Model number

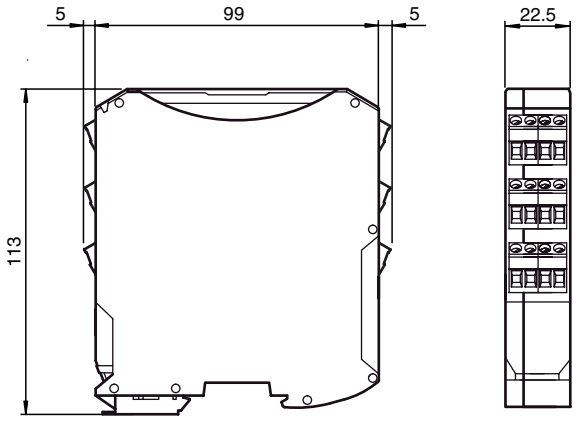
VBA-8E8A8A-KE4-ZEL/E2L/SEL

KE4 switch cabinet module
8 safety-related electronic outputs, each switchable with a standard output, 8 standard inputs

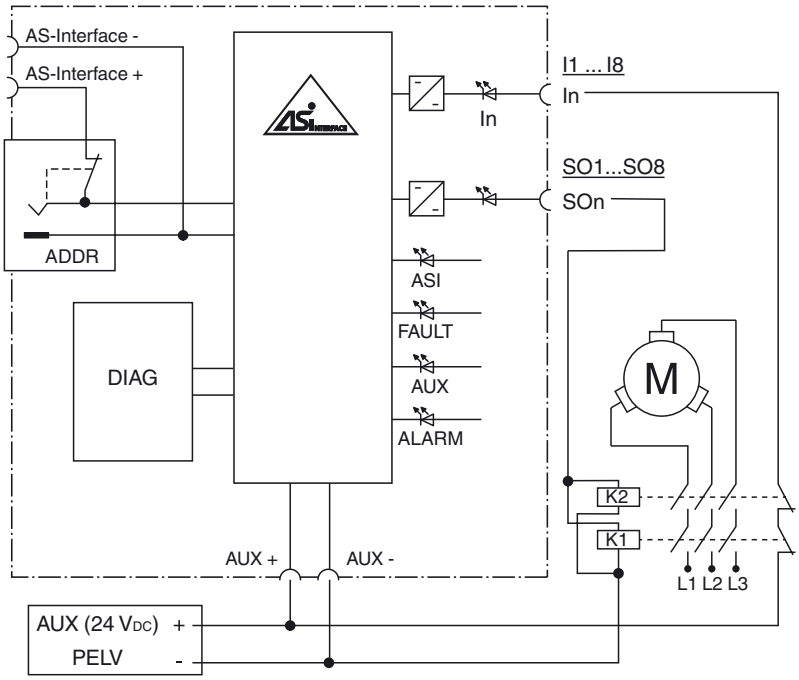
Features

- Compact solution providing a large number of safe outputs
- Functional switching of the safe outputs possible with standard outputs
- 1 A/B diagnostic slave possible per safe output
- 8 standard inputs for EDM
- Up to SIL3 (EN 62061) and PLe (EN13849-1)

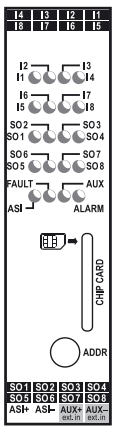
Dimensions



Electrical connection



Indicating / Operating means



I1 ... I8	= digital inputs
SO1 ... SO8	= safe outputs
ASI+, ASI-	= AS-Interface connection
AUX+ ext. in	= external supply voltage +24 V
AUX- ext. in	= external supply voltage 0 V
CHIP CARD	= chip card
ADDR	= addressing jack

Technical data

General specifications

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Slave type		A/B slave, 2 standard slaves for inputs/outputs, additional slaves can be configured
AS-Interface specification		V3.0
Required master specification		≥ V3.0
Indicators/operating means		
LED FAULT		error display; LED red red: communication error
LED AS-i		AS-Interface voltage; LED green
LED AUX		ext. auxiliary voltage U_{AUX} ; LED green
LED IN		switching state (input); 8 LED yellow
LED OUT		Switching state (output); 8 LED yellow
LED ALARM		Alarm signal from the control; yellow LED
Electrical specifications		
Auxiliary voltage (input)	U_{EXT}	24 V (20 VDC ... 30 VDC) PELV Max. current consumption: 8 A
Rated operating voltage	U_e	18,0 ... 31.6 V from AS-Interface
Rated operating current	I_e	< 200 mA
Interface 1		
Interface type		Chip card slot
Input		
Number/Type		8 digital inputs
Supply		from external auxiliary voltage U_{AUX}
Voltage		24 V DC
Switching threshold		U < 5 V (low) U > 15 V (high)
Output		
Number/Type		8 safe electronic outputs 1 - 8 release circuits
Supply		from external auxiliary voltage U_{AUX}
Current loading capacity		2 A per output, 8 A total Note derating
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 62026-2:2013
Machinery Directive		
Directive 2006/42/EC		EN 13849-1:2008/AC:2009
Standard conformity		
Degree of protection		EN 60529:2000
Electrical safety		EN 13849-1:2008/AC:2009
Climatic conditions		EN 61131-2:2007
AS-Interface		EN 62026-2:2013
Functional safety		EN 61508:2010 EN 62061:2005/A1:2013
Programming instructions		
Profile		Diagnostic slave: S-7.A.E, ID1 = 5 Input/output slave: S-7.F.E, ID1 = F Configuration slave: S-7.A.5, ID1 = 7
Ambient conditions		
Ambient temperature		0 ... 55 °C (32 ... 131 °F)
Storage temperature		-25 ... 85 °C (-13 ... 185 °F)
Altitude		0 ... 2000 m
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
Mass		270 g
Mounting		DIN mounting rail

