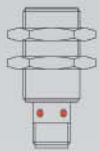
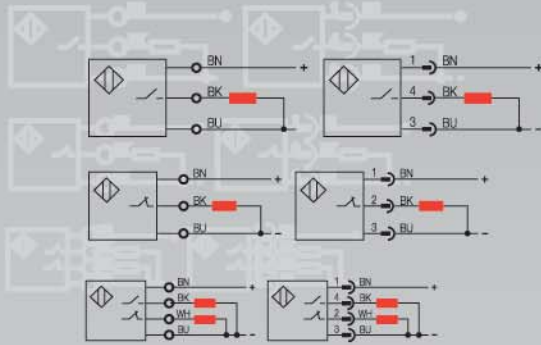
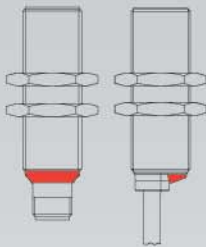


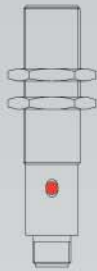
Inductive - DC 3-/4-wire



Short housing



Mid-length with maximum thread length



Long housing

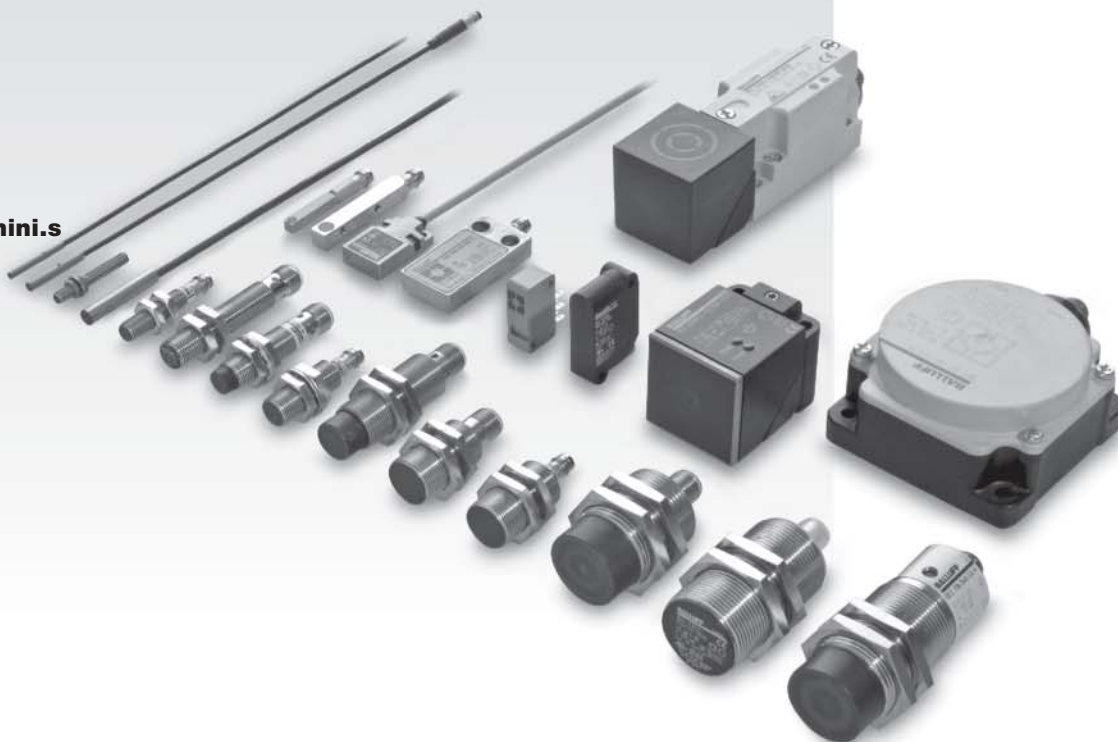
Our standard line in 3- and 4-wire DC versions

In this comprehensive line Balluff offers proximity switches from \varnothing 3 mm to 80x80 mm for virtually any application in the field of automation.

These highest quality sensors are designed and manufactured according to worldwide standards and the latest technology. Our 100 % final inspection of all products is your assurance that only carefully tested sensors leave our plants.

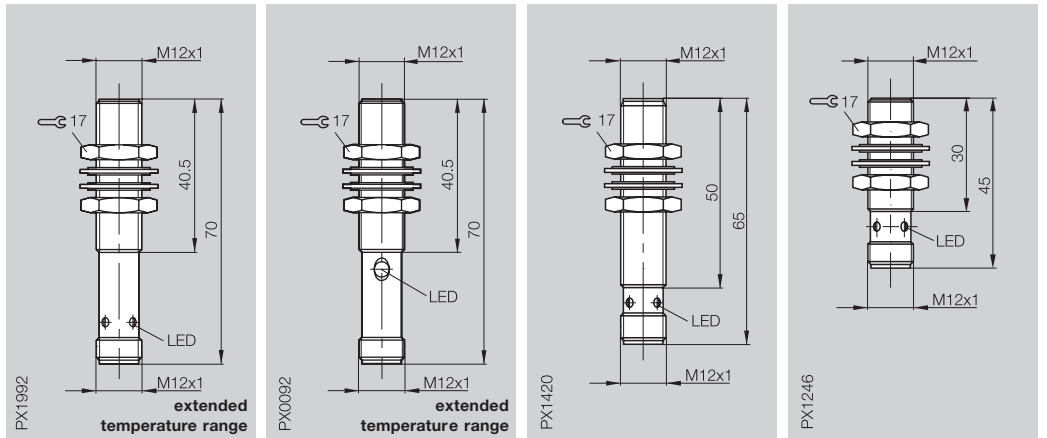
- 1.1.2 \varnothing 3 mm
- 1.1.3 \varnothing 3 mm, \varnothing 4 mm
- 1.1.6 M5
- 1.1.9 \varnothing 6.5 mm
- 1.1.13 \varnothing 8 mm
- 1.1.14 M8
- 1.1.24 M12
- 1.1.33 M18
- 1.1.40 M30
- 1.1.47 Block style housings

mini.s



Housing size
Mounting (see notes starting p. 1.0.11)
Rated operating distance s _n
Assured operating distance s _a

M12x1	M12x1	M12x1	M12x1
flush	flush	flush	flush
2 mm	2 mm	2 mm	2 mm
0...1.6 mm	0...1.6 mm	0...1.6 mm	0...1.6 mm



PNP	NO ①	BES 516-325-S4-C	BES M12MI-PSC20B-S04G	BES 516-325-E5-C-S4
	NC ②		BES M12MI-POC20B-S04G	BES 516-370-E5-C-S4
	complementary ③	BES 516-113-S4-C		
NPN	NO ④		BES M12MI-NSC20B-S04G	BES 516-329-E5-C-S4
	NC ⑤		BES M12MI-NOC20B-S04G	BES 516-375-E5-C-S4
	complementary ⑥	BES 516-118-S4-C		

Supply voltage U _B	10...30 V DC	10...30 V DC	12...30 V DC	10...30 V DC
Voltage drop U _d at I _e	≤ 1.5 V	≤ 1.5 V	≤ 2.5 V	≤ 2 V
Rated insulation voltage U _i	250 V AC	250 V AC	250 V AC	250 V AC
Rated operational current I _e	200 mA	200 mA	200 mA	200 mA
No-load supply current I ₀ max.	≤ 8 mA	≤ 8 mA	≤ 15 mA	≤ 10 mA
Polarity reversal protected	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T _a	-40...+85 °C	-40...+85 °C	-25...+70 °C	-25...+70 °C
Switching frequency f	3000 Hz	3000 Hz	1200 Hz	5000 Hz
Utilization category	DC 13	DC 13	DC 13	DC 13
Function indicator	yes	yes	yes	yes
Degree of protection per IEC 60529	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20
Insulation class	□	□	□	□
Housing material	Stainless steel	Stainless steel	CuZn coated	CuZn coated
Material of sensing face	PA 12	PA 12	PA 12	PBT
Connection	Connector	Connector	Connector	Connector
No. of wires × cross-section				
Approval	cULus	cULus	cULus	cULus
Recommended connector	BKS-_19/BKS-_20	BKS-_19/BKS-_20	BKS-_19/BKS-_20	BKS-_19/BKS-_20

① Wiring diagrams see page 1.0.6

For sensors with cable, other lengths and PUR quality are available on request.

For sensors with cable and connector, other lengths are available on request.



M12 Inductive Sensors

DC 3-/4-wire
M12
S_n 2 mm

M12x1 flush 2 mm 0...1.6 mm	M12x1 flush 2 mm 0...1.6 mm	M12x1 flush 2 mm 0...1.6 mm	M12x1 flush 2 mm 0...1.6 mm	M12x1 flush 2 mm 0...1.6 mm
BES 516-325-E5-Y-S49	BES 516-325-SA45	BES 516-325-E4-C-S4-00,5	BES 516-325-B0-C-02 BES 516-370-B0-C-02	BES 516-113-B0-C-03
			BES 516-329-B0-C-02 BES 516-375-B0-C-02	BES 516-118-B0-C-03
10...30 V DC ≤ 3.5 V 75 V DC 130 mA ≤ 25 mA yes yes	10...30 V DC ≤ 2.5 V 75 V DC 200 mA ≤ 20 mA yes yes	10...30 V DC ≤ 2 V 250 V AC 200 mA ≤ 10 mA yes yes	10...30 V DC ≤ 1.5 V 250 V AC 200 mA ≤ 8 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 32 mA yes yes
≤ 5 % -25...+70 °C 1000 Hz DC 13 yes	≤ 5 % -25...+70 °C 1000 Hz DC 13 no	≤ 5 % -25...+70 °C 5000 Hz DC 13 yes	≤ 5 % -25...+70 °C 3000 Hz DC 13 yes	≤ 5 % -25...+70 °C 800 Hz DC 13 yes
IP 67	IP 67	IP 68 per BWN Pr. 20 ☐	IP 68 per BWN Pr. 20 ☐	IP 68 per BWN Pr. 20 ☐
CuZn coated PA 12 Connector	CuZn coated PA 12 Connector	CuZn coated PBT 0.5 m PUR cable with connector	Stainless steel PA 12 2 m PVC cable	Stainless steel PA 12 3 m PVC cable
cULus BKS-_ 48/BKS-_ 49	cULus BKS-_ 19/BKS-_ 20	cULus BKS-_ 19	3x0.34 mm ² cULus	4x0.25 mm ² cULus

