Model number
VBG-PN-K20-D
PROFINET Gateway with integrated switch

Features
- Gateway compliant with AS-Interface specification 3.0
- Connection to PROFINET IO
- Fault diagnosis via LEDs and graphic display
- Easy commissioning by graphic display
- AS-Interface monitor or extended AS-Interface diagnostic read via display
- Duplicate addressing detection
- Earth fault detection
- AS-Interface noise detection
- All AS-Interface functions possible via Ethernet
- Commissioning, locally on the gateway or via AS-i Control Tools software
- Ethernet diagnostic interface

Dimensions

Electrical connection

At the cable for power supply no slaves or repeaters may be attached.
At the cable for AS-Interface circuit no power supplies or further masters may be attached.

Indicating / Operating means

Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.
Pepperl+Fuchs Group USA: +1 330 486 0001 Germany: +49 621 776 4411 Singapore: +65 6779 9091
www.pepperl-fuchs.com fa-info@us.pepperl-fuchs.com fa-info@sg.pepperl-fuchs.com
fa-info@de.pepperl-fuchs.com
# Function

The VBG-PN-K20-D is a PROFINET Gateway in accordance with AS-Interface Specification 3.0, to IP20, and is used for the connection of AS-Interface systems to the higher level PROFINET controller. Its construction is particularly suitable for use in the control cabinet. The master is supplied from the AS-Interface cable. On the AS-Interface gateway with graphics display, the commissioning of the AS-Interface circuit and also the test of the connected peripherals can be completely separated from the commissioning of the PROFINET and the programming. All the options available on the AS-Interface can be addressed via Ethernet. Local operation using the graphics displays and the 4 buttons enable all the functions to be represented on the display, which are covered by the other AS-Interface masters via the AS-I Control Tools software. An additional RS 232 socket provides the option of reading out data via gateway, network and function, direct from the gateway in the context of an extended local diagnosis. 7 LEDs, which are mounted on the front, indicate the current status of the AS-Interface network.

Every PROFINET gateway is supplied with a unique MAC-ID and supports the assignment of an IP address statically (via keypad) and dynamically (DHCP, Dynamic Host Configuration Protocol).

## Accessories

**VAZ-SW-ACT32**

Full version of the AS-I Control Tools including connection cable

**USB-0.8M-PVC ABG-SUBD9**

Interface converter USB/RS 232

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## Technical data

### General specifications

<table>
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<th>Feature</th>
<th>Specification</th>
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<tr>
<td>AS-Interface specification</td>
<td>V3.0</td>
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<tr>
<td>Duplicate address detection</td>
<td>from AS-Interface slaves</td>
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<td>Earth fault detection</td>
<td>EFD</td>
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<td>EMC monitoring</td>
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<td>Diagnostics function</td>
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<td>UL File Number</td>
<td>E223772 only from low voltage, limited energy source (SELV or PELV) or listed Class 2 source</td>
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### Functional safety related parameters

- MTTF<sub>d</sub>: 105 a at 30 °C

### Indicators/operating means

- Display: Illuminated graphical LC display for addressing and error messages
- LED ETHERNET: Ethernet active; LED green
- LED AS-I ACTIVE: AS-Interface operation normal; LED green
- LED CONFIG ERR: Configuration error; LED red
- LED PRG ENABLE: Automatic programming; LED green
- LED POWER: Voltage ON; LED green
- LED PRJ MODE: Projecting mode active; LED yellow
- LED U AS-I: AS-Interface voltage; LED green

### Electrical specifications

- Insulation voltage: U<sub>i</sub> ≥ 500 V
- Rated operating voltage: U<sub>e</sub> from AS-Interface
- Rated operating current: I<sub>e</sub> ≤ 300 mA from AS-Interface

### Interface 1

- Interface type: PROFINET I/O device (IRT)
- Physical: 2 x RJ-45
- Protocol: Media Redundancy Protocol (MRP)
- Transfer rate: 10 MBit/s / 100 MBit/s, Automatic baud rate detection

### Interface 2

- Interface type: RS 232, serial Diagnostic Interface
- Transfer rate: 19.2 kBit/s

### Interface 3

- Interface type: Chip card slot

### Connection

- PROFINET: RJ-45
- AS-Interface removable spring clamp terminals

### Directive conformity

- Electromagnetic compatibility: Directive 2014/30/EU

### Standard conformity

- Electromagnetic compatibility: EN 61000-6-2:2005, EN 61000-6-4:2007
- Degree of protection: EN 60529:2000
- AS-Interface: EN 62026-2:2013
- Standards: EN 61000-6-2:2005, EN 61000-6-4:2007

### Ambient conditions

- Ambient temperature: 0 ... 55 °C (32 ... 131 °F)
- Storage temperature: -25 ... 85 °C (-13 ... 185 °F)

### Mechanical specifications

- Degree of protection: IP20
- Mass: 500 g
- Construction type: Low profile housing, Stainless steel

### Approvals and certificates

- EAC conformity: TR CU 020/2011
- UL approval: An isolated source with a secondary open circuit voltage of ≤ 30 Vdc with a 3 A maximum over current protection. Over current protection is not required when a Class 2 source is employed. UL mark does not provide UL certification for any functional safety rating or aspects of the device.

### Notes

In an AS-Interface network only one device can be operated earth fault detection. If there are many devices in an AS-Interface network, this can lead to the earth fault monitoring response threshold becoming less sensitive.