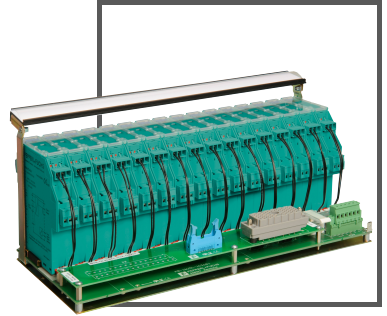


MANUAL

K-System Isolators and Termination Boards



With regard to the supply of products, the current issue of the following document is applicable:
The General Terms of Delivery for Products and Services of the Electrical Industry, published by
the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und
Elektroindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause:
"Expanded reservation of proprietorship"

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1 Introduction

1.1 Contents

This document contains information that you need in order to use your product throughout the applicable stages of the product life cycle. These can include the following:

- Product identification
- Delivery, transport, and storage
- Mounting and installation
- Commissioning and operation
- Maintenance and repair
- Troubleshooting
- Dismounting
- Disposal



Note!

This document does not substitute the instruction manual.



Note!

For full information on the product, refer to the instruction manual and further documentation on the Internet at www.pepperl-fuchs.com.

The documentation consists of the following parts:

- Present document
- Instruction manual
- Datasheet

Additionally, the following parts may belong to the documentation, if applicable:

- EC-type of examination
- EU declaration of conformity
- Attestation of conformity
- Certificates
- Control drawings
- Additional documents

1.2 Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismantling lies with the plant operator.

Only appropriately trained and qualified personnel may carry out mounting, installation, commissioning, operation, maintenance, and dismantling of the product. The personnel must have read and understood the instruction manual and the further documentation.

Prior to using the product make yourself familiar with it. Read the document carefully.

1.3 Symbols Used

This document contains symbols for the identification of warning messages and of informative messages.

Warning Messages

You will find warning messages in instances, whenever dangers may arise from your actions. It is mandatory that you observe these warning messages for your personal safety and in order to avoid property damages.

Depending on the risk level, the warning messages are displayed in descending order as follows:



Danger!

This symbol indicates an imminent danger.

Non-observance will result in personal injury or death.



Warning!

This symbol indicates a possible fault or danger.

Non-observance may cause personal injury or serious property damage.



Caution!

This symbol indicates a possible fault.

Non-observance could interrupt the device and any connected systems and plants, or result in their complete failure.



Informative Symbols



Note!

This symbol brings important information to your attention.



Action

This symbol indicates a paragraph with instructions. You are prompted to perform an action or a sequence of actions.

2 Product Specifications

2.1 Function

The K-System offers a wide range of isolators, which can realize nearly all functions.

The isolators can be mounted on termination boards. Pre-wiring on the control side is possible on termination boards. To close the signal circuit, the isolators are plugged in and connected to the control side via the pre-assembled cable connectors. Then the field wiring can be connected directly to the isolators. The isolators can be replaced during live operation.

The isolators provide the galvanic isolation of signal loops between the field side and the control side. The isolators prevent

- disturbances on the signal line,
- the transfer of disturbances via the signal line,
- dangerous voltages on the control side,
- the transfer of dangerous voltages to the control side.

Using isolators helps to standard, convert, and split signals.

The K-System isolators are divided into two groups:

- Signal conditioners provide the isolation for non-intrinsically safe applications.
- Isolated barriers are used to protect intrinsically safe circuits in explosion-hazardous areas.

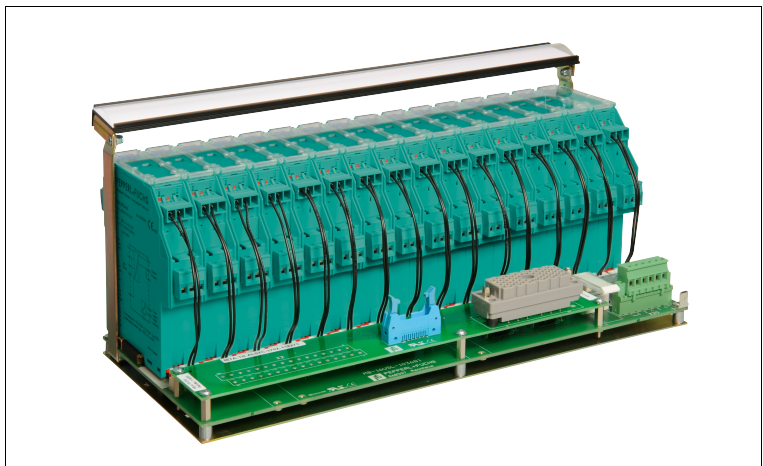


Figure 2.1 K-System termination-board with isolators

Universal and control system-specific termination boards are available in the K-System. Termination boards can be adapted to specific input and output requirements. These requirements can be implemented via various connecting plugs to the control and screw terminals to the field device.

2.2 System Components

2.2.1 Housing Design for K-System Isolators

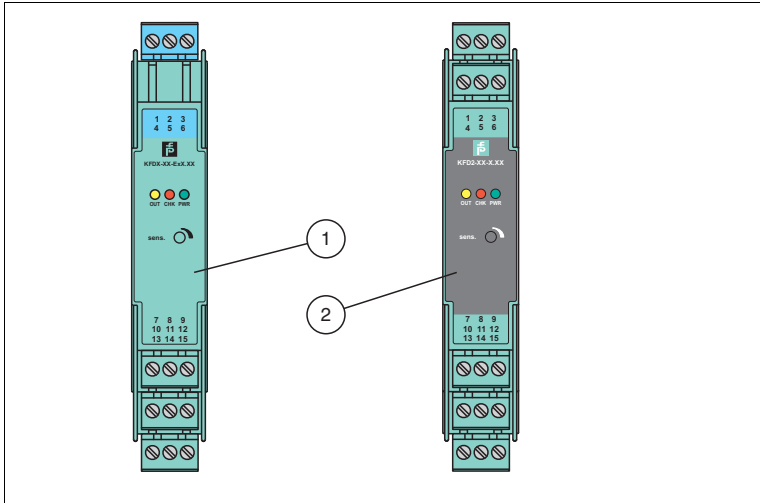


Figure 2.2 K-F device housing (20 mm)

- 1 Isolated barrier
- 2 Signal conditioner

2.2.2 Termination Boards

Termination boards form the wiring level for field and control signals. The isolators are mounted on termination boards. The isolators are connected with the control side via the termination boards. The field side is connected directly to the isolators.

Use

- For KF-isolators
- With 4, 8, 16, or 32 slots
- For redundant and fused power supply
- For fault monitoring and diagnostics

Cable Connector

For the connection between the isolators and the termination board the cable connectors FSY* are available. Depending on the application different versions with 2 to 6 conductors are available.

