

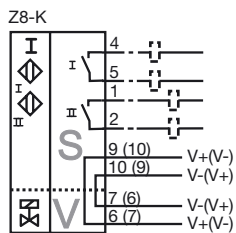
### Model Number

NBN3-F31K-Z8-K

### Features

- Direct mounting on standard actuators
- Compact and stable housing
- Fixed setting
- Satisfies machinery directive

### Connection



### Accessories

#### BT65A

Activator for F31 series

#### BT65X

Activator for F31 series

#### BT115A

Activator for F31 series

#### BT115X

Activator for F31 series

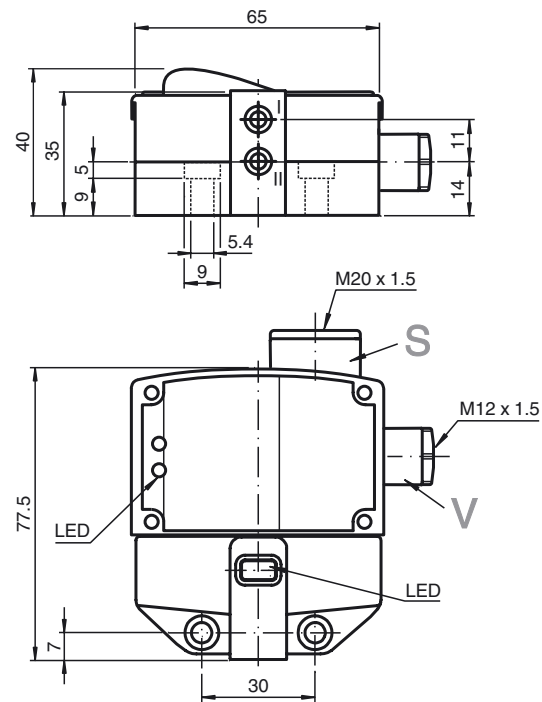
#### BT65B

Activator for F31 series

#### BT115B

Activator for F31 series

### Dimensions



### Technical Data

#### General specifications

Switching element function	DC binary NO
Rated operating distance	$s_n$ 3 mm
Installation	embeddable mountable
Output polarity	DC
Assured operating distance	$s_a$ 0 ... 2.43 mm
Reduction factor $r_{AI}$	0.5
Reduction factor $r_{Cu}$	0.4
Reduction factor $r_{304}$	1
Reduction factor $r_{SI37}$	1.1

#### Nominal ratings

Operating voltage	$U_B$	6 ... 60 V DC
Switching frequency	$f$	0 ... 500 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protected		tolerant
Short-circuit protection		no
Voltage drop	$U_d$	$\leq 6$ V
Operating current	$I_L$	4 ... 100 mA
Lowest operating current	$I_m$	4 mA
Off-state current	$I_r$	0 ... 1 mA typ. 0.7 mA
Indication of the switching state		LED, yellow
Valve status indication		LED, yellow

#### Limit data

Tightening torque, fastening screws	0.4 Nm
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#### Functional safety related parameters

MTTF <sub>d</sub>	590 a
Mission Time ( $T_M$ )	20 a
Diagnostic Coverage (DC)	0 %

#### Ambient conditions

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

Connection (system side)	Cage tension spring terminals
Core cross-section (system side)	1.5/2.5 mm <sup>2</sup> flexible/rigid
Connection (valve side)	Cage tension spring terminals
Core cross-section (valve side)	1.5/2.5 mm <sup>2</sup> flexible/rigid
Housing material	PBT
Sensing face	PBT
Protection degree	IP67
Tightening torque, housing screws	1 Nm
Tightening torque, cable gland	M20 x 1.5 ; $\leq 7$ Nm M12 x 1.5 ; $\leq 3$ Nm

#### Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

#### Approvals and certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose