



62  
Spec 2.1

### Model number

#### VBA-2E-KE4-ENC-S

KE4 control cabinet module  
2 inputs for incremental rotary encoders

### Features

- SIL3 (EN 62061)
- Addressing jack
- Memory card for configuration data

### Function

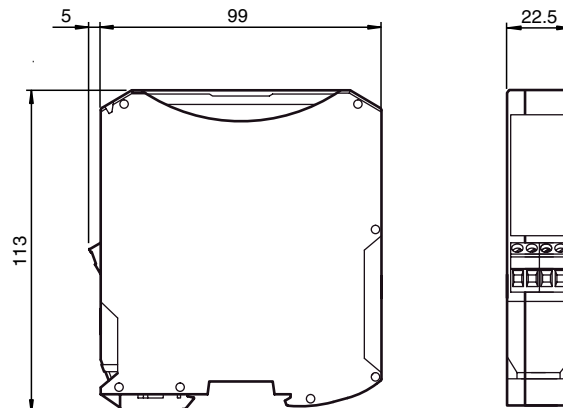
The AS-Interface rotational speed monitor VBA-2E-KE4-ENC-S is a safe control cabinet module with 2 inputs. The inputs comprise 2 safe inputs for incremental encoders. The rotational speed monitor monitors the stand-still, rotational speed and direction of rotation on a maximum of two axes and sends a safe signal via the AS-Interface network when a value falls below the set threshold.

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.

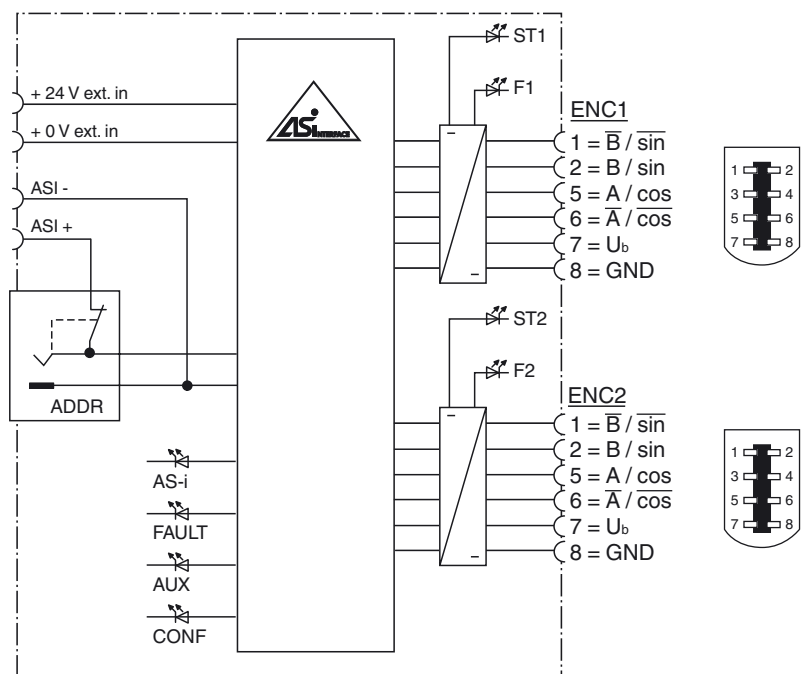
The AS-Interface and external power supply are each connected by means of a 2-station terminal block. This permits the simple removal of the supply during commissioning or servicing. The supply to the rotary encoders is fed either internally via the module from the AS-Interface or via an external supply. The current status of the inputs is indicated via yellow LEDs. Communication faults are indicated via red LEDs. The display of the operating voltage and the address 0 is provided by a green LED.

The configuration data is saved on a chip card, making it easier to replace the module in the event of damage.

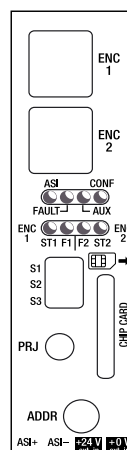
### Dimensions



### Electrical connection



### Indicating / Operating means



ENC 1 = Encoder 1  
ENC 2 = Encoder 2  
S1, S2, S3 = Function switch 1 - 3  
CHIP CARD = Chip card  
PRJ = Configuration button  
ADDR = Addressing jack

**Technical data****General specifications**

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

**Functional safety related parameters**

Safety Integrity Level (SIL)	SIL 3
Performance level (PL)	PL e
Mission Time (T <sub>M</sub> )	20 a
PFH <sub>d</sub>	2.77 E-9

**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 <sub>AUX</sub> ; LED green
LED CONF	Off = Normal mode, yellow LED
LED STATE	Status of rotary encoder, 2 yellow LEDs
LED FREQUENCY	Low frequency or halt, 2 LED yellow

**Electrical specifications**

Auxiliary voltage (input)	U <sub>EXT</sub>	18 ... 30 V <sub>DC</sub>
Insulation voltage	U <sub>i</sub>	500 V AS-Interface/U <sub>AUX</sub> :
Rated operating voltage	U <sub>e</sub>	18,0 ... 31.6 V from AS-Interface
Rated operating current	I <sub>e</sub>	≤ 150 mA from AS-Interface; ≤ 200 mA from AUX

**Interface 1**

Interface type	Chip card slot
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**Input**

Number/Type	2 inputs for incremental rotary encoders AMP mini-IO connector
Voltage	U <sub>b</sub> = 5 V DC
Signal delay	100 ms at 1015 Hz < f <sub>limit</sub> 140 ms at 45 Hz < f <sub>limit</sub> < 1015 Hz 700 ms at f <sub>limit</sub> < 45 Hz
Signal frequency	Parameterization range 25 Hz ... 200 kHz
Current	≤ 100 mA

**Programming instructions**

Profile	Safe input slaves: S-0.B.E Diagnosis slaves: S-7.A.5.
IO code	0
ID code	B
ID1 code	F

**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 <sup>2</sup> ... 2.5 mm <sup>2</sup> for multiple-wire connection with two wires of equal cross-section: flexible with twin wire-end ferrules: 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>

**Material**

Housing	PA 66-FR
Mounting	DIN mounting rail

**Compliance with standards and directives**

Standard conformity	
AS-Interface	EN 50295:1999
Input	EN 61131-2:2007
Degree of protection	EN 60529:2000
Electrical safety	EN 954-1:1996 (up to Kategorie 4), EN 62061:2005 (up to SIL3) EN ISO 13849-1:2006 to PL e

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

AS-Interface Handheld with accessory

**VAZ-SW-DIAGNOSTIC**

Software for diagnostics, servicing, and final measurement of AS-Interface installations for all K20 and K30-type masters

**VBP-HH1-V3.0**

AS-Interface Handheld

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

Adapter cable module/hand-held programming device

**VAZ-ENC-1,5M-PVC**

Connection cable for connecting encoders to a speed monitor

**VAZ-SW-SUITE**

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

**Matching system components****RVS58S-\*\*\*\*\*Z****RVS58S-282YYR4ZN-01024**

safety incremental encoder

**Safe Speed Monitor**