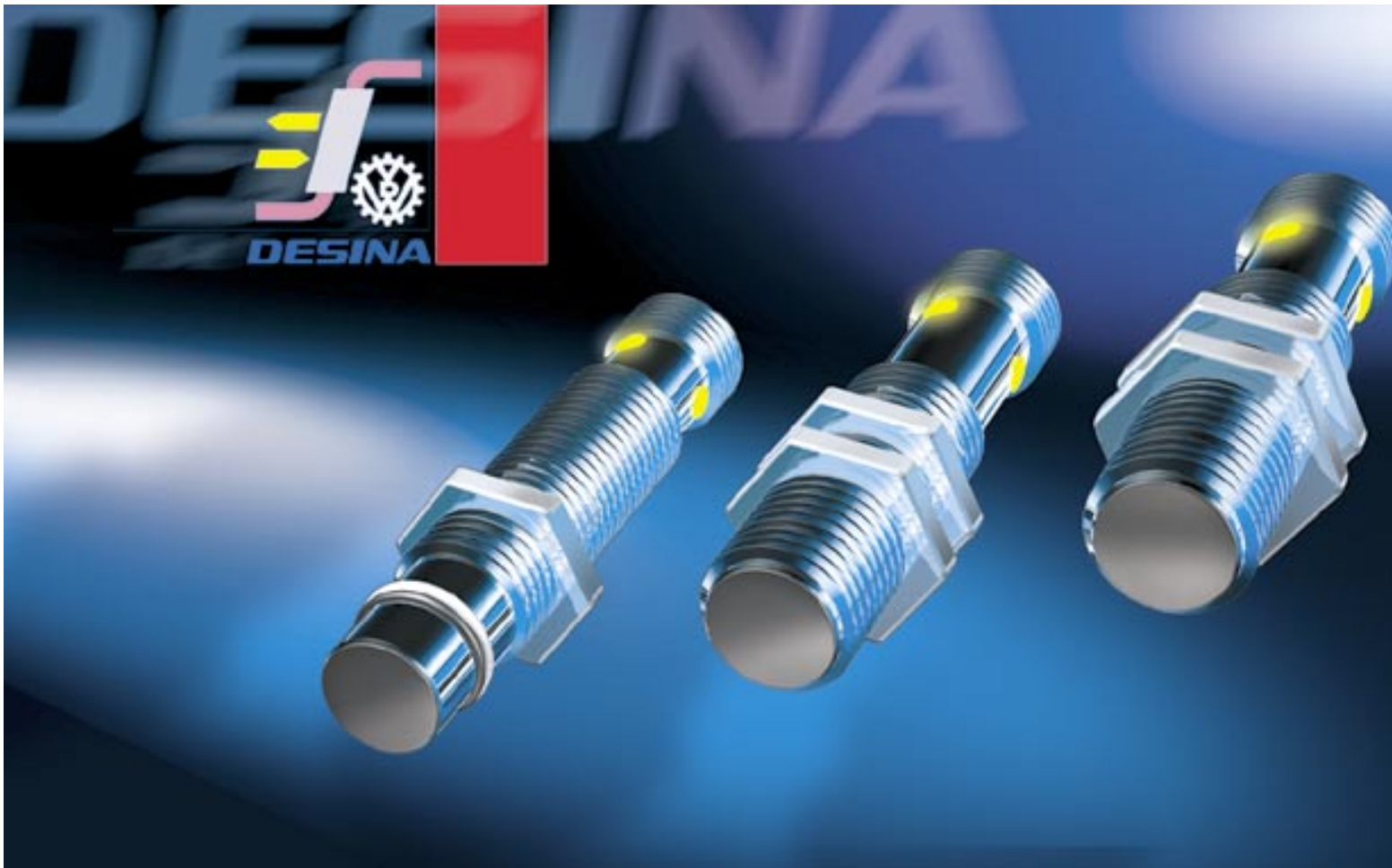




BALLUFF

Desina Sensors
Diagnostics capable –
with special mechanical
and electrical properties



**Desina Sensor
with setup aid and
diagnostic output**

These inductive proximity switches were specially developed to the Desina specification for the harsh environment of a machine tool.

The additional diagnostic output monitors the function of the switch and of the cable. As long as the sensor is functional, a High signal is output.

The optical setup aid ensures optimum working distance. This in turn ensures that the sensor operated reliably over its entire tolerance range. The range from s_n to s_a is indicated by a flashing LED.

Most of the switches have a stainless steel housing and are IP 68. They are extremely resistant to aggressive coolants and lubricants. Some of the sensors are also of the PROXIMAX® design, meaning they have a Duromer encased front section which also protects against hot chips.

