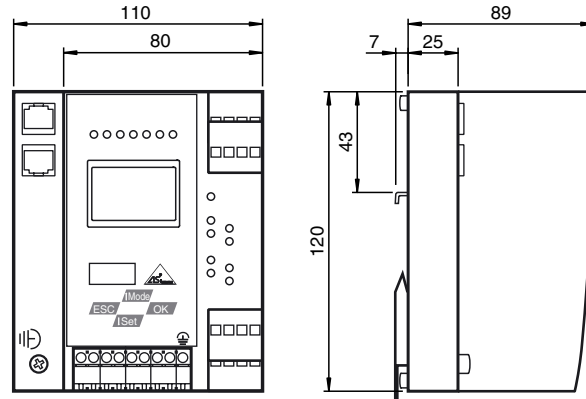
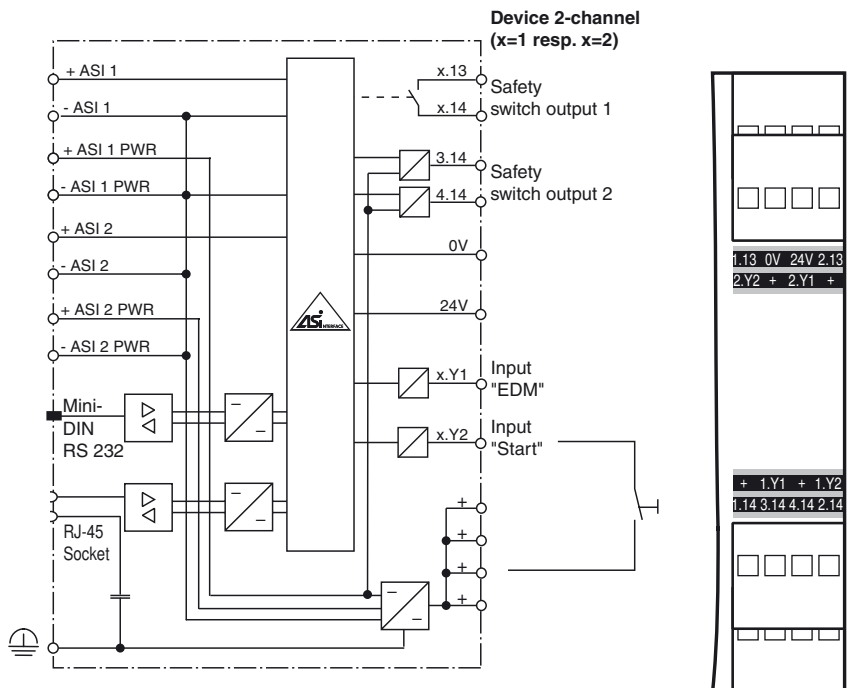




Dimensions



Electrical connection



Model number

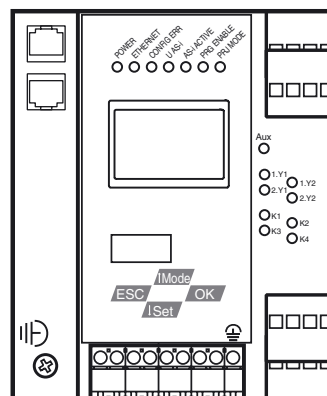
VBG-EN-K30-DMD-S16

Ethernet/IP Gateway with integrated safety monitor, double master for 2 AS-Interface networks

Features

- Gateway and safety monitor in one housing
- Gateway compliant with AS-Interface specification 3.0
- Connection to Ethernet TCP/IP
- AS-Interface safety monitor with extended range of functions
- Fulfills technical safety requirements up to SIL 3 according to IEC 61508 and EN 62061
- Chip card for storing configuration data
- 2 AS-Interface networks
- 2 safe output relays and 2 safe electronic outputs

Indicating / Operating means



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Subject to modifications without notice

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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
Switch-on delay	< 10 s
Response delay	< 40 ms
UL File Number	E223772

Functional safety related parameters

Safety Integrity Level (SIL)	SIL 3
Performance level (PL)	PL e
MTTF _d	200 a
B _{10d}	2 E+7