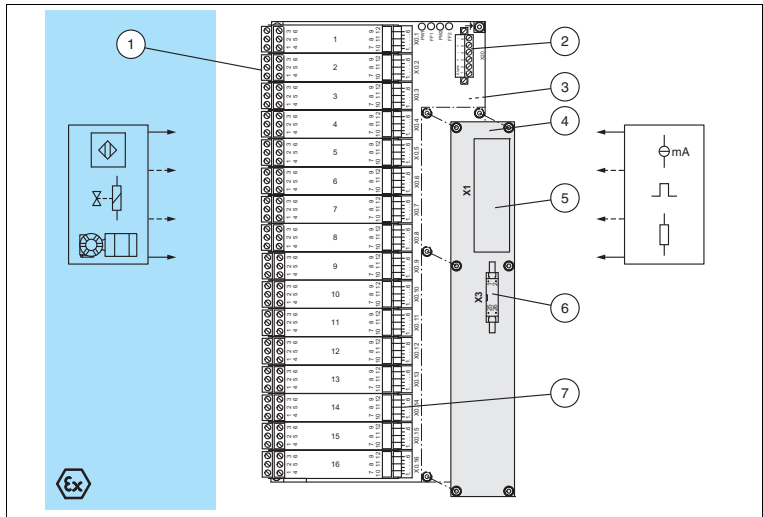


Figure 2.3 Connection example termination board with 16 slots

- 1 Field side connection
- 2 Connection power supply and fault indication output
- 3 Metal base plate with integrated DIN mounting rail mounting
- 4 Adapter PCB with customer-specific system connectors (for DCS or PLC)
- 5 Control side connection
- 6 Optional HART communication
- 7 Cable connector FSY* for connection from isolators to termination board

2.2.3

Accessories

Label Carrier for Isolators

The isolators are fitted with a label carrier ex works for individual identification.

Label Carrier for Termination Boards

The termination boards can be fitted with a label carrier for individual identification. The label carrier is available in various lengths as standard, depending on the number of mounted isolators.

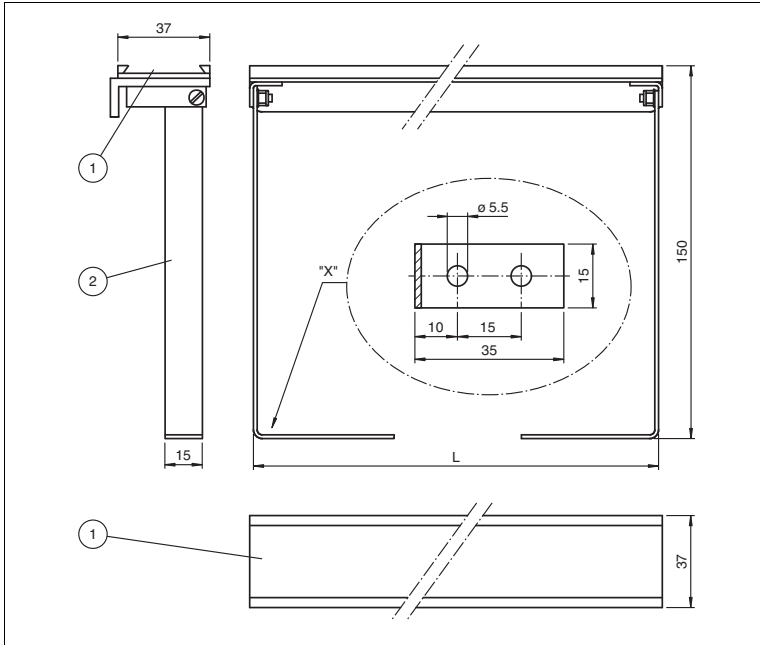


Figure 2.4 Label carrier KFD0-LC1-XXX for termination boards

- 1 Label field, available space for each isolator: 20 x 20 mm
- 2 Fastener

2.3 Connection Options

A variety of termination boards is available with different methods of connecting to the field and control side. Please refer to the documentation for the respective device for the specific connection layout.

Connecting the Field Side

The field devices can be connected to the termination board via the screw terminals of the isolators:

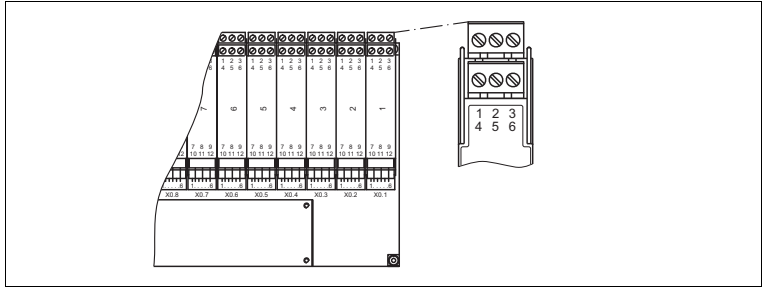


Figure 2.5 Connection via screw terminals

Connecting the Power Supply and Fault Indication Output Isolators

The isolators are supplied via the termination board. The isolators are therefore attached to the termination board.

Termination Boards

The termination boards are supplied with power via screw terminals in accordance with their design.

The supply voltage range depends on

- the isolators used
- the voltage drop of the decoupling diodes on the termination board

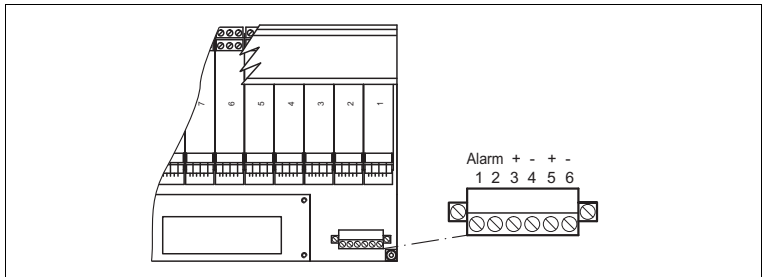


Figure 2.6 Connections of power supply and fault indication output via screw terminals



Connecting the Control Side

The termination board on the control side can be connected via the following connection options:

