

**Inductive Proximity  
Sensors**

**DC 3 and 4 Wire  
Tubular Sensors**

Balluff's broad range includes proximity sensors from Ø 3mm to M30 for virtually any automation application.

Our high quality sensors are designed and manufactured according to world-leading technology standards.

One hundred percent in-line testing of all products ensures that only completely tested sensors are shipped to our customers.

**1.12** Ø 3 mm, Ø 4 mm

**1.13** Ø 4 mm

**1.14** M5

**1.15** Ø 6.5 mm

**1.19** Ø 8 mm

**1.20** M8

**1.29** M12

**1.37** M18

**1.42** M30

**GlobalProx**

General Purpose Proximity Sensors

Balluff manufactures over 2,000 proximity sensors, many designed with specific applications in mind. With so many choices it can be difficult to select the appropriate sensor solution. However, most applications are not that specialized and may only require a general-purpose solution.

With the introduction of the GlobalProx family of proximity sensors, Balluff makes selecting a proximity sensor a whole lot easier. Balluff GlobalProx sensors were designed to meet the needs of general-purpose applications found in North America as well as the rest of the world.

2x = Double the normal sensing distance

3x = Triple the normal sensing distance

4x = Quadruple the normal sensing distance

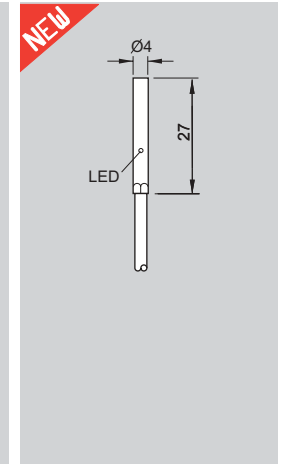
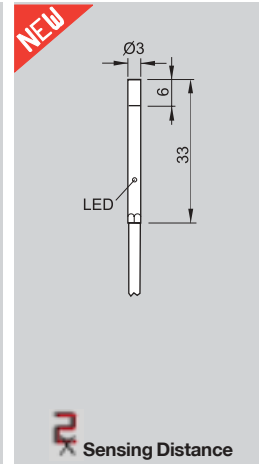
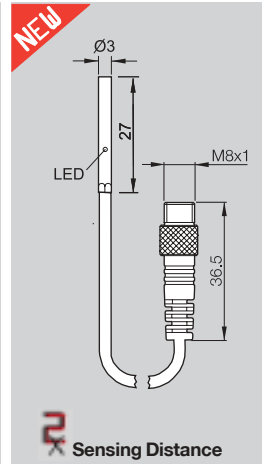
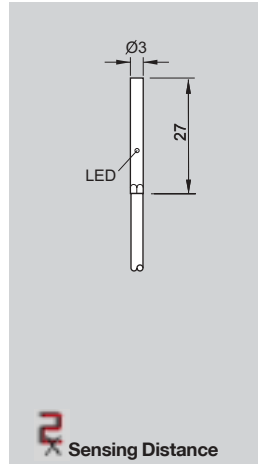
**DC  
3-/4-  
Wire  
Tubular**

# Inductive Sensors

DC 3-/4-Wire  
 Ø 3 mm, Ø 4 mm  
 s<sub>n</sub> 0.8 mm, 1.0 mm, 3.0 mm

# DC 3-/4-Wire

Housing size	Ø 3 mm	Ø 3 mm	Ø 3 mm	Ø 4 mm
Mounting	flush	flush	non-flush	flush
Rated operating distance s <sub>n</sub>	<b>1.0 mm</b>	<b>1.0 mm</b>	<b>3 mm</b>	<b>0.8 mm</b>
Assured operating distance s <sub>a</sub>	0...0.8 mm	0...0.8 mm	0...2.3 mm	0...0.6 mm



PNP	Normally-open ①	BES 516-3044-G-E4-L-PU-05	BES 516-3044-G-E4-L-S49-	BES 516-3048-G-E4-C-	BES 516-3007-E4-C-
	Normally-closed ②				
NPN	Normally-open ④	BES 516-3046-G-E4-L-PU-05			
	Normally-closed ⑤				

Rated operational voltage U <sub>e</sub>	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Supply voltage U <sub>B</sub>	10...30 Vdc	10...30 Vdc	21.6...26.4 Vdc	10...30 Vdc
Voltage drop U <sub>d</sub> at I <sub>e</sub>	≤ 1.5 V	≤ 1.5 V	≤ 2.5 V	≤ 3.0 V
Rated insulation voltage U <sub>i</sub>	75 Vdc	75 Vdc	75 Vdc	75 Vdc
Load current capacity	100 mA	100 mA	50 mA	100 mA
Current consumption (closed/open)	≤ 12 mA/≤ 9 mA	≤ 12 mA	≤ 10 mA	≤ 12 mA
Off-state current I <sub>r</sub>	≤ 50 µA	≤ 50 µA	≤ 10 µA	≤ 80 µA
Protected against polarity reversal	yes	yes	yes	yes
Short circuit protected	no	no	yes	yes
Load capacitance	≤ 0.1 µF	≤ 0.1 µF	≤ 0.5 µF	≤ 0.1 µF

