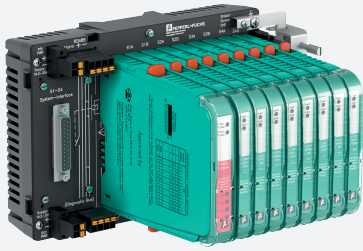


# Power Hub Motherboard

## FieldConnex® Fieldbus

### MBHC-FB-4R.HSC



- 4 segments, redundant, individual modules per segment
- Customizable cable connections to any 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 and PROFIBUS PA
- 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

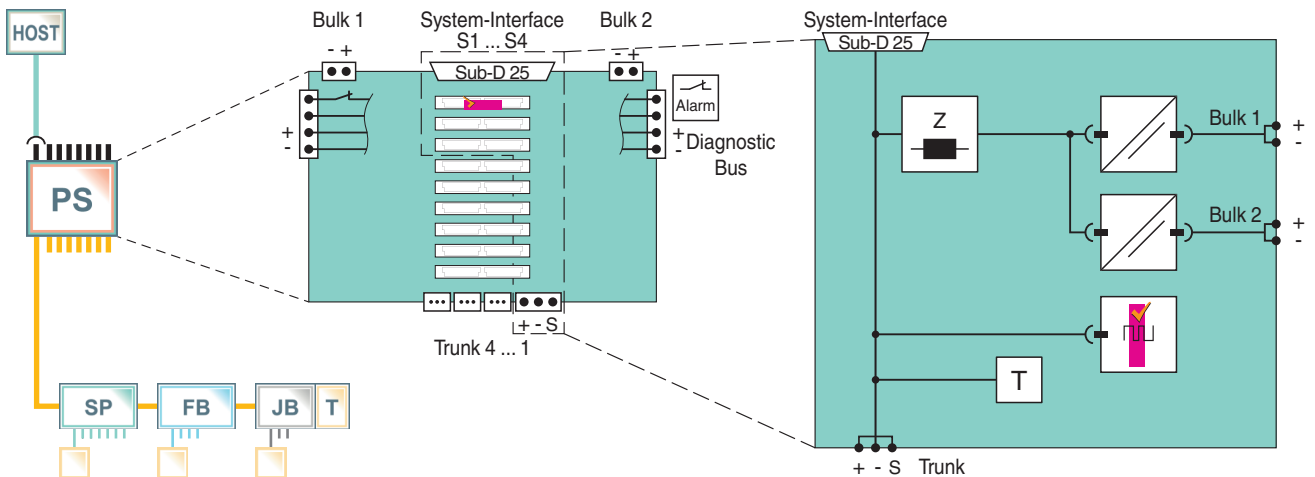
Power hub motherboard with host system connectors



## Function

The FieldConnex® Compact Power Hub is a modular fieldbus power supply for four 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 is equipped with a DB 25 connector. Manufactured cables with DCS system plugs reduce the number connection points and effort for check-out. 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 plug-in connectors with retaining screws. Electronics are optimized for lowest power dissipation and compactness.

## Connection



## Technical Data

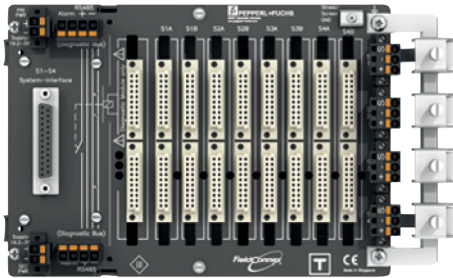
General specifications	
Design / Mounting	Motherboard based
Installation in hazardous area	Zone 2 / Div. 2
Supply	
Connection	redundant
Rated voltage	$U_r$ 19.2 ... 35 V SELV/PELV

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## Technical Data

Rated current	$I_r$	12 A
Power dissipation		typ. 0.4 W per segment
<b>Fieldbus connection</b>		
Number of segments		4 Redundant Power Supply
Host-side		system specific cable connection
Terminating resistor		100 $\Omega$ integrated
<b>Indicators/operating means</b>		
Fault signal		VFC alarm 1 A, 50 V DC, normally closed
<b>Galvanic isolation</b>		
Fieldbus segment/Fieldbus segment		functional insulation acc. to IEC 62103, rated insulation voltage 50 V <sub>eff</sub>
Fieldbus segment/Supply		functional insulation acc. to IEC 62103, rated insulation voltage 250 V <sub>eff</sub>
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
<b>Standard conformity</b>		
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
<b>Ambient conditions</b>		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °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
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
<b>Mechanical specifications</b>		
Connection type		screw terminal , pluggable
Core cross section		2.5 mm <sup>2</sup>
Housing material		Polycarbonate
Degree of protection		IP20
Mass		approx. 580 g
Mounting		DIN rail mounting
<b>Data for application in connection with hazardous areas</b>		
Certificate		TÜV 10 ATEX 555761X
Marking		Ⓜ II 3G Ex ec IIC T4 Gc
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2012 , EN 60079-11:2012 , EN 60079-15:2010
<b>International approvals</b>		
FM approval		CoC 3024816, CoC 3024816C
Approved for		Class I, Division 2, Groups A, B, C, D, T4 / Class I, Zone 2, AEx/Ex nA IIC T4
IECEx approval		IECEx TUN 13.0037X
Approved for		Ex ec IIC T4 Gc
<b>Certificates and approvals</b>		
Marine approval		DNV A-14038
<b>General information</b>		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

