

# Inductive proximity sensors

## IM 18 series, sensing range 5 / 8 mm

### DC 3-wire, metal housing

Dimensions in mm



#### Standard series

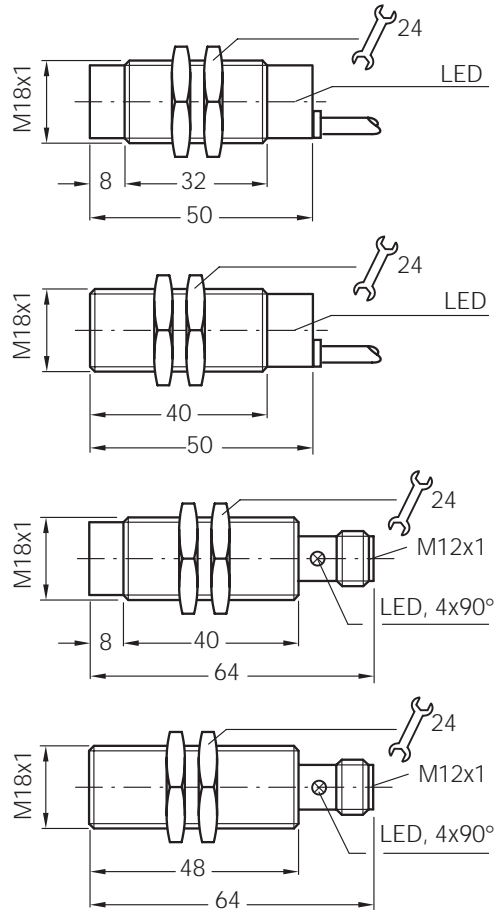
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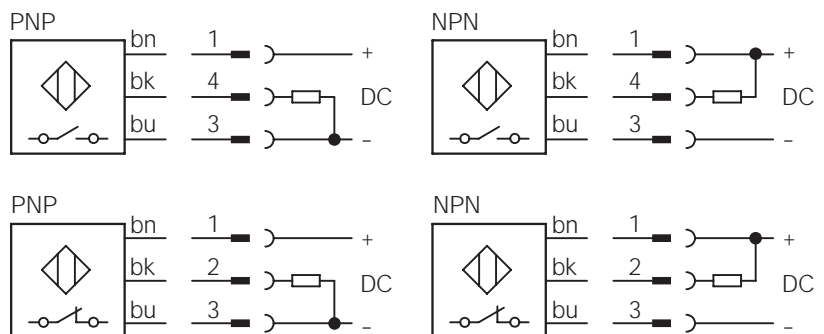
- ▶ Can be installed flush or non-flush in metal
- ▶ PNP or NPN output
- ▶ Normally open/ normally closed function
- ▶ Short-circuit protection (pulsed)
- ▶ Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- ▶ Cable or connector
- ▶ Enclosure rating IP 67
- ▶ LED status indicator

#### Accessories

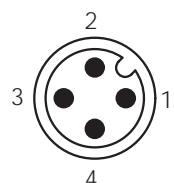
Round connectors  
Mounting bracket



#### Connection diagram



























Wire colour	Contact	Assignment
bn brown	1	+ V DC
bk black	2/4	NC/NO
bu blue	3	- V DC



## Electrical and mechanical data

<b>Operating voltage</b> $U_b$	10 ... 30 V DC	<b>Short-circuit protection (pulsed)</b>	yes
<b>Ripple</b> $U_{pp}$	$\leq 10\%$	<b>Reverse polarity protection</b>	yes
<b>Voltage drop</b> $U_d$ (at $I_a$ max.)	$\leq 1$ V	<b>Power-up pulse suppression</b>	yes
<b>Power consumption</b> (without load)	$\leq 20$ mA	<b>Enclosure rating</b> to EN 40050	IP 67
<b>Continuous current</b> $I_a$	$\leq 400$ mA	<b>Shock and vibration stress</b>	30 g, 11 ms 10 to 55 Hz, 1 mm
<b>Time delay before availability</b> $t_v$	$\leq 100$ ms	<b>Ambient temperature</b> $T_a$	- 25 ... + 70 °C
<b>Hysteresis</b> H	2% - 10% of $s_r$	<b>Housing material</b>	Brass, nickel-plated, plastic
<b>Repeatability</b> R ( $U_b$ and $T_a$ constant)	$\leq 2\%$ of $s_r$	<b>Tightening torque</b>	30 Nm
<b>Temperature drift</b>	$\pm 10\%$ of $s_r$	<b>Connection cable</b>	PVC, 3 x 0.34 mm <sup>2</sup>
<b>EMC</b>	to EN 60 947-5-2		

