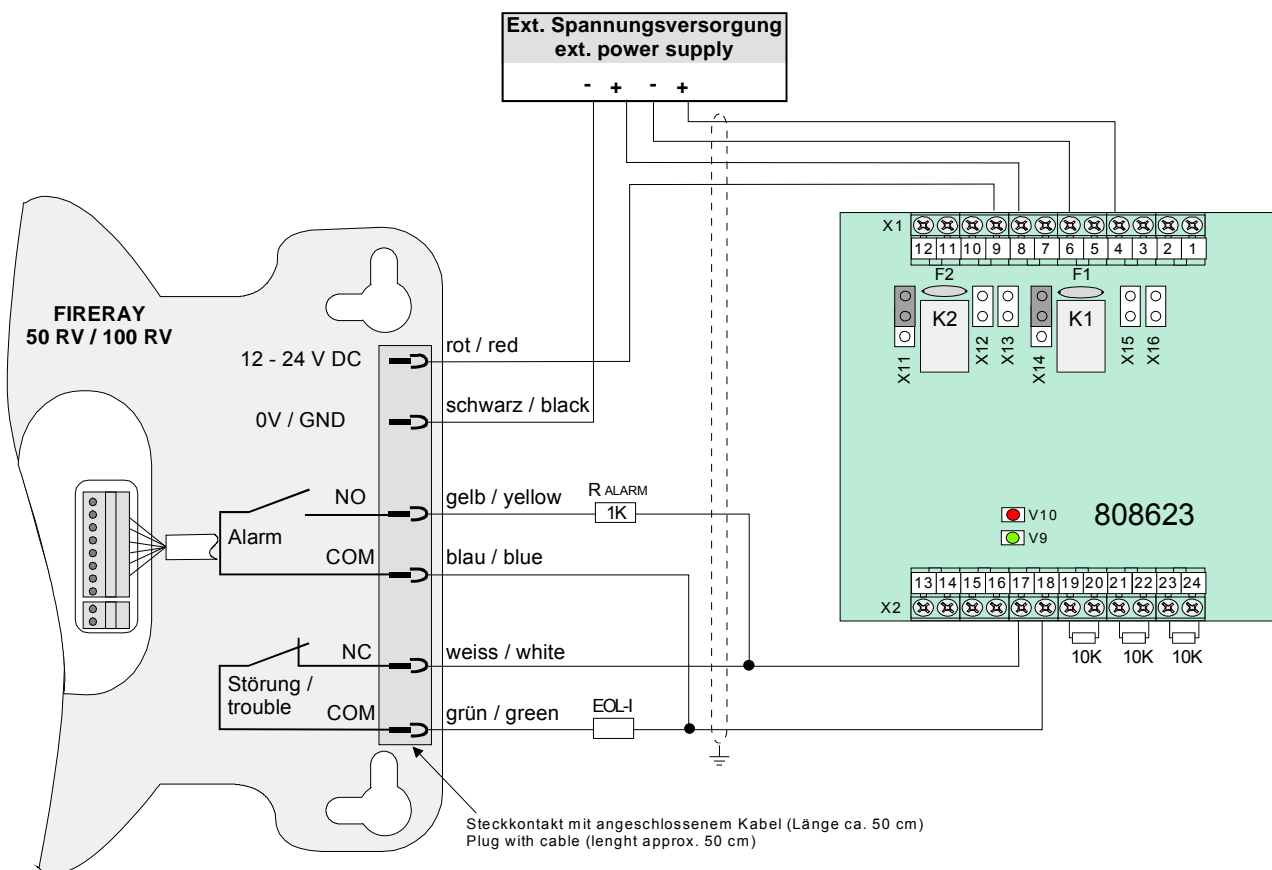


Fig. 11: Wiring example Fireray 50 RV/100 RV via the esserbus® transponder (Part No. 808623)



Pay attention to the position of the bridges on the esserbus® transponder.  
 Connect cable shielding!  
 The power supply of the detector requires an electrical isolation from the FACP!  
 An external power supply is required for the esserbus® transponder.

## Specifications

### Fireray 50 RV / 100 RV (Part No. 761315 / 761316)

DC voltage range : 10.2 V DC ... 30 V DC

#### Relays

Alarm relay : 1 dry contact (NC contact)

Fault relay : 1 dry contact (NO contact)

Contact rating : max. 30 V DC / 1 A

Quiescent current : < 4 mA @ 24 V DC

Alarm current : max. 15 mA @ 24 V DC (incl. alarm relay)

Fault current : max. 15 mA @ 24 V DC (incl. fault relay)

#### Displays

Alarm display : LED red

Fault display : LED yellow

#### Monitoring range

FIRERAY 50 RV : 5 ... 50 metres \*)

FIRERAY 100 RV : 50 ... 100 metres \*)

Adjustable alarm sensitivity : - 2.50 dB (25%), - 3.74 dB (35%), - 6.02 dB (50%)

#### Max. permissible deviation from the optical axis at 35% alarm sensitivity

Transmitter/receiver unit : ± 0.8°

Reflector mirror : ± 5°

Optical wavelength : 880 nm

Evaluation interval : approx. 10 s

Response time of alarm/fault : approx. 10 s

Monitoring range : max. 1300 m<sup>2</sup> (permissible according to VdS Guideline)

Installation height : max. 12 m (permissible according to VdS Guideline)

Ambient temperature : -30 °C ... +55 °C

Storage temperature : -35 °C ... +60 °C

Protection rating : IP 50

Housing : ABS plastic (flame resistant)

Colour : light grey, similar to RAL 7035

Weight : approx. 670 g

Dimensions of transmitter/receiver unit (W x H x D) : 130 x 210 x 120 (mm)

Detector specification : EN 54-12

VdS approval : G 203070\*\*)

Declaration of Performance : CPR-DOP-R01

\*) Simple distance between transmitter/receiver unit and the reflector mirror

\*\*\*) Source: OEM 22318.18.02

All given specifications relates to an ambient temperature of 25 °C.

### 4.3 Line-type smoke detector LRMX

The line-type smoke detector LRMX (Part No. 761400.10) according to EN 54-12 comprises a detector, the operating and control unit and a prism reflector. Wiring via the esserbus® and resetting take place via the esserbus® transponder. Use the voltage converter (Part No. 781337) to isolate DC potentials and to prevent earth faults.

The smoke detector works by using a prism reflector in a range of 5 m to 40 m. For greater distances, use the range extensions (Part No. 761401.10 or 761402.10).



A remote operation of the operating and control unit and detector is possible.

Cable length: max. 60 m

Use cable I-Y (St) Y n x 2 x 0.8 mm with special designation or fire detection cable!

When installing the detector the installation instructions of the manufacturers must be followed!



Fig. 12: Line-type smoke detector LRMX

#### Features

- Motor-driven detector
- User-friendly start-up with automatic self-test
- Interference-resistant operation through automatic electromechanical readjustment of the detector to allow for building movement.
- Optimum operation with a recessed operating unit at eye level
- Clear display of all statuses via a central display in the operating and control unit.
- High protection against moisture for use in difficult environments
- Switch-on and reset via esserbus® transponder (Part. No. 808623)

#### Accessories

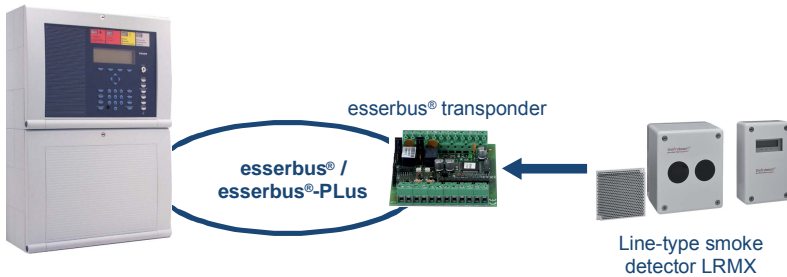
Description	Part No.
LRMX with anti-condensation and heating	761410
Single reflector for LRMX	761403
Single reflector nano-coated (moisture-repelling) for use in difficult environmental conditions	761413
Reflector set LRMX up to 80 m	761401.10
Reflector set LRMX up to 100 m	761402.10
Ceiling mount for LRMX	761415
Mounting plate for ceiling mount for detector / single reflector	761406
Spider mount for ceiling mount	761407
Flush housing for LRMX	761408
Nano detector cover	761414

For more information, see the Product catalogue Fire.

**Wiring via the esserbus® transponder (Part No. 808623)**

Recommended power supply: 24 V DC

The external power supply for the line-type smoke detector LRMX is connected via the esserbus® transponder and can be monitored for trouble.



**Zone input:** Zone input G1 or G2 can be used to connect the detector. These zone inputs are monitored with an end-of-line unit EOL-I for >Quiescent< and otherwise an End-of-line resistor 1 kOhm for >Alarm< (setting can be changed via tools 8000). Unused zone inputs should be wired with a 10 kOhm load resistance.

**Relays:** The two relays K1 and K2 can, for example, be programmed with operating mode >Reset relay<.

K1 → Reset relay (normally open), reset time = 5 seconds

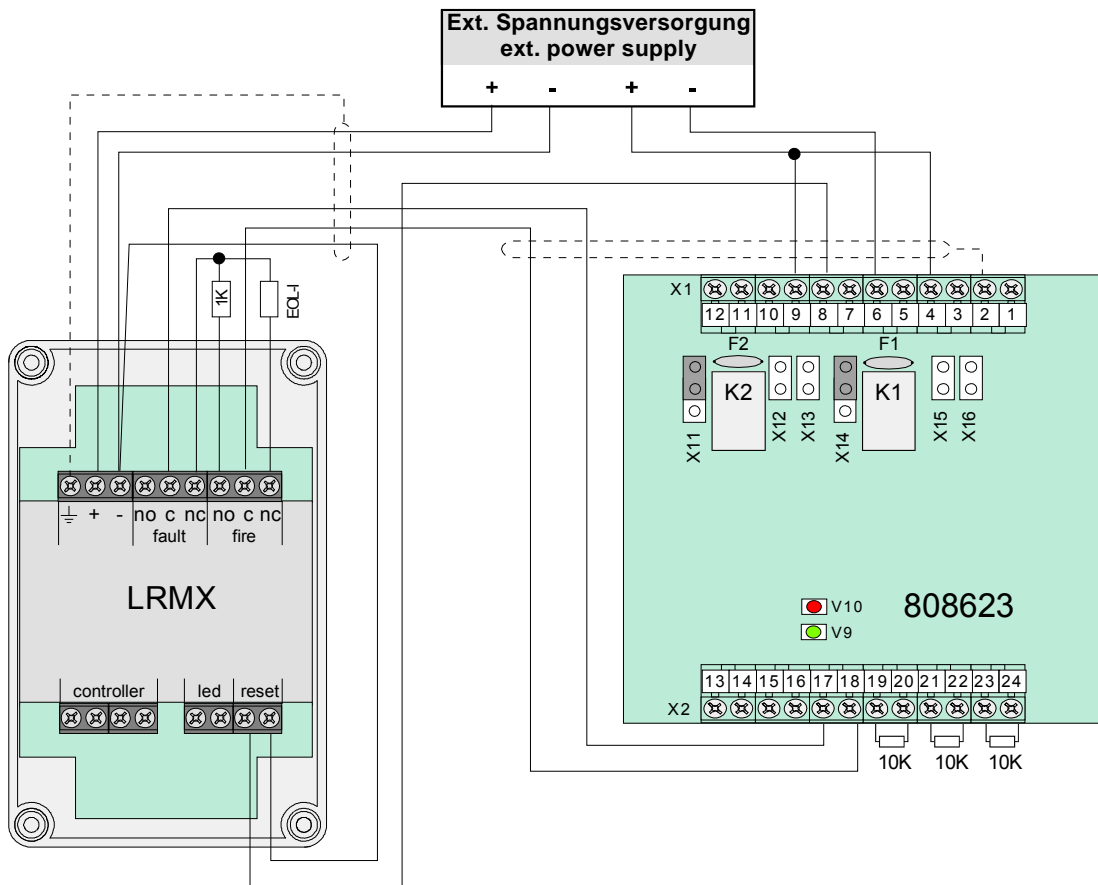


Fig. 13: Wiring example line-type smoke detector LRMX via the esserbus® transponder (Part No. 808623)



Pay attention to the position of the bridges on the esserbus® transponder.  
 Connect cable shielding!  
 The power supply of the detector requires an electrical isolation from the FACP!  
 An external power supply is required for the esserbus® transponder.



## Specifications

### Line-type smoke detector LRMX (Part No. 761400.10)

Operating voltage	: 10,2 V DC ... 40 V DC
Current consumption	: 3 mA (in all operating conditions)
IR wavelength	: 870 nm
Alarm relay	: 30 V DC / 2 A
Fault relay	: 30 V DC / 2 A
Monitoring range	: 5 to 40 m
Ambient temperature	: -30 °C ... +70 °C
Storage temperature	: -35 °C ... +60 °C
Ambiente humidity	: ≤ 95 % rel. humidity (non-condensing)
Protection rating	: IP 65
Weight	: approx. 2.05 kg
Dimensions (W x H x D)	
- Detector	: 155 x 180 x 137 (mm)
- Operating unit	: 120 x 185 x 62 (mm)
VdS approval	: G 206056

All given specifications relates to an ambient temperature of 25 °C.

## 5 Line-type heat detector

Linear heat detectors are used to monitor areas where automatic point fire detectors are not as well-suited or cannot be mounted.

### 5.1 Line-type heat detector LWM-1

The Line-type heat detector LWM-1 (Part No. 761290) provide reliable early warnings for fires and overheating. The system can also be deployed in buildings and rooms where confined conditions make monitoring with point-type or line-type detectors difficult or impossible. The sensor cable of the LWM-1 is also suitable for installation in environments with aggressive environmental conditions and has to be chosen to suit the application.

The LWM-1 is connected to the loop. To reset the unit an external 24 V DC power supply is interrupted by the esserbus® transponder. Optionally, the voltage converter can be used (Part No. 781337) to isolate DC potentials and to prevent earth faults. Potential-free contacts for >Fire< and >Trouble< are available in the evaluation unit.



Fig. 14: Evaluation unit Line-type heat detector LWM-1

#### Applications

- Cable conduits
- Floating-roof tanks in petrochemicals installations
- Multi-storey car parks, tunnels
- Cold stores
- Belt conveyor systems, escalators
- Landfill sites, waste incineration plants

#### How the system works

The LWM-1 heat detector system consists of an evaluation unit and a sensor cable. The sensor cable contains four copper leads, each of which has a sheath with a negative temperature coefficient. The ends of the sensor cable leads are connected in two separate loops. Interruption of either of the loops is registered as a fault. A rise in temperature increases the electrical resistance between the two loops and when the preset temperature is exceeded the evaluation unit automatically triggers an alarm.

### The sensor cable

The sensor cable must be matched to the requirements of the individual application or selected according to the environmental influences - see Accessories table.

- The blue sensor cable is suitable for normal environments, including environments with high humidity levels.
- The black sensor cable is suitable for aggressive atmospheres. It has a nylon sheath to protect it against acids and alkalis.
- The black sensor cable with steel braid reduces also the mechanical stresses and protects the cable from damage.

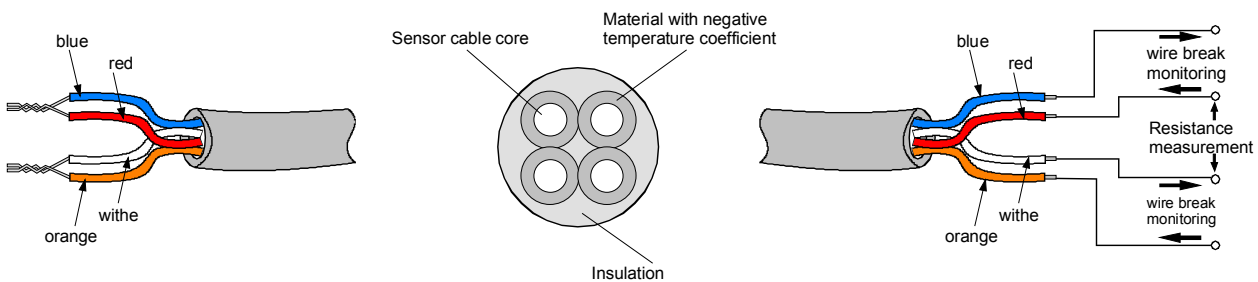


Fig. 15: Line-type heat detector LWM-1 sensor cable



When installing the detector the installation instructions of the manufacturers must be followed!

### Accessories

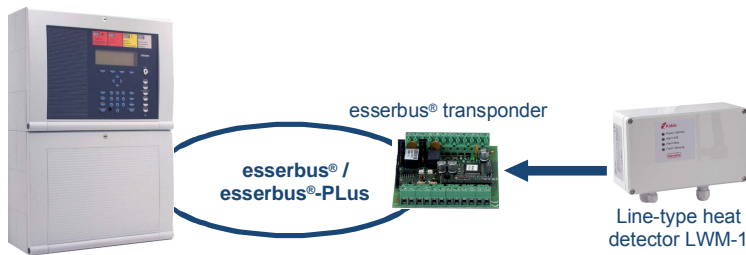
Description	Ø	Comment / Application	Part. No.
Sensor cable, blue	3,15 mm	with high humidity	761245
Sensor cable, black	4,8 mm	with protection against acids and bases	761246
Sensor cable with steel braiding, black	5,8 mm	with protection against acids, bases and for higher cable loads	761247
Connection link set for Sensor cable	---	---	761243
Termination link set for Sensor cable	---	---	761244

For more information, see the Product catalogue Fire.

**Wiring via the esserbus® transponder (Part No. 808623)**

Required power supply: 24 V DC

The external power supply for the detector is connected via the esserbus® transponder and can be monitored for trouble.



**Zone input:** Zone input G1 or G2 can be used to connect the detector. These zone inputs are monitored with an end-of-line unit EOL-I for >Quiescent< and with an End-of-line resistor 1 kOhm for >Alarm< (setting can be changed via tools 8000). Unused zone inputs should be wired with a 10 kOhm load resistance.

**Relay:** The two relays K1 and K2 can, for example, be programmed with operating mode >Reset relay<.

K1 → Reset relay (normally open), Reset time = 2 seconds

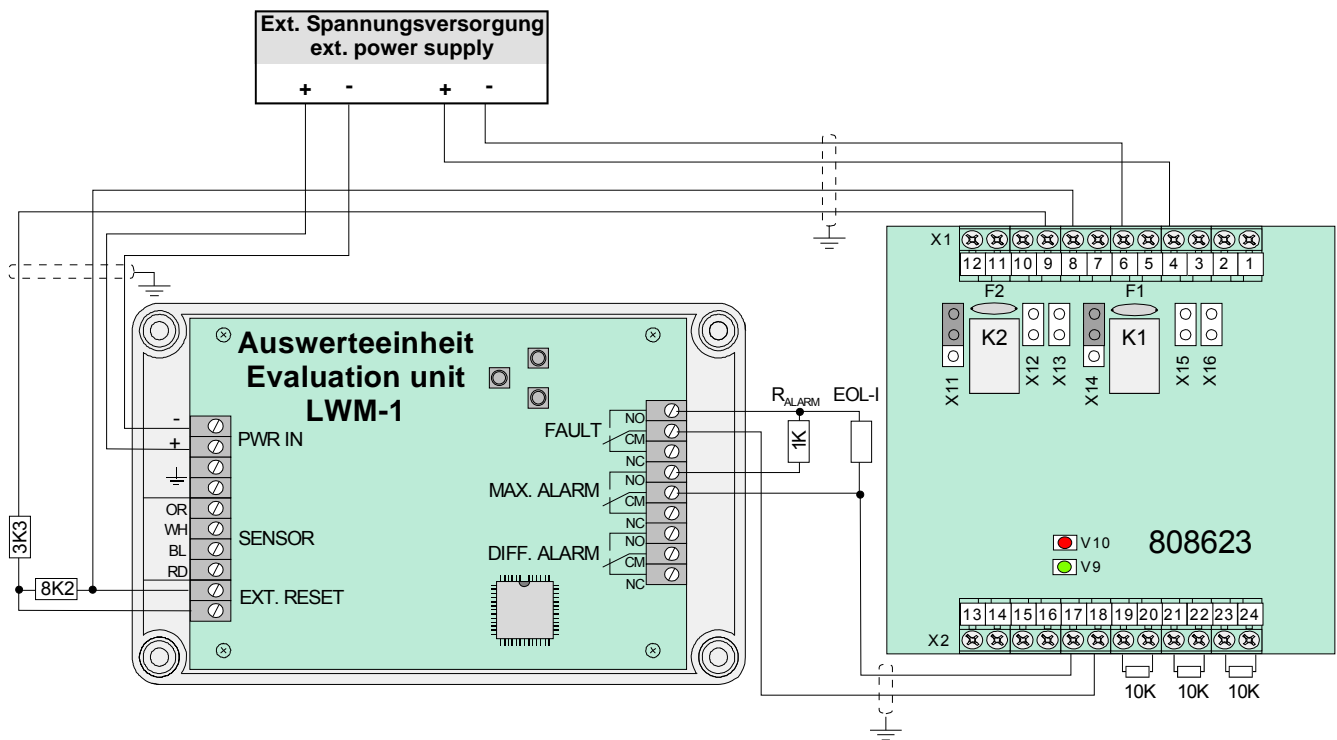


Fig. 16: Wiring example heat detector LWM-1 (Part No. 761290) via the esserbus® transponder (Part No. 808623)



Pay attention to the position of the bridges on the esserbus® transponder.  
 Connect cable shielding!  
 The power supply of the detector requires an electrical isolation from the FACP!  
 An external power supply is required for the esserbus® transponder.

