Model number

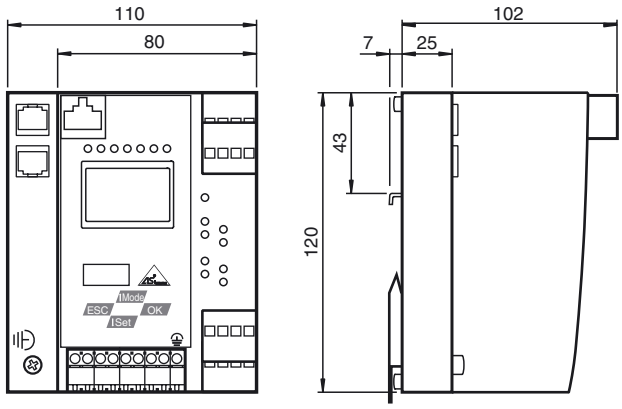
VBG-PN-K30-DMD-S32-EV

PROFINET Gateway with integrated safety monitor, double master for 2 AS-Interface networks, power supply input with decoupling coils

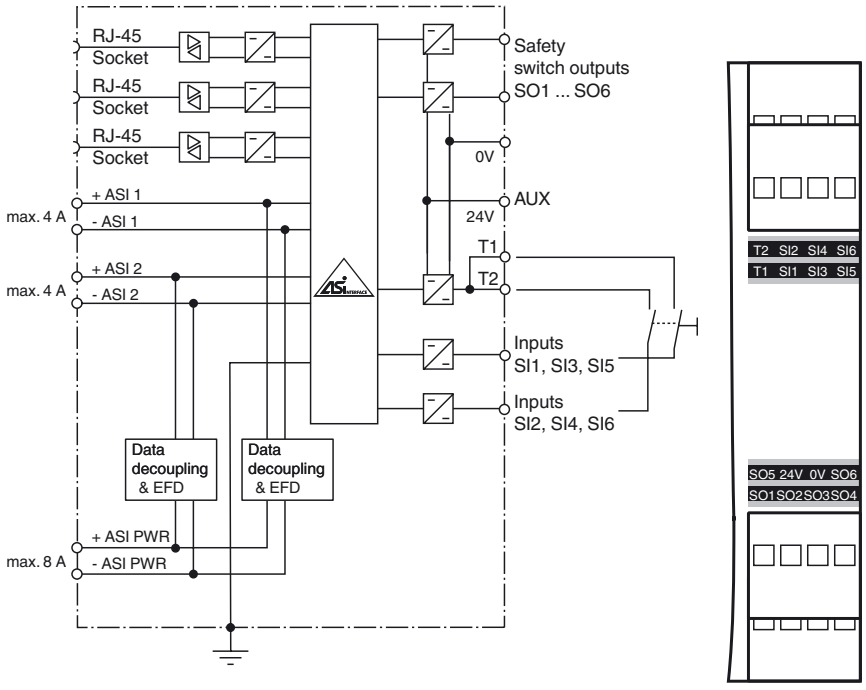
Features

- Gateway and safety monitor in one housing
- Connection to PROFINET IO
- SafeLink
- Certified up to SIL 3 according to IEC 61508 and EN 62061 and up to PL_e according to EN 13849
- 2 AS-Interface networks
- Six safe electronic outputs
- Integrated data decoupling
- Dublicate addressing detection
- Earth fault detection
- AS-Interface noise detection
- Ethernet diagnostic interface