## Selection table

Sensing range $s_n$ mm	Installation in metal	Switching output	Switching function	Switching frequency $f$ in Hz	Connection	Type	Order number
5		PNP		600	Cable 2 m	IM18-05BPS-ZW1	6011987
5		NPN		600	Cable 2 m	IM18-05BNS-ZW1	6011988
5		PNP		600	Cable 2 m	IM18-05BPO-ZW1	6011989
5		PNP		600	Connector M12 x 1 mm	IM18-05BPS-ZC1	6011991
5		NPN		600	Connector M12 x 1 mm	IM18-05BNS-ZC1	6011992
5		PNP		600	Connector M12 x 1 mm	IM18-05BPO-ZC1	6011993
8		PNP		600	Cable 2 m	IM18-08NPS-ZW1	6011995
8		NPN		600	Cable 2 m	IM18-08NNS-ZW1	6011996
8		NPN		600	Cable 2 m	IM18-08NNO-ZW1	6011998
8		PNP		600	Connector M12 x 1 mm	IM18-08NPS-ZC1	6011999
8		NPN		600	Connector M12 x 1 mm	IM18-08NNS-ZC1	6012000
8		PNP		600	Connector M12 x 1 mm	IM18-08NPO-ZC1	6012001

# Inductive proximity sensors

## IM 18 series, sensing range 5 / 8 mm

### DC 3-wire, metal housing

Dimensions in mm



#### Short version

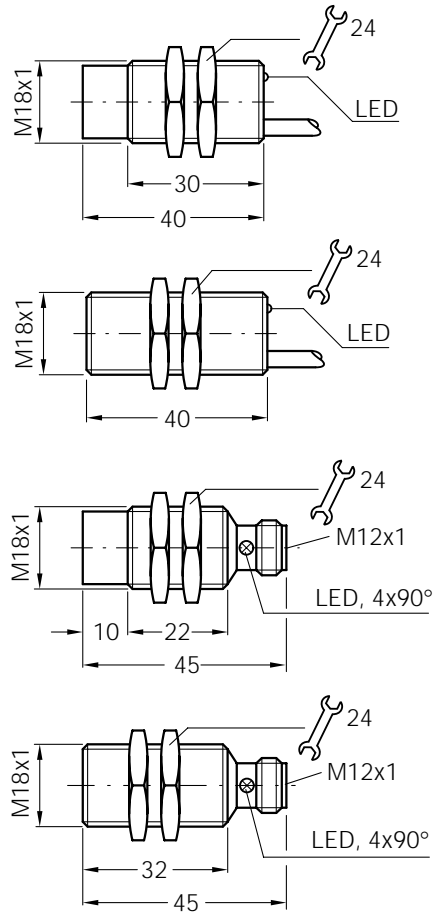
#### Features



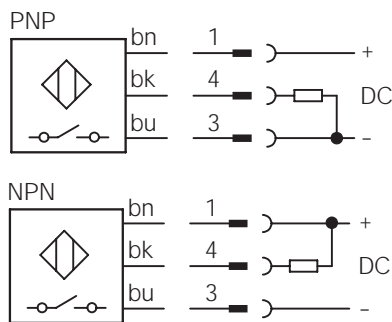
- ▶ Can be installed flush or non-flush in metal
- ▶ PNP or NPN output
- ▶ Normally open function
- ▶ Short-circuit protection (pulsed)
- ▶ Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- ▶ Cable and connector
- ▶ Enclosure rating IP 67
- ▶ LED status indicator

