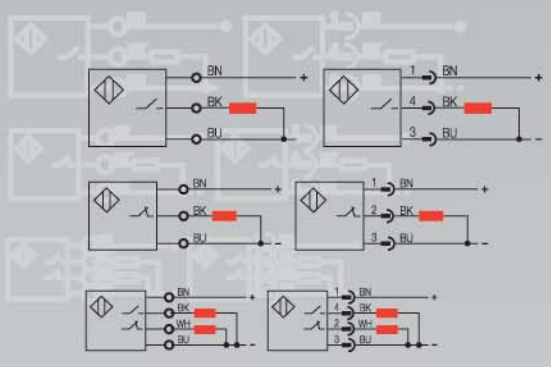
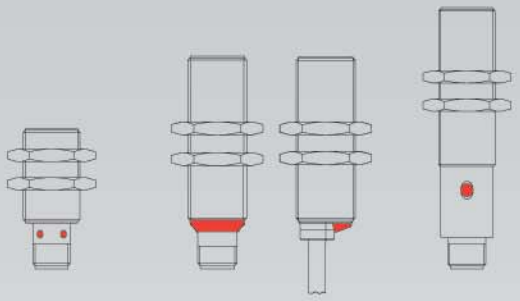
Inductive – DC 3-/4-wire





Short housing

Mid-length with maximum thread length

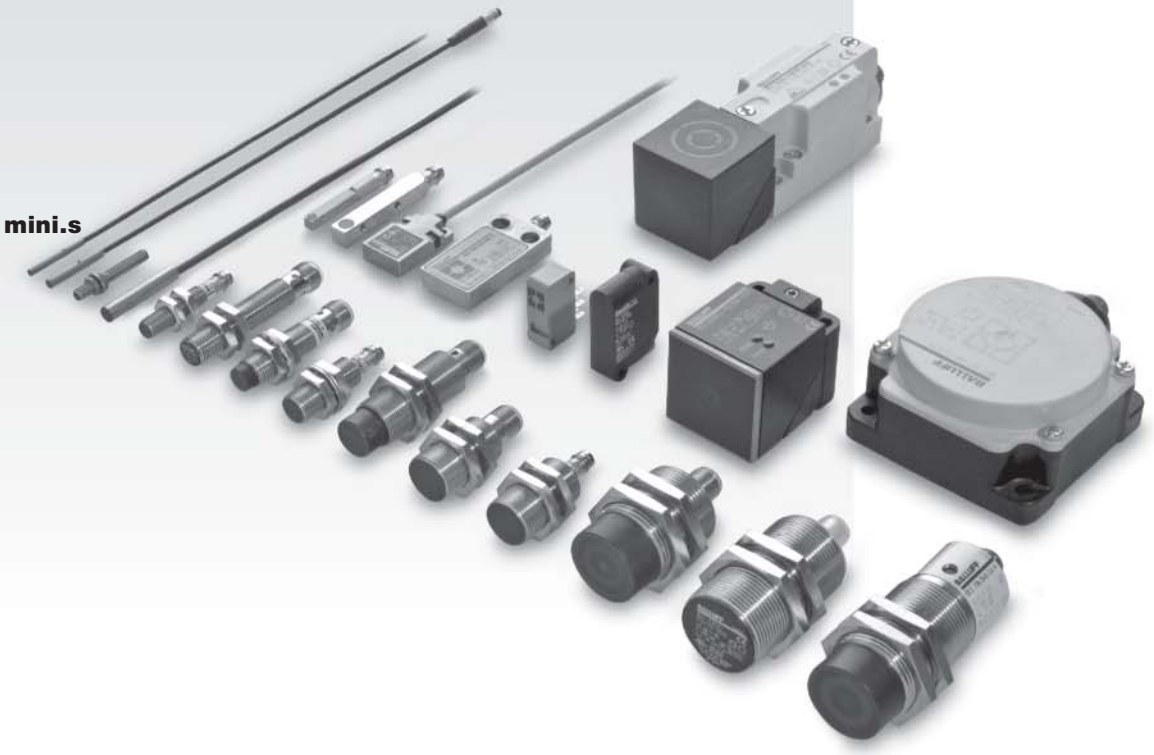
Long housing

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

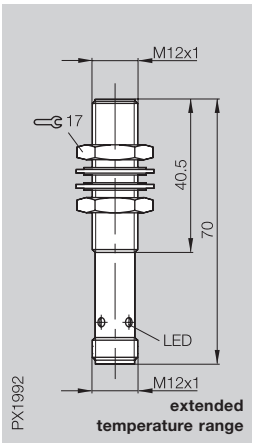
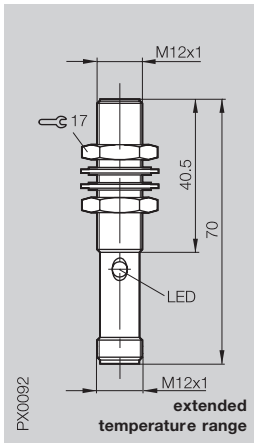
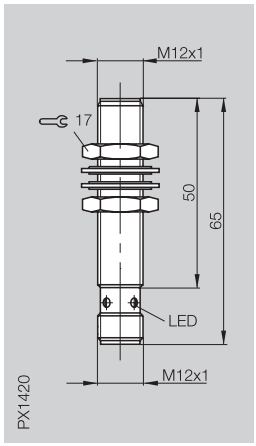
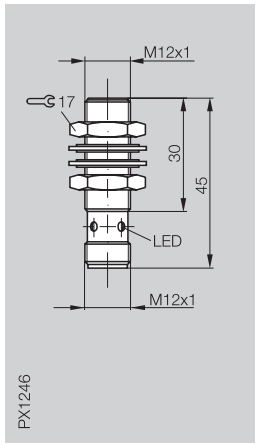
In this comprehensive line Balluff offers proximity switches from Ø 3 mm to 80×80 mm for virtually any application in the field of automation.

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 Ø 3 mm
1.1.3 Ø 3 mm, Ø 4 mm
1.1.6 M5
1.1.9 Ø 6.5 mm
1.1.13 Ø 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

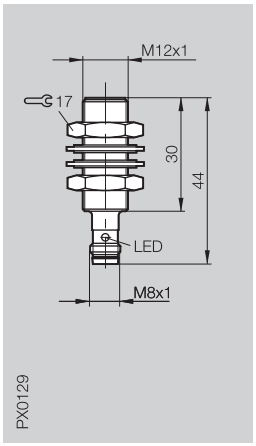
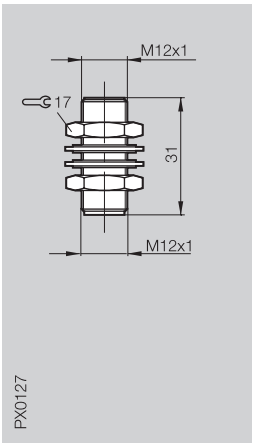
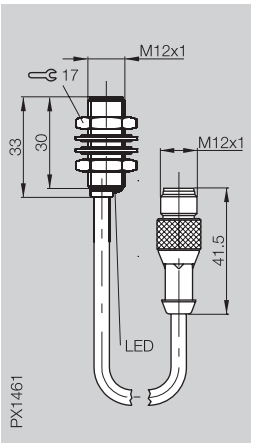
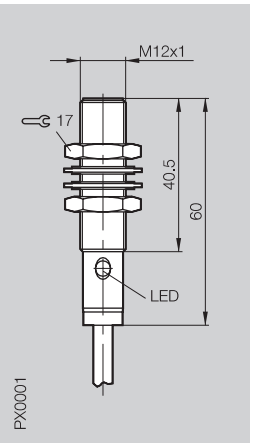
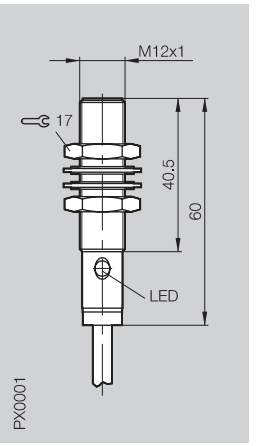
Housing size		**M12×1**	**M12×1**	**M12×1**	**M12×1**	
Mounting (see notes starting p. **1.0.**11)		flush	flush	flush	flush	
Rated operating distance s_n		**2 mm**	**2 mm**	**2 mm**	**2 mm**	
Assured operating distance s_a		0...1.6 mm	0...1.6 mm	0...1.6 mm	0...1.6 mm	
						