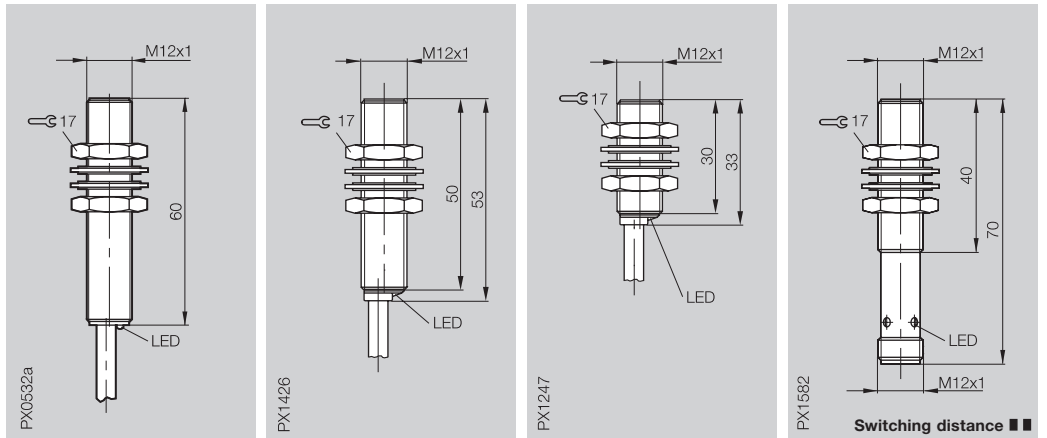
1.1



5
Connectors,
Holders ...
Page 5.2 ...

Housing size
Mounting (see notes starting p. 1.0.11)
Rated operating distance s _n
Assured operating distance s _a

M12x1	M12x1	M12x1	M12x1
flush	flush	flush	flush
2 mm	2 mm	2 mm	4 mm
0...1.6 mm	0...1.6 mm	0...1.6 mm	0...3.2 mm



PNP	NO	①	BES 516-325-SA56-03	BES M12MI-PSC20B-BV02	BES 516-325-E4-C-02	BES 516-325-G-S4-C
	NC	②		BES M12MI-POC20B-BV02	BES 516-370-E4-C-02	
NPN	NO	④		BES M12MI-NSC20B-BV02	BES 516-329-E4-C-02	
	NC	⑤			BES 516-375-E4-C-02	
Supply voltage U _B	10...30 V DC		12...30 V DC		10...30 V DC	
Voltage drop U _d at I _e	≤ 1.7 V		≤ 2.5 V		≤ 2 V	
Rated insulation voltage U _i	75 V DC		250 V AC		250 V AC	
Rated operational current I _e	200 mA		200 mA		200 mA	
No-load supply current I ₀ max.	≤ 25 mA		≤ 15 mA		≤ 12 mA	
Polarity reversal protected	yes		yes		yes	
Short circuit protected	yes		yes		yes	
Repeat accuracy R	≤ 5 %		≤ 5 %		≤ 5 %	
Ambient temperature range T _a	-25...+70 °C		-25...+70 °C		-25...+70 °C	
Switching frequency f	800 Hz		1200 Hz		5000 Hz	
Utilization category	DC 13		DC 13		DC 13	
Function indicator	yes		yes		yes	
Degree of protection per IEC 60529	IP 67		IP 68 per BWN Pr. 20		IP 68 per BWN Pr. 20	
Insulation class			□		□	
Housing material	Stainless steel		CuZn coated		CuZn coated	
Material of sensing face	PA 12		PA 12		PBT	
Connection	3 m PVC cable		2 m PVC cable		2 m PVC cable	
No. of wires × cross-section	3×0.34 mm ²		3×0.34 mm ²		3×0.34 mm ²	
Approval			cULus		cULus	
Recommended connector					BKS-_ 19/BKS-_ 20	

① Wiring diagrams see page 1.0.6
Switching distance ■ ■ see page 1.0.10

For sensors with cable, other lengths and PUR quality are available on request.

For sensors with cable and connector, other lengths are available on request.



M12 Inductive Sensors

DC 3-wire
M12
S_n 4 mm

1.1

M12x1 flush 4 mm 0...3.2 mm	M12x1 flush 4 mm 0...3.2 mm	M12x1 flush 4 mm 0...3.2 mm	M12x1 flush 4 mm 0...3.2 mm	M12x1 flush 4 mm 0...3.2 mm
BES M12MI-PSC40B-S04G BES M12MI-POC40B-S04G	BES 516-325-G-E5-C-S4 BES 516-370-G-E5-C-S4	BES 516-325-G-E5-C-S49 BES 516-370-G-E5-C-S49	BES 516-325-G-E4-C-S4-00,5	BES M12MI-PSC40B-BV02 BES M12MI-POC40B-BV02
BES M12MI-NSC40B-S04G BES M12MI-NOC40B-S04G	BES 516-329-G-E5-C-S4 BES 516-375-G-E5-C-S4	BES 516-329-G-E5-C-S49 BES 516-375-G-E5-C-S49		BES M12MI-NSC40B-BV02
12...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 15 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 14 mA yes yes	10...30 V DC ≤ 2.5 V 75 V DC 200 mA ≤ 14 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 10 mA yes yes	12...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 15 mA yes yes
≤ 5 % -25...+70 °C 300 Hz DC 13 yes	≤ 5 % -25...+70 °C 1000 Hz DC 13 yes	≤ 5 % -25...+70 °C 1000 Hz DC 13 yes	≤ 5 % -25...+70 °C 2500 Hz DC 13 yes	≤ 5 % -25...+70 °C 300 Hz DC 13 yes
IP 68 per BWN Pr. 20 ☐	IP 68 per BWN Pr. 20 ☐	IP 67	IP 68 per BWN Pr. 20 ☐	IP 68 per BWN Pr. 20 ☐
CuZn coated LCP Connector	CuZn coated LCP Connector	CuZn coated LCP Connector	CuZn coated LCP 0.5 m PUR cable with connector	CuZn coated LCP 2 m PVC cable
cULus BKS-_ 19/BKS-_ 20	cULus BKS-_ 19/BKS-_ 20	cULus BKS-_ 48/BKS-_ 49	cULus BKS-_ 19	3x0.34 mm ² cULus

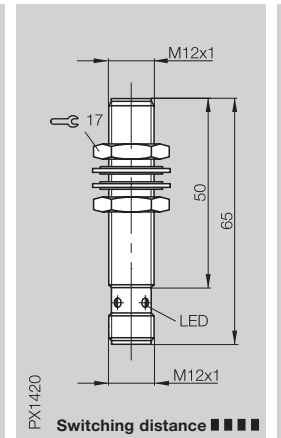
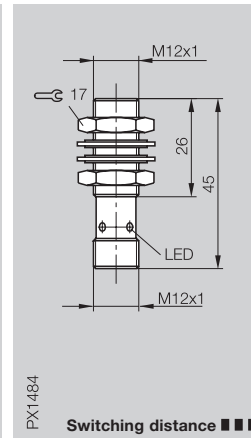
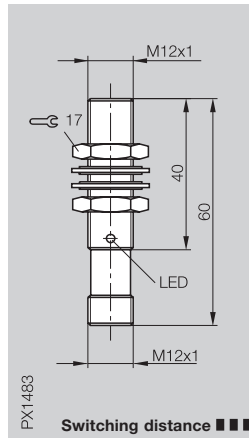
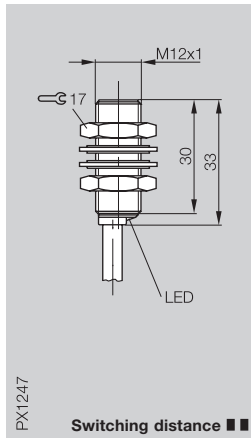


5

Connectors,
Holders ...
Page 5.2 ...

Housing size
Mounting (see notes starting p. 1.0.11)
Rated operating distance s _n
Assured operating distance s _a

M12x1	M12x1	M12x1	M12x1
flush	quasi flush	quasi flush	quasi flush
4 mm	6 mm	6 mm	8 mm
0...3.2 mm	0...4.9 mm	0...4.9 mm	0...5.8 mm



PNP	NO ①	BES 516-325-G-E4-C-02	BES M12MG1-PSC60B-S04G	BES M12MD1-PSC60B-S04G	BES M12MI-PSH80B-S04G
	NC ②	BES 516-370-G-E4-C-02	BES M12MG1-POC60B-S04G		
	complementary ③				
NPN	NO ④	BES 516-329-G-E4-C-02	BES M12MG1-NSC60B-S04G	BES M12MD1-NSC60B-S04G	BES M12MI-NSH80B-S04G
	NC ⑤	BES 516-375-G-E4-C-02	BES M12MG1-NOC60B-S04G		
	complementary ⑥				

Supply voltage U _B	10...30 V DC	10...30 V DC	10...30 V DC	10...55 V DC
Voltage drop U _d at I _e	≤ 2.5 V	≤ 2 V	≤ 2 V	≤ 2.5 V
Rated insulation voltage U _i	250 V AC	75 V DC	75 V DC	250 V AC
Rated operational current I _e	200 mA	200 mA	200 mA	200 mA
No-load supply current I ₀ max.	≤ 14 mA	≤ 10 mA	≤ 10 mA	≤ 10 mA
Polarity reversal protected	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 10 %
Ambient temperature range T _a	-25...+70 °C	-25...+70 °C	-25...+70 °C	0...+60 °C
Switching frequency f	1000 Hz	800 Hz	800 Hz	300 Hz
Utilization category	DC 13	DC 13	DC 13	DC 13
Function indicator	yes	yes	yes	yes
Degree of protection per IEC 60529	IP 68 per BWN Pr. 20	IP 67	IP 67	IP 67
Insulation class	□			□
Housing material	CuZn coated	CuZn coated	CuZn coated	CuZn coated
Material of sensing face	LCP	PBT	PBT	LCP
Connection	2 m PVC cable	Connector	Connector	Connector
No. of wires × cross-section	3×0.34 mm ²			
Approval	cULus			
Recommended connector		BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20

① Wiring diagrams see page 1.0.6
Switching distance ■■ see page 1.0.10

For sensors with cable, other lengths and PUR quality are available on request.

For sensors with cable and connector, other lengths are available on request.