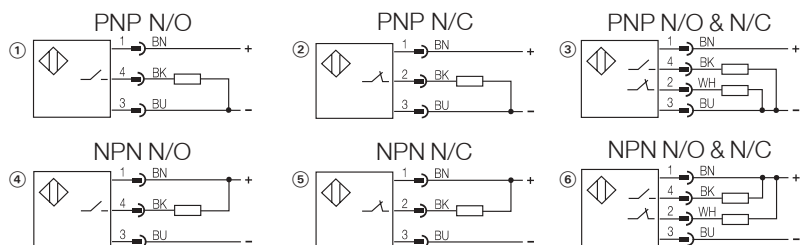
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 15 %	≤ 5 %
Ambient temperature range T <sub>a</sub>	0...+70 °C	0...+70 °C	0...+70 °C	25...+70 °C
Operating frequency f	5000 Hz	5000 Hz	2000 Hz	3000 Hz
Utilization categories	DC 13	DC 13	DC 13	DC 13
Function indication	yes	yes	yes	yes

Degree of protection per IEC 529	IP 67	IP 67	IP 67	IP 67
Insulation class				
Housing material	stainless steel	stainless steel	stainless steel	stainless steel
Material of sensing face	POM	POM	POM	POM
Connection	cable	cable with connector <sup>¶</sup>	cable	cable
No. of wires x gauge	3 x 28 AWG		3 x 28 AWG	3 x 26 AWG
Approvals				cULus
Recommended connector		C49 ANE-00-VY-050M		

See technical section for proper mounting of the 2x, 3x, and 4x long range sensors.

Please specify the cable length for sensors with molded **cable**.  
 03, 05 = PVC, length 3 m or 5 m  
 PU-03, PU-05 = PuFlex, length 3 m or 5 m

<sup>¶</sup>Please specify the cable length for sensors with **cable and connector**.  
 00.2, 00.5 = PUR, length 0.2 m or 0.5 m

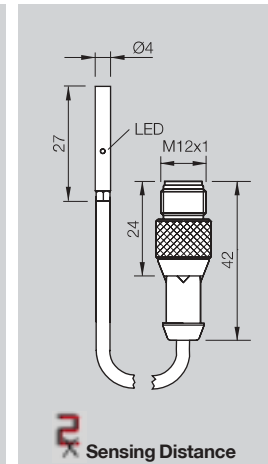
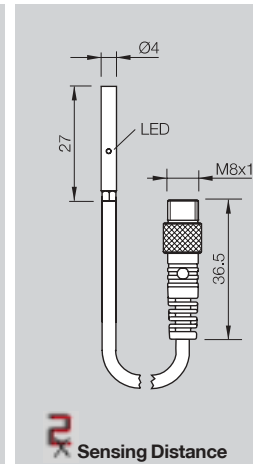
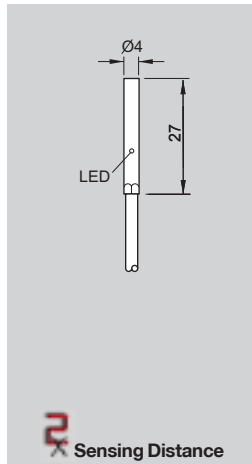
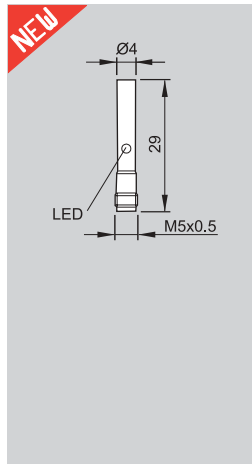
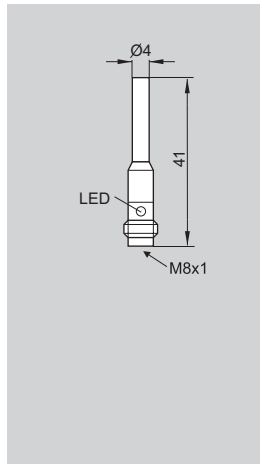


# DC 3-/4-Wire

## Inductive Sensors

DC 3-/4-Wire  
 Ø 4 mm  
 s<sub>n</sub> 0.8 mm, 1.5 mm

Ø 4 mm	Ø 4 mm	Ø 4 mm	Ø 4 mm	Ø 4 mm
flush	flush	flush	flush	flush
<b>0.8 mm</b>	<b>0.8 mm</b>	<b>1.5 mm</b>	<b>1.5 mm</b>	<b>1.5 mm</b>
0...0.65 mm	0...0.6 mm	0...1.2 mm	0...1.2 mm	0...1.2 mm



BES 516-3007-E5-C-S49 BES 516-3017-E5-C-S49	BES G04EC-PSC08B-S26-G BES G04EC-POC08B-S26-G	BES 516-3007-G-E4-C- BES 516-3017-G-E4-C-	BES 516-3007-G-E4-C-S49-	BES 516-3007-G-E4-C-S4- BES 516-3017-G-E4-C-S4-
BES 516-3008-E5-C-S49	BES G04EC-NSC08B-S26-G	BES 516-3008-G-E4-C- BES 516-3018-G-E4-C-	BES 516-3008-G-E4-C-S49-	
24 Vdc	24 Vdc	24 Vdc	24 Vdc	24 Vdc
10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc
≤ 1.5 V	≤ 3.0 V	≤ 3.0 V	≤ 3.0 V	≤ 3.0 V
75 Vdc	75 Vdc	75 Vdc	75 Vdc	75 Vdc
100 mA	100 mA	100 mA	100 mA	100 mA
≤ 12 mA/≤ 5 mA	≤ 12 mA	≤ 10 mA/≤ 3 mA	≤ 10 mA/≤ 3 mA	≤ 10 mA/≤ 3 mA
≤ 80 µA	≤ 80 µA	≤ 80 µA	≤ 80 µA	≤ 80 µA
yes	yes	yes	yes	yes
yes	yes	yes	yes	yes
≤ 0.02 µF	≤ 0.1 µF	≤ 1.0 µF	≤ 1.0 µF	≤ 1.0 µF
≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
500 Hz	3000 Hz	1800 Hz	1800 Hz	1800 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 67
stainless steel	stainless steel	stainless steel	stainless steel	stainless steel
POM	POM	POM	POM	POM
connector	connector	cable	cable with connector <sup>□</sup>	cable with connector <sup>□</sup>
	cJLus	3 x 26 AWG		
C49 ANE-00-VY-050M	BKS-B25-1-PU-03		C49 ANE-00-VY-050M	C04 AEL-00-VY-050M