PNP	NO ①	BES 516-325-S4-C		BES M12MI-PSC20B-S04G	BES 516-325-E5-C-S4	
	NC ②		BES 516-370-S4-C	BES M12MI-POC20B-S04G	BES 516-370-E5-C-S4	
	complementary ③	BES 516-113-S4-C				
NPN	NO ④		BES 516-329-S4-C	BES M12MI-NSC20B-S04G	BES 516-329-E5-C-S4	
	NC ⑤		BES 516-375-S4-C	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

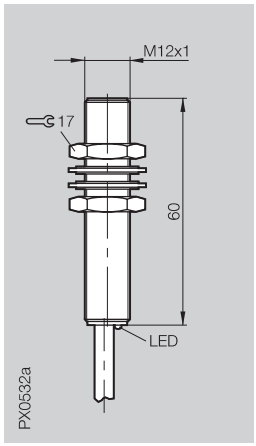
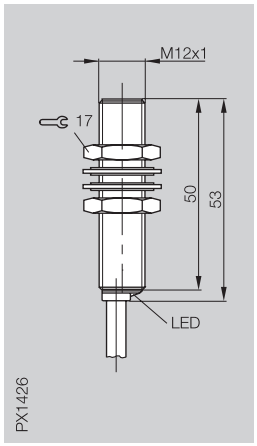
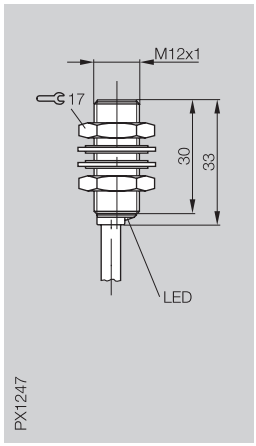
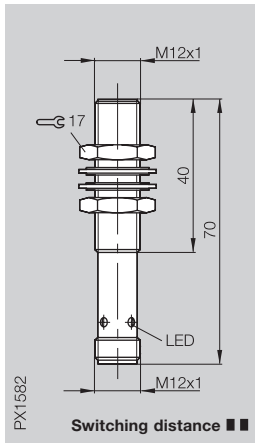
For sensors with cable, other lengths and PUR quality are available on request.

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



	M12×1	**M12×1**	**M12×1**	**M12×1**	**M12×1**
	flush	flush	flush	flush	flush
	2 mm	**2 mm**	**2 mm**	**2 mm**	**2 mm**
	0...1.6 mm	0...1.6 mm	0...1.6 mm	0...1.6 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	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
	≤ 3.5 V	≤ 2.5 V	≤ 2 V	≤ 1.5 V	≤ 2.5 V
	75 V DC	75 V DC	250 V AC	250 V AC	250 V AC
	130 mA	200 mA	200 mA	200 mA	200 mA
	≤ 25 mA	≤ 20 mA	≤ 10 mA	≤ 8 mA	≤ 32 mA
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes
	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C
	1000 Hz	1000 Hz	5000 Hz	3000 Hz	800 Hz
	DC 13	DC 13	DC 13	DC 13	DC 13
	yes	no	yes	yes	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	CuZn coated	CuZn coated	Stainless steel	Stainless steel
	PA 12	PA 12	PBT	PA 12	PA 12
	Connector	Connector	0.5 m PUR cable with connector	2 m PVC cable	3 m PVC cable
				3×0.34 mm²	4×0.25 mm²
	cULus		cULus	cULus	cULus
	BKS-_ 48/BKS-_ 49	BKS-_ 19/BKS-_ 20	BKS-_ 19		



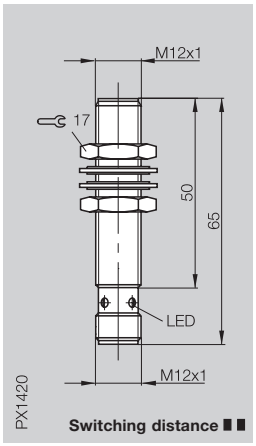
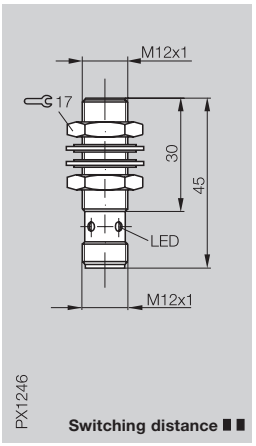
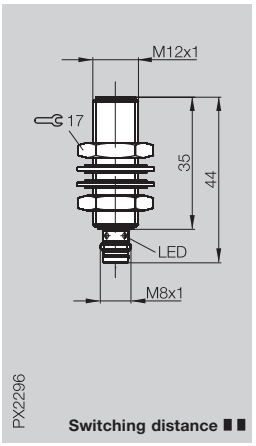
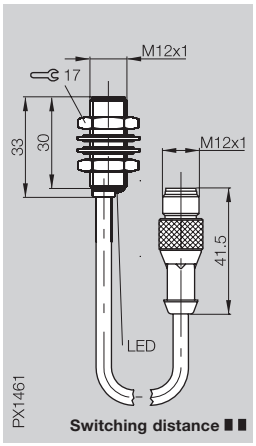
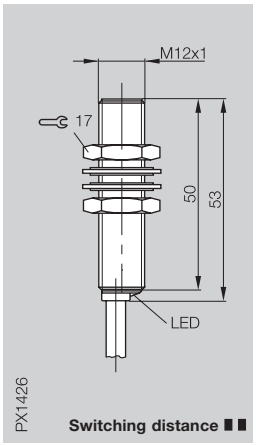
Housing size		**M12×1**	**M12×1**	**M12×1**	**M12×1**	
Mounting (see notes starting p. **1.0.**11)		flush	flush	flush	flush	
Rated operating distance s_n		**2 mm**	**2 mm**	**2 mm**	**4 mm**	
Assured operating distance s_a		0...1.6 mm	0...1.6 mm	0...1.6 mm	0...3.2 mm	
						
PNP	NO ①	BES 516-325-SA56-03	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	10...30 V DC	
Voltage drop U_d at I_e		≤ 1.7 V	≤ 2.5 V	≤ 2 V	≤ 2.5 V	
Rated insulation voltage U_i		75 V DC	250 V AC	250 V AC	75 V DC	
Rated operational current I_e		200 mA	200 mA	200 mA	200 mA	
No-load supply current I_0 max.		≤ 25 mA	≤ 15 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		800 Hz	1200 Hz	5000 Hz	1000 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 68 per BWN Pr. 20	IP 67	
Insulation class			⧈	⧈		
Housing material		Stainless steel	CuZn coated	CuZn coated	CuZn coated	
Material of sensing face		PA 12	PA 12	PBT	LCP	
Connection		3 m PVC cable	2 m PVC cable	2 m PVC cable	Connector	
No. of wires × cross-section		3×0.34 mm²	3×0.34 mm²	3×0.34 mm²		
Approval			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.

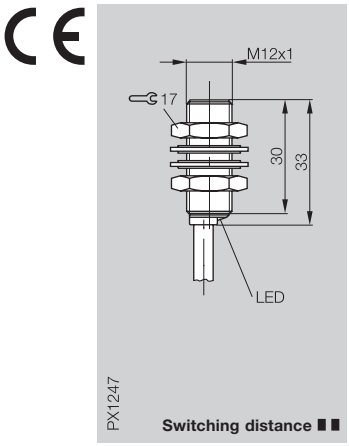
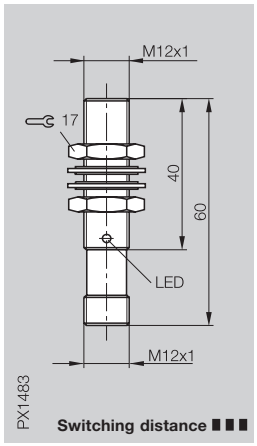
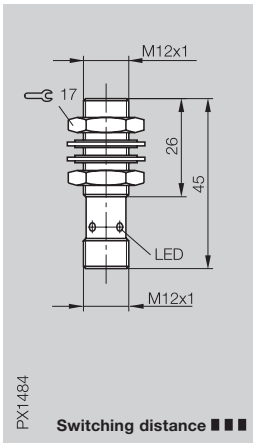
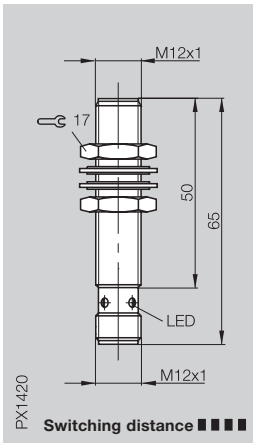
For sensors with cable and connector, other lengths are available on request.