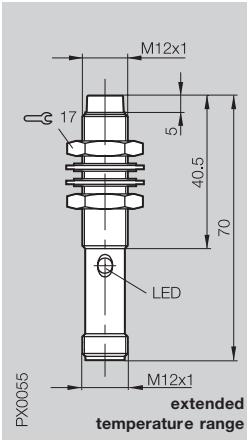
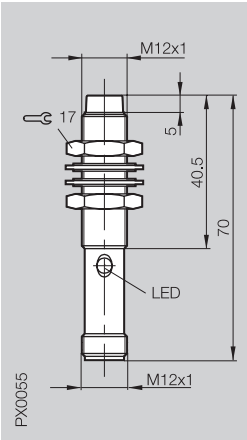
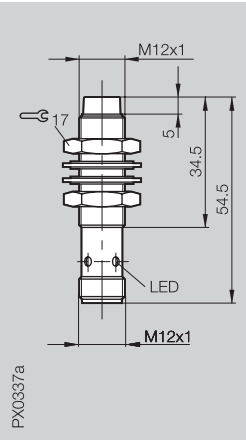
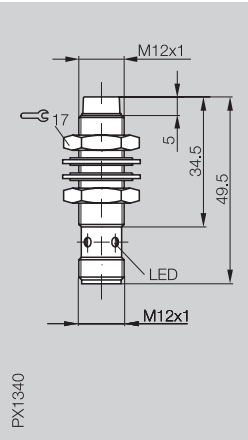
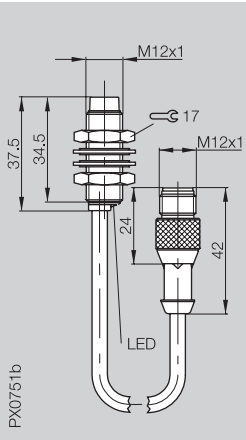


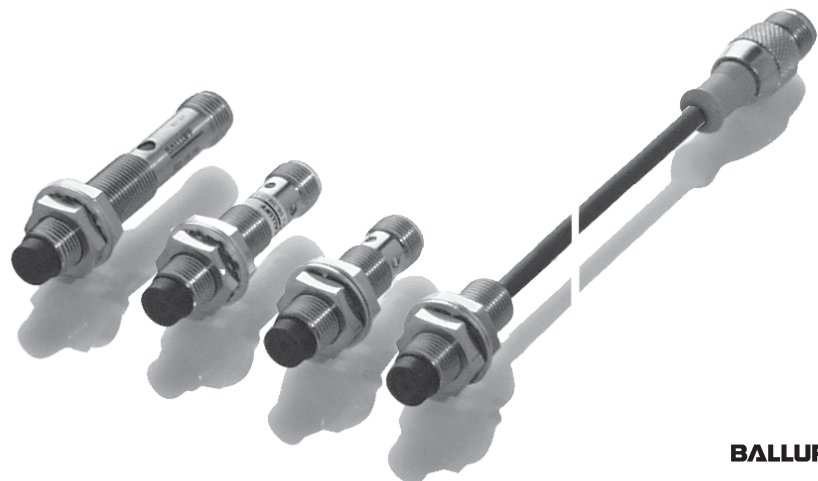
M12

Inductive Sensors

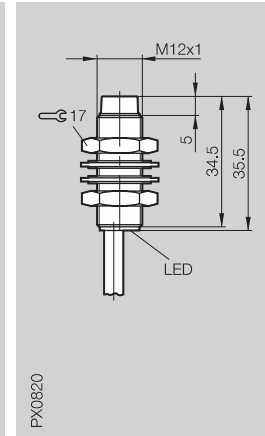
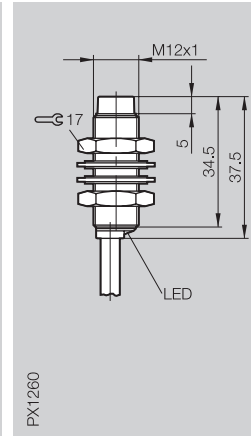
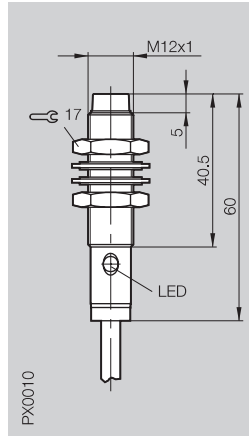
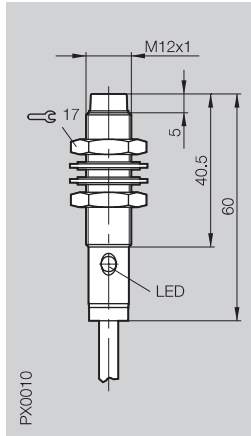
DC 3-/4-wire
M12
s_n 4 mm

1.1

M12x1 non-flush 4 mm 0...3.2 mm	M12x1 non-flush 4 mm 0...3.2 mm	M12x1 non-flush 4 mm 0...3.2 mm	M12x1 non-flush 4 mm 0...3.2 mm	M12x1 non-flush 4 mm 0...3.2 mm
				
BES 516-356-S4-C BES 516-3019-S4-C	BES 516-131-S4-C		BES 516-356-E5-C-S4 BES 516-3019-E5-C-S4	BES 516-356-E4-C-S4-00,3
BES 516-357-S4-C BES 516-3030-S4-C	BES 516-122-S4-C	BES 516-357-E5-Y-S4		
10...30 V DC ≤ 1.5 V 250 V AC 200 mA ≤ 8 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 32 mA yes yes	10...30 V DC ≤ 3.5 V 75 V DC 130 mA ≤ 25 mA yes yes	10...30 V DC ≤ 2 V 250 V AC 200 mA ≤ 10 mA yes yes	10...30 V DC ≤ 2 V 250 V AC 200 mA ≤ 10 mA yes yes
≤ 5 % -40...+85 °C 1500 Hz DC 13 yes	≤ 5 % -25...+70 °C 400 Hz DC 13 yes	≤ 5 % -25...+70 °C 400 Hz DC 13 yes	≤ 5 % -25...+70 °C 2000 Hz DC 13 yes	≤ 5 % -25...+70 °C 2000 Hz DC 13 yes
IP 68 per BWN Pr. 20 ☐ Stainless steel PA 12 Connector	IP 68 per BWN Pr. 20 ☐ Stainless steel PA 12 Connector	IP 68 per BWN Pr. 20 ☐ CuZn coated PA 12 Connector	IP 68 per BWN Pr. 20 ☐ CuZn coated PBT Connector	IP 68 per BWN Pr. 20 ☐ CuZn coated PBT 0.3 m PUR cable with connector
cULus BKS-_19/BKS-_20	cULus BKS-_19/BKS-_20	cULus BKS-_19/BKS-_20	cULus BKS-_19/BKS-_20	cULus BKS-_19



Housing size	M12x1	M12x1	M12x1	M12x1
Mounting (see notes starting p. 1.0.11)	non-flush	non-flush	non-flush	non-flush
Rated operating distance s _n	4 mm	4 mm	4 mm	4 mm
Assured operating distance s _a	0...3.2 mm	0...3.2 mm	0...3.2 mm	0...3.2 mm

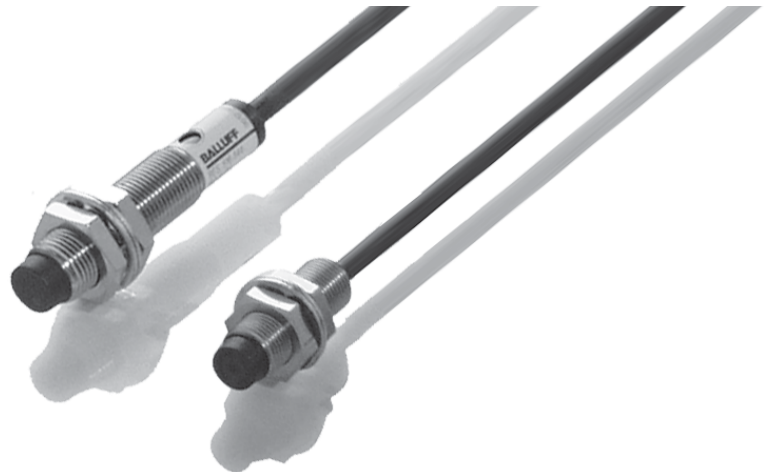


PNP	NO ①	BES 516-356-B0-C-02		BES 516-356-E4-C-02	
	NC ②	BES 516-3019-B0-C-02		BES 516-3019-E4-C-02	
	complementary ③		BES 516-131-B0-C-03		
NPN	NO ④	BES 516-357-B0-C-02			BES 516-357-E4-Y-02
	NC ⑤	BES 516-3030-B0-C-02		BES 516-3030-E4-C-02	
	complementary ⑥		BES 516-122-B0-C-03		

Supply voltage U _B	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
Voltage drop U _d at I _e	≤ 1.5 V	≤ 2.5 V	≤ 2 V	≤ 3.5 V
Rated insulation voltage U _i	250 V AC	250 V AC	250 V AC	75 V DC
Rated operational current I _e	200 mA	200 mA	200 mA	130 mA
No-load supply current I ₀ max.	≤ 8 mA	≤ 32 mA	≤ 10 mA	≤ 25 mA
Polarity reversal protected	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T _a	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Switching frequency f	1500 Hz	400 Hz	2000 Hz	400 Hz
Utilization category	DC 13	DC 13	DC 13	DC 13
Function indicator	yes	yes	yes	yes
Degree of protection per IEC 60529	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20
Insulation class	□	□	□	□
Housing material	Stainless steel	Stainless steel	CuZn coated	CuZn coated
Material of sensing face	PA 12	PA 12	PBT	PA 12
Connection	2 m PVC cable	3 m PVC cable	2 m PVC cable	2 m PVC cable
No. of wires × cross-section	3×0.34 mm ²	4×0.25 mm ²	3×0.34 mm ²	3×0.34 mm ²
Approval	cULus	cULus	cULus	cULus
Recommended connector				

① Wiring diagrams see page 1.0.6
Switching distance ■■ see page 1.0.10

For sensors with cable, other lengths
quality are available on request.



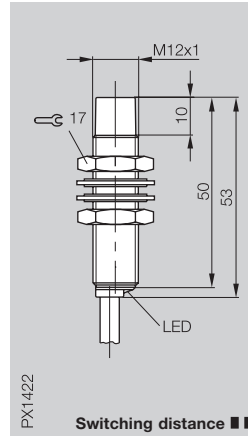
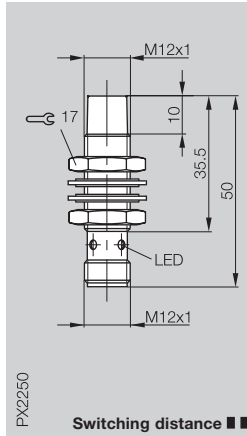
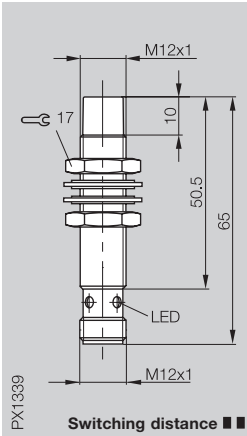
M12 Inductive Sensors

DC 3-wire
M12
S_n 8 mm

M12x1
non-flush
8 mm
0...6.5 mm

M12x1
non-flush
8 mm
0...6.5 mm

M12x1
non-flush
8 mm
0...6.5 mm



BES M12MG-PSC80F-S04G
BES M12MG-POC80F-S04G

BES M12MD-PSC80F-S04G
BES M12MD-POC80F-S04G

BES M12MG-PSC80F-BV02
BES M12MG-POC80F-BV02

BES M12MG-NSC80F-S04G
BES M12MG-NOC80F-S04G

BES M12MD-NSC80F-S04G
BES M12MD-NOC80F-S04G

BES M12MG-NSC80F-BV02
BES M12MG-NOC80F-BV02

10...30 V DC
≤ 2.5 V
250 V AC
200 mA
≤ 14 mA
yes
yes

10...30 V DC
≤ 2.5 V
250 V AC
200 mA
≤ 14 mA
yes
yes

10...30 V DC
≤ 2.5 V
250 V AC
200 mA
≤ 14 mA
yes
yes

≤ 5 %
-25...+70 °C
800 Hz
DC 13
yes

≤ 5 %
-25...+70 °C
800 Hz
DC 13
yes

≤ 5 %
-25...+70 °C
800 Hz
DC 13
yes

IP 67
☐
CuZn coated
PBT
Connector

IP 67
☐
CuZn coated
PBT
Connector

IP 67
☐
CuZn coated
PBT
2 m PVC cable
3×0.34 mm²

cULus
BKS-_ 19/BKS-_ 20

cULus
BKS-_ 19/BKS-_ 20

cULus



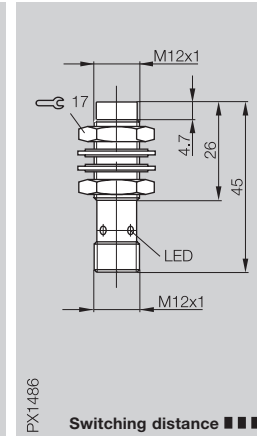
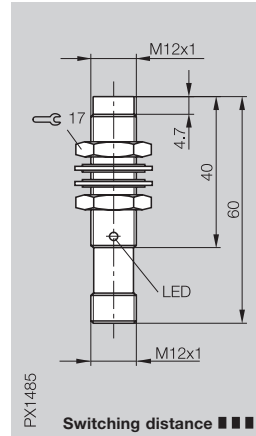
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5

Connectors,
Holders ...
Page 5.2 ...