## Specifications

### Line-type heat detector LWM-1 (Part No. 761290)

Operating voltage range	: 9 V DC ... 30 V DC
<b>Current consumption</b>	
Quiescent current	: max. 25 mA @ 24 V DC
Alarm current	: max. 25 mA @ 24 V DC
Fault current	: max. 15 mA @ 24 V DC
Switch-on peak	: < 100 mA @ 24 V DC
<b>Indicator</b>	
LED green	: Operation, continuous light
LED red	: Alarm Diff, continuous light, locked
LED red	: Alarm Max, continuous light, locked
LED yellow	: Fault, flashing light, locked
Sensor cable per evaluation unit	: max. 300 m, min. 10 m
Ambient temperature	: -20 °C ... +50 °C
Ambiente humidity	: ≤ 95 % rel. humidity (non-condensing)
Protection rating	: IP 65
Housing	: ABS plastic
Colour	: Grey, similar to RAL 7035
Weight	: approx. 550 g
Dimensions (W x H x D)	: 200 x 120 x 80 (mm)
VdS approval	: G 205066

All given specifications relates to an ambient temperature of 25 °C.

## 6 Flame detector

Flame detectors monitor rooms and areas for radiation, as can occur in the case of naked flames. The differing fire loads may vary the wavelengths of the resulting flame radiation.

As a result, a distinction is made between IR flame detectors for the infrared range and UV flame detectors for the ultraviolet range. What is important is whether solid or liquid stores are monitored, as solids generally burn with a higher infrared component than liquids, which tend to display a higher UV component.

When planning flame detectors, the expected fire development must be considered.

Only IR flame detectors should be used if an initial smouldering phase is expected, as smoke absorbs any UV radiation, while infrared radiation penetrates the smoke.

To ensure that flame detectors can detect a fire, it must be ensured that the area to be monitored is 'visible' to the flame detector.

For flame detectors that only monitor one wavelength range (UV or IR), an alarm status may only lead to a detector and not a fire alarm. These flame detectors must always be connected or programmed in a dual detector dependency (type B). The dependent detectors must monitor the same area from two different angles.

Flame detectors that monitor at least two different wavelengths using two or more sensors may trigger a fire alarm directly in the event of an AND connection.

As flame detectors can also be triggered by external influences – potential false alarms – it may be necessary to suppress these external variables by using blinds and covers.

Flame detectors are especially ideal for use in large, high halls thanks to their relatively large monitoring range with regard to the expected fire development and possible disturbances.

The number, installation and alignment of flame detectors must be selected so that adequate room monitoring is ensured that is as consistent as possible.

The expected number of flame detectors depends on the room volume and the conditions in the room. Flame detectors are installed in corners and on walls, whereby it must be ensured that the detector's beam axis is set at an angle of 45° to the floor and wall.

If the detector is installed at an angle of 45°, this provides a symmetrical angle of rotation of at least 90°, which can be used to monitor a rectangular room volume.

A flame detector classification breaks the maximum installation heights and the maximum monitoring areas into three classes.

### Application

- |   |  |  |
|---|--|--|
| <ul style="list-style-type: none"><li>• Ex-zones 1 and 2 and 21 and 22</li><li>• Smokeless liquid and gas fires</li></ul> | <ul style="list-style-type: none"><li>• Ammunition depots</li><li>• Turbines</li></ul> | <ul style="list-style-type: none"><li>• Petrochemical industry</li><li>• Automotive industry</li></ul> |
|---|--|--|

### Project planning information

The 'inverse square law' applies with regard to the detection of fires by UV and IR detectors.

If the distance to the detector is doubled, the fire must be four times as big to guarantee detection. The distance should never exceed 50 m.



The current version of VdS guideline 2095 must be observed.

### Use in dry areas containing dust and powder

To protect the optical system and reflector from contamination, an air-flushing attachment can be fixed to the detector. The operator is responsible for the quality of the compressed air necessary for operation in accordance with ISO 8573-1.



- When installing the detector the installation instructions of the manufacturers must be followed!
- For more information, see the Product catalogue Fire.

## 6.1 IR flame detector (ex) X 9800

The pressure resistant IR flame detector (Part No. 761347) is practically characterised by reliable operation under difficult conditions.

One integrated LED and three relays indicated the operation, fault and alarm status. Robust against contamination. Heated optics against condensation and freezing-up permit outdoor application.



Fig. 17: IR Flame detector (Part No. 761347) for Ex areas



### Ex areas

When the flame detector is used in explosive areas (Ex), the manufacturer's documentation and the standards, guidelines and requirements for explosive areas must be adhered to.

## 6.2 UV/IR flame detector (ex) X 5200

The pressure resistant combined flame detector (Part No. 761349) allows UV and IR transmitter monitoring same danger areas with a viewing angle of 90°. An alarm is triggered only when the response threshold value IR and UV sensors has been exceeded. LED indicates the operation, fault and alarm status.

Three relays (fire, fault and auxiliary alarm) for fire alarm system connection are integrated. Robust against contamination. Heated optics against condensation and freezing-up permit outdoor application.



Fig. 18: UV / IR flame detector (Part No. 761349) for Ex areas



### Ex areas

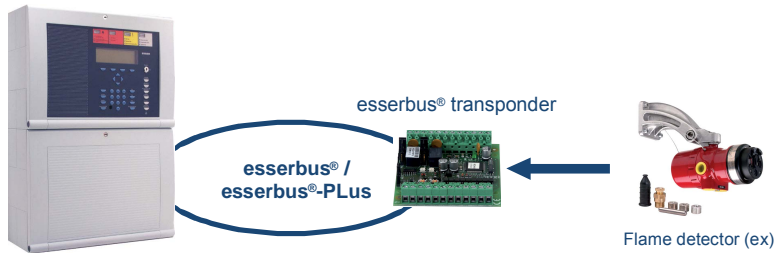
When the flame detector is used in explosive areas (Ex), the manufacturer's documentation and the standards, guidelines and requirements for explosive areas must be adhered to.

Under Section 7 of the German Radiation Protection Ordinance (StrlSchV), a handling authorisation permit reflecting the type approval is required for this product. For more information, see the product group catalogue.

**Wiring via the esserbus® transponder (Part No. 808623)**

Required power supply: 24 V DC

The external power supply for the detector is connected via the esserbus® transponder and can be monitored for trouble.



**Zone input:** Zone input G1 or G2 can be used to connect the detector. These zone inputs are monitored with an end-of-line unit EOL-I for >Quiescent< and an End-of-line resistor 1 kOhm for >Alarm< (setting can be changed via tools 8000). Unused zone inputs should be wired with a 10 kOhm load resistance.

**Relay:** The two relays K1 and K2 can, for example, be programmed with operating mode >Reset relay<.

K1 → Reset relay (normally open), Reset time = 7 seconds

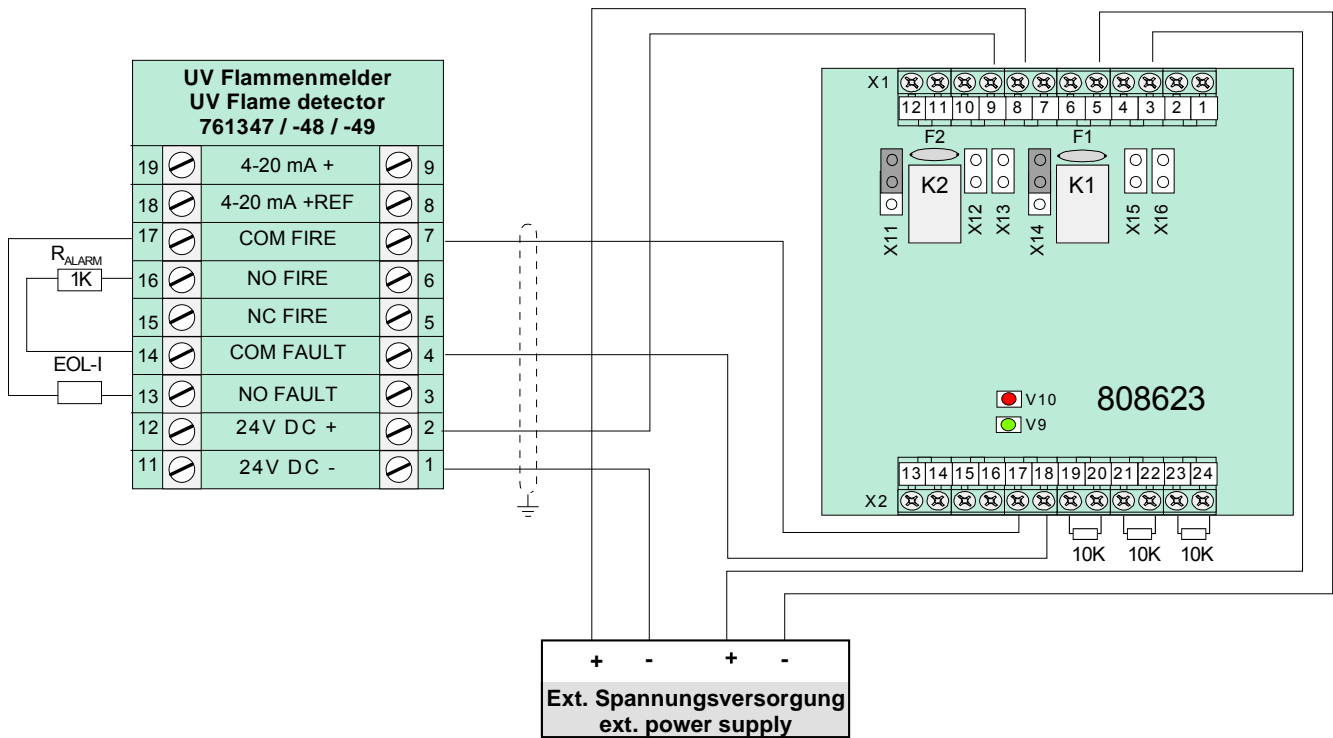


Fig. 19: Wiring example flame detector (Part No. 761347 / -49) via the esserbus® transponder (Part No. 808623)



Pay attention to the position of the bridges on the esserbus® transponder.  
 Connect cable shielding!  
 The power supply of the detector requires an electrical isolation from the FACP!  
 An external power supply is required for the esserbus® transponder.



## Specifications

### IR Flame detector (ex) X 9800 (Part No. 761347)

Operating voltage	: 24 V DC
Power consumption	: 16,5 W @ 30 V DC with end-of-line resistor and heater on maximum
Angle of vision	: 90°
Ambient temperature	: -40 °C ... +75 °C
Storage temperature	: -55 °C ... +85 °C
Ambiente humidity	: ≤ 95 % rel. humidity (non-condensing)
Protection rating	: IP 66
Housing	: aluminium
Weight	: 2,7 kg + 6,0 kg fixure
Dimensions (Ø x L)	: 122 x 246 (mm)
Specification	: EN 54-10, class 1
Explosion rating	: EEx d IIC T5-T6 T86°C
Ex-category	: II 2 GD
VdS approval	: G 203084
EC-type examination certificate	: DEMKO 02 ATEX 132195
Declaration of Performance	: DoP-2013-DEC1208

### UV/IR Flame detector (ex) X 5200 (Part No. 761349)

Operating voltage	: 24 V DC
Power consumption	: 17,5 W @ 30 V DC with end-of-line resistor and heater on maximum
Angle of vision	: 90°
Ambient temperature	: -40 °C ... +75 °C
Storage temperature	: -55 °C ... +85 °C
Ambiente humidity	: ≤ 95 % rel. humidity (non-condensing)
Protection rating	: IP 66
Housing	: aluminium
Weight	: 2,7 kg + 6,0 kg fixure
Dimensions (Ø x L)	: 122 x 246 (mm)
Specification	: EN 54-10, class 1
Explosion rating	: EEx d IIC T5-T6 T86°C
Ex-category	: II 2 GD
VdS approval	: G 203085
EC-type examination certificate	: DEMKO 02 ATEX 132195
Declaration of Performance	: DoP-2013-DEC1208

All given specifications relates to an ambient temperature of 25 °C.

### 6.3 UV flame detector UniVario FMX5000 UV.ESSER

UV flame detector (Part No. 782311) for the recognition of fast developing fires with flame formation. The device is a Class 1 fire detector in accordance with EN 54-10 and able to detect fires up to 50 m away. This detector has an optical input channel and reacts to UV-C radiation in a 185 nm–260 nm range. It is not sensitive to direct sunlight and does not require any adjustment for sensitivity either, which makes it suitable for use indoors and out. Operation, fault and fire statuses are displayed via LED on the detector.

The supply voltage and the linking take place directly via the zone input at the esserbus® transponder (Part No. 808623.10).

Resetting of the detector is also carried out directly via the same esserbus® transponder.



Fig. 20: UV flame detector UniVario (Part No. 782311)

#### Sources of interference

During planning, bear in mind that UV-C radiation can be reflected very strongly by metallic surfaces and glass. For this reason, there must be no sources of interference (e.g. welding flames) in the immediate vicinity or in the sensor range of the detector.



You must observe documentation 798658 during installation of the detector.

## 6.4 Three-channel infrared flame detector UniVario FMX5000 IR.ESSER

UniVario three-channel IR flame detector (Part No. 782315) for recognition of quickly developing fires with flame development. The sensitivity of the detector can be set to Class 1, 2 or 3, or to maximum fire sensitivity X (50 m), in accordance with EN 54-10. With an IP 67 rating, the detector is suitable for use both indoors and out. Optical windows of the IR sensors are fully monitored. The detector achieves a high level of resistance towards disturbance variables via three-channel infrared evaluation.

Voltage supply and connection occur directly via the zone input at the esserbus® transponder (Part No. 808623.10).

The detector is also reset directly via the same esserbus® transponder.



Fig. 21: Three-channel infrared flame detector UniVario (Part No. 782315)

### Sources of interference

To avoid false alarms, the detectors should not be used in areas in which sources of interference can be expected, for example:

- Warm, turbulent air flows on the detector window
- Exhaust fumes or air containing CO/CO<sub>2</sub> in the sensor range of the detector
- Sources of interference with very high power ratings that override the sensors
- Welding
- Sources of infrared emitting large amounts of radiation

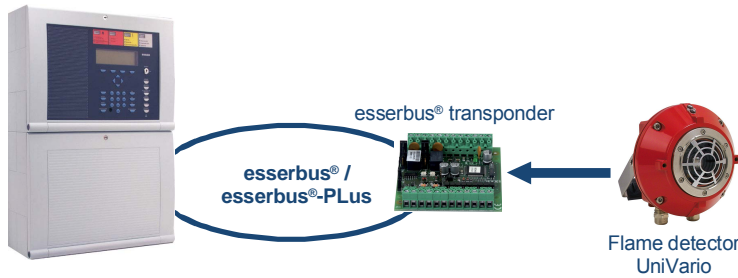


You must observe documentation 798648 during installation of the detector.

**Wiring via the esserbus® transponder for UniVario (Part No. 808623.10)**

Required power supply: 24 V DC

The flame detector UniVario receives the ext. power supply via the zone input of the transponder.



**Zone input:** Zone input G1 or G2 can be used to connect the Fireray 2000. The zone inputs must be terminated in the detector with a termination element EOL-UV (808626.10). The detector is reset via the esserbus® transponder. Unused zone inputs should be wired with a 4,7 kOhm load resistance.

**Relay:** The two relays K1 and K2 can be free programmed. The factory configured operating mode cannot be changed. The esserbus® transponder is not suitable for activating alarm devices acc. to EN 54-13!

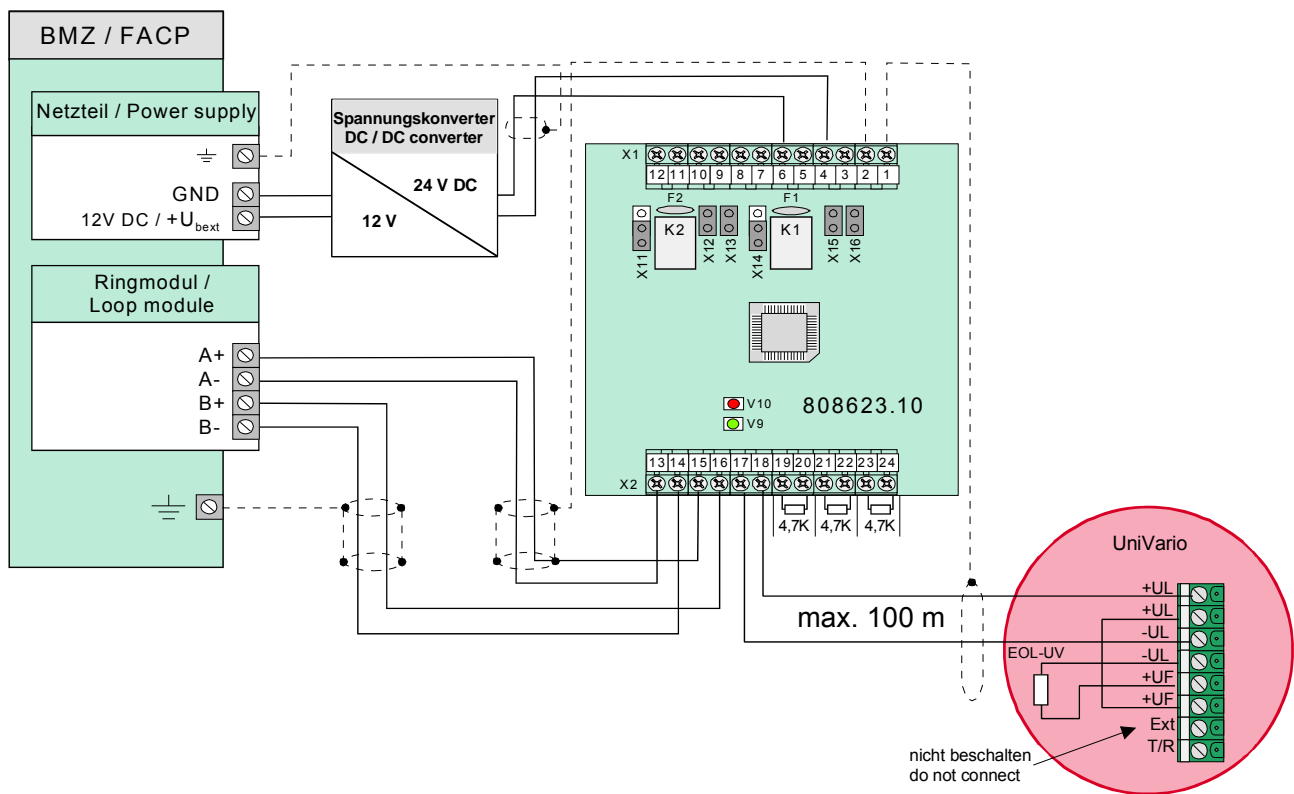


Fig. 22: Wiring example flame detector UniVario via the esserbus® transponder for UniVario (Part No. 808623.10)



Pay attention to the position of the bridges on the esserbus® transponder.  
 Connect cable shielding!  
 The power supply of the detector requires an electrical isolation from the FACP!  
 An external power supply is required for the esserbus® transponder.

## Specifications

### UV flame detector UniVario FMX5000 UV.ESSER (Part No. 782311)

Operating voltage	:	9 V DC
Quiescent current incl. EOL-UV	:	approx. 1,36 mA @ 9 V DC
Alarm current incl. EOL-UV	:	approx. 19,6 mA @ 9 V DC
Application temperature	:	-20 °C ... +80 °C
Storage temperature	:	-40 °C ... +85 °C
Ambiente humidity	:	≤ 95 % rel. humidity (non-condensing)
Protection class	:	IP 67
Housing	:	die cast aluminium
Colour	:	red (similar to RAL 3000)
Weight	:	approx. 945 g (incl. base and bracket)
Dimensions (W x H x D)	:	130 x 140 x 92 (mm)
Specification	:	EN 54-10 : 2002 / A1 : 2005
VdS certification	:	G 208131
Declaration of Performance	:	DoP-20567130701

### Three-channel infrared flame detector UniVario (Part No. 782315)

Operating voltage	:	7,6 V ... 30 V DC
Quiescent current incl. EOL-UV	:	approx. 3,5 mA @ 9 V DC
Alarm current incl. EOL-UV	:	approx. 21,8 mA @ 9 V DC
Application temperature	:	-20 °C ... +80 °C
Storage temperature	:	-40 °C ... +85 °C
Ambiente humidity	:	≤ 95 % rel. humidity (non-condensing)
Protection class	:	IP 67
Housing	:	die cast aluminium
Colour	:	red (similar to RAL 3000)
Weight	:	approx. 945 g (incl. base and bracket)
Dimensions (W x H x D)	:	130 x 140 x 92 (mm)
Specification	:	EN 54-10 : 2002 / A1 : 2005
VdS certification	:	G 211041
Declaration of Performance	:	DoP-20567130701

All given specifications relates to an ambient temperature of 25 °C.

