



AS-Interface gateway VBG-PB-K20-D-EV24

- Connection to PROFIBUS DP
- Easy commissioning and fault diagnosis via LEDs and graphic display
- PROFIBUS DP V1 support
- Duplicate addressing detection
- Earth fault detection
- AS-Interface noise detection
- AS-Interface POWER24

PROFIBUS gateway



Function

The VBG-PB-K20-D-EV24 is a PROFIBUS gateway according to AS-Interface specification 3.0.

The design of the K20 in stainless steel with IP20 is particularly suited for use in switching cabinets for snap on mounting on the 35 mm mounting rail.

The gateway in accordance with the AS-Interface specification V 3.0 is used to connect AS-Interface systems to a higher-level net. It acts as a master for the AS-Interface segment and as a slave for the higher-level net. During cyclic data exchange, the digital data of an AS-Interface segment is transferred. Analog values as well as the complete command set of the new AS-Interface specification are transferred using a command interface.

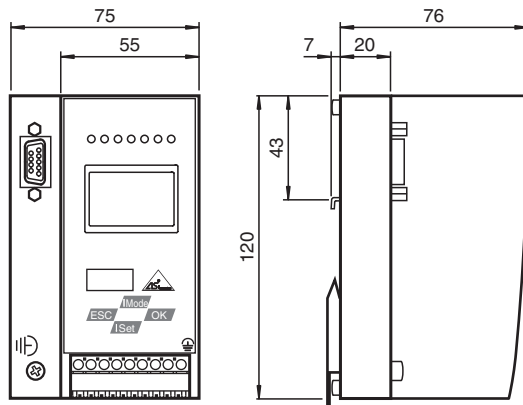
The address allocation and acceptance of the target configuration can be achieved via the keys. 7 LEDs fitted to the front panel indicate the actual state of the AS-Interface branch.

With the graphical display, the commissioning of the AS-Interface circuits and testing of the connected peripherals can take place completely separately from the commissioning of the higher-level network and the programming. With the 4 switches, all functions can be controlled and visualized on the display.

An RJ-45 Ethernet port provides a way of exporting data relating to the gateway, network and operation directly from the gateway for extended local diagnosis purposes.

The device can be operated with a 24 V power supply according to PELV.

Dimensions



Technical Data

General specifications

AS-Interface specification	V3.0
PLC-Functionality	activateable
Duplicate address detection	from AS-Interface slaves
Earth fault detection	EFD integrated