Housing size	M12x1
Mounting (see notes starting p. 1.0.11)	non-flush
Rated operating distance s _n	10 mm
Assured operating distance s _a	0...8.1 mm

M12x1	M12x1
non-flush	non-flush
10 mm	10 mm
0...8.1 mm	0...8.1 mm



PNP	NO	①	BES M12MF1-PSC10F-S04G	BES M12MC1-PSC10F-S04G
	NC	②	BES M12MF1-POC10F-S04G	
	complementary	③		
NPN	NO	④	BES M12MF1-NSC10F-S04G	BES M12MC1-NSC10F-S04G
	NC	⑤		
	complementary	⑥		

BES M12MF1-PSC10F-S04G	BES M12MC1-PSC10F-S04G
BES M12MF1-POC10F-S04G	
BES M12MF1-NSC10F-S04G	BES M12MC1-NSC10F-S04G

Supply voltage U _B	10...30 V DC
Voltage drop U _d at I _e	≤ 2 V
Rated insulation voltage U _i	75 V DC
Rated operational current I _e	200 mA
No-load supply current I ₀ max.	≤ 10 mA
Polarity reversal protected	yes
Short circuit protected	yes
Repeat accuracy R	≤ 5 %
Ambient temperature range T _a	-25...+70 °C
Switching frequency f	400 Hz
Utilization category	DC 13
Function indicator	yes
Degree of protection per IEC 60529	IP 67
Insulation class	
Housing material	CuZn coated
Material of sensing face	PBT
Connection	Connector
Approval	
Recommended connector	BKS-_ 19/BKS-_ 20

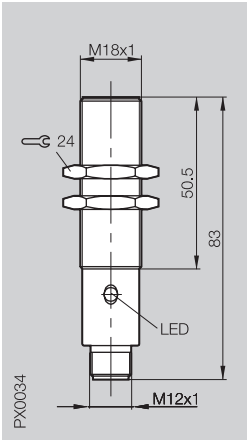
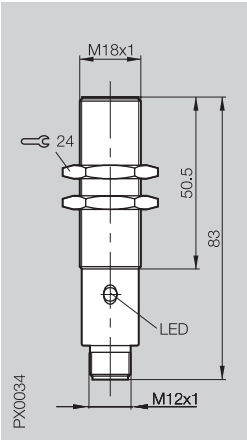
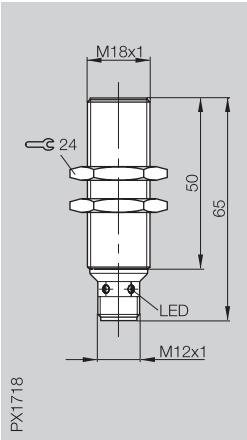
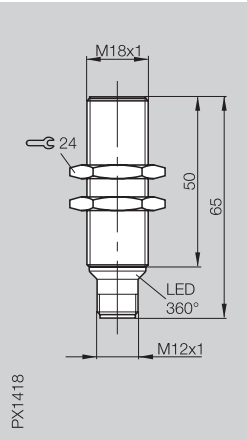
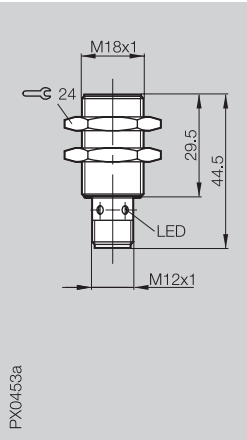
10...30 V DC	10...30 V DC
≤ 2 V	≤ 2 V
75 V DC	75 V DC
200 mA	200 mA
≤ 10 mA	≤ 10 mA
yes	yes
yes	yes
≤ 5 %	≤ 5 %
-25...+70 °C	-25...+70 °C
400 Hz	400 Hz
DC 13	DC 13
yes	yes
IP 67	IP 67
CuZn coated	CuZn coated
PBT	PBT
Connector	Connector
BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20

① Wiring diagrams see page 1.0.6
Switching distance ■■■ see page 1.0.10



M18 Inductive Sensors

DC 3-/4-wire
M18
s_n 5 mm

M18x1 flush 5 mm 0...4.1 mm	M18x1 flush 5 mm 0...4.1 mm	M18x1 flush 5 mm 0...4.1 mm	M18x1 flush 5 mm 0...4.1 mm	M18x1 flush 5 mm 0...4.1 mm
				
BES 516-326-S4-C BES 516-367-S4-C	BES 516-105-S4-C	BES M18MI-PSC50B-S04G	BES M18MI-PSC50B-S04K BES M18MI-POC50B-S04K	BES 516-367-E5-Y-S4
BES 516-355-S4-C BES 516-366-S4-C	BES 516-111-S4-C		BES M18MI-NSC50B-S04K BES M18MI-NOC50B-S04K	BES 516-355-E5-Y-S4
10...30 V DC ≤ 1.5 V 250 V AC 200 mA ≤ 8 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 30 mA yes yes	12...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 15 mA yes yes	12...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 15 mA yes yes	10...30 V DC ≤ 3.5 V 250 V AC 130 mA ≤ 25 mA yes yes
≤ 5 % -25...+70 °C 900 Hz DC 13 yes	≤ 5 % -25...+70 °C 500 Hz DC 13 yes	≤ 5 % -25...+70 °C 700 Hz DC 13 yes	≤ 5 % -25...+70 °C 700 Hz DC 13 yes	≤ 5 % -25...+70 °C 500 Hz DC 13 yes
IP 68 per BWN Pr. 20 ☐ CuZn coated	IP 68 per BWN Pr. 20 ☐ CuZn coated	IP 68 per BWN Pr. 20 ☐ CuZn coated	IP 68 per BWN Pr. 20 ☐ CuZn coated/ PA 6 transparent	IP 67 CuZn coated
PA 12 Connector	PA 12 Connector	PA 12 Connector	PA 12 Connector	PA 12 Connector
cULus BKS-_19/BKS-_20	cULus BKS-_19/BKS-_20	cULus BKS-_19/BKS-_20	cULus BKS-_19/BKS-_20	cULus BKS-_19/BKS-_20



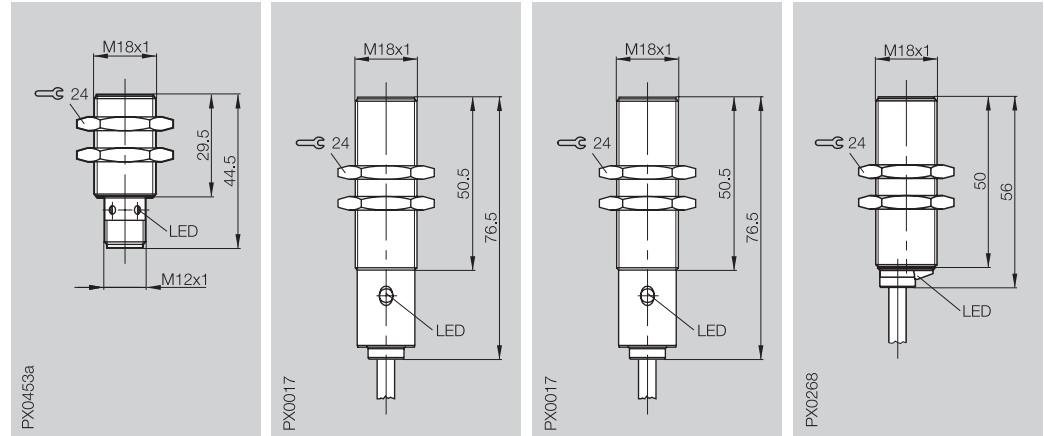
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5

Connectors,
Holders ...
Page 5.2 ...

Housing size
Mounting (see notes starting p. 1.0.11)
Rated operating distance s _n
Assured operating distance s _a

M18x1	M18x1	M18x1	M18x1
flush	flush	flush	flush
5 mm	5 mm	5 mm	5 mm
0...4.1 mm	0...4.1 mm	0...4.1 mm	0...4.1 mm



PNP	NO ①	BES 516-326-E5-C-S4	BES 516-326-B0-C-02		BES M18MI-PSC50B-BV02
	NC ②				BES M18MI-POC50B-BV02
	complementary ③			BES 516-105-B0-C-03	
NPN	NO ④		BES 516-355-B0-C-02		BES M18MI-NSC50B-BV02
	complementary ⑥			BES 516-111-B0-C-03	

Supply voltage U _B	10...30 V DC	10...30 V DC	10...30 V DC	12...30 V DC
Voltage drop U _d at I _e	≤ 2 V	≤ 1.5 V (PNP)/≤ 2.5 V (NPN)	≤ 2.5 V	≤ 2.5 V
Rated insulation voltage U _i	75 V DC	250 V AC	250 V AC	250 V AC
Rated operational current I _e	200 mA	200 mA	200 mA	200 mA
No-load supply current I ₀ max.	≤ 10 mA	≤ 25 mA	≤ 30 mA	≤ 15 mA
Polarity reversal protected	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T _a	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Switching frequency f	1000 Hz	900 Hz (PNP)/500 Hz (NPN)	500 Hz	700 Hz
Utilization category	DC 13	DC 13	DC 13	DC 13
Function indicator	yes	yes	yes	yes
Degree of protection per IEC 60529	IP 67	IP 68 per BWN Pr. 20	IP 67	IP 68 per BWN Pr. 20
Insulation class		□	□	□
Housing material	CuZn coated	CuZn coated	CuZn coated	CuZn coated
Material of sensing face	PBT	PA 12	PA 12	PA 12
Connection	Connector	2 m PVC cable	3 m PVC cable	2 m PVC cable
No. of wires × cross-section		3×0.34 mm ²	4×0.25 mm ²	3×0.34 mm ²
Approval	cULus	cULus	cULus	cULus
Recommended connector	BKS- _ 19/BKS- _ 20			

① Wiring diagrams see page 1.0.6
Switching distance ■■ see page 1.0.10

For sensors with cable, other lengths and PUR quality are available on request.



