

Inductive Sensors

DC 3-/4-wire
Block style housings
 s_n 40 mm, 50 mm

80×84×40 mm

Housing size	80×84×40 mm Maxisensor	80×84×40 mm Maxisensor
Mounting (see notes starting p. 1.0.11)	flush	non-flush
Rated operating distance s_n	40 mm	50 mm
Assured operating distance s_a	0...32.4 mm	0...40.5 mm

Non-flush mount

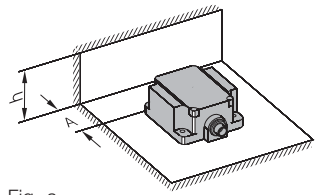


Fig. a

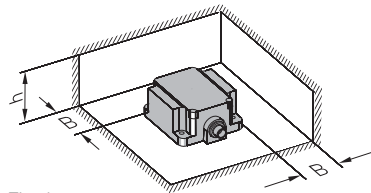


Fig. b

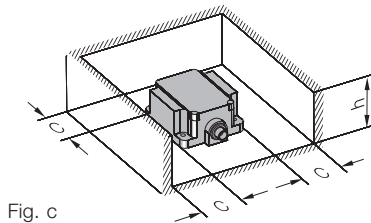


Fig. c

Minimum distances with steel

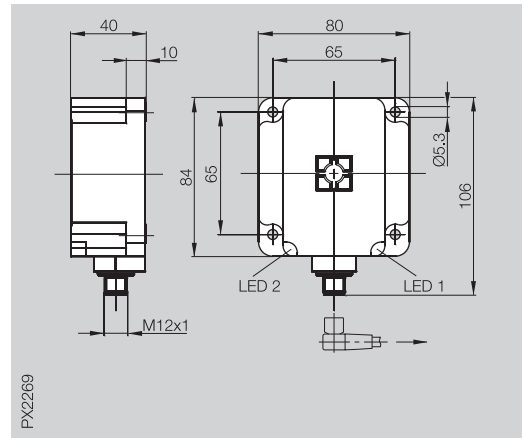
h	A	B	C
40	70	80	90
70	80	90	100

Minimum distances with aluminum

h	A	B	C
40	0	10	10
70	10	20	20

Dimensions in mm

The change in effective operating distance s_r for these installation dimensions is $\leq 10\%$.



PNP	NO	①	BES Q80KA-PSH40B-S04Q	BES Q80KA-PSH50F-S04Q
	complementary	③	BES Q80KA-PAH40B-S04Q	BES Q80KA-PAH50F-S04Q
NPN	complementary	⑥		
Supply voltage U_B	10...55 V DC		10...55 V DC	
Voltage drop U_d at I_e	≤ 2.5 V		≤ 2.5 V	
Rated insulation voltage U_i	250 V AC		250 V AC	
Rated operational current I_e	200 mA		200 mA	
No-load supply current I_0 max.	≤ 15 mA		≤ 15 mA	
Polarity reversal protected	yes		yes	
Short circuit protected	yes		yes	
Repeat accuracy R	$\leq 5\%$		$\leq 5\%$	
Ambient temperature range T_a	$-25...+70$ °C		$-25...+70$ °C	
Switching frequency f	50 Hz		50 Hz	
Utilization category	DC 13		DC 13	
Function/Supply voltage indicator	yes/yes		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	Connector		Connector	
max. conductor cross-section				
Recommended connector	BKS-_ 19/BKS-_ 20		BKS-_ 19/BKS-_ 20	
possible mounting options	Fig. d		Fig. a to c	