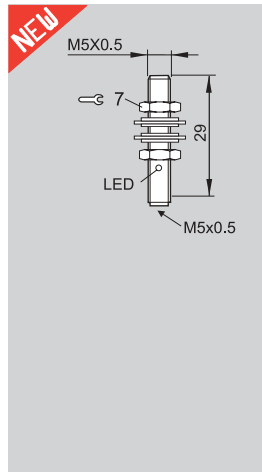
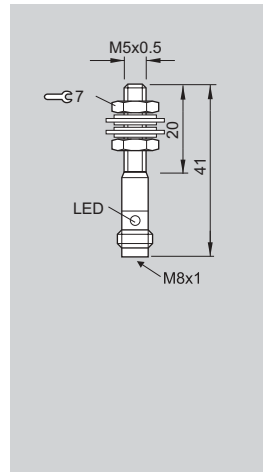
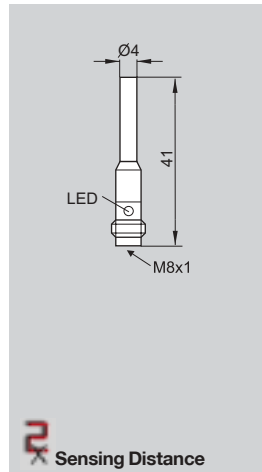
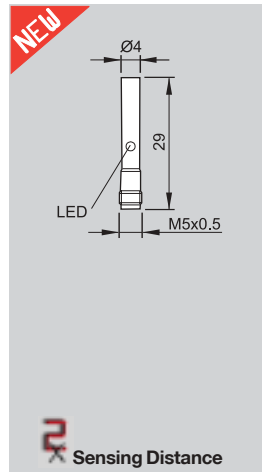
- For mounting brackets & accessories see section 7.  
 - For mating connectors see section 6.

# Inductive Sensors

DC 3-/4-Wire  
 Ø 4 mm, M5  
 s<sub>n</sub> 0.8 mm, 1.5 mm

# DC 3-/4-Wire

Housing size	Ø 4 mm	Ø 4 mm	M5x0.5	M5x0.5
Mounting	flush	flush	flush	flush
Rated operating distance s <sub>n</sub>	1.5 mm	1.5 mm	0.8 mm	0.8 mm
Assured operating distance s <sub>a</sub>	0...1.2 mm	0...1.2 mm	0...0.65 mm	0...0.6 mm



PNP	Normally-open ①	BES G04EC-PSC15B-S26G	BES 516-3007-G-E5-C-S49	BES 516-3005-E5-C-S49	BES M05EC-PSC08B-S26G
	Normally-closed ②	BES G04EC-POC15B-S26G	BES 516-3017-G-E5-C-S49	BES 516-3022-E5-C-S49	BES M05EC-POC08B-S26G

NPN	Normally-open ④	BES G04EC-NSC15B-S26G	BES 516-3008-G-E5-C-S49	BES 516-3006-E5-C-S49	BES M05EC-NSC08B-S26G
	Normally-closed ⑤	BES G04EC-NOC15B-S26G	BES 516-3018-G-E5-C-S49		

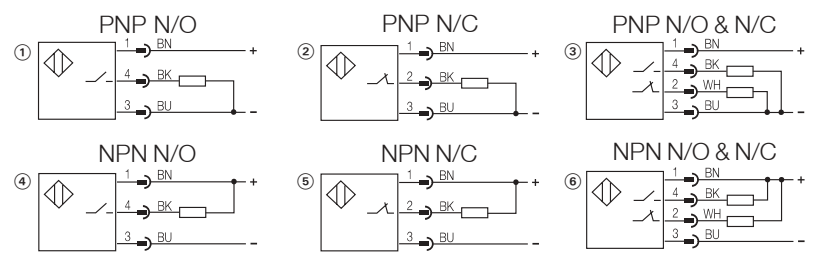
Rated operational voltage U <sub>e</sub>	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Supply voltage U <sub>B</sub>	10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc
Voltage drop U <sub>d</sub> at I <sub>e</sub>	≤ 3.0 V	≤ 3.0 V	≤ 3.0 V	≤ 3.0 V
Rated insulation voltage U <sub>i</sub>	75 Vdc	75 Vdc	75 Vdc	75 Vdc
Load current capacity	100 mA	100 mA	150 mA	100 mA
Current consumption (closed/open)	≤ 10 mA	≤ 10 mA/≤ 3 mA	≤ 10 mA/≤ 1.5 mA	≤ 12 mA
Off-state current I <sub>l</sub>	≤ 80 µA	≤ 80 µA	≤ 50 µA	≤ 80 µA
Protected against polarity reversal	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes
Load capacitance	≤ 0.1 µF	≤ 1.0 µF	≤ 0.1 µF	≤ 0.1 µF

Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T <sub>a</sub>	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Operating frequency f	1800 Hz	1800 Hz	1000 Hz	3000 Hz
Utilization categories	DC 13	DC 13	DC 13	DC 13
Function indication	yes	yes	yes	yes

Degree of protection per IEC 529	IP 65	IP 67	IP 67	IP 67
Insulation class				
Housing material	stainless steel	stainless steel	stainless steel	stainless steel
Material of sensing face	POM	POM	POM	POM
Connection	connector	connector	connector	connector
No. of wires x gauge				
Approvals				cULus
Recommended connector	BKS-B25-1-PU-03	C49 ANE-00-VY-050M	C49 ANE-00-VY-050M	BKS-B25-1-PU-03

See technical section for proper mounting of the 2x, 3x, and 4x long range sensors.

