



**SCHÖNBUCH**  
**ELECTRONIC**



- ø4mm to M30 cylindrical
- Block form



昆山苏美自动化科技有限公司

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## SCHÖNBUCH

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## TECHNICAL SPECIFICATIONS

### STANDARDS

- Schonbuch Proximity switches are constructed to Cenelec and DIN norms specified below.
- For 3 lead DC sensors: DIN EN 50008

- For NAMUR sensors: DIN EN 19234 NAMUR
- Protection: Inductive-to IP67

- Insulation class II
- Refer also to VDE 0660 part 1 8.69



## FEATURES

- Contact free detection
- NPN or PNP open collector output
- LED indicator
- Rugged construction
- Short-circuit and reverse polarity protection (Where applicable)
- High speed switching
- Oil resistant cable

## SPECIFICATIONS TO DIN AND CENELEC

- Nominal sensing distance  $S_n$ : See appropriate sensor  $\pm 10\%$
- Actual sensing distance  $S_r$ :  $0.9 S_n \leq S_r \leq 1.1 S_n$
- Usable sensing distance  $S$ :  $0.9 S_r \leq S \leq 1.1 S_r$
- Reduction multiplier: Copper 0.4, Aluminium 0.45, Brass 0.5, Stainless steel 0.85, Chrome-nickel 0.9
- Hysteresis H: 3 - 15%
- Temperature range:  $-25^\circ\text{C}$  to  $+70^\circ\text{C}$
- Shock:  $b \leq 30g$ ,  $t \leq 11\text{ms}$
- Vibration:  $f \leq 55\text{Hz}$ ,  $A \leq 1\text{mm}$
- Protection class - Inductive: IP67

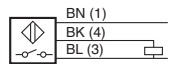
## MATERIAL

- Metal body: - Nickel plated brass

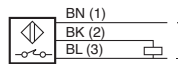
## CONNECTIONS

### 3 WireDC Connections

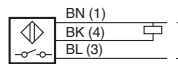
#### PNP N/O



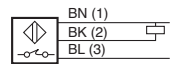
#### PNP N/C



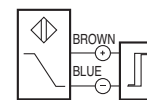
#### NPN N/O



#### NPN N/C

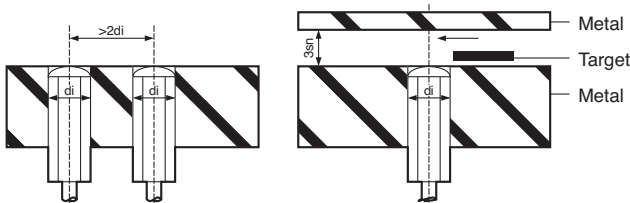


### Namur Connections



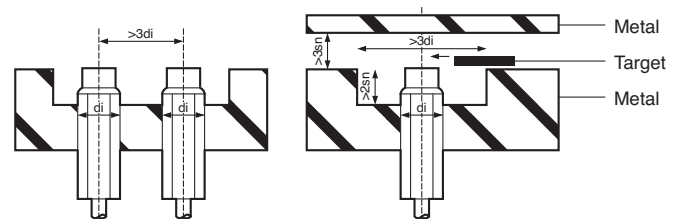
## INSTALLATION NOTES

### Flush types



Flush type switches will not be affected by surrounding metal, but must not be installed closer than  $2 \times d_i$

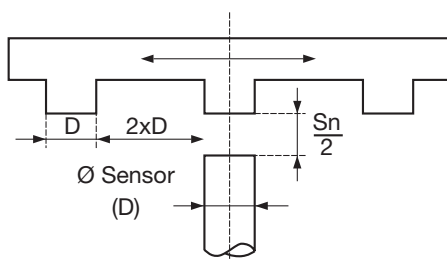
### Non - Flush types



Non flush types must not have metal next to the active face of the switch, and must not be installed closer than  $3 \times d_i$