#### Accessories

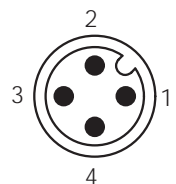
Round connectors  
Mounting bracket



#### Connection diagram



















Wire colour	Contact	Assignment
bn	brown	1 + V DC
bk	black	4 NO
bu	blue	3 - V DC



## Electrical and mechanical data

<b>Operating voltage</b> $U_b$	10 ... 30 V DC	<b>Wire-break protection</b>	yes
<b>Ripple</b> $U_{pp}$	$\leq 10\%$ of $U_b$	<b>Short-circuit protection (pulsed)</b>	yes
<b>Voltage drop</b> $U_d$ (at $I_a$ max.)	$\leq 1.5$ V	<b>Reverse polarity protection</b>	yes
<b>Power consumption</b> (without load)	$\leq 10$ mA	<b>Power-up pulse suppression</b>	yes
<b>Continuous current</b> $I_a$	$\leq 300$ mA	<b>Enclosure rating</b> to EN 60529	IP 67
<b>Time delay before availability</b> $t_v$	$\leq 10$ ms	<b>Shock and vibration stress</b>	30 g, 11 ms 10 to 55 Hz, 1 mm
<b>Hysteresis</b> H	2% - 10% of $s_r$	<b>Ambient temperature</b> $T_a$	- 25 ... + 75 °C
<b>Repeatability</b> R ( $U_b$ and $T_a$ constant)	$\leq 2\%$ of $s_r$	<b>Housing material</b>	Brass, nickel-plated, plastic
<b>Temperature drift</b>	$\pm 10\%$ of $s_r$	<b>Tightening torque</b>	25 Nm
<b>EMC</b>	to EN 60 947-5-2	<b>Connection cable</b>	PUR-PVC, 3 x 0.25 mm <sup>2</sup>

## Selection table

Sensing range $s_n$ mm	Installation in metal	Switching output	Switching function	Switching frequency f in Hz	Connection	Type	Order number
5		PNP		1000	Cable 2 m	IM18-05BPS-ZUK	1017430
5		NPN		1000	Cable 2 m	IM18-05BNS-ZUK	1017442
5		PNP		1000	Connector M12 x 1 mm	IM18-05BPS-ZCK	1017432
5		NPN		1000	Connector M12 x 1 mm	IM18-05BNS-ZCK	1017444
8		PNP		1000	Cable 2 m	IM18-08NPS-ZUK	1017431
8		NPN		1000	Cable 2 m	IM18-08NNS-ZUK	1017443
8		PNP		1000	Connector M12 x 1 mm	IM18-08NPS-ZCK	1017433
8		NPN		1000	Connector M12 x 1 mm	IM18-08NNS-ZCK	1017445



# Inductive proximity sensors

## IM 18 series, sensing range 8 / 12 mm

### DC 3-wire, metal housing

Dimensions in mm

#### Advanced series

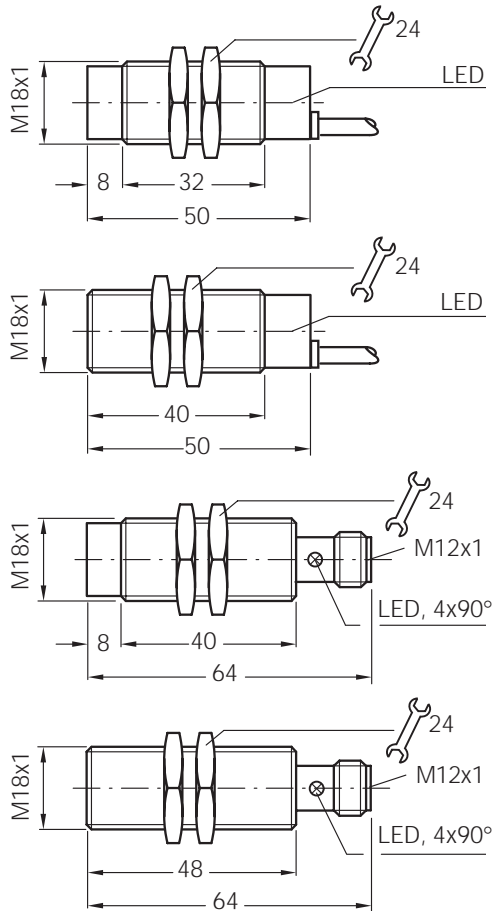
#### Features



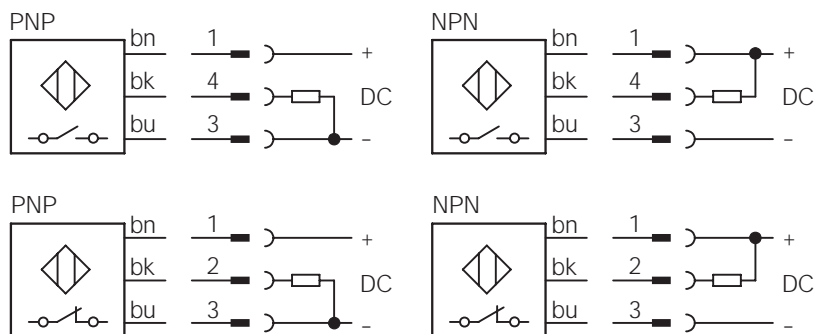
- ▶ Enhanced sensing range
- ▶ Can be installed flush or non-flush in metal
- ▶ PNP or NPN output
- ▶ Normally open/ normally closed function
- ▶ High switching frequency
- ▶ Short-circuit protection (pulsed)
- ▶ Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- ▶ Cable and connector
- ▶ Enclosure rating IP 67
- ▶ LED status indicator

