



Power Hub Motherboard

FieldConnex® Fieldbus

FBTA-228-BPFB-R-8R

- 8 segments, redundant, individual modules per segment
- Customized for Invensys, FBM228
- 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
- Dual, redundant bulk power connections

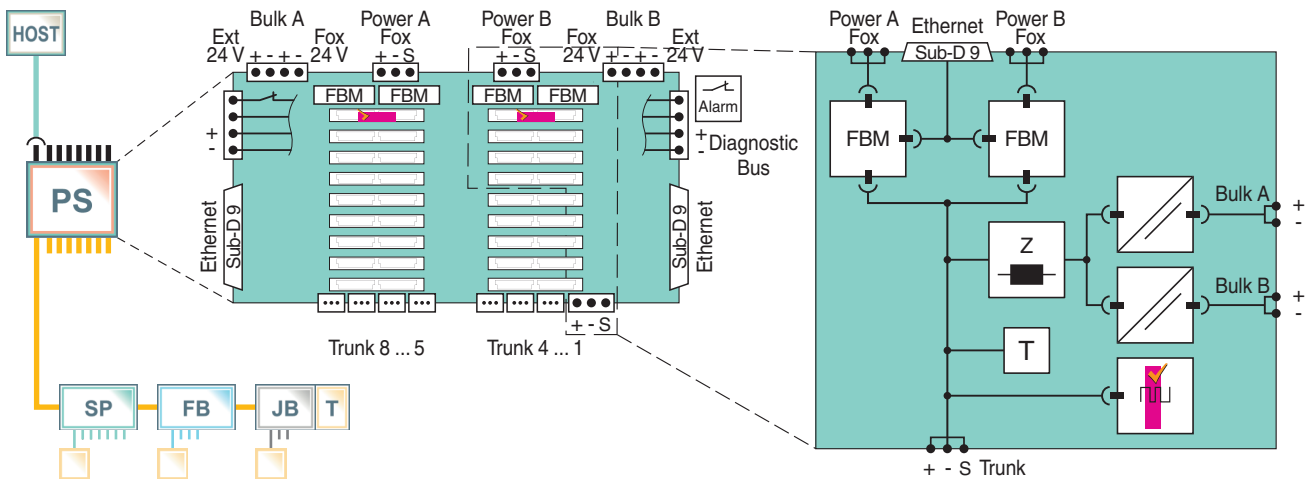
Power hub motherboard for Invensys FBM 228



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 and mounting plate with sockets for redundant FBM-228 host modules. Individual power modules enable simple installation and replacement without tools. For power redundancy with seamless transfer, pairs of modules feed each segment. Dual, redundant bulk power connections are configurable. They permit common or separate supply to FBM and power modules via Invensys or external power source. This design allows the most compact cabinet layout for large scale projects. Excellent availability and a very long service life is achieved through: passive impedance filter per segment, high-availability fieldbus termination and plug-in connectors with retaining screws and electronics optimized for lowest power dissipation and compactness.

Connection



Technical Data

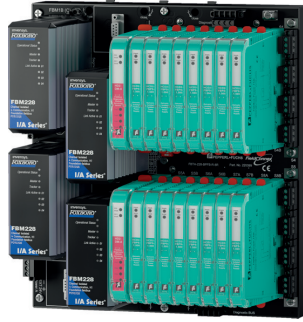
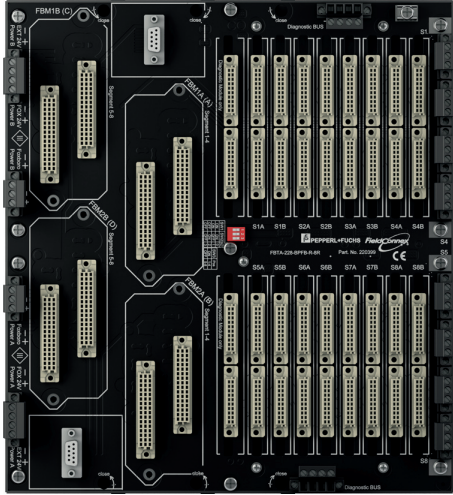
General specifications	
Design / Mounting	Motherboard based
Supply	
Connection	redundant
Rated voltage	U _r 21.6 ... 25.2 V Input for Power Hub selectable: Option 1: from regular Foxboro power supplies Option 2: one or two external bulk power supplies
Rated current	I _r 16 A