Cable connector FSY*

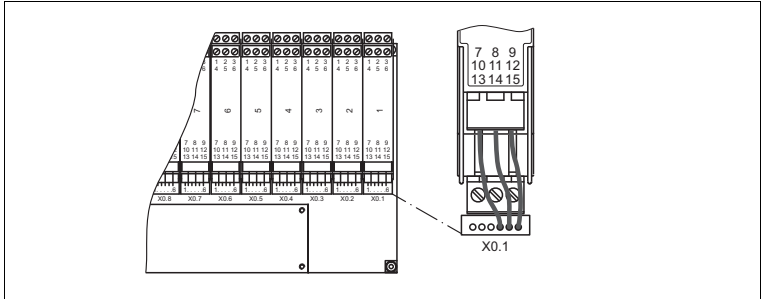


Figure 2.7 Connection via cable connector FSY*

Screw terminals

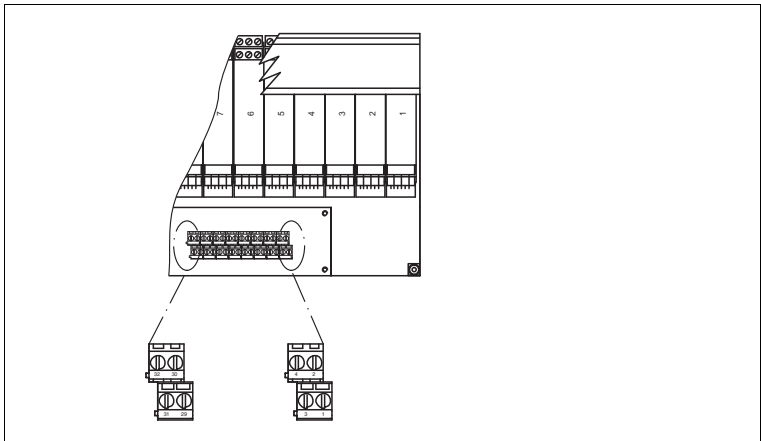


Figure 2.8 Connection via screw terminals



Sub-D connector, 25-pin, 37-pin, or 50-pin

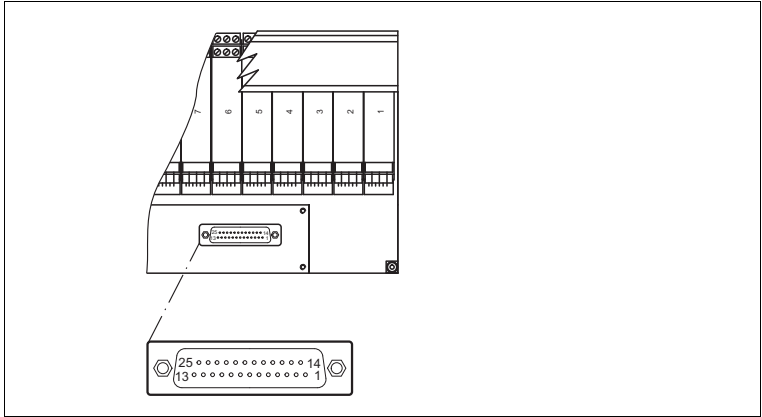


Figure 2.9 Connection example: Sub-D connector, 25-pin

Yokogawa system connector, 40-pin or 50-pin

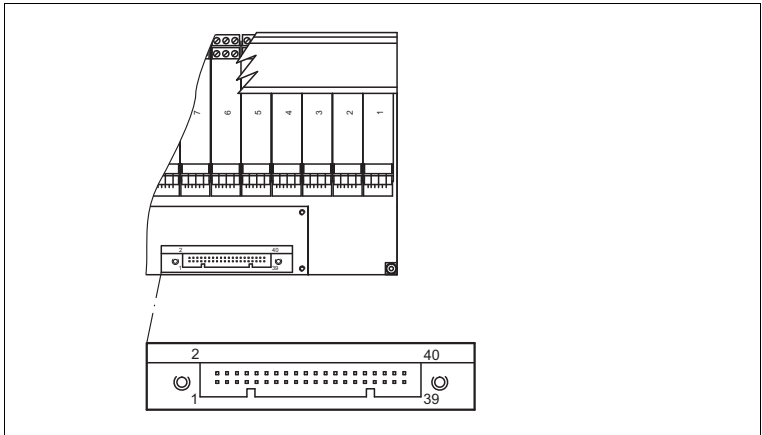


Figure 2.10 Connection example: Yokogawa system connector, 40-pin



ELCO connector, 38-pin or 56-pin

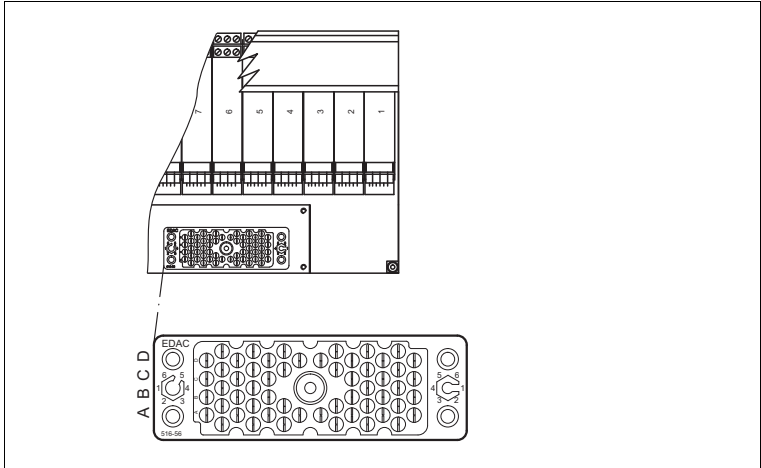


Figure 2.11 Connection example: ELCO connector, 56-pin

Honeywell system connector, 10-pin or 20-pin

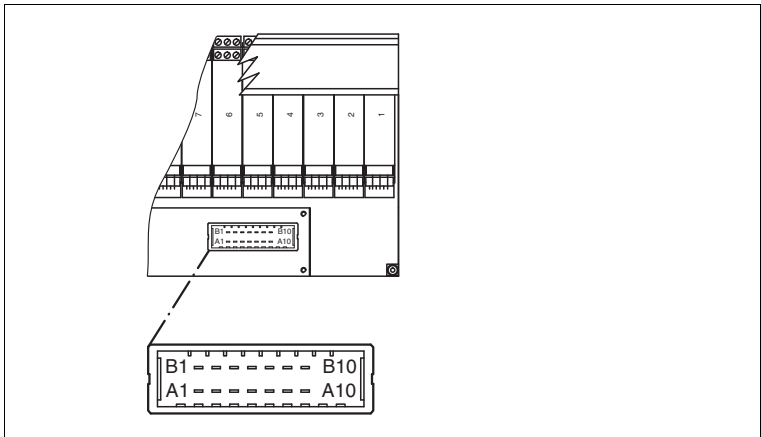


Figure 2.12 Connection example: Honeywell system connector, 20-pin

Connecting the HART Communication

The HART communication can be connected to the termination board via HART connector:

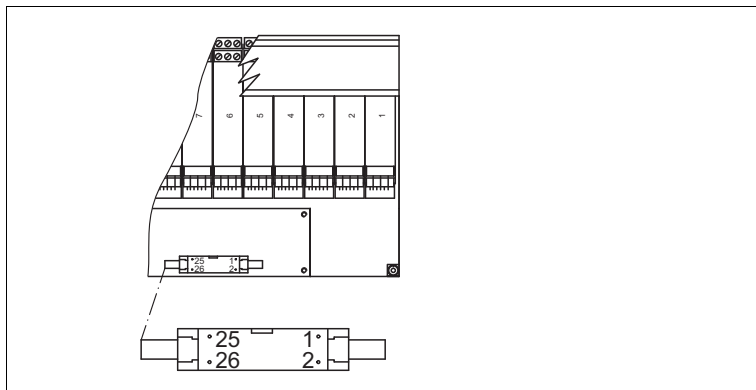


Figure 2.13 Connection via control-side HART connector



Note!

For more information see the corresponding datasheets.