#### Accessories

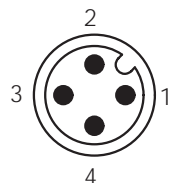
Round connectors  
Mounting bracket



#### Connection diagram























Wire colour	Colour	Contact	Assignment
bn	brown	1	+ V DC
bk	black	2/4	NC/NO
bu	blue	3	- V DC



## Electrical and mechanical data

<b>Operating voltage</b> $U_b$	10 ... 30 V DC	<b>Short-circuit protection (pulsed)</b>	yes
<b>Ripple</b> $U_{pp}$	$\leq 10\%$ of $U_b$	<b>Reverse polarity protection</b>	yes
<b>Voltage drop</b> $U_d$ (at $I_a$ max.)	$\leq 1$ V	<b>Power-up pulse suppression</b>	yes
<b>Power consumption</b> (without load)	$\leq 10$ mA	<b>Enclosure rating</b> to EN 60529	IP 67
<b>Continuous current</b> $I_a$	$\leq 400$ mA	<b>Shock and vibration stress</b>	30 g, 11 ms 10 to 55 Hz, 1 mm
<b>Time delay before availability</b> $t_v$	$\leq 100$ ms	<b>Ambient temperature</b> $T_a$	- 25 ... + 70 °C
<b>Hysteresis</b> H	2% - 15% of $s_r$	<b>Housing material</b>	Brass, nickel-plated, plastic
<b>Repeatability</b> R ( $U_b$ and $T_a$ constant)	$\leq 5\%$ of $s_r$	<b>Tightening torque</b>	30 Nm
<b>Temperature drift</b>	$\pm 10\%$ of $s_r$	<b>Connection cable</b>	PVC, 3 x 0.34 mm <sup>2</sup>
<b>EMC</b>	to EN 60 947-5-2		

## Selection table

Sensing range $s_n$ mm	Installation in metal	Switching output	Output function	Switching frequency f in Hz	Connection	Type	Order number
8		PNP		300	Cable 2 m	IM18-08BPS-ZW1	7900081
8		NPN		300	Cable 2 m	IM18-08BNS-ZW1	7900082
8		PNP		300	Connector M12 x 1 mm	IM18-08BPS-ZC1	7900085
8		NPN		300	Connector M12 x 1 mm	IM18-08BNS-ZC1	7900086
8		PNP		300	Connector M12 x 1 mm	IM18-08BPO-ZC1	7900087
12		PNP		300	Cable 2 m	IM18-12NPS-ZW1	7900093
12		NPN		300	Cable 2 m	IM18-12NNS-ZW1	7900094
12		PNP		300	Connector M12 x 1 mm	IM18-12NPS-ZC1	7900097
12		NPN		300	Connector M12 x 1 mm	IM18-12NNS-ZC1	7900098
12		PNP		300	Connector M12 x 1 mm	IM18-12NPO-ZC1	7900099