Flush mount

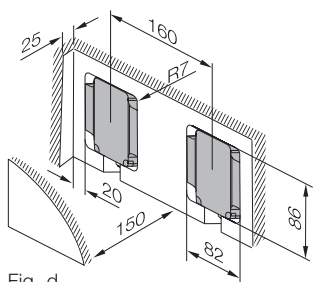


Fig. d



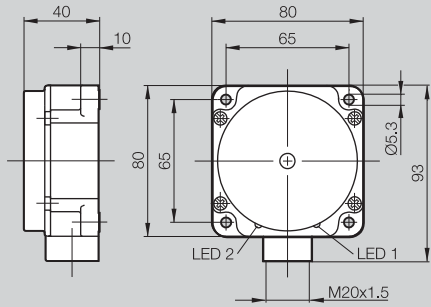
80×80×40 mm Inductive Sensors

DC 4-wire
Block style housings
s_n 40 mm, 50 mm

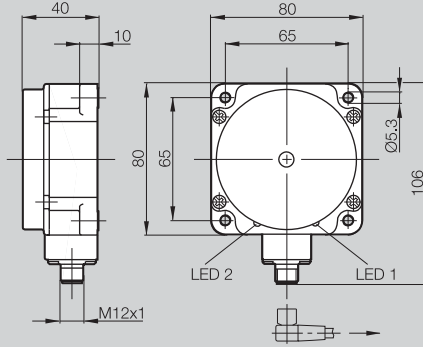
80×80×40 mm Maxisensor
flush
40 mm
0...32.4 mm

80×80×40 mm Maxisensor
non-flush
50 mm
0...40.5 mm

80×80×40 mm Maxisensor
non-flush
50 mm
0...40.5 mm



PX1573



PX0656a

1.1

BES 517-139-M4-H

BES 517-139-M5-H

BES 517-140-M5-H

BES 517-140-M5-H-S4

10...55 V DC

10...55 V DC

10...55 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

≤ 15 mA

≤ 15 mA

≤ 15 mA

yes

yes

yes

yes

yes

yes

≤ 5 %

≤ 5 %

≤ 5 %

-25...+70 °C

-25...+70 °C

-25...+70 °C

50 Hz

100 Hz

100 Hz

DC 13

DC 13

DC 13

yes/yes

yes/yes

yes/yes

IP 67

IP 67

IP 67

PBT

PBT

PBT

PBT

PBT

PBT

Screw terminals
up to 2.5 mm²

Screw terminals
to 2.5 mm²

Connector

Fig. 1 to 4

Fig. 4

BKS- 19/BKS- 20

Fig. 4

Mounting in steel

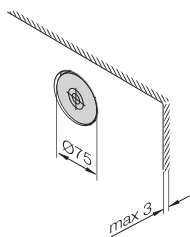


Fig. 1

Mounting in non-ferrous metals

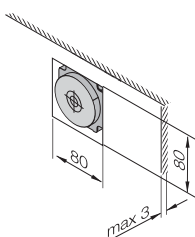


Fig. 2

Mounting in steel/ non-ferrous metals

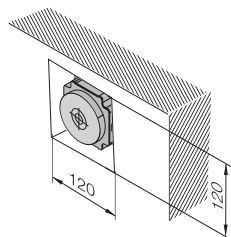


Fig. 3

Mounting on steel/ non-ferrous metals

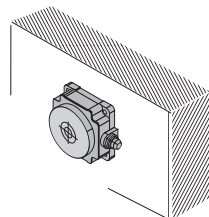


Fig. 4



5

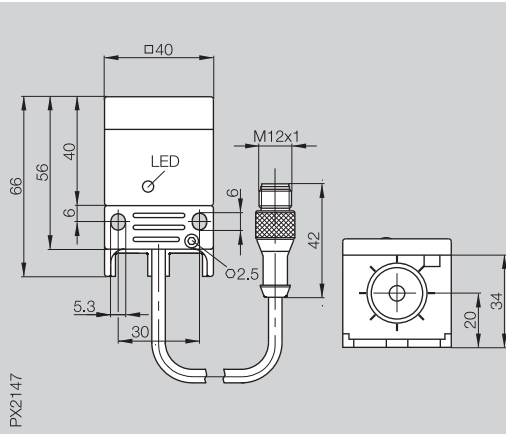
Connectors
page 5.2 ...