	M12×1	**M12×1**	**M12×1**	**M12×1**	**M12×1**
	flush	flush	flush	flush	flush
	4 mm	**4 mm**	**4 mm**	**4 mm**	**4 mm**
	0...3.2 mm	0...3.2 mm	0...3.2 mm	0...3.2 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	10...30 V DC	10...30 V DC	10...30 V DC	12...30 V DC
	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V
	250 V AC	250 V AC	75 V DC	250 V AC	250 V AC
	200 mA	200 mA	200 mA	200 mA	200 mA
	≤ 15 mA	≤ 14 mA	≤ 14 mA	≤ 10 mA	≤ 15 mA
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes
	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C
	300 Hz	1000 Hz	1000 Hz	2500 Hz	300 Hz
	DC 13	DC 13	DC 13	DC 13	DC 13
	yes	yes	yes	yes	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	CuZn coated	CuZn coated	CuZn coated	CuZn coated
	LCP	LCP	LCP	LCP	LCP
	Connector	Connector	Connector	0.5 m PUR cable with connector	2 m PVC cable
					3×0.34 mm²
	cULus	cULus	cULus	cULus	cULus
	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 48/BKS-_ 49	BKS-_ 19	



1.1
5
Connectors, Holders ... Page 5.2 ...

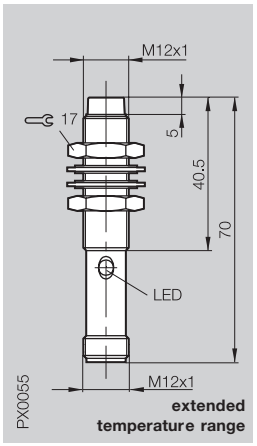
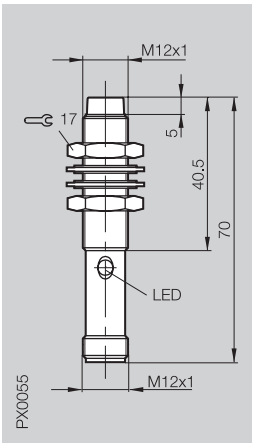
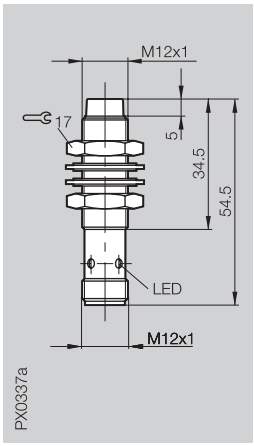
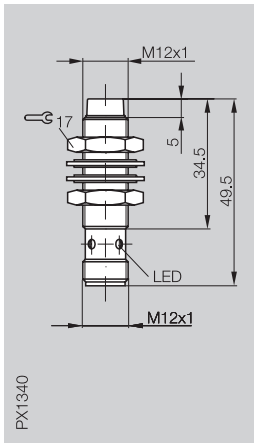
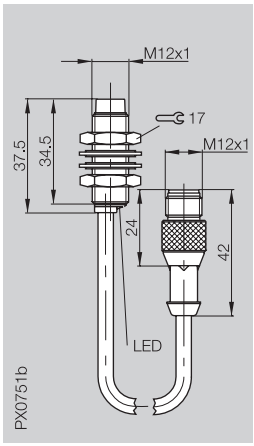
Housing size		**M12×1**	**M12×1**	**M12×1**	**M12×1**
Mounting (see notes starting p. **1.0.**11)		flush	quasi flush	quasi flush	quasi flush
Rated operating distance s_n		**4 mm**	**6 mm**	**6 mm**	**8 mm**
Assured operating distance s_a		0...3.2 mm	0...4.9 mm	0...4.9 mm	0...5.8 mm
					
PNP	NO ①	BES 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 mm²			
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.



	M12×1	**M12×1**	**M12×1**	**M12×1**	**M12×1**
	non-flush	non-flush	non-flush	non-flush	non-flush
	4 mm	**4 mm**	**4 mm**	**4 mm**	**4 mm**
	0...3.2 mm	0...3.2 mm	0...3.2 mm	0...3.2 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	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
	≤ 1.5 V	≤ 2.5 V	≤ 3.5 V	≤ 2 V	≤ 2 V
	250 V AC	250 V AC	75 V DC	250 V AC	250 V AC
	200 mA	200 mA	130 mA	200 mA	200 mA
	≤ 8 mA	≤ 32 mA	≤ 25 mA	≤ 10 mA	≤ 10 mA
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes
	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
	–40...+85 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C
	1500 Hz	400 Hz	400 Hz	2000 Hz	2000 Hz
	DC 13	DC 13	DC 13	DC 13	DC 13
	yes	yes	yes	yes	yes
	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20
	⧈	⧈		⧈	⧈
	Stainless steel	Stainless steel	CuZn coated	CuZn coated	CuZn coated
	PA 12	PA 12	PA 12	PBT	PBT
	Connector	Connector	Connector	Connector	0.3 m PUR cable with connector
	cULus	cULus	cULus	cULus	cULus
	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19

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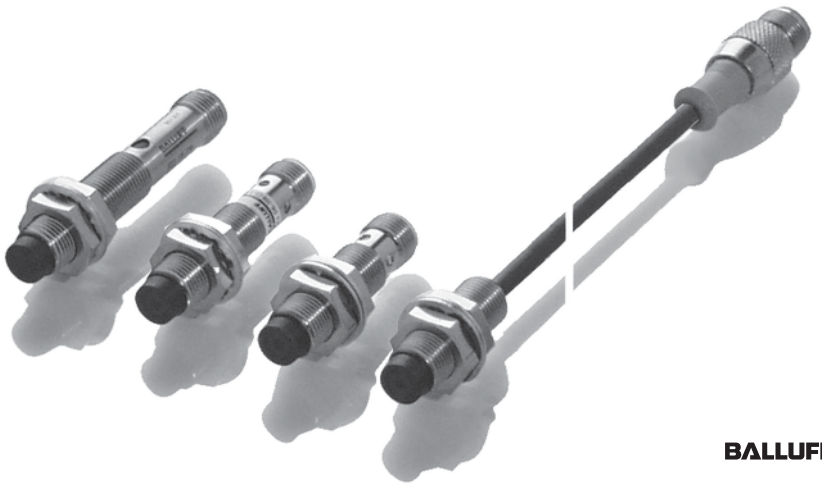
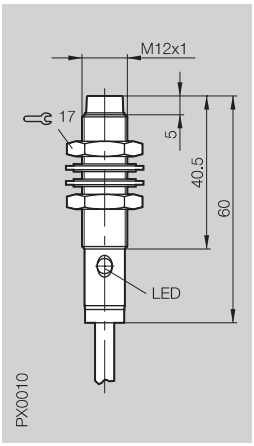
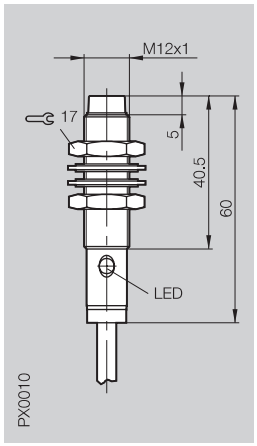
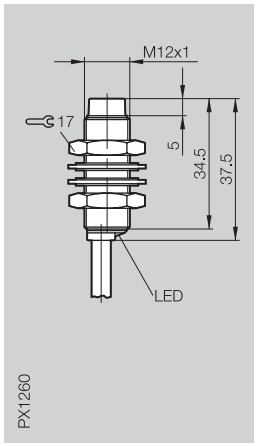
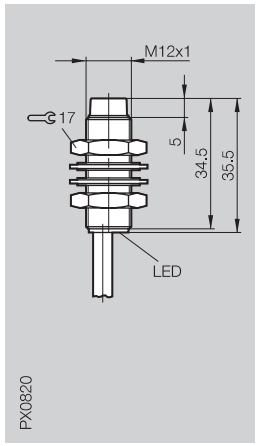
Connectors, Holders ...
Page 5.2 ...

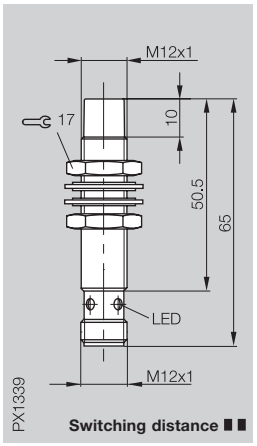
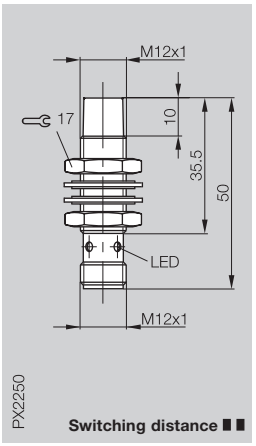
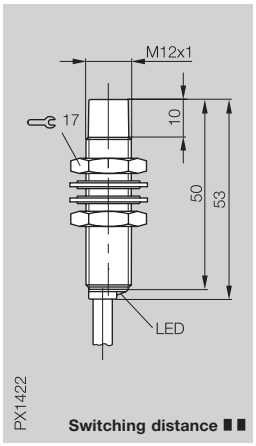


Housing size			**M12×1**	**M12×1**	**M12×1**	**M12×1**
Mounting (see notes starting p. **1.0.**11)			non-flush	non-flush	non-flush	non-flush
Rated operating distance s_n			**4 mm**	**4 mm**	**4 mm**	**4 mm**
Assured operating distance s_a			0...3.2 mm	0...3.2 mm	0...3.2 mm	0...3.2 mm
						
PNP	NO	①	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 mm²	4×0.25 mm²	3×0.34 mm²	3×0.34 mm²
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.