## 7 Heat sensor UniVario WMX5000 Heat detector UniVario WMX5000FS

Heat sensor and Heat detector UniVario (Part No. 782302 / -03/ -04 / -06 / -07 / -08 / -10) for detection of open fires with fast development of heat. For usage in polluted industrial environments, interior and exterior areas. Voltage supply and connection occur directly via the zone input at the esserbus® transponder (Part No. 808623.10).

The detector is also reset directly via the esserbus® transponder.

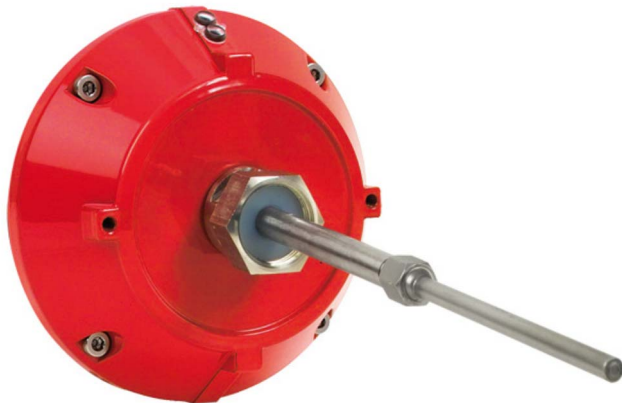


Fig. 23: Heat detector UniVario (example)

Description		Part No.
Head sensor UniVario WMX5000.ESSER	Response temperature adjustable from 0°C to max. +90°C	782310
Head detector UniVario WMX5000FS200.ESSER	Response temperature adjustable from +54°C to max. + 400°C, rod length 200 mm	782302
Head detector UniVario WMX5000FS400.ESSER	same as 782302, but with rod length 400 mm	782303
Head detector UniVario WMX5000FS600.ESSER	same as 782302, but with rod length 600 mm	782304
Head detector UniVario WMX5000FSFlex200.ESSER	same as 782302, but with flexible sensor tube 2 m	782306
Head detector UniVario WMX5000FSFlex600.ESSER	same as 782302, but with flexible sensor tube 6 m	782307
Head detector UniVario WMX5000FSFlex900.ESSER	same as 782302, but with flexible sensor tube 9 m	782308

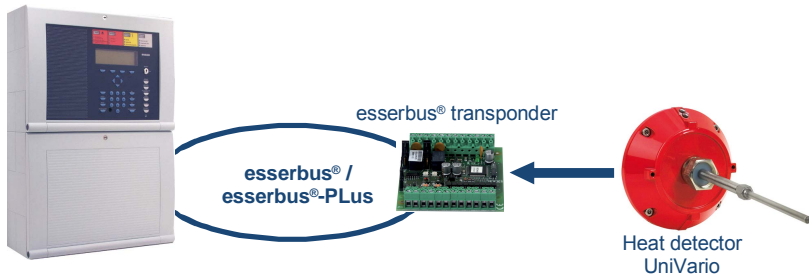


You must observe documentation 798649 during installation of the detector. For more information, see the Product catalogue Fire.

### Wiring via the esserbus® transponder for UniVario (Part No. 808623.10)

Required power supply: 24 V DC

The power supply of the Univario flame detector is provided by the appropriate transponder.



**Zone input:** Zone input G1 or G2 can be used to connect the detector. These zone inputs must be terminated in the detector with a termination element EOL-UV (808626.10). The detector is reset via the esserbus® transponder. Unused zone inputs should be wired with a 4,7 kOhm load resistance.

**Relay:** The two relays K1 and K2 can be free

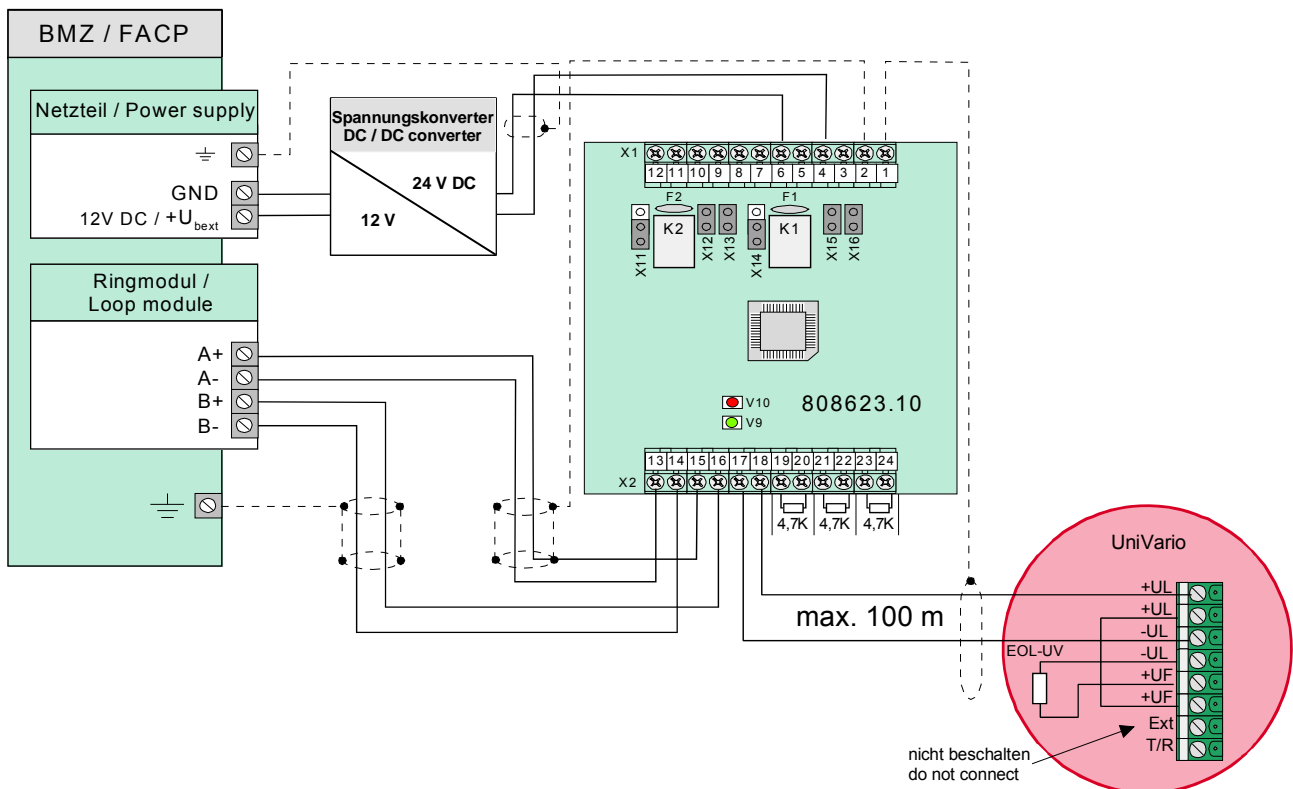


Fig. 24: Wiring example Head sensor / detector UniVario via the esserbus® transponder for UniVario (Part No. 808623.10)



Pay attention to the position of the bridges on the esserbus® transponder.  
 Connect cable shielding!  
 The power supply of the detector requires an electrical isolation from the FACP!  
 An external power supply is required for the esserbus® transponder.

## Specifications

### Heat sensor UniVario WMX5000 and Heat detector UniVario WMX5000FS (Part No. 782302 / -03/ -04 / -06 / -07 / -08 / -10)

Operating voltage	: 9 V DC
Quiescent current incl. EOL-UV	: approx. 1,4 mA @ 9 V DC
Alarm current incl. EOL-UV	: approx. 19,7 mA @ 9 V DC
Application temperature	: 0 °C ... +90 °C (782310) +54 °C ... +400 °C (782302, 782303, 782304, 782306, 782307, 782308)
Storage temperature	: -40 °C ... +85 °C
Ambiente humidity	: ≤ 95 % rel. humidity (non-condensing)
Protection class	: IP 67
Housing	: die cast aluminium
Colour	: red (similar to RAL 3000)
Weight	: approx. 900 g (incl. base and bracket) (excluding sensor element /rod/tube)
Dimensions (W x H x D)	: 130 x 140 x 85 (mm) (excluding sensor element /rod/tube)
Sensor element, length	: 100 mm (782310)
Sensor rod, length	: 200 mm (782302), 400 mm (782303), 600 mm (782303)
Sensor tube, length	: 2 m (782306), 6 m (78230s7) or 9 m (782308)
Sensor tube, min. bending radius	: 120 mm
Specification	: EN 54-5 class DS and GS
VdS certification	: G 211039 G 211040
Declaration of Performance	: DoP-21054130701

All given specifications relates to an ambient temperature of 25 °C.



## 8 Aspirating Smoke Detector (ASD)

The Aspirating Smoke Detector ensures early warning by detecting extremely small concentrations of smoke aerosols a long time before the first flames appear. Air from the room is drawn through the sampling pipe into the detector unit where it is sampled in a special detection chamber. A Aspirating Smoke Detector can be installed in conditions with strong air movement or in stagnant air with no negative effects on its function.

For room surveillance, the sampling pipework is usually installed in a regular pattern below the ceiling or above a suspended ceiling. This system allows for easy surveillance of small or large rooms by adapting the pipe length and the number of pipes. The denser the installation of the pipe network, the faster the smoke can be extracted into one of the nearby sampling points where it can be detected by the detector unit. The more suction tubes are used, the shorter the distance that the aspired air has to travel before it reaches the detector unit.

The following figure shows an example for installation of the suction tube.

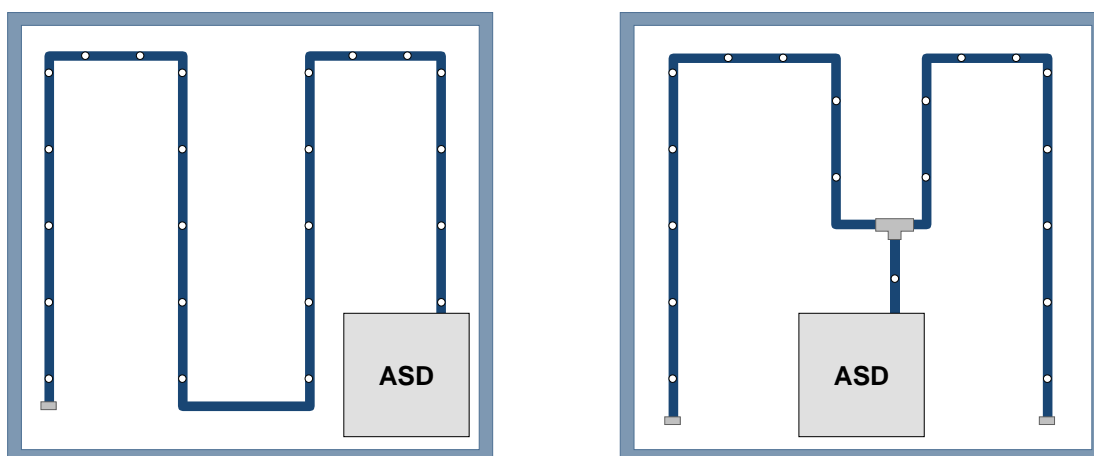


Fig. 25: Room surveillance with one sampling pipe

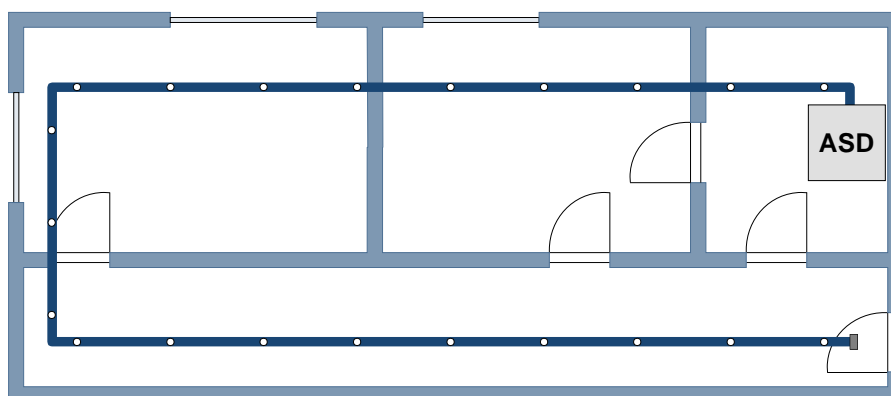


Fig. 26: Example of suction tube layout

The Aspirating Smoke Detector is the preferred solution for all applications where early warning is required and where single-point fire detectors are either not practical or not desirable, e.g.:

- air conditioned areas (computer rooms and racks)
- clean-rooms and laboratories
- areas with a high concentration of valuables (e.g. museum)
- warehouses used for various types of goods
- Production and recycling halls with increased protection requirements



When installing the detector the installation instructions of the manufacturers must be followed!

## 8.1 Aspirating smoke detector FFAST LT EB

The FFAST LT EB aspirating smoke detectors form part of the FFAST (Fire Alarm Aspiration Sensing Technology®) family of products. FFAST is an advanced smoke detection system designed for early detection. The device, which has been designed to provide maximum convenience during installation and use, is especially ideal for Class C (in accordance with EN 54-20) areas in which maintenance work is difficult to carry out, other fire alarm procedures are unsuitable, or in which there are critical ambient conditions, or if alternatively stringent implementation requirements have to be taken into consideration.

The FFAST LT EB can also be used in Classes B and A, in accordance with EN 54-20, however. Information about pipe lengths and the number of air-sampling apertures in each class is provided with the characteristics listed for the devices.

The laser sensors in the FFAST LT EB use sophisticated detection algorithms which reduce the number of false alarms. The aspirating smoke detectors offer you a high level of flexibility when connecting to the loop (esserbus®-Plus) of ESSER fire alarm systems. Using PipelQ, the built-in installation and commissioning software, the devices are fast to install and easy to configure.

This software, plus other information, is available for download from the downloads area at [www.esser-systems.com](http://www.esser-systems.com).

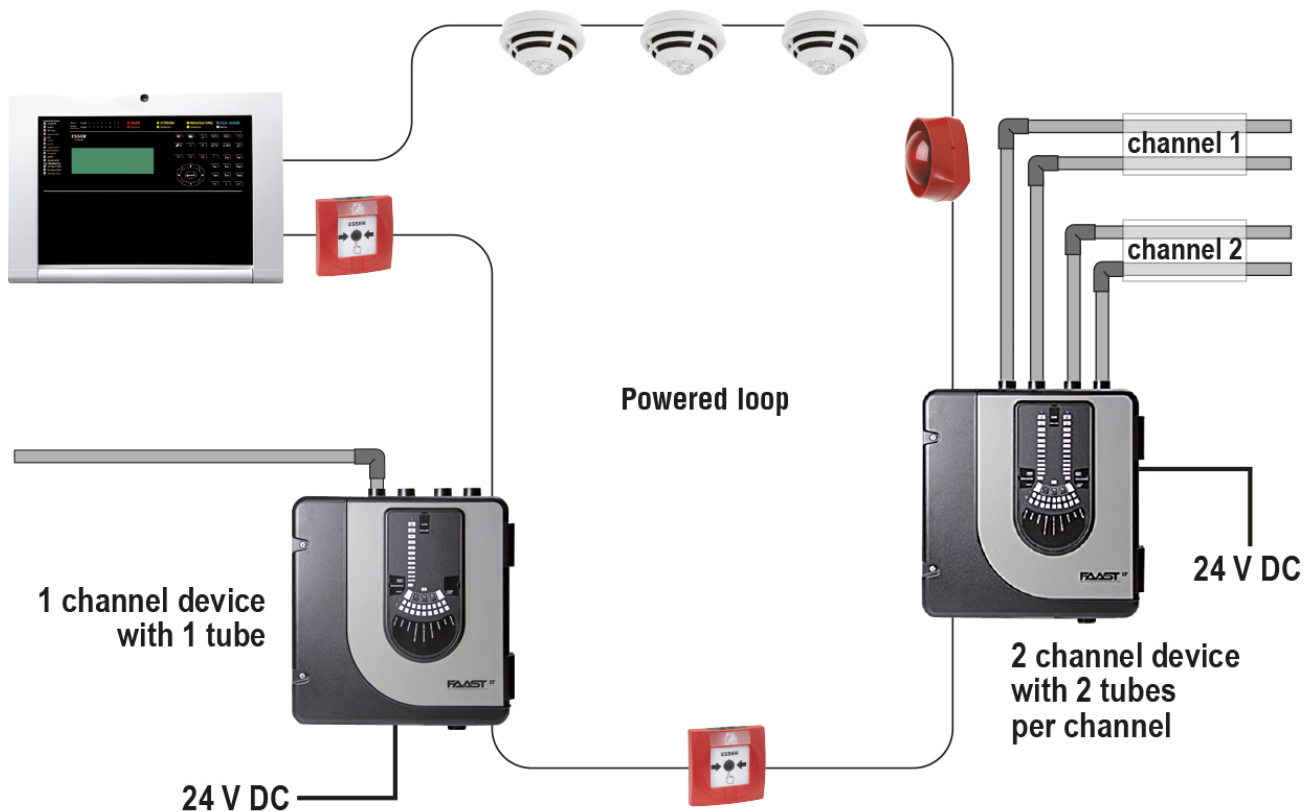


Fig. 27: FFAST LT EB in esserbus® Plus

### Accessories:

Description	Part No.
Replacement Air Filter for FFAST LT	Art.-Nr. FL-IF-6

### 8.1.1 FFAST LT EB - 1 channel

The FFAST LT EB single-channel aspirating smoke detector (Part No. 801711) is an advanced active early fire detection system fitted with a laser smoke detector. Up to two pipes can be connected to the channel. A preconfigured esserbus® transponder is built into the device for connection to the loop of the ESSER FACP.



Fig. 28: Aspirating smoke detector  
FFAST LT EB – 1 channel

#### Performance features

- Single-channel system for connecting up to two pipes
- Integrated and preconfigured esserbus® transponder
- Highly sensitive laser sensors for maximum stability
- Nine different levels of sensitivity that can be set, from 0.07% LD/m
- Programmable pre-alarm levels
- Sophisticated detection algorithms that reduce number of false alarms
- PipelQ software that ensures intuitive system layout, configuration and maintenance
- Straightforward light emitting diode overview with detailed fault indicator
- Unique air flow pendulum showing the channel's current rate of air flow
- Ten fan stages that can be set
- Operational noise level from 26 dB (A) at fan stage 1
- Built-in memory for up to 2244 events
- Ultrasonic flow rate sensor ensuring maximum-precision measurement of pipe flow
- USB port
- IP 65 rating
- Replaceable and reusable built-in filter unit
- Operating menu in 24 languages
- Option to set up dual-detector dependency type B according to DIN VDE 0833-2 and VdS 2095
- Class A, B and C with following system limits permitted according to EN 54-20:
  - Max. 160 m pipe length
  - Max. 18 holes for Class C
  - Max. 6 holes for Class B
  - Max. 3 holes for Class A

### 8.1.2 FFAST LT EB - 2 channel

The FFAST LT EB dual-channel aspirating smoke detector (Part No. 801722) is an advanced active early fire detection system fitted with two completely separate channels, each with its own laser smoke detector. Up to two pipes can be connected to each of the channels. A preconfigured esserbus® transponder is built into the device for connection to the loop of the ESSER FACP.



