

**Inductive  
Proximity Switches**

**Our Standard  
Offering in 2-Wire  
AC/DC Versions**

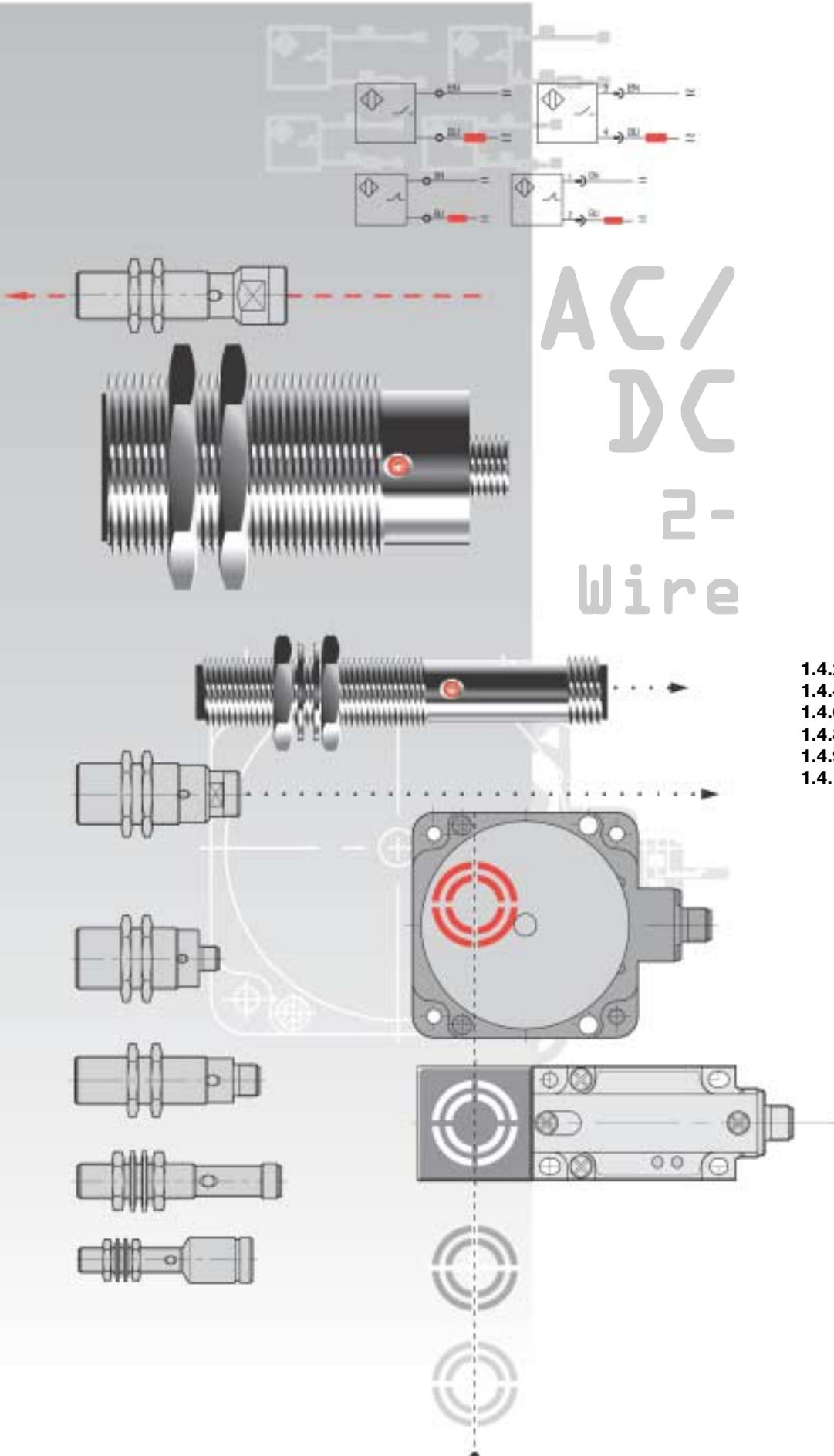
With this broad range of product, Balluff offers proximity switches in housings from M12 to 80 x 80 mm for virtually any application in the field of automation.

These highest quality sensors are designed and manufactured according to world-wide standards and the newest technology. 100 % testing of all products is your assurance that only carefully checked sensors are shipped.

**AC/DC  
2-Wire Sensors**

- 1.4.2** M12
- 1.4.4** M18
- 1.4.6** M30
- 1.4.8** Unisensor
- 1.4.9** Unicomact
- 1.4.10** Maxisensor

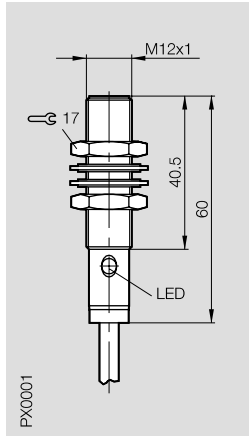
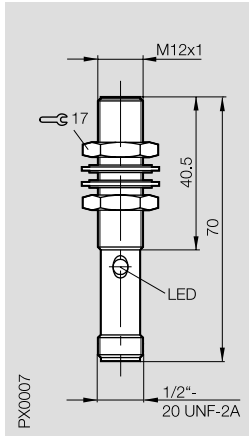
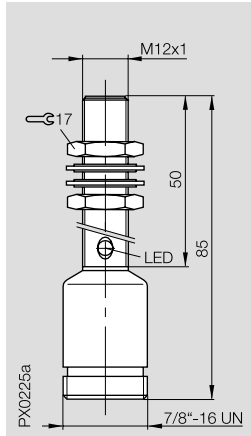
Additional AC/DC switches can be found in section **1.5** – Inductive sensors with special mechanical and/or electrical properties.