	M12×1 non-flush **8 mm** 0...6.5 mm	**M12×1** non-flush **8 mm** 0...6.5 mm	**M12×1** 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	10...30 V DC	10...30 V DC		
	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V		
	250 V AC	250 V AC	250 V AC		
	200 mA	200 mA	200 mA		
	≤ 14 mA	≤ 14 mA	≤ 14 mA		
	yes	yes	yes		
	yes	yes	yes		
	≤ 5 %	≤ 5 %	≤ 5 %		
	–25...+70 °C	–25...+70 °C	–25...+70 °C		
	800 Hz	800 Hz	800 Hz		
	DC 13	DC 13	DC 13		
	yes	yes	yes		
	IP 67	IP 67	IP 67		
	⧈	⧈	⧈		
	CuZn coated	CuZn coated	CuZn coated		
	PBT	PBT	PBT		
	Connector	Connector	2 m PVC cable 3×0.34 mm²		
	cULus	cULus	cULus		
	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20			



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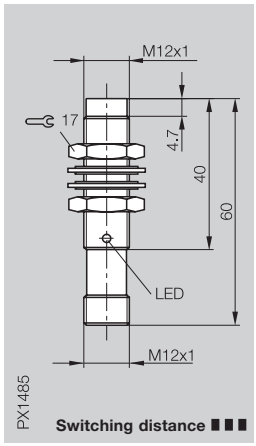
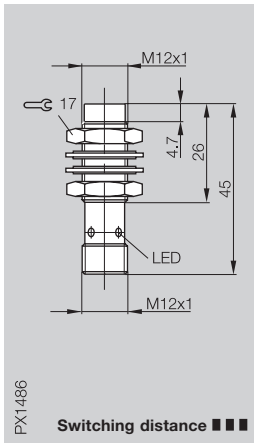
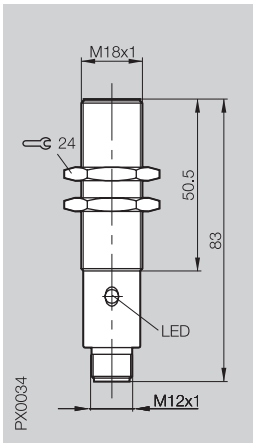
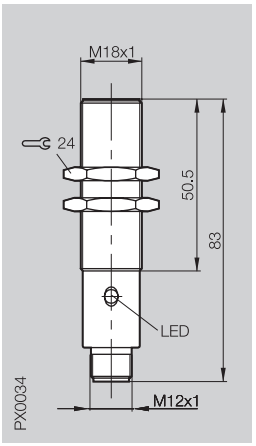
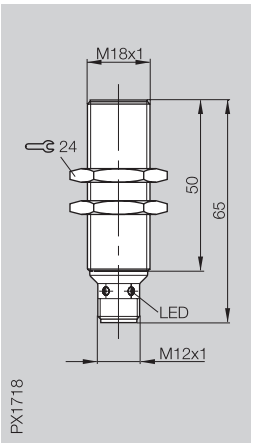
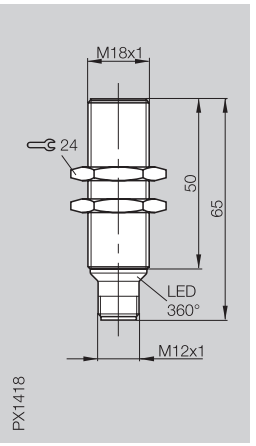
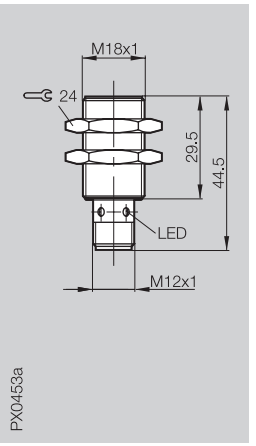
Connectors, Holders ...
Page 5.2 ...

Housing size			**M12×1**	**M12×1**		
Mounting (see notes starting p. **1.0.**11)			non-flush	non-flush		
Rated operating distance s_n			**10 mm**	**10 mm**		
Assured operating distance s_a			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				
Supply voltage U_B			10...30 V DC	10...30 V DC		
Voltage drop U_d at I_e			≤ 2 V	≤ 2 V		
Rated insulation voltage U_i			75 V DC	75 V DC		
Rated operational current I_e			200 mA	200 mA		
No-load supply current I_0 max.			≤ 10 mA	≤ 10 mA		
Polarity reversal protected			yes	yes		
Short circuit protected			yes	yes		
Repeat accuracy R			≤ 5 %	≤ 5 %		
Ambient temperature range T_a			–25...+70 °C	–25...+70 °C		
Switching frequency f			400 Hz	400 Hz		
Utilization category			DC 13	DC 13		
Function indicator			yes	yes		
Degree of protection per IEC 60529			IP 67	IP 67		
Insulation class						
Housing material			CuZn coated	CuZn coated		
Material of sensing face			PBT	PBT		
Connection			Connector	Connector		
Approval						
Recommended connector			BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20		

① Wiring diagrams see page **1.0.**6
Switching distance ■■■ see page **1.0.**10



	M18×1	**M18×1**	**M18×1**	**M18×1**	**M18×1**
	flush	flush	flush	flush	flush
	5 mm	**5 mm**	**5 mm**	**5 mm**	**5 mm**
	0...4.1 mm	0...4.1 mm	0...4.1 mm	0...4.1 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	10...30 V DC	12...30 V DC	12...30 V DC	10...30 V DC
	≤ 1.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 3.5 V
	250 V AC	250 V AC	250 V AC	250 V AC	75 V DC
	200 mA	200 mA	200 mA	200 mA	130 mA
	≤ 8 mA	≤ 30 mA	≤ 15 mA	≤ 15 mA	≤ 25 mA
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes
	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C
	900 Hz	500 Hz	700 Hz	700 Hz	500 Hz
	DC 13	DC 13	DC 13	DC 13	DC 13
	yes	yes	yes	yes	yes
	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20	IP 67
	⧈	⧈	⧈	⧈	
	CuZn coated	CuZn coated	CuZn coated	CuZn coated/ PA 6 transparent	CuZn coated
	PA 12	PA 12	PA 12	PA 12	PA 12
	Connector	Connector	Connector	Connector	Connector
	cULus	cULus	cULus	cULus	cULus
	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20

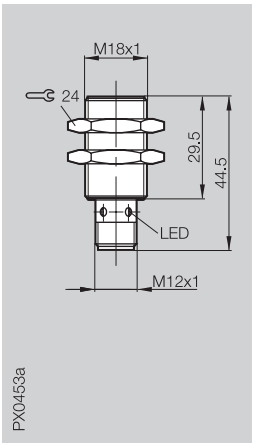
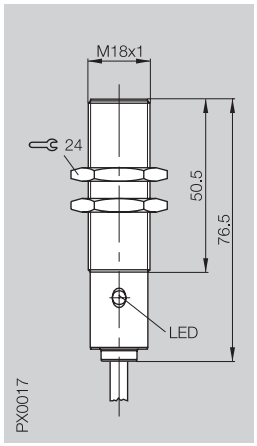
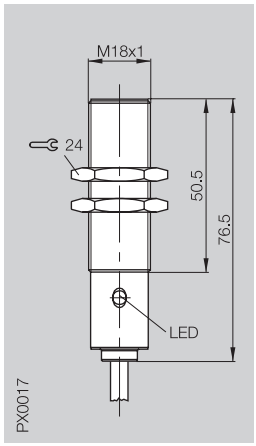
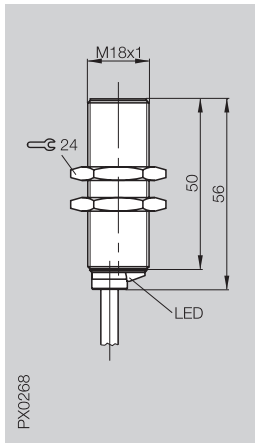