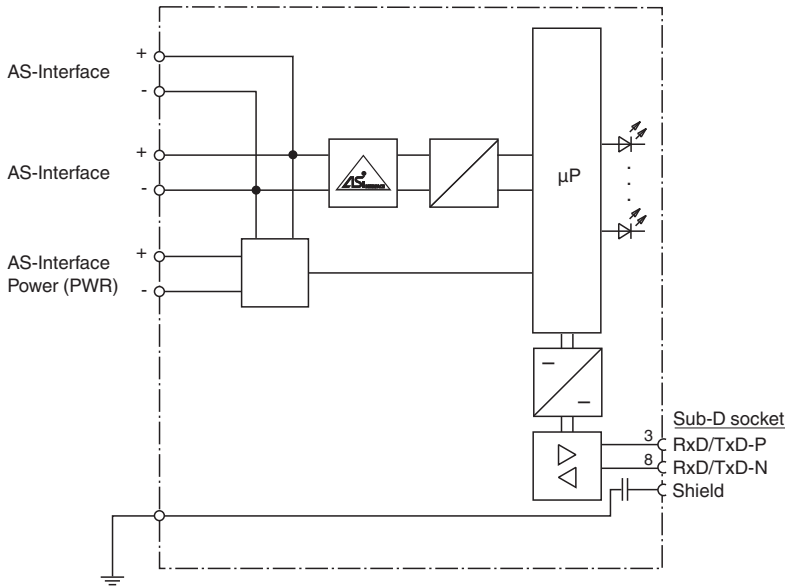
Technical Data

EMC monitoring	integrated	
Diagnostics function	Extended function via display	
Data decoupling	integrated	
UL File Number	E223772 only from low voltage, limited energy source (SELV or PELV) or listed Class 2 source	
Functional safety related parameters		
MTTF _d	105 a at 30 °C	
Indicators/operating means		
Display	Illuminated graphical LC display for addressing and error messages	
LED PROFIBUS	PROFIBUS communication active; LED green	
LED AS-i ACTIVE	AS-Interface operation normal; LED green	
LED CONFIG ERR	configuration error; LED red	
LED PRG ENABLE	autom. 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	
Switch SET	Selection and setting of a slave address	
OK button	Mode selection traditional-graphical/confirmation	
Button MODE	Mode selection PRJ-operation/save configuration/cursor	
ESC button	Mode selection traditional-graphical/cancel	
Electrical specifications		
Insulation voltage	U _i	≥ 500 V
Rated operating voltage	U _e	24 V DC (20 ... 31.6 V) safe isolated power supplies (PELV) Note 24 V power supply, max. segment length: 50 m Supply via AS-Interface power supply, max. segment length: 100 m
Rated operating current	I _e	approx. 250 mA
Power supply	max. 4 A per AS-Interface circuit	
Interface 1		
Interface type	RS-485	
Protocol	PROFIBUS DP V1	
Transfer rate	9.6 kBit/s / 12 MBit/s , Automatic baud rate detection	
Interface 2		
Interface type	Chip card slot	
Connection		
PROFIBUS	Sub-D interface	
AS-Interface	spring terminals, removable	
Directive conformity		
Electromagnetic compatibility	Directive 2014/30/EU	
	EN 62026-2:2013 EN 61000-6-2:2005, EN 61000-6-4:2007	
Standard conformity		
Electromagnetic compatibility	EN 61326:2003	
Degree of protection	EN 60529:2000	
AS-Interface	EN 62026-2:2013	
Shock resistance	EN 61131-2:2004	
Approvals and certificates		
UL approval	An isolated source with a secondary open circuit voltage of ≤ 30 V _{DC} 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.	
Ambient conditions		
Ambient temperature	0 ... 55 °C (32 ... 131 °F)	
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)	
Mechanical specifications		

Technical Data

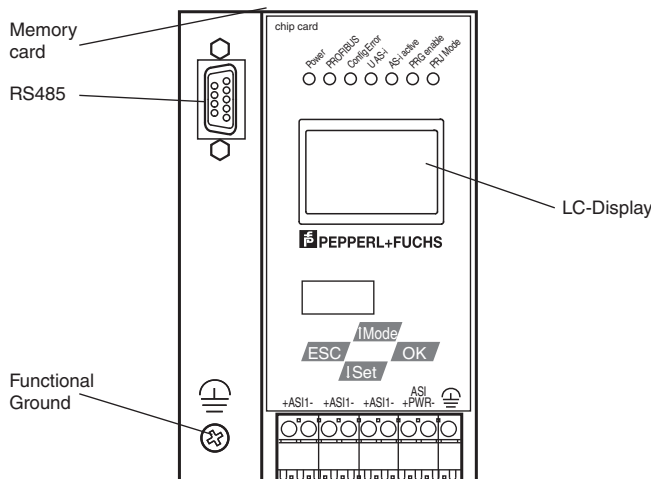
Degree of protection	IP20
Mass	500 g
Construction type	Low profile housing , Stainless steel

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.

Assembly






Operation

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.

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Accessories

	VAZ-SW-ACT32	Full version of the AS-I Control Tools including connection cable
	VAZ-PB-SIM	PROFIBUS master simulator
	VAZ-PB-DB9-W	PROFIBUS Sub-D Connector with switchable terminal resistance

Commissioning

The device is supplied with the configuration data files (GSD) as well as a restricted version of the AS-i Control Tools software. The software performs the addressing, programming and monitoring of the AS-Interface network. The full version of the AS-i Control Tool is available as an accessory and features an expanded diagnostics monitor as well as a larger program memory for AS-Interface Control which makes it possible to detect faulty telegrams of slaves.

A GSD file can be easily created for the PROFIBUS DP using the GSD assistant, whereby the size of the I/O windows can be conveniently adapted to the AS-Interface circuit's load and the AS-Interface configuration can be stored within the GSD file. A text file is also created, which documents the status of AS-Interface data in the gateway's I/O window.

Note:

The VAZ-PB-SIM accessory is required for the AS-i Control Tool.