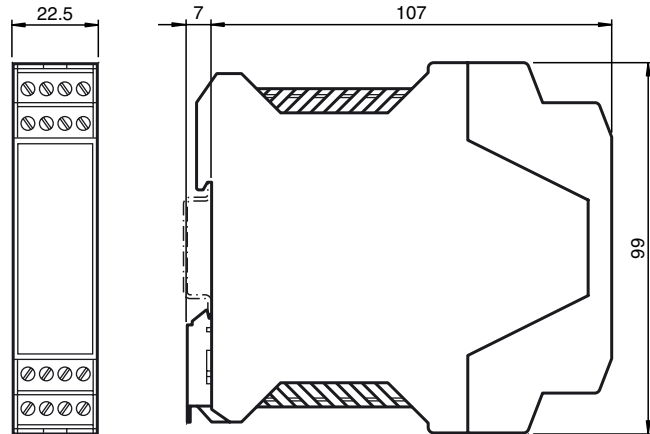
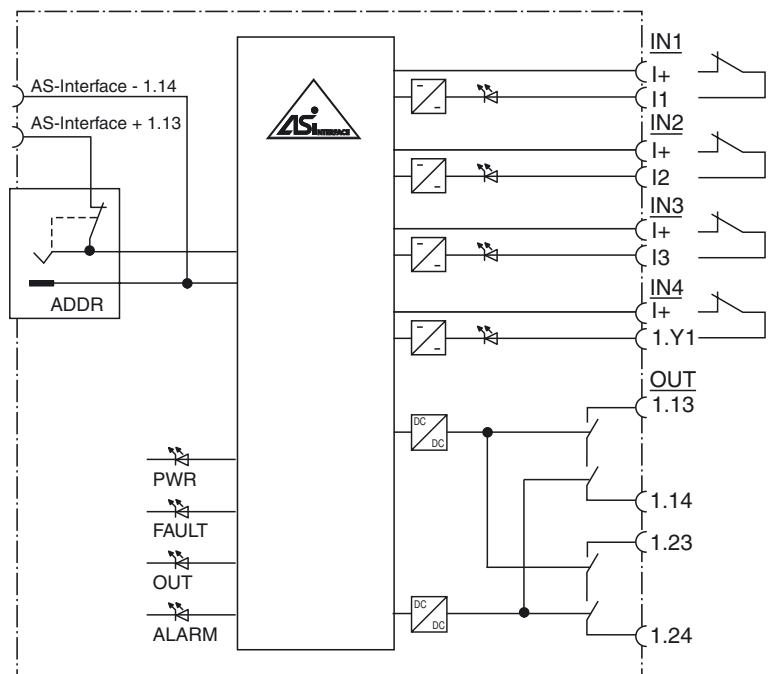




Dimensions



Electrical connection



Model number

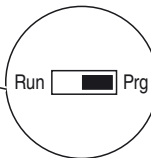
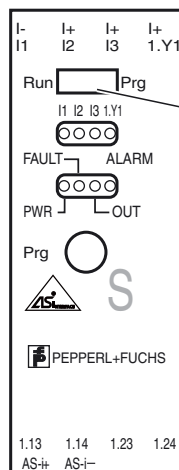
VBA-4E1A-KE3-ZEJ/SR

KE3 control cabinet module
4 inputs, 1 control-safe relay output

Features

- Several safe output modules grouped to form a release circuit
- 2 galvanically isolated contact banks
- 4 conventional inputs, 1 of which can be switched as a protective feedback circuit
- SIL3 (IEC 61508)
- Addressing jack
- Occupies one complete address for the safe output and one A/B address for the 4 inputs

Indicating / Operating means



Set switch:
Prg = Programming of safety-related AS-Interface address enabled.
Protective mode not possible.
Run = Programming of non safety-related AS-Interface address enabled.
Protective mode possible.

Technical data

General specifications

Slave type	A/B slave
AS-Interface specification	V2.1
Required master specification	≥ V2.1
UL File Number	E223772

Functional safety related parameters

Safety Integrity Level (SIL)	SIL 3
Performance level (PL)	PL e

Indicators/operating means

LED FAULT	error display; LED red red: communication error
LED PWR	AS-Interface voltage; LED green
LED IN	switching state (input); 4 LED yellow
LED OUT	For flashing patterns see diagnostics table
LED ALARM	PLC reports alarm; red LED

Electrical specifications

Auxiliary voltage (input)	U_{EXT}	12 ... 30 V DC PELV
Rated operating voltage	U_e	26.5 ... 31.6 V from AS-Interface
Rated operating current	I_e	≤ 30 mA (without sensors) / max. 200 mA
Protection class		III
Surge protection	U_{EXT} , U_e	Over voltage category III, safe isolated power supplies (PELV)

