



## Inductive sensor

### NBN3-F31K2M-E8-B23-S-3G-3D

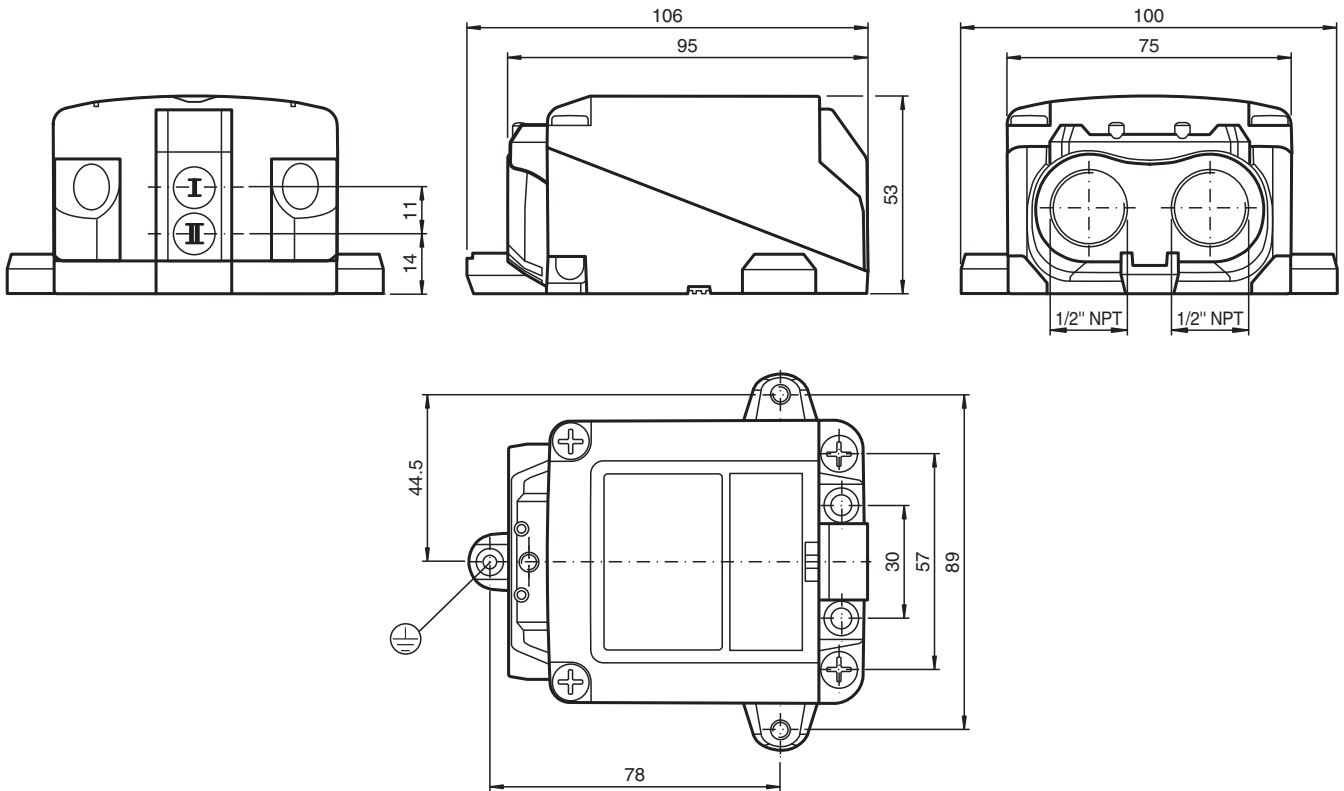
- Direct mounting on standard actuators
- ATEX/IECEX Zone 2/22
- Rugged metal base
- Weatherproof housing for outdoor applications
- Plug-in terminals
- 1/2" NPT conduit entrance



## Installation

The connections to this sensor are sealed with stopping plugs to protect against dirt and moisture. If not all of the connections are used in your application, then seal the remaining stopping plugs on the sensor permanently or check during initial installation and when performing regular maintenance work that the stopping plugs are secure and impermeable. If necessary, tighten the stopping plugs to a torque of 1 Nm.