# Inductive Sensors

AC/DC 2-Wire  
M12  
s<sub>n</sub> 2 mm

Housing size	<b>M12x1</b>	<b>M12x1</b>	<b>M12x1</b>
Mounting	flush	flush	flush
Rated operating distance s <sub>n</sub>	<b>2 mm</b>	<b>2 mm</b>	<b>2 mm</b>
Assured operating distance s <sub>a</sub>	0...1.6 mm	0...1.6 mm	0...1.6 mm



Normally-open ⑮ ⑰	BES 516-207-S 5-E	BES 516-207-S 21-E	BES 516-207-B0-E
Normally-closed ⑯ ⑱		BES 516-208-S 21-E	BES 516-208-B0-E
Rated operational voltage U <sub>e</sub>	110 V AC	110 V AC	110 V AC
Supply voltage U <sub>B</sub>	20...250 V AC/DC	20...250 V AC/DC	20...250 V AC/DC
Voltage drop U <sub>d</sub> at I <sub>e</sub>	≤ 11 V; ≤ 7.5 V dyn.	≤ 11 V; ≤ 7.5 V dyn.	≤ 11 V; ≤ 7.5 V dyn.
Rated insulation voltage U <sub>i</sub>	250 V AC	250 V AC	250 V AC
Rated operational current I <sub>e</sub>	130 mA	130 mA	130 mA
Minimum operational current I <sub>m</sub>	5 mA	5 mA	5 mA
Off-state current I <sub>r</sub>	≤ 1.7 mA at 110 V AC	≤ 1.7 mA at 110 V AC	≤ 1.7 mA at 110 V AC
Inrush current I <sub>k</sub> t ≤ 20 ms	≤ 0.7 A/≤ 0.5 Hz	≤ 0.7 A/≤ 0.5 Hz	≤ 0.7 A/≤ 0.5 Hz
Protected against polarity reversal	yes	yes	yes
Short circuit protected/overload protected	yes/yes	yes/yes	yes/yes
Repeat accuracy R	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range T <sub>a</sub>	-25...+70 °C	-25...+70 °C	-25...+70 °C
Frequency of operating cycles f	≤ 1000 Hz	≤ 1000 Hz	≤ 1000 Hz
Utilization categories	AC 140/DC 13	AC 140/DC 13	AC 140/DC 13
Function indication	yes	yes	yes
Degree of protection per IEC 60529	IP 67	IP 67	IP 67
Insulation class	with protection GND	with protection GND	□
Housing material	stainless steel	stainless steel	stainless steel
Material of sensing face	PA 12	PA 12	PA 12
Connection	connector	connector	cable
No. of wires x conductor cross section			2 x 0.34 mm <sup>2</sup>
Approval	cULus	cULus	cULus
Recommended connector	BKS-S 5-AC	BKS-S 21/BKS-S 22	

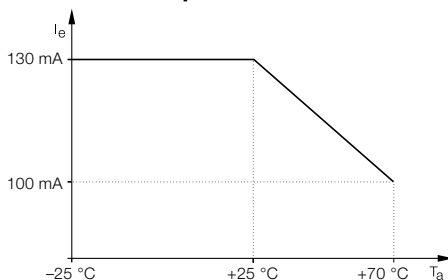
⑮ Connection diagrams see page 1.0.12

Please add the cable length to the ordering code for sensors with **cable!**

03, 05 = PVC, length 3 m or 5 m  
PU-03, PU-05 = PUR, length 3 m or 5 m

Also available with metric M12x1 connector thread.  
Ordering code:  
BES 516-207-S 27-E  
BES 516-208-S 27-E

## Current reduction as a function of ambient temperature

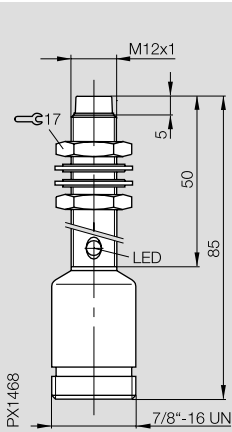


**M12x1**

non-flush

**4 mm**

0...3.2 mm



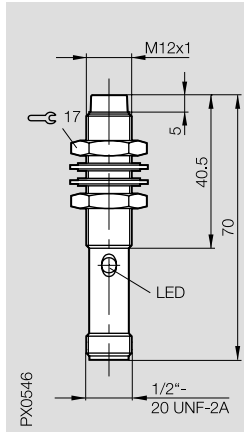
BES 516-209-S 5-E

**M12x1**

non-flush

**4 mm**

0...3.2 mm



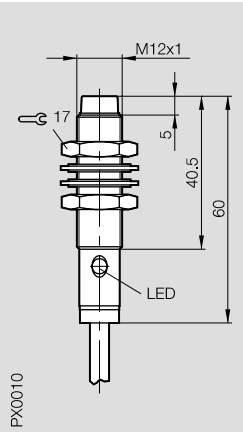
BES 516-209-S 21-E  
BES 516-210-S 21-E

**M12x1**

non-flush

**4 mm**

0...3.2 mm



BES 516-209-B0-E  
BES 516-210-B0-E

**1.4**

110 V AC  
20...250 V AC/DC  
≤ 11 V; ≤ 7.5 V dyn.  
250 V AC  
130 mA  
5 mA  
≤ 1.7 mA at 110 V AC  
≤ 0.7 A/≤ 0.5 Hz  
yes  
yes/yes