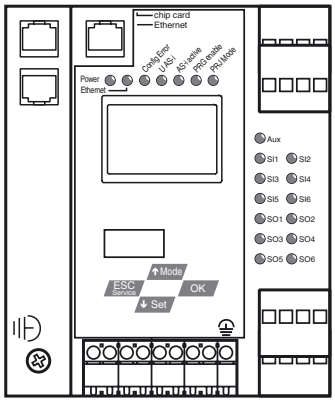
Dimensions



Electrical connection



Indicating / Operating means



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Technical data

General specifications		
AS-Interface specification		V3.0
PLC-Functionality		activateable
Duplicate address detection		from AS-Interface slaves
Earth fault detection	EFD	integrated
EMC monitoring		integrated
Diagnostics function		Extended function via display
Data decoupling		integrated
Switch-on delay		< 10 s
Response delay		< 40 ms
UL File Number		E223772 only from low voltage, limited energy source (SELV or PELV) or listed Class 2 source
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 3
Performance level (PL)		PL e
$MTTF_d$		100 a
B_{10d}		2.5 E+5
Indicators/operating means		
Display		Illuminated graphical LC display for addressing and error messages
LED ETHERNET		PROFINET master detected; 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
LED AUX		ext. auxiliary voltage U_{AUX} ; LED green
LED IN		6 x LED green
LED OUT		Output circuit closed; 6 x green LEDs
Button		4
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	26.5 ... 31.6 V from AS-Interface; 24 V_{DC}
Rated operating current	I_e	approx. 300 mA PELV
Interface 1		
Interface type		PROFINET I / O device (IRT)
Physical		2 x RJ-45
Protocol		Media Redundancy Protocol (MRP)
Transfer rate		100 MBit/s
Interface 2		
Interface type		RJ-45 Ethernet Diagnostic Interface
Transfer rate		10 MBit/s
Interface 3		
Interface type		Chip card slot
Input		
Number/Type		6 inputs Safety: 3 x 2 channels Or 6 standard inputs
Output		
Safety output		6 semiconductor outputs Output circuits: 6 PNP transistor outputs Max. contact load: 1.2 A_{DC-13} at 30 V_{DC}, Σ = 7.2 A in total (see derating)
Connection		
PROFINET		RJ-45
AS-Interface		spring terminals, removable
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 62026-2:2013 EN 61000-6-2/AC:2005, EN 61000-6-4:2007+A1:2011
Machinery Directive		
Directive 2006/42/EC		EN 61508:2010 EN ISO 13849-1/AC:2009 EN 62061:2005+A1:2013
Standard conformity		
Degree of protection		EN 60529:2000
AS-Interface		EN 62026-2:2013
Noise immunity		EN 61000-6-4:2007/A1:2011 EN 61000-6-2/AC:2005
Shock resistance		EN 61131-2:2004

Function

The VBG-PN-K30-DMD-S32-EV is a PROFINET gateway with an integrated safety monitor and a double master according to AS-Interface specification 3.0.
The gateway is used to connect AS-Interface systems to a higher-level PROFINET. It acts as a master for the AS-Interface segment and as a slave for the PROFINET. The AS-Interface functions are made available on both a cyclic and acyclic basis via PROFINET DP V1. The binary data of an AS-Interface segment is transferred cyclically. In addition, analog values and the complete command set of the new AS-Interface specification are transferred to PROFINET using a command interface.
The gateway has six inputs and outputs. The six inputs are used for extended EDM device monitoring or as start inputs. The six outputs are semiconductor outputs and switch circuits 1 and 2. The K30 model is especially suitable for installation in a control cabinet.
The device can be configured using buttons. Seven LEDs located on the front panel indicate the current status of the AS-Interface segment. One LED shows the power supply via AUX. Additional LEDs indicate the status of the inputs and outputs.
Via the graphics display, the commissioning of the AS-Interface circuit and testing of the connected peripherals can take place completely independently of the commissioning of the higher-level network and programming. All functions can be controlled and shown on the display using the four buttons.
An additional RJ45 Ethernet interface provides a way of exporting data relating to the gateway, network, and operation directly from the gateway for extended local diagnostic purposes.
Up to 31 devices can reliably cross-communicate via the RJ45 Ethernet diagnostics interface.
The integrated data decoupling function enables two AS-Interface circuits to be operated with just one standard power supply.
The device features a chip card slot for storage of configuration data.

Accessories

VAZ-SW-SIMON+
Software for configuration of K30 Master Monitors/K31 and KE4 Safety Monitors

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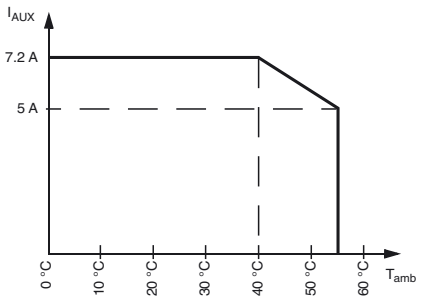
Functional safety	EN ISO 13849-1:2008/AC:2009, EN ISO 13849-2:2012 (up to PL e), EN 61508:2010 and EN 62061:2005+A1:2013 (up to SIL3)
Ambient conditions	
Ambient temperature	0 ... 55 °C (32 ... 131 °F)
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)
Mechanical specifications	
Degree of protection	IP20
Material	
Housing	Stainless steel
Mass	800 g
Construction type	Low profile housing
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.

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.

Derating output current



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