



Power Hub Motherboard

FieldConnex® Fieldbus

MBHC-FB-8R*

- 8 segments, redundant, individual modules per segment
- Supports all PLC and PCS hosts
- High-power trunk: Live work on devices in any hazardous area
- Best quality, smallest size and lowest heat dissipation
- For FOUNDATION Fieldbus H1
- Optional advanced diagnostics
- Passive impedance for high reliability
- Supports Ex ic voltage limitation
- Installation in Zone 2/Div. 2
- Spring terminals or screw terminals selectable

Power hub motherboard with common host interface

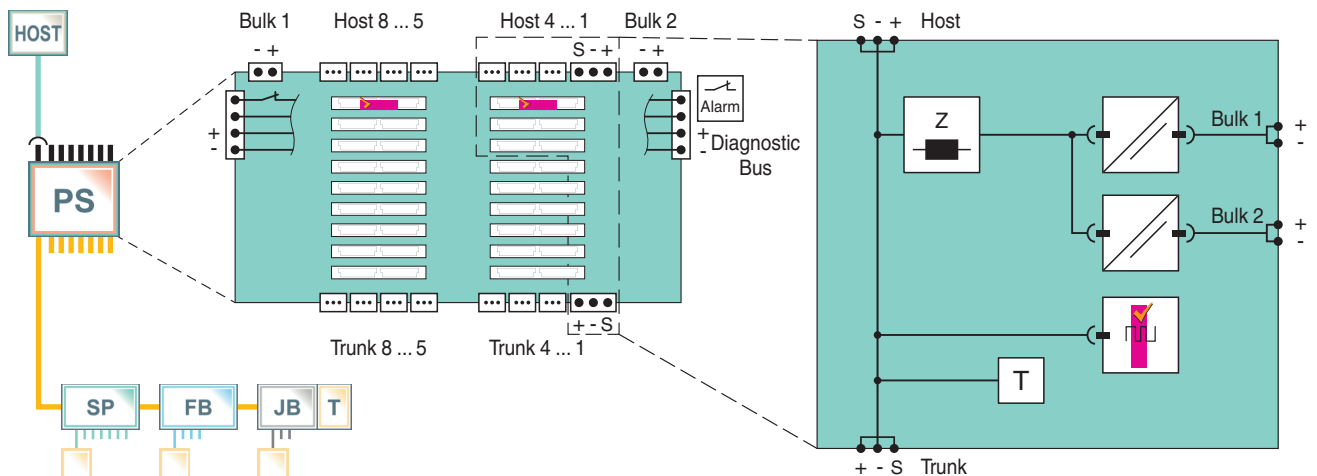


Function

The FieldConnex® compact Power Hub is a modular fieldbus power supply for eight segments with lowest power dissipation and smallest foot print. It supports explosion protection e.g. the high-power trunk for longest cable run and highest device count. The Power Hub supports optional advanced diagnostics for fast fieldbus commissioning and online monitoring. The motherboard is the wiring interface with terminals for all DCS and PLC host systems. Sockets for all modules enable simple installation and replacement without tools. For power redundancy with seamless transfer, pairs of modules feed each segment. Wire connections can be selected as spring terminals or screw terminals.

This design allows the most compact cabinet layout. Excellent availability and a very long service life are achieved through: passive impedance filter per segment, high-availability fieldbus termination and plugs with retaining screws. Electronics are optimized for lowest power dissipation and compactness.

