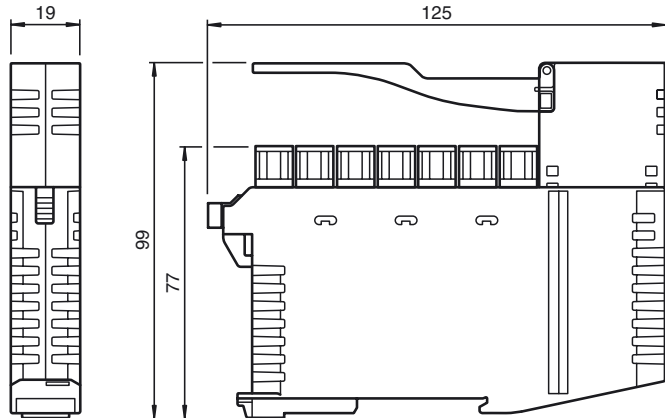




Dimensions



Electrical connection

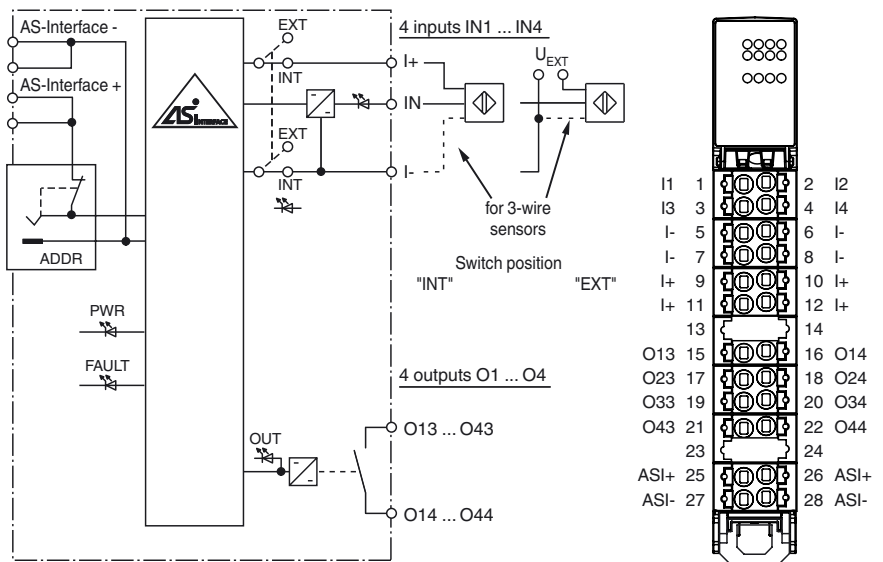
Model number

VBA-4E4A-KE5-ZEJQ/R

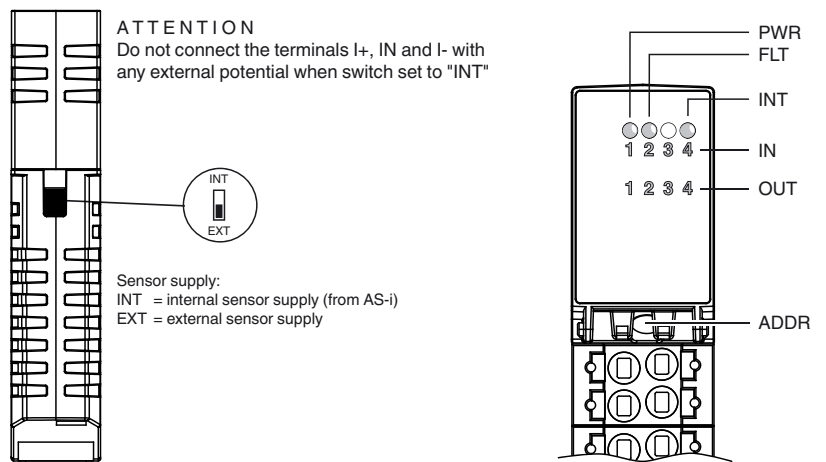
Cabinet module
4 inputs and 4 relay outputs

Features

- Housing with push-in connection technology and mechanically coded terminal blocks
- Housing width 19 mm, installation in the switch cabinet on DIN mounting rail
- Selectable supply to the sensors: External or from the module
- Function display for bus, internal sensor supply, inputs, and outputs



Indicating / Operating means



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Technical data**General specifications**

Slave type	A/B slave
AS-Interface specification	V3.0
Required master specification	≥ V3.0
UL File Number	E223772
MTBF	224 a

Indicators/operating means

LED FAULT	Fault display; Red LED red: Communication fault or address is 0 red, flashing: Overload, internal input supply
LED INT	Internal input supply active; LED green
LED PWR	AS-Interface voltage; green LED green: voltage OK flashing green: address 0
LED IN	switching state (input); 4 LED yellow
LED OUT	Switching state (output); 4 LED yellow

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	≤ 35 mA (without sensors) / max. 230 mA
Surge protection		O1 ... O4: Over voltage category II U_{EXT} , U_e : overvoltage category II, safe isolated power supplies (PELV)

Input

Number/Type	4 inputs for 3-wire sensors (PNP), DC
Supply	from AS-Interface (switch position INT, default settings) or external U_{EXT} (switch position EXT)
Voltage	21 ... 31 V DC (INT)
Current loading capacity	≤ 150 mA, overload- and short-circuit protected (INT)
Input current	≤ 5.6 mA (max.)
Switching point	according to DIN EN 61131-2 (type 1)
0 (unattenuated)	≤ 0.5 mA
1 (attenuated)	≥ 2 mA
Signal delay	< 1 ms (input/AS-Interface)