Fig. 29: Aspirating smoke detector  
FFAST LT EB – 2 channel

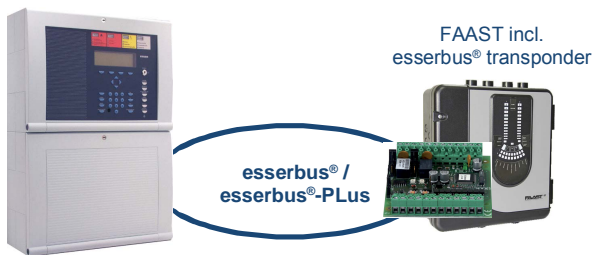
#### Performance features

- Dual-channel system for connecting up to two pipes per channel
- Two separate measuring chambers, each with one fan, one filter, one sensor and separate air outlets
- Two highly sensitive laser sensors for maximum stability
- Integrated and preconfigured esserbus® transponder
- Nine different levels of sensitivity that can be set, from 0.07% LD/m, separately for each channel
- Programmable pre-alarm levels for each individual channel
- Sophisticated detection algorithms that reduce number of false alarms
- PipelQ software that ensures intuitive system layout, configuration and maintenance
- Straightforward light emitting diode overview with detailed fault indicator
- Unique air flow pendulum showing each channel's current rate of air flow
- One fan for each channel, with ten fan stages that can be set separately
- Operational noise level from 28 dB (A) at fan stage 1
- Built-in memory for up to 2244 events
- Ultrasonic flow rate sensor ensuring maximum-precision measurement of pipe flow, with option to assess this for each individual channel
- USB port
- IP 65 rating
- Two replaceable and reusable built-in filter units
- Operating menu in 24 languages
- Option to set up dual-detector dependency type B according to DIN VDE 0833-2 and VdS 2095
- Class A, B and C with following system limits permitted according to EN 54-20:
  - Max. 160 m pipe length
  - Max. 18 holes for Class C
  - Max. 6 holes for Class B
  - Max. 3 holes for Class A

### Wiring with integrated esserbus® transponder (Part No. 808623)

The FAAST LT EB is connected to the loop of the ESSER FACP's as a databus subscriber. The esserbus® transponder that is required is installed and wired at the factory.

Required power supply: 24 V DC



Programming is carried out using service and programming software tools 8000 and PipelQ in accordance with the manufacturer's documentation.

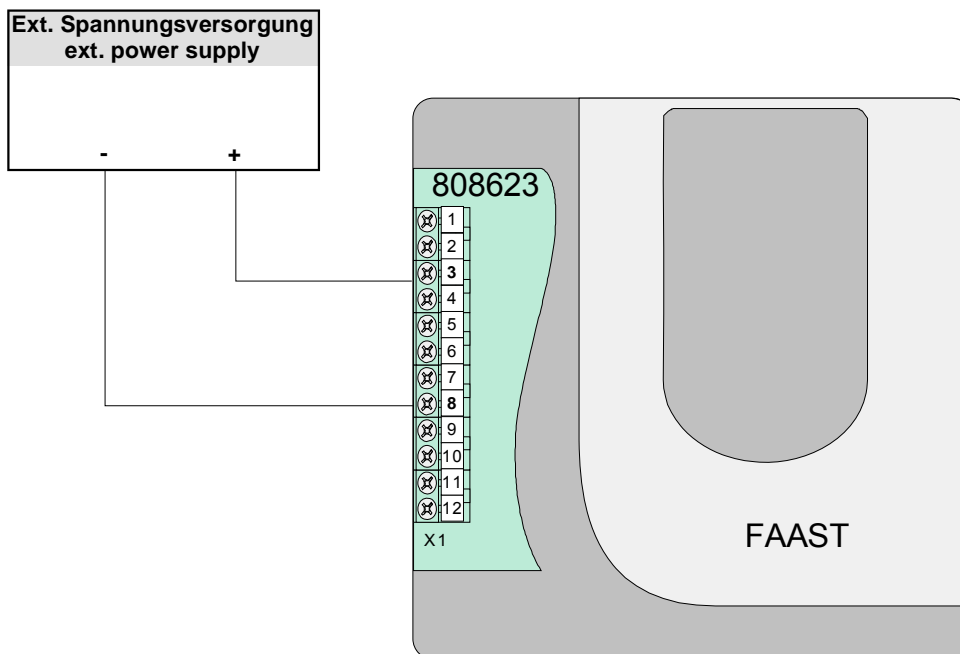


Fig. 30: Wiring example FAAST LT EB incl. esserbus® transponder (Part No. 808623)



Connect cable shielding!

The power supply of the detector requires an electrical isolation from the FACP!  
An external power supply is required for the esserbus® transponder.

## Specifications

### Aspirating smoke detector FFAST LT EB 2 channel (Part No. 801722)

Operating voltage	:	18,5 ... 31,5 V DC
Quiscent current @ 24 V DC	:	ca. 282 mA
Sound level @ 24 V DC	:	28 dB(A) at fan level 1
Ambiente temperature	:	-10 °C ... +55 °C
Storage temperature	:	-15 °C ... +60 °C
Ambiente humidity	:	10 ... 93 % (nolch aber schonn-condensing)
Protection class	:	IP 65
Housing	:	Plastic (ABS)
Colour	:	black / grey
Dimensions (W x H x D)	:	356 x 403 x 135 mm
Declaration of Performance	:	DOP-ASP005

### Aspirating smoke detector FFAST LT EB 1 channel (Part No. 801711)

Operating voltage	:	18,5 ... 31,5 V DC
Quiscent current @ 24 V DC	:	ca. 182 mA
Sound level @ 24 V DC	:	26 dB(A) at fan level 1
Ambiente temperature	:	-10 °C ... +55 °C
Storage temperature	:	-15 °C ... +60 °C
Ambiente humidity	:	10 ... 93 % (non-condensing)
Protection class	:	IP 65
Housing	:	Plastic (ABS)
Colour	:	black / grey
Dimensions (W x H x D)	:	356 x 403 x 135 mm
Declaration of Performance	:	DOP-ASP004

All given specifications relates to an ambient temperature of 25 °C.

## 8.2 Aspirating smoke detector FFAST XM

The Aspirating smoke detector FFAST XM (Part No. 8100e) is a modern smoke particle detection system used in applications for early and even very early warnings.

The system continuously samples air through a range of sampling vents from the controlled environment (up to 2000 m<sup>2</sup>) to check the environment for smoke particles.

The FFAST system information is displayed on the device and fire alarm control panel via relays. There are also two ways to display the system information remotely via the network interface: the integrated web server or the PipelQ software.

The display clearly shows the system status, particle values, alarm levels, air flow and errors. If the status changes, an email notification is sent. These can be seen on the user interface of a local or remote display.



Fig. 31: Aspirating smoke detector FFAST XM

### Performance features

- Wider sensitivity range between 0.0015% ... 20.5%/m atmospheric opacity
- 5 freely programmable alarm thresholds
- Max. pipeline 120 m for single pipe, 320 m for pipeline network
- Max. 36 sampling vents
- Automatic adaptation to ambient conditions (acclimate mode)
- Dual measuring chamber processes with blue LED and IR laser
- Intelligent dust detection for reducing false alarms
- Dual ultrasonic air flow system for monitoring pipe air flow and measuring chamber flow rate
- Patented air filtering with particle separation
- Additional replaceable air filter with electronic monitoring
- Ethernet connection for remote diagnosis via integrated web browser
- Integrated email server (up to 6 email addresses) for notification in the event of faults and alarms
- Integrated bar graph display for visualising the smoke level
- Intelligent LED display for current air flow and indicating additional faults
- Event memory for up to 18,000 events
- PipelQ software supports system configuration, pipe configuration and remote diagnosis
- 8 potential-free relay contacts (fixed assignment to alarms and faults)
- Connection and reset via esserbus<sup>®</sup> alarm transponder 808623

### Accessories:

Description	Part No.
Language package (German, Dutch, French, Italian)	F-A-LC-A
Spare filter	F-A3384-000

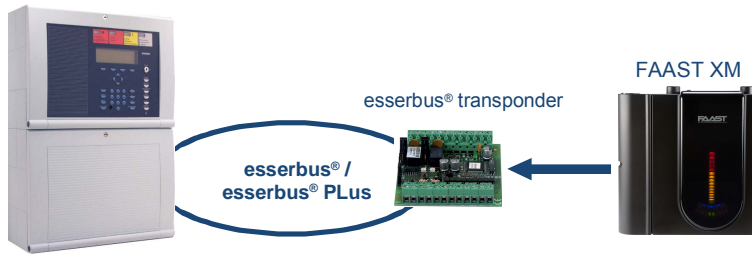


For more information, see the Product catalogue Fire.

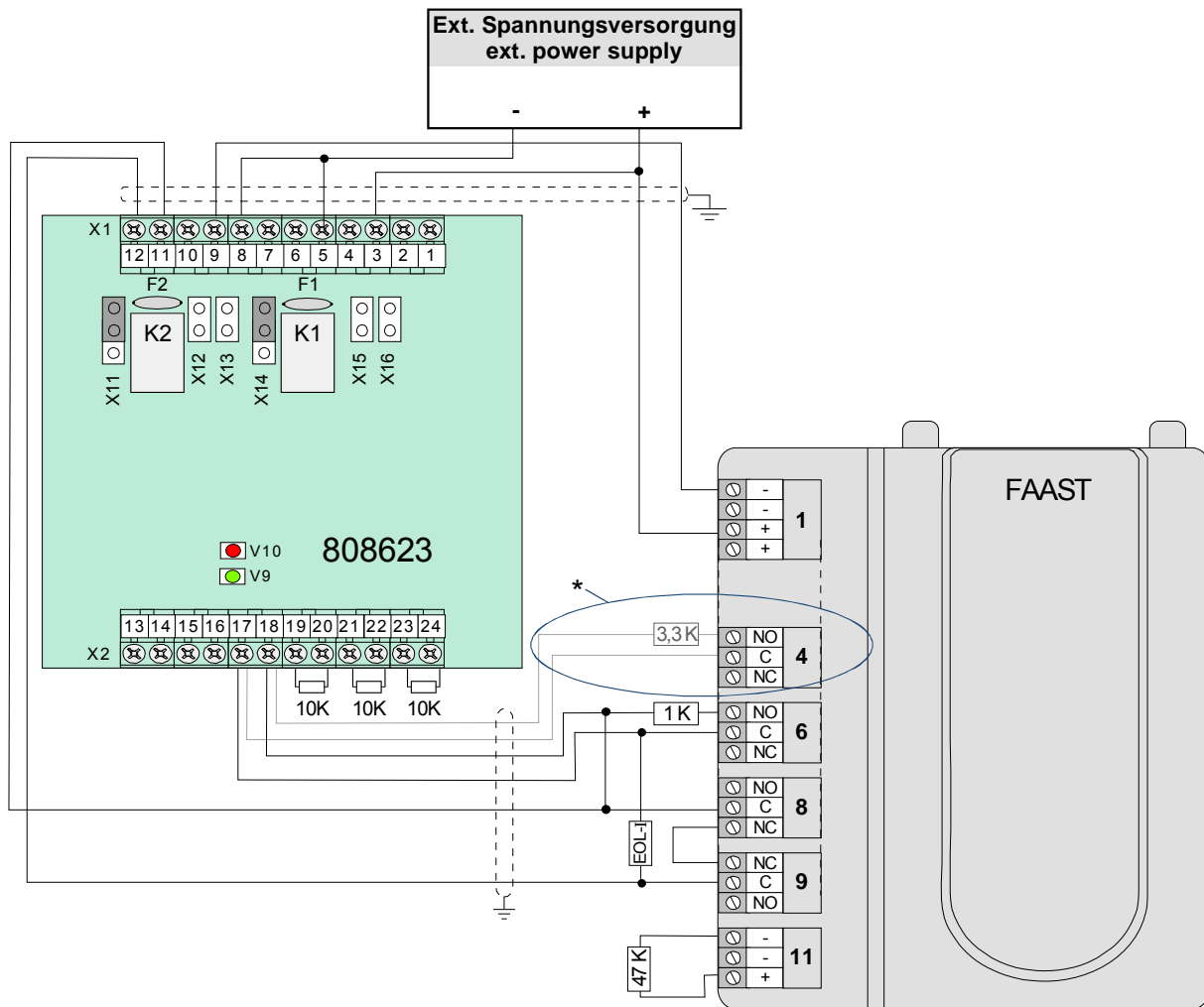
**Wiring via the esserbus® transponder (Part No. 808623)**

Required power supply: 24 V DC

The external power supply for the detector is connected via the esserbus® transponder and can be monitored for trouble.



Programming is carried out using service and programming software tools 8000 and PipeIQ in accordance with FAAST XM documentation (Part No. 798824). Also see manufacturer's documentation for further information.



\* Option Voralarm / pre alarm

Fig. 32: Wiring example FAAST XM via the esserbus® transponder (Part No. 808623)



Pay attention to the position of the bridges on the esserbus® transponder.  
 Connect cable shielding!  
 The power supply of the detector requires an electrical isolation from the FACP!  
 An external power supply is required for the esserbus® transponder.



## Specifications

### Aspirating smoke detector FFAST XM (Part No. 8100e)

Operating voltage	: 18 V DC ... 30 V DC
Quiscent current	: 415 mA @ 24 V DC
Alarm current	: 465 mA @ 24 V DC (all relays + all alarm levels active)
Contact rating	: 30 V DC / 3 A
Sample air temperature	: -20 °C ... +60 °C
Air movement	: 0 ... 20 m/s
Terminals	: 0,5 mm <sup>2</sup> ... max. 2 mm <sup>2</sup>
Pipeline network size	: max. 2000 m <sup>2</sup>
Maximum length of single pipe	: 120 m/24 vents for class C 120 m/20 vents for class A
Sensitivity	: 0,00095 % ... 20,5 % LD/m
Pipe internal diameter	: 15 ... 21 mm
Pipe external diameter	: 25 mm
Specification	: EN 54-20
Ambiente temperature	: -15 °C ... +65 °C
Storage temperature	: -15 °C ... +60 °C
Ambiente humidity	: ≤ 95 % rel. humidity (non-condensing)
Protection class	: IP 30
Housing	: Plastic
Colour	: black / grey
Weight	: ca. 3,9 kg
Dimensions (W x H x D)	: 330 x 337 x 127 (mm)
VdS approval	: G 212002
Declaration of Performance	: DOP 0786-CPD-21130

All given specifications relates to an ambient temperature of 25 °C.

### 8.3 Aspirating smoke detector LRS-100 / LRS-S700

The aspirating smoke detector LRS-100 (Part No. 761500) and LRS-S700 (Part No. 761502) are a modern concept for early detection of fires using LASER technology. The LRS system can detect tiny quantities of smoke aerosols in the initial phases of a fire, long before flames start to form, and can warn about possible fires.

Part No.	Description
761500	Aspirating smoke detector LRS-100 for max. 4 sampling pipes
761502	Aspirating smoke detector LRS-S700 for max. 4 suction tubes with individual monitoring (scanner)

For more information, see the Product catalogue Fire.



Fig. 33: Detector unit LRS-100 and LRS-S700

Air is continuously extracted from the room and fed to the detector unit, where it is evaluated in a special measuring chamber. With detector unit LRS-100 the air is evaluated together from all four possible suction tubes. Detector unit LRS-S700 with a scanner function enables separate alarm evaluation for each individual suction tube.

The adjustable fan in the detector unit, which draws the air from the room to the detection chamber, ensures that the air is extracted evenly. With its intelligent learning mode the detector unit automatically adapts to the surroundings and automatically defines the required alarm thresholds.

The LRS system can be installed in conditions with strong air movement or in stagnant air with no negative effects on its function. With the four extendable PVC suction tubes for each detector unit it is possible to monitor a large volume of air at a low price.

The aspirating smoke detectors are preferably installed where the installation of point-type fire detectors is not possible or not desired.

The Detectors have a modular design and can be easily extended or converted at a later date. The possibility of networking the detector units creates almost unlimited flexibility. Other systems, such as a fire alarm control panel, can be activated via the freely programmable, potential-free relay contacts.



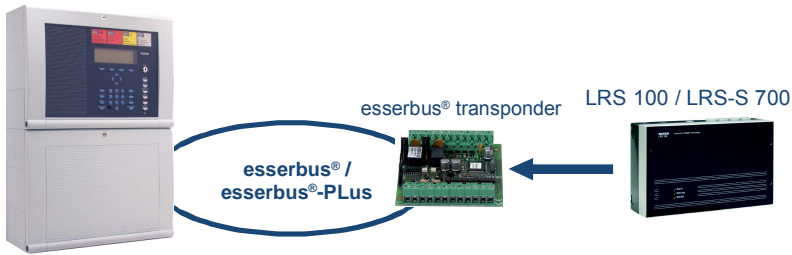
Each special detector requires a separate zone input of the esserbus® alarm transponder. Wiring several special detectors via one zone input is not permitted.

When installing the detector the installation instructions of the manufacturers must be followed!

**Wiring via the esserbus® transponder (Part No. 808623)**

Required power supply: 24 V DC

The external power supply for the system is connected via the esserbus® transponder and can be monitored for trouble.



**Zone input:** Zone input G1 or G2 can be used to connect the system. These zone inputs are monitored with an end-of-line unit EOL-I for >Quiescent< and an End-of-line resistor 1 kOhm for >Alarm< (setting can be changed via tools 8000). Unused zone inputs should be wired with a 10 kOhm load resistance.

**Relay:** The two relays K1 and K2 can, for example, be programmed with operating mode >Reset relay<. K1 → Reset relay (normally open), Reset time = 2 seconds

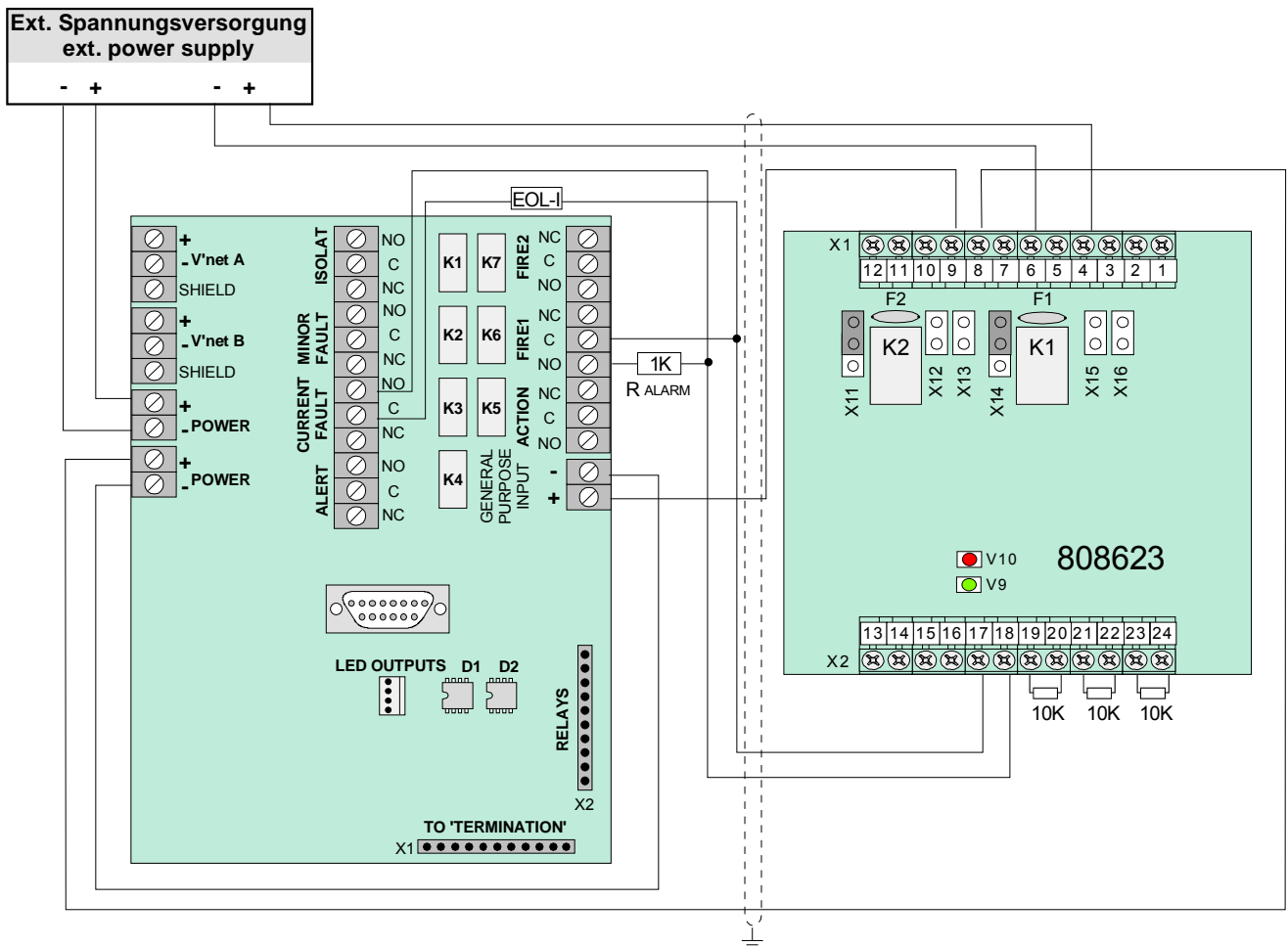


Fig. 34: Wiring example LRS-100/S-700 with 7x relay card via the esserbus® transponder (Part No. 808623)



Pay attention to the position of the bridges on the esserbus® transponder!  
 Connect cable shielding!  
 The power supply of the detector requires an electrical isolation from the FACP!  
 An external power supply is required for the esserbus® transponder.

