

H-System

Isolated Barriers and Termination Boards for Triconex Tricon

Brief Instructions



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1 Introduction

1.1 Content of this Document

This document contains control-system specific information about:

- Connection options
- Status indications
- Product identification
- Dimensions



Note

See system manual for further information.



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.



Note

For specific device information such as the year of construction, scan the QR code on the device. As an alternative, enter the serial number in the serial number search at www.pepperl-fuchs.com.

1.2 Target Group, Personnel

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

Only appropriately trained and qualified personnel may carry out mounting, installation, commissioning, operation, maintenance, and dismounting 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.

2 Product Specifications

2.1 Function

Isolated barriers are used to protect intrinsically safe circuits in explosive areas. In addition to the required current, voltage and power limitation, the isolated barriers have a galvanic isolation between the field circuit and the controller.

The H-System isolated barriers are mounted on termination boards. Pre-wiring is possible on termination boards. To close the signal circuit, the isolated barriers are simply plugged in. The isolated barriers can be replaced during live operation when the wiring is connected.

Generic and control-system specific termination boards are available in the H-System. Termination boards can be adapted to specific input/output requirements. These requirements can be implemented via

- Various connecting plugs to the controller
- Various terminals to the field device
- A large selection of isolated barriers

2.2 Isolated Barriers

H-System isolated barriers cover all functions and the interoperability of the H-System.

The pin assignment and terminal designations are consistent for all termination boards. Each H-System isolated barrier can therefore be mounted in each termination board slot.

The termination board can be coded together with the isolated barriers. This prevents the isolated barriers being mixed up on the termination board. The safety-relevant data for the connected field devices is backed up.

Note

See system manual for further information.



2.3 Termination Boards

Termination boards form the wiring level for field and control signals. The isolated barriers are mounted on termination boards. The isolated barriers are connected with the field and control side via the termination boards. Once the isolated barrier is mounted, the signal circuit between the field and control side is closed.

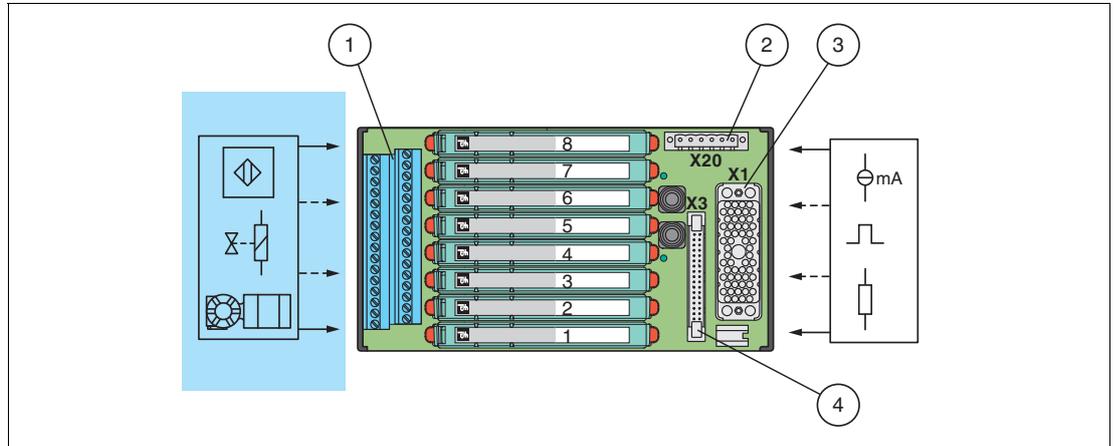


Figure 2.1 Connection example termination board with 8 slots

- 1 Field side connection
- 2 Connection power supply and fault indication output
- 3 Control side connection
- 4 HART communication connection, if available

Features depending on version

- With 8, 16, or 32 slots
- For redundant and fused power supply
- For fault monitoring and diagnostics
- HART communication

2.3.1 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 with the following connection option:

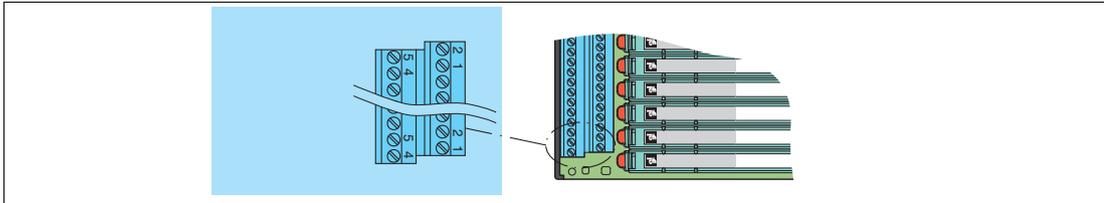


Figure 2.2 Pluggable screw terminals

Connecting the Power Supply and Fault Indication Output

Isolated barriers

The isolated barriers are supplied via the termination board. The isolated barriers are therefore attached to the termination board.

Termination boards

The termination boards are supplied via pluggable screw terminals.

The supply voltage range depends on

- The values used for the isolated barriers
- The voltage drop of the decoupling diodes on the termination board

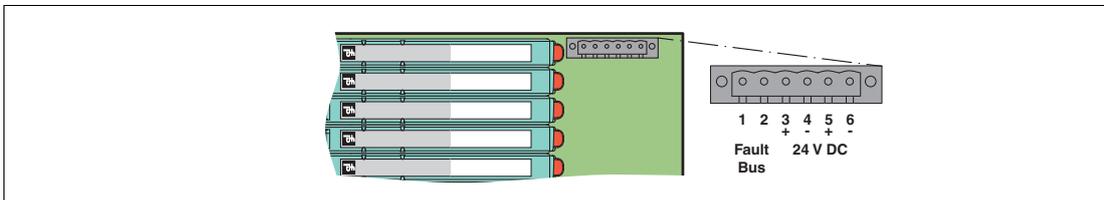


Figure 2.3 Connection of power supply and fault indication output via pluggable screw terminals

Connecting the Control Side

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

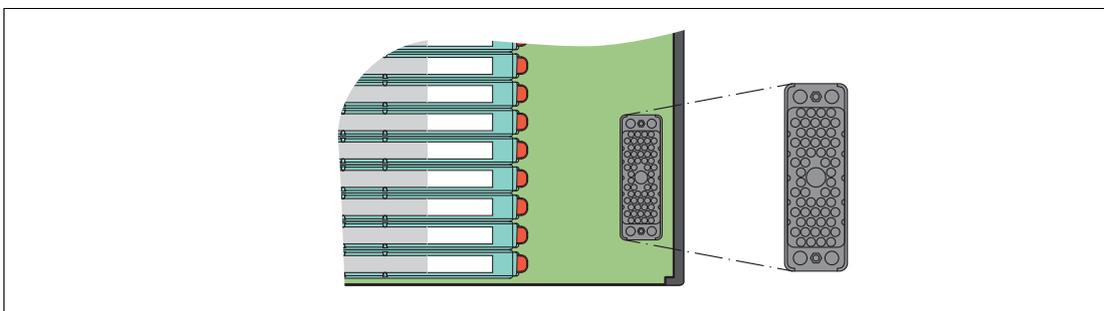


Figure 2.4 ELCO connector, 56-pin

Connecting the Fault Indication Board

The Fault Indication Board indicates a loss of power supply and displays fault messages supported by the isolated barrier. The internal fault signal output operates in something resembling a safety mode, and can be wired in a series connection (daisy chain) or redundant star configuration.

The fault indication board displays faults via LEDs and issues fault messages.

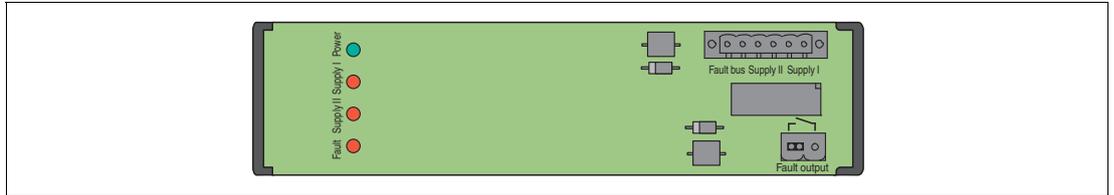


Figure 2.5 Fault Indication Board

Establishing the HART Communication

Establish the HART communication via HART connector and HART multiplexer.

HART connector

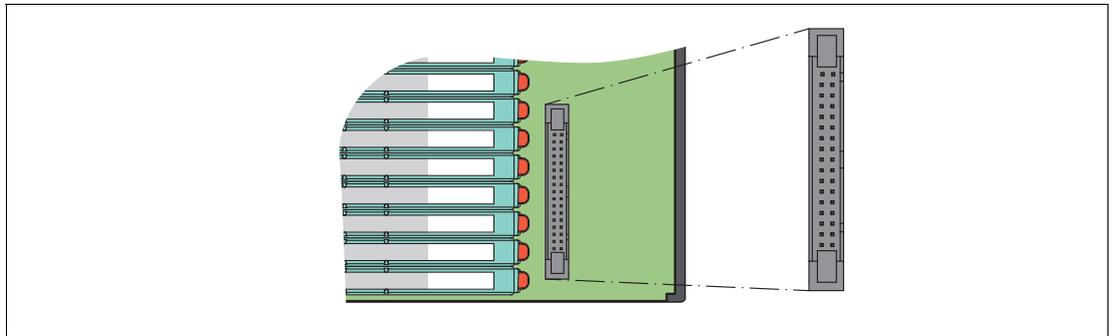


Figure 2.6 HART plug, recommended cable: HiACA-UNIFLK34- FLK34-*M*

HART multiplexer

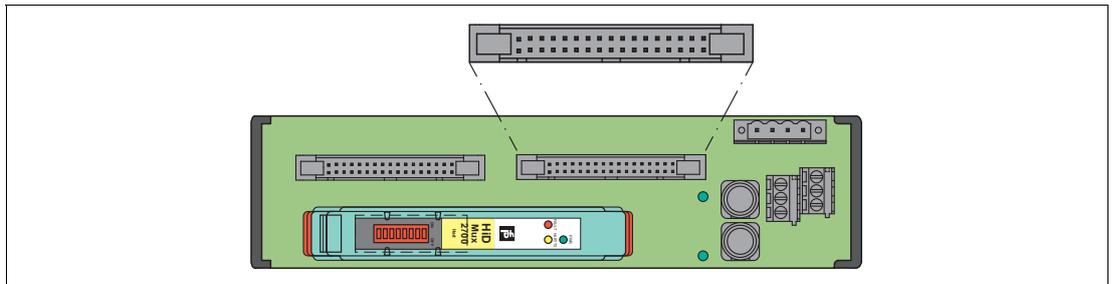


Figure 2.7 HART multiplexer connection

Application example

The following diagram shows a typical example of an application with a Fault Indication Board and HART Communication Board.