2.4 Color Identification

The color identification of the isolators has the following meaning:

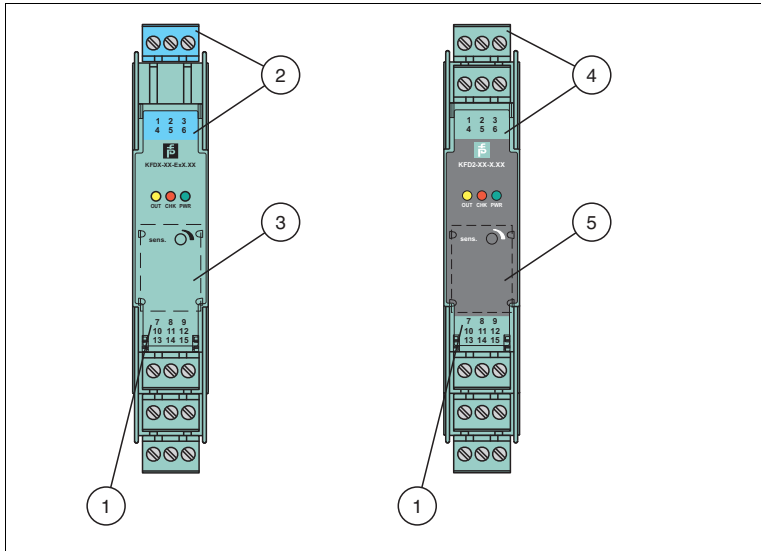


Figure 2.14 Color identification of devices

- 1 Green indicates devices with DC power supply.
- 2 Blue indicates devices that process signals from the hazardous area
- 3 Green indicates isolated barriers
- 4 Green indicates devices that process signals from the non-hazardous area
- 5 Grey indicates signal conditioners

2.5 Status Indicators of the Isolators

LEDs are often used on isolators to indicate different statuses (e. g. for power supply, device failure, status messages, binary switching states). Standard LED colors are assigned to the status display according to NAMUR NE44.

LED	Display function	Display	Meaning
Green LED	Power supply	On	Power supply OK
		Off	No power supply or insufficient power supply – device faulty
Red LED	Device fault, device failure	On	Internal fault signal, failure signal – fault/failure display of causes detected inside the device, device needs replacing
	Line fault	Flashing	External fault signal, failure signal – fault/failure display of causes detected outside the device, inspection and elimination of fault required
	No fault	Off	No malfunction, device is operating properly
Yellow LED	Switching states of binary inputs and outputs	On	Possible causes of the output: <ul style="list-style-type: none"> • The relay is energized. • The NO contact (also a change-over contact) is actively closed. • The open collector is switched through. • The switching voltage generated inside the device is applied. Possible causes of the input: <ul style="list-style-type: none"> • A binary switching signal is present. • An analog limit value is reached.
		Off	Possible causes of the output: <ul style="list-style-type: none"> • The relay is de-energized. • The NO contact (also a change-over contact) is actively opened. • The open collector is not switched through. • The switching voltage generated inside the device is not applied. Possible causes of the input: <ul style="list-style-type: none"> • A binary switching signal is present. • An analog limit value is reached.

Table 2.1 Meaning of status indicators

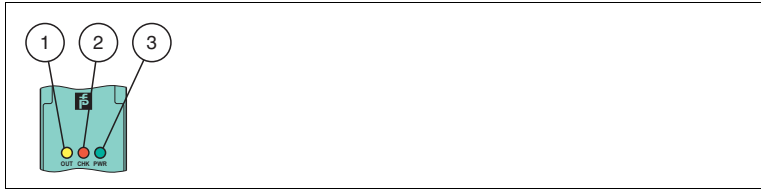


Figure 2.15 Example status indicators

- 1 Yellow LED "OUT"
Switching state of the output
- 2 Red LED "CHK"
Lead breakage and short circuit status indicator
- 3 Green LED "PWR"
Power supply status indicator

2.6 Status Indicators of the Termination Boards

LEDs are often used on termination boards to indicate different statuses (e. g. for power supply, device failure). Standard LED colors are assigned to the status display according to NAMUR NE44.

LED	Display function	Display	Meaning
Green LED "PW1" Green LED "PW2"	Power supply	On	Power supply termination board OK
		Off	No power supply or insufficient power supply
Red LED "FF1" Red LED "FF2"	No power supply or insufficient power supply	On	A power supply fault is triggered by a fuse failure or low voltage. A fuse failure can only be detected if at least one power supply is connected.
		Off	Power supply termination board OK

Table 2.2 Meaning of status indicators

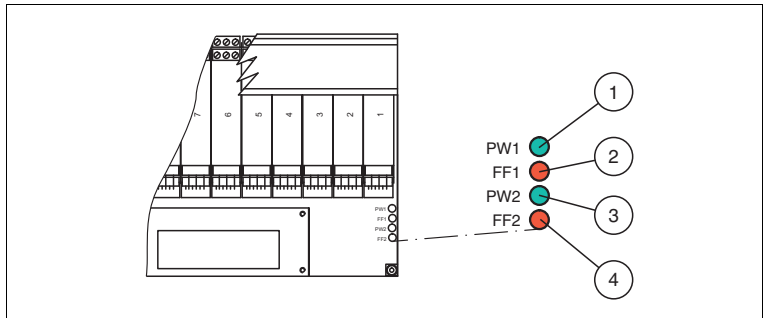


Figure 2.16 Example status indicators

- 1 Green LED "PW1"
Status indicator power supply 1
- 2 Red LED "FF1"
Fuse failure or low voltage power supply 1
- 3 Green LED "PW2"
Status indicator power supply 2
- 4 Red LED "FF2"
Fuse failure or low voltage power supply 2

3 Installation

3.1 DIN Mounting Rail

The devices are mounted on a 35 mm DIN mounting rail according to EN 60715.

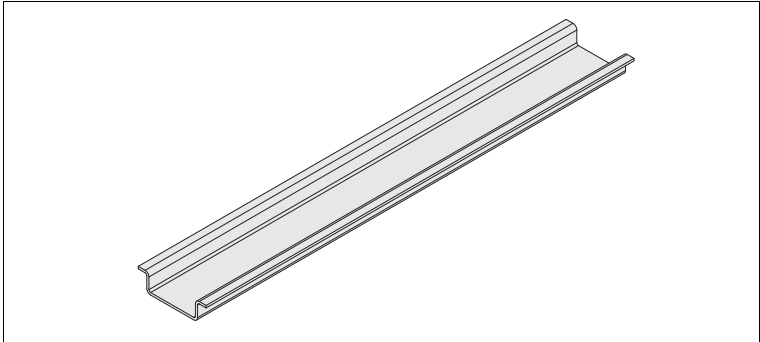


Figure 3.1 Example: DIN mounting rail (35 mm x 7.5 mm)

3.2 Mounting

3.2.1 Mounting the Termination Boards



Warning!

Risk of injury from missing fastening of the termination boards

Due to a missing fastening when vertically mounted, the termination boards can slip off the DIN mounting rail. This can cause injury.

Secure the termination boards reliably against slipping off the DIN mounting rail. Use suitable fasteners for the DIN mounting rail, e. g., end clamp E/AL-NS35.



Warning!

Risk of short circuit

Working on live parts can cause injuries and can compromise the function and the electrical safety of the device.

- Before working on the device, always disconnect the supply voltage.
- Connect the device to the supply voltage only after completion of the work.

Vertical and horizontal mounting

Low heat dissipation allows vertical or horizontal mounting without spacing. Operation is guaranteed over the full temperature range of the system in any mounting direction and without restriction.



Mounting the Termination Boards

The termination boards are mounted on the 35 mm DIN mounting rail. The DIN mounting rail runs below the termination board. See figures below.

1. Unlock the locking (4) with the locking screws (3).
2. Set the termination board (2) onto the DIN mounting rail (1).
3. Lock the locking (4) with the locking screws (3).