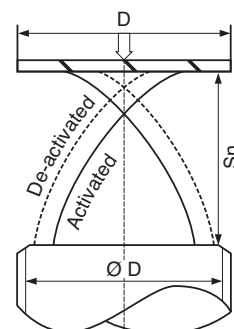
## MINIMUM DISTANCES FOR REPEATABLE SWITCHING

Ref: Europa Norm EN 50010

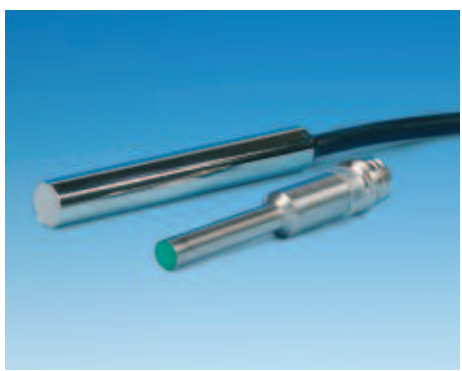


For precise repeatable switching in applications where there is more than one target to detect, the target should equal the diameter of the switch (D) and the distance between targets should be  $2 \times (D)$

## HYSTERESIS



Hysteresis is the difference between activated point and de-activated point of a proximity switch. The usable "Safe" switching distance for a proximity switch is  $0.81 \times S_n$  (Sensing distance).

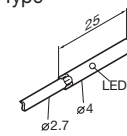
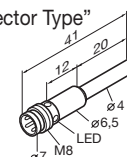
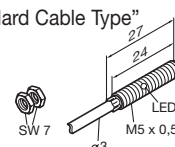
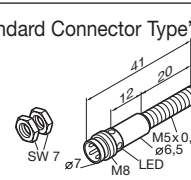
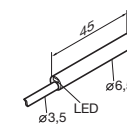
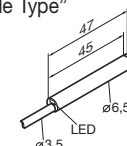
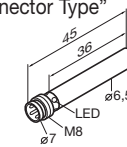
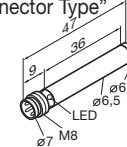


## Ø4 – Ø6.5 MINIATURE SENSORS

- 0.8 – 2mm sensing Range
- Cable and connector type
- LED Indication
- PNP & NPN types available
- N/O & N/C types available



### GENERAL SPECIFICATIONS

Sn mm	Size	Mounting Flush/ Non Flush	Connection	Supply	Frequency (Max)	Max Load	LED Ind	Type	Output	Part Number	
0.8	Ø4 "Standard Cable Type" 	Flush	3 Wire 2m	10-35V DC	2KHz	100mA	1 LED	PNP	N/O	IBDA 0414	
									N/C	IBDA 0415	
									NPN	N/O	IBDA 0412
										N/C	IBDA 0413
0.8	Ø4 "Standard Connector Type" 	Flush	Plug in M 8 3 Pin	10-35V DC	2KHz	150mA	1 LED	PNP	N/O	IBMD 0414	
									N/C	IBMD 0415	
									NPN	N/O	IBMD 0412
										N/C	IBMD 0413
0.8	M5X0.5 "Standard Cable Type" 	Flush	3 Wire 2m	10-35V DC	2KHz	150mA	1 LED	PNP	N/O	IBCA 0514	
									N/C	IBCA 0515	
									NPN	N/O	IBCA 0512
										N/C	IBCA 0513
0.8	M5X0.5 "Standard Connector Type" 	Flush	Plug in M8 3 Pin	10-35V DC	2KHz	150mA	1 LED	PNP	N/O	IBLD 0514	
									N/C	IBLD 0515	
									NPN	N/O	IBLD 0512
										N/C	IBLD 0513
1.5	Ø6.5 "Standard Cable Type" 	Flush	3 Wire 2m	10-35V DC	5KHz	200mA	1 LED	PNP	N/O	ICDA 6514	
									N/C	ICDA 6515	
									NPN	N/O	ICDA 6512
										N/C	ICDA 6513
2	Ø6.5 "Standard Cable Type" 	Non Flush	3 Wire 2m	10-35V DC	5KHz	200mA	1 LED	PNP	N/O	INDA 6514	
									N/C	INDA 6515	
									NPN	N/O	INDA 6512
										N/C	INDA 6513
1.5	Ø6.5 "Standard Connector Type" 	Flush	Plug in M8 3 Pin	10-35V DC	5KHz	200mA	1 LED	PNP	N/O	IDMD 6514	
									N/C	IDMD 6515	
									NPN	N/O	IDMD 6512
										N/C	IDMD 6513
2	Ø6.5 "Standard Connector Type" 	Non Flush	Plug in M8 3 Pin	10-35V DC	5KHz	200mA	1 LED	PNP	N/O	IOMD 6514	
									N/C	IOMD 6515	
									NPN	N/O	IOMD 6512
										N/C	IOMD 6513



