

FRVKDOO\_R0\_C113

15.02.2024

**Emergency-stop with 5-pole M12 connector, AIDA and status indication active/inactive**



**General Data**

Type reference	FRVKDOO_R0_C113
Description	Emergency-stop, active/inactive (without diagnostic unit), with integrated 5-pole M12 connector
Approvals	CE, UKCA
Contact type	2 NC
Degree of protection	IP65 / IP67 (in the front); IP65 / IP67 (on the rear with plugged-in M12 connector)
Connection type	5-pole M12, A coded
Contact material	AgNi
Max. storage temperature	-40°C ... 80°C
Max. operating temperature	-25°C ... 70°C
Mechanical life	50,000 switching cycles
Electrical life (rated load)	50,000 switching cycles at rated load
Contact resistance NC	< 50 mOhm (new state)
Bouncing time NC	< 10ms
Positive opening contact	acc. to EN60947-5-1, appendix K

**Electrical data acc. to IEC/EN 60947-5-1 (VDE 0660 Sect. 200)**

	alternate current	direct current
Utilisation category	AC15	DC13
Rated insulation voltage Ui	50 V	50 V
Rated operating voltage Ue	35 V	35 V
Rated operating current Ie	2 A	2 A
Breaking capacity	-	-
Continuous thermal current	2 A	2 A

**Technical Data - Lamp**

Lamp socket	none, with integrated 3 mm LED
Definition	Pin5: LED+, Pin3: LED-



### Additional data

Mounting aperture	22.3 mm
Tightening torque (mounting nut)	1.0 ... 1.7 Nm
Release	twist release, left or right
Mounting position	any
Standards	EN 60947-5-1, EN 60947-5-5, EN ISO 13850
Tightening torque (M12-connector)	max. 0.4 Nm
Ld	20% (NC)
B10d [cycles]	250,000
Overvoltage category	II
Pollution degree	2
Material group	I

### Note

○ = NC contact  
 - with switching position indicator  
 - the diagnostic unit is not scope of delivery  
 - LED: 0 ohm serie resistor, with protective diode (series-connected)

Conditional short circuit I<sub>q</sub>: 1000 A  
 Rated impulse withstand voltage U<sub>imp</sub>: 2.5 KV at contact element  
 Short circuit means (recommendation): safety fuse 2A gG

Illumination, status indication active/inactive: acc. to ISO 13850:2015(E), EN ISO 13850:2015(D), DIN EN ISO 13850:2016-05

Mushroom head "grey": "inactive", no emergency-stop  
 Mushroom head "red": "active" emergency-stop

LED data:  
 The LED must not be operated without series resistor.  
 Do not connect Pin 5 - Pin 3 directly to the voltage. Observe LED data!

Type: (Data sheet\_LED\_FRVKD\_170302.pdf)  
 Protective diode (series-connected): Diodes Incorporated BAS70-05  
 Forward voltage: max. 1.0 V (I<sub>F</sub>=15mA), max. 410mV (I<sub>F</sub>=1mA)  
 LED series resistor: 0-Ohm

Typical data at I<sub>F</sub>=20mA: (recommended: 15mA...20mA)  
 Luminous intensity: min. 10000 mcd, typ. 13000 mcd  
 Beam angle: typ. 15°  
 Dominant wave length: 618...624 nm, typ. 621 nm  
 Typical luminous intensity at I<sub>F</sub>=18mA: min. 9000 mcd, typ. 11700 mcd  
 LED cut-off voltage: max. 70V (incl. protective diode)  
 Average lifetime: abt. 80.000...100.000 h  
 Max. forward current: 30 mA  
 Forward voltage LED: typical 2.0V (1.9 V...2.1 V)

#### Safety instructions / mounting instructions

- The emergency-stop must only be used when lighting conditions ensure a clear and distinct visibility of the red illuminated (active) mushroom, e.g. in interiors or roofed places without direct sunlight (normal industrial environment).
- Before using the emergency-stop a safety review of the entire system is required.
- Depending on the designer's risk assessment, the illumination of the emergency-stop has to be monitored by means of a "diagnostic unit", and in case of a failure one has to react in accordance with the risk evaluation.
- The illumination of the emergency-stop has to be checked regularly as to its clear perceptibility. The emergency-stop has to be exchanged in case the clear perceptibility is no longer given.
- the M12 connector must not be connected or disconnected under load
- the single connector pin may be loaded with max. 2 A



- not suitable for use under water
- there may not be any mechanical load on the M12 connector, ensure that there is sufficient strain relief!
- observe the operating instructions
- depending on the usage the LED connected to the common pin must be considered in the overall system There is no electrical isolation from the normally closed contact!
- observe the operating instructions

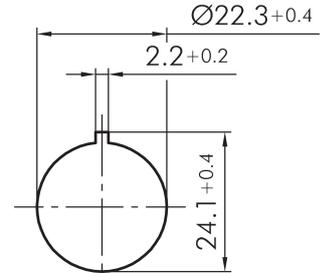
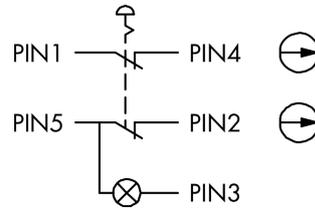
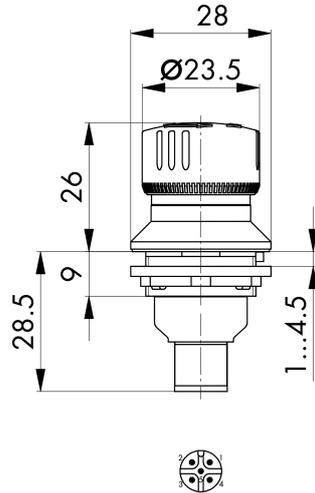
Standard compliant applications:

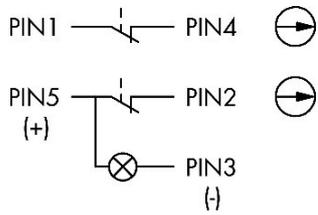
- pluggable operator stations
- wireless operator stations
- pluggable system components (system components which are stationary available but only temporarily in operation)

Pin assignment:

Pin 1 Pin 2 Pin 3 Pin 4 Pin 5 Type

NC1 NC2 LED - NC1 COM (NC2, LED +) 2 NC (AIDA)





[Bild exemplarisch]

