



# PROFINET Power Hub, Gateway Module

## HD2-GTR-4PA.PN

- Gateway PROFINET RT to 4 x PROFIBUS PA segments
- Up to 32 devices per PROFIBUS PA segment
- Installation in Zone 2/Class I, Div. 2
- Ring and system redundancy
- Integrated webserver for diagnostics



### Function

The PROFINET to PROFIBUS PA gateway integrates communication of 4 PA segments into PROFINET I/O systems. The gateway is part of the FieldConnex® Power Hub system. The gateway operates with power supply modules connected to the same or a separate motherboard.

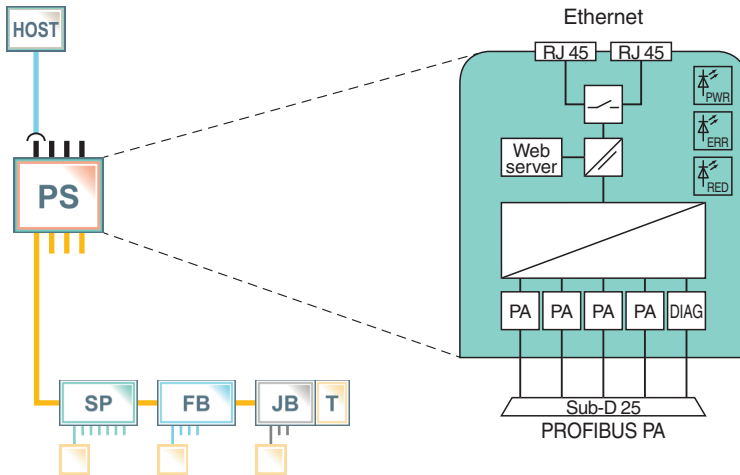
The gateway provides a PA master for each segment and thus enables short bus cycle times.

One single gateway supports S2 system redundancy and ring redundancy.

A complete toolchain supports the engineering for system integration. A gateway device type manager (DTM) and a webserver enable access to both status and diagnostics of the gateway. The gateway DTM enables communication for parameterization, diagnostics, and status information to PROFIBUS PA devices through vendors' DTMs. A library of STEP 7 software modules for integration into Siemens PCS7 is available.

The PROFINET gateway is an ideal solution for new plants and for upgrading existing PROFIBUS PA installations from PROFIBUS DP to PROFINET.

### Connection



### Technical Data

#### General specifications

Design / Mounting Motherboard based

#### Supply

Rated voltage  $U_r$  19.2 ... 35 V SELV/PELV

Rated current  $I_r$  typ. 135 mA

Power dissipation approx. 3.5 W

#### Fieldbus connection

Number of segments 4

Number of devices per segment max. 32

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## Technical Data

Fieldbus type	PROFIBUS PA
<b>Ethernet Interface</b>	
Number of ports	2
Protocol	PROFINET
Ethernet Interface	Connector plug , 2x RJ45
Transfer rate	100 MBit/s
Redundancy	Ring (MRP) , System S2
<b>Indicators/operating means</b>	
LED ETH1 LINK 2	green: link status
LED ETH1 ACT	yellow: activity status
LED ETH2 LINK	green: link status
LED ETH2 ACT	yellow: activity status
LED ERR	red 2 Hz flashing: Ethernet error
LED Seg 1...4	red 2 Hz flashing: PA error, red and LED DP/ERR red: MAU error
LED PWR	green: Power on
LED DP/ERR	red 2 Hz flashing: DP error ; red: Hardware error
LED Red.	yellow: redundant operation primary device ; yellow 2 Hz flashing: synchronization or redundancy not available
<b>Galvanic isolation</b>	
CH/PROFIBUS DP	functional insulation acc. to IEC 61010, rated insulation voltage 50 V <sub>eff</sub>
PROFIBUS DP/Supply	functional insulation acc. to IEC 61010, rated insulation voltage 50 V <sub>eff</sub>
CH/CH	functional insulation acc. to IEC 61010, rated insulation voltage 50 V <sub>eff</sub>
CH/Ethernet	functional insulation acc. to IEC 61010, rated insulation voltage 50 V <sub>eff</sub>
All circuits/FE	functional insulation acc. to IEC 61010, rated insulation voltage 50 V <sub>eff</sub>
Ethernet/Supply	functional insulation acc. to IEC 61010, rated insulation voltage 50 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 ... 60 °C (-40 ... 140 °F) vertically mounted , -40 ... 70 °C (-40 ... 158 °F) horizontally mounted
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
<b>Mechanical specifications</b>	
Housing material	Polycarbonate
Housing width	40 mm
Housing height	106 mm
Housing depth	128 mm
Degree of protection	IP20
Mass	250 g
Mounting	motherboard mounting
<b>Data for application in connection with hazardous areas</b>	
Certificate	TÜV 15 ATEX 7735 X
Marking	Ⓜ II 3 G Ex ec IIC T4 Gc

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## Technical Data

<b>Directive conformity</b>	
Directive 2014/34/EU	EN IEC 60079-0:2018+AC:2020 , EN 60079-7:2015+A1:2018
<b>International approvals</b>	
IECEX approval	IECEX TUR 16.0007X
Approved for	Ex ec IIC T4 Gc
<b>Certificates and approvals</b>	
Marine approval	pending
<b>General information</b>	
Supplementary information	Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