Please specify the cable length for sensors with molded **cable**.  
 03, 05 = PVC, length 3 m or 5 m  
 PU-03, PU-05 = PuFlex, length 3 m or 5 m

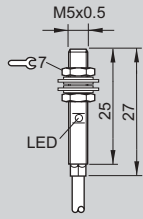
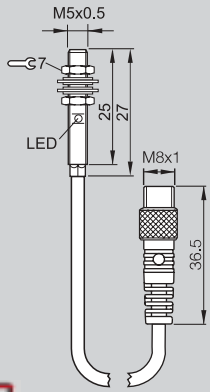
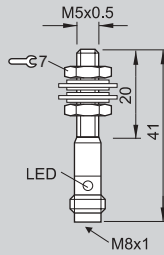
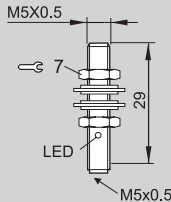
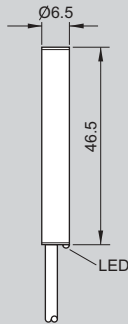


Ⓐ Please specify the cable length for sensors with **cable and connector**.  
 00.2, 00.5 = PUR, length 0.2 m or 0.5 m

# DC 3-/4-Wire

## Inductive Sensors

DC 3-/4-Wire  
M5, Ø 6.5 mm  
s<sub>n</sub> 1.5 mm

M5x0.5 flush 1.5 mm 0...1.2 mm	M5x0.5 flush 1.5 mm 0...1.2 mm	M5x0.5 flush 1.5 mm 0...1.2 mm	M5x0.5 flush 1.5 mm 0...1.2 mm	Ø 6.5 mm flush 1.5 mm 0...1.2 mm
				
<b>Sensing Distance</b>	<b>Sensing Distance</b>	<b>Sensing Distance</b>	<b>Sensing Distance</b>	<b>Extended Temperature</b>
BES 516-3005-G-E4-C- BES 516-3022-G-E4-C-	BES 516-3005-G-E4-C-S49-	BES 516-3005-G-E5-C-S49 BES 516-3022-G-E5-C-S49	BES M05EC-PSC15B-S26G BES M05EC-POC15B-S26G	BES 516-371-E0-C-
BES 516-3006-G-E4-C- BES 516-3023-G-E4-C-		BES 516-3006-G-E5-C-S49 BES 516-3023-G-E5-C-S49	BES M05EC-NSC15B-S26G BES M05EC-NOC15B-S26G	BES 516-372-E0-C-
24 Vdc 10...30 Vdc ≤ 3.0 V 75 Vdc 100 mA ≤ 10 mA/≤ 3 mA ≤ 80 µA yes yes ≤ 1.0 µF	24 Vdc 10...30 Vdc ≤ 3.0 V 75 Vdc 100 mA ≤ 10 mA/≤ 3 mA ≤ 80 µA yes yes ≤ 1.0 µF	24 Vdc 10...30 Vdc ≤ 3.0 V 75 Vdc 100 mA ≤ 10 mA/≤ 3 mA ≤ 80 µA yes yes ≤ 1.0 µF	24 Vdc 10...30 Vdc ≤ 3.0 V 75 Vdc 100 mA ≤ 10 mA ≤ 80 µA yes yes ≤ 0.1 µF	24 Vdc 10...30 Vdc ≤ 1.5 V 250 Vac 200 mA ≤ 8 mA/≤ 1 mA ≤ 10 µA yes yes ≤ 0.5 µF
≤ 5 % -25...+70 °C 1800 Hz DC 13 yes	≤ 5 % -25...+70 °C 1800 Hz DC 13 yes	≤ 5 % -25...+70 °C 1800 Hz DC 13 yes	≤ 5 % -25...+70 °C 1800 Hz DC 13 yes	≤ 5 % -40...+85 °C 3000 Hz DC 13 yes
IP 67	IP 67	IP 67	IP 65	IP 67
stainless steel POM cable 3 x 26 AWG	stainless steel POM cable with connector <sup>†</sup>	stainless steel POM connector	stainless steel POM connector	stainless steel PBTP cable 3 x 26 AWG cULus
	C49 ANE-00-VY-050M	C49 ANE-00-VY-050M	BKS-B25-1-PU-03	



- For mounting brackets & accessories see section 7.  
- For mating connectors see section 6.

