

# Technical Data Compact Flame Scanner F300K



Fig. 1 F300K with integrated display



Fig. 2 F300K with LED

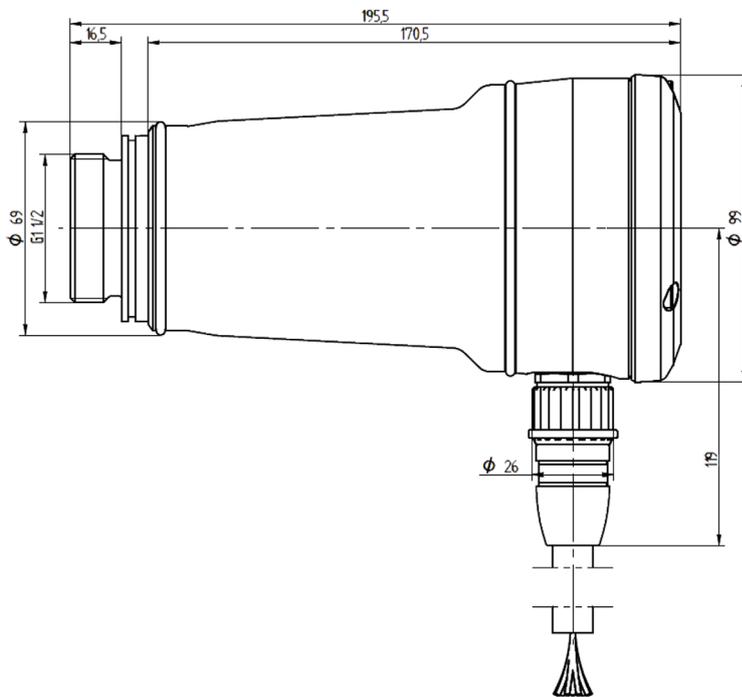


Fig. 3 Dimensional drawing F300K

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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

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

<sup>1</sup> 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

# Technical Data Compact Flame Scanner F300K

Output parameters	
<b>Flame signal output contact</b>	Normally open contact (potential-free)
Permissible switching voltage <sup>1</sup>	Max. 50 VAC/DC Min. 13 VAC/DC
Permissible switching current	Max. 0.5 A cosφ 0.4 at ≤ 60 °C / +140 °F <sup>2</sup> Max. 0.4 A cosφ 0.4 at ≤ 80 °C / +176 °F <sup>2</sup> Min. 10 mA <sup>2</sup> 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 <sub>VAUS</sub> adjustable via factory password to 1, 2, 3, 4, 5 seconds (default: 1 s)
Start-up delay	t <sub>VEin</sub> adjustable up to 5 s
<b>Output contact stand-by</b>	Switch NC (floating)
Permissible switching voltage <sup>1</sup>	Max. 50 VAC/DC Min. 13 VAC/DC
Permissible switching current	Max. 0.5 A <sup>2</sup> Min. 10 mA <sup>2</sup>
Fuse protection	Required externally

Output parameters	
<b>Analogue output - intensity/effective value</b>	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 %

<sup>1</sup> The product must not be transported, stored or operated outside the specified range. If it is, any guarantees with regard to safety-related functions lose their validity.

<sup>2</sup> 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

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<b>Connecting/extension cable</b>	
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 <sup>2</sup> / 20 AWG → length 100 m / 328.08 ft Cross-section 1,0 mm <sup>2</sup> / 17 AWG → length 200 m / 656.17 ft
	Deviating cable lengths such as: Cross-section: 0.5 mm <sup>2</sup> / 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.
<b>Wear parts</b>	
	None
<b>Technical capacity</b>	
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
<b>Operating Condition</b>	
Relative humidity	0 ... 95 % non-condensing
<b>Use in potentially explosive atmospheres</b>	
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
<b>Operating temperature range</b>	
Ambient temperature <sup>1</sup>	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".

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## Environmental Conditions <sup>1</sup>

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

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## EU Declaration of Conformity

2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
(EU) 2016/426	Gas Appliance Regulation (GAR)
2014/68/EU	Pressure Equipment Directive Kat. 4 Mod. B+D
2011/65/EU	RoHS
2015/863/EU	RoHS

## **NOTICE**

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

# Technical Data Compact Flame Scanner F300K

## 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

# Technical Data Compact Flame Scanner F300K

## Connecting cable

### Separate standard connecting cable with cable connector for F300K

Description/Type	Order no.
Connecting cable, length 10 m   32.81 ft	659N0502
Connecting cable, length 15 m   49.21 ft	659N0503
Connecting cable, length 50 m   164.04 ft	659N0508
Connecting cable, silicone, length 10 m   32.81 ft	659N0502/SI
Connecting cable, silicone, length 15 m   49.21 ft	659N0503/SI
Connecting cable, silicone, length 50 m   164.04 ft	659N0508/SI
Connecting cable, silicone, UL compliant Div2 Listed Connecting cable, length 10 m   32.81 ft	659N0502/D2L
Connecting cable, silicone, UL compliant Div2 Listed Connecting cable, length 15 m   49.21 ft	659N0503/D2L
Connecting cable, silicone, UL compliant Div2 Listed Connecting cable, length 50 m   164.04 ft	659N0508/D2L
further lengths available on request	

## Approvals



PESO

The information in this publication is subject to technical changes.



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