M18 Inductive Sensors

DC 3-/4-wire
M18
S_n 5 mm, 8 mm

1.1

M18x1 flush 5 mm 0...4.1 mm	M18x1 flush 8 mm 0...6.5 mm	M18x1 flush 8 mm 0...6.5 mm	M18x1 flush 8 mm 0...6.5 mm	M18x1 flush 8 mm 0...6.5 mm
BES 516-326-E4-C-02	BES 516-326-G-S4-C	BES 516-326-G-S4-H BES 516-105-G-S4-H	BES M18MI-PSC80B-S04G	BES M18MI-PSC80B-S04K BES M18MI-POC80B-S04K
				BES M18MI-NSC80B-S04K
10...30 V DC ≤ 2 V 75 V DC 200 mA ≤ 10 mA yes yes	10...30 V DC ≤ 2.5 V 75 V DC 200 mA ≤ 12 mA yes yes	10...55 V DC ≤ 2.5 V 75 V DC 200 mA ≤ 15 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 18 mA yes yes	12...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 15 mA yes yes
≤ 5 % -25...+70 °C 1000 Hz DC 13 yes	≤ 5 % 0...+70 °C 80 Hz DC 13 yes	≤ 5 % 0...+70 °C 80 Hz DC 13 yes	≤ 5 % -25...+70 °C 1000 Hz DC 13 yes	≤ 5 % -25...+70 °C 150 Hz DC 13 yes
IP 67	IP 67	IP 67	IP 67	IP 68 per BWN Pr. 20
CuZn coated	CuZn coated	CuZn coated	CuZn coated	CuZn coated/ PA 6 transparent
PBT 2 m PVC cable 3x0.34 mm ² cULus	PBT Connector cULus	PBT Connector BKS-_ 19/BKS-_ 20	PBT Connector cULus BKS-_ 19/BKS-_ 20	PA 12 Connector cULus BKS-_ 19/BKS-_ 20



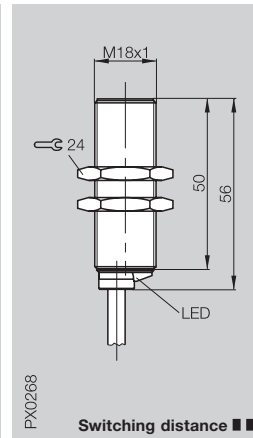
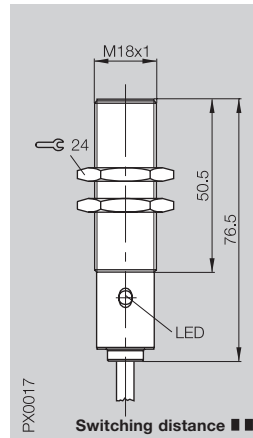
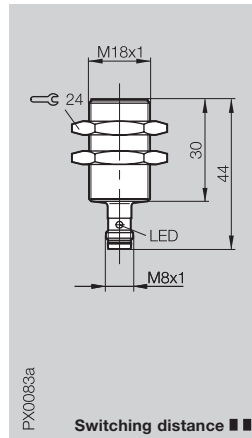
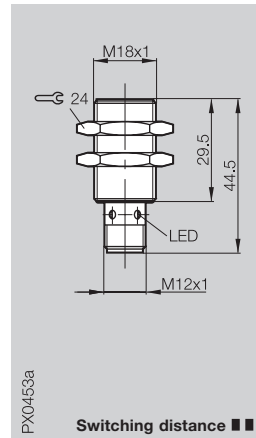
Housing size
Mounting (see notes starting p. 1.0.11)
Rated operating distance s _n
Assured operating distance s _a

M18x1
flush
8 mm
0...6.5 mm

M18x1
flush
8 mm
0...6.5 mm

M18x1
flush
8 mm
0...6.5 mm

M18x1
flush
8 mm
0...6.5 mm



PNP	NO	①
	NC	②
	complementary	③

BES 516-326-G-E5-Y-S4
BES 516-367-G-E5-Y-S4

BES 516-326-G-E5-Y-S49
BES 516-367-G-E5-Y-S49

BES 516-326-G-B0-C-PU-02

BES M18MI-PSC80B-BV02

NPN	NO	④
	NC	⑤
	complementary	⑥

BES 516-355-G-E5-Y-S4

BES 516-355-G-E5-Y-S49
BES 516-366-G-E5-Y-S49

BES M18MI-NSC80B-BV02

Supply voltage U _B	10...30 V DC
Voltage drop U _d at I _e	≤ 3.5 V
Rated insulation voltage U _i	75 V DC
Rated operational current I _e	130 mA
No-load supply current I ₀ max.	≤ 25 mA
Polarity reversal protected	yes
Short circuit protected	yes

10...30 V DC
≤ 3.5 V
75 V DC
130 mA
≤ 25 mA
yes
yes

10...30 V DC
≤ 3.5 V
75 V DC
130 mA
≤ 25 mA
yes
yes

10...30 V DC
≤ 2.5 V
250 V AC
200 mA
≤ 12 mA
yes
yes

12...30 V DC
≤ 2.5 V
250 V AC
200 mA
≤ 15 mA
yes
yes

Repeat accuracy R	≤ 5 %
Ambient temperature range T _a	-25...+70 °C
Switching frequency f	200 Hz
Utilization category	DC 13
Function indicator	yes

≤ 5 %
-25...+70 °C
200 Hz
DC 13
yes

≤ 5 %
-25...+70 °C
200 Hz
DC 13
yes

≤ 5 %
0...+70 °C
80 Hz
DC 13
yes

≤ 5 %
-25...+70 °C
150 Hz
DC 13
yes

Degree of protection per IEC 60529	IP 67
Insulation class	
Housing material	CuZn coated
Material of sensing face	PBT
Connection	Connector
No. of wires × cross-section	
Approval	cULus
Recommended connector	BKS-_ 19/BKS-_ 20

IP 67
CuZn coated
PBT
Connector
cULus
BKS-_ 48/BKS-_ 49

IP 67
□
CuZn coated
PBT
Connector
2 m cable PUR
3×0.34 mm ²
cULus

IP 68 per BWN Pr. 20
□
CuZn coated
PA 12
2 m PVC cable
3×0.34 mm ²
cULus

① Wiring diagrams see page 1.0.6
Switching distance ■■ see page 1.0.10

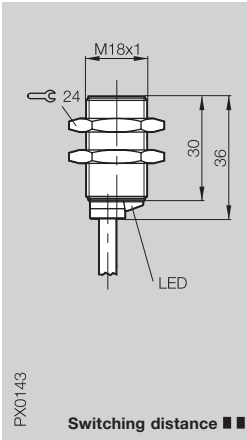
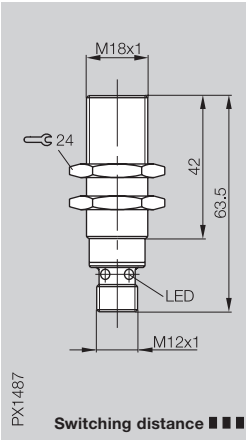
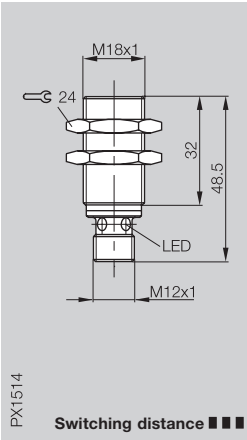
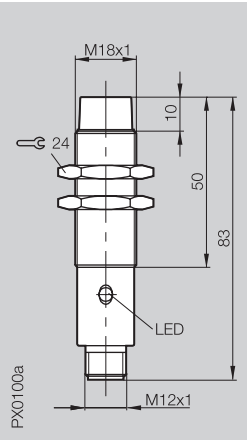
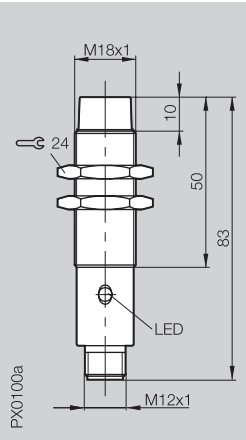
Other cable lengths on request.



M18 Inductive Sensors

DC 3-/4-wire
M18
S_n 8 mm, 12 mm

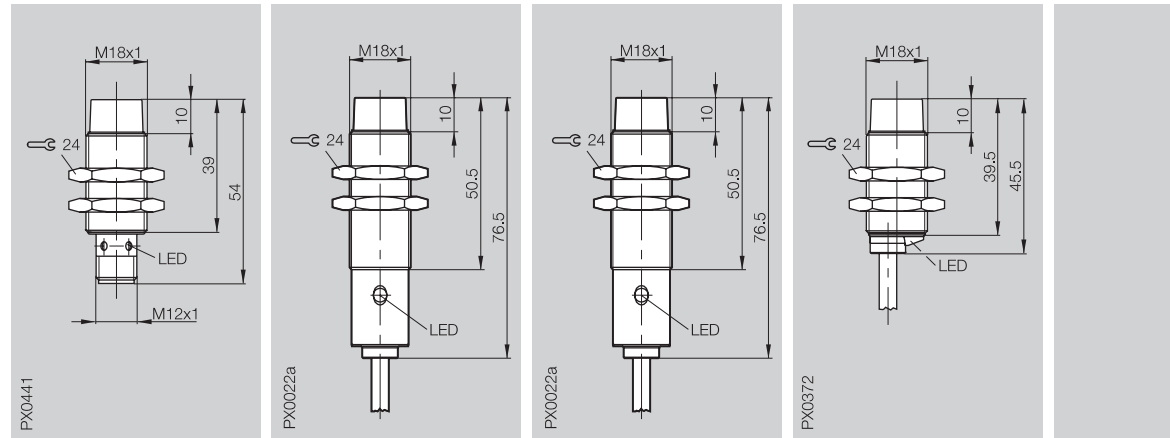
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M18x1 flush 8 mm 0...6.5 mm	M18x1 quasi flush 12 mm 0...9.7 mm	M18x1 quasi flush 12 mm 0...9.7 mm	M18x1 non-flush 8 mm 0...6.5 mm	M18x1 non-flush 8 mm 0...6.5 mm
				