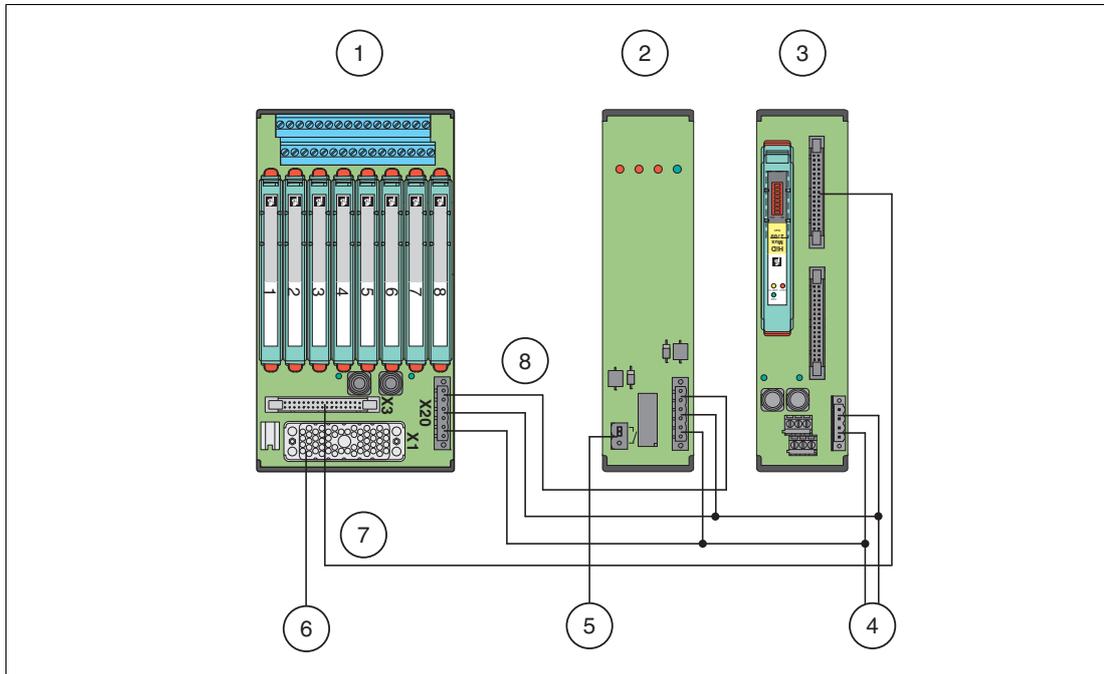


Figure 2.8 H-System topology

- 1 Termination board
- 2 Fault Indication Board
- 3 HART Communication Board
- 4 Connection power supply I and II (redundant)
- 5 Connection fault indication output (relay contact)
- 6 Control side connection
- 7 Connection HART communication
- 8 Internal fault bus



Note

See corresponding datasheets for further information.



Note

See system manual for further information.

2.3.2 Status Indicators of Termination Boards

LEDs are often used on termination boards to indicate different statuses (e. g. for power supply, device failure, status messages). Standard LED colors are assigned to the status display according to NAMUR NE 44.

LED	Display function	Display	Meaning
Green LED PW1	Power supply I	On	Power supply OK
		Off	No power
Green LED PW2	Power supply II	On	Power supply OK
		Off	No power

Table 2.1 Meaning of status indicators

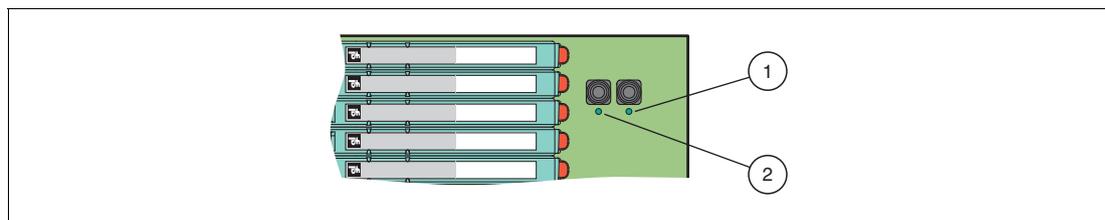


Figure 2.9 Example status indicators

- 1** Green LED **PW1**
Status indicator power supply I
- 2** Green LED **PW2**
Status indicator power supply II



Note

See system manual for further information.

Termination Board for 16 Modules

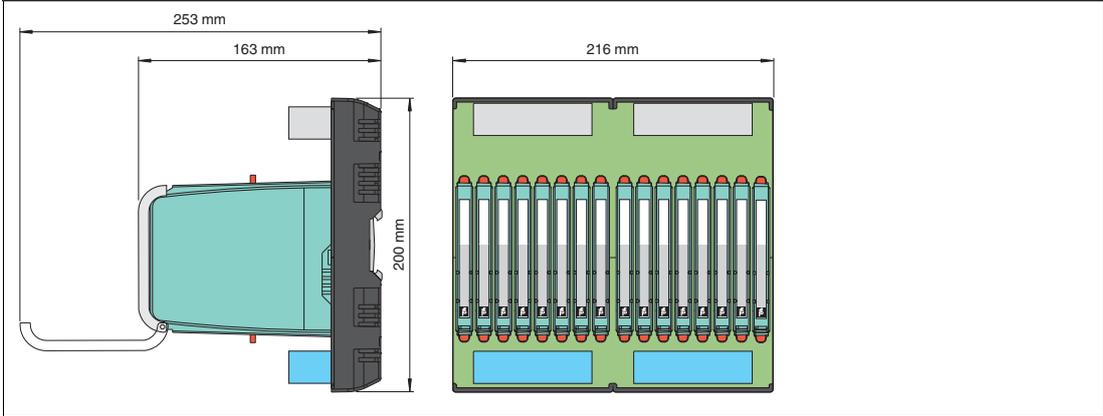


Figure 3.2 Dimensions (W x H x D): 216 x 200 x 163 mm (8.5 x 7.9 x 6.42 inch), depth including module assembly