110 V AC  
20...250 V AC/DC  
≤ 11 V; ≤ 7.5 V dyn.  
250 V AC  
130 mA  
5 mA  
≤ 1.7 mA at 110 V AC  
≤ 0.7 A/≤ 0.5 Hz  
yes  
yes/yes

110 V AC  
20...250 V AC/DC  
≤ 11 V; ≤ 7.5 V dyn.  
250 V AC  
130 mA  
5 mA  
≤ 1.7 mA at 110 V AC  
≤ 0.7 A/≤ 0.5 Hz  
yes  
yes/yes

≤ 5 %  
-25...+70 °C  
≤ 600 Hz  
AC 140/DC 13  
yes

≤ 5 %  
-25...+70 °C  
≤ 600 Hz  
AC 140/DC 13  
yes

≤ 5 %  
-25...+70 °C  
≤ 600 Hz  
AC 140/DC 13  
yes

IP 67  
with protection GND  
stainless steel  
PA 12  
connector

IP 67  
with protection GND  
stainless steel  
PA 12  
connector

IP 67  
□  
stainless steel  
PA 12  
cable

cULus  
BKS-S 5-AC

cULus  
BKS-S 21/BKS-S 22

2 × 0.34 mm<sup>2</sup>  
cULus

Also available with  
metric M12x1  
connector thread.  
Ordering code:  
BES 516-209-S 27-E  
BES 516-210-S 27-E



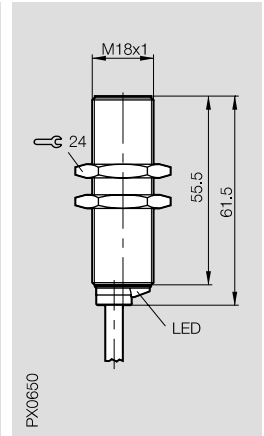
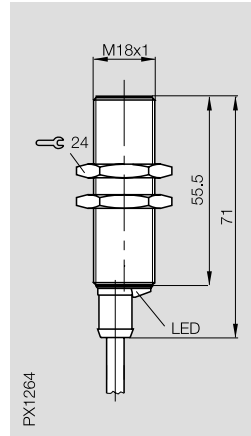
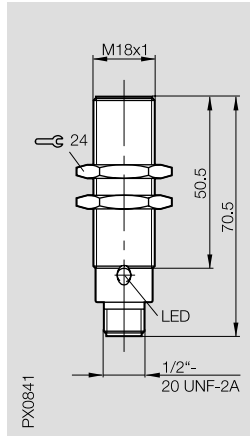
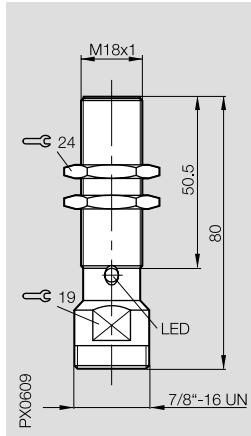
**6**

Connectors,  
clamps ...  
page 6.2 ...

# Inductive Sensors

AC/DC 2-Wire  
M18  
 $s_n$  5 mm

Housing size	<b>M18x1</b>	<b>M18x1</b>	<b>M18x1</b>	<b>M18x1</b>
Mounting	flush	flush	flush	flush
Rated operating distance $s_n$	<b>5 mm</b>	<b>5 mm</b>	<b>5 mm</b>	<b>5 mm</b>
Assured operating distance $s_a$	0...4.1 mm	0...4.1 mm	0...4.1 mm	0...4.1 mm



Normally-open ⑮ ⑰	BES 516-211-E5-E-S 5	BES 516-211-E5-E-S 21	BES 516-211-E6-E-	BES 516-211-E4-E-
Normally-closed ⑯ ⑱	BES 516-212-E5-E-S 5	BES 516-212-E5-E-S 21		BES 516-212-E4-E-
Rated operational voltage $U_e$	110 V AC	110 V AC	110 V AC	110 V AC
Supply voltage $U_B$	20...250 V AC/DC	20...250 V AC/DC	20...250 V AC/DC	20...250 V AC/DC
Voltage drop $U_d$ at $I_e$	$\leq 11$ V; $\leq 7.5$ V dyn.	$\leq 11$ V; $\leq 7.5$ V dyn.	$\leq 11$ V; $\leq 7.5$ V dyn.	$\leq 11$ V; $\leq 7.5$ V dyn.
Rated insulation voltage $U_i$	250 V AC	250 V AC	250 V AC	250 V AC
Rated operational current $I_e$	250 mA	250 mA	250 mA	250 mA
Minimum operational current $I_m$	5 mA	5 mA	5 mA	5 mA
Off-state current $I_r$	$\leq 1.7$ mA at 110 V AC	$\leq 1.7$ mA at 110 V AC	$\leq 1.7$ mA at 110 V AC	$\leq 1.7$ mA at 110 V AC
Inrush current $I_k$ $t \leq 20$ ms	$\leq 1.5$ A/ $\leq 1$ Hz	$\leq 1.5$ A/ $\leq 1$ Hz	$\leq 1.5$ A/ $\leq 1$ Hz	$\leq 1.5$ A/ $\leq 1$ Hz
Protected against polarity reversal	yes	yes	yes	yes
Short circuit protected/overload protected	yes/yes	yes/yes	yes/yes	yes/yes
Repeat accuracy R	$\leq 5$ %	$\leq 5$ %	$\leq 5$ %	$\leq 5$ %
Ambient temperature range $T_a$	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Frequency of operating cycles f	$\leq 400$ Hz	$\leq 400$ Hz	$\leq 400$ Hz	$\leq 250$ Hz
Utilization categories	AC 140/DC 13	AC 140/DC 13	AC 140/DC 13	AC 140/DC 13
Function indication	yes	yes	yes	yes
Degree of protection per IEC 60529	IP 67	IP 67	IP 67	IP 67
Insulation class	with protection GND	with protection GND	□	□
Housing material	CuZn nickel plated	CuZn nickel plated	CuZn nickel plated	CuZn nickel plated
Material of sensing face	PA 12	PA 12	PA 12	PA 12
Connection	connector	connector	cable	cable
No. of wires x conductor cross section			2 x 0.34 mm <sup>2</sup>	2 x 0.34 mm <sup>2</sup>
Approval	cULus	cULus	cULus	cULus
Recommended connector	BKS-S 5-AC	BKS-S 21/BKS-S 22		

