Model number

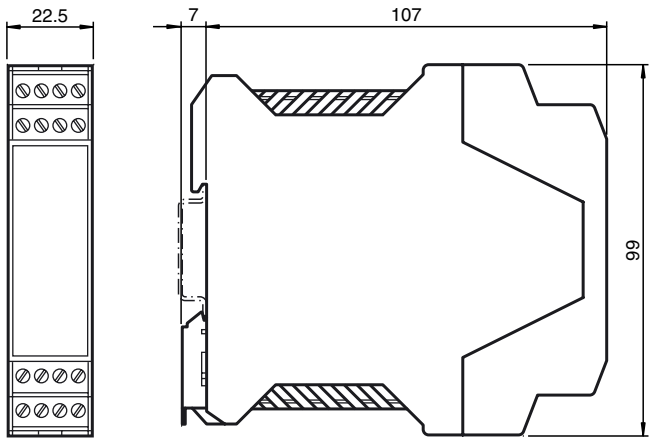
VBA-4E1A-KE3-ZEJ/SR

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

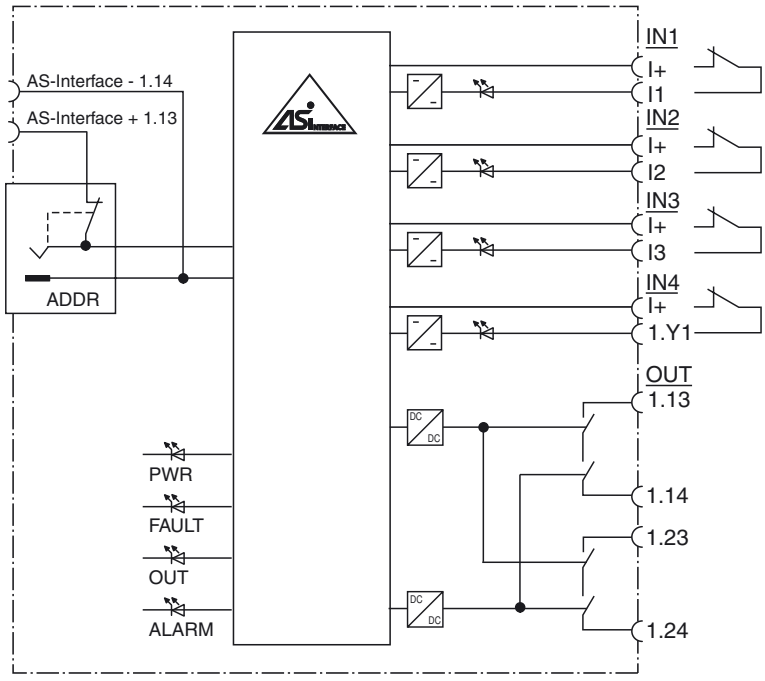
Features

- 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

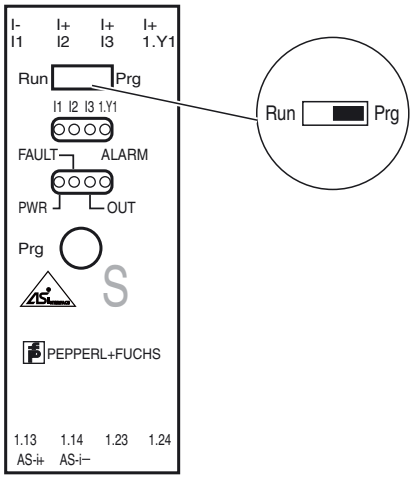
Dimensions



Electrical connection



Indicating / Operating means



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

Release date: 2013-04-15 09:09 Date of issue: 2014-01-13 203796_eng.xml

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)
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		
Protection degree		IP20
Connection		removable terminals rated connection capacity: rigid/flexible (with and without wire-end ferrules): 0.25 mm² ... 2.5 mm² for multiple-wire connection with two wires of equal cross-section: flexible with twin wire-end ferrules: 0.5 mm² ... 1.5 mm²
Material		
Housing		PA 66-FR
Mounting		DIN mounting rail

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

Release date: 2013-04-15 09:09 Date of issue: 2014-01-13 203796_eng.xml

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
Protection degree	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	auxillary signal 2	1 Hz
3	yellow flash.	-		-
4	red	output off		off
5	red flash.	waiting for reset of error condition	auxillary 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

Release date: 2013-04-15 09:09 Date of issue: 2014-01-13 203796_eng.xml