Connection



Technical Data

| General specifications | |
|--------------------------------|-------------------------------|
| Design / Mounting | Motherboard based |
| Installation in hazardous area | Zone 2 / Div. 2 |
| Supply | |
| Connection | redundant |
| Rated voltage | U_r 19.2 ... 35 V SELV/PELV |
| Rated current | I_r 16 A |

Release date: 2025-02-07 Date of issue: 2025-02-07 Filename: t171429_eng.pdf

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

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Technical Data

| | |
|--|--|
| Power dissipation | typ. 0.4 W per segment |
| Fieldbus connection | |
| Number of segments | 8 Redundant Power Supply |
| Host-side | general purpose host |
| Terminating resistor | 100 Ω integrated |
| Indicators/operating means | |
| Fault signal | VFC alarm 1 A, 50 V DC, normally closed |
| 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 250 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 |
| Fieldbus standard | IEC 61158-2 |
| 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 | screw terminal , pluggable spring terminal , pluggable |
| Core cross section | 2.5 mm ² |
| Housing material | Polycarbonate |
| Degree of protection | IP20 |
| Mass | approx. 1350 g |
| Dimensions | |
| Height | 150 mm |
| Width | 268 mm |
| Depth | 69 mm |
| Mounting | DIN rail mounting |
| Data for application in connection with hazardous areas | |
| Certificate | TÜV 10 ATEX 555761X |
| Marking | Ⓜ II 3G Ex ec IIC T4 Gc |
| Directive conformity | |
| Directive 2014/34/EU | EN IEC 60079-0:2018+AC:2020 , EN 60079-7:2015+A1:2018 , EN 60079-11:2012 |
| International approvals | |
| FM approval | |
| FM certificate | FM 19 US 0015 X and FM 19 CA 0011 X |
| Approved for | Class I, Division 2, Groups A, B, C, D, T4 / Class I, Zone 2, AEx/Ex ec IIC T4 |
| IECEx approval | |
| IECEx certificate | IECEx TUN 13.0037X |
| IECEx marking | Ex ec IIC T4 Gc |
| General information | |

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Technical Data

Supplementary information

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

Assembly



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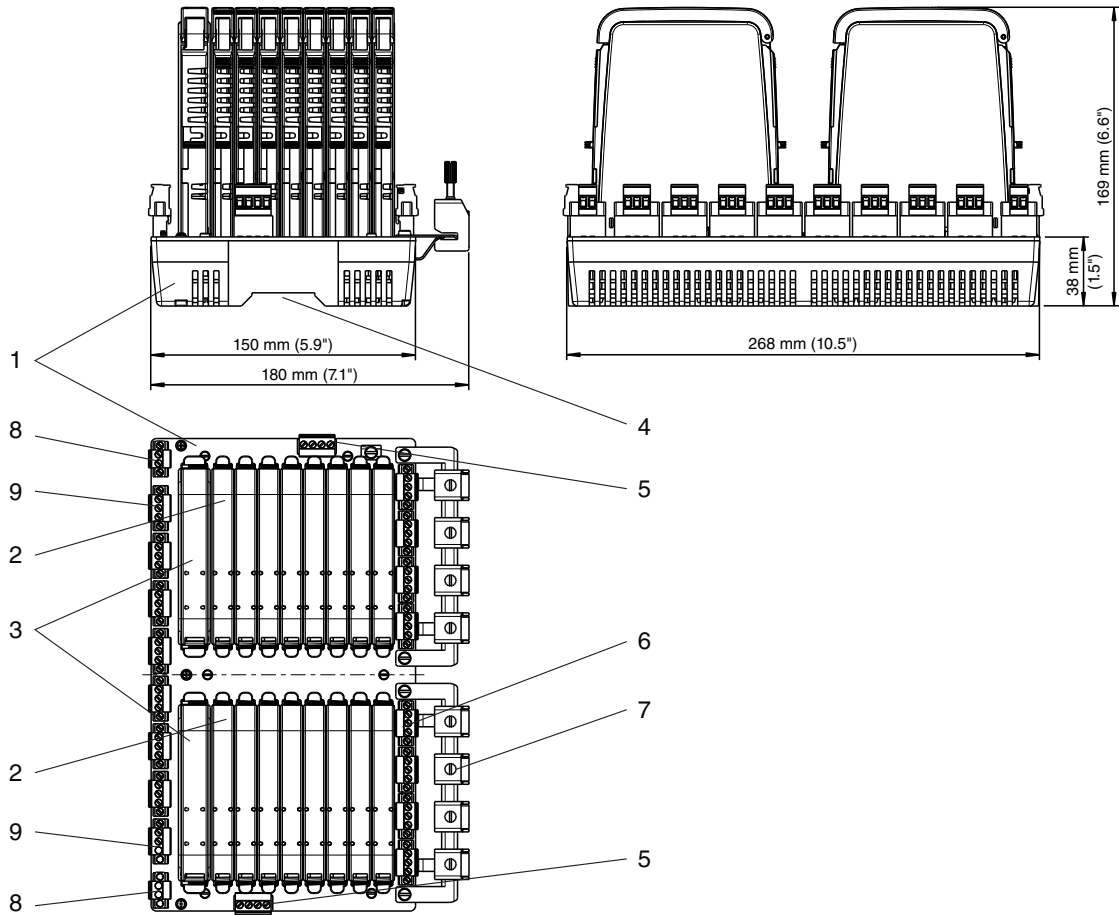
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Additional Information