**Accessories / Options**

Description	Part No.
Detector unit LRS-100	761500
Detector unit LRS-S700 (Scanner version)	761502
Indicator and operating module LRS-110 (for detector LRS-100)	761501
PC-Interface LRS-300	761506
Flush mounting unit for detector unit LRS-100	761510
Flush mounting unit for programming unit LRS-210 or Indicator and operating module LRS-110	761511
Spare filter for detector unit LRS-100	761512
VESDAnet connection box	761517
VSM3 management software	761518
CD-ROM LRS	797595
Sampling pipe (ABS), length 5 m / Ø 25 mm	761520.10
Bend 90°(ABS)	761521.10
Angle 90° (ABS)	761522.10
Angle 45° (ABS)	761523.10
T-Tab (ABS)	761524.10
Sleeve (ABS), to connect pipes	761525.10
End cap (ABS)	761526.10
Sampling rosette (PVC), e.g. for suspended ceiling	761527
Flange for climate channel (ABS)	761529.10
3-way-sphere tap (ABS), to connect compressed air to clean the piping	801607
Filter chamber for LRS smoke aspirating systems	761509
Spare filter for filter chamber 761509	761514
Separator, for application in humidity environments incl. connection to the pipe	801606
Adhesive, for connection ABS pipe and fitting	761535
Detergents to clean the ABS adhesive point	761536
Mounting clip for 25-mm pipe	761537.10
Suctions hose set for flexible installation in objects surveillance or suspended ceilings	761542.10
Threaded joint, detachable	761544.10
Pipe cutter for PVC/ABS pipes	761546.10

For more information, see the Product catalogue Fire.

**Specifications**
**Detector unit LRS-100 / LRS-S700 (Part No. 761500 / 761502)**

Operating voltage	: 18 V DC ... 30 V DC
Quiescent current	: 240 mA ... 500 mA @ 24 V DC
Relay contact	: 7 dry contacts, n.o. contact
Contact rating	: max. 30 V DC / 1A
Operation mode Relay No. 1,2,4,5 and 7	: free programmable
Operation mode Relay No. 3+6	: fixed designed
Sampled air temperature	: -20 °C ... +60 °C
Terminals	: 0,2 mm ... 2,5 mm <sup>2</sup>
Ambient temperature	: 0 °C ... +39 °C
Storage temperature	: -20 °C ... +60 °C
Ambient humidity	: ≤ 95 % rel. humidity (non-condensing)
Housing	: Metal sheet, with plastic seals
Colour	: grey, with blue front
Weight	: approx. 3,5 kg
Protection rating	: IP 30
Dimensions (W x H x D)	: 350 x 225 x 110 (mm)
VdS approval	: G 298024
Declaration of Performance	: DoP-25986_00_CPR_DoP - VLP (LRS-100) DoP-25987_00_CPD_DoP - VLS (LRS-S700)

**Indicator and Operating module LRS-110 / 120 and LRS-S710 / S720**

Operating voltage	: 18 V ... 30 V DC
Quiescent current	: 110 mA ... 130 mA @ 24 V DC
Terminals	: 0,2 mm ... 2,5 mm <sup>2</sup>
Ambient temperature	: 0 °C ... +39 °C
Storage temperature	: -20 °C ... +60 °C
Ambient humidity	: ≤ 95 % rel. humidity (non-condensing)
Housing	: Metal sheet, with plastic seals
Color	: grey, with blue front
Weight	: approx. 1 kg
Protection rating	: IP 30
Dimensions (W x H x D)	: 140 x 150 x 90 (mm)

All given specifications relates to an ambient temperature of 25 °C.

## 8.4 Aspirating smoke detector LRS compact and LRS compact/net

The compact version of the LRS aspirating smoke detector is available in both designs as a stand-alone system, LRS compact (Part No. 761515) or as a network-capable detector unit, LRS compact/net (Part No. 761516), which can be networked with other detector units and bus devices from the VESDAnet®.



Fig. 35: Detector units LRS compact and compact/net

### LRS compact

The detector unit LRS compact is a stand-alone system that cannot be networked for early fire detection in smaller buildings. Apart from the service PC, no other components can be connected to the system, such as display, operating or programming units.

### LRS compact/net

Network-capable detector unit LRS compact/net with the possibility of connecting display, operating and programming units.

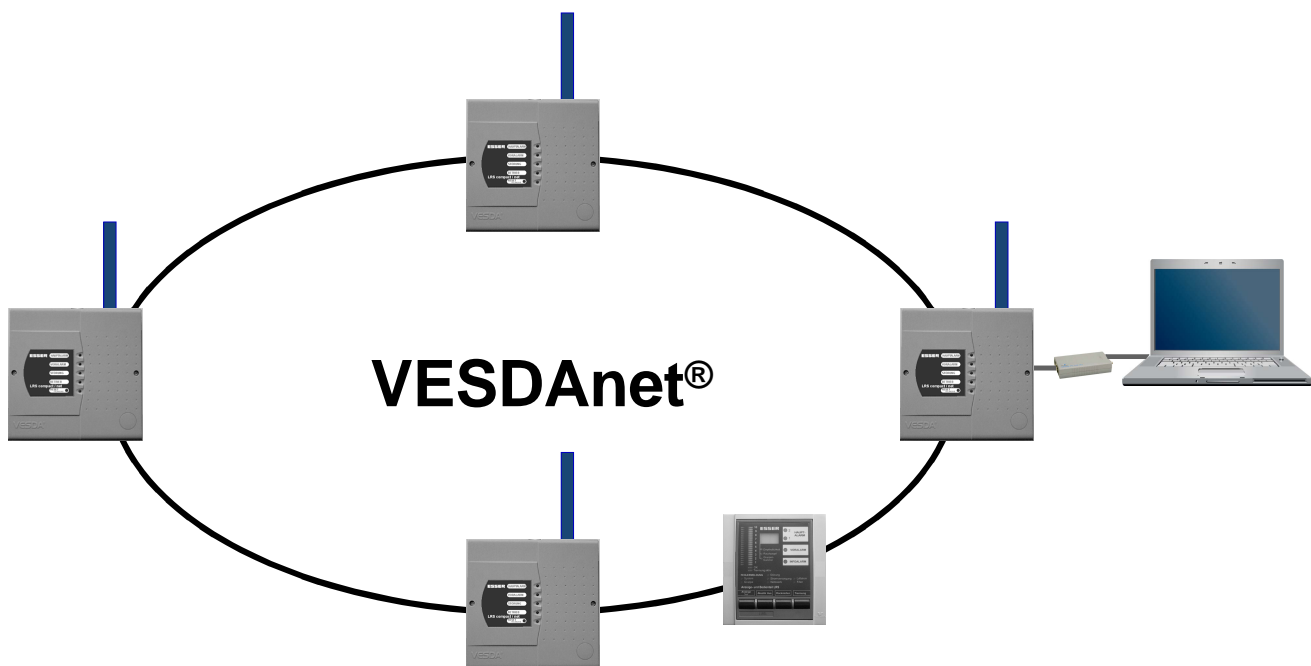


Fig. 36: Principle of networked LRS compact/net detector units

The system has a modular design and can be easily extended or converted at a later date. The possibility of networking the detector units LRS compact/net creates almost unlimited flexibility. Other systems, such as a fire alarm control panel, can be activated via the freely programmable, potential-free relay contacts.

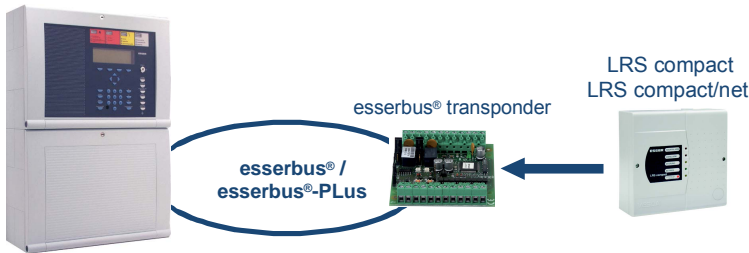


When installing the detector the installation instructions of the manufacturers must be followed!

**Wiring via the esserbus® transponder (Part No. 808623)**

Required power supply: 24 V DC

The external power supply for the system is connected via the esserbus® transponder and can be monitored for trouble.



**Zone input:** Zone input G1 or G2 can be used to connect the system. These zone inputs are monitored with an end-of-line unit EOL-I for >Quiescent< and an End-of-line resistor 1 kOhm for >Alarm< (setting can be changed via tools 8000). Unused zone inputs should be wired with a 10 kOhm load resistance.

**Relay:** The two relays K1 and K2 can, for example, be programmed with operating mode >Reset relay<.

K1 → Reset relay (normally open), Reset time = 2 seconds

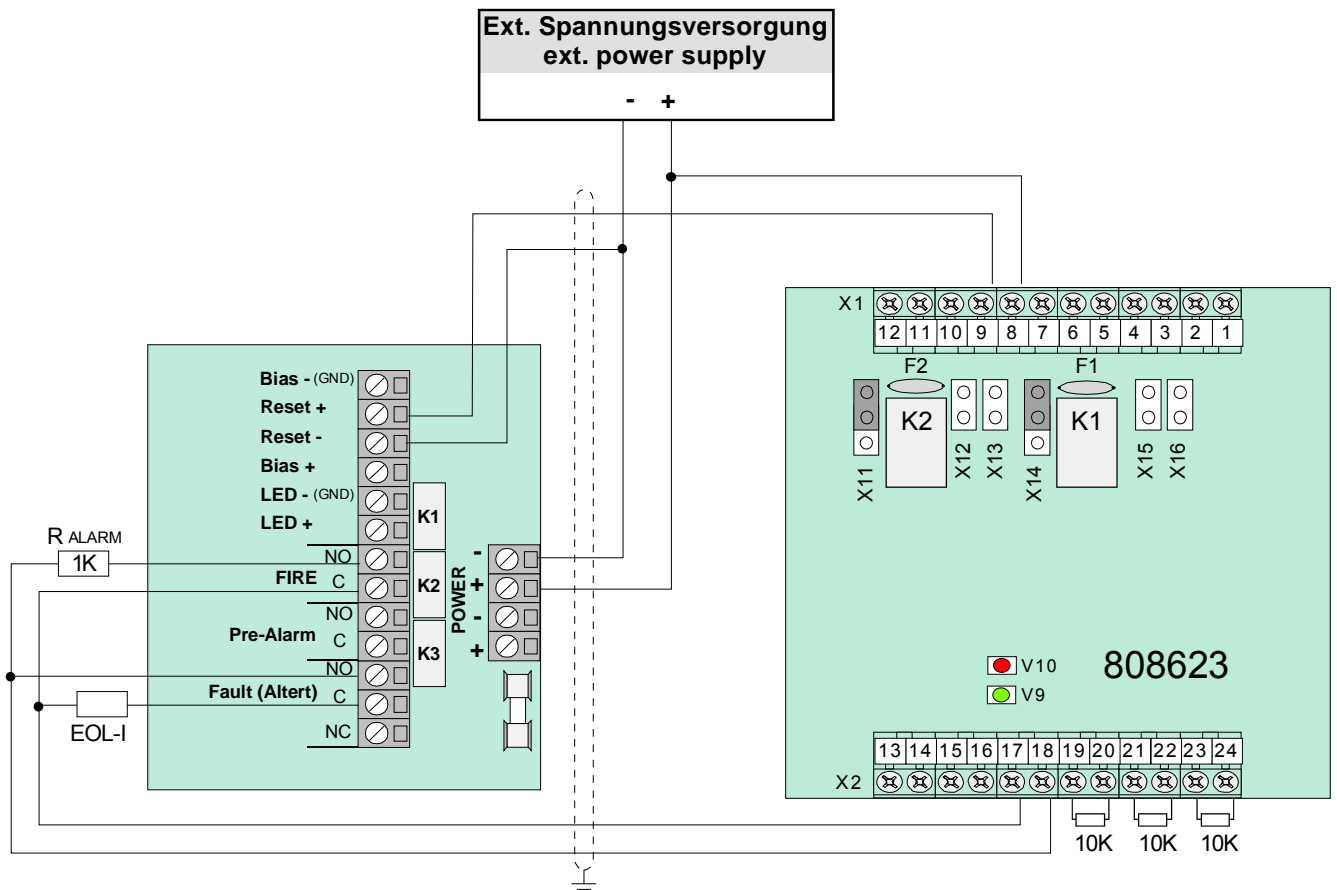


Fig. 37: Wiring example LRS compact or compact/net via the esserbus® transponder (Part No. 808623)



Pay attention to the position of the bridges on the esserbus® transponder.  
 Connect cable shielding!  
 The power supply of the detector requires an electrical isolation from the FACP!  
 An external power supply is required for the esserbus® transponder.

**Accessories / Options**

Description	Part No.
Detector unit LRS-100	761500
Detector unit LRS-S700 (Scanner version)	761502
Indicator and operating module LRS-110 (for detector LRS-100)	761501
PC-Interface LRS-300	761506
Flush mounting unit for detector unit LRS-100	761510
Flush mounting unit for programming unit LRS-210 or Indicator and operating module LRS-110	761511
Spare filter for detector unit LRS-100	761512
VESDAnet connection box	761517
VSM3 management software	761518
CD-ROM LRS	797595
Sampling pipe (ABS), length 5 m / Ø 25 mm	761520.10
Bend 90°(ABS)	761521.10
Angle 90° (ABS)	761522.10
Angle 45° (ABS)	761523.10
T-Tab (ABS)	761524.10
Sleeve (ABS), to connect pipes	761525.10
End cap (ABS)	761526.10
Sampling rosette (PVC), e.g. for suspended ceiling	761527
Flange for climate channel (ABS)	761529.10
3-way-sphere tap (ABS), to connect compressed air to clean the piping	801607
Filter chamber for LRS smoke aspirating systems	761509
Spare filter for filter chamber 761509	761514
Separator, for application in humidity environments incl. connection to the pipe	801606
Adhesive, for connection ABS pipe and fitting	761535
Detergents to clean the ABS adhesive point	761536
Mounting clip for 25-mm pipe	761537.10
Suctions hose set for flexible installation in objects surveillance or suspended ceilings	761542.10
Threaded joint, detachable	761544.10
Pipe cutter for PVC/ABS pipes	761546.10

For more information, see the Product catalogue Fire.



**Specifications**
**LRS compact and compact /net (Part No. 761515 / 761516)**

Operating voltage	: 18 V DC ... 30 V DC
Quiescent current	: 170 mA
Alarm current	: max. 190 mA @ 24 V DC (incl. LED and relay activation)
Relay (dry contact) contact rating	: max. 30 V DC / 2 A
Sampled air temperature	: -20 °C ... +60 °C
Terminal	: max. 2,5 mm <sup>2</sup>
Ambient temperature	: 0 °C ... + 39 °C
Storage temperature	: 0 °C ... + 45 °C
Ambient humidity	: ≤ 95 % rel. humidity (non-condensing)
Housing	: Plastic
Colour	: grey
Weight	: approx. 1,9 kg
Protection rating	: IP 30
Dimensions (W x H x D)	: 225 x 225 x 85 (mm)
VdS approval	: G 298024 *)
Declaration of Performance	: DoP-25989_00_CPR_DoP - VLC
Area coverage	: max. 800 m <sup>2</sup>
Pipe length	: 1 x 80 m or 2 x 50 m
Number of sampling points	: 1 x 3 - 15 **) bzw. 2 x 2 - 9 **) (T-branch)
Connectable capillary hose length	: max. 3 m **)

\*) Source – OEM VESDA aspirating smoke detector

\*\*) Note – more sampling vents and/or a longer capillary are possible if this configuration is calculated with ASPIRE® 2 or ESSER VSC.

**Indicator and Operating module LRS 110 / 120**

Operating voltage	: 18 V DC ... 30 V DC
Quiescent current	: 110 mA
Alarm current	: max. 130 mA @ 24 V DC (incl. LED and relay activation)
<b>Relay (dry contact) only LRS 110</b>	
Contact rating	: max. 30 V DC / 2 A
Terminals	: max. 2,5 mm <sup>2</sup>
Ambient temperature	: 0 °C ... +39 °C
Storage temperature	: 0 °C ... +45 °C
Ambient humidity	: ≤ 95 % rel. humidity (non-condensing)
Housing	: Metal sheet, with plastic seal
Colour	: grey, with blue front
Weight	: approx. 1 kg
Protection rating	: IP 30
Dimensions (W x H x D)	: ca. 140 x 150 x 90 (mm)

All given specifications relates to an ambient temperature of 25 °C.

## 8.5 Aspirating smoke detector LaserFOCUS

The aspirating smoke detector LaserFOCUS (Part No. 761519) is an active detection system based on laser technology for early detection of fires in small areas and is installed with a standardised suction tube system.



Fig. 38: Aspirating smoke detector LaserFOCUS VLF-250

### Features

- Plug & play function (simple installation and commissioning)
- Laser based smoke detection
- Programmable alarm threshold value
- Two-level air filtering
- Integrated bargraph display
- Integrated debugging function
- Event memory for up to 18.000 events

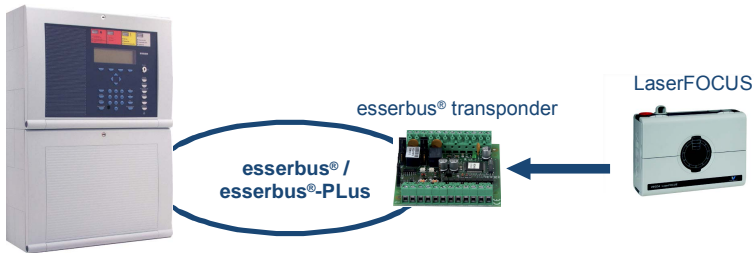


When installing the detector the installation instructions of the manufacturers must be followed!  
For more information, see the Product catalogue Fire.

**Wiring via the esserbus® transponder (Part No. 808623)**

Required power supply: 24 V DC

The external power supply for the detector is connected via the esserbus® transponder and can be monitored for trouble.



**Zone input:** Zone input G1 or G2 can be used to connect the system. These zone inputs are monitored with an end-of-line unit EOL-I for >Quiescent< and via End-of-line resistor 1 kOhm >Alarm< (setting can be changed via tools 8000). Unused zone inputs should be wired with a 10 kOhm load resistance.

**Relay:** The two relays K1 and K2 can, for example, be programmed with operating mode >Reset relay<.

K1 → Reset relay (normally open), Reset time = 2 seconds

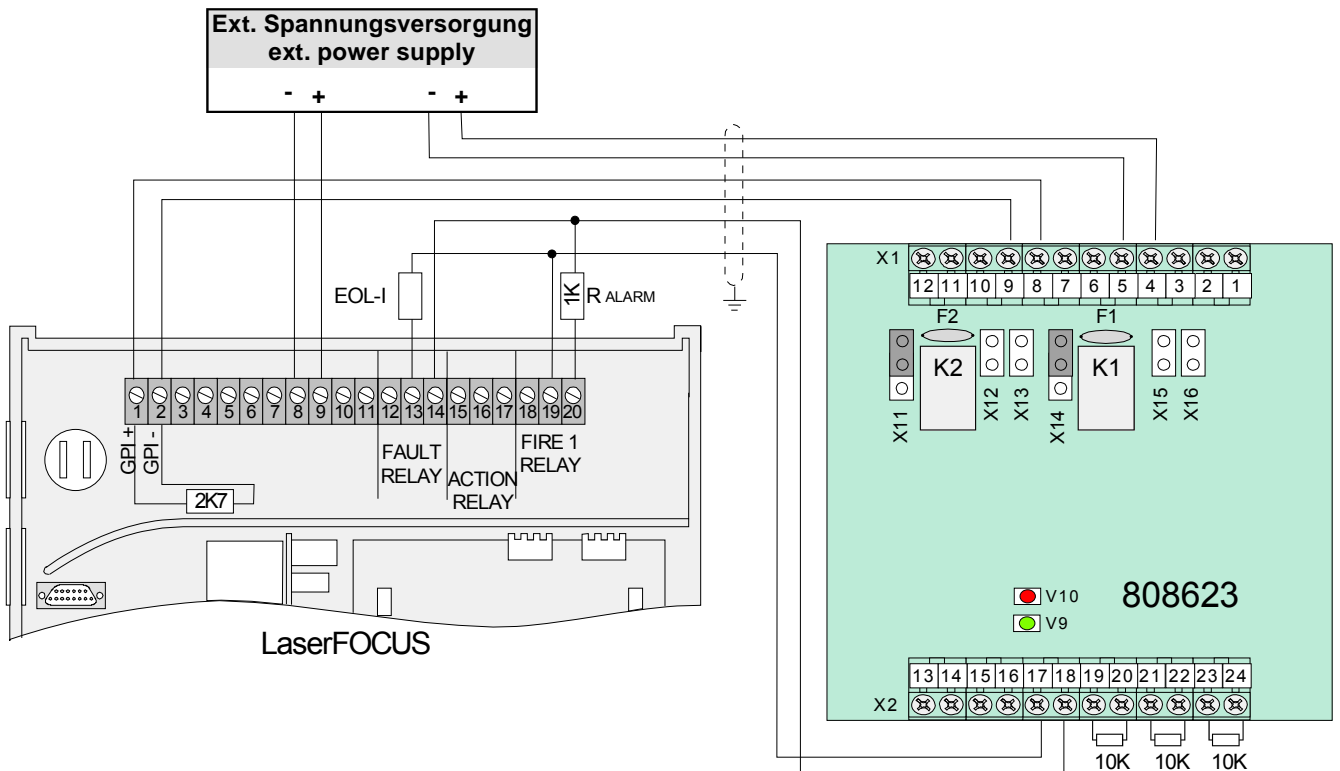


Fig. 39: Wiring example LaserFOCUS (Part No. 761519) via the esserbus® transponder (Part No. 808623)



Pay attention to the position of the bridges on the esserbus® transponder.  
 Connect cable shielding!  
 The power supply of the detector requires an electrical isolation from the FACP!  
 An external power supply is required for the esserbus® transponder.