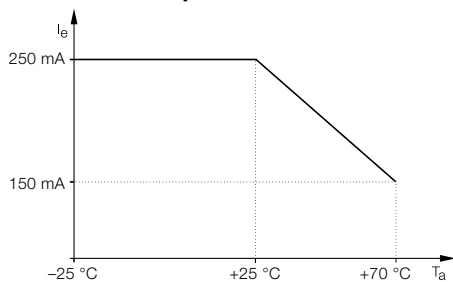
⑱ Connection diagrams see page 1.0.12

Please add the cable length to the ordering code for sensors with **cable!**

03, 05 = PVC, length 3 m or 5 m  
PU-03, PU-05 = PUR, length 3 m or 5 m

Also available with metric M12x1 connector thread.  
Ordering code:  
BES 516-211-E5-E-S 27  
BES 516-212-E5-E-S 27

## Current reduction as a function of ambient temperature



**M18x1**

non-flush

**8 mm**

0...6.5 mm

**M18x1**

non-flush

**8 mm**

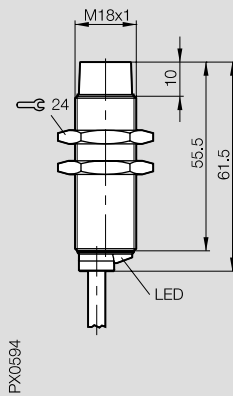
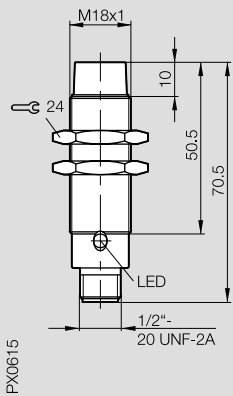
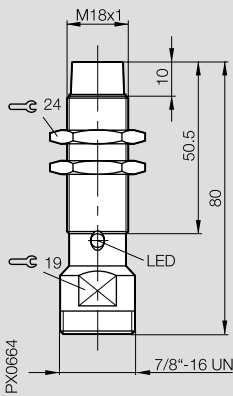
0...6.5 mm

**M18x1**

non-flush

**8 mm**

0...6.5 mm



BES 516-213-E5-E-S 5  
BES 516-214-E5-E-S 5

BES 516-213-E5-E-S 21  
BES 516-214-E5-E-S 21

BES 516-213-E4-E-S  
BES 516-214-E4-E-S

110 V AC

20...250 V AC/DC  
≤ 11 V; ≤ 7.5 V dyn.

250 V AC

250 mA

5 mA

≤ 1.7 mA at 110 V AC

≤ 1.5 A/≤ 1 Hz

yes

yes/yes

≤ 5 %

-25...+70 °C

≤ 250 Hz

AC 140/DC 13

yes

IP 67

with protection GND

CuZn nickel plated

PA 12

connector

cULus

BKS-S 5-AC

110 V AC

20...250 V AC/DC  
≤ 11 V; ≤ 7.5 V dyn.

250 V AC

250 mA

5 mA

≤ 1.7 mA at 110 V AC

≤ 1.5 A/≤ 1 Hz

yes

yes/yes

≤ 5 %

-25...+70 °C

≤ 250 Hz

AC 140/DC 13

yes

IP 67

with protection GND

CuZn nickel plated

PA 12

connector

cULus

BKS-S 21/BKS-S 22

Also available with

metric M12x1

connector thread.

Ordering code:

BES 516-213-E5-E-S 27

BES 516-214-E5-E-S 27

110 V AC

20...250 V AC/DC  
≤ 11 V; ≤ 7.5 V dyn.

