## Features

- Comprehensive diagnostics for fieldbus physical layer and power supply
- Plug-in Module for the FieldConnex Power Hub
- Precise measurements through passive circuits
- For commissioning, online monitoring and troubleshooting
- For FOUNDATION Fieldbus H1 and PROFIBUS PA
- Installation in Zone 2/Class I, Div. 2
- System state and fault indication via LEDs
- Display of data in the safety of the control room
- Automatic setup of diagnostic system
- Full software integration into PCS and PAM possible

## Function

Designed as a plug-in module for the FieldConnex® Power Hub, this Advanced Diagnostic Module (ADM) is a comprehensive measurement tool for the physical layer of up to four fieldbus segments. It's passive input circuits leave the physical layer untouched for exact data. The ADM detects gradual or sudden changes and helps trace even intermittent malfunctions.
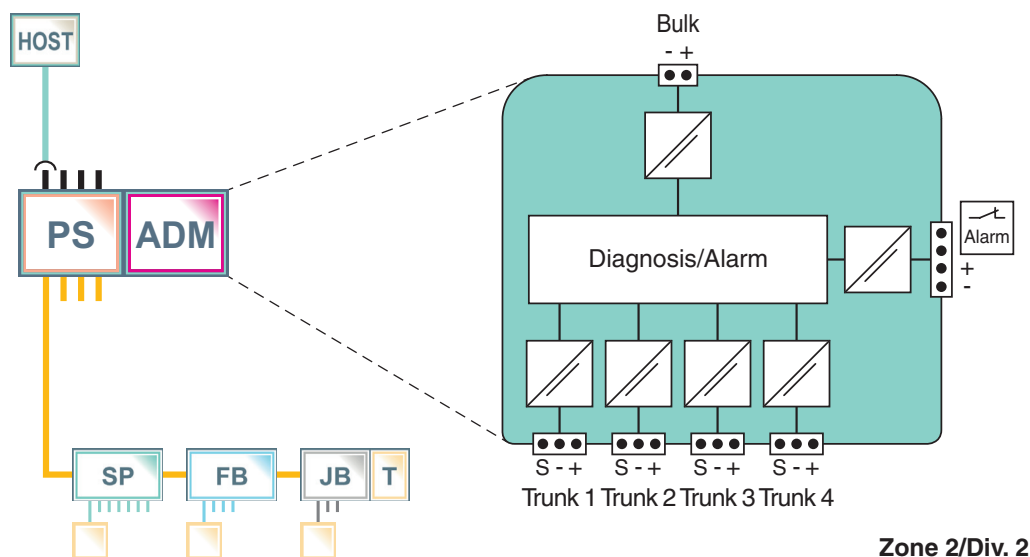
The ADM supports commissioning, online monitoring and troubleshooting. It can be integrated tightly into the DCS and PAM via a separate diagnostic bus, making the fieldbus physical layer itself a managable asset. Configuration tools automate setup of the ADM and of selected DCS.

The Diagnostic Manager is the software for display and operation from the safety of the control room. The Professional Edition provides powerful functions and wizards simplifying and automating work procedures: Embedded expert system data historian and a built-in oscilloscope are included. (see datasheet DTM-FC.AD*).