## Specifications

### Aspirating system LaserFOCUS (Part No. 761519)

Operating voltage	:	18 V DC ... 30 V DC
Quiescent current	:	220 mA @ 24 V DC
Alarm current	:	295 mA @ 24 V DC
Relay output	:	3 change-over contacts
Max. Pipe length	:	1 x 25 m (max. 12 sampling points) 2 x 15 m (max. 6 sampling points per branch)
Area coverage	:	up to 250 m <sup>2</sup>
Sampled air temperature	:	0 °C ... +40 °C
Ambient temperature	:	0 °C ... +40 °C
Ambient humidity	:	≤ 95 % rel. humidity (non-condensing)
Protection rating	:	IP 30
Weight	:	approx. 2 kg
Dimensions (W x H x D)	:	255 x 185 x 90 (mm)
VdS approval	:	G 205060
Declaration of Performance	:	DoP-25990_00_CPR_DoP - VLF

All given specifications relates to an ambient temperature of 25 °C.

## 8.6 Aspirating smoke detector TITANUS PRO SENS® EB

The TITANUS PRO SENS® EB is connected to the loop of the ESSER fire alarm control panels as a bus device. The fire alarm control panel (FACP) and the detector unit communicate via the loop. Required power supply: 24 V DC.



Fig. 40: Detector unit TITANUS PRO SENS® EB

Part No.	Description
801515.10	Compact system TITANUS PRO SENS® EB, incl. a detector module DM-TP-50L (factory pre-configured system)
801521.10	Basic device TITANUS PRO SENS® EB, to integrate a detector module (detector module not included in delivery)
801521.10.SL	Basic device TITANUS PRO SENS® EB with silent fan, to integrate a detector module (detector module not included in delivery)
801522.10	Basic device TITANUS PRO SENS® EB, to integrate two detector modules (detector module not included in delivery)
801522.10.SL	Basic device TITANUS PRO SENS® EB with silent fan, to integrate two detector modules (detector module not included in delivery)

For more information, see the Product catalogue Fire.

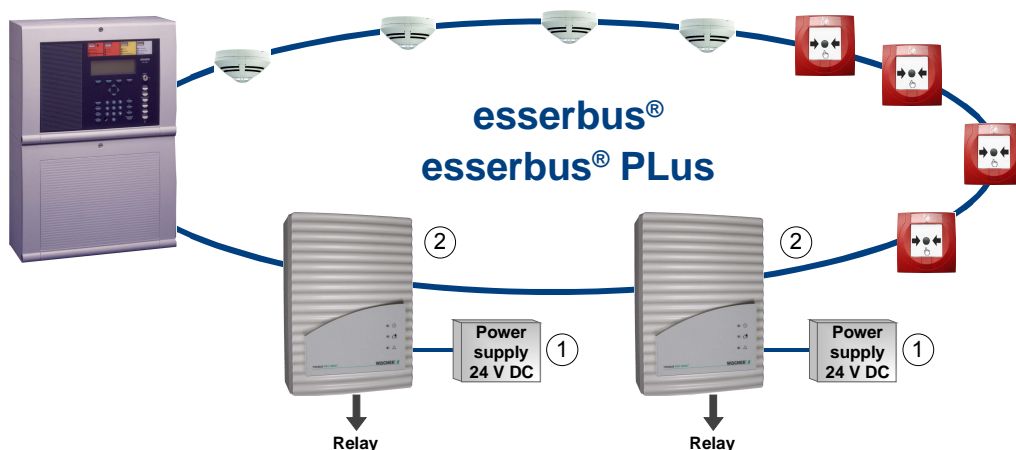


Fig. 41: Principal wiring to the loop

①

### Power supply

The TITANUS PRO SENS® EB is powered with 24 V DC from an external mains power supply. This power supply must meet the requirements of EN 54-4 and must be equipped with a monitored emergency power supply system as well as contacts and displays for error conditions (e.g. DCU 2403 Art.-Nr. 805684).

Example:

A battery capacity of min. 7 Ah is required for a 24 h emergency power supply with an alarm time of 30 minutes.

②

### Loop

Terminals for connecting the loop esserbus® or esserbus® PPlus.

The esserbus® transponder required to connect the system to the loop of the ESSER fire alarm control panels has already been installed and wired and are thus ready for operation (factory setting).

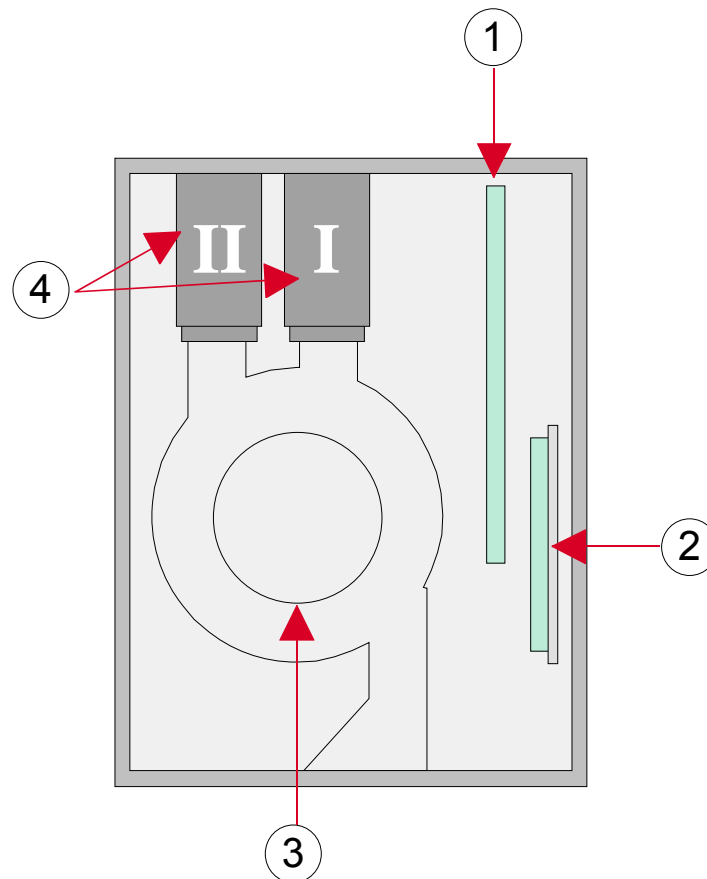


Fig. 42: TITANUS PRO SENS® EB – Detector unit with the housing open

①	Motherboard
②	Integrated esserbus® transponder
③	Fan housing with air inlet and air outlet ducts
④	<p>Mounting position for detector module I + II</p> <p>The second detector module can be optionally installed.</p> <p>For the TITANUS PRO SENS 2® EB, the integration option of two detector modules has been prepared and the required components have already been installed and wired.</p> <p>The compact system TITANUS PRO SENS® EB (Part No. 801515.10) has already been equipped with a detector module type DM-TP-50L and has been pre-configured accordingly (factory setting).</p>



The esserbus® transponder only be removed from the guide bars of the housing to connect the 24 V DC power supply and the loop.

**Wiring with the integrated esserbus® transponder**

TITANUS PRO SENS® EB with a single detector module

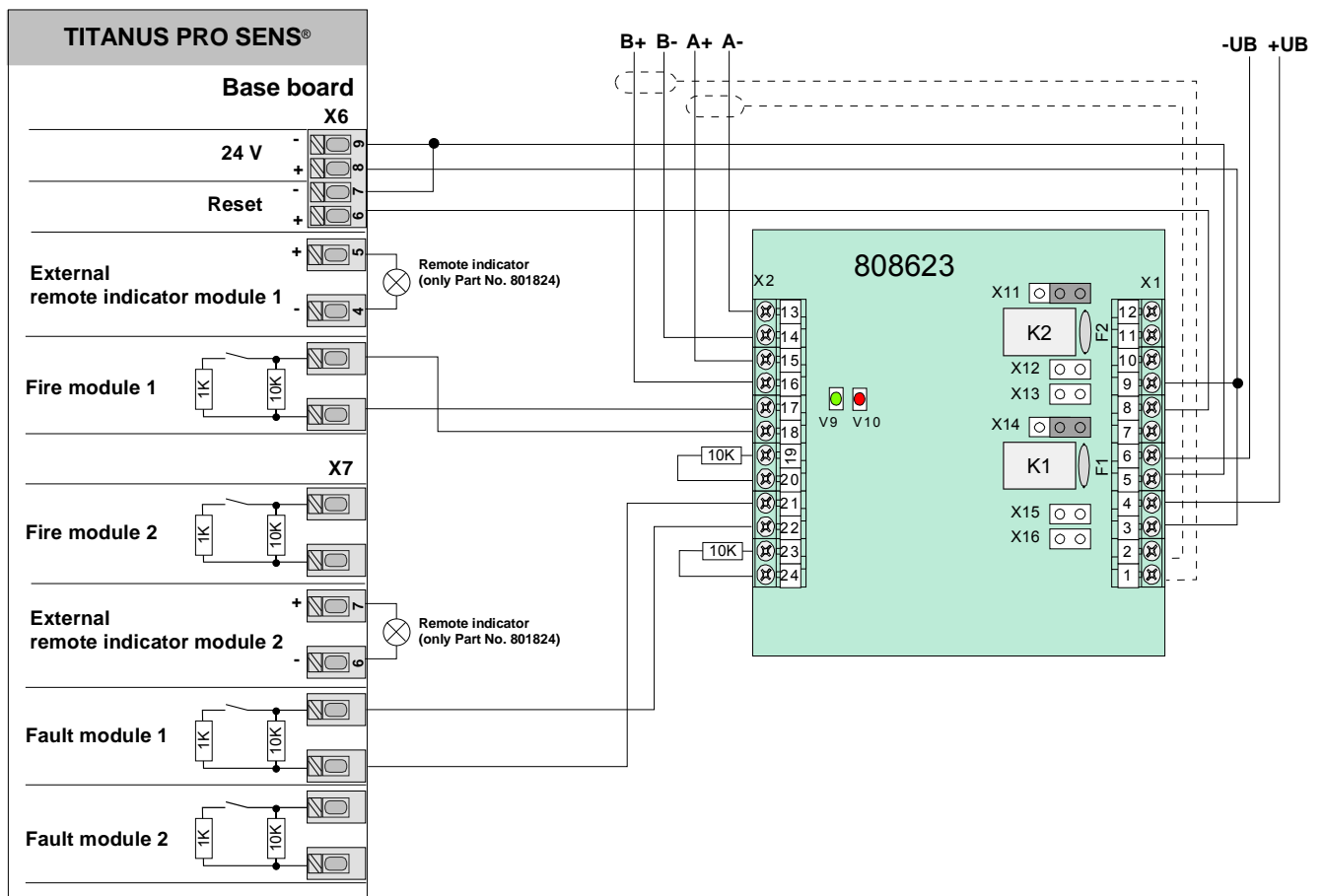
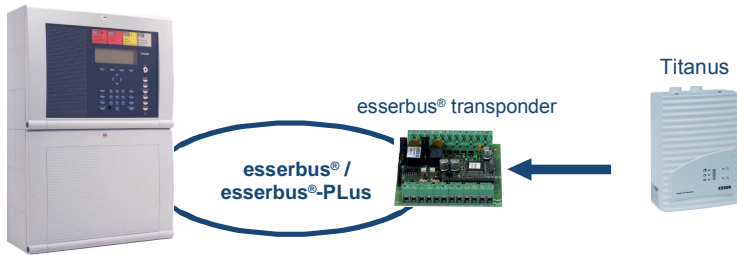


Fig. 43: Wiring example TITANUS PRO SENS® EB with a single detector module

**Wiring with the integrated esserbus® transponder**  
**TITANUS PRO SENS® EB with two detector modules**

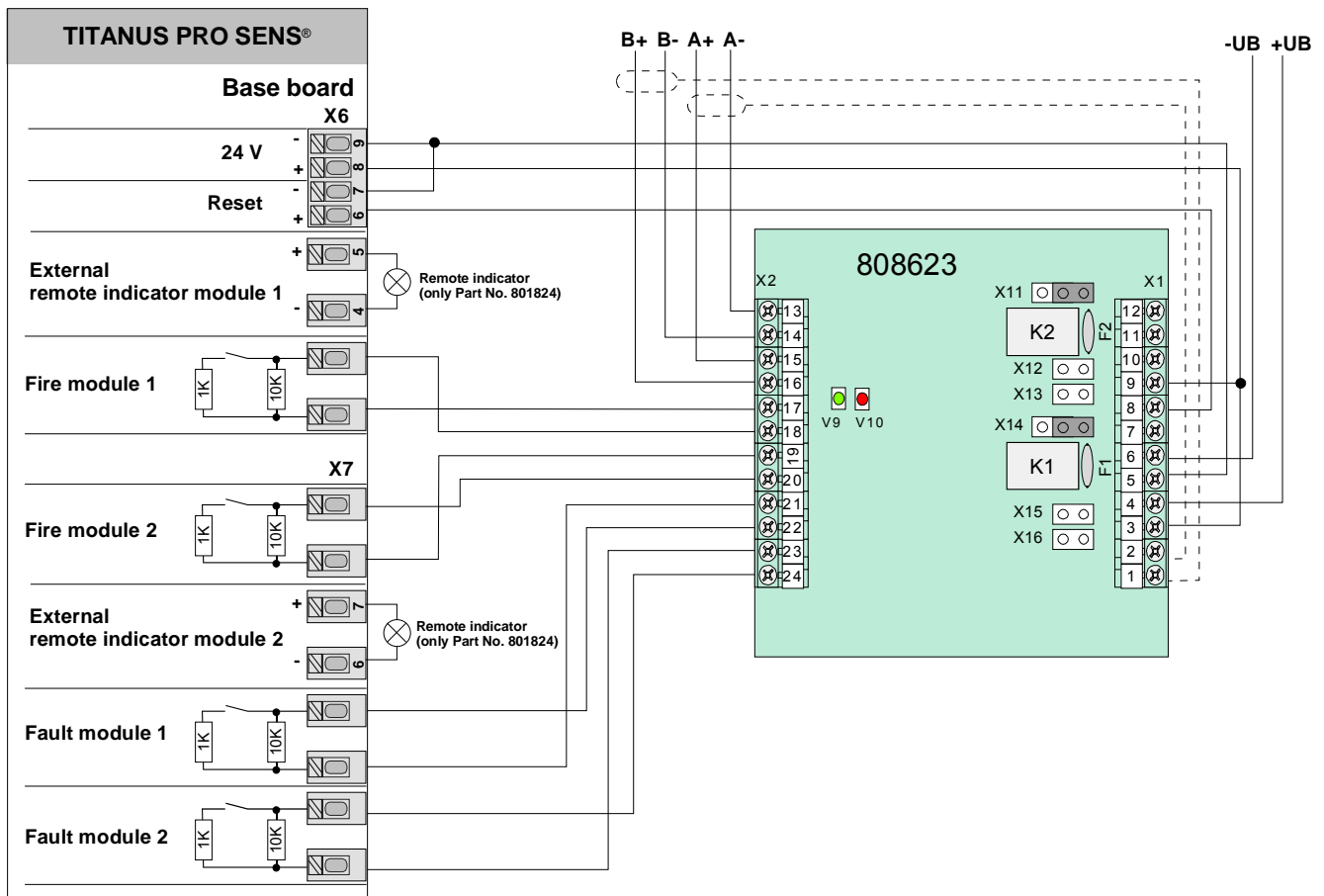


Fig. 44: Wiring example TITANUS PRO SENS® EB with two detector modules



**Specification**

	TITANUS PRO SENS® EB		TITANUS PRO SENS 2® EB <sup>1)</sup>	
Operating voltage, range	14 ... 30 V DC			
Rated voltage	24 V DC			
Ventilator current	U <sub>L</sub> = 6.9 V	U <sub>L</sub> = 9 V	U <sub>L</sub> = 6.9 V	U <sub>L</sub> = 9 V
Contact rating of the Alarm- and Fault relay	30 V DC/ 1 A			
Quiescent current @ 24 V D	200 mA	275 mA	220 mA	295 mA
Alarm current @ 24 V DC	max. 210 mA	max. 285 mA	max. 240 mA	max. 315 mA
Initial current @ 24 V DC	300 mA		330 mA	
LED indicators	Alarm	1 red LED		2 red LED
	Fault ON	yellow LED green LED		
Noise level L <sub>wa</sub> according to EN 27779, 1991	approx. 45 dB(A) (without sound absorber Part No. 801543.10)			
Terminals	max. 1.5 mm <sup>2</sup>			
Ambient temperature	-20 °C ... +60 °C			
	-40 °C ... +60 °C (specific detector type for cold stores required)			
Storage temperature	-25 °C ... +65 °C			
Ambient humidity	≤ 95 % rel. humidity (non-condensing)			
Protection rating	IP 20			
Housing	plastic (ABS)			
Colour	papyrus white, similar to RAL 9018			
Weight	1.35 kg			
Dimensions (W x H x D)	200 x 292 x 113 (mm)			
Specification	EN 54-17 : 2005 / -20 : 2006			
VdS-Approval	G 206118			
Declaration of Performance	DoP-20791130701			

<sup>1)</sup> Values match also the TITANUS PRO SENS® EB / EB-SL with a second detector module

		TITANUS TOP SENS® EB-SL			TITANUS TOP SENS 2® EB-SL		
Operating voltage		14 ... 30 V DC					
Rated voltage		24 V DC					
Voltages with fan control printed circuit board FC-2		U <sub>L</sub> <sup>2)</sup> = 6.5 V	U <sub>L</sub> <sup>2)</sup> = 6.9 V	U <sub>L</sub> <sup>2)</sup> = 9 V	U <sub>L</sub> <sup>2)</sup> = 6.5 V	U <sub>L</sub> <sup>2)</sup> = 6.9 V	U <sub>L</sub> <sup>2)</sup> = 9 V
Quiescent current @ 24 V DC <sup>3)</sup>		150 mA	160 mA	210 mA	190 mA	200 mA	250 mA
Alarm current @ 24 V DC <sup>3)</sup>		max. 180 mA	max. 190 mA	max. 240 mA	max. 220 mA	max. 230 mA	max. 280 mA
Starting current @ 24 V DC <sup>3)</sup>		300 mA			330 mA		
Voltages with fan control printed circuit board FC-3		U <sub>L</sub> <sup>2)</sup> = 10 V	U <sub>L</sub> <sup>2)</sup> = 11 V	U <sub>L</sub> <sup>2)</sup> = 12 V	U <sub>L</sub> <sup>2)</sup> = 10 V	U <sub>L</sub> <sup>2)</sup> = 11 V	U <sub>L</sub> <sup>2)</sup> = 12 V
Quiescent current @ 24 V DC <sup>3)</sup>		200 mA	230 mA	260 mA	240 mA	270 mA	310 mA
Alarm current @ 24 V DC <sup>3)</sup>		max. 230 mA	max. 260 mA	max. 290 mA	max. 300 mA	max. 320 mA	max. 330 mA
Starting current @ 24 V DC <sup>3)</sup>		300 mA			300 mA		
Current consumption of the network module		max. 40 mA					
Current consumption of the switch-off module		max. 6 mA					
Contact rating of the alarm and fault relay		30 V DC / 1 A					
Device indicators	Alarm	1 red LED information alarm 1 red LED pre-alarm 1 red LED main alarm			2 red LEDs information alarm 2 red LEDs pre-alarm 2 red LEDs main alarm		
		1 x smoke level 1 to 10 (10 segments)			2 x smoke level 1 to 10 (10 segments)		
	Collective fault In operation	yellow LED green LED					
Sound level L <sub>pa</sub> according to EN ISO 3744, 1995		approx. 31 dB(A) depending on the fan voltage (without sound absorber Part No. 801543.10)					
Sound level L <sub>pa</sub> according to EN ISO 3744, 1995		approx. 23 dB(A) depending on the fan voltage (with sound absorber Part No. 801543.10)					
Terminals		max. 1.5 mm <sup>2</sup>					
Ambient temperature		-20 °C ... +60 °C					
Storage temperature		-40 °C ... +60 °C (special design for cold storage areas required)					
Ambient humidity		-25 °C ... +65 °C					
Class of protection		≤ 95 % rel. humidity (non-condensing)					
Housing		IP 20					
Colour		Plastic (ABS)					
Weight		Papyrus White, similar to RAL 9018					
Dimensions (w x h x d)		1.35 kg			1.45 kg		
Specification		200 x 292 x 113 (mm)					
Declaration of Performance		EN 54-17 : 2005 / -20 : 2006					
		DoP-20791130701					

<sup>2)</sup> U<sub>L</sub> = fan voltage

<sup>3)</sup> without additional modules

	TITANUS PRO SENS® EB TITANUS PRO SENS® EB-SL	TITANUS PRO SENS 2® EB 1) TITANUS PRO SENS 2® EB-SL
Ventilator construction type	radial	
Service life of the ventilator (12 V)	43.500 h @ 24 °C	
Required cable type	Twisted-pair. shielded e. g. I-Y(St)Y n x 2 x 0.8mm	
Cable entries	5 x M 20 2 x M 25	
tapered pipe connectors	1 x for ABS pipe Ø 25 mm for air return Ø 25 mm	1 x for ABS pipe Ø 25 mm for air return Ø 25 mm

### Response Sensitivity

Detector module DM-TP-50L ...	up to 0.5 % light obscuration/m
Detector module DM-TP-10L ...	up to 0.1 % light obscuration/m
Detector module DM-TP-01L ...	up to 0.015 % light obscuration/m

### Pipe System – TITANUS PRO SENS® EB

	Pipe System	
	TITANUS PRO SENS® EB TITANUS PRO SENS® EB-SL	TITANUS PRO SENS 2® EB 1) TITANUS PRO SENS 2® EB-SL
Pipe length number of air sampling points	max. 300 m max. 32	max. 560 m max. 64
length of air sampling hose per ceiling lead-through	max. 1 m	
Ambient temperature	PVC pipe -10°C ... +60°C ABS pipe -40°C ... +80°C	

1) Values match also the TITANUS PRO SENS® EB with a second detector module

All given specifications relates to an ambient temperature of 25 °C.