↳ The termination board (2) is now properly mounted and secured.

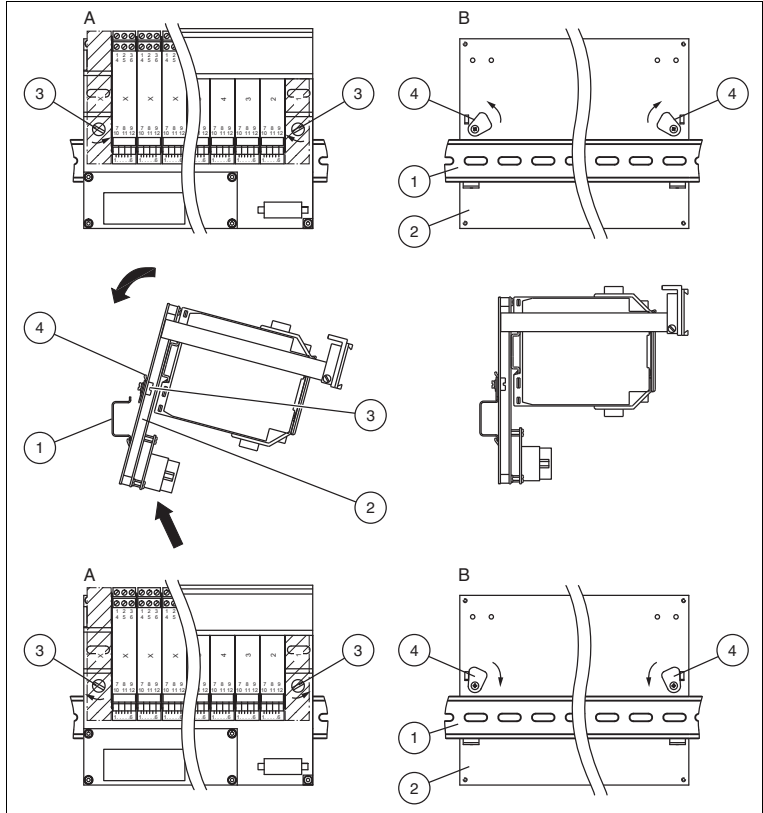


Figure 3.2 Mounting of the termination board on the DIN mounting rail

- A** Front view
- B** View from behind
- 1** 35 mm DIN mounting rail
- 2** Termination board
- 3** Locking screws
- 4** Locking

3.2.2 Mounting the Isolators

Vertical and horizontal mounting

Low heat dissipation allows vertical or horizontal mounting without spacing. Operation is guaranteed over the full temperature range of the system in any mounting direction and without restriction.

Mounting the Isolator on the Termination Board

Snap the device onto the DIN mounting rail in a **vertical downward** movement. See figure below.

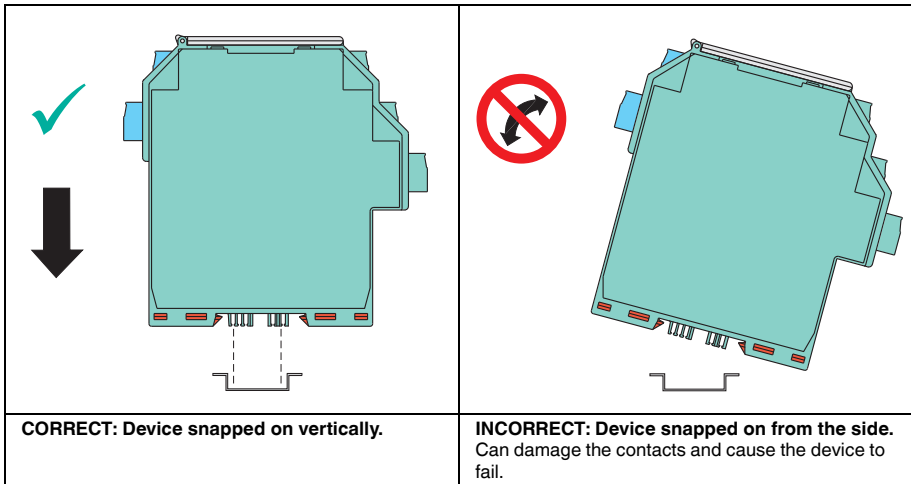


Figure 3.3 Mounting of the isolator on the DIN mounting rail

Observe the following instructions when connecting or disconnecting the terminal blocks on the isolator.

Mounting the Terminal Blocks on the Control Side

1. Use the cable connectors FSY* for the connection between the isolators and the termination board.
2. Connect the terminal blocks or disconnect the terminal blocks of the cable connector.



Mounting the Terminal Blocks on the Field Side



Danger!

Danger to life from electric shock

Working on live parts at voltages higher than 50 V AC or 120 V DC can result in electric shock.

1. De-energize the device.
2. Secure the circuit against reconnection.
3. Verify that the device is de-energized at all poles.
4. Provide protection from adjacent live parts, if present.

1. Switch off the voltage.
2. Connect the terminal blocks or disconnect the terminal blocks.

3.3 Connection



Danger!

Danger to life from electric shock

Absent or insufficient insulation can result in electric shock.

- Maintain sufficient distance between the connection lines, terminals, housing, and the environment.
- Insulate connection lines, terminals, and the housing from the environment.



Danger!

Danger to life from incorrect installation

Incorrect installation of cables and connection lines can compromise the function and the electrical safety of the device.

- Observe the permissible core cross section of the conductor.
- When using stranded conductors, crimp wire end ferrules on the conductor ends.
- Use only one conductor per terminal.
- When installing the conductors the insulation must reach up to the terminal.
- Observe the tightening torque of the terminal screws.

Connecting the Field Side



Danger!

Explosion hazard from wrong separation distances

If you do not observe the minimum separation distance between 2 intrinsically safe circuits, this can lead to added currents or voltages. This can result in a current/voltage flashover generating sparks. The sparks can ignite the surrounding potentially explosive atmosphere.

Ensure that you observe all separation distances between 2 adjacent intrinsically safe circuits according to IEC/EN 60079-14.



Danger!

Explosion hazard from wrong separation distances

If you do not observe the minimum separation distances between intrinsically safe circuits of associated apparatus and non-intrinsically safe circuits, this can lead to added currents or voltages. This can result in a current/voltage flashover generating sparks. The sparks can ignite the surrounding potentially explosive atmosphere.

Ensure that you observe the compliance of the separation distances to all non-intrinsically safe circuits according to IEC/EN 60079-14.



Danger!

Danger to life from electric shock

Working on live parts at voltages higher than 50 V AC or 120 V DC can result in electric shock.

1. De-energize the device.
2. Secure the circuit against reconnection.
3. Verify that the device is de-energized at all poles.
4. Provide protection from adjacent live parts, if present.

Connect the field devices to the isolators via the screw terminals.

Connecting the Power Supply and Fault Indication Output



Danger!

Danger to life from electric shock

Absent or insufficient insulation can result in electric shock.

Only connect circuits that provide protection against electric shock (e. g. SELV or PELV).



Warning!

Risk of injury from wrong or missing fuse protection of supply

Faulty or missing fuse protection can compromise the function and the electrical safety of the device.