Inductive

1

Contents  
Selection  
Charts  
Part  
Numbers  
Standard

**DC 3-/4-Wire  
Tubular**

DC 3-/4-Wire  
Block

AC 2-Wire  
Tubular

AC/DC 2-Wire  
Tubular

AC/DC 2-Wire  
Block

DC 2-Wire  
Tubular

Specialty

Welding Sensors  
- Factor 1  
- Weld Immune

Proximax<sup>®</sup>

SteelFace<sup>™</sup>

Proxinop<sup>®</sup>

High Temp

Ultralinear<sup>™</sup>

Namur

Large  
Housing

Ring  
Sensors

6

Connectors

7

Accessories

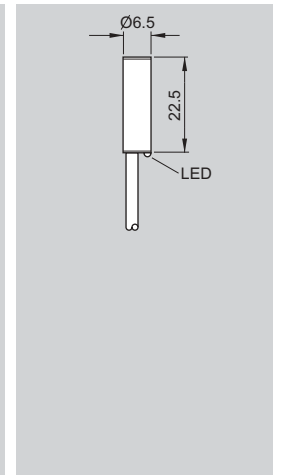
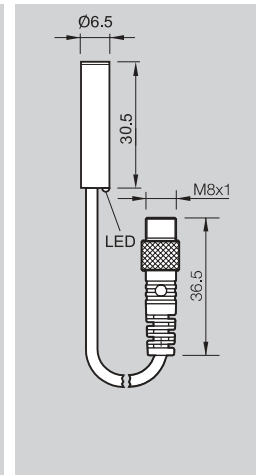
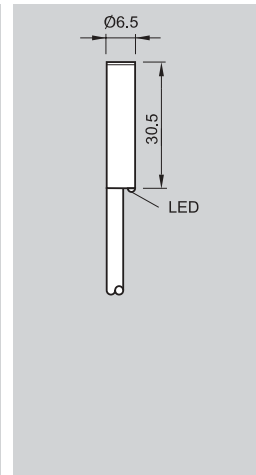
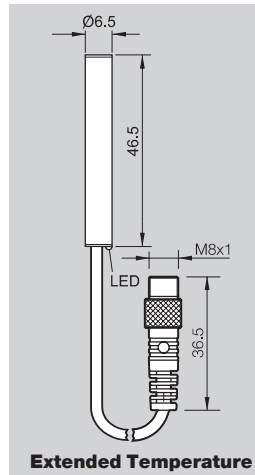
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Technical  
Reference

p

Part  
Number  
Index

Housing size	Ø 6.5 mm	Ø 6.5 mm	Ø 6.5 mm	Ø 6.5 mm
Mounting	flush	flush	flush	flush
Rated operating distance s <sub>n</sub>	<b>1.5 mm</b>	<b>1.5 mm</b>	<b>1.5 mm</b>	<b>1.5 mm</b>
Assured operating distance s <sub>a</sub>	0...1.2 mm	0...1.2 mm	0...1.2 mm	0...1.2 mm

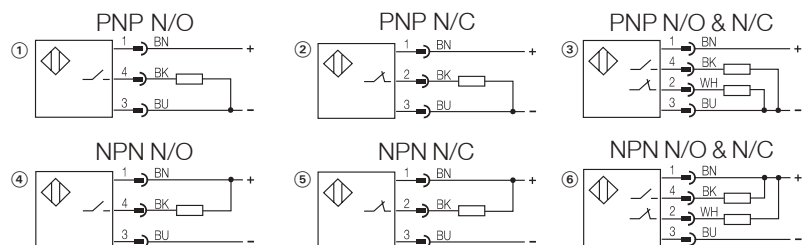


PNP	Normally-open ①	BES 516-371-E0-C-S49-	BES 516-371-E4-C-	BES 516-371-E4-C-S49-	BES 516-371-SA 10-
	Normally-closed ②				
NPN	Normally-open ④		BES 516-372-E4-C-		BES 516-372-SA 1-
	Normally-closed ⑤				
Rated operational voltage U <sub>o</sub>	24 Vdc	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Supply voltage U <sub>B</sub>	10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc
Voltage drop U <sub>d</sub> at I <sub>o</sub>	≤ 1.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V
Rated insulation voltage U <sub>i</sub>	250 Vac	75 Vdc	75 Vdc	75 Vdc	75 Vdc
Load current capacity	200 mA	200 mA	200 mA	200 mA	200 mA
Current consumption (closed/open)	≤ 8 mA/≤ 1 mA	≤ 25 mA/≤ 12 mA	≤ 25 mA/≤ 12 mA	≤ 25 mA/≤ 12 mA	≤ 25 mA/≤ 12 mA
Off-state current I <sub>r</sub>	≤ 10 µA	≤ 80 µA	≤ 80 µA	≤ 80 µA	≤ 80 µA
Protected against polarity reversal	yes	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes	yes
Load capacitance	≤ 0.5 µF	≤ 1.0 µF	≤ 1.0 µF	≤ 1.0 µF	≤ 0.5 µF
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T <sub>a</sub>	-40...+85 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Operating frequency f	3000 Hz	1500 Hz	1500 Hz	1500 Hz	1500 Hz
Utilization categories	DC 13	DC 13	DC 13	DC 13	DC 13
Function indication	yes	yes	yes	yes	yes
Degree of protection per IEC 529	IP 67	IP 67	IP 67	IP 67	IP 67
Insulation class	□				
Housing material	stainless steel	stainless steel	stainless steel	stainless steel	nickel plated brass
Material of sensing face	PBT	PBTP	PBT	PBTP	PBTP
Connection	cable with connector <sup>□</sup>	cable	cable with connector <sup>□</sup>	cable	cable
No. of wires x gauge		3 x 26 AWG		3 x 26 AWG	
Approvals	cULus	cULus	cULus		
Recommended connector	C49 ANE-00-VY-050M		C49 ANE-00-VY-050M		

See technical section for proper mounting of the 2x, 3x, and 4x long range sensors.