Observe actual issue of the VdS-Guideline 2095, 2304 and 3435!



For further information incl. maintenance, service and to the TITANUS TOP SENS® EB refer to Documentation 798976.GB0.

## 8.7 Aspirating smoke detector TITANUS TOP SENS® EB

The TITANUS TOP SENS® EB is connected to the loop of the ESSER fire alarm control panels as a bus device. The fire alarm control panel (FACP) and the detector unit communicate via the loop.  
Required power supply: 24 V DC



Fig. 45: Detector unit TITANUS TOP SENS® EB

Part No.	Description
801531.10	Basic device TITANUS TOP SENS® EB, to integrate a detector module (detector module not included in delivery)
801531.10.SL	Basic device TITANUS TOP SENS® EB with silent fan, to integrate a detector module (detector module not included in delivery)
801532.10	Basic device TITANUS TOP SENS 2® EB, to integrate two detector modules (detector module not included in delivery)

For more information, see the Product catalogue Fire.

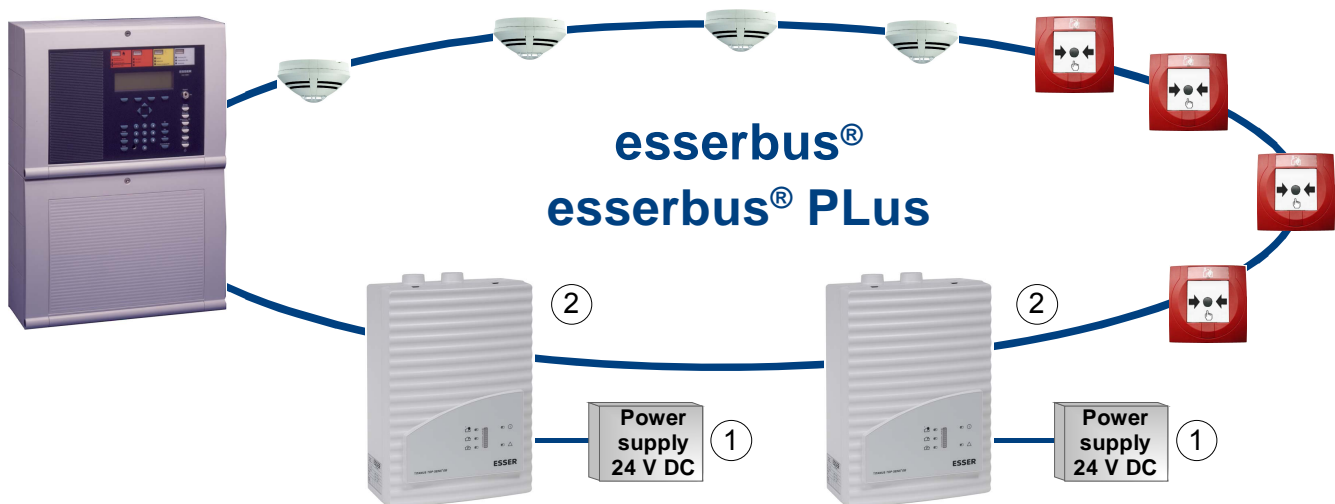


Fig. 46: Principal wiring to the loop

①	<p><b>Power supply</b></p> <p>The TITANUS TOP SENS® EB is powered with 24 V DC from an external mains power supply. This power supply must meet the requirements of EN 54-4 and must be equipped with a monitored emergency power supply system as well as contacts and displays for error conditions (e.g. DCU 2403 - Part No. 805684). Example: A battery capacity of min. 7Ah is required for a 24h emergency power supply with an alarm time of 30 minutes.</p>
②	<p><b>Loop</b></p> <p>Terminals for connecting the loop esserbus® or esserbus® PLus.</p>

All required esserbus® transponder are integrated and completely wired for operation when are shipped from the factory and provide a direct connection to the loop of the ESSER fire alarm control panels.

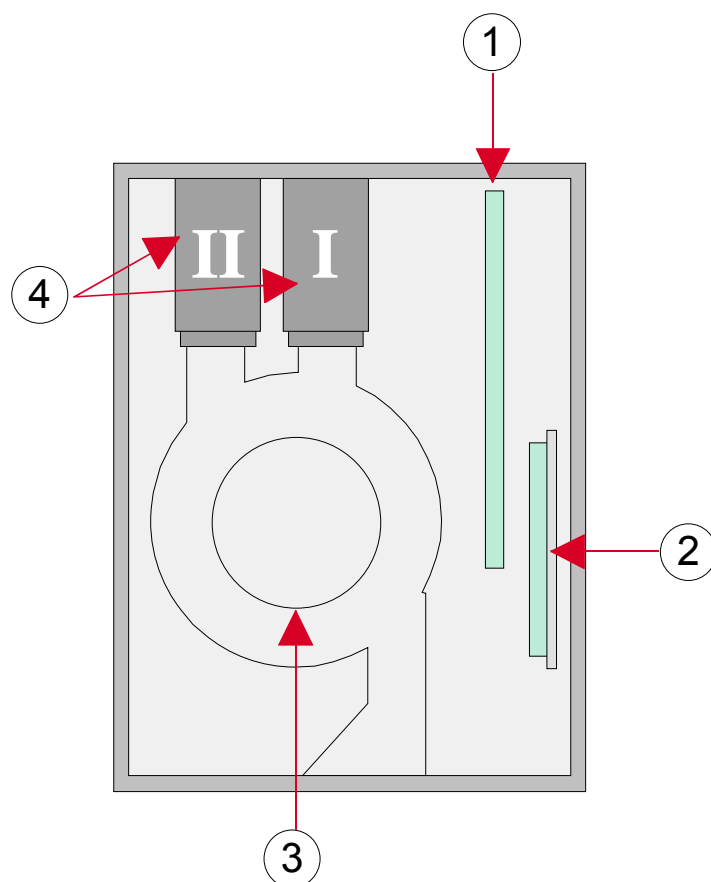


Fig. 47: TITANUS TOP SENS® EB Detector without cover

①	Base board
②	Integrated esserbus® transponder
③	Ventilator chamber with sampling and exhaust openings
④	<p>Mounting place for Detector module I + II</p> <p>A second detector module may be refitted. For this a change of the front panel is required (with 2<sup>nd</sup> alarm indicator).</p> <p>The TITANUS TOP SENS 2® EB is prepared to operate two detector modules and all required components are installed and wiring is done by factory.</p>



The esserbus® transponder must only be removed to connect the 24 V DC-power supply voltage and the loop wiring.

**Wiring with the integrated esserbus® transponder**

TITANUS TOP SENS® EB with a single detector module

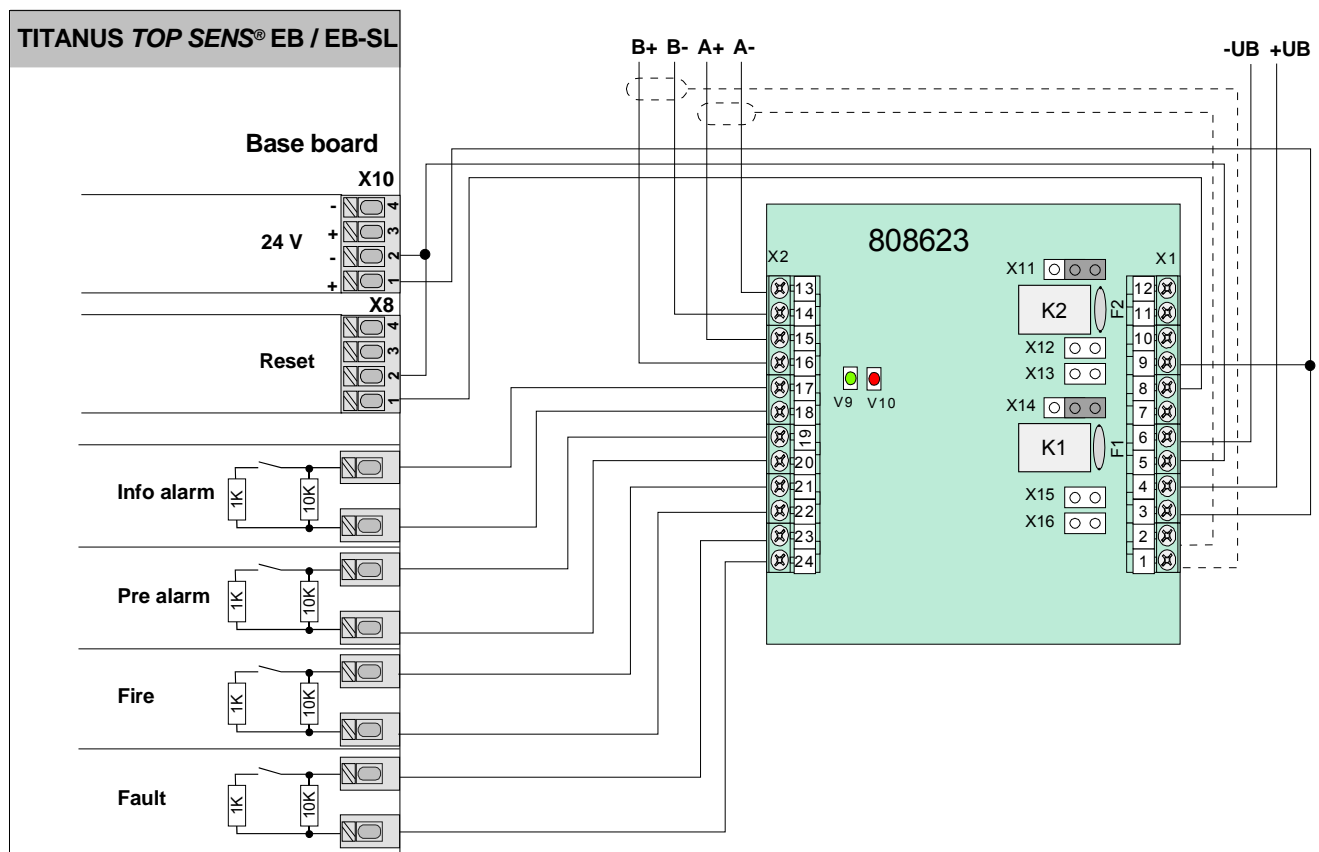
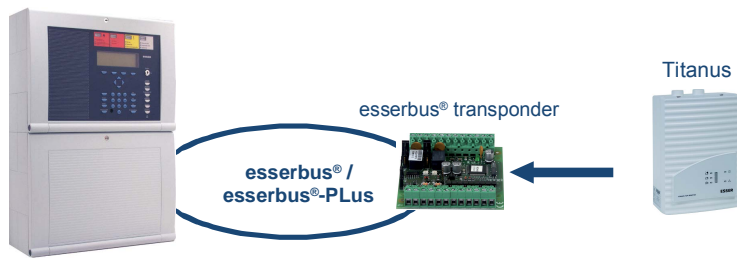


Fig. 48: Wiring example - TITANUS TOP SENS® EB with a single detector module



At the factory delivery state the wiring between the esserbus® transponder is completed and the required resistors connected to the transponder.

Program the relay of the esserbus® transponders as a reset relay  $t \geq 6$  seconds.

**Wiring with the integrated esserbus® transponders**

TITANUS TOP SENS® EB with two detector modules.

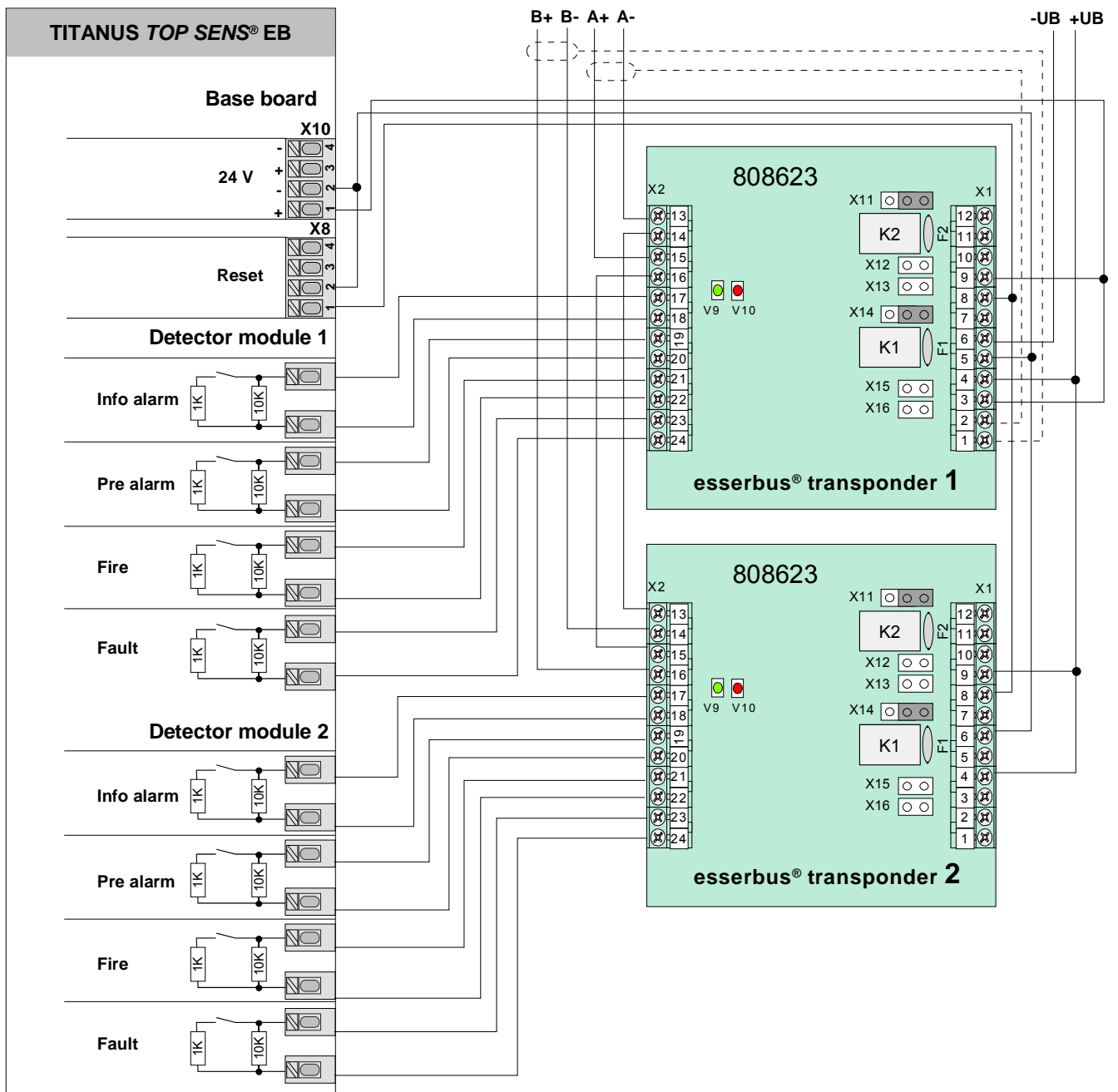


Fig. 49: Wiring example - TITANUS TOP SENS® EB with two detector modules



At the factory delivery state the wiring of the esserbus® transponder is completed and the required resistors connected to the transponder.

Program relays 1 and 2 of the esserbus® transponder as reset relays  $t \geq 6$  seconds.

**Specifications**

	TITANUS TOP SENS® EB		TITANUS TOP SENS 2® EB <sup>1)</sup>	
Operating voltage	14 ... 30 V DC			
Rated voltage	24 V DC			
Ventilator current	U <sub>L</sub> = 6,9 V	U <sub>L</sub> = 9 V	U <sub>L</sub> = 6,9 V	U <sub>L</sub> = 9 V
Contact rating of the Alarm- and Fault relay	30 V DC/ 1 A			
Quiescent current @ 24 V DC	200 mA	260 mA	230 mA	310 mA
Alarm current @ 24 V DC	max. 230 mA	max. 290 mA	max. 290 mA	max. 370 mA
Initial current @ 24 V DC	300 mA		320 mA	
LED indicators	Alarm	1 red LED Info alarm 1 red LED Pre-alarm 1 red LED Main alarm		2 red LED Info alarm 2 red LED Pre-alarm 2 red LED Main-alarm
	Common fault ON	1 x smoke level 1 to 10 (10 digits)		2 x smoke level 1 to 10 (10 digits)
		yellow LED green LED		
Noise level L <sub>wa</sub> according to EN 27779, 1991	approx. 45 dB(A) (without sound absorber Part No. 801543.10)			
Terminals	max. 1,5 mm <sup>2</sup>			
Ambient temperature	-20 °C ... +60 °C			
	-40° ... +60°C (specific detector type for cold stores required)			
Storage temperature	-25 °C ... +65 °C			
Ambient humidity	≤ 95 % rel. humidity (non-condensing)			
Protection rating	IP 20			
Housing	plastic (ABS)			
Colour	papyrus white, similar to RAL 9018			
Weight	1,35 kg		1,45 kg	
Dimensions (W x H x D)	200 x 292 x 113 (mm)			
Specification	EN 54-17 : 2005 / -20 : 2006			
VdS-Approval	G 206118			
Declaration of Performance	DoP-20791130701			

<sup>1)</sup> Values match also the TITANUS TOP SENS® EB with a second detector module



	TITANUS TOP SENS® EB-SL		
Operating voltage Rated voltage	14 ... 30 V DC 24 V DC		
Voltages with fan control board FC-2	U <sub>L</sub> <sup>2)</sup> = 6,5 V	U <sub>L</sub> <sup>2)</sup> = 6,9 V	U <sub>L</sub> <sup>2)</sup> = 9 V
Quiescent current @ 24 V DC <sup>3)</sup>	150 mA	160 mA	210 mA
Alarm current @ 24 V DC <sup>3)</sup>	max. 180 mA	max. 190 mA	max. 240 mA
Initial current @ 24 V DC <sup>3)</sup>	300 mA		
Voltages with fan control board FC-3	U <sub>L</sub> <sup>2)</sup> = 10 V	U <sub>L</sub> <sup>2)</sup> = 11 V	U <sub>L</sub> <sup>2)</sup> = 12 V
Quiescent current @ 24 V DC <sup>3)</sup>	200 mA	230 mA	260 mA
Alarm current @ 24 V DC <sup>3)</sup>	max. 230 mA	max. 260 mA	max. 290 mA
Initial current @ 24 V DC <sup>3)</sup>	300 mA		
Current consumption network module	max. 40 mA		
Current consumption shut-off module	max. 6 mA		
Contact rating of the alarm and fault relay	30 V DC / 1 A		
LED indicators	Alarm	1 red LED Info alarm 1 red LED Pre-alarm 1 red LED Main alarm	
	Common fault ON	1 x smoke level 1 to 10 (10 digits) yellow LED green LED	
Noise level L <sub>wa</sub> according to EN ISO 3744, 1995	approx. 31 dB(A) dep. on ventilator voltage (without sound absorber Part No. 801543.10)		
Noise level L <sub>pa</sub> according to EN ISO 3744, 1995	approx. 23 dB(A) dep. on ventilator voltage (without sound absorber Part No. 801543.10)		
Terminals	max. 1,5 mm <sup>2</sup>		
Ambient temperature	-20 °C ... +60 °C -40° ... +60°C (specific detector type for cold stores required)		
Storage temperature	-25 °C ... +65 °C		
Ambient humidity	≤ 95 % rel. humidity (non-condensing)		
Protection rating	IP 20		
Housing	plastic (ABS)		
Colour	papyrus white, similar to RAL 9018		
Weight	1,35 kg		
Dimensions (W x H x D)	200 x 292 x 113 (mm)		
Specification	EN 54-17 : 2005 / -20 : 2006		
VdS Approval	G 206118		
Declaration of Performance	DoP-20791130701		

<sup>2)</sup> U<sub>L</sub> = Ventilator voltage

<sup>3)</sup> without additional modules

	TITANUS TOP SENS® EB TITANUS TOP SENS® EB-SL	TITANUS TOP SENS 2® EB <sup>1)</sup>
Ventilator construction type	radial	
Service life of the ventilator (12 V)	43.500 h @ 24 °C	
Required cable type	e. g. I-Y (St) Y n x 2 x 0,8 mm, twisted-pair, shielded	
Cable entries	5 x M 20 2 x M 25	
tapered pipe connectors	1 x for ABS pipe Ø 25 mm for air return Ø 25 mm	2 x for ABS pipe Ø 25 mm for air return Ø 25 mm

### Response Sensitivity

Detector module DM-TT-50L	up to 0,5 % light obscuration/m
Detector module DM-TT-10L	up to 0,1 % light obscuration/m
Detector module DM-TT-01L	up to 0,015 % light obscuration/m

### Pipe System – TITANUS TOP SENS® EB

	Pipe System	
	TITANUS TOP SENS® EB	TITANUS TOP SENS 2® EB <sup>1)</sup>
Pipe length number of air sampling points	max. 300 m max. 32	max. 560 m max. 64
length of air sampling hose per ceiling lead through	max. 1 m	
Ambient temperature	PVC pipe -10°C ... +60°C ABS pipe -40°C ... +80°C	

<sup>1)</sup> Values match also the TITANUS TOP SENS® EB with a second detector module

All given specifications relates to an ambient temperature of 25 °C.