Termination Board for 32 modules

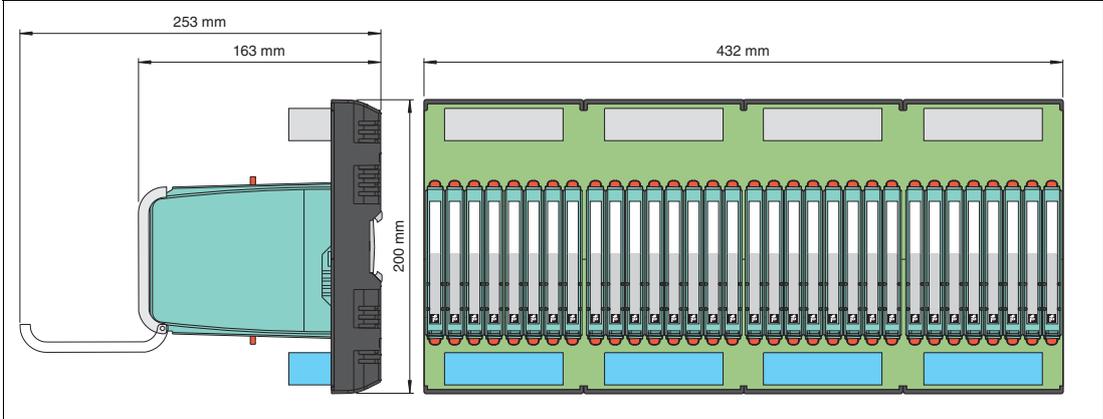


Figure 3.3 Dimensions (W x H x D): 432 x 200 x 163 mm (17 x 7.9 x 6.42 inch), depth including module assembly

Accessory Boards

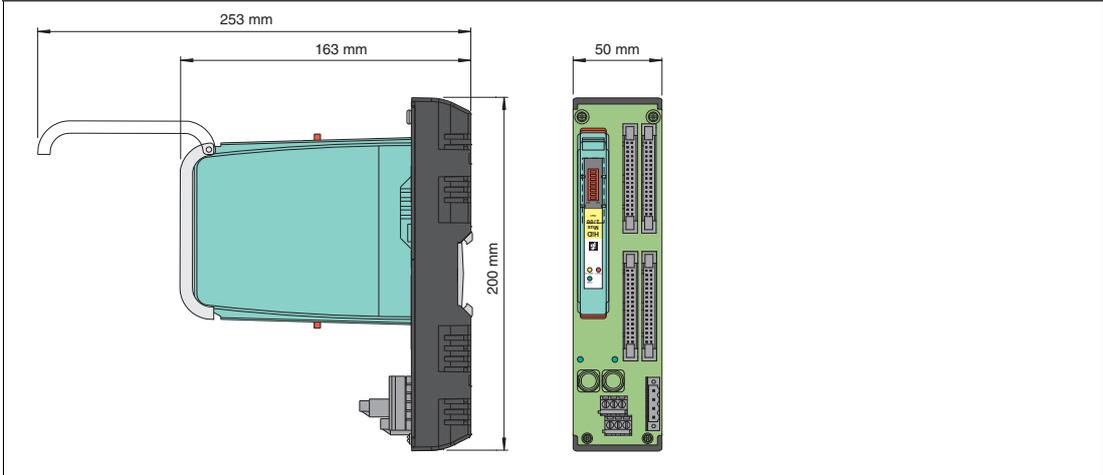


Figure 3.4 Dimensions (W x H x D): 50 x 200 x 163 mm (1.97 x 7.9 x 6.42 inch), depth including module assembly

Note
 See system manual for further information.

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