All-round LED



1.1

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

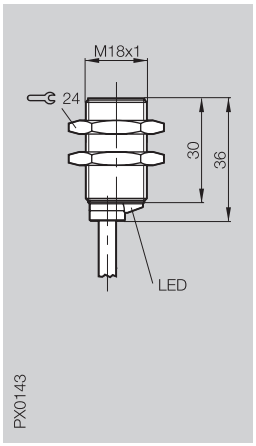
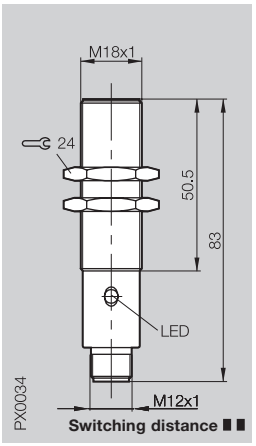
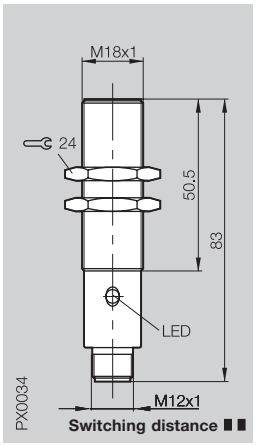
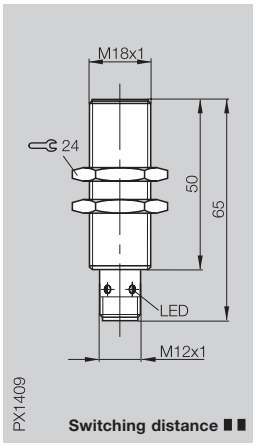
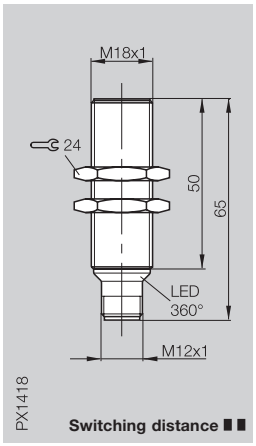
Housing size		**M18×1**	**M18×1**	**M18×1**	**M18×1**
Mounting (see notes starting p. **1.0.**11)		flush	flush	flush	flush
Rated operating distance s_n		**5 mm**	**5 mm**	**5 mm**	**5 mm**
Assured operating distance s_a		0...4.1 mm	0...4.1 mm	0...4.1 mm	0...4.1 mm
					
PNP	NO ①	BES 516-326-E5-C-S4	BES 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 mm²	4×0.25 mm²	3×0.34 mm²
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.





	M18×1	**M18×1**	**M18×1**	**M18×1**	**M18×1**
	flush	flush	flush	flush	flush
	5 mm	**8 mm**	**8 mm**	**8 mm**	**8 mm**
	0...4.1 mm	0...6.5 mm	0...6.5 mm	0...6.5 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	10...30 V DC	10...55 V DC	10...30 V DC	12...30 V DC
	≤ 2 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V
	75 V DC	75 V DC	75 V DC	250 V AC	250 V AC
	200 mA	200 mA	200 mA	200 mA	200 mA
	≤ 10 mA	≤ 12 mA	≤ 15 mA	≤ 18 mA	≤ 15 mA
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes
	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
	–25...+70 °C	0...+70 °C	0...+70 °C	–25...+70 °C	–25...+70 °C
	1000 Hz	80 Hz	80 Hz	1000 Hz	150 Hz
	DC 13	DC 13	DC 13	DC 13	DC 13
	yes	yes	yes	yes	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	PBT	PBT	PBT	PA 12
	2 m PVC cable	Connector	Connector	Connector	Connector
	3×0.34 mm²				
	cULus	cULus		cULus	cULus
		BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20



All-round LED

1.1

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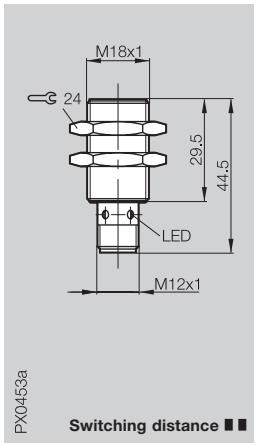
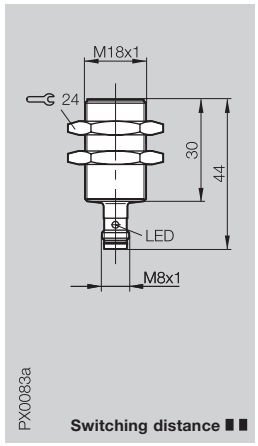
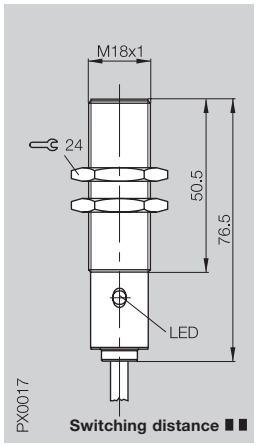
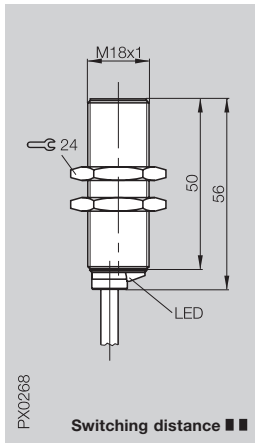
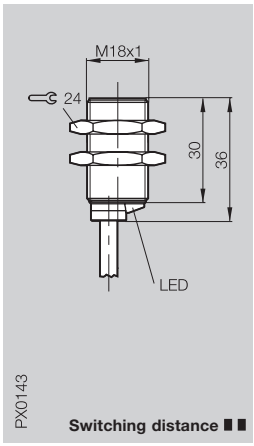
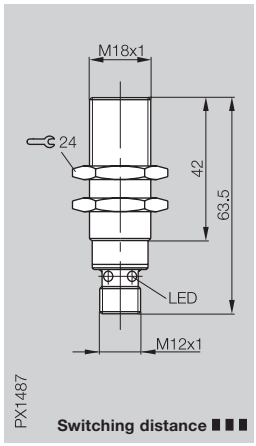
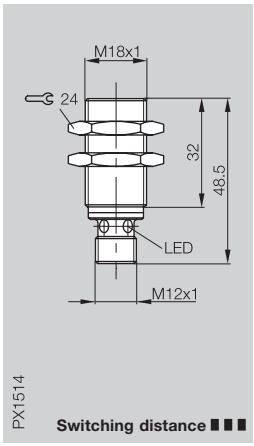
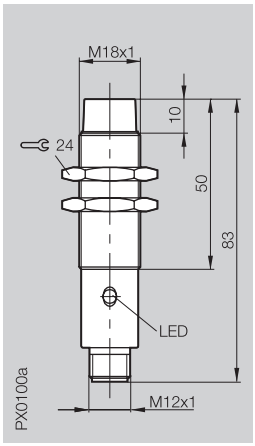
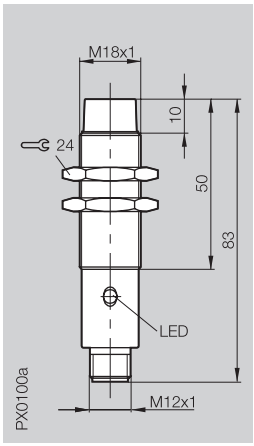
Connectors, Holders ...
Page 5.2 ...

Housing size			**M18×1**	**M18×1**	**M18×1**	**M18×1**
Mounting (see notes starting p. **1.0.**11)			flush	flush	flush	flush
Rated operating distance s_n			**8 mm**	**8 mm**	**8 mm**	**8 mm**
Assured operating distance s_a			0...6.5 mm	0...6.5 mm	0...6.5 mm	0...6.5 mm
						
PNP	NO	①	BES 516-326-G-E5-Y-S4	BES 516-326-G-E5-Y-S49	BES 516-326-G-B0-C-PU-02	BES M18MI-PSC80B-BV02
	NC	②	BES 516-367-G-E5-Y-S4	BES 516-367-G-E5-Y-S49		
	complementary	③				
NPN	NO	④	BES 516-355-G-E5-Y-S4	BES 516-355-G-E5-Y-S49		BES M18MI-NSC80B-BV02
	NC	⑤		BES 516-366-G-E5-Y-S49		
	complementary	⑥				
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			≤ 3.5 V	≤ 3.5 V	≤ 2.5 V	≤ 2.5 V
Rated insulation voltage U_i			75 V DC	75 V DC	250 V AC	250 V AC
Rated operational current I_e			130 mA	130 mA	200 mA	200 mA
No-load supply current I_0 max.			≤ 25 mA	≤ 25 mA	≤ 12 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	0...+70 °C	–25...+70 °C
Switching frequency f			200 Hz	200 Hz	80 Hz	150 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 67	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	PBT	PBT	PA 12
Connection			Connector	Connector	2 m cable PUR	2 m PVC cable
No. of wires × cross-section					3×0.34 mm²	3×0.34 mm²
Approval			cULus	cULus	cULus	cULus
Recommended connector			BKS-_ 19/BKS-_ 20	BKS-_ 48/BKS-_ 49		

① Wiring diagrams see page **1.0.**6
Switching distance ■■ see page **1.0.**10

Other cable lengths on request.



