

Technical Data Compact Flame Scanner F300K



Fig. 1 F300K with integrated display



Fig. 2 F300K with LED

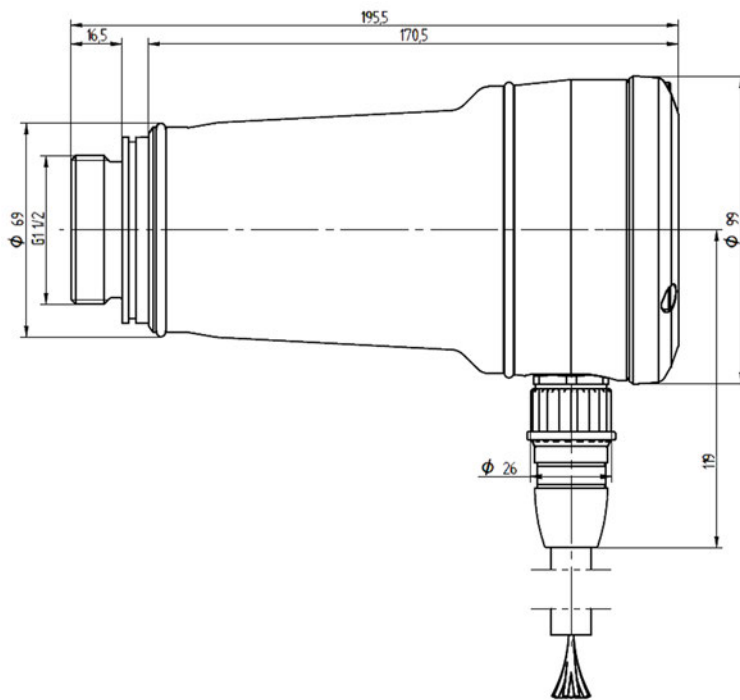


Fig. 3 Dimensional drawing F300K

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Housing

Material	Corrosion-resistant aluminium EN AW 6082, anodised or stainless steel V4A
Dimensions	195.5 x 99 mm / 3.9"x7.7" in
Weight	1.05 kg / 2.3 lb in Al, 3.6 kg / 7.9 lb in stainless steel

Input parameters

Auxiliary power	
Power supply voltage ¹	24 VDC ± 20 %
Power consumption	≤ 3.7 W
Digital inputs – mode switching	
Control voltage ¹	24 VDC ± 20 %
Control current	Approx. 6 mA
Signal input	
Responsiveness	≥ 18 mVAC

¹ The product must not be transported, stored or operated outside the specified range. All promises regarding safety-relevant functions otherwise lose their validity.

Spectral ranges

UV-4	215 ... 360 nm	UV-spectral range
UV4.6	220 ... 360 nm	UV-spectral range
IR-2	850 ... 1.200 nm	IR-spectral range
IR-4	1.00 ... 2.200 nm	IR-spectral range
UVIR-1	215 ... 360 nm 1.000 ... 1.700 nm	UV-spectral range IR-spectral range
UV-4.6 FO (fibre optic)	220 ... 360 nm	UV-spectral range
UVIR-1 FO (fibre optic)	215 ... 360 nm 1.000 ... 1.700 nm	UV-spectral range IR-spectral range

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Output parameters	
Flame signal output contact	Normally open contact (potential-free)
Permissible switching voltage ¹	Max. 50 VAC/DC Min. 13 VAC/DC
Permissible switching current	Max. 0.5 A cosφ 0.4 at ≤ 60 °C / +140 °F ² Max. 0.4 A cosφ 0.4 at ≤ 80 °C / +176 °F ² Min. 10 mA ² Provide spark suppression externally for inductive loads, do not switch capacitive loads.
Fuse protection	Internal self-resetting circuit breaker 900 mA plus fuse 2,5 A
Safety time (FFDT) Response time in the event of the flame going out	t _{VAUS} adjustable via factory password to 1, 2, 3, 4, 5 seconds (default: 1 s)
Start-up delay	t _{VEin} adjustable up to 5 s
Output contact stand-by	Switch NC (floating)
Permissible switching voltage ¹	Max. 50 VAC/DC Min. 13 VAC/DC
Permissible switching current	Max. 0.5 A ² Min. 10 mA ²
Fuse protection	Required externally

Output parameters	
Analogue output - intensity/effective value	No galvanic isolation
Output current	Setting range: 4 ... 20 mA, 0 ... 20 mA
Maximum load	240 Ω
Open Circuit Voltage	Approx. 6.5 V
Basic error	± 2 %

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² Please note: Gold-plated relay contacts
The maximum load for inductive/capacitive loads (recurring current peaks during switching) is 100 mA. If this is exceeded, even briefly (current peaks), the specified minimum value of 10 mA can no longer be guaranteed. Provide external spark suppression.