Indicators/operating means

Display	Illuminated graphical LC display for addressing and error messages
LED ETHERNET	Ethernet 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 EDM/Start	External device monitoring circuit inputs closed, 4x yellow LEDs
LED output circuit	Output circuit closed; 4 x green LEDs
Button	4

Electrical specifications

Insulation voltage	U _i	≥ 500 V
Rated operational voltage	U _e	26.5 ... 31.6 V from AS-Interface; Outlets K3 and K4 24 V _{DC}
Rated operational current	I _e	≤ 300 mA off AS interface network 1 ≤ 300 mA off AS interface network 2 ≤ 370 mA in total

Interface

Interface type	RJ-45
Protocol	Ethernet/IP
Transfer rate	10 MBit/s ... 100 MBit/s, Automatic baud rate detection

Interface 2

Interface type	Chip card slot
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Interface 3

Interface type	RS 232, serial
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Input

Number/Type	4 EDM/Start inputs: EDM: Inputs for the external device monitoring circuits Start: start inputs: Static switching current 4 mA at 24 V, dynamic 30 mA at 24 V (T=100 μs)
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Output

Safety output	Outlet circuits 1 and 2: 2 potential-free contacts, max. contact load: 3 A _{DC-13} at 30 V _{DC} , 3 A _{AC-15} at 30 V _{AC} Outlet circuits 3 and 4: 2 PNP transistor outlets max. contact load: 0.5 A _{DC-13} at 30 V _{DC}
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Connection

Ethernet	RJ-45
AS-Interface	spring terminals, removable

Ambient conditions

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

Mechanical specifications

Protection degree	IP20
Material	
Housing	Stainless steel
Mass	860 g
Construction type	Low profile housing, Stainless steel

Compliance with standards and directives

Directive conformity	
EMC Directive 2004/108/EC	EN 61000-6-2:2005, EN 61000-6-4:2007
Standard conformity	
Shock and impact resistance	EN 61131-2:2004

Function

EthernetThe VBG-EN-K30-DMD-S16* is an Ethernet gateway with an integral safety monitor and a double master according to AS-Interface specification 3.0, with degree of protection IP20. The VBG-EN-K30-DMD-S16* has four inputs and four outputs. The four inputs are used either for extended EDM device monitoring or as start inputs. Two sets of two outputs act as relay outputs and switch output circuits 1 and 2 and, as semiconductor outputs, output circuits 3 and 4. The K30 model is particularly suitable for installation in a control cabinet.

The VBG-EN-K30-DMD-S16* is a combined full-specification AS-Interface Ethernet gateway and safety monitor. The product allows a gateway and a safety monitor to be replaced by a single device.

Two safety relays provide a safe interface to the connected consumers. The AS-Interface 3.0 Ethernet gateways are used to connect AS-I systems to a higher-level Ethernet. They act as a double master for the AS-I segment and as a slave for the Ethernet.

The AS-I functions are made available on both a cyclic and acyclic basis through Ethernet. During cyclic data exchange, up to 32 bytes of I/O data (this amount is variable) are transferred as the digital data of an AS-I segment. In addition, analog values as well as the complete command set of the new AS-I specification can be transferred via Ethernet using a command interface.

Address assignment, the transfer of the desired configuration, and the setting of the PROFIBUS address and baud rate can all be performed using switches. Seven LEDs located on the front panel indicate the current status of the AS-Interface segment. One LED shows the power supply via AUX. An additional eight LEDs indicate the status of the inputs and outputs.

If the AS-Interface gateway has a graphical display, the commissioning of the AS-Interface circuit and testing of the connected peripherals can take place completely separately from the commissioning of the Ethernet and the programming. Local operation using the graphical display and the four switches allow all the functions covered on the other AS-Interface masters by AS-I Control Tools software to be visualized on the display. An additional RS 232 socket provides a way of exporting data relating to the gateway, network and operation directly from the gateway for extended local diagnostic purposes.

Accessories

VAZ-SW-SIMON+
Configuration software

USB-0,8M-PVC ABG-SUBD9
Converter USB/RS 232

Standards

IEC 61508:2001 and EN 62061:2005 (to SIL3 or Cat. 4)
EN ISO 13849-1:2008 (PL e)

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.