



Inductive sensor NCN3-F31K-B3B-B31

- Direct mounting on standard actuators
- A/B node with extended addressing possibility for up to 62 nodes
- Mode of operation, programmable
- Degree of protection IP67
- Communication monitoring, turn-off
- Lead breakage and short-circuit monitoring of the valve
- LEDs for switching state of sensor and solenoid valve

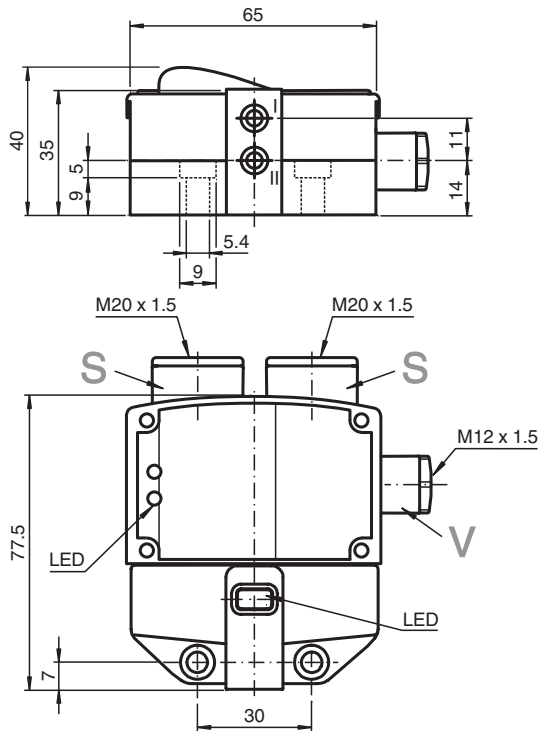
Valve positioner and valve control module



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



Technical Data

General specifications

Switching function		Normally open/closed (NO/NC) programmable
Output type		AS-Interface
Rated operating distance	s_n	3 mm
Installation		flush mountable
Assured operating distance	s_a	0 ... 2.43 mm

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Technical Data

Reduction factor r_{Al}		0.5
Reduction factor r_{Cu}		0.45
Reduction factor r_{304}		1
Reduction factor r_{Si37}		1.2
Node type		A/B node
AS-Interface specification		V3.0
Required gateway specification		\geq V2.1
Nominal ratings		
Operating voltage	U_B	26.5 ... 31.9 V via AS-i bus system
Switching frequency	f	0 ... 100 Hz
No-load supply current	I_0	\leq 35 mA
Functional safety related parameters		
MTTF _d		842 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
LED PWR		AS-Interface voltage; LED green
LED IN		switching state (input); LED yellow
LED OUT		binary LED yellow/red yellow: switching state red: lead breakage/short-circuit
Electrical specifications		
Rated operating voltage	U_e	26.5 ... 31.6 V from AS-Interface
Rated operating current	I_e	100 mA
Compliance with standards and directives		
Standard conformity		
Electromagnetic compatibility		EN 50295:1999-10
Standards		EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012
Approvals and certificates		
UL approval		cULus Listed, General Purpose
CSA approval		cCSAus Listed, General Purpose
CCC approval		CCC approval / marking not required for products rated \leq 36 V
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Mechanical specifications		
Connection (system side)		screw terminals
Core cross section (system side)		1.5/2.5 mm ² flexible/rigid
Connection (valve side)		screw terminals
Core cross section (valve side)		1.5/2.5 mm ² flexible/rigid
Housing material		PBT
Sensing face		PBT
Degree of protection		IP67
Material		
Housing		PBT
Tightening torque, fastening screws		4 Nm ... 5 Nm
Tightening torque, housing screws		1 Nm
Tightening torque, cable gland		M20 x 1.5 ; max. 7 Nm M12 x 1.5 ; max. 1.5 Nm
Note		valve voltage limited to 26,4 V max.; valve power 2,5 W max.

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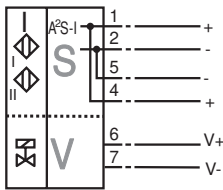
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Connection

B3B-V1-K



Additional Information

Programming Instructions

Address	00 preset, alterable via Busmaster or programming units
IO-code	D
ID-code	A
ID1-code	7
ID2-code	E

Data bit


Bit	Function
D0	valve status (0=valve OFF, 1=valve ON)
D1	valve fault ¹⁾ (0=lead breakage/short circuit; 1=no fault)
D2	switch output sensor 1 ²⁾ (0=damped; 1=undamped)
D3	switch output sensor 2 ²⁾ (0=damped; 1=undamped)

Parameter bit

Bit	Function
P0	Watchdog (0=inactive; 1=active) ³⁾
P1	switching element function sensor II ⁴⁾ 0=NO; 1= NC)
P2	switching element function sensor I ⁴⁾ 0=NO; 1= NC)
P3	not used

- 1) Verification only with actuated valve (D0=1)
- 2) Applies to NC function (P1/P2=1; preset), with NO function (P1/P2=0) reversed characteristics
- 3) Watchdog active: valve voltage drops with the occurrence of an AS-I communication fault



Accessories

	BT65A	Activator for F31 series
	BT65B	Activator for F31 series
	BT65X	Activator for F31 series
	BT115A	Activator for F31 series

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Accessories

	<p>BT115B</p>	<p>Activator for F31 series</p>
	<p>BT115X</p>	<p>Activator for F31 series</p>

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