Output

Number/Type	4 relay outputs, normally open
Supply	none
Nominal load	
Per contact	2 A/30 VDC; 2 A/250 VAC For more information, see the "Galvanic Isolation" section
Per module	8 A
Control circuit	≤ 11 mA per relay (from AS-Interface)
Switching delay	< 10 ms (AS-Interface/contact)
Usage category	DC-13 and AC-14
Switching	
Mechanical	5×10^7
Electrical	2×10^5 (250 VAC, 2 A, $\cos \phi = 0.4$)

Galvanic isolation

Input/Output	safe isolation, Rated insulation voltage 252 Veff
Input/AS-Interface	Switch position INT: None Switch setting EXT: safe isolation, rated insulation voltage 92 Veff
Output/Output	Basic insulation, rated insulation voltage 250 V _{eff} , in phase
Output/AS-Interface	safe isolation, Rated insulation voltage 252 Veff

Directive conformity

Electromagnetic compatibility	
Directive 2014/30/EU	EN 62026-2:2013 EN 61000-6-2:2005, EN 61000-6-4:2007
Low voltage	
Directive 2006/95/EC	EN 60664-1:2007

Standard conformity

Galvanic isolation	EN 60664-1:2007
Degree of protection	EN 60529:2000
Fieldbus standard	EN 62026-2:2013
Electrical safety	IEC 61140:2009
Input	EN 61131-2:2004
Emitted interference	EN 61000-6-4:2007
AS-Interface	EN 62026-2:2013
Noise immunity	EN 61000-6-2:2005, EN 61326-1:2006, EN 62026-2:2013

Programming instructions

Profile	S-7.A.7
IO code	7
ID code	A
ID1 code	7
ID2 code	7

Data bits (function via AS-Interface)	input	output
D0	IN1	O1

Function

The AS-Interface connecting module VBA-4E4A-KE5-ZEJQ/R is a switch cabinet module with 4 inputs and 4 relay contact outputs. The housing is only 19 mm wide and takes up little space in the switch cabinet. The module is mounted by snapping onto the 35 mm DIN rail in compliance with EN 50022. The connection is made via removable 4-pin push-in terminal blocks. For AS-i+ and AS-i-, two connections are available in each case; these connections are bridged in the terminal block. If the terminal block is disconnected from the module, the link between these connections is retained. The terminal blocks for the inputs and outputs are mechanically coded.

The supply to the inputs and the connected sensors can be fed either from the internal supply of the module from the AS-Interface or via an external U_{EXT} voltage source. A switch located on the side of the module changes the source.

The internal input supply is displayed via the INT LED. The relevant IN and OUT LEDs display the current switching status of the inputs and outputs.

Notes:

The device is equipped with a communication monitor, which deactivates the outputs if the AS-Interface does not communicate with the module for more than 40 ms. The communication monitor can be deactivated via the parameter P0. Filters that suppress pulses with a duration of 2 ms or less at the inputs can be connected via the parameter P1. Parameter P2 activates the AS-Interface synchronous mode.

Installation, Commissioning, and Maintenance

Install the device in a closed electrical plant where only electricians or persons with appropriate electrical training have access. The relevant laws, guidelines, and standards that apply for the application or intended use must be observed.

The device must be installed in a switch cabinet or switch box that meets protection class IP54 as a minimum.

Additional requirements for the AS-Interface power supply:

If voltages that are not in accordance with PELV/SELV are connected to the relay contact outputs, then it must be ensured that the AS-Interface supply voltage does not exceed 36 V, even in the event of a fault.

Daisy-Chaining Devices

Insulation to the outer surfaces of the housing: Basic insulation in accordance with EN 60664-1. To provide reliable and double insulation, devices in the direct vicinity must have basic insulation as a minimum.

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-BRIDGE-BU/BN60MM/0,75-100

Jumper for switch cabinet modules with spring terminals or screw terminals

D1	IN2	O2
D2	IN3	O3
D3	IN4	O4

Parameter bits (programmable via AS-i)**function**

P0	Communication monitoring P0 = 0 monitoring = off, the outputs maintain the status if communication fails P0 = 1 monitoring = on, i.e. if communication fails, the outputs are deenergised (default settings)
P1	Input filter P1 = 0 input filter on, pulse suppression ≤ 2 ms P1 = 1 input filter off (default settings)
P2	Synchronous mode P2 = 0 synchronous mode on P2 = 1 synchronous mode off (default settings)
P3	not used

Ambient conditions

Ambient temperature	-25 ... 60 °C (-13 ... 140 °F)
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)
Relative humidity	85 % , noncondensing
Climatic conditions	For indoor use only
Altitude	≤ 2000 m above MSL
Shock and impact resistance	15 g, 11 ms in 6 spatial directions, 3 shocks 10 g, 16 ms in 6 spatial directions, 1000 shocks
Vibration resistance	0.35 mm 10 ... 57 Hz , 5 g 57 ... 150 Hz, 20 cycles
Pollution degree	2

Mechanical specifications

Degree of protection	IP20 Installation in an enclosure with a minimum protection class of IP54 required
Connection	Removable push-in terminals rated connection capacity: rigid: 0.20 mm ² ... 1.5 mm ² flexible (without wire end ferrule): 0.20 mm ² ... 2.5 mm ² flexible (with wire end ferrule): 0.25 mm ² ... 1.5 mm ²
Material	
Housing	PA 66-FR
Mass	125 g
Mounting	DIN mounting rail

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.