Protect the supply with a suitable fuse protection.

Connect the power supply and fault indication output via the screw terminals.

Connecting the Control Side



Danger!

Danger to life from electric shock

Absent or insufficient insulation can result in electric shock.

Only connect circuits that provide protection against electric shock (e. g. SELV or PELV).

Connect the isolators to the termination boards via the cable connectors FSY*.

Use one the following connection options to connect the termination board on the control side:

- System-specific or universal connectors, if applicable
- Screw terminals, if applicable
- HART connector, if applicable



Connecting Circuits

1. Connect the field circuit.
2. Connect the control circuit.
3. Connect the power supply.



Note!

For more information see the corresponding datasheets.

3.4 Device Configuration

Many devices of the K-System can be adapted to different applications. Depending on the device different controls are available for this configuration.

These controls are:

DIP switches

Via DIP switches you can configure the basic functions of the device.



Figure 3.4

- 1 DIP switch

Rotary switches

Via rotary switches you can configure the basic functions of the device.



Figure 3.5

- 1 Rotary switch

Programming sockets for the connection of a PC with parameterization software PACTware™

Via parameterization software PACTware™ you can configure the device easily. The configuration data can be edited and saved. The parameterization software helps users for maintenance, diagnostics and troubleshooting.



Figure 3.6

- 1 Programming socket



Device configuration

Set the particular controls as described in section "Configuration" of the data sheet.



Note!

For more information see the corresponding datasheets.

4 Operation

4.1 Fault Monitoring

Numerous faults can occur between measurement of the process variable and evaluation in the control system. This can lead to undesirable process statuses under certain circumstances. These process statuses may result in plant downtime or quality problems or even present a hazard to persons and the environment. Depending on the device version, the isolators enable monitoring of the following faults:

- **Line faults**
Here, the connection cables between the isolator and field device are monitored for lead breakages or short circuits. If a fault is detected, it is output at the fault message output or collective fault message. The relevant switching outputs are then switched to a de-energized state. The red fault indication LEDs signal the fault.
- **Device faults**
The isolators are designed so that internal faults are detected and reported. In the case of a power failure, the outputs are switched to a de-energized state.

4.2 Fault Output

Several K-System isolators monitor the field leads for lead breakage and short circuits. This means that faults are immediately identified in the system, and that lead faults are not interpreted as a signal.

Depending on the parameterization of the isolators, these lead faults are output on the control-side outputs and displayed as additional information on the separate fault signal output.

Fault Signal Output

If the device has a fault indication output (Fault), lead and device faults are output. The fault indication output is active in normal status and is deactivated in fault status (closed-circuit principle). In the case of fault indication output, it is not possible to reverse the direction of operation.

Line Fault Transparency (LFT)

If the device has a signal output with line fault transparency, the fault message can be transmitted on the signal lead. This saves additional wiring and delivers channel-selective fault messages. For digital signals, a resistive passive transistor output is used. Signals 0 and 1 are output using two resistance values at the output. In the event of an fault, the output will become highly resistive. For this line fault transparency function, corresponding input cards are required in the controller.

Fault Signal on Termination Board

The majority of the termination boards have an internal fault signal.

Information about a missing or insufficient power supply of the isolators or a fuse failure is available for the system as a volt-free contact.

Depending on the version, field wiring faults are also reported via this or a further relay contact, if this function supported by the isolators and the termination boards.

4.3 Current and Voltage Standard Signals

The following signals have established themselves as the standard:

- the 0/4 mA to 20 mA current signal
- the 0/2 V to 10 V voltage signal

The 0/1 V to 5 V voltage signal is also occasionally encountered in addition to the 0/2 V to 10 V voltage signal.

Analog sensor signals and digital frequency signals are converted into one of the two standard signals for processing in a wide variety of measurement, regulatory and control tasks. This offers the measurement and control technician an easy-to-measure standard signal common to all manufacturers. Sensor signals are converted into standard signals via signal converters.

For more diagnostic options, the NAMUR organization published NAMUR recommendation NE43, dividing the value range of the signal (e. g. current signal) into several areas. Valid, defined measurement value information is transferred within the range from 3.8 mA to 20.5 mA. Failure information is available when the signal current is < 3.6 mA or > 21 mA i. e. outside of the range for measured value information. The same applies to the voltage signal.

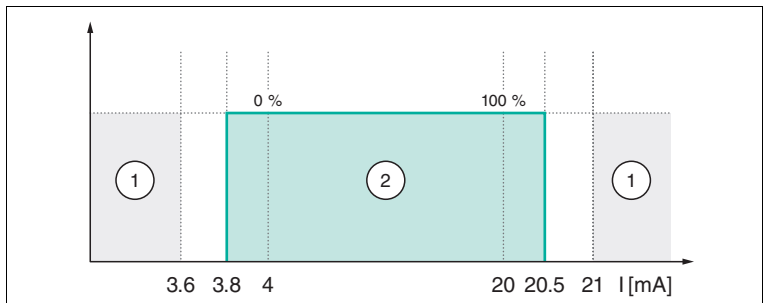


Figure 4.1 Signal ranges according to NAMUR NE43 (e. g. current signal)

- 1 Failure information
- 2 Measuring information

5 Dismounting, Maintenance, and Repair



Danger!

Danger to life from electric shock

Working on live parts at voltages higher than 50 V AC or 120 V DC can result in electric shock.

1. De-energize the device.
2. Secure the circuit against reconnection.
3. Verify that the device is de-energized at all poles.
4. Provide protection from adjacent live parts, if present.



Danger!

Danger to life from using damaged or repaired devices.

Using a defective or repaired device can compromise its function and its electrical safety.

- Do not use a damaged or polluted device.
- The device must not be repaired, changed or manipulated.
- If there is a defect, always replace the device with an original device from Pepperl+Fuchs.



Disconnecting Circuits

1. Disconnect the power supply.
2. Disconnect the field circuit.
3. Disconnect the control circuit.

5.1 Dismounting the Isolator



Dismounting the Isolator from the Termination Board

Use for dismounting of the device a slotted screwdriver

1. Insert the screwdriver (4) into the groove of the red mounting slider (3).
2. Turn the screwdriver (4) in the groove until the red mounting slider (3) springs back.
3. Repeat these steps on the other side of the device.
4. Remove the isolator (2) from the DIN mounting rail (1).

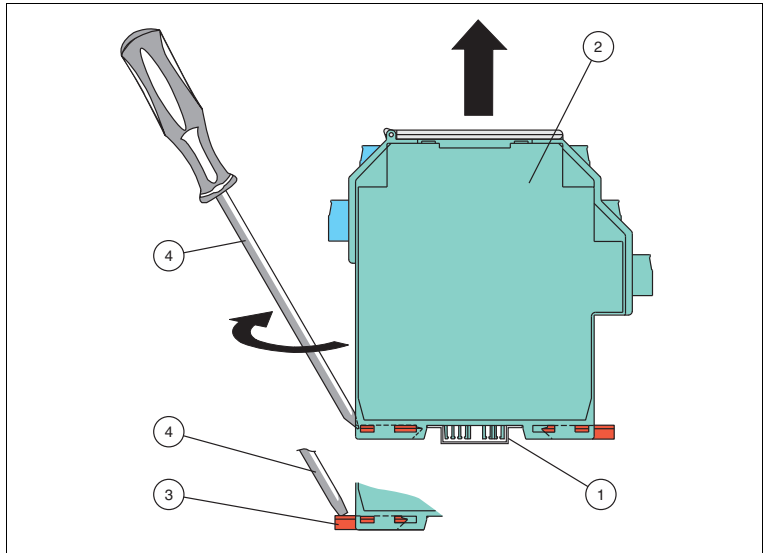


Figure 5.1 Dismounting of the isolator from the DIN mounting rail

- 1 35 mm DIN mounting rail
- 2 Isolator
- 3 Mounting slider
- 4 Slotted screwdriver

5.2 Dismounting the Termination Board



Warning!

