AS-Interface master
VBM-CTR-K20-R2

- Stand alone master with PLC functionality and RS 232 interface
- Large, graphic LCD
- RS 232 diagnosis interface
- Easy commissioning and fault diagnosis via LEDs and graphic display
- Earth fault detection
- AS-Interface noise detection

AS-Interface master RS 232 cabinet module

Function

The VBM-CTR-K20-R2 is a stand-alone master in AS-Interface specification 3.0 with IP20. The construction type is especially suited for use in a switch cabinet.

Address allocation, acceptance of the target configuration and setting the baud rate can be managed via buttons. There are 7 LEDs on the front panel, showing the current status of the AS-Interface line.

In the AS-Interface master with graphical display the commissioning of the AS-Interface circuit and the test of the connected periphery devices can be separated completely overriding bus systems and from programming. The on-site operation via the graphic display and the four push buttons make it possible to show all of the functions on the display, which, for all other AS-Interface masters, are covered by the software AS-Interface control tools.

PLC Functionality

For PLC functionality the VBM-CTR-K20-R2 provides 16 kB program memory, 8 kB data memory, 1024 counters and 1024 timers. This is sufficient capacity to process all data arriving at the AS-Interface. The master can, therefore, also be operated as "stand-alone". The programm processing for 1000 word commands is approx. 2 ms. The programming language is based on STEP5. In the extended mode the AS-Interface CTRL functions (upload, download, start, stop, read and write marker) can be utilized.

Dimensions
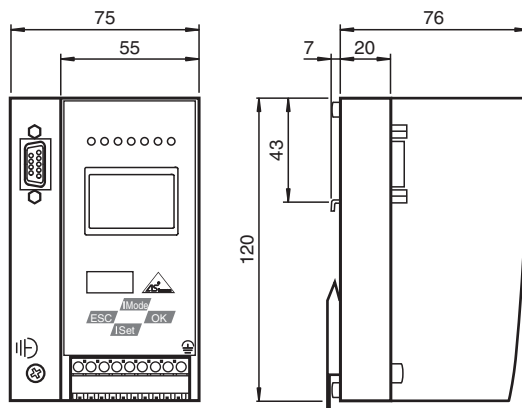
Technical Data

General specifications

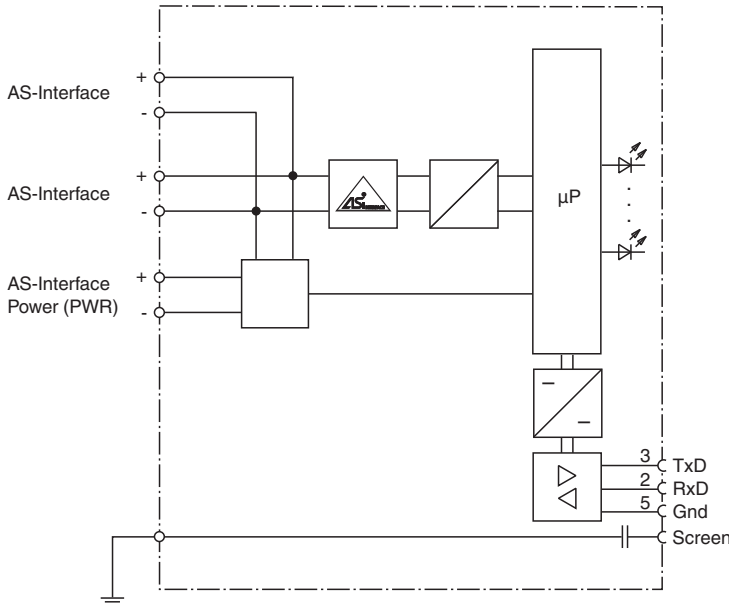|		
AS-Interface specification		V3.0
PLC-Functionality		integrated
Earth fault detection	EFD	integrated
EMC monitoring		integrated
Diagnostics function		Extended function via display

