

# Technical Data Compact Flame Scanner F300K



Fig. 1 F300K with integrated display



Fig. 2 F300K with LED

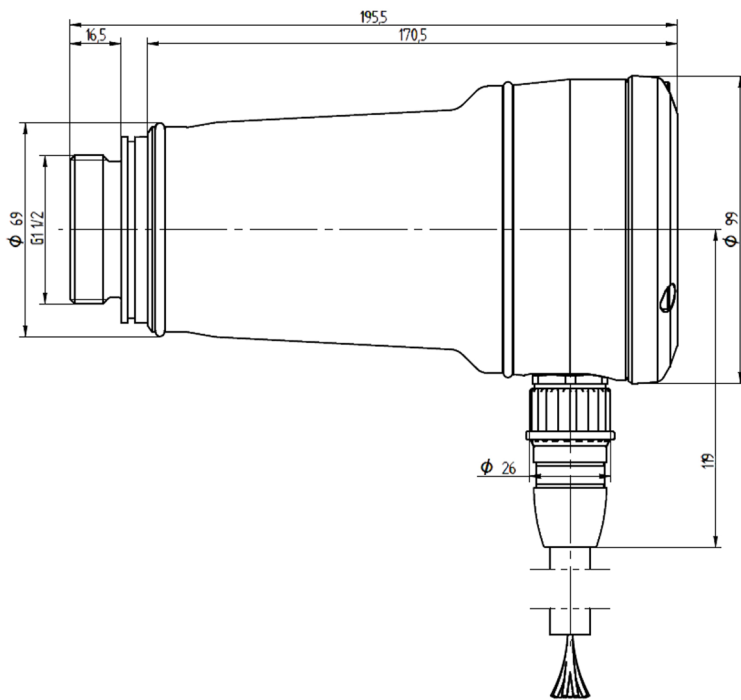


Fig. 3 Dimensional drawing F300K

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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,<br>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<br>1.000 ... 1.700 nm | UV-spectral range<br>IR-spectral range |
| UV-4.6 FO (fibre optic) | 220 ... 360 nm                       | UV-spectral range                      |
| UVIR-1 FO (fibre optic) | 215 ... 360 nm<br>1.000 ... 1.700 nm | UV-spectral range<br>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<br>Min. 13 VAC/DC   |
| Permissible switching current   | Max. 0.5 A cosφ 0.4 at ≤ 60 °C / +140 °F <sup>2</sup><br>Max. 0.4 A cosφ 0.4 at ≤ 80 °C / +176 °F <sup>2</sup><br>Min. 10 mA <sup>2</sup><br>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)<br>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<br>Min. 13 VAC/DC   |
| Permissible switching current   | Max. 0.5 A <sup>2</sup><br>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 |

| 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:<br>Cross-section 0.5 mm <sup>2</sup> / 20 AWG → length 100 m / 328.08 ft<br>Cross-section 1,0 mm <sup>2</sup> / 17 AWG → length 200 m / 656.17 ft |
|                            | Deviating cable lengths such as:<br>Cross-section: 0.5 mm <sup>2</sup> / 20 AWG → length 150 m / 492.12 ft<br>150 : 0.5 x 0.0059 + 19.2 = 21.0 V<br>The supply voltage must be > 21.0 V.   |

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## Wear parts

None

## Technical capacity

|                                |  |
|--------------------------------|--|
| Operating mode                 | Continuous operation<br>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 |
|-------------------|---------------------------|

## Use in potentially explosive atmospheres

|   |  |
|---|--|
| Device group/category, potentially explosive area, standard | II 3G, Zone 2, 22 IEC60097-0, DIN EN 60079-0<br>Class I Division 2 ANSI/ISA-12.12.01, CAN/CSA C22.2<br>No. 213 |
| Identification marking                                      | Ex nA nC ic IIC T6...T5 Gc X, Ex tb IIIC 85°C Dc X,<br>CI I Div2 GrA T5  |
| <b>Operating temperature range</b>                          |  |
| Ambient temperature <sup>1</sup>                            | T5 -40 °C ... + 80 °C / -40 °F ... 176 °F<br>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 <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  |

<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.

## 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<br>IR-SPECTRAL RANGE | 215 ... 360 nm<br>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<br>IR-SPECTRAL RANGE | 250 ... 360 nm<br>1.000 ... 1.700 nm | 37        |

| A 20 – HOUSING  |  | Selection |
|---|--|-----------|
| WITH INTEGRATED USER-INTERFACE  |  | UI*       |
| WITH INTEGRATED USER-INTERFACE WITH EFA (ADVANCED FLAME EVALUATION)<br>Additionally required: Gateway for further evaluation<br>- FSB / Modbus-TCP/ Modbus-RTU<br>- FSB / Profibus-DP<br>- 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



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The information in this publication is subject to technical changes.

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