Risk of short circuit

Working on live parts can cause injuries and can compromise the function and the electrical safety of the device.

- Before working on the device, always disconnect the supply voltage.
- Connect the device to the supply voltage only after completion of the work.



Dismounting the Termination Board

1. Remove the isolators from the termination board (2).
2. Unlock the locking (4) with the locking screws (3).
3. Remove the termination board (2) from the DIN mounting rail (1).

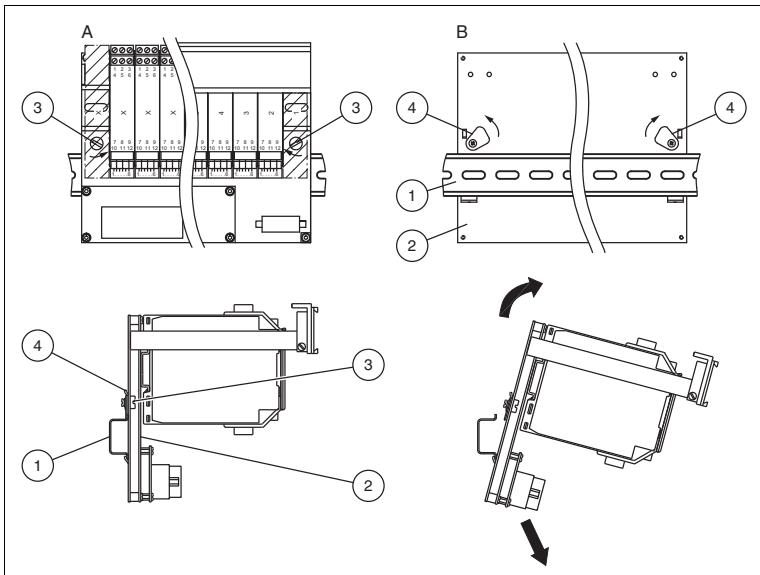


Figure 5.2 Dismounting of the termination board from the DIN mounting rail

- A** Front view
B View from behind
1 35 mm DIN mounting rail
2 Termination board
3 Locking screws
4 Locking

6 Technical Specifications

6.1 Technical Data Isolators

Electrical Data

Safe Area Signals or Control Circuit Signals

- 0/4 mA to 20 mA signal level according to NE43
- 0/2 V to 10 V signal level according to NE43
- 0/1 V to 5 V signal level according to NE43
- Current output HART compatible
- Current input HART compatible
- Digital output: active or passive electronic output 100 mA/30 V, short-circuit protected
- Relay output 2 A, minimum load 1 mA/24 V
- Logic level 24 V according to IEC 60946
- Functional isolation or safe isolation according to IEC 61140 and NAMUR NE23

Hazardous Area Signals or Field Circuit Signals

- Transmitter power supply up to 17 V DC
- Current output HART compatible
- Pt100, 2-, 3-, (4)-wire technology
- Resistor 0 Ω to 400 Ω with freely definable characteristic
- Potentiometer
- Thermocouples of all types, internal cold junction, external reference
- Current output HART compatible
- Digital input according to NAMUR EN 60947-5-6
- Digital output for Ex-i valves, short-circuit protected

Conformity

General

- Isolators with and without explosion protection, mostly with Ex ia IIC/Class I Div. 1, international approvals
- EMV according to
 - EN 61326-1
 - EN 61326-3-2, only for devices with SIL rating, where the data sheet mentions this standard.
If you operate the device with a DC supply voltage, you must ensure that the bridging of the 20 ms voltage interruption is realized by the power supply.
 - NAMUR NE21
If you operate the device with a DC supply voltage, you must ensure that the bridging of the 20 ms voltage interruption is realized by the power supply.
- LEDs according to NAMUR NE44
- Software according to NAMUR NE53
- Switch-on pulse suppression
- K*D2 devices:
 - Supply voltage 20 V DC to 30 V DC via Power Rail or supply terminals
 - Collective error message via Power Rail
- Safety devices according to VDE 0660, part 209, AK according to DIN 19250

Digital Inputs and Outputs according to NAMUR

The standards references for this interface have changed many times:

- German standard (old): **DIN 19234**: Electrical distance sensors – DC interface for distance sensors and switch amplifiers; 1990-06
- European standard (old): **EN 50227**: Low voltage switch gear and control gear – control devices and switching elements – proximity switches, DC interface for proximity sensors and switch amplifiers (NAMUR), 1996-10
- German version (old): **DIN EN 50227**: Low voltage switch gear – control devices and switching elements – proximity switches, DC interface for proximity sensors and switch amplifiers (NAMUR), 1997
- **Current designation: EN 60947-5-6**: Low voltage switch gear – control devices and switching elements – proximity switches, DC interface for proximity sensors and switch amplifiers (NAMUR), 2000
- **Current IEC designation: IEC 60947-5-6**: Low voltage switch gear and control gear – part 5-6: Control devices and switching elements – DC interface for proximity sensors and switch amplifiers (NAMUR), 1999

Ambient Conditions

Ambient Temperature

- -20 °C to 60 °C (-4 °F to 140 °F), exceptions see data sheets

Storage Temperature

- -40 °C to 90 °C (-40 °F to 194 °F), exceptions see data sheets

Reference Conditions for Adjustment

- 20 °C (68 °F)

Relative Humidity

- max. 95 % without moisture condensation

Vibration Resistance

- according to EN 60068-2-6, 10 Hz to 150 Hz, 1 g, high crossover frequency

Shock Resistance

- according to EN 60068-2-27, 15 g, 11 ms, half-sine

Labeling

- Place for labeling on the front side, label: KF device (20 mm):
22 mm x 16.5 mm

Mechanical Specifications

Mounting

- Snap-on 35 mm DIN mounting rail according to EN 60715. Can be mounted horizontally or vertically, side by side.

Housing Material

- Polycarbonate (PC)

Dimensions

- Dimension drawings please refer to dimensions chapter.

Degree of Protection

- IP20 according to EN 60529

Connection

- Possible connection options see connection chapter

Fire Protection Class

- Housing: V2 according to UL 94 standard. Unless stated otherwise all details relate to the reference conditions.



Note!

For more information see the corresponding datasheets.