250 V AC

250 mA

5 mA

≤ 1.7 mA at 110 V AC

≤ 1.5 A/≤ 1 Hz

yes

yes/yes

≤ 5 %

-25...+70 °C

≤ 250 Hz

AC 140/DC 13

yes

IP 67

with protection GND

CuZn nickel plated

PA 12

cable

2 × 0.34 mm<sup>2</sup>

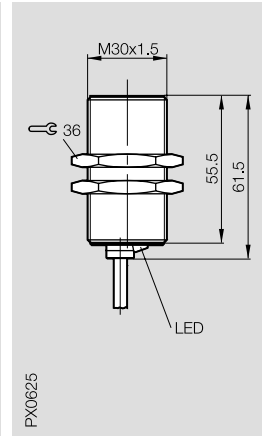
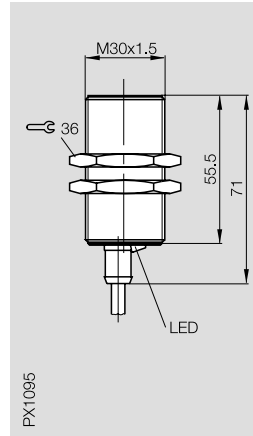
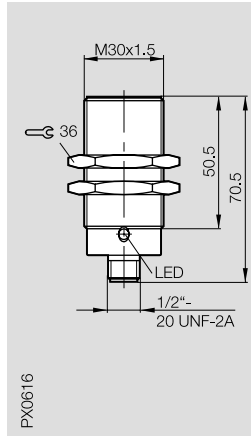
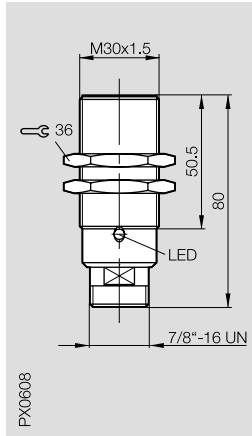
cULus



# Inductive Sensors

AC/DC 2-Wire  
M30  
s<sub>n</sub> 10 mm

Housing size	<b>M30x1.5</b>	<b>M30x1.5</b>	<b>M30x1.5</b>	<b>M30x1.5</b>
Mounting	flush	flush	flush	flush
Rated operating distance s <sub>n</sub>	<b>10 mm</b>	<b>10 mm</b>	<b>10 mm</b>	<b>10 mm</b>
Assured operating distance s <sub>a</sub>	0...8.1 mm	0...8.1 mm	0...8.1 mm	0...8.1 mm



Normally-open ⑮ ⑰	BES 516-215-E5-E-S 5	BES 516-215-E5-E-S 21	BES 516-215-E6-E-	BES 516-215-E4-E-
Normally-closed ⑯ ⑱	BES 516-216-E5-E-S 5	BES 516-216-E5-E-S 21		BES 516-216-E4-E-
Rated operational voltage U <sub>e</sub>	110 V AC	110 V AC	110 V AC	110 V AC
Supply voltage U <sub>B</sub>	20...250 V AC/DC	20...250 V AC/DC	20...250 V AC/DC	20...250 V AC/DC
Voltage drop U <sub>d</sub> at I <sub>e</sub>	≤ 11 V; ≤ 7.5 V dyn.	≤ 11 V; ≤ 7.5 V dyn.	≤ 11 V; ≤ 7.5 V dyn.	≤ 11 V; ≤ 7.5 V dyn.
Rated insulation voltage U <sub>i</sub>	250 V AC	250 V AC	250 V AC	250 V AC
Rated operational current I <sub>e</sub>	250 mA	250 mA	250 mA	250 mA
Minimum operational current I <sub>m</sub>	5 mA	5 mA	5 mA	5 mA
Off-state current I <sub>r</sub>	≤ 1.7 mA at 110 V AC	≤ 1.7 mA at 110 V AC	≤ 1.7 mA at 110 V AC	≤ 1.7 mA at 110 V AC
Inrush current I <sub>k</sub> t ≤ 20 ms	≤ 3 A/≤ 1 Hz	≤ 3 A/≤ 1 Hz	≤ 3 A/≤ 1 Hz	≤ 3 A/≤ 1 Hz
Protected against polarity reversal	yes	yes	yes	yes
Short circuit protected/overload protected	yes/yes	yes/yes	yes/yes	yes/yes
Repeat accuracy R	≤ 10 %	≤ 10 %	≤ 10 %	≤ 10 %
Ambient temperature range T <sub>a</sub>	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
Frequency of operating cycles f	≤ 150 Hz	≤ 150 Hz	≤ 150 Hz	≤ 150 Hz
Utilization categories	AC 140/DC 13	AC 140/DC 13	AC 140/DC 13	AC 140/DC 13
Function indication	yes	yes	yes	yes
Degree of protection per IEC 60529	IP 67	IP 67	IP 67	IP 67
Insulation class	with protection GND	with protection GND	□	□
Housing material	CuZn nickel plated	CuZn nickel plated	CuZn nickel plated	CuZn nickel plated
Material of sensing face	PA 12	PA 12	PA 12	PA 12
Connection	connector	connector	cable	cable
No. of wires x conductor cross section			2 x 0.34 mm <sup>2</sup>	2 x 0.34 mm <sup>2</sup>
Approval	cULus	cULus	cULus	cULus
Recommended connector	BKS-S 5-AC	BKS-S 21/BKS-S 22		

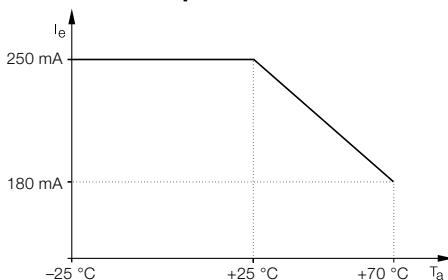
⑱ Connection diagrams see page 1.0.12

Please add the cable length to the ordering code for sensors with **cable!**

03, 05 = PVC, length 3 m or 5 m  
PU-03, PU-05 = PUR, length 3 m or 5 m

Also available with metric M12x1 connector thread.  
Ordering code:  
BES 516-215-E5-E-S 27  
BES 516-216-E5-E-S 27

