



Model Number

NBN3-F31K-Z8-V1-V1

Features

- Direct mounting on standard actuators
- Fixed setting
- LEDs for switching state of sensor and solenoid valve

Application

Note

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.

Accessories

VMA-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, Form A on M12, 2+PE, LED, Z diode, PVC cable

VMC-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, Form C on M12, 2+PE, LED, Z diode, PVC cable

VMCI-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, Form C (Ind) on M12, 2+PE, LED, Z diode, PVC cable

VMB-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, Form B on M12, 2+PE, LED, Z diode, PVC cable

VMBI-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, Form B (Ind) on M12, 2+PE, LED, Z diode, PVC cable

BT65A

Activator for F31 series

BT65X

Activator for F31 series

BT115A

Activator for F31 series

BT115X

Activator for F31 series

BT65B

Activator for F31 series

BT115B

Activator for F31 series

Technical Data

General specifications

Switching function	2 x normally open (NO)
Output type	Two-wire
Rated operating distance	s_n 3 mm
Installation	flush mountable
Output polarity	DC
Assured operating distance	s_a 0 ... 2.43 mm
Actual operating distance	s_r 2.7 ... 3.3 mm typ. 3 mm
Reduction factor r_{AI}	0.5
Reduction factor r_{Cu}	0.4
Reduction factor r_{304}	1
Reduction factor r_{Si37}	1.1
Output type	4-wire

Nominal ratings

Operating voltage	U_B 6 ... 60 V DC
Switching frequency	f 0 ... 500 Hz
Hysteresis	H typ. 5 %
Reverse polarity protection	reverse polarity tolerant
Short-circuit protection	pulsing
Voltage drop	U_d ≤ 5.5 V
Operating current	I_L 4 ... 100 mA
Lowest operating current	I_m 4 mA
Off-state current	I_r 0.5 ... 0.9 mA typ. 0.65 mA
Time delay before availability	t_v ≤ 40 ms
Operating voltage indicator	LED, green
Switching state indicator	LED, yellow
Valve status indicator	LED, yellow

Limit data

Tightening torque, fastening screws	0.4 Nm
-------------------------------------	--------

Functional safety related parameters

MTTF _d	570 a
Mission Time (T_M)	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

Ambient conditions

Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
---------------------	--------------------------------

Mechanical specifications

Connection (system side)	Cage tension spring terminals
Core cross-section (system side)	1.5/2.5 mm ² flexible/rigid
Connection (valve side)	4-pin, M12 x 1 socket
Housing material	PBT
Sensing face	PBT
Degree of protection	IP67
Mass	177 g
Tightening torque, housing screws	1 Nm
Tightening torque, cable gland	M20 x 1.5 ; ≤ 7 Nm

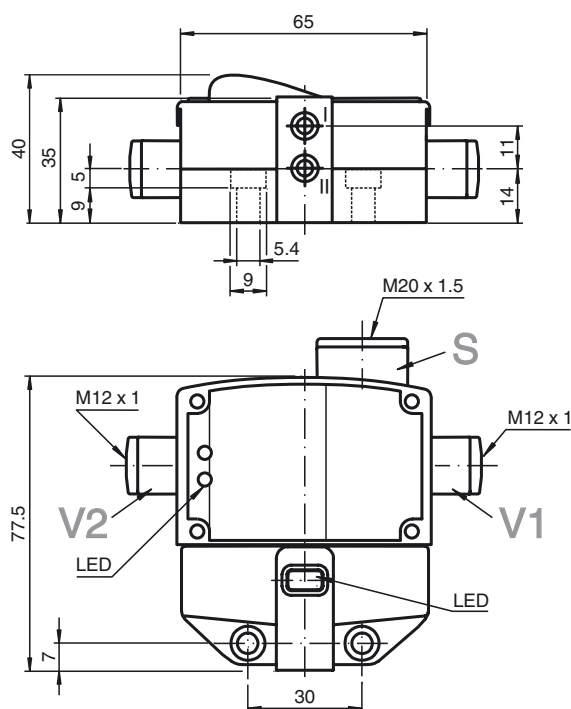
Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012

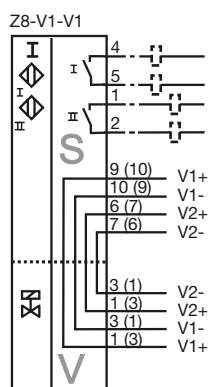
Approvals and certificates

UL approval	cULus Listed, General Purpose, Class 2 Power Source
CCC approval	Certified by China Compulsory Certification (CCC)

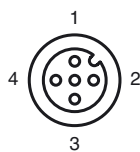
Dimensions



Electrical Connection



Pinout



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)