## Dimensions



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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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## Technical Data

General specifications		
Switching function		2 x normally open (NO)
Output type		PNP
Rated operating distance	$s_n$	2.5 mm
Installation		for non-flush mounting
Output polarity		DC
Assured operating distance	$s_a$	0 ... 2.05 mm
Output type		4-wire
Nominal ratings		
Operating voltage	$U_B$	10 ... 30 V
Switching frequency	$f$	0 ... 100 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protection		all connections
Short-circuit protection		pulsing
Voltage drop	$U_d$	$\leq 3$ V
Operating current	$I_L$	0 ... 100 mA
Off-state current	$I_r$	0 ... 0.5 mA typ. 0.1 $\mu$ A
No-load supply current	$I_0$	$\leq 25$ mA
Functional safety related parameters		
MTTF <sub>d</sub>		490 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
Valve circuit		
Voltage		max. 32 V DC
Current		max. 240 mA
Short-circuit protection		no
Reverse polarity protection		yes, with reversed output LED is out of function, therefore more power for solenoid valve
Compliance with standards and directives		
Standard conformity		
Standards		EN IEC 60947-5-2:2020 IEC 60947-5-2:2019
Approvals and certificates		
IECEX approval		
Equipment protection level Gc		IECEX TUR 20.0062X
Equipment protection level Dc		IECEX TUR 20.0068X
ATEX approval		
Equipment protection level Gc		TÜV 20 ATEX 8592 X
Equipment protection level Dc		TÜV 20 ATEX 8598 X
Ambient conditions		
Ambient temperature		-40 ... 75 °C (-40 ... 167 °F) , restriction for use in hazardous area, see instruction manual
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Connection type		screw terminals
Connection (system side)		1/2" NPT cable gland , ground connection with earthing screw only for wire cross-section 4 mm <sup>2</sup> , use solid wire or stranded wire with wire end ferrule
Connection (valve side)		screw terminal , Cable gland 1/2" NPT
Housing material		PC (glass-fiber-reinforced Makrolon)
Housing base		powder coated aluminum
Degree of protection		IP67 ; additional degree of protection IP66/IP69 with BT65-F31K2-RG-EN-01 and SH-F31K2-B13
Terminal assembly		
Number		10

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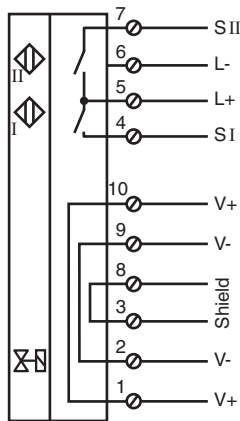
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Connection type	For connection of copper wires with 7 mm dismantle length Tightening torque 0.5 ... 0.6 Nm
Type	Screw terminal block, pluggable
Terminal capacity	Conductor cross-section 0,25 ... 2,5 mm <sup>2</sup> , flexible/rigid For Multiple-wire connection: two wires of equal cross-section per 0.25 ... 1 mm <sup>2</sup>
Tightening torque, fastening screws	4 Nm ... 5 Nm
Tightening torque, housing screws	1.5 Nm
Tightening torque of cover screws	1.5 Nm
Tightening torque, earthing screw	1.5 Nm
Tightening torque, cable gland	max. 4 Nm
Tightening torque, stopping plug	2 Nm
<b>General information</b>	
Use in the hazardous area	see instruction manuals

## Connection



## Accessories

	<b>BT65-F31K2-RG-EN-01</b>	Activator for F31K2 series including protective housing
	<b>SH-F31K2-B13</b>	Protective cap for mechanically protected mounting
	<b>SH-BT65-F31K2-01</b>	Protective housing for activator BT65-F31K2-RG-EN-01
	<b>BT115A</b>	Activator for F31 series
	<b>BT115X</b>	Activator for F31 series

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