## Current reduction as a function of ambient temperature

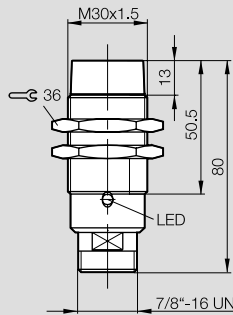


**M30×1.5**

non-flush

**15 mm**

0...12.2 mm



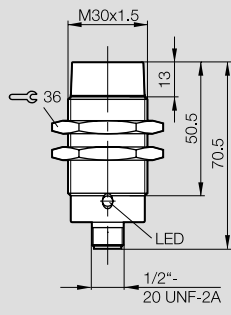
PX0729

**M30×1.5**

non-flush

**15 mm**

0...12.2 mm



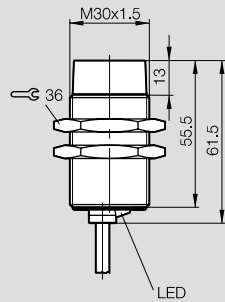
PX0617

**M30×1,5**

non-flush

**15 mm**

0...12.2 mm



PX0613a

BES 516-217-E5-E-S 5  
BES 516-218-E5-E-S 5

BES 516-217-E5-E-S 21  
BES 516-218-E5-E-S 21

BES 516-217-E4-E-  
BES 516-218-E4-E-

110 V AC

20...250 V AC/DC  
≤ 11 V; ≤ 7.5 V dyn.

250 V AC

250 mA

5 mA

≤ 1.7 mA at 110 V AC

≤ 3 A/≤ 1 Hz

yes

yes/yes

≤ 10 %

-25...+70 °C

≤ 100 Hz

AC 140/DC 13

yes

IP 67

with protection GND

CuZn nickel plated

PA 12

connector

cULus

BKS-S 5-AC

110 V AC

20...250 V AC/DC  
≤ 11 V; ≤ 7.5 V dyn.

250 V AC

250 mA

5 mA

≤ 1.7 mA at 110 V AC

≤ 3 A/≤ 1 Hz

yes

yes/yes

≤ 10 %

-25...+70 °C

≤ 100 Hz

AC 140/DC 13

yes

IP 67

with protection GND

CuZn nickel plated

PA 12

connector

cULus

BKS-S 21/BKS-S 22

Also available with

metric M12×1

connector thread.

Ordering code:

BES 516-217-E5-E-S 27

BES 516-218-E5-E-S 27

110 V AC

20...250 V AC/DC  
≤ 11 V; ≤ 7.5 V dyn.

250 V AC

250 mA

5 mA

≤ 1.7 mA at 110 V AC

≤ 3 A/≤ 1 Hz

yes

yes/yes

≤ 10 %

-25...+70 °C

≤ 100 Hz

AC 140/DC 13

yes

IP 67

□

CuZn nickel plated

PA 12

cable

2 × 0.34 mm<sup>2</sup>

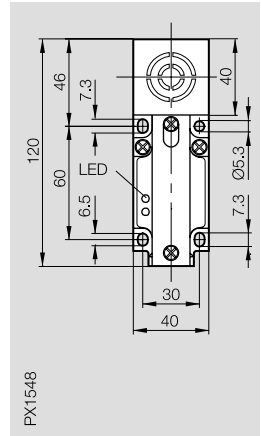
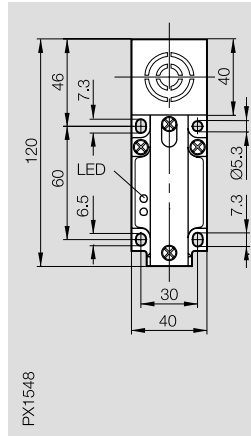
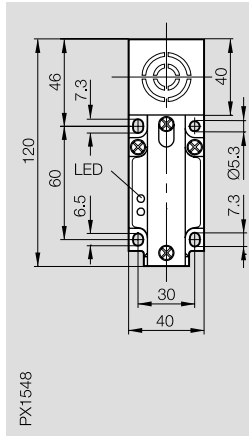
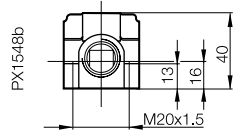
cULus



# Inductive Sensors

AC/DC 2-Wire  
 Quadraform Housings  
 $s_n$  15 mm, 20/25 mm, 30 mm

Housing size	<b>40x40x120 Unisensor</b>	<b>40x40x120 Unisensor</b>	<b>40x40x120 Unisensor</b>
Mounting	flush	non-flush	non-flush
Rated operating distance $s_n$	<b>15 mm</b>	<b>mount. dependent 20/25 mm</b>	<b>30 mm</b>
Assured operating distance $s_a$	0...12.2 mm	0...16.2 mm, 0...20.3 mm	0...24.3 mm



## Programmable Unisensor

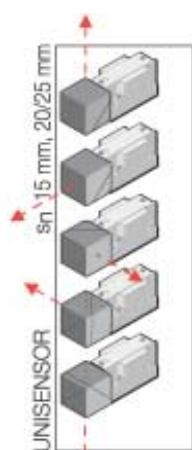
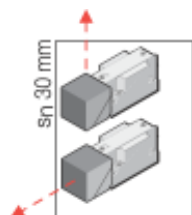
Unisensors can be configured for normally-open or normally-closed function using a reversible contact.

## Unisensors

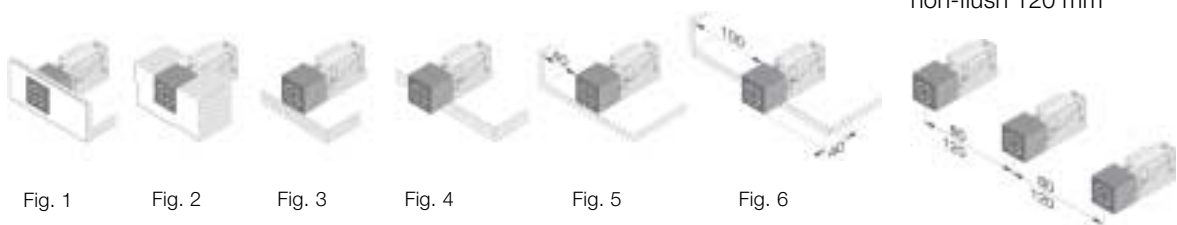
are also available with a metal base and 1/2"-NPT thread. For this replace the **M** with a **U** in the ordering code.