\* see installation notes



# Inductive proximity sensors

## IM 18 series, sensing range 5 / 8 mm

### DC 4-wire, metal housing

Dimensions in mm

#### For harsh environment

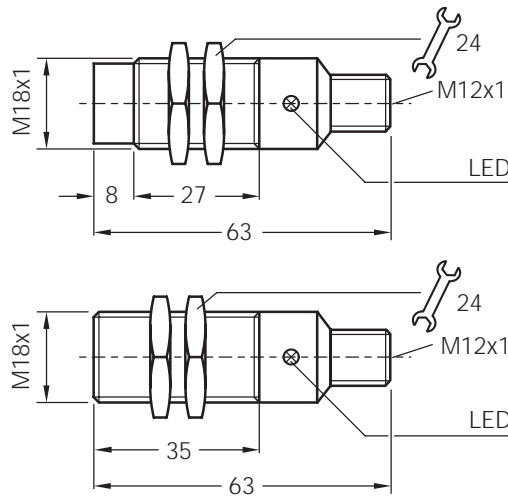
#### Features



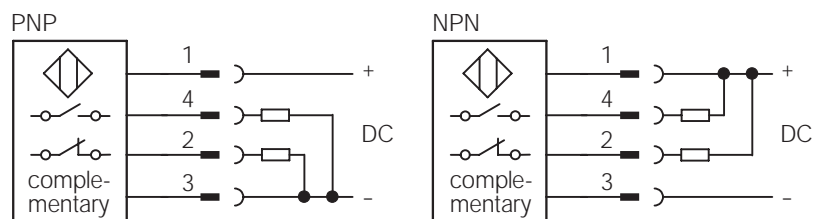
- ▶ For harsh environment, resistant to most cutting oils
- ▶ Enclosure rating IP 68
- ▶ Can be installed flush or non-flush in metal
- ▶ PNP or NPN output
- ▶ Complementary output function
- ▶ Short-circuit protection (pulsed)
- ▶ Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- ▶ Internal enclosure housing in technopolymer
- ▶ Connector
- ▶ LED status indicator (NO function)

#### Accessories

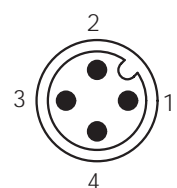
- Round connectors
- Mounting bracket



#### Connection diagram











Wire colour	Contact	Assignment
bn brown	1	+ V DC
wh white	2	NC
bu blue	3	- V DC
bk black	4	NO



## Electrical and mechanical data

<b>Operating voltage</b> $U_b$	10 ... 30 V DC	<b>Short-circuit protection (pulsed)</b>	yes
<b>Ripple</b> $U_{pp}$	$\leq 10\%$	<b>Reverse polarity protection</b>	yes
<b>Voltage drop</b> $U_d$ (at $I_a$ max.)	$\leq 0.8$ V	<b>Power-up pulse suppression</b>	yes
<b>Power consumption</b> (without load)	$\leq 20$ mA	<b>Enclosure rating</b>	IP 68
<b>Continuous current</b> $I_a$	$\leq 400$ mA	<b>Shock and vibration stress</b>	30 g, 11 ms 10 to 55 Hz, 1 mm
<b>Time delay before availability</b> $t_v$	$\leq 100$ ms	<b>Ambient temperature</b> $T_a$	- 25 ... + 70 °C
<b>Hysteresis</b> H	2% - 10% of $s_r$	<b>Housing material</b>	Brass, nickel-plated, plastic
<b>Repeatability</b> R ( $U_b$ and $T_a$ constant)	$\leq 5\%$ of $s_r$	<b>Tightening torque</b>	40 Nm
<b>Temperature drift</b> <b>EMC</b>	$\pm 10\%$ of $s_r$ to EN 60 947-5-2		

## Selection table

Sensing range $s_n$ mm	Installation in metal	Switching output	Output function	Switching frequency $f$ in Hz	Connection	Type	Order number
5		PNP	 complementary	1000	Connector M12 x 1 mm	IM18-05BPP-ZC1	7902931
5		NPN	 complementary	1000	Connector M12 x 1 mm	IM18-05BNP-ZC1	7902932
8		PNP	 complementary	1000	Connector M12 x 1 mm	IM18-08NPP-ZC1	7902933
8		NPN	 complementary	1000	Connector M12 x 1 mm	IM18-08NNP-ZC1	7902934