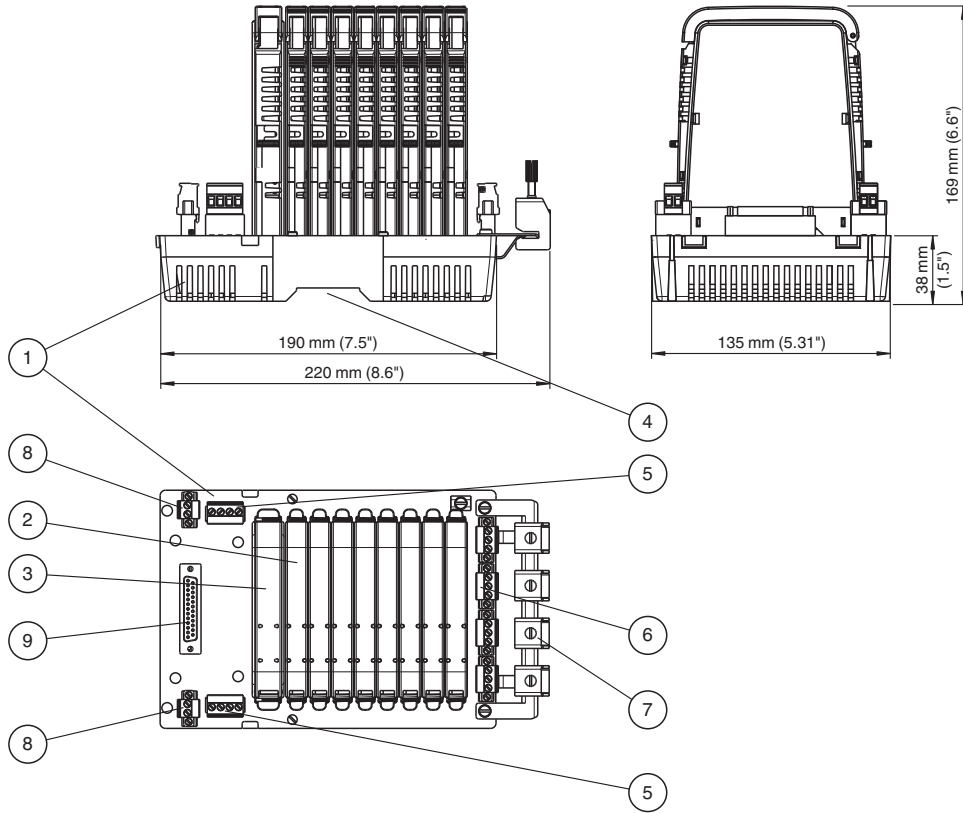
Assembly



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**Additional Information**

**Dimensions and Assembly**



**Description:**

- 1 Motherboard MBHC-FB-4R.HSC\*
- 2 Power supply modules
- 3 Diagnostic module
- 4 Mounting slot for DIN mounting rail
- 5 Connections for alarm voltage-free contact and diagnostic bus
- 6 Connections for fieldbus trunk
- 7 Screening/earthing kit for trunk shields, optional accessory
- 8 Connections for bulk power supply
- 9 DB 25 connector for host via custom cable

**Components**

**Compatible Power Supply Modules**

		HCD2-FBPS-1.23.500	HCD2-FBPS-1.500	
<b>Power Output</b>				
Voltage (V)		21 ... 23	28 ... 29.5	
Current (mA)		500	500	
Limit U <sub>0</sub> (V)		24	30	
<b>Device in ...</b>	<b>Type of Protection</b>			<b>Required Installation Components</b>
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
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

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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-4R.HSC	Motherboard for redundant power supplies with pluggable screw terminals and host system connector (Pepperl+Fuchs custom cable with 25-pin sub-D connector to a DCS typical system connection)
MBHC-FB-4R.HSC.1	Motherboard for redundant power supplies with pluggable spring terminals and host system connector (Pepperl+Fuchs custom cable with 25-pin sub-D connector to a DCS typical system connection)

## Interface

### Connection to FOUNDATION Fieldbus Hosts

#### Invensys

The motherboard can be connected to Foxboro I/A series with FBM228 host modules using a dedicated system cable. The number of cables required is determined by the number of system connectors on the Power Hub motherboard.

Type code	Description
ACC-MB-HGC.FOX.010	FieldConnex Power Hub system cable for Foxboro FBM228, length 1 m
ACC-MB-HGC.FOX.020	FieldConnex Power Hub system cable for Foxboro FBM228, length 2 m
ACC-MB-HGC.FOX.030	FieldConnex Power Hub system cable for Foxboro FBM228, length 3 m
ACC-MB-HGC.FOX.050	FieldConnex Power Hub system cable for Foxboro FBM228, length 5 m
ACC-MB-HGC.FOX.100	FieldConnex Power Hub system cable for Foxboro FBM228, length 10 m
ACC-MB-HGC.FOX.150	FieldConnex Power Hub system cable for Foxboro FBM228, length 15 m
ACC-MB-HGC.FOX.200	FieldConnex Power Hub system cable for Foxboro FBM228, length 20 m

#### Honeywell

The motherboard can be connected to Honeywell series C with FIM4/FIM8 host modules using a dedicated system cable. The number of cables required is determined by the number of system connectors on the Power Hub motherboard.

Type code	Description
ACC-MB-HGC.HON.010	FieldConnex Power Hub system cable for Honeywell C300, length 1 m
ACC-MB-HGC.HON.020	FieldConnex Power Hub system cable for Honeywell C300, length 2 m
ACC-MB-HGC.HON.030	FieldConnex Power Hub system cable for Honeywell C300, length 3 m
ACC-MB-HGC.HON.050	FieldConnex Power Hub system cable for Honeywell C300, length 5 m
ACC-MB-HGC.HON.100	FieldConnex Power Hub system cable for Honeywell C300, length 10 m
ACC-MB-HGC.HON.150	FieldConnex Power Hub system cable for Honeywell C300, length 15 m
ACC-MB-HGC.HON.200	FieldConnex Power Hub system cable for Honeywell C300, length 20 m