	M18×1	**M18×1**	**M18×1**	**M18×1**	**M18×1**
	flush	quasi flush	quasi flush	non-flush	non-flush
	8 mm	**12 mm**	**12 mm**	**8 mm**	**8 mm**
	0...6.5 mm	0...9.7 mm	0...9.7 mm	0...6.5 mm	0...6.5 mm
					
	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	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
	≤ 3.5 V	≤ 2 V	≤ 2 V	≤ 1.5 V	≤ 2.5 V
	75 V DC	75 V DC	75 V DC	250 V AC	250 V AC
	130 mA	200 mA	200 mA	200 mA	200 mA
	≤ 25 mA	≤ 10 mA	≤ 10 mA	≤ 8 mA	≤ 30 mA
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes
	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C
	200 Hz	500 Hz	500 Hz	600 Hz	200 Hz
	DC 13	DC 13	DC 13	DC 13	DC 13
	yes	yes	yes	yes	yes
	IP 68 per BWN Pr. 20	IP 67	IP 67	IP 68 per BWN Pr. 20 ⧈	IP 67 ⧈
	CuZn coated	CuZn coated	CuZn coated	CuZn coated	CuZn coated
	PBT	PBT	PBT	PA 12	PA 12
	2 m PVC cable	Connector	Connector	Connector	Connector
	3×0.34 mm²				
	cULus			cULus	cULus
		BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20



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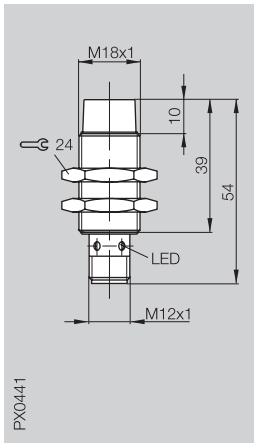
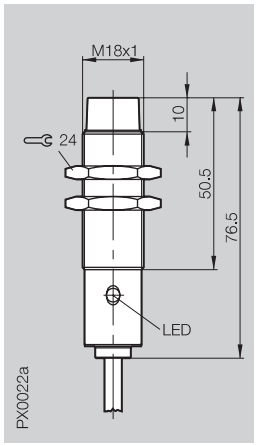
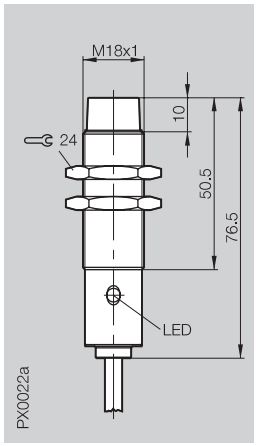
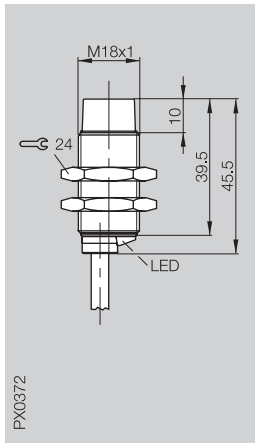
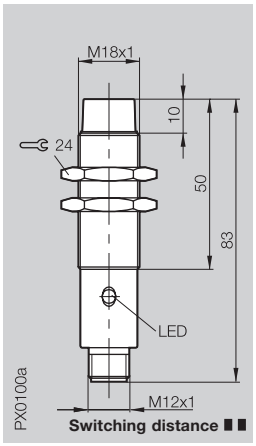
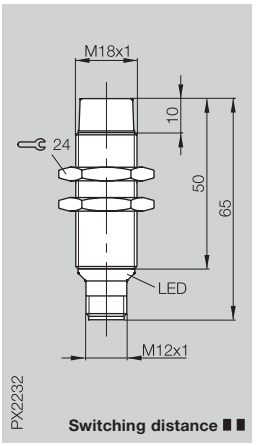
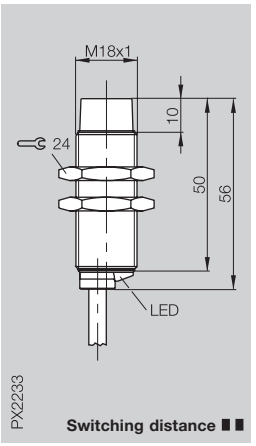
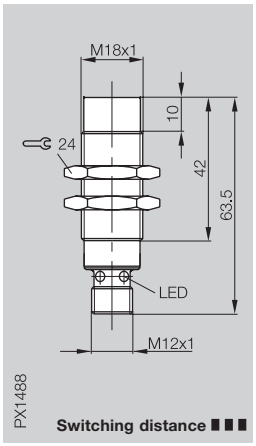
Connectors, Holders ...
Page 5.2 ...

Housing size			**M18×1**	**M18×1**	**M18×1**	**M18×1**
Mounting (see notes starting p. **1.0.**11)			non-flush	non-flush	non-flush	non-flush
Rated operating distance s_n			**8 mm**	**8 mm**	**8 mm**	**8 mm**
Assured operating distance s_a			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 mm²	4×0.25 mm²	3×0.34 mm²
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.



	M18×1	M18×1	M18×1	M18×1	
	non-flush	non-flush	non-flush	non-flush	
	16 mm	**16 mm**	**16 mm**	**20 mm**	
	0...13 mm	0...12.8 mm	0...12.8 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	10...30 V DC	10...30 V DC	10...30 V DC	
	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2 V	
	250 V AC	250 V AC	250 V AC	75 V DC	
	200 mA	200 mA	200 mA	200 mA	
	≤ 15 mA	≤ 14 mA	≤ 14 mA	≤ 10 mA	
	yes	yes	yes	yes	
	yes	yes	yes	yes	
	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	
	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	
	80 Hz	800 Hz	800 Hz	200 Hz	
	DC 13	DC 13	DC 13	DC 13	
	yes	yes	yes	yes	
	IP 68 per BWN Pr. 20	IP 67	IP 67	IP 54	
	⧈	⧈	⧈		
	CuZn coated	CuZn coated	CuZn coated	CuZn coated	
	PA 12	PBT	PBT	PBT	
	Connector	Connector	2 m PVC cable 3×0.34 mm²	Connector	
			cULus		
	BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20		BKS-_ 19/BKS-_ 20	



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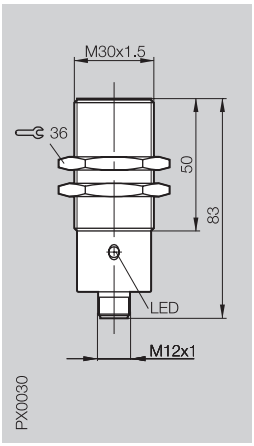
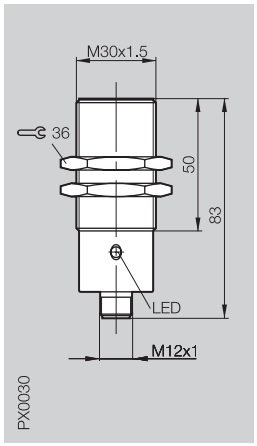
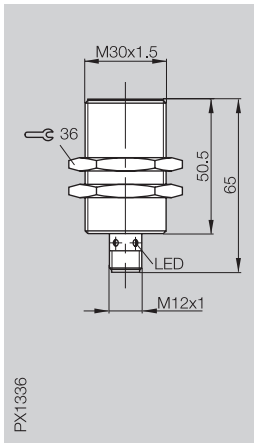
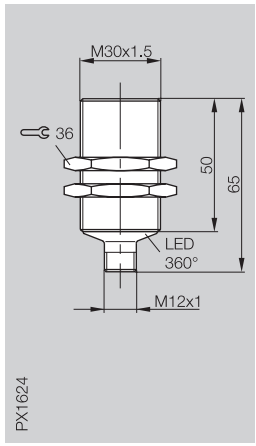
Connectors, Holders ...
Page 5.2 ...