Programming Instructions 4E/4A slaves

(Bit Assignment of Inputs and Outputs, Standard and EDM Input)

Bit	AS-Interface Output		Bit	AS-Interface Input	
	Slave 1	Slave 2		Slave 1	Slave 2
A0	SO1	SO5	E0	I1	I5
A1	SO2	SO6	E1	I2	I6
A2	SO3	SO7	E2	I3	I7
A3	SO4	SO8	E3	I4	I8

Programming Instructions 4E/4A slaves (Bit Assignment of the AS-Interface Parameter)

Bit P0	
P1=1	Safe output switches when released and when output bit =1
P1=0	Safe output switches when released

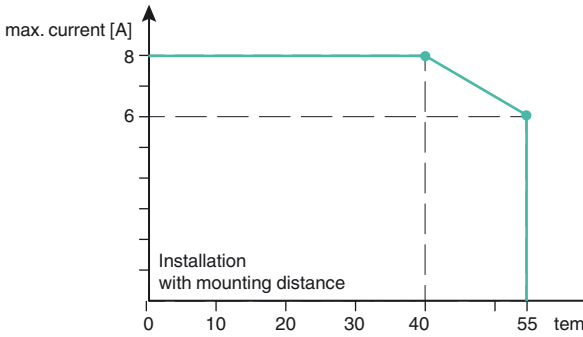
Function

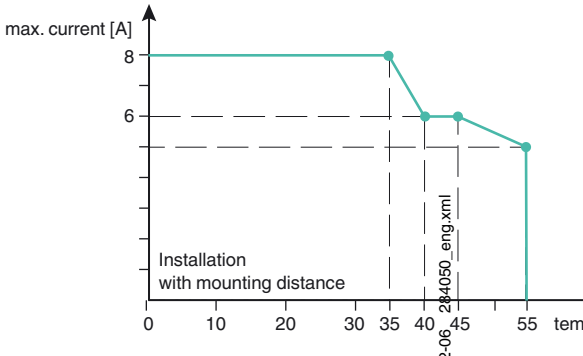
The AS-Interface safety output module VBA-8E8A8A-KE4-ZEL/E2L/SEL is a switch cabinet module with eight safe electronic outputs. In addition, the module has eight inputs and one standard output per safe output. The safety output module allows safe switching processes to take place remotely in the box. The parallel wiring of safe actuators in the box is a thing of the past.

The housing is only 22.5 mm wide and takes up little space in the switch cabinet. A snapon function mounts the module onto the 35 mm mounting strip in line with EN 50022. An addressing socket for programming the basic address is integrated in the module. All further addresses can be configured via a configuration software.

The connection is made via plug-in terminals. Four-way (black) terminal blocks are used for the inputs. The AS-Interface is connected via a two-way terminal block (yellow). This allows the sensors or the power supply to be easily disconnected for commissioning or service. Power is supplied to the inputs by an external auxiliary power supply. Yellow LEDs display the current switching status of the inputs and outputs. Yellow LEDs display communication errors. A green LED displays the operating voltage and the 0 address.

Derating





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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

VAZ-SW-SUITE
Combined software for configuration, diagnostics, and programming, for masters and safety monitors (type KE4, K20, K30, K31)

Programming Instructions 4E/4A slaves (Bit Assignment of the AS-Interface Parameter)

Bits P1, P2, P3
Not used

Programming Instructions Diagnostic slaves (Bit Assignment 1 Diagnostic Slave)

Bit	AS-Interface Output		Bit	AS-Interface Input	
A0	Parameter P1=1	Parameter P1=0	E0		
	Switches output on if release is issued. Parameter is independent of the ouput bit A0	1: Switches output on if release is issued. 0: Switches output off although release is issued		See "diagnostics" table	
A1	Not used		E1		
A2	Not used		E2		
A3	Not available		E3	Parameter P2=0	Parameter P2=1
				1: Feedback for user: Release activated 0: Feedback for user: Release deactivated	In (status of the assigned input)

Diagnostics Diagnostic slaves

Value	Color	Description	Status change	LED SO1 ... SO8
0	Green	Output on		On
1	Green flashing	-		-
2	Yellow	Restart interlock	Auxiliary signal 2	1 Hz
3	Yellow flashing	-		-
4	Red	Output off		Off
5	Red flashing	Waiting to reset fault condition	Auxiliary signal 1	8 Hz
6	Gray	Internal fault such as fatal error	By powering device on only	All LEDs flash
7	Green/yellow	Output released but not switched on	Switched on by setting A0	Off

Programming Instructions Diagnostic slaves (Bit Assignment of the AS-Interface Parameter)

Bit P1	
P1=1	Safe output switches when released
P1=0	Safe output switches when released and when A0=1
Bit P2	
P2=1	Input In on AS-Interface bit E3
P2=0	Feedback for user: Release
Bits P0, P3	
Not used	

Programming instructions Configuration slaves

Bit	AS-Interface Output	Bit	AS-Interface Input
A0, A1	Communication CTT2	E0, E1	Not used
A2, A3	ALARM LED	E2, E3	Communication CTT2
	Not used		

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