PX0143 Switching distance ■■■	PX1487 Switching distance ■■■■	PX1514 Switching distance ■■■■	PX0100a Switching distance ■■■■	PX0100a Switching distance ■■■■
BES 516-326-G-E4-Y-02 BES 516-367-G-E4-Y-02	BES M18MG1-PSC12B-S04G	BES M18MD1-PSC12B-S04G	BES 516-360-S4-C BES 516-3026-S4-C	BES 516-123-S4-C
BES 516-355-G-E4-Y-02 BES 516-366-G-E4-Y-02	BES M18MG1-NSC12B-S04G	BES M18MD1-NSC12B-S04G	BES 516-361-S4-C	BES 516-124-S4-C
10...30 V DC ≤ 3.5 V 75 V DC 130 mA ≤ 25 mA yes yes	10...30 V DC ≤ 2 V 75 V DC 200 mA ≤ 10 mA yes yes	10...30 V DC ≤ 2 V 75 V DC 200 mA ≤ 10 mA yes yes	10...30 V DC ≤ 1.5 V 250 V AC 200 mA ≤ 8 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 30 mA yes yes
≤ 5 % -25...+70 °C 200 Hz DC 13 yes	≤ 5 % -25...+70 °C 500 Hz DC 13 yes	≤ 5 % -25...+70 °C 500 Hz DC 13 yes	≤ 5 % -25...+70 °C 600 Hz DC 13 yes	≤ 5 % -25...+70 °C 200 Hz DC 13 yes
IP 68 per BWN Pr. 20	IP 67	IP 67	IP 68 per BWN Pr. 20	IP 67
CuZn coated PBT 2 m PVC cable 3x0.34 mm ² cULus	CuZn coated PBT Connector	CuZn coated PBT Connector	CuZn coated PA 12 Connector	CuZn coated PA 12 Connector
	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	cULus BKS-_ 19/BKS-_ 20	cULus BKS-_ 19/BKS-_ 20



Housing size
Mounting (see notes starting p. 1.0.11)
Rated operating distance s _n
Assured operating distance s _a

M18x1	M18x1	M18x1	M18x1
non-flush	non-flush	non-flush	non-flush
8 mm	8 mm	8 mm	8 mm
0...6.5 mm	0...6.5 mm	0...6.5 mm	0...6.5 mm



PNP	NO ①	BES 516-360-E5-Y-S4	BES 516-360-B0-C-02	BES 516-360-E4-Y-02
	NC ②	BES 516-3026-E5-Y-S4	BES 516-3026-B0-C-02	BES 516-3026-E4-Y-02
	complementary ③			BES 516-123-B0-C-03
NPN	NO ④	BES 516-361-E5-Y-S4	BES 516-361-B0-C-02	BES 516-361-E4-Y-02
	NC ⑤		BES 516-3031-B0-C-02	
	complementary ⑥			BES 516-124-B0-C-03

Supply voltage U _B	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
Voltage drop U _d at I _e	≤ 3.5 V	≤ 1.5 V	≤ 2.5 V	≤ 3.5 V
Rated insulation voltage U _i	75 V DC	250 V AC	250 V AC	75 V DC
Rated operational current I _e	130 mA	200 mA	200 mA	130 mA
No-load supply current I ₀ max.	≤ 25 mA	≤ 25 mA	≤ 30 mA	≤ 25 mA
Polarity reversal protected	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T _a	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Switching frequency f	200 Hz	600 Hz (PNP)/200 Hz (NPN)	200 Hz	200 Hz
Utilization category	DC 13	DC 13	DC 13	DC 13
Function indicator	yes	yes	yes	yes
Degree of protection per IEC 60529	IP 67	IP 68 per BWN Pr. 20 (PNP)/ IP 67 (NPN)	IP 67	IP 68 per BWN Pr. 20
Insulation class		□	□	
Housing material	CuZn coated	CuZn coated	CuZn coated	CuZn coated
Material of sensing face	PA 12	PA 12	PA 12	PA 12
Connection	Connector	2 m PVC cable	3 m PVC cable	2 m PVC cable
No. of wires × cross-section		3×0.34 mm ²	4×0.25 mm ²	3×0.34 mm ²
Approval	cULus	cULus	cULus	cULus
Recommended connector	BKS-_ 19/BKS-_ 20			

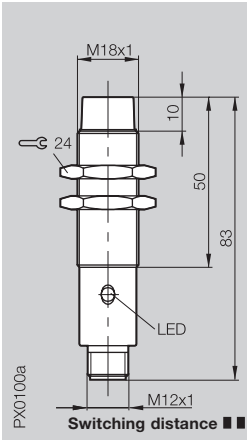
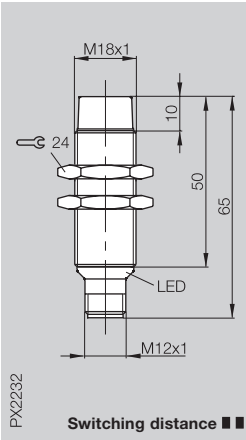
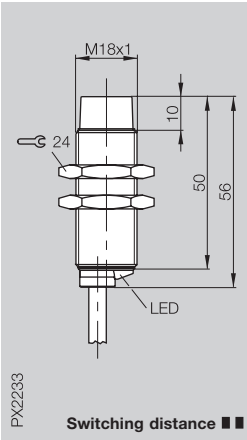
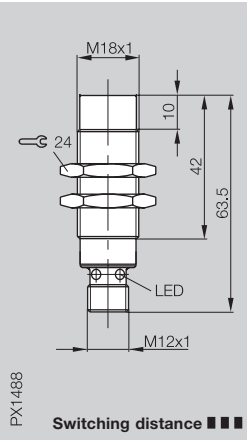



① Wiring diagrams see page 1.0.6
Switching distance ■■ see page 1.0.10

For sensors with cable, other lengths and PUR quality are available on request.



M18 Inductive Sensors

DC 3-/4-wire
M18
S_n 16 mm, 20 mm

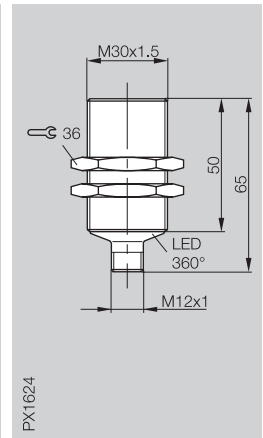
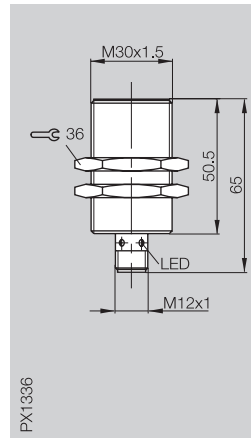
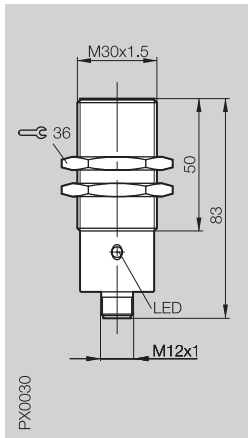
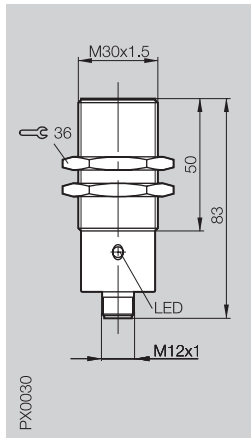
M18x1 non-flush 16 mm 0...13 mm	M18x1 non-flush 16 mm 0...12.8 mm	M18x1 non-flush 16 mm 0...12.8 mm	M18x1 non-flush 20 mm 0...16.2 mm
			
BES 516-360-G-S4-H BES 516-123-G-S4-H	BES M18MG-PSC16F-S04K BES M18MG-POC16F-S04K	BES M18MG-PSC16F-BV02 BES M18MG-POC16F-BV02	BES M18ME1-PSC20F-S04G
	BES M18MG-NSC16F-S04K BES M18MG-NOC16F-S04K	BES M18MG-NSC16F-BV02 BES M18MG-NOC16F-BV02	BES M18ME1-NSC20F-S04G
10...55 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 15 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 14 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 14 mA yes yes	10...30 V DC ≤ 2 V 75 V DC 200 mA ≤ 10 mA yes yes
≤ 5 % -25...+70 °C 80 Hz DC 13 yes	≤ 5 % -25...+70 °C 800 Hz DC 13 yes	≤ 5 % -25...+70 °C 800 Hz DC 13 yes	≤ 5 % -25...+70 °C 200 Hz DC 13 yes
IP 68 per BWN Pr. 20	IP 67	IP 67	IP 54
 CuZn coated PA 12 Connector	 CuZn coated PBT Connector	 CuZn coated PBT 2 m PVC cable 3x0.34 mm ² cULus	CuZn coated PBT Connector
BKS-_ 19/BKS-_ 20	cULus BKS-_ 19/BKS-_ 20	cULus	BKS-_ 19/BKS-_ 20

1.1



5
Connectors,
Holders ...
Page 5.2 ...

Housing size	M30x1.5	M30x1.5	M30x1.5	M30x1.5
Mounting (see notes starting p. 1.0.11)	flush	flush	flush	flush
Rated operating distance s _n	10 mm	10 mm	10 mm	10 mm
Assured operating distance s _a	0...8.1 mm	0...8.1 mm	0...8.1 mm	0...8.1 mm



PNP	NO ①	BES 516-327-S4-C		BES M30MI-PSC10B-S04G	BES M30MI-PSC10B-S04K
	NC ②	BES 516-3028-S4-C			BES M30MI-POC10B-S04K
	complementary ③		BES 516-114-S4-C		
NPN	NO ④	BES 516-359-S4-C			BES M30MI-NSC10B-S04K
	NC ⑤				BES M30MI-NOC10B-S04K
	complementary ⑥		BES 516-120-S4-C		

Supply voltage U _B	10...30 V DC	10...30 V DC	12...30 V DC	12...30 V DC
Voltage drop U _d at I _e	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V
Rated insulation voltage U _i	250 V AC	250 V AC	75 V DC	250 V AC
Rated operational current I _e	200 mA	200 mA	200 mA	200 mA
No-load supply current I ₀ max.	≤ 25 mA	≤ 30 mA	≤ 10 mA	≤ 10 mA
Polarity reversal protected	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T _a	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Switching frequency f	300 Hz	300 Hz	400 Hz	400 Hz
Utilization category	DC 13	DC 13	DC 13	DC 13
Function indicator	yes	yes	yes	yes
Degree of protection per IEC 60529	IP 68 per BWN Pr. 20	IP 67	IP 67	IP 68 per BWN Pr. 20
Insulation class	□	□		□
Housing material	CuZn coated	CuZn coated	CuZn coated	CuZn coated/ PA 6 transparent
Material of sensing face	PA 12	PA 12	PA 12	PA 12
Connection	Connector	Connector	Connector	Connector
No. of wires x cross-section				
Approval	cULus	cULus	cULus	cULus
Recommended connector	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20

① Wiring diagrams see page 1.0.6

For sensors with cable, other lengths and PUR quality are available on request.