6.2 Technical Data Termination Boards

Supply	
Nominal voltage	24 V DC SELV/PELV , in consideration of rated voltage of used isolators
Voltage drop	0.9 V , voltage drop across the series diode on the termination board must be considered
Ripple	≤ 10 %
Fusing	2 A
Power dissipation	≤ 1.5 W per power supply , without isolators
Reverse polarity protection	yes
Redundancy	
Supply	Redundancy available. The supply for the isolators is decoupled, monitored and fused.
Fault indication output	
Output type	volt-free contact
Contact loading	30 V DC, 1 A
Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
Conformity	
Degree of protection	IEC 60529:2001
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications	
Degree of protection	IP20
Material	Mounting plate : SS400 , chromated
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
Accessories	
Designation	optional accessories: label carrier KFD0-LC1-XXX

Table 6.1



Note!

For more information see the corresponding datasheets.

6.3 Dimensions

6.3.1 Housing Types Isolators K-System

Housing Type B1

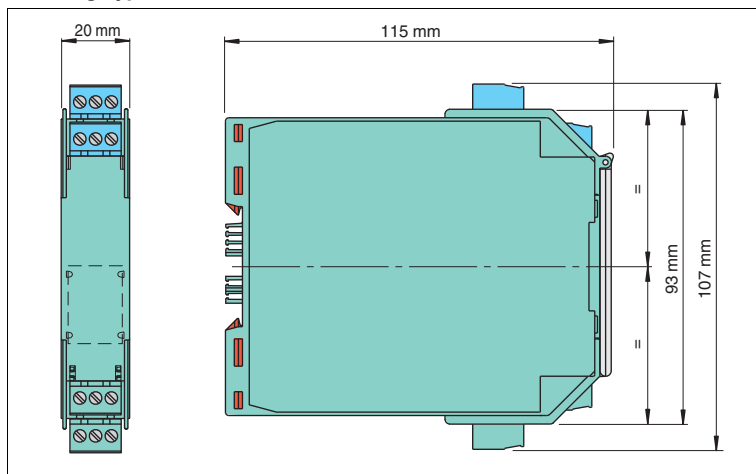


Figure 6.1

Number of terminal blocks maximum 4

- Dimension drawing with screw terminals
- When using screw terminals with test sockets the device is 115 mm in height.
- When using spring terminals the device is 122 mm in height.

Housing Type B2

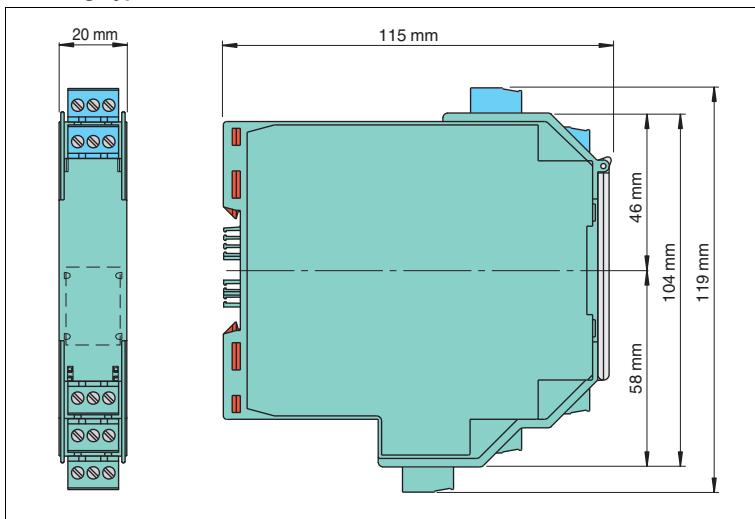


Figure 6.2

Number of terminal blocks maximum 5

- Dimension drawing with screw terminals
- When using screw terminals with test sockets the device is 124 mm in height.
- When using spring terminals the device is 131 mm in height.

6.3.2 Housing Types Termination Boards

Termination Board for 4 Modules

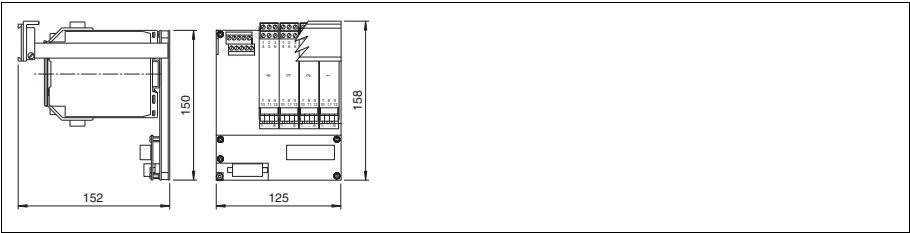


Figure 6.3

Termination Board for 8 Modules

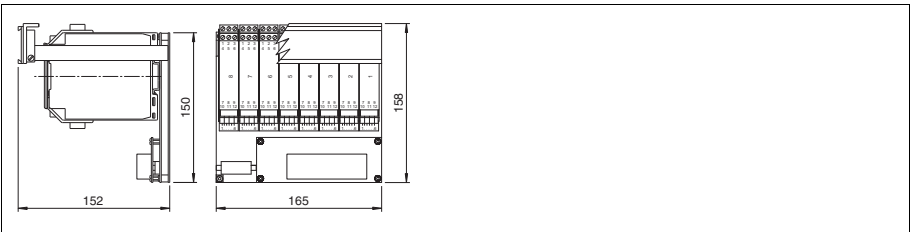


Figure 6.4

Termination Board for 16 Modules

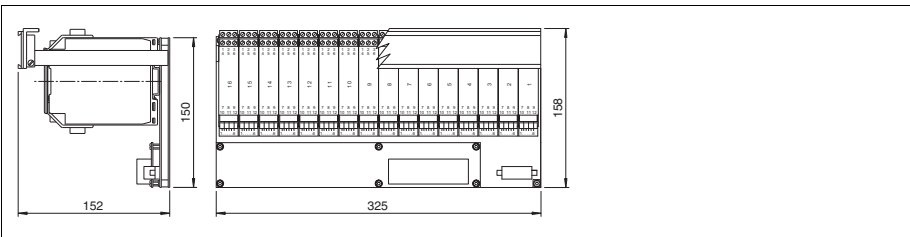


Figure 6.5

Termination Board for 32 Modules

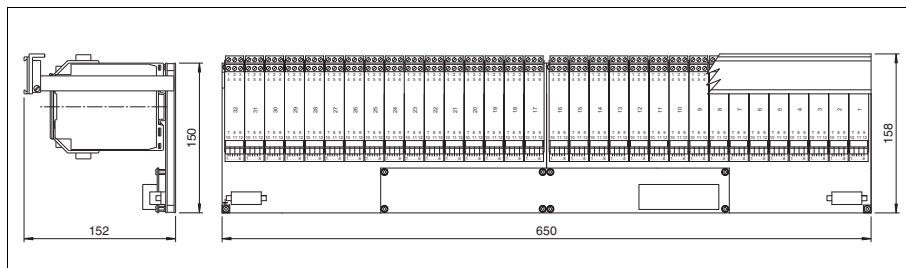


Figure 6.6







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Worldwide Headquarters

Pepperl+Fuchs GmbH
68307 Mannheim · Germany
Tel. +49 621 776-0
E-mail: info@de.pepperl-fuchs.com

For the Pepperl+Fuchs representative
closest to you check www.pepperl-fuchs.com/contact

www.pepperl-fuchs.com

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