40×40×66 mm, 80×92×40 mm

Inductive Sensors

DC 2-wire
Block style housings
s_n 15 mm, 50 mm

40×40×66 mm Unicomcompact
flush
15 mm
0...12.2 mm



BES Q40KFU-GSH15B-EP00,8-GS04
BES Q40KFU-GOH15B-EP00,8-GS04

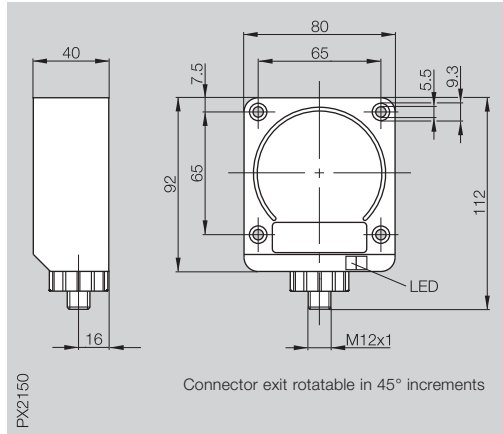
10...55 V DC polarized
≤ 4.6 V
250 V AC
100 mA
2 mA
≤ 800 μA
yes
yes

≤ 10 %
-25...+70 °C
150 Hz
DC 13
yes

IP 67
□
PBT
PEI
0.8 m PUR cable with connector

BKS-S 19-13/S 19-12

80×92×40 mm Maxisensor
flush
50 mm
0...40.5 mm



BES Q80KA-GSH50B-S04Q

10...55 V DC polarized
≤ 4.6 V
250 V AC
400 mA
4 mA
≤ 600 μA
yes
yes

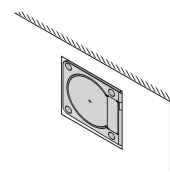
≤ 10 %
-25...+50 °C
90 Hz
DC 13
yes

IP 67
□
PPE
PPE
Connector

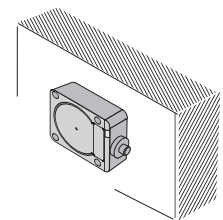
BKS-S 19-13/-S 20-13

Permissible mounting variations for Maxisensor

Mounting in steel/
non-ferrous metals



Mounting on steel/
non-ferrous metals



For non-flush
mounting the
switching distance
is reduced by
max. 5.5 mm.



1.2

5

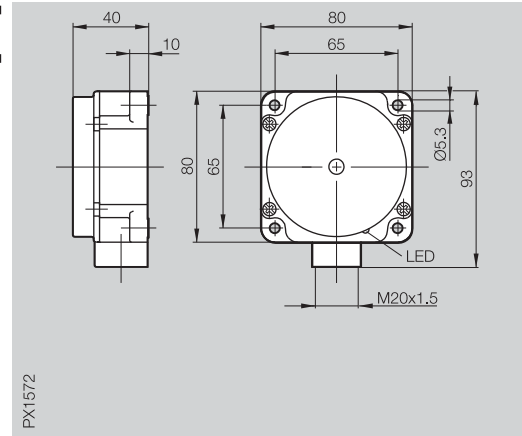
Connectors,
Holders ...
Page 5.2 ...

80×80×40 mm

Inductive Sensors

AC/DC 2-wire
Block style housings
s_n 40 mm, 50 mm

Housing size	80×80×40 mm Maxisensor	80×80×40 mm Maxisensor
Mounting (see notes starting p. 1.0.11)	non-flush	non-flush
Rated operating distance s _n	40 mm	50 mm
Assured operating distance s _a	0...32.4 mm	0...40.5 mm



Maxisensor programmable

Maxisensors can be set for normally open and normally closed function. A wire contact is used to change the setting.