## Assembly

C E | Ex | FOUNDATION | PROFIBUS®

FieldConnex® | ADVANCED DIAGNOSTICS

## Connection

HOST

PS | ADM

SP | FB | JB | T

Bulk − +

Diagnosis/Alarm

Alarm + −

S − + | S − + | S − + | S − +
Trunk 1 | Trunk 2 | Trunk 3 | Trunk 4

**Zone 2/Div. 2**

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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| **General specifications** | | |
|---|---|---|
| Design / Mounting | | Motherboard based |
| **Supply** | | |
| Rated voltage | $U_r$ | 19.2 ... 35 V |
| Rated current | $I_r$ | 110 ... 30 mA |
| Power dissipation | | max. 2 W |
| **Fieldbus interface** | | |
| Number of segments | | 4 |
| Fieldbus type | | FOUNDATION Fieldbus/PROFIBUS PA |
| Rated voltage | $U_N$ | 9 ... 32 V |
| **Indicators/operating means** | | |
| LED PRI PWR | | green: on, primary bulk power supply connected |
| LED SEC PWR | | green: on, secondary bulk power supply connected |
| LED Seg 1...4 | | yellow: bus activity; red 2 Hz flashing: alarm; red: hardware error |
| Fault signal | | VFC alarm 1 A, 50 V DC, normally closed |
| DIP switch | | diagnostic address 1...247, binary coded |
| **Interface** | | |
| Interface type | | diagnostic bus: RS 485 |
| **Galvanic isolation** | | |
| Fieldbus segment/Fieldbus segment | | functional insulation acc. to IEC 62103, rated insulation voltage 50 $V_{eff}$ |
| Fieldbus segment/Supply | | functional insulation acc. to IEC 62103, rated insulation voltage 50 $V_{eff}$ |
| **Directive conformity** | | |
| Electromagnetic compatibility | | |
|    Directive 2014/30/EU | | EN 61326-1:2013 |
| **Standard conformity** | | |
| Electromagnetic compatibility | | NE 21:2011 |
| Degree of protection | | IEC 60529 |
| Shock resistance | | EN 60068-2-27 |
| Vibration resistance | | EN 60068-2-6 |
| **Ambient conditions** | | |
| Ambient temperature | | -40 ... 70 °C (-40 ... 158 °F) |
| Storage temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| Relative humidity | | < 95 % non-condensing |
| Shock resistance | | 15 g 11 ms |
| Vibration resistance | | 1 g , 10 ... 150 Hz |
| Pollution degree | | max. 2, according to IEC 60664 |
| Corrosion resistance | | acc. to ISA-S71.04-1985, severity level G3 |
| **Mechanical specifications** | | |
| Connection type | | motherboard specific |
| Core cross-section | | motherboard specific |
| Housing material | | Polycarbonate |
| Housing width | | 18 mm |
| Housing height | | 106 mm |
| Housing depth | | 128 mm |
| Degree of protection | | IP20 |
| Mass | | approx. 100 g |
| Mounting | | motherboard mounting |
| Mating cycles | | 100 |
| **Data for application in connection with hazardous areas** | | |
| Certificate | | TÜV 04 ATEX 2500 X |
|    Marking | | ⟨Ex⟩ II 3 G Ex nA IIC T4 Gc |
| Directive conformity | | |
|    Directive 2014/34/EU | | EN 60079-0:2012 , EN 60079-11:2012 , EN 60079-15:2010 |
| **International approvals** | | |
| FM approval | | |
|    FM certificate | | FM 19 US 0015 X and FM 19 CA 0011 X |
|    FM marking | | AEx/Ex ec IIC T4 |
| IECEx approval | | |
|    IECEx certificate | | IECEx TUN 13.0038X |
|    IECEx marking | | Ex nA IIC T4 Gc |
| **Certificates and approvals** | | |
| Marine approval | | DNV A-14038 |
| Patents | | This product may be covered by the following patent: US7,698,103 |
| **General information** | | |

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

| Supplementary information | Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com. |
|---|---|