## Assembly



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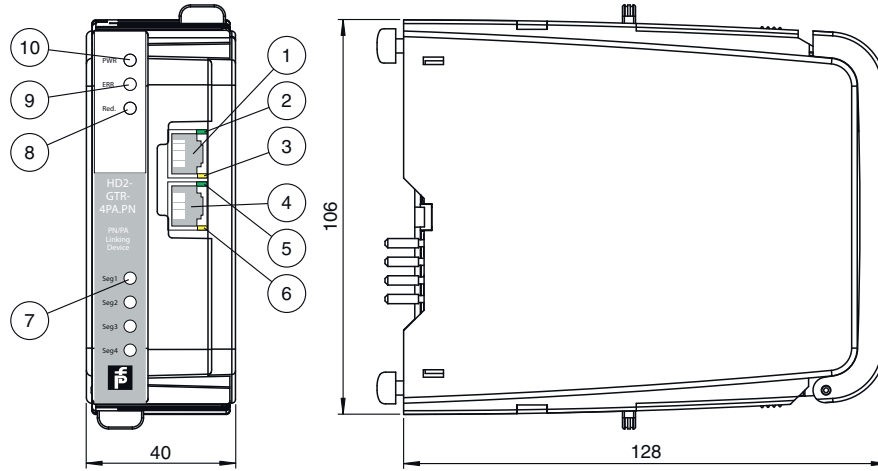
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**Additional Information**

**Dimensions and Assembly**



**Description:**

- 1 Ethernet port 1
- 2 Ethernet port 1 LED, yellow: Activity status indicator
- 3 Ethernet port 1 LED, green: Link status indicator
- 4 Ethernet port 2
- 5 Ethernet port 2 LED, yellow: Activity status indicator
- 6 Ethernet port 2 LED, green: Link status indicator
- 7 LED Seg 1 ... Seg 4, red: PROFIBUS PA segment 1 ... 4 status
- 8 LED Red.: Redundancy status indicator
- 9 LED ERR: Error status indicator
- 10 LED PWR: Power status indicator

**Available PROFIBUS and PROFINET Power Hub System Components**

The following list describes all available PROFIBUS and PROFINET Power Hub system components as an overview and quick reference beyond the component described in this datasheet.

Type Code	Description
HD2-GTR-4PA	PROFIBUS DP to PROFIBUS PA gateway module, 4 PROFIBUS PA segments.
HD2-GTR-4PA.PN	PROFINET to PROFIBUS PA gateway module, 4 PROFIBUS PA segments.
HCD2-FBPS-1.500	Power supply module 30 V/500 mA.
HCD2-FBPS-1.23.500	Power supply module 23 V/500 mA.
HD2-DM-A*	Advanced physical layer diagnostic module.
HD2-DM-B	Basic diagnostic module.
MB-FB-GTR1	Motherboard for gateway redundancy, slots for 2 gateway modules.
MBHC-FB-4.GT*	Compact Power Hub motherboard for 4 segments, slots for 4 power supply modules, 1 diagnostic module, and 1 gateway module. Connector options: Removable screw terminals or spring terminals.
MBHC-FB-4.HSC*	Compact Power Hub motherboard for 4 segments, slots for 4 power supply modules and 1 diagnostic module. Connector options: Removable screw terminals or spring terminals.
MBHC-FB-4R.HSC*	Compact Power Hub motherboard for 4 redundant segments, slots for 8 power supply modules and 1 diagnostic module. Connector options: Removable screw terminals or spring terminals.
KT-MB-FB-D-4R.GEN	DART high-density Power Hub with generic interface for 4 redundant segments, slots for 8 power supply modules with 1 diagnostic module.

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**Applicable Combinations of Gateway Motherboards, System Modules with Motherboards**

		GW MBs	GW Modules		Power Supplies		Diagnostic Modules	
		MB-FB-GTR1	HD2-GTR-4PA	HD2-GTR-4PA.PN	HCD2-FBPS-1.23.500	HCD2-FBPS-1.500	HD2-DM-A*	HD2-DM-B
MBs or Power Hub Kits	MBHC-FB-4.HSC*	x			x	x	x	x
	MBHC-FB-4R.HSC*	x			x	x	x	x
	KT-MB-FB-D-4R.GEN	x					x	x
GW MBs	MB-FB-GTR1		x	x				
	MBHC-FB-4.GT		x	x	x	x	x	x

For more details on the components see respective datasheets.

**Example: Power Hub with Redundancy for 4 Segments**

No.	Product Component	Model Type/Order Number
1	Motherboard	MBHC-FB-4R.HSC
8	Power supply modules	HCD2-FBPS-1.500
4	Surge protectors	TPH-LBF-IA1.36.DE*
1	Earth bar for surge protectors	ACC-LBF-EB.4
1	Advanced diagnostic module	HD2-DM-A
1	Gateway motherboard	MB-FB-GTR1
2	PROFIBUS gateway module or	HD2-GTR-4PA
1	PROFINET gateway module	HD2-GTR-4PA.PN

**Example: Simplex Power Hub for 4 Segments**

The table lists the components of a typical Power Hub.  
Optional accessories are also listed.

No.	Product Component	Model Type/Order Number
1	Motherboard	MBHC-FB-4.GT
4	Power supply modules	HCD2-FBPS-1.500
4	Surge protectors	TPH-LBF-IA1.36.DE*
1	Earth bar for surge protectors	ACC-LBF-EB.8
1	Advanced diagnostic module	HD2-DM-A
1	PROFIBUS or PROFINET gateway module	HD2-GTR-4PA*

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