Fig. 1 Figure of AEC-VS

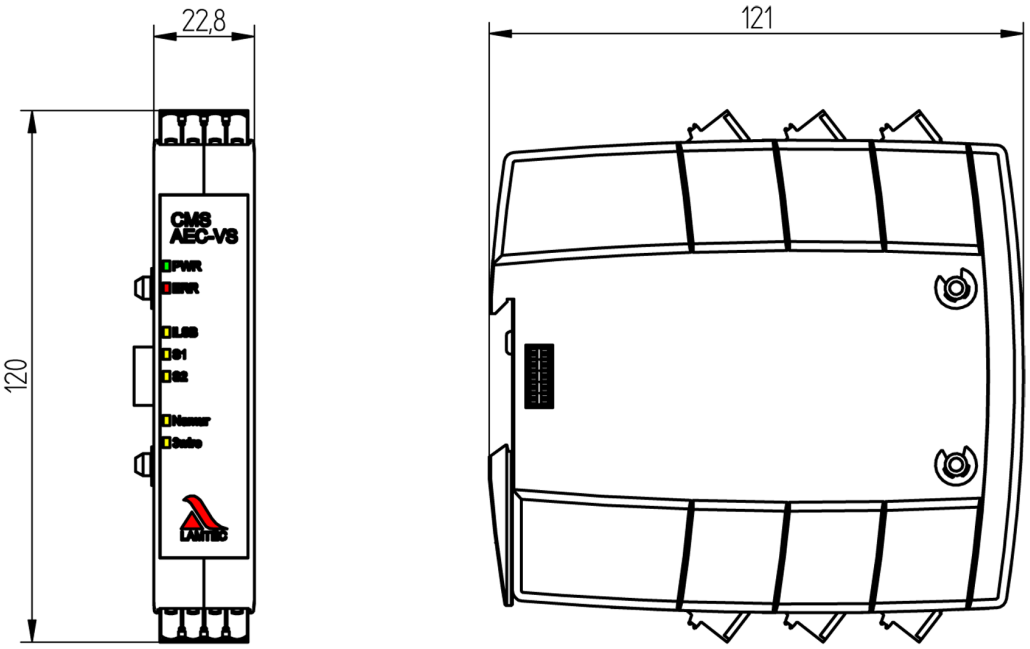

Fig. 2 AEC-VS dimensional drawing

Item number	
AEC-VS Actuator Extension Component - Variable Speed	Type 668R0230-XX*

* XX = dependent on the configuration

Technical Data AEC-VS

Technical data AEC-VS	
Dimensions (H x W x D)	120 x 22.8 x 121 mm
Weight	0.160 kg
Power supply voltage	24 VDC ± 20% (via plug-in connection from MCC)
Current consumption	min: 50 mA max: 60 mA
Power consumption	2 W
Flammability	UL94 V-0

Signal inputs	
Namur Pulse input for connecting inductive sensors with Namur interface according to EN 60947-5-6 The connection for this is X14	Sensor supply: 8.2 V, max. 8.2 mA ***NOTICE*** The power supply terminal of the 3-wire interface (X15-1) is short-circuit proof. The short-circuit current, and thus the maximum current rating of the output driver, is 18 mA. Correct operation cannot be guaranteed for sensors with a higher current draw. Conversion of the sensor recording into digital information: – Inactive: >2.1 mA → Digital signal ON – Active/pulse: <1.2 mA → Digital signal OFF – Hysteresis: ≥ 0.5 mA Frequency range: 5 ... 9400 pulses/min. (0.083 ... 157 Hz) Pulse length: min. 200 µs Input resistance: ≥ 1 kΩ Cable lengths max 200 m >10 m, used shielded connecting piping When used on ships with Lloyds Register approval, shielded cables must be used for cable lengths > 1 m.
Pulse input 3-wire: Pulse input for connecting inductive sensors with 3-wire interface The connection for this is X15	Sensor supply: 24 V Conversion of the input voltage into digital information: – Inactive: 0 V→ Digital signal OFF – Active/pulse: 24 V → Digital signal ON – Hysteresis: ≥ ¼ U_{max} Frequency range: 5 ... 9400 pulses/min. (0.083 ... 157 Hz) Pulse length: min. 200 µs Input resistance: ≥ 10 kΩ Cable lengths max 200 m >10 m, used shielded connecting piping When used on ships with Lloyds Register approval, shielded cables must be used for cable lengths > 1 m.
Analogue input 0/4 ... 20 mA: For connecting speed transmitters with power interface 4 ... 20 mA or position detectors of actuators with power interface 4 ... 20 mA. The connection for this is X15	Range: 0/4 ... 20 mA, load 150 Ω, accuracy ±1% Overcurrent limitation: approx. 25 ... 28 mA Cable lengths max 200 m >10 m, used shielded connecting piping When used on ships with Lloyds Register approval, shielded cables must be used for cable lengths > 1 m.