Please specify the cable length for sensors with molded **cable**.  
 03, 05 = PVC, length 3 m or 5 m  
 PU-03, PU-05 = PuFlex, length 3 m or 5 m

<sup>□</sup>Please specify the cable length for sensors with **cable and connector**.  
 00.2, 00.5 = PUR, length 0.2 m or 0.5 m



# DC 3-/4-Wire

## Inductive Sensors

DC 3-/4-Wire  
 Ø 6.5 mm  
 s<sub>n</sub> 1.5 mm, 2 mm

Ø 6.5 mm flush 1.5 mm 0...1.2 mm	Ø 6.5 mm flush 1.5 mm 0...1.2 mm	Ø 6.5 mm flush 2 mm 0...1.6 mm	Ø 6.5 mm flush 2 mm 0...1.6 mm	Ø 6.5 mm flush 2 mm 0...1.6 mm
BES 516-371-S49-C	BES 516-371-E5-C-S49	BES 516-371-G-E4-C- BES 516-3021-G-E4-C-	BES 516-371-G-E4-C-S49-	BES 516-371-SA13-PU-
		BES 516-372-G-E4-C- BES 516-3025-G-E4-C-		
24 Vdc 10...30 Vdc ≤ 1.5 V 75 Vdc 200 mA ≤ 8 mA/≤ 1.0 mA ≤ 80 µA yes yes ≤ 1.0 µF	24 Vdc 10...30 Vdc ≤ 2.5 V 75 Vdc 200 mA ≤ 25 mA/≤ 12 mA ≤ 80 µA yes yes ≤ 1.0 µF	24 Vdc 10...30 Vdc ≤ 2.5 V 75 Vdc 200 mA ≤ 25 mA/≤ 12 mA ≤ 80 µA yes yes ≤ 1.0 µF	24 Vdc 10...30 Vdc ≤ 2.5 V 75 Vdc 200 mA ≤ 25 mA/≤ 12 mA ≤ 80 µA yes yes ≤ 1.0 µF	24 Vdc 10...30 Vdc ≤ 2.5 V 75 Vdc 200 mA ≤ 20 mA/≤ 12 mA ≤ 80 µA yes yes ≤ 1.0 µF
≤ 5 % -25...+70 °C 3000 Hz DC 13 yes	≤ 5 % -25...+70 °C 1500 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 1000 Hz DC 13 no
IP 67	IP 67	IP 67	IP 67	IP 65
stainless steel PBTP connector	stainless steel PBTP connector	stainless steel PA 12 cable 3 × 26 AWG cULus	stainless steel PA 12 cable with connector <sup>□</sup> cULus	stainless steel PBTP cable 3 × 26 AWG cULus
C49 ANE-00-VY-050M	C49 ANE-00-VY-050M		C49 ANE-00-VY-050M	



- For mounting brackets & accessories see section 7.  
 - For mating connectors see section 6.

Inductive

1

Contents  
 Selection  
 Charts  
 Part  
 Numbers  
 Standard

**DC 3-/4-Wire  
 Tubular**

DC 3-/4-Wire  
 Block  
 AC 2-Wire  
 Tubular  
 AC/DC 2-Wire  
 Tubular  
 AC/DC 2-Wire  
 Block  
 DC 2-Wire  
 Tubular

Specialty

Welding Sensors  
 – Factor 1  
 – Weld Immune  
 Proximax®  
 SteelFace™  
 Proxinox®  
 High Temp  
 Ultralinear™  
 Namur  
 Large  
 Housing  
 Ring  
 Sensors

6 Connectors

7 Accessories

t Technical  
 Reference

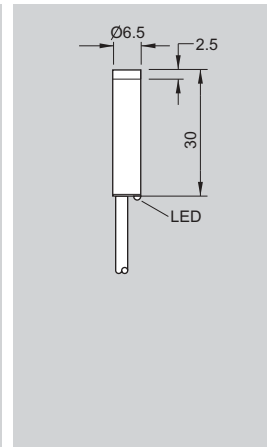
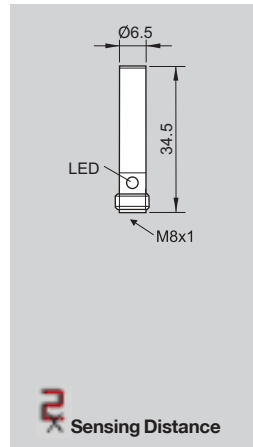
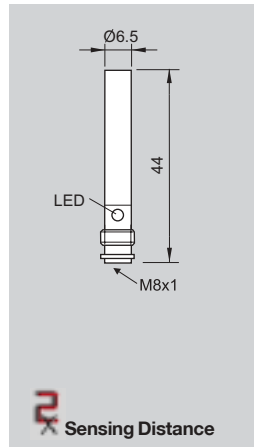
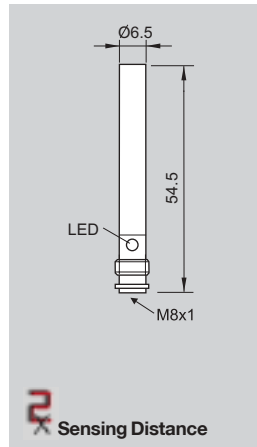
p Part  
 Number  
 Index

# Inductive Sensors

DC 3-/4-Wire  
 Ø 6.5 mm  
 s<sub>n</sub> 2 mm, 2.5 mm

# DC 3-/4-Wire

Housing size	Ø 6.5 mm	Ø 6.5 mm	Ø 6.5 mm	Ø 6.5 mm
Mounting	flush	flush	flush	non-flush
Rated operating distance s <sub>n</sub>	2 mm	2 mm	2 mm	2.5 mm
Assured operating distance s <sub>a</sub>	0...1.6 mm	0...1.6 mm	0...1.6 mm	0...2 mm