## M8 - M12 STANDARD SENSORS

- 1.5 – 4mm sensing distance
- Cable and connector types
- LED indication
- PNP and NPN types available
- N/O and N/C types available



### GENERAL SPECIFICATIONS

Sn mm	Size	Mounting Flush/ Non Flush	Connection	Supply	Frequency (Max)	Max Load	LED Ind	Type	Output	Part Number	
1.5	M8X1 "Standard Cable Type" 	Flush	3 Wire 2m	10-35V DC	2KHz	200mA	1 LED	PNP	N/O	ICCA 0814	
									N/C	ICCA 0815	
									NPN	N/O	ICCA 0812
										N/C	ICCA 0813
2	M8X1 "Standard Cable Type" 	Non Flush	3 Wire 2m	10-35V DC	2KHz	200mA	1 LED	PNP	N/O	INCA 0814	
									N/C	INCA 0815	
									NPN	N/O	INCA 0812
										N/C	INCA 0813
1.5	M8X1 "Standard Connector Type" 	Flush	Plug in M 8 3 Pin	10-35V DC	2KHz	200mA	1 LED	PNP	N/O	ICLD 0814	
									N/C	ICLD 0815	
									NPN	N/O	ICLD 0812
										N/C	ICLD 0813
2	M8X1 "Standard Connector Type" 	Non Flush	Plug in M8 3 Pin	10-35V	2KHz	200mA	1 LED	PNP	N/O	INLD 0814	
									N/C	INLD 0815	
									NPN	N/O	INLD 0812
										N/C	INLD 0813
2	M12X1 "Standard Cable Type" 	Flush	3 Wire 2m	10-35V DC	2KHz	200mA	1 LED	PNP	N/O	ILCT 1214	
									N/C	ILCT 1215	
									NPN	N/O	ILCT 1212
										N/C	ILCT 1213
4	M12X1 "Standard Cable Type" 	Non Flush	3 Wire 2m	10-35V DC	1KHz	200mA	1 LED	PNP	N/O	IPCT 1214	
									N/C	IPCT 1215	
									NPN	N/O	IPCT 1212
										N/C	IPCT 1213
2	M12X1 "Standard Connector Type" 	Flush	Plug in M12 4 Pin	10-35V	2KHz	200mA	1 LED	PNP	N/O	ILLI 1214	
									N/C	ILLI 1215	
									NPN	N/O	ILLI 1212
										N/C	ILLI 1213
4	M12X1 "Standard Connector Type" 	Non Flush	Plug in M12 4 Pin	10-35V DC	1KHz	200mA	1 LED	PNP	N/O	IPLI 1214	
									N/C	IPLI 1215	
									NPN	N/O	IPLI 1212
										N/C	IPLI 1213

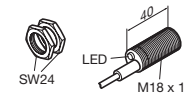
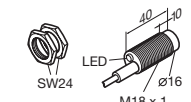
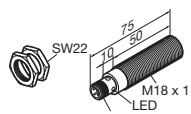
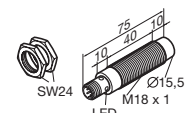
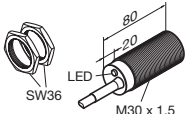
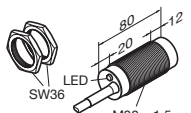
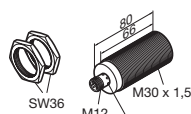
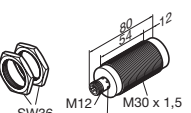


