

Technical data**General specifications**

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

Functional safety related parameters

MTTF _d	140 a at 30 °C
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Indicators/operating means

LED FAULT	error display; LED red red: communication error red flashing: peripheral error
LED INT	Internal input supply active; LED green
LED PWR	AS-Interface voltage; LED green
LED AUX	ext. auxiliary voltage U _{AUX} ; LED green
LED -/OK	Status input signal; LED green Off: Not connected (Only current module) On: Signal within measuring range Flashing: Signal outside measuring range
LED U/I	Current or voltage module; Green LED Off: Voltage input On: Current input

Electrical specifications

Auxiliary voltage (output)	U _{AUX}	24 V DC ± 15 % PELV (protection class 3 according to VDE 0106/IEC 364-4-41)
Insulation voltage	U _i	≥ 500 V
Rated operational voltage	U _e	26.5 ... 31.6 V from AS-Interface
Rated operational current	I _e	≤ 80 mA

Input

Number/Type	2 analog inputs Current: 4 ... 20 mA voltage: 0 ... 10 V
Supply	from AS-Interface or from external auxiliary voltage as required U _{AUX}
Current loading capacity	≤ 40 mA per input
Input resistance	For current module: 50 Ω For voltage module: 100 kΩ
Switching point	Changeover current/voltage module: current module with I _{in} ≥ 1 mA voltage module with U _{in} ≥ 1 V
Resolution	16 Bit / 1 μA (Current module) or 16 bit / 1 mV (Voltage module)

Programming instructions

Profile	S-7.3.D
IO code	7
ID code	3
ID2 code	D

Data bits (function via AS-Interface) The transfer of the data value is based on AS-Interface Profile 7.3.

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

P0	mains power frequency filter P0=1, 50 Hz filter active P0=0, 60 Hz filter active
P1	projecting of the 2nd channel P1=1, channel 2 is projected P1=0, channel 2 is not projected
P2	Message of peripheral error P2=1, peripheral error is reported P2=0, peripheral error is not reported
P3	P3=1, normal operating mode P3=0, both channels in current mode and without recognition of wire breakage

Ambient conditions

Ambient temperature	0 ... 70 °C (32 ... 158 °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 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	350 g
Mounting	DIN rail

Compliance with standards and directives**Function**

The VBA-2E-KE2-I/U analog module is equipped with two analog inputs that can be current inputs (4 mA ... 20 mA) or voltage inputs (0 ... 10 V). The module can also be connected as a combined current/voltage module. In this case the module type must be the same for each channel.

Depending on the setting of the internal sliding switch, the power supply for the measurement value transmitter is via the module (from the AS-Interface) or through an external power supply. The input power supply selection is displayed via the INT and AUX LEDs.

Measurement values are converted and data is transferred asynchronously based on AS-Interface Profile 7.3. The resolution of analog values is 16 bits with a value range of 4,000 ... 20,000 (current module) or 0 ... 10,000 (voltage module). Power faults can be eliminated with a parameterizable filter (50 Hz/60 Hz) in the A/D converter.

The second channel can be turned off with a second slide switch to allow for faster data transfer.

The housing, only 22.5 mm in width, takes up little place in the switch cabinet. The module is installed by snapping on the 35-mm carrier rail in accordance with EN 50022. It can be connected by plug-in terminals (COMBICON). 4X terminal blocks (black) are used for the inputs. The connection of the external auxiliary supply and AS-Interface is made through the 2-way-terminal blocks (auxiliary supply gray, AS-Interface yellow). This makes it possible to separate individual sensors or to supply power during commissioning or servicing.

Note:

The device is equipped with communication monitoring that turns off the outputs if no AS-Interface communication has taken place with the device for more than 40 ms.

An overload of the internal input supply is reported by the 'periphery error' to the AS-Interface master. Communication over the AS-Interface remains in effect.

Accessories**VBP-HH1-V3.0**

AS-Interface Handheld

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

Connection cable module/hand-held programming device

Directive conformity

EMC Directive 2004/108/EC EN 50295:1999-10, EN 61326:2002-03

Standard conformity

Electromagnetic compatibility EN 50295:1999-10, EN 61326:2002-03

Protection degree

EN 60529:2000

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.