# Inductive proximity sensors

## IM 18 series, sensing range 5 / 8 mm

### DC 4-wire, metal housing

Dimensions in mm



### Multitalents

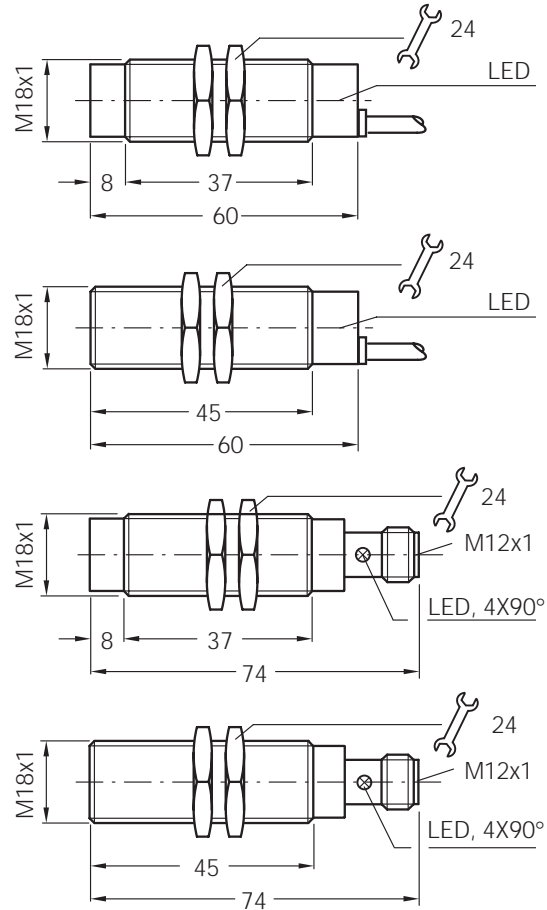
#### Features



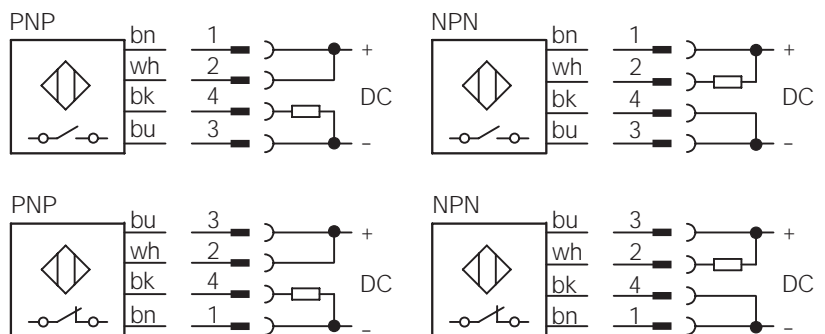
- ▶ Free configurable output functions in one sensor  
PNP / NO, PNP / NC  
NPN / NO, NPN / NC
- ▶ Can be installed flush or non-flush in metal
- ▶ Short-circuit protection
- ▶ Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- ▶ Cable or connector
- ▶ Enclosure rating IP 67
- ▶ LED status indicator (NO function)

#### Accessories

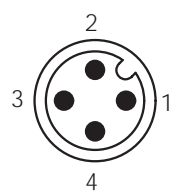
Round connectors  
Mounting bracket



#### Connection diagram











Wire colour		Contact	configurable output function			
			PNP		NPN	
bn	brown	1	+V DC	-V DC	+V DC	-V DC
wh	white	2	+V DC	+V DC	NO	NC
bu	blue	3	-V DC	+V DC	-V DC	+V DC
bk	black	4	NO	NC	-V DC	-V DC



## Electrical and mechanical data

<b>Operating voltage</b> $U_b$	10 ... 30 V DC	<b>Short-circuit protection</b>	yes
<b>Ripple</b> $U_{pp}$	$\leq 10\%$	<b>Reverse polarity protection</b>	yes
<b>Voltage drop</b> $U_d$ (at $I_a$ max.)	$\leq 1.2$ V	<b>Power-up pulse suppression</b>	yes
<b>Power consumption</b> (without load)	$\leq 30$ mA	<b>Enclosure rating</b> to EN 60529	IP 67
<b>Continuous current</b> $I_a$	$\leq 100$ mA	<b>Shock and vibration stress</b>	30 g, 11 ms 10 to 55 Hz, 1 mm
<b>Time delay before availability</b> $t_v$	$\leq 200$ ms	<b>Ambient temperature</b> $T_a$	- 25 ... + 70 °C
<b>Hysteresis</b> H	2% - 10% of $s_r$	<b>Housing material</b>	Brass, nickel-plated, plastic
<b>Repeatability</b> R ( $U_b$ and $T_a$ constant)	$\leq 5\%$ of $s_r$	<b>Tightening torque</b>	40 Nm
<b>Temperature drift</b>	$\pm 10\%$ of $s_r$	<b>Connection cable</b>	PVC, 4 x 0.34 mm <sup>2</sup>
<b>EMC</b>	to prEN 60 947-5-2		

## Selection table

Sensing range $s_n$ mm	Installation in metal	Switching output	Output function	Switching frequency $f$ in Hz	Connection	Type	Order number
5		PNP/NPN config.		300	Cable 2 m	IM18-05BCP-ZW1	7902935
5		PNP/NPN config.		300	Connector M12 x 1 mm	IM18-05BCP-ZC1	7902936
8		PNP/NPN config.		300	Cable 2 m	IM18-08NCP-ZW1	7902937
8		PNP/NPN config.		300	Connector M12 x 1 mm	IM18-08NCP-ZC1	7902938