Normally-open/normally-closed programmable <sup>Ⓢ</sup> Ⓢ	BES 517-223-M3-E	BES 517-223-M4-E	BES 517-223-M5-E
Rated operational voltage $U_o$	110 V AC	110 V AC	110 V AC
Supply voltage $U_B$	20...250 V AC/DC	20...250 V AC/DC	20...250 V AC/DC
Voltage drop $U_d$ at $I_o$	$\leq 11.5$ V; $\leq 7.5$ V dyn.	$\leq 11.5$ V; $\leq 7.5$ V dyn.	$\leq 11.5$ V; $\leq 7.5$ V dyn.
Rated insulation voltage $U_i$	250 V AC	250 V AC	250 V AC
Rated operational current $I_o$	250 mA	250 mA	250 mA
Minimum operational current $I_m$	5 mA	5 mA	5 mA
Off-state current $I_r$	$\leq 1.7$ mA at 110 V AC	$\leq 1.7$ mA at 110 V AC	$\leq 1.7$ mA at 110 V AC
Inrush current $I_k$ $t \leq 20$ ms	$\leq 1$ A/ $\leq 1$ Hz	$\leq 1$ A/ $\leq 1$ Hz	$\leq 1$ A/ $\leq 1$ Hz
Protected against polarity reversal	yes	yes	yes
Short circuit protected/overload protected	yes/yes	yes/yes	yes/yes
Repeat accuracy R	$\leq 5$ %	$\leq 5$ %	$\leq 5$ %
Ambient temperature range $T_a$	-25...+70 °C	-25...+70 °C	-25...+70 °C
Frequency of operating cycles f	$\leq 100$ Hz	$\leq 100$ Hz	$\leq 100$ Hz
Utilization categories	AC 140/DC 13	AC 140/DC 13	AC 140/DC 13
Function indication	yes	yes	yes
Degree of protection per IEC 60529	IP 67	IP 67	IP 67
Insulation class	□	□	□
Housing material	PBT	PBT	PBT
Material of sensing face	PBT	PBT	PBT
Connection	screw terminals	screw terminals	screw terminals
Max. cross section for connection	$\leq 2.5$ mm <sup>2</sup>	$\leq 2.5$ mm <sup>2</sup>	$\leq 2.5$ mm <sup>2</sup>
Approval	cULus	cULus	cULus
Mounting variations allowed	Figs. 1 to 6	$s_n$ 20 mm Figs. 4 and 6 $s_n$ 25 mm Figs. 3 and 5	Figs. 4 and 6

<sup>Ⓢ</sup> Connection diagrams see page 1.0.12



## Mounting variations

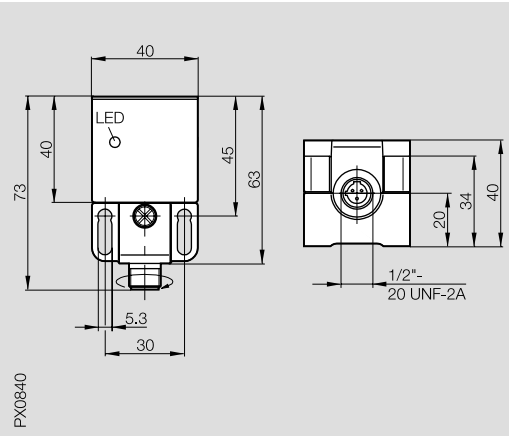


**Row mounting**  
 flush 80 mm  
 non-flush 120 mm

## Inductive Sensors

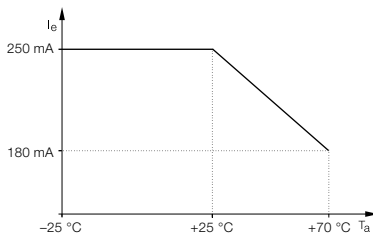
AC/DC 2-Wire  
Quadraform Housings  
 $s_n$  15 mm, 20/25 mm

Housing size	<b>40×40×73</b> Unicomcompact	<b>40×40×73</b> Unicomcompact
Mounting	flush	non-flush
Rated operating distance $s_n$	<b>15 mm</b>	<b>mount. dependent 20/25 mm</b>
Assured operating distance $s_a$	0...12.2 mm	0...16.2/0...20.3 mm



1.4

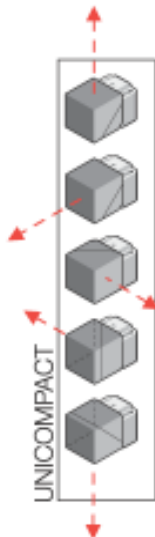
### Current reduction as a function of ambient temperature for Unisensor and Unicomcompact



**Unicomcompact sensors** are also available with a metric M12×1 connector thread. For this replace **S21** with **S27** in the ordering code.