Input

Number/Type	4 inputs for 2- or 3-wire sensors (PNP), DC
Supply	from AS-Interface
Voltage	21 ... 31 V DC
Current loading capacity	≤ 90 mA, overload- and short-circuit proof (INT)
Input current	≤ 8 mA (limited internally)
Switching point	according to DIN EN 61131-2 (Type 2)
0 (unattenuated)	≤ 2 mA
1 (attenuated)	≥ 4 mA
Signal delay	< 2 ms (input/AS-Interface)
Signal frequency	≤ 250 Hz

Output

Number/Type	1 safety relay output
Supply	from AS-Interface
Nominal load	
Per contact	3 A / 24 V DC; 3 A / 230 V AC
Usage category	DC-13 and AC-15

Programming instructions

Profile	S-7.A.E
IO code	7
ID code	A
ID1 code	5 (Can be changed to 7 or F)
ID2 code	E

Data bits (function via AS-Interface)	input	output
D0	E0	LED ALARM
	Diagnosis (see table Device colors)	
D1	E1	OUT1 (see P1)
D2	E2	-
D3	E3 = 1.Y1	-

Parameter bits (programmable via AS-i) function

P0	not used
P1	Output linkage: P1 = 1: safe output switches on release. P1 = 0: safe output switches on release and OUT1=1
P2	ID1=5 not used ID1=7 or F P2 = 0 IN3 is input P2 = 1 IN3 notifies of release
P3	not used

Ambient conditions

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

Mechanical specifications

Degree of protection	IP20
Connection	removable terminals rated connection capacity: rigid/flexible (with and without wire-end ferrules): 0.25 mm ² ... 2.5 mm ² for multiple-wire connection with two wires of equal cross-section: flexible with twin wire-end ferrules: 0.5 mm ² ... 1.5 mm ²
Material	
Housing	PA 66-FR

Function

The AS-Interface relay output module VBA-4E1A-KE3-ZEJ/SR is a control cabinet module with 4 inputs and a relay output. The inputs comprise 3 conventional and 1 EDM input. The relay-switched output can be loaded with 3 A at 24 V DC or 230 V AC. The use of the relay output module enables safe switching sequences to be achieved remotely in the field. This means that the parallel wiring of safe actuators in the field is a thing of the past.

The housing, which is only 22.5 mm wide, requires little space in the switch cabinet. The module is installed by simply snapping it onto the 35 mm standard mounting rail to EN 50022. An addressing socket is integrated in the module.

The connection is made via plug-in terminals. Four-terminal blocks (black) are used for the outputs. Connection of the AS-Interface is by means of a 2-station terminal block (yellow). This permits the simple removal of the sensors or of the supply during commissioning or servicing. The supply to the inputs and the connected sensors is fed internally via the module from the AS-Interface. The current switching state of the inputs and of the output relay is indicated via yellow LEDs. Communication faults and the set output bit A0 are indicated via red LEDs. The display of the operating voltage and the address 0 is provided by a green LED.

Access to the addressing of the safe output slaves and of the integrated A/B-Slaves takes place by switching over the programming switch to the operating mode "Prg" and "Run".

Accessories

VBP-HH1-V3.0-KIT

AS-Interface Handheld with accessory

VBP-HH1-V3.0

AS-Interface Handheld

VAZ-PK-1,5M-V1-G

Adapter cable module/hand-held programming device

Mounting	DIN mounting rail
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Compliance with standards and directives

Directive conformity	
EMC Directive 2004/108/EC	EN 61000-6-2:2005, EN 61000-6-4:2007, EN 50295:1999
Standard conformity	
Noise immunity	EN 61000-6-2:2005, EN 50295:1999
Emitted interference	EN 61000-6-4:2007
AS-Interface	EN 50295:1999
Input	EN 61131-2
Degree of protection	EN 60529

Notes

Do not connect inputs and outputs, which are supplied via the module from AS-interface or via auxiliary power, with power supply and signal circuits with external potentials.

Diagnostic

Value	Color	Description	State change	LED out
0	green	output on		on
1	green flash.	-		-
2	yellow	restart inhibit	auxiliary signal 2	1 Hz
3	yellow flash.	-		-
4	red	output off		off
5	red flash.	waiting for reset of error condition	auxiliary signal 1	8 Hz
6	grey	internal error such as fatal error	only via Power on on device	all LED flashing
7	green/yellow	output released, but not switched on	switching on by setting of A1	off