Mounting in non-ferrous metals

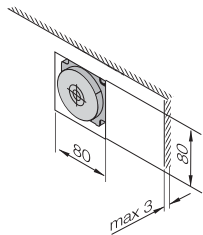


Fig. 1

Mounting in steel/non-ferrous metals

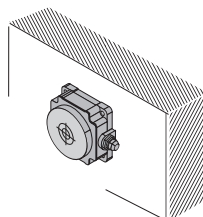


Fig. 2

NO/NC programmable	Ⓜ	BES 517-224-M4-E	BES 517-224-M5-E
Rated operational voltage U _o		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 _o		≤ 11 V; ≤ 7.5 V dyn.	≤ 11 V; ≤ 7.5 V dyn.
Rated insulation voltage U _i		250 V AC	250 V AC
Rated operational current I _o		250 mA	250 mA
Minimum operating current I _m		5 mA	5 mA
Off-state current I _r		≤ 1.7 mA at 110 V AC	≤ 1.7 mA at 110 V AC
Inrush current I _k t ≤ 20 ms		≤ 1 A/≤ 1 Hz	≤ 1 A/≤ 1 Hz
Polarity reversal protected		yes	yes
Short circuit/overload protected		yes/yes	yes/yes
Repeat accuracy R		≤ 5 %	≤ 5 %
Ambient temperature range T _a		-25...+70 °C	-25...+70 °C
Switching frequency f		≤ 10 Hz	≤ 10 Hz
Utilization category		AC 140/DC 13	AC 140/DC 13
Function indicator		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. wire cross-section		≤ 2.5 mm ²	≤ 2.5 mm ²
Approval		cULus	cULus
possible mounting options		Fig. 1 and 2	Fig. 2

Ⓜ Wiring diagrams see page 1.0.6

1.3

5

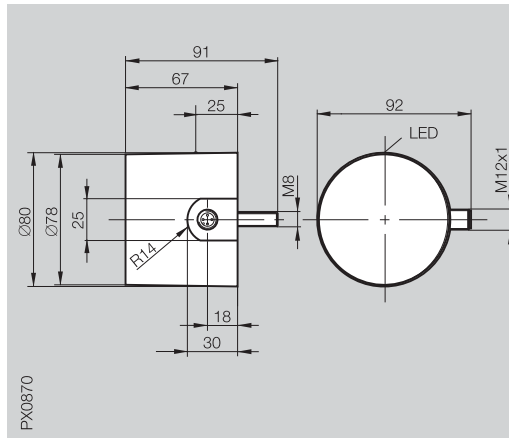
Connectors,
mounting
plate ...
page 5.2 ...



Inductive Sensors

DC 3-wire
 \varnothing 80x67 mm
 s_n 50 mm

Housing size	\varnothing 80x67 mm
Mounting (see notes starting p. 1.0.11)	non-flush
Rated operating distance s_n	50 mm
Assured operating distance s_a	0...40.5 mm



PNP	NO ① complementary ③	BES IKJ-S-050-P-2-S-S4-C
Supply voltage U_B	10...55 V DC	
Voltage drop U_d at I_e	≤ 2 V	
Rated insulation voltage U_i	75 V DC	
Rated operational current I_e	200 mA	
No-load supply current I_0 max.	≤ 10 mA	
Output resistance R_a	Open collector	
Polarity reversal protected	yes	
Short circuit protected	yes	
Repeat accuracy R	≤ 5 %	
Ambient temperature range T_a	-25...+70 °C	
Switching frequency f	100 Hz	
Utilization category	DC 13	
Function indicator	yes	
Degree of protection per IEC 60529	IP 67	
Housing material	Plastic	
Material of sensing face	Plastic	
Connection	Connector	
Recommended connector	BKS- _ 19/BKS- _ 20	

① Wiring diagrams see page 1.0.6

Application

These sensors are used when longer switching distances are required. The IKU style is especially preferred for non-contact sensing of conveyor belts, e.g. in monitoring the width of narrow conveyed material or checking dispensing lines.



extended switching distance

large housing distance

Inductive Sensors

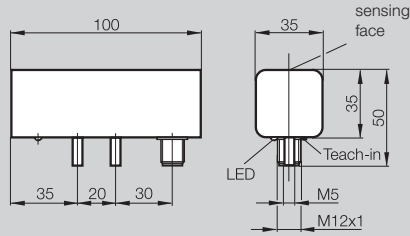
DC 3-/4-wire
Block style housings
s_n 30 mm