Normally-open	Ⓜ	BES Q40KEU-USU15B-S21G	BES Q40KEU-USU25F-S21G
Normally-closed	Ⓝ	BES Q40KEU-UOU15B-S21G	BES Q40KEU-UOU25F-S21G
Rated operational voltage $U_e$		110 V AC	110 V AC
Supply voltage $U_B$		20...250 V AC/DC	20...250 V AC/DC
Voltage drop $U_d$ at $I_e$		$\leq 11$ V; $\leq 7.5$ V dyn.	$\leq 11$ V; $\leq 7.5$ V dyn.
Rated insulation voltage $U_i$		250 V AC	250 V AC
Rated operational current $I_e$		250 mA	250 mA
Minimum operational current $I_m$		5 mA	5 mA
Off-state current $I_r$		$\leq 1.7$ mA at 110 V AC	$\leq 1.7$ mA at 110 V AC
Inrush current $I_k$ $t \leq 20$ ms		$\leq 2$ A/ $\leq 1$ Hz	$\leq 2$ A/ $\leq 1$ Hz
Protected against polarity reversal		yes	yes
Short circuit protected/overload protected		yes/yes	yes/yes
Repeat accuracy R		$\leq 5$ %	$\leq 5$ %
Ambient temperature range $T_a$		-25...+70 °C	-25...+70 °C
Frequency of operating cycles f		100 Hz	100 Hz
Utilization categories		AC 140/DC 13	AC 140/DC 13
Function indication		yes	yes
Degree of protection per IEC 60529		IP 67	IP 67
Insulation class		with protection GND	with protection GND
Housing material		PBT/GD-ZnAl	PBT/GD-ZnAl
Material of sensing face		PBT	PBT
Connection		connector	connector
Recommended connector		BKS-S 21/BKS-S 22	BKS-S 21/BKS-S 22
Mounting variations allowed		Figs. 1 to 5	$s_n$ 20 mm Fig. 4 $s_n$ 25 mm Figs. 3 and 5

Ⓜ Connection diagrams see page 1.0.12



### Mounting variations



Fig. 1

Fig. 2

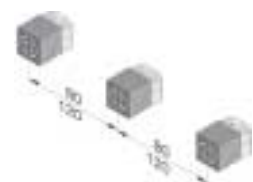
Fig. 3

Fig. 4

Fig. 5

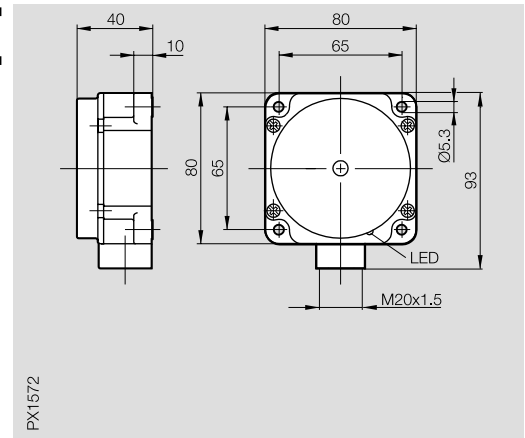
### Row mounting

flush 80 mm  
non-flush 120 mm



6

Connectors, mounting plate ... page 6.2 ...



### Programmable Maxisensor

Maxisensors can be configured for normally-open or normally-closed function using a reversible contact.

**Maxisensors** are also available with a metal base and 1/2"-NPT thread. For this replace the **M** with a **U** in the ordering code.

Housing size	<b>80×80×40</b> Maxisensor	<b>80×80×40</b> Maxisensor
Mounting	non-flush	non-flush
Rated operating distance s <sub>n</sub>	<b>40 mm</b>	<b>50 mm</b>
Assured operating distance s <sub>a</sub>	0...32.4 mm	0...40.5 mm

Normally-open/normally-closed programmable ⑤⑥	BES 517-224-M4-E	BES 517-224-M5-E
Rated operational voltage U <sub>e</sub>	110 V AC	110 V AC
Supply voltage U <sub>B</sub>	20...250 V AC/DC	20...250 V AC/DC
Voltage drop U <sub>d</sub> at I <sub>e</sub>	≤ 11 V; ≤ 7.5 V dyn.	≤ 11 V; ≤ 7.5 V dyn.
Rated insulation voltage U <sub>i</sub>	250 V AC	250 V AC
Rated operational current I <sub>e</sub>	250 mA	250 mA
Minimum operational current I <sub>m</sub>	5 mA	5 mA
Off-state current I <sub>r</sub>	≤ 1.7 mA at 110 V AC	≤ 1.7 mA at 110 V AC
Inrush current I <sub>k</sub> t ≤ 20 ms	≤ 1 A/≤ 1 Hz	≤ 1 A/≤ 1 Hz
Protected against polarity reversal	yes	yes
Short circuit protected/overload protected	yes/yes	yes/yes
Repeat accuracy R	≤ 5 %	≤ 5 %
Ambient temperature range T <sub>a</sub>	-25...+70 °C	-25...+70 °C
Frequency of operating cycles f	≤ 10 Hz	≤ 10 Hz
Utilization categories	AC 140/DC 13	AC 140/DC 13
Function indication	yes	yes
Degree of protection per IEC 60529	IP 67	IP 67
Insulation class	□	□
Housing material	PBT	PBT
Material of sensing face	PBT	PBT
Connection	screw terminals	screw terminals
Max. cross section for connection	≤ 2.5 mm <sup>2</sup>	≤ 2.5 mm <sup>2</sup>
Approval	cULus	cULus
Mounting variations allowed	Figs. 1 and 2	Fig. 2

⑤ Connection diagrams see page 1.0.12

### Mounting in non-ferrous metals



Fig. 1

### Mounting in steel/non-ferrous metals



Fig. 2