## M18 – M30 STANDARD SENSORS

- 5 – 15mm sensing Range
- Cable and connector type
- LED Indication
- PNP & NPN types available
- N/O & N/C types available



### GENERAL SPECIFICATIONS

Sn mm	Size	Mounting Flush/ Non Flush	Connection	Supply	Frequency (Max)	Max Load	LED Ind	Type	Output	Part Number
5	M18X1 "Standard Cable Type" 	Flush	3 Wire 2m	10-35V DC	1KHz	200mA	1 LED	PNP	N/O	ILCT 1814
									N/C	ILCT 1815
								NPN	N/O	ILCT 1812
									N/C	ILCT 1813
8	M18X1 "Standard Cable Type" 	Non Flush	3 Wire 2m	10-35V DC	500Hz	200mA	1 LED	PNP	N/O	IPCT 1814
									N/C	IPCT 1815
								NPN	N/O	IPCT 1812
									N/C	IPCT 1813
5	M18X1 "Standard Connector Type" 	Flush	Plug in M12 4 Pin	10-35V DC	1KHz	200mA	1 LED	PNP	N/O	IBLI 1814
									N/C	IBLI 1815
								NPN	N/O	IBLI 1812
									N/C	IBLI 1813
8	M18X1 "Standard Connector Type" 	Non Flush	Plug in M12 4 Pin	10-35V DC	500Hz	200mA	1 LED	PNP	N/O	INLI 1814
									N/C	INLI 1815
								NPN	N/O	INLI 1812
									N/C	INLI 1813
10	M30X1.5 "Standard Cable Type" 	Flush	3 Wire 2m	10-35V DC	250Hz	200mA	1 LED	PNP	N/O	IBCT 3014
									N/C	IBCT 3015
								NPN	N/O	IBCT 3012
									N/C	IBCT 3013
15	M30X1.5 "Standard Cable Type" 	Non Flush	3 Wire 2m	10-35V DC	150Hz	200mA	1 LED	PNP	N/O	INCT 3014
									N/C	INCT 3015
								NPN	N/O	INCT 3012
									N/C	INCT 3013
10	M30X1.5 "Standard Connector Type" 	Flush	Plug in M12 4 Pin	10-35V DC	250Hz	200mA	1 LED	PNP	N/O	IBLI 3014
									N/C	IBLI 3015
								NPN	N/O	IBLI 3012
									N/C	IBLI 3013
15	M30X1.5 "Standard Connector Type" 	Non Flush	Plug in M12 4 Pin	10-35V DC	150Hz	200mA	1 LED	PNP	N/O	INLI 3014
									N/C	INLI 3015
								NPN	N/O	INLI 3012
									N/C	INLI 3013



## M8 - M30 EXTENDED RANGE SENSORS

- 3 – 40mm sensing distance
- 2m Cable
- LED indication
- PNP & NPN types available
- N/O & N/C types available