Observe actual issue of the VdS-Guideline 2095 and 3435!



For further information incl. maintenance, service and to the TITANUS TOP SENS® EB refer to Documentation 798977.GB0.

## 8.8 Scorpion remote testing system for aspirating smoke detectors

Scorpion®ASD is a functional remote testing system for aspirating smoke detectors, which helps maintain international regulations and standards and at the same time provides substantial time and cost savings as well as reduces interruption times.

Aspirating smoke detector are usually tested during commissioning by spraying a test aerosol into the individual sampling vents. Not only is this approach very impractical, it can also contaminate the system.

Scorpion provides an approved, non-contaminating test aerosol that can be introduced to the vents in a controlled and repeatable way.

As Scorpion probes are permanently affixed to the end of a pipe section, controlled and consistent testing equipment can be used for every test throughout the entire service life of the system. The transport time can be measured by recording the time of activation and the time at which the alarm is triggered. By comparing this data with the saved commissioning data, previous tests and permissible deviations, the integrity of the air-sampling system can be assessed.



Fig. 50: Scorpion remote testing system for aspirating smoke detectors

### Application areas

- Permanently open public areas such as airports
- Areas with access restrictions such as prisons, military facilities or banks
- Areas with continuous operation such as production facilities
- Areas that are difficult to access such as warehouses
- Hazardous areas such as at the top of lift shafts



For more information, see the Product catalogue Fire.

### Specifications

Scorpion remote testing system for aspirating smoke detectors			
	Scorpion control unit (Part No. 805540)	Scorpion probe (Part No. 805541)	Scorpion battery (Part No. 805542)
Ambiente temperature	: +5°C ... +45°C	0°C ... +60°C	+5°C ... +45°C
Storage temperature	: -10°C ... +50°C		-10°C ... +50°C
Humidity	: ≤ 80 % rel. humidity (non-condensing)		≤ 95 % rel. humidity (non-condensing)
Protection class	: IP 40	IP 20	IP 40
Weight	: < 500 g	< 200 g	approx. 523 g
Dimensions (W x H x D)	: 150 x 37 x 155 (mm)	155 x 34 x 54 (mm)	81 x 48 x 139 (mm)

All given specifications relates to an ambient temperature of 25 °C.

## 9 Air Duct detector

### 9.1 Venturi-Air Duct Kit

The Venturi air duct mounting kit (Part No. 781443) for special IQ8Quad fire detectors is used in combination with various Venturi pipe lengths for monitoring air ducts from a diameter of 100 mm in buildings.

The mounting kit is mounted onto the air duct from the outside in the direction of flow and the Venturi pipe is introduced to the duct through a drilled hole. The air flow in the air duct is automatically directed through the Venturi pipe to the fire detector used and analysed there by the intelligent detector electronics.

The specially developed fire detector IQ8Quad OTblue air duct detector (Part No. 802379) is connected directly with the ESSER fire alarm control panel as a loop subscriber. The connected FACP is used for operation and the display of alarm and fault messages.



*Fig. 51: Venturi-Air Duct Kit*



For more information, see the Product catalogue Fire.

### Wiring Venturi-Air Duct Kit

The Venturi air duct mounting kit (Part No. 781443) including detector base (Part No. 805590 or 805591) and fire detector IQ8Quad OT<sup>blue</sup> air duct detector (Part No. 802379) is directly connected to the loop of the ESSER FACP.



Fig. 52: Schematic circuit diagram of loop

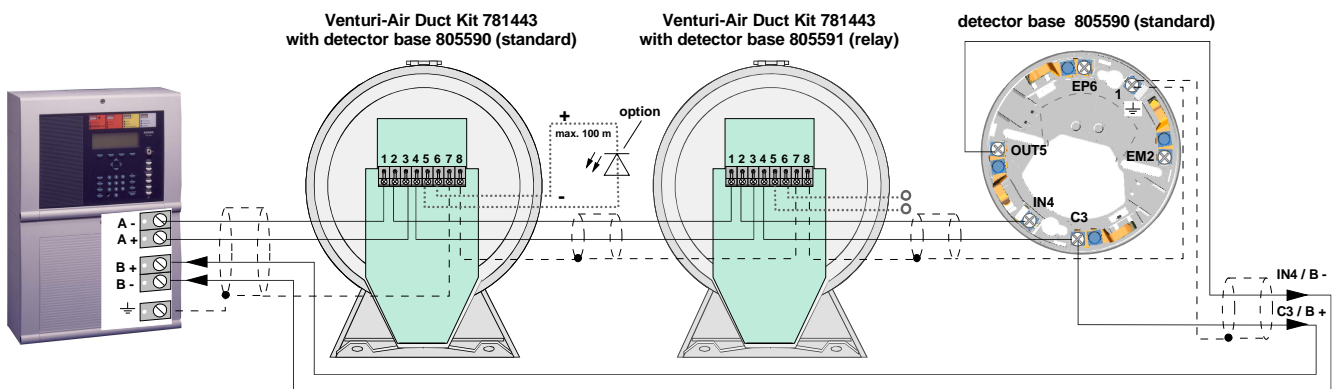


Fig. 53: Wiring example - Venturi-Air Duct Kit



Use clearly identified communications cable I-Y (St) Y n x 2 x 0.8 mm or fire alarm cable! Connection of the cable shield to the ground terminal protects the signal lines against interference.



Observe the applicable documentation during the installation of the mounting kit:  
 798349 Installation Instruction Venturi-Air Duct Kit (Part No. 781443)  
 798930 Operating Instruction Fire Detector IQ8Quad (Part No. 802xxx)  
 798932 Installation Instruction Detector Base and options  
 (Part No. 805590, 805591, 805570, 805572.50, 805573, 805574, 805576, 805577, 781550)

## Specifications

### Air duct detector housing (Part No. 781443)

Terminals	: max. 1,5 mm <sup>2</sup>
Ambient temperature	: -10 °C ... +60 °C
Storage temperature	: -15 °C ... +65 °C
Protection class	: IP 54
Housing	: ABS plastic
Colour	: grey (with transparent cover)
Weight	: approx. 800g (without detector / detector base)
Dimensions (W x H x D)	: 180 x 235 x 183 (mm)

### Detector base (Part No. 805590 / 805591)

Ambient temperature	: -20°C ... +72°C
Storage temperature	: -25°C ... +75°C
Terminals	: 0,6 mm Ø ... 2 mm <sup>2</sup>
Housing	: ABS plastic
Colour	: white (similar to RAL 9010)
Weight	: approx. 70 g (805590) / approx. 80 g (805591)
Dimensions (W x H x D)	: Ø 117 mm, H = 62 mm

### Special Specification for Detector base with relay contact (Part No. 805591)

Contact	: dry contact, N.O / N.C. configurable with soldering gap
Contact rating	: max. 30 V DC / 1 A
Max. Current	: 5 µA (without detector, relay activated)
Relay	: Activated with each detector alarm. Further configuration with customer data settings at the FACP.

### IQ8Quad OT<sup>blue</sup>-LKM (Part No. 802379)

Operating voltage	: 9 V DC ... 42 V DC
Quiescent current @ 19 V DC	: 50 µA
Quiescent current @ BMZ <sub>Accu</sub>	: 0,20 mA @ 27,5 V / 0,28 mA @ 42 V
Alarm indicator	: rote LED, blinkend
Air velocity range	: 1 ... 3.936 ft/min.
Ambient temperature	: -20 °C ... +50 °C
Storage Temperature	: -25 °C ... +75 °C
Ambient humidity	: ≤ 95% relative humidity (non-condensing)
IP rating	: IP 43 (with base + option 805570 / 72 / 73)
Housing	: ABS plastic
Colour	: white (similar to RAL 9010)
Weight	: approx. 110 g
Dimensions (with base)	: Ø 117 mm, H = 62 mm
Specification	: EN 54-7:2006 / -17:2005, CEA 4021
VdS approval	: G 207128
Declaration of Performance	: DoP-20116130701

All given specifications relates to an ambient temperature of 25 °C.

## 10 Manual Call Points

### 10.1 Ex Manual Call Point IP 66 (Standard)

The Ex manual control point IP66 (Part No. 761697) is used based on EN 54-11, type B for manually triggering a fire alarm or hazard alarm, or as a detector for use in workshops where there is a risk of explosion, either indoors or outdoors.

The operation panel is a double-sided inlay. The rear side of the inlay provides in addition to the EN 54-11 compliant symbolism an extra icon and multi language text to indicate the “out of order” condition for a quick usage whilst maintenance work.

The cover label is two-sided printed with the >burning house< symbol in accordance to the EN 54-11 requirements and on the rear side with a multi language text “FIRE DEPARTMENT” or “FIRE”.



Fig. 54: Manual call Point IP 66 for explosive areas (Ex)

#### Shipment

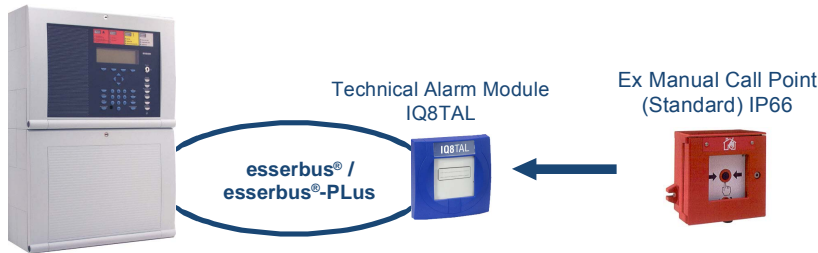
- incl. 1x glass screen 704910
- two-sided operation panel (“Out of order“ on the rear side)
- two-sided cover label (multilingual)



When installing the detector the installation instructions of the manufacturers must be followed!  
For more information, see the Product catalogue Fire.

**Wiring via Technical Alarm Module IQ8TAL (Part No. 804868)**

The Ex-Manual call point (Part No. 761697) must be connected only via the Technical Alarm Module IQ8TAL (Part No. 804868).



**Zone input:** The detector is connected to terminals 7 / 8 of the IQ8TAL. These zone inputs are monitored with an end-of-line unit EOL-I for >Quiescent< and an End-of-line resistor 1 kOhm for >Alarm<. (setting can be changed via tools 8000). Unused zone inputs should be wired with a 10 kOhm load resistance.

**Relay:** Contact response / Operating mode  
The dry contacts of a relay are available on terminals 5 / 6. The relay output is activated automatically when this IQ8TAL is triggered. The relay is operated as NO contact by factory settings. The relay output can be programmed as a control zone in the customer data of the fire alarm control panel and the NC (normally closed) operating mode must be programmed with the service and programming software tools 8000.

Maximum contact rating : 30 V DC / 1 A or 30 V AC / 1 A

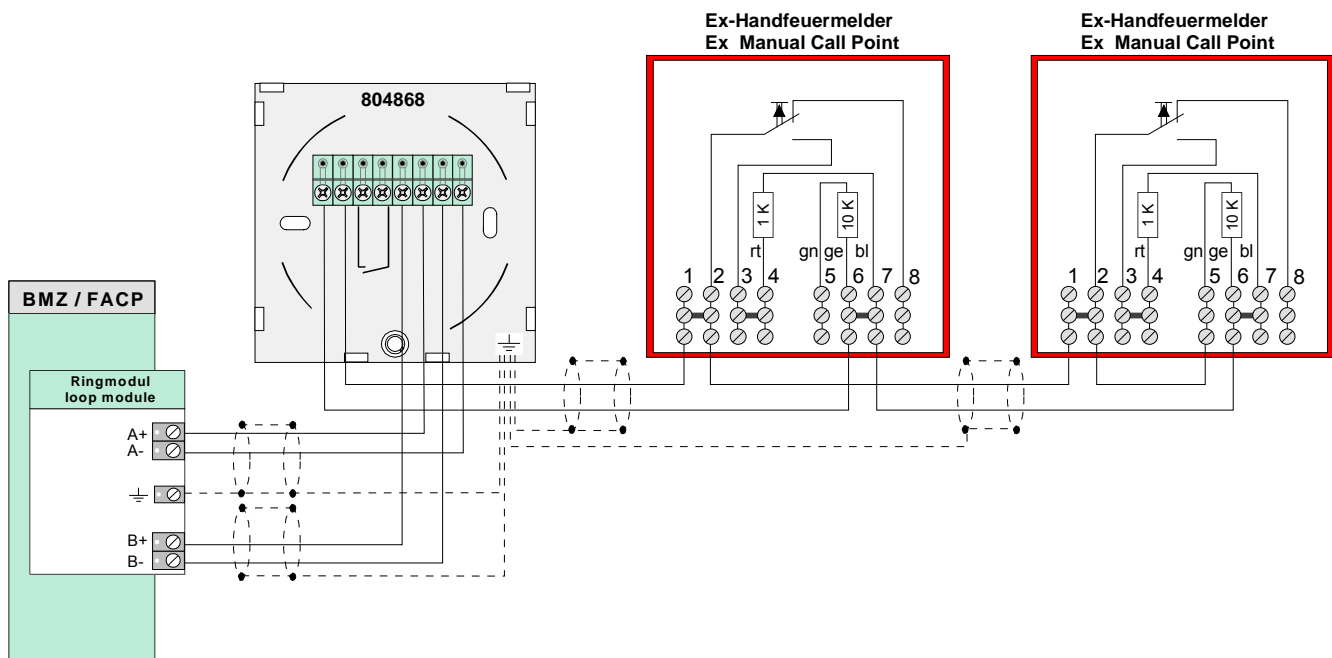


Fig. 55: Wiring example Ex Manual Call Point via IQ8TAL (Part No. 804868)



Activate integrated End-of-Line resistors only in the last detector!



## Specifications

### Ex Manual Call Point IP 66 (Part No. 761697)

Power supply	: 12 V DC ... 24 V DC
Alarm current	: approx. 9 mA
Wiring	: 1 kOhm / 10 kOhm internal
Detector number / zone	: max. 10 detectors per Zone (acc. VdS)
Connection terminals	: 0,6 mm ... 4 mm <sup>2</sup>
Ambient temperature (T6)	: -55 °C ... +65 °C
Ambient temperature (T5)	: -55 °C ... +85 °C
Storage temperature	: -55 °C ... +85 °C
Protection rating	: IP 66
Housing	: reinforced Polyester
Colour	: red, similar to RAL 3000
Weight	: approx. 1,8 kg
Dimensions (W x H x D)	: 136 x 138 x 88 (mm)
Specification	: EN 54-11, Type B
Category	: IIG
Ex-Protection classification	: Ex e d mb IIC T6, T5
VdS approval	: G 297060
Certification	: PTB 97 ATEX 3197
Declaration of Performance	: DoP-1303

All given specifications relates to an ambient temperature of 25 °C.

## 10.2 Manual Call Point (IFD) IP 66

Addressable manual control point as per EN 54-11 with zone separator (Part No. 761694) for use as esserbus® and esserbus®-PLus subscriber for manually triggering a fire alarm or hazard alarm. The detector can be used outdoors or in humid environments.



Fig. 56: Manual Call Point (IFD) IP 66



For more information, see the Product catalogue Fire.

## Connection to loop

The manual control point (Part No. 761694) is connected as an esserbus® and esserbus®-PLus subscriber directly to the loop.



- Max. 10 (as per VdS) per zone
- Max. 127 per loop
- See documentation (Part No. 798954) for further information.

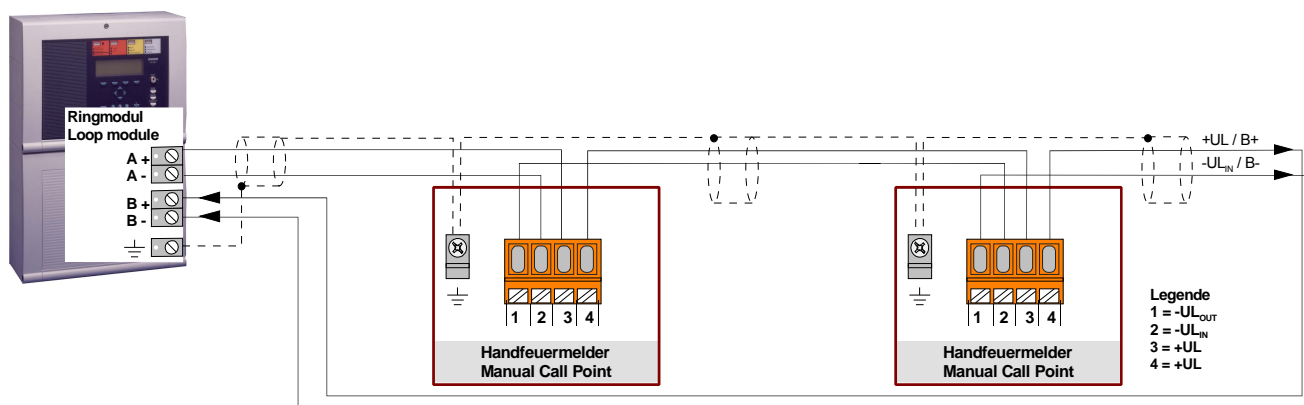


Fig. 57: Wiring example Manual Call Point (IFD) IP 66

## Specifications

### Manual Call Point (IFD) IP 66 (Part No. 761694)

Operation voltage	: 8 V DC ... 42 V DC
Quiescent current	: approx. 45 µA @ 19 V DC
Alarm current	: approx. 9 mA @ 19 V DC, pulsed
Number of detectors	: max. 127 detectors (per loop)
Terminals	: max. 1,5 mm <sup>2</sup> (AWG 30-14)
Ambient temperature	: -20 °C ... +70 °C
Storage temperature	: -25 °C ... +75 °C
Protection rating	: IP 66
Housing	: PC plastic, red (similar to RAL 3000)
Weight	: approx. 475 g
Dimensions (w x h x d)	: 135 x 135 x 61 (mm)
Specification	: EN 54-11 : 2001 / A1 : 2005 / -17 : 2005, type B
VdS approval	: G 209190
Declaration of Performance	: DoP-20882130701

All given specifications relates to an ambient temperature of 25 °C.



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