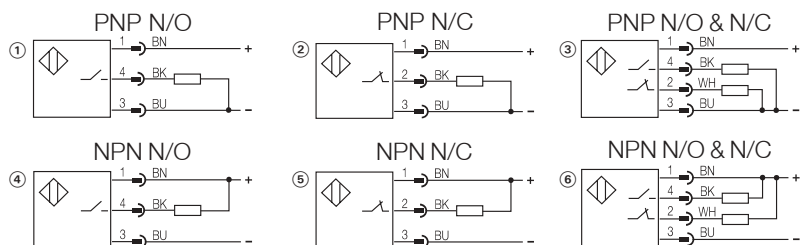
PNP	Normally-open ①	BES 516-371-G-S49-C	BES 516-371-G-E5-C-S49	BES 516-371-SA15-C-S49	BES 516-349-E4-C-
	Normally-closed ②		BES 516-3021-G-E5-C-S49		
NPN	Normally-open ④		BES 516-372-G-E5-C-S49		BES 516-350-E4-C-
	Normally-closed ⑤		BES 516-3025-G-E5-C-S49		

Rated operational voltage U <sub>e</sub>	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Supply voltage U <sub>B</sub>	10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc
Voltage drop U <sub>d</sub> at I <sub>e</sub>	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V
Rated insulation voltage U <sub>i</sub>	75 Vdc	75 Vdc	75 Vdc	75 Vdc
Load current capacity	200 mA	200 mA	200 mA	200 mA
Current consumption (closed/open)	≤ 25 mA/≤ 12 mA	≤ 25 mA/≤ 12 mA	≤ 25 mA/≤ 12 mA	≤ 25 mA/≤ 12 mA
Off-state current I <sub>r</sub>	≤ 80 µA	≤ 80 µA	≤ 80 µA	≤ 80 µA
Protected against polarity reversal	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes
Load capacitance	≤ 1.0 µF	≤ 1.0 µF	≤ 1.0 µF	≤ 1.0 µF
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T <sub>a</sub>	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Operating frequency f	1000 Hz	1000 Hz	1000 Hz	1500 Hz
Utilization categories	DC 13	DC 13	DC 13	DC 13
Function indication	yes	yes	yes	yes
Degree of protection per IEC 529	IP 67	IP 67	IP 67	IP 67
Insulation class				
Housing material	stainless steel	stainless steel	stainless steel	stainless steel
Material of sensing face	PBTP	PA 12	PBTP	PA 12
Connection	connector	connector	connector	cable
No. of wires x gauge				3 x 26 AWG
Approvals	cULus	cULus		cULus
Recommended connector	C49 ANE-00-VY-050M	C49 ANE-00-VY-050M	C49 ANE-00-VY-050M	

See technical section for proper mounting of the 2x, 3x, and 4x long range sensors.

Please specify the cable length for sensors with molded **cable**.  
 03, 05 = PVC, length 3 m or 5 m  
 PU-03, PU-05 = PuFlex, length 3 m or 5 m

°Please specify the cable length for sensors with **cable and connector**.  
 00.2, 00.5 = PUR, length 0.2 m or 0.5 m



# DC 3-/4-Wire

## Inductive Sensors

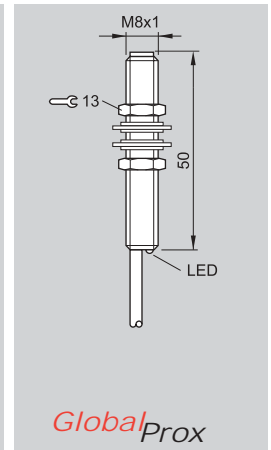
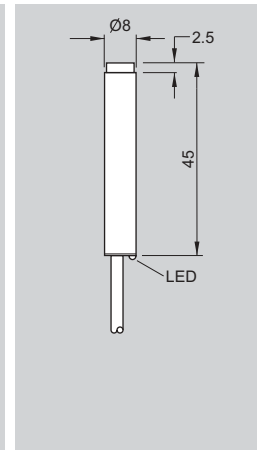
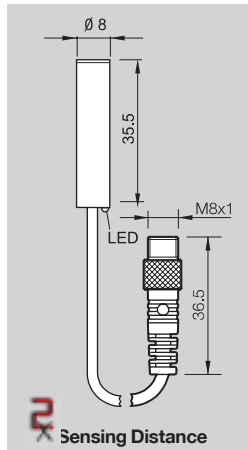
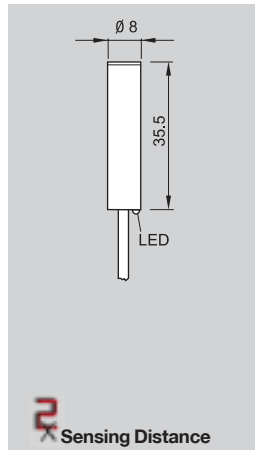
DC 3-/4-Wire  
 Ø 6.5 mm, Ø 8 mm  
 S<sub>n</sub> 1.5, 3, 4 mm