## Dimensions

Dimensions complete redundant system*
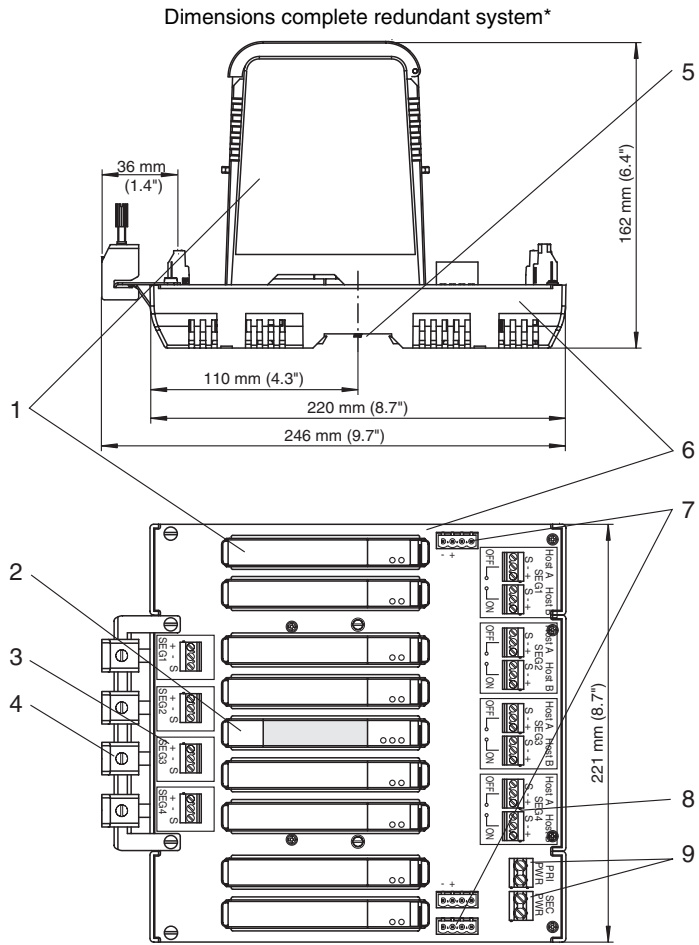
Dimensions Advanced Diagnostic Module*
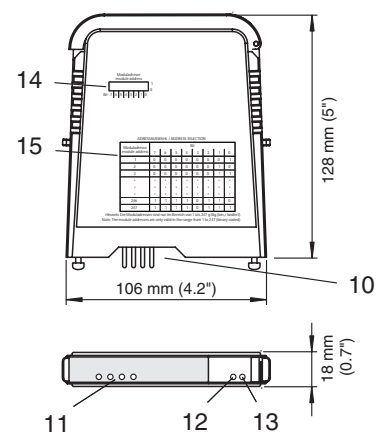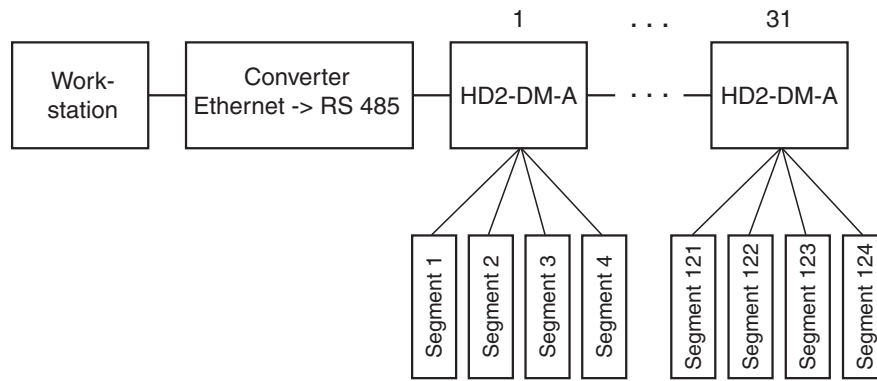
*all dimensions without tolerance indication

Description:
1   Power Supply Modules, see separate data sheets
2   Advanced Diagnostic Module
3   Connections for fieldbus trunk, terminator switch
4   Screening/earthing kit for trunk cables shield, optional accessory
5   Mounting slot for DIN rail
6   Motherboard, see separate data sheets
7   Connections for alarm, voltage free contact and diagnostics bus
8   Connections for redundant host
9   Connections for redundant bulk power supply

10   Plug connections to Motherboard
11   LED Seg 1 ... Seg 4
12   LED green SEC Power
13   LED green PRI Power
14   Dip-Switch-Array for diagnostic address or address on the diagnostics bus
15   Address selection overview

## Installation note

System topology

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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**PEPPERL+FUCHS**   **3**

Installation notes see manual.

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**Accessories**

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- Software User Interface for monitoring up to or including 100 fieldbus segments: Diagnostic Manager, Professional Edition DTM-FC.AD
- Software User Interface for monitoring more than 100 fieldbus segments: Diagnostic Manager, Professional Edition DTM-FC.AD.1
- KT-MB-GT2AD Diagnostic Gateway

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