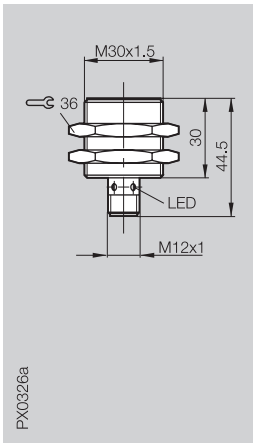
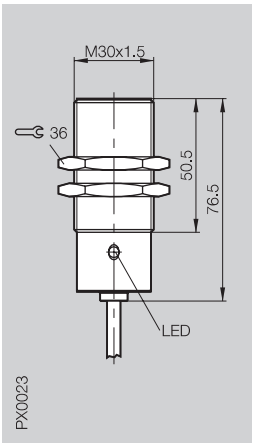
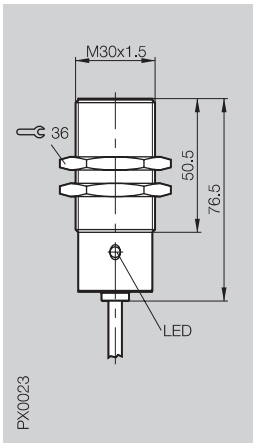
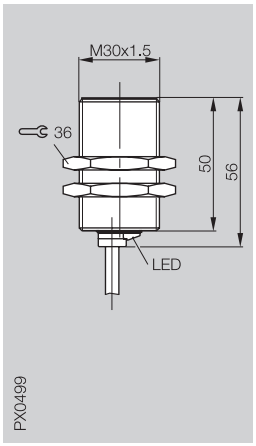
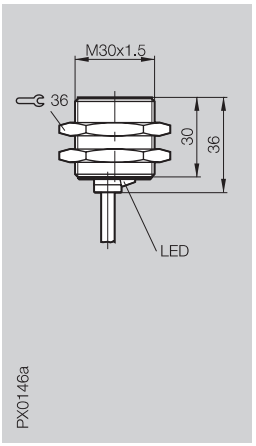
Housing size			**M30×1.5**	**M30×1.5**	**M30×1.5**	**M30×1.5**
Mounting (see notes starting p. **1.0.**11)			flush	flush	flush	flush
Rated operating distance s_n			**10 mm**	**10 mm**	**10 mm**	**10 mm**
Assured operating distance s_a			0...8.1 mm	0...8.1 mm	0...8.1 mm	0...8.1 mm
						
PNP	NO	①	BES 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 × 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

	M30×1.5	**M30×1.5**	**M30×1.5**	**M30×1.5**	**M30×1.5**
	flush	flush	flush	flush	flush
	10 mm	**10 mm**	**10 mm**	**10 mm**	**10 mm**
	0...8.1 mm	0...8.1 mm	0...8.1 mm	0...8.1 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	10...30 V DC	10...30 V DC	12...30 V DC	10...30 V DC
	≤ 3.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 3.5 V
	75 V DC	250 V AC	250 V AC	250 V AC	75 V DC
	130 mA	200 mA	200 mA	200 mA	130 mA
	≤ 25 mA	≤ 25 mA	≤ 30 mA	≤ 10 mA	≤ 25 mA
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes
	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C
	500 Hz	300 Hz	300 Hz	400 Hz	200 Hz
	DC 13	DC 13	DC 13	DC 13	DC 13
	yes	yes	yes	yes	yes
	IP 67	IP 68 per BWN Pr. 20	IP 67	IP 68 per BWN Pr. 20	IP 68 per BWN Pr. 20
		⧈	⧈	⧈	
	CuZn coated	CuZn coated	CuZn coated	CuZn coated	CuZn coated
	PA 12	PA 12	PA 12	PA 12	PA 12
	Connector	2 m PVC cable	3 m PVC cable	2 m PVC cable	2 m PVC cable
		3×0.34 mm²	4×0.25 mm²	3×0.34 mm²	3×0.34 mm²
	cULus	cULus	cULus	cULus	cULus
	BKS-_ 19/BKS-_ 20				



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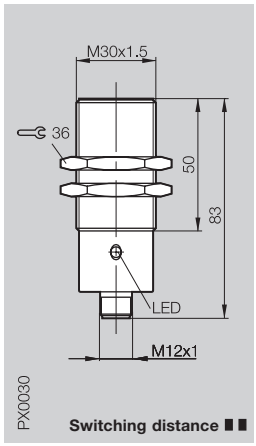
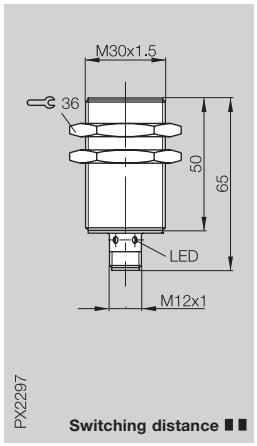
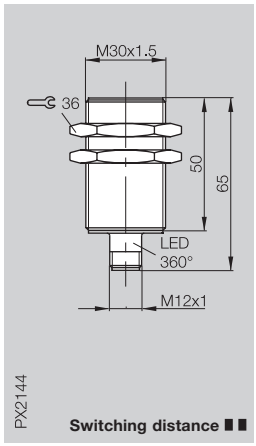
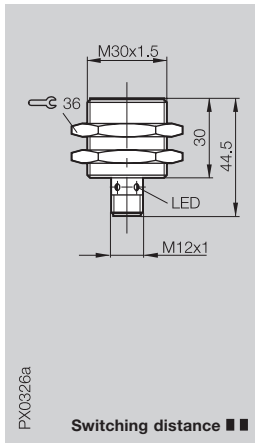
Connectors, Holders ...
Page 5.2 ...

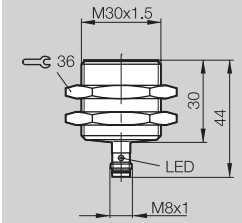
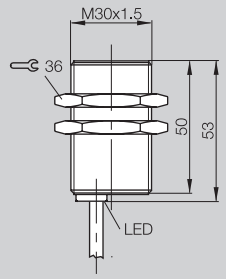
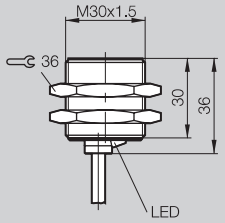
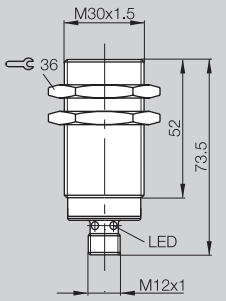
Housing size		**M30×1.5**	**M30x1.5**	**M30×1.5**	**M30×1.5**	
Mounting (see notes starting p. **1.0.**11)		flush	flush	flush	flush	
Rated operating distance s_n		**15 mm**	**15 mm**	**15 mm**	**15 mm**	
Assured operating distance s_a		0...12.2 mm	0...12.2 mm	0...12.2 mm	0...12.2 mm	
						
PNP	NO ①		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.



All-round LED

	M30×1.5 flush **15 mm** 0...12.2 mm	**M30x1.5** flush **15 mm** 0...12.2 mm	**M30×1.5** flush **15 mm** 0...12.2 mm	**M30×1.5** 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	10...30 V DC	10...30 V DC	10...30 V DC	
	≤ 3.5 V	≤ 2.5 V	≤ 3.5 V	≤ 2 V	
	75 V DC	250 V AC	75 V DC	75 V DC	
	130 mA	200 mA	130 mA	200 mA	
	≤ 25 mA	≤ 10 mA	≤ 25 mA	≤ 10 mA	
	yes	yes	yes	yes	
	yes	yes	yes	yes	
	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	
	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	
	100 Hz	100 Hz	100 Hz	200 Hz	
	DC 13	DC 13	DC 13	DC 13	
	yes	yes	yes	yes	
	IP 67	IP 67 ⧈	IP 68 per BWN Pr. 20	IP 67	
	CuZn coated	CuZn coated	CuZn coated	CuZn coated	
	PA 12	PA 12	PA 12	PBT	
	Connector	2 m PVC cable 3×0.34 mm²	2 m PVC cable 3×0.34 mm²	Connector	
	cULus	cULus	cULus		
	BKS-_ 48/BKS-_ 49			BKS-_ 19/BKS-_ 20	