35×35×100 mm

non-flush

30 mm (adjustable with teach-in key)

0...24.3 mm



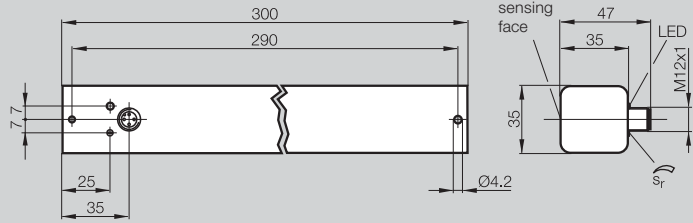
PX2401

35×35×300 mm

non-flush

30 mm (adjustable)

0...24.3 mm



PX0872

BES IKU-011T.28-G-S4

10...30 V DC

≤ 2 V

75 V DC

400 mA

≤ 10 mA

Open collector

yes

yes

≤ 5 %

-25...+70 °C

50 Hz

DC 13

yes

IP 65

Plastic

Plastic

Connector

BKS- _ 19/BKS- _ 20

BES IKU-031.28-S4

10...30 V DC

≤ 2 V

75 V DC

200 mA

≤ 10 mA

Open collector

yes

no

≤ 5 %

-25...+70 °C

50 Hz

DC 13

yes

IP 65

Plastic

Plastic

Connector

BKS- _ 19/BKS- _ 20

1.5

Factor 1
Weld immune
Magnetic field immune
Diagnostic
Steelface
Pressure rated
Pressure rated Ex
Namur Ex
Temperature rated
PROXINOX®
Ring Sensors
Extended switching distance



5

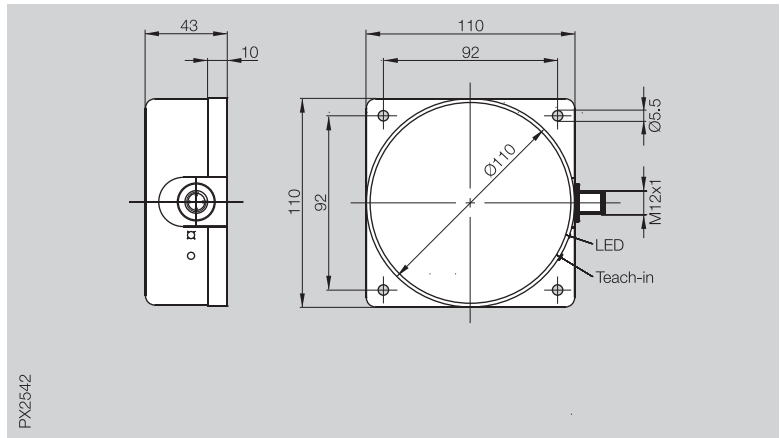
Connectors ...
page 5.2 ...

Inductive Sensors

DC 4-wire
110×110×43 mm
s_n 70 mm

large housing
extended switching distance

Housing size	110×110×43 mm
Mounting (see notes starting p. 1.0.11)	non-flush
Rated operating distance s _n	70 mm (adjustable with teach-in key)
Assured operating distance s _a	0...56.7 mm



PNP	complementary	③	BES IKN-070T.38-G-S4
Supply voltage U _B			10...55 V DC
Voltage drop U _d at I _e			≤ 2 V
Rated insulation voltage U _i			75 V DC
Rated operational current I _e			200 mA
No-load supply current I ₀ max.			≤ 10 mA
Output resistance R _a			Open collector
Polarity reversal protected			yes
Short circuit protected			yes
Repeat accuracy R			≤ 5 %
Ambient temperature range T _a			0...+70 °C
Switching frequency f			50 Hz
Utilization category			DC 13
Function/Supply voltage indicator			yes/yes (1 LED with changing color)
Degree of protection per IEC 60529			IP 67
Housing material			PBT
Material of sensing face			PBT
Connection			Connector
Recommended connector			BKS-_ 19/BKS-_ 20

③ Wiring diagram see page 1.0.6