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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	redundant Invensys FBM 228
Main cable (Trunk)	
Rated current	max. 500 mA per segment
Terminating resistor	100 Ω integrated
Indicators/operating means	
Fault signal	VFC alarm output via connectors
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 2004/108/EC	EN 61326-1:2006
Standard conformity	
Electromagnetic compatibility	NE 21:2006
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	-20 ... 60 °C (-4 ... 140 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	< 95 % non-condensing
Shock resistance	10 g , 11 ms
Vibration resistance	1 g , 10 ... 150 Hz
Mechanical specifications	
Connection type	screw terminal , pluggable
Housing material	Steel, coated
Degree of protection	IP20
Mass	3200 g
Dimensions	
Height	253 mm
Width	278 mm
Depth	69 mm
Mounting	DIN rail mounting
International approvals	
FM approval	
FM certificate	FM 19 US 0015 X and FM 19 CA 0011 X
FM marking	AEx/Ex ec IIC T4
General information	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .

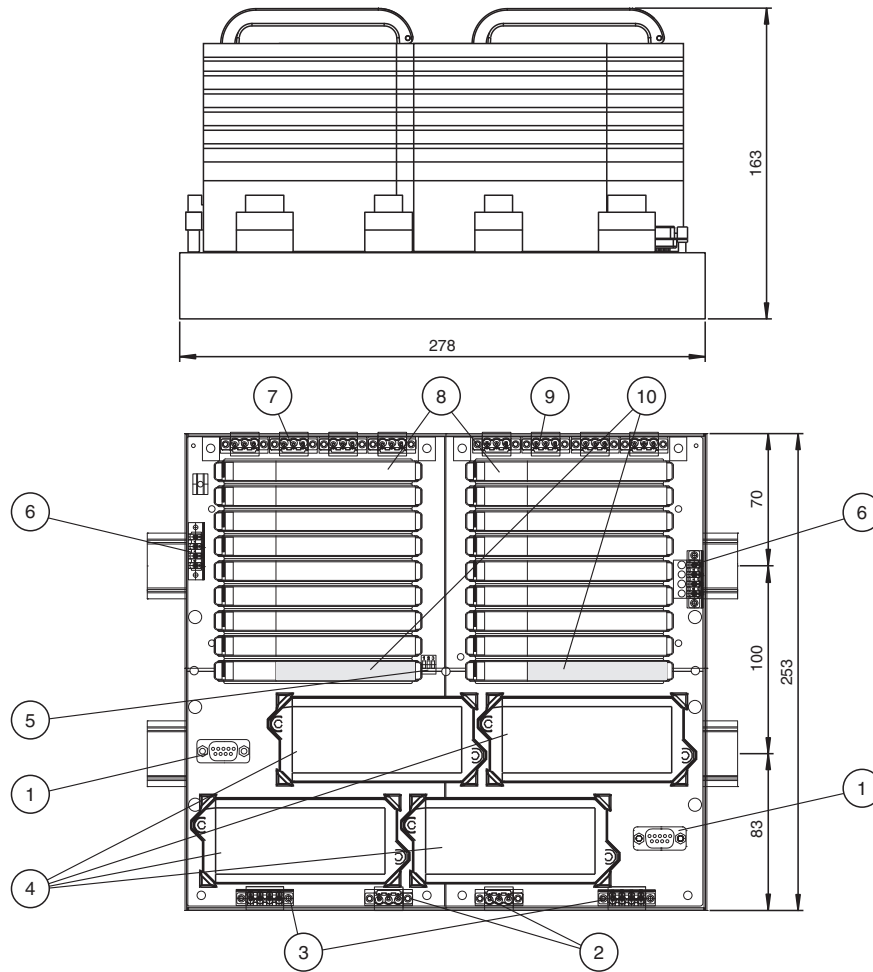
Assembly



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Additional Information

Dimensions and Assembly



Description:

- 1 Ethernet trunk fieldbus connection
- 2 Connections for Foxboro A&B power supply
- 3 Connections for external bulk power supply for power supply modules
- 4 INVENSYS FBM 228 FOUNDATION fieldbus modules
- 5 ID Dip Switch array
- 6 Fault output (relay) and diagnostic bus
- 7 Fieldbus trunk connections 5-8
- 8 Power supply modules
- 9 Fieldbus trunk connections 1-4
- 10 Diagnostic modules

Components

Power Module

HCD2-FBPS-1.500			
Power Output			
Voltage (V)		28 ... 30	
Current (mA)		500	
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

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Zone 1/Div. 1	Flameproof Ex d	■	Segment Protector R-SP-E12 or any Segment Protector installed in Zone 2
Safe Area	No specific type of protection	■	Segment Protector recommended

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.