### GENERAL SPECIFICATIONS

Sn mm	Size	Mounting Flush/ Non Flush	Connection	Supply	Frequency (Max)	Max Load	LED Ind	Type	Output	Part Number
3	M8X1 "Extended Range" 	Flush	3 Wire 2m	10-30V DC	1KHz	200mA	1 LED	PNP	N/O	IC3CA 0814
									N/C	IC3CA 0815
								NPN	N/O	IC3CA 0812
									N/C	IC3CA 0813
6	M8X1 "Extended Range" 	Non Flush	3 Wire 2m	10-30V DC	1KHz	200mA	1 LED	PNP	N/O	IN6CA 0814
									N/C	IN6CA 0815
								NPN	N/O	IN6CA 0812
									N/C	IN6CA 0813
6	M12X1 "Extended Range" 	Flush	3 Wire 2m	10-35V DC	500Hz	200mA	1 LED	PNP	N/O	IL6CT 1214
									N/C	IL6CT 1215
					NPN			N/O	IL6CT 1212	
								N/C	IL6CT 1213	
10	M12X1 "Extended Range" 	Non Flush	3 Wire 2m	10-35V DC	400Hz	200mA	1 LED	PNP	N/O	IP10CT 1214
									N/C	IP10CT 1215
								NPN	N/O	IP10CT 1212
									N/C	IP10CT 1213
12	M18X1 "Extended Range" 	Flush	3 Wire 2m	10-35V DC	300Hz	200mA	1 LED	PNP	N/O	IL12CT 1814
									N/C	IL12CT 1815
								NPN	N/O	IL12CT 1812
									N/C	IL12CT 1813
20	M18X1 "Extended Range" 	Non Flush	3 Wire 2m	10-35V DC	100Hz	200mA	1 LED	PNP	N/O	IP20CT 1814
									N/C	IP20CT 1815
								NPN	N/O	IP20CT 1812
									N/C	IP20CT 1813
22	M30X1,5 "Extended Range" 	Flush	3 Wire 2m	10-35V DC	100Hz	200mA	1 LED	PNP	N/O	IB22CT 3014
									N/C	IB22CT 3015
								NPN	N/O	IB22CT 3012
									N/C	IB22CT 3013
40	M30X1,5 "Extended Range" 	Non Flush	3 Wire 2m	10-35V DC	100Hz	200mA	1 LED	PNP	N/O	IN40CT 3014
									N/C	IN40CT 3015
								NPN	N/O	IN40CT 3012
									N/C	IN40CT 3013

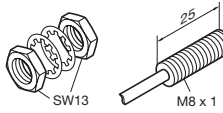
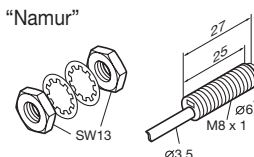
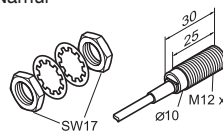
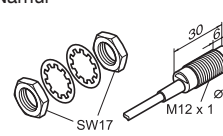
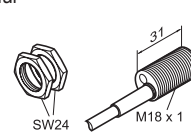
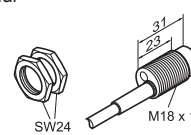
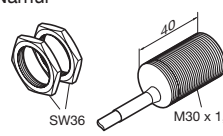
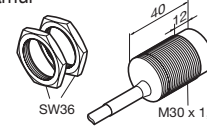


## M8 - M30 NAMUR SENSORS

- 1.5 – 15mm sensing Range
- 2m Cable
- LED Indication



### GENERAL SPECIFICATIONS

Sn mm	Size	Mounting Flush/ Non Flush	Connection	Supply	Frequency (Max)	Current Requirements		Part Number
						Damp	Undamp	
1.5	M8X1 "Namur" 	Flush	3 Wire 2m	7,7 to 9VDC Ri = 1kΩ	5KHz	< 0,8mA	> 2,5mA	ICAA 0808
2	M8X1 "Namur" 	Non Flush	3 Wire 2m	7,7 to 9VDC Ri = 1kΩ	5KHz	< 0,8mA	> 2,5mA	INAA 0808
2	M12X1 "Namur" 	Flush	3 Wire 2m	7,7 to 9VDC Ri = 1kΩ	2KHz	< 0,8mA	> 2,5mA	IBAT 1208
5	M12X1 "Namur" 	Non Flush	3 Wire 2m	7,7 to 9VDC Ri = 1kΩ	2KHz	< 0,8mA	> 2,5mA	INAT 1208
5	M18X1 "Namur" 	Flush	3 Wire 2m	7,7 to 9VDC Ri = 1kΩ	1KHz	< 0,8mA	> 2,5mA	IBAT 1808
8	M18X1 "Namur" 	Non Flush	3 Wire 2m	7,7 to 9VDC Ri = 1kΩ	1KHz	< 0,8mA	> 2,5mA	INAT 1808
10	M30X1 "Namur" 	Flush	3 Wire 2m	7,7 to 9VDC Ri = 1kΩ	500Hz	< 0,8mA	> 2,5mA	IBAT 3008
15	M30X1 "Namur" 	Non Flush	3 Wire 3m	7,7 to 9VDC Ri = 1kΩ	500Hz	< 0,8mA	> 2,5mA	INAT 3008