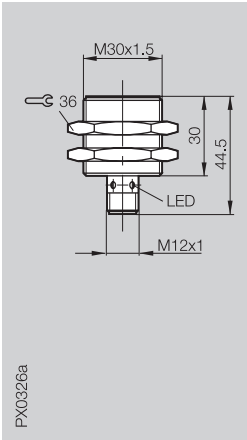
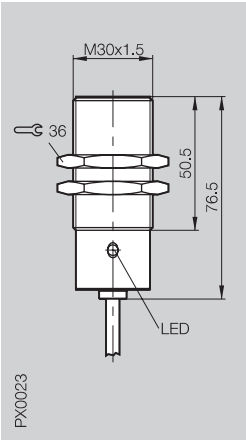
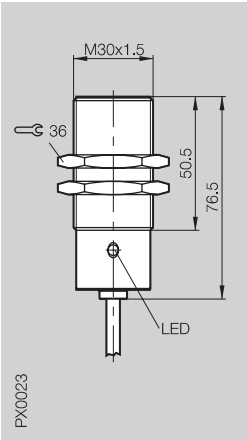
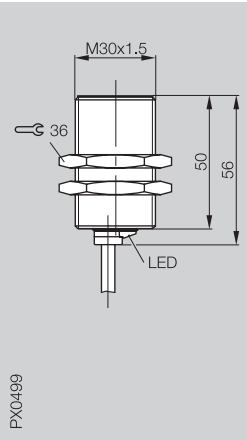
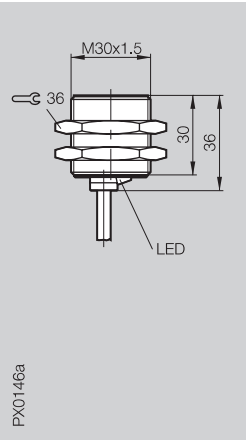


All-round LED

M30

Inductive Sensors

DC 3-/4-wire
M30
S_n 10 mm

M30×1.5 flush 10 mm 0...8.1 mm	M30×1.5 flush 10 mm 0...8.1 mm	M30×1.5 flush 10 mm 0...8.1 mm	M30×1.5 flush 10 mm 0...8.1 mm	M30×1.5 flush 10 mm 0...8.1 mm
				
BES 516-327-E5-Y-S4 BES 516-3028-E5-Y-S4	BES 516-327-B0-C-02	BES 516-114-B0-C-03	BES M30MI-PSC10B-BV02 BES M30MI-POC10B-BV02	BES 516-327-E4-Y-02
BES 516-359-E5-Y-S4	BES 516-359-B0-C-02	BES 516-120-B0-C-03	BES M30MI-NSC10B-BV02 BES M30MI-NOC10B-BV02	BES 516-359-E4-Y-02
10...30 V DC ≤ 3.5 V 75 V DC 130 mA ≤ 25 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 25 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 30 mA yes yes	12...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 10 mA yes yes	10...30 V DC ≤ 3.5 V 75 V DC 130 mA ≤ 25 mA yes yes
≤ 5 % -25...+70 °C 500 Hz DC 13 yes	≤ 5 % -25...+70 °C 300 Hz DC 13 yes	≤ 5 % -25...+70 °C 300 Hz DC 13 yes	≤ 5 % -25...+70 °C 400 Hz DC 13 yes	≤ 5 % -25...+70 °C 200 Hz DC 13 yes
IP 67	IP 68 per BWN Pr. 20 <input type="checkbox"/>	IP 67 <input type="checkbox"/>	IP 68 per BWN Pr. 20 <input type="checkbox"/>	IP 68 per BWN Pr. 20
CuZn coated	CuZn coated	CuZn coated	CuZn coated	CuZn coated
PA 12 Connector	PA 12 2 m PVC cable 3×0.34 mm ²	PA 12 3 m PVC cable 4×0.25 mm ²	PA 12 2 m PVC cable 3×0.34 mm ²	PA 12 2 m PVC cable 3×0.34 mm ²
cULus BKS-_ 19/BKS-_ 20	cULus	cULus	cULus	cULus

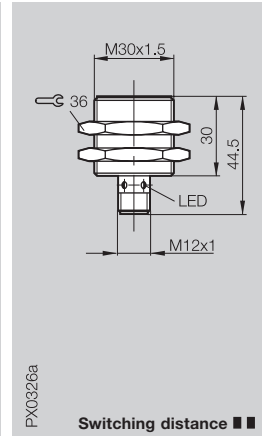
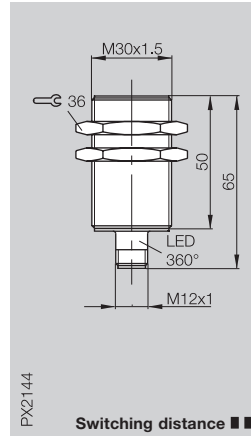
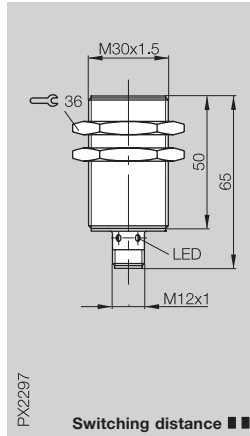
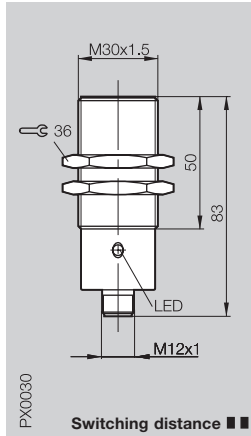
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5

Connectors, Holders ...
Page 5.2 ...

Housing size	M30x1.5	M30x1.5	M30x1.5	M30x1.5
Mounting (see notes starting p. 1.0.11)	flush	flush	flush	flush
Rated operating distance s _n	15 mm	15 mm	15 mm	15 mm
Assured operating distance s _a	0...12.2 mm	0...12.2 mm	0...12.2 mm	0...12.2 mm



PNP	NO	①		BES M30MI-PSC15B-S04G	BES M30MI-PSC15B-S04K	BES 516-327-G-E5-Y-S4
	NC	②			BES M30MI-POC15B-S04K	BES 516-3028-G-E5-Y-S4
	complementary	③	BES 516-114-G-S4-H			
NPN	NO	④			BES M30MI-NSC15B-S04K	
	NC	⑤			BES M30MI-NOC15B-S04K	

Supply voltage U _B	10...55 V DC	10...30 V DC	10...30 V DC	10...30 V DC
Voltage drop U _d at I _e	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 3.5 V
Rated insulation voltage U _i	250 V AC	250 V AC	250 V AC	75 V DC
Rated operational current I _e	200 mA	200 mA	200 mA	130 mA
No-load supply current I ₀ max.	≤ 15 mA	≤ 10 mA	≤ 10 mA	≤ 25 mA
Polarity reversal protected	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T _a	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Switching frequency f	150 Hz	100 Hz	100 Hz	100 Hz
Utilization category	DC 13	DC 13	DC 13	DC 13
Function indicator	yes	yes	yes	yes
Degree of protection per IEC 60529	IP 68 per BWN Pr. 20	IP 67	IP 67	IP 67
Insulation class	□	□	□	
Housing material	CuZn coated	CuZn coated	CuZn coated	CuZn coated
Material of sensing face	PA 12	PA 12	PA 12	PA 12
Connection	Connector	Connector	Connector	Connector
No. of wires × cross-section				
Approval		cULus	cULus	cULus
Recommended connector	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20

① Wiring diagrams see page 1.0.6
Switching distance ■■ see page 1.0.10

For sensors with cable, other lengths and PUR quality are available on request.

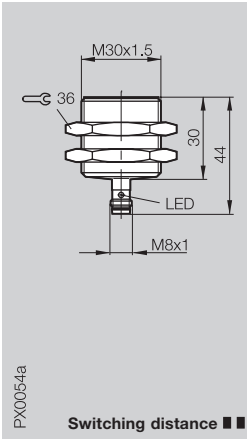
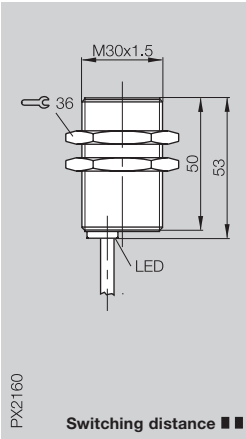
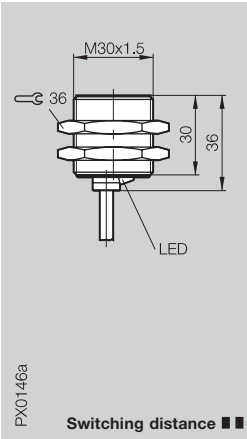
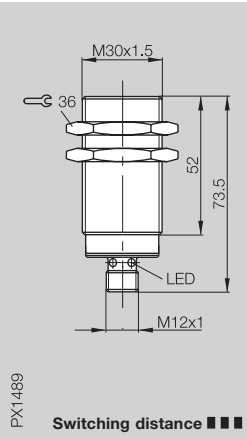


M30

Inductive Sensors

DC 3-wire
M30
S_n 15 mm, 22 mm

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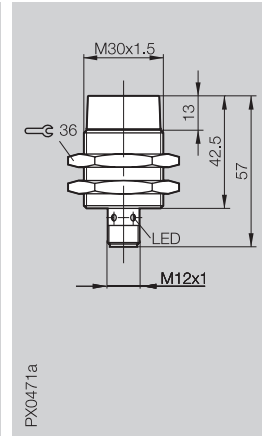
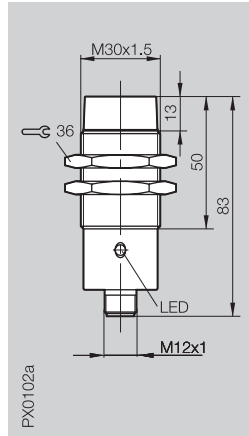
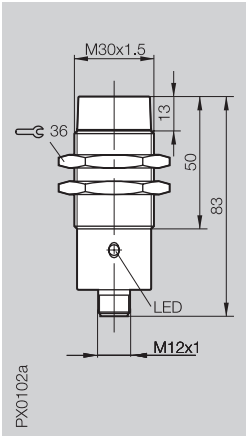
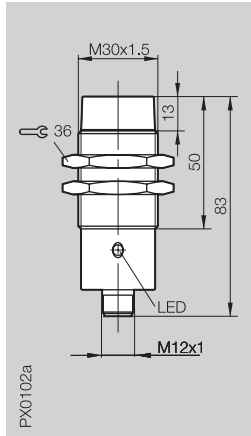
M30x1.5 flush 15 mm 0...12.2 mm	M30x1.5 flush 15 mm 0...12.2 mm	M30x1.5 flush 15 mm 0...12.2 mm	M30x1.5 quasi flush 22 mm 0...17.8 mm
			
PX0054a Switching distance ■■	PX2160 Switching distance ■■	PX0146a Switching distance ■■	PX1489 Switching distance ■■■
BES 516-327-G-E5-Y-S49	BES M30MI-PSC15B-BV02 BES M30MI-POC15B-BV02	BES 516-327-G-E4-Y-02 BES 516-3028-G-E4-Y-02	BES M30MI1-PSC22B-S04G BES M30MI1-POC22B-S04G
BES 516-359-G-E5-Y-S49		BES 516-359-G-E4-Y-02	BES M30MI1-NSC22B-S04G
10...30 V DC ≤ 3.5 V 75 V DC 130 mA ≤ 25 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 10 mA yes yes	10...30 V DC ≤ 3.5 V 75 V DC 130 mA ≤ 25 mA yes yes	10...30 V DC ≤ 2 V 75 V DC 200 mA ≤ 10 mA yes yes
≤ 5 % -25...+70 °C 100 Hz DC 13 yes	≤ 5 % -25...+70 °C 100 Hz DC 13 yes	≤ 5 % -25...+70 °C 100 Hz DC 13 yes	≤ 5 % -25...+70 °C 200 Hz DC 13 yes
IP 67	IP 67 □	IP 68 per BWN Pr. 20	IP 67
CuZn coated PA 12 Connector	CuZn coated PA 12 2 m PVC cable 3x0.34 mm ²	CuZn coated PA 12 2 m PVC cable 3x0.34 mm ²	CuZn coated PBT Connector
cULus BKS-_ 48/BKS-_ 49	cULus	cULus	BKS-_ 19/BKS-_ 20



5

Connectors,
Holders ...
Page 5.2 ...