Ø 6.5 mm quasi-flush 3 mm 0...2.4 mm	Ø 6.5 mm quasi-flush 3 mm 0...2.4 mm	Ø 6.5 mm quasi-flush 4 mm 0...2.9 mm	Ø 6.5 mm non-flush 4 mm 0...3.2 mm	Ø 8 mm flush 1.5 mm 0...1.2 mm
BES G06MH1-PSC30B-S04G	BES G06MI-PSC30B-S49G BES G06MI-POC30B-S49G	BES G06MI-PSC40B-S49G	BES G06EF-PSC40F-S49G	BES 516-369-E0-C- BES 516-3013-E0-C-
BES G06MH1-NSC30B-S04G	BES G06MI-NSC30B-S49G BES G06MI-NOC30B-S49G	BES G06MI-NSC40B-S49G		BES 516-368-E0-C-
24 Vdc	24 Vdc	24 Vdc	24 Vdc	24 Vdc
10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc
≤ 2.0 V	≤ 2.0 V	≤ 2.8 V	≤ 2.5 V	≤ 1.5 V
75 Vdc	75 Vdc	75 Vdc	75 Vdc	250 Vac
200 mA	200 mA	200 mA	200 mA	200 mA
≤ 12 mA/≤ 10 mA	≤ 12 mA/≤ 10 mA	≤ 10 mA/≤ 8 mA	≤ 12 mA/≤ 10 mA	≤ 25 mA/≤ 12 mA
≤ 100 µA	≤ 100 µA	≤ 10 µA	≤ 10 µA	≤ 10 µA
yes	yes	yes	yes	yes
yes	yes	yes	yes	yes
≤ 1.0 µF	≤ 1.0 µF	≤ 1.0 µF	≤ 1 µF	≤ 0.5 µF
≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
-25...+70 °C	-25...+70 °C	0...+60 °C	-25...+70 °C	-25...+70 °C
1000 Hz	1000 Hz	700 Hz	5000 Hz	3000 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 67
chrome plated brass	chrome plated brass	nickel plated brass	stainless steel	stainless steel
PBTP	PBTP	PBTP	PBT	PBTP
connector	connector	connector	connector	cable
cULus		cULus		3 x 26 AWG
C04 AEL-00-VY-050M	C49 ANE-00-VY-050M	C49 ANE-00-VY-050M	C49 ANE-00-VY-050M	C04 AEL-00-VY-050M



- For mounting brackets & accessories see section 7.  
 - For mating connectors see section 6.

Housing size	Ø 8 mm	Ø 8 mm	Ø 8 mm	M8x1
Mounting	flush	flush	non-flush	flush
Rated operating distance s <sub>n</sub>	<b>2mm</b>	<b>2 mm</b>	<b>2.5 mm</b>	<b>1.5 mm</b>
Assured operating distance s <sub>a</sub>	0...1.6	0...1.6 mm	0...2 mm	0...1.2 mm



PNP	Normally-open ①	BES 516-369-G-SA-2-PU-	BES 516-369-G-SA 2-S49-	BES 516-396-E0-C-	BES M08MI-PSC15B-
	Normally-closed ②		BES 516-3013-G-SA 2-S49-		BES M08MI-POC15B-
	Complementary ③				
NPN	Normally-open ④			BES 516-397-E0-C-	BES M08MI-NSC15B-
	Normally-closed ⑤				
Rated operational voltage U <sub>e</sub>	24 Vdc	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Supply voltage U <sub>B</sub>	10...30 Vdc	10...30 Vdc	10...30 Vdc	10...30 Vdc	12...30 Vdc
Voltage drop U <sub>d</sub> at I <sub>e</sub>	≤ 3.5 V	≤ 3.5 V	≤ 2.5 V	≤ 2.5 V	≤ 2.5 V
Rated insulation voltage U <sub>i</sub>	75 Vdc	75 Vdc	75 Vdc	75 Vdc	75 Vdc
Load current capacity	130 mA	130 mA	200 mA	200 mA	100 mA
Current consumption (closed/open)	≤ 25 mA/≤ 12 mA	≤ 25 mA/≤ 12 mA	≤ 25 mA/≤ 12 mA	≤ 25 mA/≤ 12 mA	≤ 10 mA/≤ 5 mA
Off-state current I <sub>r</sub>	≤ 80 µA	≤ 80 µA	≤ 80 µA	≤ 80 µA	≤ 20 µA
Protected against polarity reversal	yes	yes	yes	yes	yes
Short circuit protected	yes	yes	yes	yes	yes
Load capacitance	≤ 1.0 µF	≤ 1.0 µF	≤ 1.0 µF	≤ 1.0 µF	≤ 1.0 µF
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T <sub>a</sub>	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Operating frequency f	800 Hz	800 Hz	1000 Hz	1000 Hz	1000 Hz
Utilization categories	DC 13	DC 13	DC 13	DC 13	DC 13
Function indication	yes	yes	yes	yes	yes
Degree of protection per IEC 529	IP 67	IP 67	IP 67	IP 67	IP 67
Insulation class					
Housing material	nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
Material of sensing face	PBTP	PBT	PA 12	PBT	PBT
Connection	cable	cable with connector <sup>q</sup>	cable	cable	cable
No. of wires x gauge	3 x 26 AWG		3 x 26 AWG	3 x 22 AWG	3 x 22 AWG
Approvals	cULus	cULus	cULus	cULus	cULus
Recommended connector		C49 ANE-00-VY-050M			

Please specify the cable length for sensors with molded **cable**.  
 03, 05 = PVC, length 3 m or 5 m  
 PU-03, PU-05 = PuFlex, length 3 m or 5 m

<sup>q</sup>Please specify the cable length for sensors with **cable and connector**.  
 00.2, 00.5 = PUR, length 0.2 m or 0.5 m