Communication	
Bus	No galvanic isolation
Driver	High-speed
Speed	500 kbit/s
Cable length	80 m / 262.46 ft, TP (twisted pair) recommended

Connecting/extension cable	
Type	14-wire, shielded (e.g. LiYCY)
Cable length	Maximum extension after 3 m / 9.84 ft of connecting cable at a supply voltage of 20.4 V: Cross-section 0.5 mm ² / 20 AWG → length 100 m / 328.08 ft Cross-section 1,0 mm ² / 17 AWG → length 200 m / 656.17 ft
	Deviating cable lengths such as: Cross-section: 0.5 mm ² / 20 AWG → length 150 m / 492.12 ft 150 : 0.5 x 0.0059 + 19.2 = 21.0 V The supply voltage must be > 21.0 V.

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Wear parts

None

Technical capacity

Operating mode	Continuous operation 72 hours of operation in accordance with TRD 604
Safety integrity level	DIN EN 61508:2011, SIL 3 part 1 to 7
Overvoltage category	IEC 60730-1:2010, ÜKIII
Susceptibility to interference	IEC 60730-1:2010
Emitted interference	DIN EN 55022:2006, Class B

Operating Condition

Relative humidity	0 ... 95 % non-condensing
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Use in potentially explosive atmospheres

Device group/category, potentially explosive area, standard	II 3G, Zone 2, 22 IEC60097-0, DIN EN 60079-0 Class I Division 2 ANSI/ISA-12.12.01, CAN/CSA C22.2 No. 213
Identification marking	Ex nA nC ic IIC T6...T5 Gc X, Ex tb IIIC 85°C Dc X, CI I Div2 GrA T5
Operating temperature range	
Ambient temperature ¹	T5 -40 °C ... + 80 °C / -40 °F ... 176 °F T6 -40 °C ... + 70 °C / -40 °F ... 158 °F
Additional specifications	Read the section entitled "Important information on protection in potentially explosive atmospheres".

Environmental Conditions ¹

Operation	Perm. temperature range	-40 ... +85 °C / -40 ... +185 °F (device-internal display)
Transport	Perm. temperature range	-40 ... +85 °C / -40 ... +185 °F
Storage	Perm. temperature range	-40 ... +85 °C / -40 ... +185 °F (storage in enclosed spaces)
Degree of protection	DIN EN 60529:2000	IP66/67, NEMA 4X

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NOTICE

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

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Order Information

NOTICE

All options marked with * correspond to the standard selection.

Description / Type	Order no.
Compact Flame Monitor F300K, power supply voltage 24 VDC / 3,7 W, IP66/67, NEMA 4X	659A50...

A 10 – SPECTRUM				Selection
TYPE UV-4		UV-SPECTRAL RANGE	215 ... 360 nm	04*
TYPE UV-4.6		UV-SPECTRAL RANGE	220 ... 360 nm	06
TYPE IR-2	chamber / pyrolysis	IR-SPECTRAL RANGE	850 ... 1.200 nm	10
TYPE IR-4	grate firing	IR-SPECTRAL RANGE	1.000 ... 2.200 nm	12
TYPE UVIR-1		UV-SPECTRAL RANGE IR-SPECTRAL RANGE	215 ... 360 nm 1.000 ... 1.700 nm	17
TYPE UV-4.6	for fibre optic	UV-SPECTRAL RANGE	220 ... 360 nm	26
TYPE UVIR-1	for fibre optic	UV-SPECTRAL RANGE IR-SPECTRAL RANGE	250 ... 360 nm 1.000 ... 1.700 nm	37

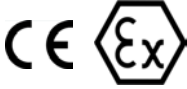
A 20 – HOUSING		Selection
WITH INTEGRATED USER-INTERFACE		UI*
WITH INTEGRATED USER-INTERFACE WITH EFA (ADVANCED FLAME EVALUATION) Additionally required: Gateway for further evaluation - FSB / Modbus-TCP/ Modbus-RTU - FSB / Profibus-DP - FSB / Profinet		UIE
WITH LED-DISPLAY		0
STAINLESS STEEL 1.4404 WITH LED-DISPLAY		V4A

A 30 – UL CERTIFICATION		Selection
WITH UL CERTIFICATION		0*
WITH UL CERTIFICATION, INCL. CLASS I DIVISION 2		D2

A 40 – CUSTOMER PARAMETER		Selection
STANDARD PARAMETERISATION		0*
SPECIAL CONFIGURATION		0006

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Approvals



PESO

The information in this publication is subject to technical changes.



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