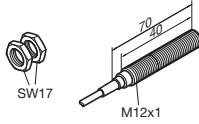
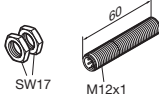
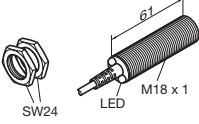
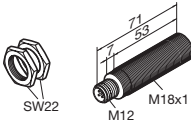
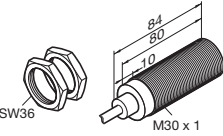
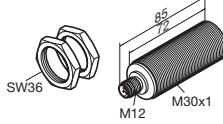


## M12 - M30 FULL METAL SENSORS

- 2 – 10mm sensing distance
- Cable & connector type
- LED indication
- PNP N/O output



### GENERAL SPECIFICATIONS

Sn mm	Size	Mounting Flush/ Non Flush	Connection	Supply	Frequency (Max)	Max Load	Type	Output	Part Number
2	M12X1 "Full Metal Cable Type" 	Flush	3 Wire	10-35V DC	20Hz	150mA	PNP	N/O	IGAA 1214
2	M12X1 "Full Metal Connector Type" 	Flush	Plug in M12 4 Pin	10-35V DC	20Hz	150mA	PNP	N/O	IGII 1214
5	M18X1 "Full Metal Cable Type" 	Flush	3 Wire	10-35V DC	20Hz	150mA	PNP	N/O	IGAA 1814
5	M18X1 "Full Metal Connector Type" 	Flush	Plug in M12 4 Pin	10-35V DC	20Hz	150mA	PNP	N/O	IGII 1814
10	M30X1 "Full Metal Cable Type" 	Flush	3 Wire	10-35V DC	20Hz	150mA	PNP	N/O	IGAA 3014
10	M30X1 "Full Metal Connector Type" 	Flush	Plug in M12 4 Pin	10-35V DC	20Hz	150mA	PNP	N/O	IGII 3014





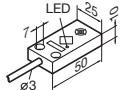
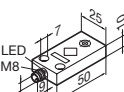
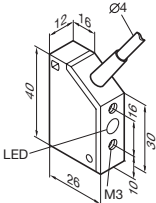
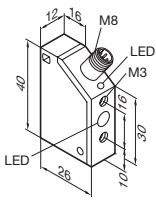
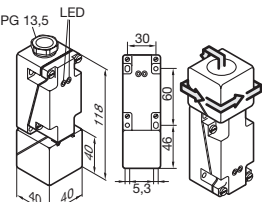


## BLOCK FORM SENSORS

- 8 – 30mm sensing distance
- Cable & connector types available
- LED Indication
- PNP N/O output



### GENERAL SPECIFICATIONS

Sn mm	Size	Mounting Flush/ Non Flush	Connection	Supply	Frequency (Max)	Max Load	Type	Output	Part Number
8	50 x 25 x 10mm "Cable Type" 	Non Flush	3 Wire	10-35V DC	400Hz	200mA	PNP	N/O	INHT 6014
8	50 x 25 x 10mm "M8 Connector Type" 	Non Flush	Plug in M8 3 Pin	10-35V DC	400Hz	200mA	PNP	N/O	INRD 6014
4	40 x 26 x 12mm "Cable Type" 	Non Flush	3 Wire	10-35V DC	1kHz	200mA	PNP	N/O	INHE 5214
4	40 x 26 x 12mm "M8 Connector Type" 	Non Flush	Plug in M8 3 Pin	10-35V DC	1kHz	200mA	PNP	N/O	INRD 5214
30	40 x 40 x 118mm "Screw Terminals" 	Non Flush	Screw Terminals	10-30V DC	100Hz	200mA	PNP	N/O	INHK 4014



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