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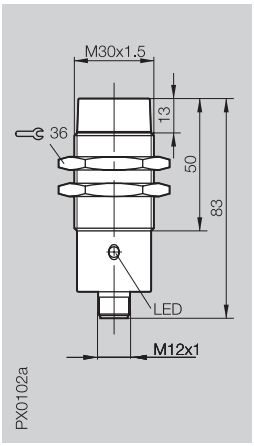
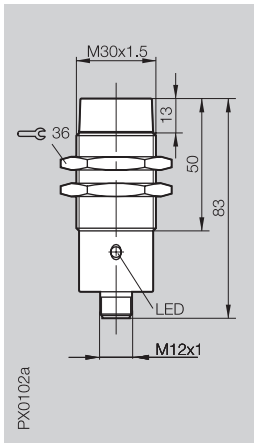
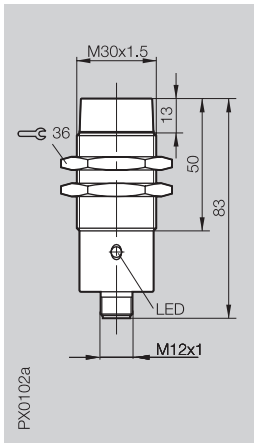
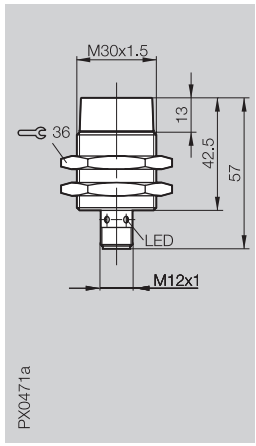
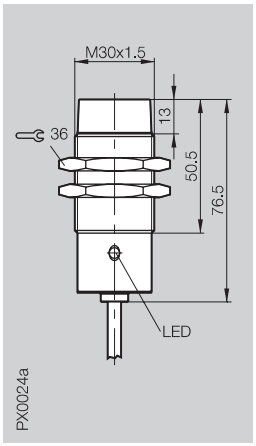
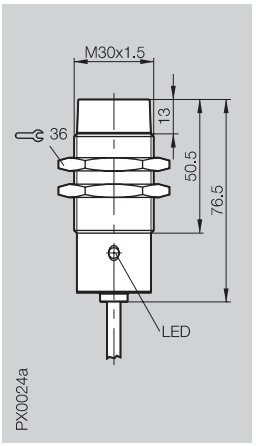
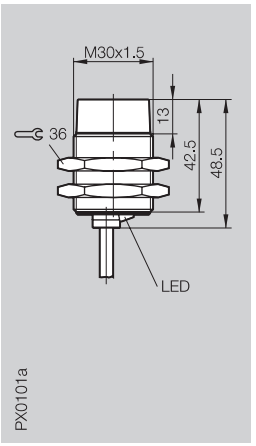
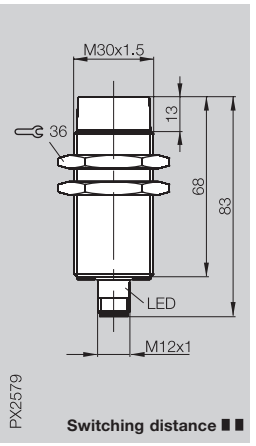
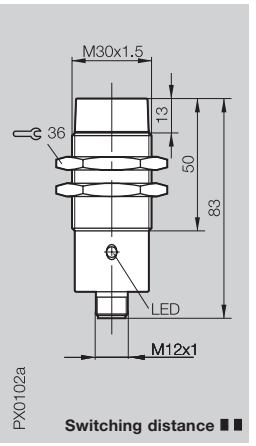
Connectors, Holders ...
Page 5.2 ...

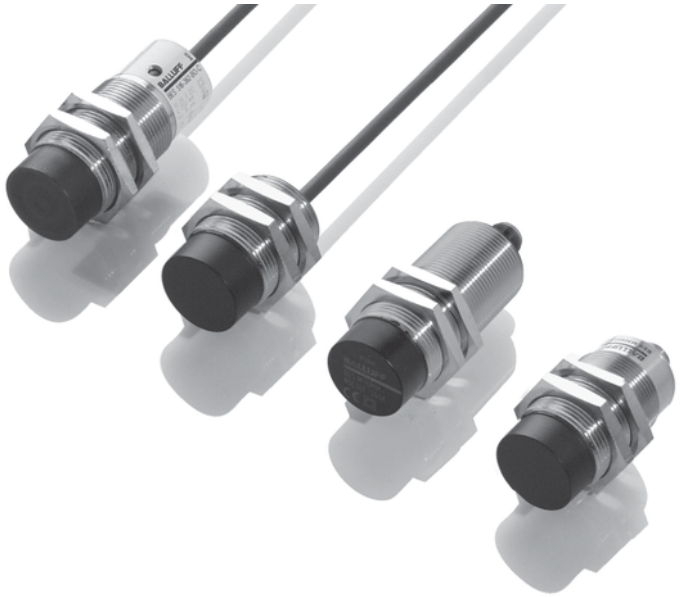
Housing size			**M30×1.5**	**M30×1.5**	**M30×1.5**	**M30×1.5**
Mounting (see notes starting p. **1.0.**11)			non-flush	non-flush	non-flush	non-flush
Rated operating distance s_n			**15 mm**	**15 mm**	**15 mm**	**15 mm**
Assured operating distance s_a			0...12.2 mm	0...12.2 mm	0...12.2 mm	0...12.2 mm
						
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.



	M30×1.5 non-flush 15 mm 0...12.2 mm	M30×1.5 non-flush 15 mm 0...12.2 mm	M30×1.5 non-flush 15 mm 0...12.2 mm	M30×1.5 non-flush 30 mm 0...24.3 mm	M30×1.5 non-flush 30 mm 0...24.3 mm
					
	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	10...30 V DC	10...30 V DC	10...30 V DC	10...55 V DC
	≤ 2.5 V	≤ 2.5 V	≤ 3.5 V	≤ 2.5 V	≤ 2.5 V
	250 V AC	250 V AC	75 V DC	250 V AC	250 V AC
	200 mA	200 mA	130 mA	200 mA	200 mA
	≤ 25 mA	≤ 30 mA	≤ 25 mA	≤ 10 mA	≤ 15 mA
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes
	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C
	100 Hz	100 Hz	100 Hz	300 Hz	70 Hz
	DC 13	DC 13	DC 13	DC 13	DC 13
	yes	yes	yes	yes	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	CuZn coated	CuZn coated	CuZn coated	CuZn coated
	PA 12	PA 12	PA 12	PBT	PA 12
	2 m PVC cable	3 m PVC cable	2 m PVC cable	Connector	Connector
	3×0.34 mm²	4×0.25 mm²	3×0.34 mm²		
	cULus	cULus	cULus	cULus	
				BKS-_ 19/BKS-_ 20	BKS-_ 19/BKS-_ 20



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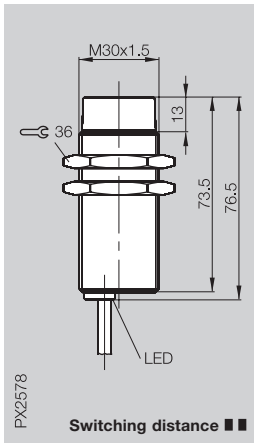
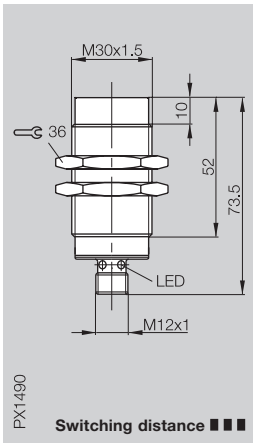
Connectors, Holders ...
Page 5.2 ...

Housing size			**M30×1.5**	**M30×1.5**		
Mounting (see notes starting p. **1.0.**11)			non-flush	non-flush		
Rated operating distance s_n			**30 mm**	**40 mm**		
Assured operating distance s_a			0...24.3 mm	0...32.4 mm		



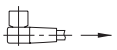


PNP	NO	①	BES M30MM-PSC30F-BV02	BES M30MG1-PSC40F-S04G
	NC	②	BES M30MM-POC30F-BV02	
NPN	NO	④	BES M30MM-NSC30F-BV02	
	NC	⑤	BES M30MM-NOC30F-BV02	

Supply voltage U_B	10...30 V DC	10...30 V DC
Voltage drop U_d at I_e	≤ 2.5 V	≤ 2 V
Rated insulation voltage U_i	250 V AC	75 V DC
Rated operational current I_e	200 mA	200 mA
No-load supply current I_0 max.	≤ 10 mA	≤ 10 mA
Polarity reversal protected	yes	yes
Short circuit protected	yes	yes
Repeat accuracy R	≤ 5 %	≤ 5 %
Ambient temperature range T_a	–25...+70 °C	–25...+70 °C
Switching frequency f	300 Hz	100 Hz
Utilization category	DC 13	DC 13
Function indicator	yes	yes
Degree of protection per IEC 60529	IP 67	IP 54
Housing material	CuZn coated	CuZn coated
Material of sensing face	PBT	PBT
Connection	2 m PVC cable	Connector
No. of wires × cross-section	3×0.34 mm²	
Approval	cULus	
Recommended connector		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

