Features

- 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 PROFINET 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.

Features

- 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

Assembly

Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.

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PROFINET Power Hub, Gateway Module
HD2-GTR-4PA.PN

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.

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

Connection
### 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 interface

| Number of segments | 4 |
| Number of devices per segment | $\leq 32$ |
| Fieldbus type | PROFIBUS PA |

### Ethernet Interface

| Number of ports | 2 |
| Protocol | PROFINET |
| Ethernet Interface | Connector, 2x RJ45 |
| Transfer rate | 100 MBit/s |
| Redundancy | Ring (MRP), System S2 |

#### Indicators/operating means

- **LED ETH1 LINK**
  - 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

### Galvanic isolation

- CH/PROFIBUS DP
  - functional insulation acc. to IEC 61010, rated insulation voltage $50 V_{\text{eff}}$
- PROFIBUS DP/Supply
  - functional insulation acc. to IEC 61010, rated insulation voltage $50 V_{\text{eff}}$
- CH/CH
  - functional insulation acc. to IEC 61010, rated insulation voltage $50 V_{\text{eff}}$
- CH/Ethernet
  - functional insulation acc. to IEC 61010, rated insulation voltage $50 V_{\text{eff}}$
- All circuits/FE
  - functional insulation acc. to IEC 61010, rated insulation voltage $50 V_{\text{eff}}$
- Ethernet/Supply
  - functional insulation acc. to IEC 61010, rated insulation voltage $50 V_{\text{eff}}$

### 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
  - $-40 \ldots 60 \, ^\circ\text{C} (-40 \ldots 140 \, ^\circ\text{F})$ vertically mounted, $-40 \ldots 70 \, ^\circ\text{C} (-40 \ldots 158 \, ^\circ\text{F})$ horizontally mounted
- Storage temperature
  - $-40 \ldots 85 \, ^\circ\text{C} (-40 \ldots 185 \, ^\circ\text{F})$
- 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

- 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

### Data for application in connection with hazardous areas

- Certificate
  - TÜV 15 ATEX 7735 X
- Marking
  - II 3 G Ex ec IIC T4 Gc

### Directive conformity

- Directive 2014/30/EU

### International approvals
### Technical data

<table>
<thead>
<tr>
<th>Description</th>
<th>Type Code</th>
<th>Code</th>
<th>Sync Mode</th>
<th>Connector Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROFIBUS DP to PROFIBUS PA gateway module, 4 PROFIBUS PA segments.</td>
<td>HD2-GTR-4PA</td>
<td>PROFIBUS DP to PROFIBUS PA gateway module, 4 PROFIBUS PA segments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROFINET to PROFIBUS PA gateway module, 4 PROFIBUS PA segments.</td>
<td>HD2-GTR-4PA.PN</td>
<td>PROFINET to PROFIBUS PA gateway module, 4 PROFIBUS PA segments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply module 30 V/500 mA.</td>
<td>HCD2-FBPS-1.500</td>
<td>Power supply module 30 V/500 mA.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply module 23 V/500 mA.</td>
<td>HCD2-FBPS-1.23.500</td>
<td>Power supply module 23 V/500 mA.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced physical layer diagnostic module.</td>
<td>HD2-DM-A*</td>
<td>Advanced physical layer diagnostic module.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic diagnostic module.</td>
<td>HD2-DM-B</td>
<td>Basic diagnostic module.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motherboard for gateway redundancy, slots for 2 gateway modules.</td>
<td>MB-FB-GTR1</td>
<td>Motherboard for gateway redundancy, slots for 2 gateway modules.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compact Power Hub motherboard for 4 segments, slots for 4 power supply modules, 1 diagnostic module, and 1 gateway module.</td>
<td>MBHC-FB-4.GT*</td>
<td>Compact Power Hub motherboard for 4 segments, slots for 4 power supply modules, 1 diagnostic module, and 1 gateway module.</td>
<td>Removable screw terminals or spring terminals.</td>
<td></td>
</tr>
<tr>
<td>Compact Power Hub motherboard for 4 redundant segments, slots for 8 power supply modules and 1 diagnostic module.</td>
<td>MBHC-FB-4.R.HSC*</td>
<td>Compact Power Hub motherboard for 4 redundant segments, slots for 8 power supply modules and 1 diagnostic module.</td>
<td>Removable screw terminals or spring terminals.</td>
<td></td>
</tr>
<tr>
<td>DART high-density Power Hub with generic interface for 4 redundant segments, slots for 8 power supply modules with 1 diagnostic module.</td>
<td>KT-MB-FB-D-4R.GEN</td>
<td>DART high-density Power Hub with generic interface for 4 redundant segments, slots for 8 power supply modules with 1 diagnostic module.</td>
<td>Removable screw terminals or spring terminals.</td>
<td></td>
</tr>
</tbody>
</table>
### Applicable Combinations of Gateway Motherboards, System Modules with Motherboards

<table>
<thead>
<tr>
<th>GW MBs or Power Hub Kits</th>
<th>GW MBs</th>
<th>GW Modules</th>
<th>Power Supplies</th>
<th>Diagnostic Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBs or Power Hub Kits</td>
<td>MB-FB-GTR1</td>
<td>HD2-GTR-4PA</td>
<td>HCD2-FBPS-1,2500</td>
<td>HD2-DM-B</td>
</tr>
<tr>
<td>MBHC-FB-4.HSC*</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>MBHC-FB-4R.HSC*</td>
<td>x</td>
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</tr>
</tbody>
</table>

For more details on the components see respective datasheets.
**Example: Power Hub with Redundancy for 4 Segments**

<table>
<thead>
<tr>
<th>No.</th>
<th>Product Component</th>
<th>Model Type/Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Motherboard</td>
<td>MBHC-FB-4H.HSC</td>
</tr>
<tr>
<td>8</td>
<td>Power supply modules</td>
<td>HCD2-FBPS-1.500</td>
</tr>
<tr>
<td>4</td>
<td>Surge protectors</td>
<td>TPH-LBF-I1A1.36.DE*</td>
</tr>
<tr>
<td>1</td>
<td>Earth bar for surge protectors</td>
<td>ACC-LBF-EB.4</td>
</tr>
<tr>
<td>1</td>
<td>Advanced diagnostic module</td>
<td>HD2-DM-A</td>
</tr>
<tr>
<td>1</td>
<td>Gateway motherboard</td>
<td>MB-FB-GTR1</td>
</tr>
<tr>
<td>2</td>
<td>PROFIBUS gateway module</td>
<td>HD2-GTR-4PA*</td>
</tr>
<tr>
<td>1</td>
<td>PROFINET gateway module</td>
<td>HD2-GTR-4PA.PN</td>
</tr>
</tbody>
</table>

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

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

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<tr>
<th>No.</th>
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<td>Motherboard</td>
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<tr>
<td>1</td>
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</tr>
</tbody>
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