Dimensions and Assembly



Description:

- 1 Motherboard MBHC-FB-8R*
- 2 Power supply modules
- 3 Diagnostic modules
- 4 Mounting slot for DIN mounting rail
- 5 Connections for alarm volt-free contact and diagnostic bus
- 6 Connections for fieldbus trunk
- 7 Screening/earthing kit for trunk cables shield, optional accessory
- 8 Connections for bulk power supply
- 9 Connections for host

Components

Compatible Power Supply Modules

| | | HCD2-FBPS-1.23.500 | HCD2-FBPS-1.500 | |
|--------------------------|---------------------------|--------------------|-----------------|---|
| Power Output | | | | |
| Voltage (V) | | 21 ... 23 | 28 ... 29.5 | |
| Current (mA) | | 500 | 500 | |
| Limit U ₀ (V) | | 24 | 30 | |
| Device in ... | Type of Protection | | | Required Installation Components |
| Zone 0/Div. 1 | Intrinsically safe Ex ia | | ■ | FieldBarrier |
| Zone 1/Div. 1 | Intrinsically safe Ex ia | | ■ | FieldBarrier |
| Zone 1/Div. 1 | Flameproof Ex d | | ■ | Segment Protector R-SP-E12 or any Segment Protector installed in Zone 2 |

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| | | | | |
|-----------|-----------------------------------|---|---|--|
| Zone 2 | Intrinsically safe Ex ic (Entity) | ■ | ■ | Selected Segment Protectors |
| Div. 2 | Non-incendive | ■ | ■ | Any Segment Protector; power module selection depends on voltage of field device |
| Safe Area | No specific type of protection | | ■ | Segment Protector recommended |

For more details on the power supply modules see respective data sheets.

Diagnostic Module Selection

The following diagnostic modules are compatible with this motherboard.

| Type code | Description |
|-------------|---|
| HD2-DM-B | Diagnostic Module, basic version |
| HD2-DM-A | Diagnostic Module, advanced version |
| HD2-DM-A.RO | Diagnostic Module, advanced version, relay output |

The stationary and mobile Advanced Diagnostic Module (ADM) and related components provide measurement tools for the fieldbus physical layer. The ADM monitors many quality indicating values of the fieldbus physical layer. An expert system, which is included, analyzes the values and issues easy to understand messages indicating cause and remedy. The ADM is recommended for:

- **Faster commissioning and plant start-up:** Installation issues are known and corrected before loop check commences
- **Reliable operation through online monitoring:** The quality of the physical layer and installation is monitored making fieldbus a manageable asset
- **Efficient troubleshooting:** An expert system guides the user through issues and faults in the fieldbus installation

Many other tools are included that enhance fieldbus installation and upkeep. Please see datasheet on HD2-DM-A.

Product Versions

| Type code | Description |
|--------------|---|
| MBHC-FB-8R | Redundant motherboard with pluggable screw terminals |
| MBHC-FB-8R.1 | Redundant motherboard with pluggable spring terminals |