Technical Data

UL File Number		E223772 only from low voltage, limited energy source (SELV or PELV) or listed Class 2 source
Functional safety related parameters		
$MTTF_d$		180 a at 30 °C
Indicators/operating means		
Display		Illuminated graphical LC display for addressing and error messages
LED RS 232		interface in operation; LED green
LED AS-i ACTIVE		AS-Interface operation normal; LED green
LED CONFIG ERR		configuration error; LED red
LED PRG ENABLE		autom. programming; LED green
LED POWER		voltage ON; LED green
LED PRJ MODE		projecting mode active; LED yellow
LED U AS-i		AS-Interface voltage; LED green
Switch SET		Selection and setting of a slave address
OK button		Mode selection traditional-graphical/confirmation
Button MODE		Mode selection PRJ-operation/save configuration/cursor
ESC button		Mode selection traditional-graphical/cancel
Electrical specifications		
Insulation voltage	U_i	≥ 500 V
Rated operating voltage	U_e	from AS-Interface
Rated operating current	I_e	≤ 150 mA
Interface		
Interface type		RS 232
Transfer rate		1200, 2400, 4800, 9600, 19200, 28800, 38400, 57600 or 11500 Bit/s , Automatic baud rate detection
Cable length		max. 30 m
Connection		
AS-Interface		spring terminals, removable
Serial interfaces		9-pin Sub-D socket
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 62026-2:2013
Standard conformity		
Electromagnetic compatibility		EN 61326
Degree of protection		EN 60529:2000
AS-Interface		EN 62026-2:2013
Approvals and certificates		
UL approval		An isolated source with a secondary open circuit voltage of ≤ 30 V_{DC} with a 3 A maximum over current protection. Over current protection is not required when a Class 2 source is employed. UL mark does not provide UL certification for any functional safety rating or aspects of the device.
Ambient conditions		
Ambient temperature		0 ... 55 °C (32 ... 131 °F)
Storage temperature		-15 ... 75 °C (5 ... 167 °F)
Mechanical specifications		
Degree of protection		IP20
Mass		460 g
Construction type		Low profile housing , Stainless steel

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Connection

AS-Interface +/-
AS-Interface +/-
AS-Interface Power (PWR) +/-

µP

3 TxD
2 RxD
5 Gnd
Screen

At the cable for power supply no slaves or repeaters may be attached.
At the cable for AS-Interface circuit no power supplies or further masters may be attached.

Assembly

POWER RS 232 CONFIG ERR U AS-I AS-I ACTIVE PRG ENABLE PRJ MODE

PEPPERL+FUCHS
VBM-CTR-K20-R2

Mode
ESC   OK
Set

+ASI- +ASI- ASI +PWR- NC NC
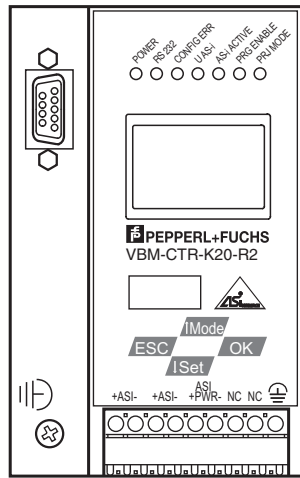
Connection

In an AS-Interface network only one device can be operated earth fault detection. If there are many devices in an AS-Interface network, this can lead to the earth fault monitoring response threshold becoming less sensitive.

Accessories

	VAZ-SW-ACT32	Full version of the AS-I Control Tools including connection cable
	USB-0,8M-PVC ABG-SUBD9	Interface converter USB/RS 232

Release date: 2021-09-27 Date of issue: 2021-09-27 Filename: 195379_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".
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Commissioning

The AS-i Control Tools software is supplied as restricted version together with the documentation. The software performs addressing, programming and monitoring of the AS-Interface network. In addition, it contains an editor that creates programs for the integrated PLC functionality. The full version of the AS-i Control Tool is available as an accessory and features an expanded diagnostics monitor as well as a larger program memory for AS-Interface Control which makes it possible to detect faulty telegrams of slaves.

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4