Digital input (non-safe)[1]				
		24 VDC	120 VAC	230 VAC
The connection for this is X16	Nominal current	2.1 mA Impedance 11 kΩ	2.1 mA Impedance 75 kΩ	2.3 mA Impedance 100 kΩ
	Due to the low input currents of the CMS, we recommend using appropriate contact material, e.g. gold-plated silver contacts, or wiring the encoder contacts accordingly.			
	Signal ON (min)	0.55 mA ≙ 6.9 VDC	0.97 mA ≙ 56 VAC	0.78 mA ≙ 77 VAC
	Signal OFF (max)	0.27 mA ≙ 4 VDC	0.35 mA ≙ 21 VAC	0.35 mA ≙ 36 VAC
	Electrically safe separation between the input and electronics, floating			
	Cable length max. 200 m			

1 Do not use for safety-relevant signals

Outputs		
Analogue output 0/4 ... 20 mA or 0/2 ... 10 V	Same setpoint for both outputs Can be set via parameters	
Current output 0/4 ... 20 mA	Accuracy ±1.5% Use shielded connecting piping	
Voltage output 0/2 ... 10 V The connection for this is X11	Voltage ripple≤50 mV_{pp} Max. current 10 mA Short circuit proof Accuracy ±2% of the maximum value Use shielded connecting piping	
Digital output The connection for this is X13	Fuse protection:	Resettable/electronic 4.1 A max. (voltage-dependent) Not resettable 5 A fast-acting
	Floating contact up to max. 400VAC/ 300VDC	
	Electrically safe separation from SELV power supply voltage of the CMS system	
	Cable length max. 200 m When using it on ships with Lloyds Register approval, a ferrite must be fitted to plug X13 via the connecting piping. We recommend type WE742 711 11 from Würth Elektronik.	

Technical Data AEC-VS

Environmental conditions		
Operation	permissible temperature range	-30 °.. .+70 °C (condensation prohibited)
	permissible ambient humidity	5% ... 95% relative air humidity
Transport/storage	permissible temperature range	-40 ... +80 °C (condensation prohibited)
	permissible ambient humidity	5% ... 95% relative air humidity
Protection class	DIN EN 60529	IP20 (when all terminals are fitted)

EU Declaration of Conformity	
2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
2014/68/EU	Pressure Equipment Directive Kat. 4 Mod. B+D
(EU) 2016/426	Gas Appliance Regulation (GAR)
2011/65/EU	RoHS

NOTICE

The limits of the technical data must be strictly adhered to.

Order Information

Description/Type	Order no.
AEC-VS Actuator Extension Component - Variable Speed, power supply 24 VDC/1,5 W Module for controlling and monitoring frequency converters or actuators with 4 ... 20 mA input and 4 ... 20 mA feedback	668R0230...
A 10 – CONTROL VOLTAGE DIGITAL INPUT	**Selection**
120 VAC	120VAC
230 VAC	230VAC
24 VDC	24VDC
A 20 – CUSTOMER	**Selection**
STANDARD	S
A 30 – CUSTOMER	**Selection**
BLACK (STANDARD)	SW
A 40 – CONNECTOR SET	**Selection**
SCREW TERMINALS Connector set included	SC
SPRING TERMINALS Connector set included	FED
WITHOUT Connector set not included, must be ordered separately, see „Separate Connector Sets for AEC-VS”	0

Separate connector sets for AEC-VS

when attribute 40 „CONNECTOR SET" = selection „0“

Description/Type	Order no.
Screw Terminals AEC-VS Control Voltage Digital Input 120/230 VAC	668R0081
Screw Terminals AEC-VS Control Voltage Digital Input 24 VDC	668R0082
Spring Terminals AEC-VS Control Voltage Digital Input 120/230 VAC	668R0091
Spring Terminals AEC-VS Control Voltage Digital Input 24 VDC	668R0092

Approvals

The information in this publication is subject to technical changes.

LAMTEC GmbH & Co. KG
Josef-Reiert-Straße 26
69190 Walldorf
GERMANY
Telefon: +49 (0) 6227 6052-0
Telefax: +49 (0) 6227 6052-57
info@lamtec.de
www.lamtec.de

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