Housing size	M30x1.5	M30x1.5	M30x1.5	M30x1.5
Mounting (see notes starting p. 1.0.11)	non-flush	non-flush	non-flush	non-flush
Rated operating distance s _n	15 mm	15 mm	15 mm	15 mm
Assured operating distance s _a	0...12.2 mm	0...12.2 mm	0...12.2 mm	0...12.2 mm



PNP	NO ①	BES 516-362-S4-C	BES 516-362-S4-H	BES 516-362-E5-Y-S4
	NC ②	BES 516-3029-S4-C		BES 516-3029-E5-Y-S4
	complementary ③		BES 516-125-S4-C	
NPN	NO ④	BES 516-363-S4-C		BES 516-363-E5-Y-S4
	NC ⑤	BES 516-3033-S4-C		
	complementary ⑥			

Supply voltage U _B	10...30 V DC	10...30 V DC	10...55 V DC	10...30 V DC
Voltage drop U _d at I _e	≤ 2.5 V	≤ 2.5 V	≤ 1.5 V	≤ 3.5 V
Rated insulation voltage U _i	250 V AC	250 V AC	250 V AC	75 V DC
Rated operational current I _e	200 mA	200 mA	200 mA	130 mA
No-load supply current I ₀ max.	≤ 25 mA	≤ 30 mA	≤ 12 mA	≤ 25 mA
Polarity reversal protected	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T _a	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Switching frequency f	100 Hz	100 Hz	400 Hz	100 Hz
Utilization category	DC 13	DC 13	DC 13	DC 13
Function indicator	yes	yes	yes	yes
Degree of protection per IEC 60529	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 67
Insulation class	□	□	□	
Housing material	CuZn coated	CuZn coated	CuZn coated	CuZn coated
Material of sensing face	PA 12	PA 12	PA 12	PA 12
Connection	Connector	Connector	Connector	Connector
No. of wires × cross-section				
Approval	cULus	cULus		cULus
Recommended connector	BKS- _ 19/BKS- _ 20	BKS- _ 19/BKS- _ 20	BKS- _ 19/BKS- _ 20	BKS- _ 19/BKS- _ 20

① Wiring diagrams see page 1.0.6
Switching distance ■■ see page 1.0.10

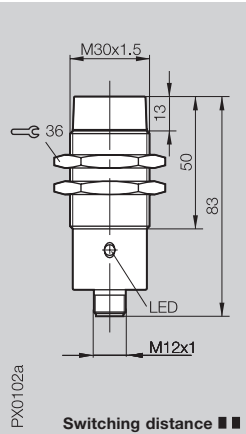
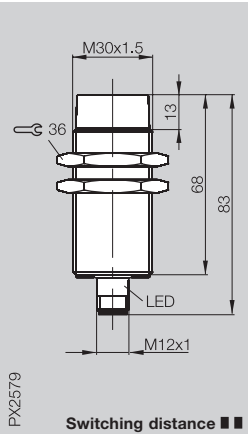
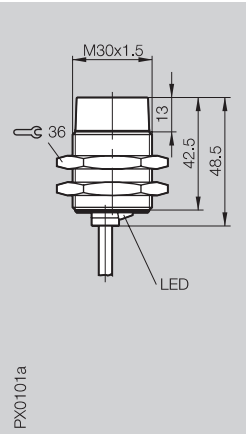
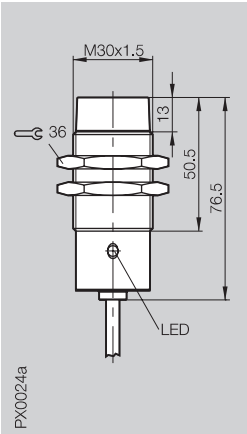
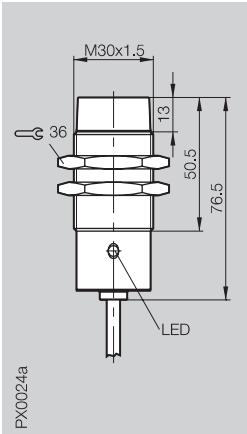
For sensors with cable, other lengths and PUR quality are available on request.



M30 Inductive Sensors

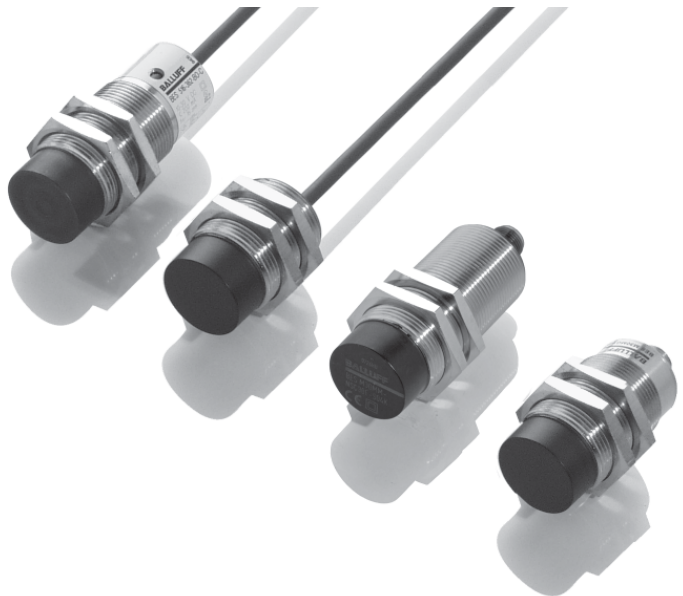
DC 3-/4-wire
M30
S_n 15 mm, 30 mm

M30x1.5 non-flush 15 mm 0...12.2 mm	M30x1.5 non-flush 15 mm 0...12.2 mm	M30x1.5 non-flush 15 mm 0...12.2 mm	M30x1.5 non-flush 30 mm 0...24.3 mm	M30x1.5 non-flush 30 mm 0...24.3 mm
------------------------------------------------------------	------------------------------------------------------------	------------------------------------------------------------	------------------------------------------------------------	------------------------------------------------------------



1.1

BES 516-362-B0-C-02 BES 516-3029-B0-C-02	BES 516-125-B0-C-03	BES 516-362-E4-Y-02 BES 516-3029-E4-Y-02	BES M30MM-PSC30F-S04K BES M30MM-POC30F-S04K	BES 516-362-G-S4-H
BES 516-363-B0-C-02 BES 516-3033-B0-C-02	BES 516-126-B0-C-03	BES 516-363-E4-Y-02	BES M30MM-NSC30F-S04K BES M30MM-NOC30F-S04K	
10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 25 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 30 mA yes yes	10...30 V DC ≤ 3.5 V 75 V DC 130 mA ≤ 25 mA yes yes	10...30 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 10 mA yes yes	10...55 V DC ≤ 2.5 V 250 V AC 200 mA ≤ 15 mA yes yes
≤ 5 % -25...+70 °C 100 Hz DC 13 yes	≤ 5 % -25...+70 °C 100 Hz DC 13 yes	≤ 5 % -25...+70 °C 100 Hz DC 13 yes	≤ 5 % -25...+70 °C 300 Hz DC 13 yes	≤ 5 % -25...+70 °C 70 Hz DC 13 yes
IP 68 per BWN Pr. 20 ☐	IP 67 ☐	IP 68 per BWN Pr. 20	IP 67	IP 68 per BWN Pr. 20 ☐
CuZn coated PA 12 2 m PVC cable 3x0.34 mm ² cULus	CuZn coated PA 12 3 m PVC cable 4x0.25 mm ² cULus	CuZn coated PA 12 2 m PVC cable 3x0.34 mm ² cULus	CuZn coated PBT Connector cULus BKS-_ 19/BKS-_ 20	CuZn coated PA 12 Connector BKS-_ 19/BKS-_ 20



5
Connectors,
Holders ...
Page 5.2 ...

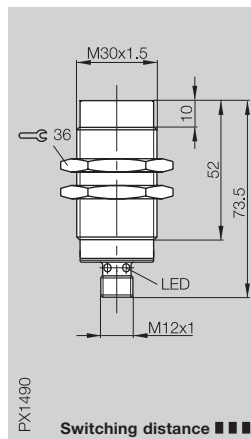
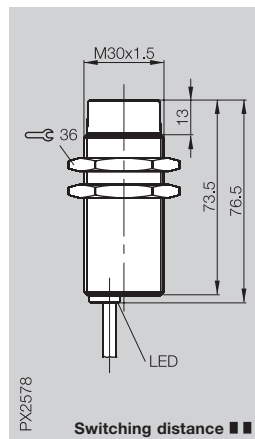
Inductive Sensors

DC 3-wire
M30
s_n 30 mm, 40 mm

M30

Housing size	M30x1.5
Mounting (see notes starting p. 1.0.11)	non-flush
Rated operating distance s _n	30 mm
Assured operating distance s _a	0...24.3 mm

M30x1.5	M30x1.5
non-flush	non-flush
40 mm	40 mm
0...32.4 mm	0...32.4 mm



PNP	NO	①
	NC	②

BES M30MM-PSC30F-BV02	BES M30MG1-PSC40F-S04G
BES M30MM-POC30F-BV02	

NPN	NO	④
	NC	⑤

BES M30MM-NSC30F-BV02	
BES M30MM-NOC30F-BV02	

Supply voltage U _B	10...30 V DC
Voltage drop U _d at I _e	≤ 2.5 V
Rated insulation voltage U _i	250 V AC
Rated operational current I _e	200 mA
No-load supply current I ₀ max.	≤ 10 mA
Polarity reversal protected	yes
Short circuit protected	yes

10...30 V DC	10...30 V DC
≤ 2 V	≤ 2 V
75 V DC	75 V DC
200 mA	200 mA
≤ 10 mA	≤ 10 mA
yes	yes
yes	yes

Repeat accuracy R	≤ 5 %
Ambient temperature range T _a	-25...+70 °C
Switching frequency f	300 Hz
Utilization category	DC 13
Function indicator	yes

≤ 5 %	≤ 5 %
-25...+70 °C	-25...+70 °C
100 Hz	100 Hz
DC 13	DC 13
yes	yes

Degree of protection per IEC 60529	IP 67
Housing material	CuZn coated
Material of sensing face	PBT
Connection	2 m PVC cable

IP 54	IP 54
CuZn coated	CuZn coated
PBT	PBT
Connector	Connector

No. of wires × cross-section	3×0.34 mm ²
Approval	cULus
Recommended connector	BKS-_ 19/BKS-_ 20

BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20

① Wiring diagrams see page 1.0.6
Switching distance ■■■ see page 1.0.10

Other cable lengths on request.

Connector orientation