Note!

Connectors with integrated LED function display should not be used with function diagnostics switches. This is because the LED is in parallel with the load R_L , thus defeating the cable break monitoring function.

**Inductive sensor
pressure rated up to 500
bar, diagnostics capable
and with setup aid**

The high pressure rated inductive proximity switch BES M12EL-PSC15B-S04G-HM01 is used for sensing the position of the piston in hydraulic cylinders.

Here the active surface of the switch is subjected to high pressure inside the cylinder.

Balluff has selected a special manufacturing technique for making the active surface extremely robust. The coils are encased in a Duromer. The additional diagnostic output monitors the function of the switch and of the cable. As long as the sensor is functional, a High signal is output.

The optical setup aid indicates when the optimum distance between the active surface of the sensors and the piston is reached. This makes installation easier and helps to prevent damage to the sensor.

The **Desina Sensor** can also be connected to an **AS-Interface®** through a user module with static diagnostics BAS S-010-S0-P0-S 4 (page 5.11 in main sensor catalog). Static diagnostics refers to an additional signal that verifies sensor function by the presence of this signal.

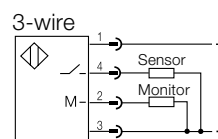
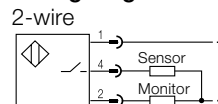


Housing size	
Mounting	
Rated operating distance s_n	
Assured operating distance s_a	



PNP	Normally-open	
Rated operational voltage U_e		
Supply voltage U_B		
Voltage drop U_d at I_e		
Rated insulation voltage U_i		
Rated operational current I_e		
Minimum operational current I_m		
No-load supply current I_0 max.		
Off-state current I_r		
Protected against polarity reversal		
Short circuit protected		
Load capacity		
Repeat accuracy R		
Ambient temperature range T_a		
Frequency of operating cycles f		
Utilization categories		
Function indication		
Degree of protection per IEC 60529		
Insulation class		
Housing material		
Material of sensing face		
Connection		
Recommended connector		
O-ring/replacement part number		
Support ring/replacement part number		
Pressure rated up/High pressure rated up to		

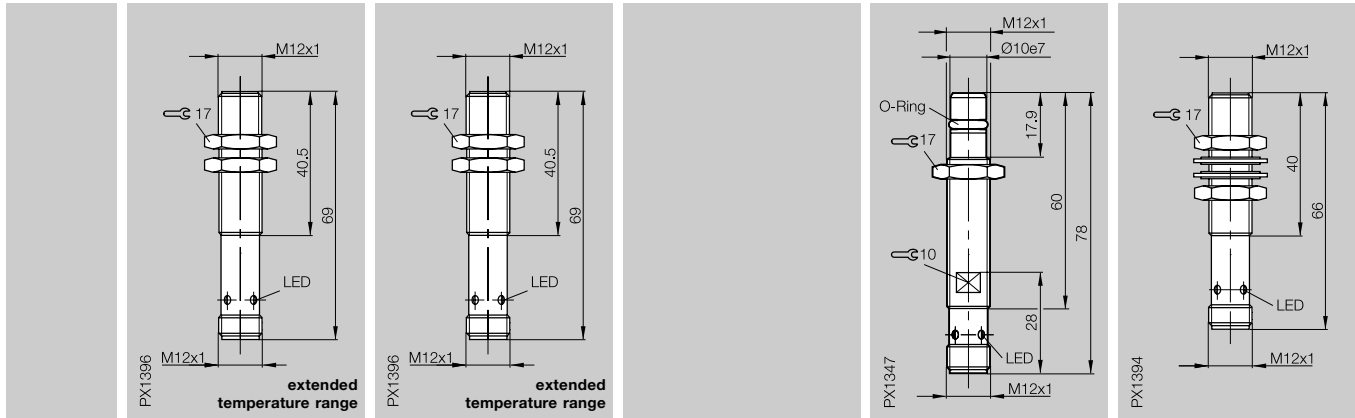
Wiring diagrams



DC 2-Wire
M12
s_n 2 mm, 4 mm

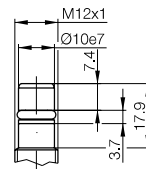
DC 3-Wire
M12
s_n 1.5 mm, 2 mm

M12x1	M12x1	M12x1	M12x1
flush	flush	flush	flush
2 mm	4 mm	1.5 mm	2 mm
0...1.6 mm	0...3.2 mm	0...1.2 mm	0...1.6 mm



1.5

BES M12EL-GSH20B-S04G-M01	BES M12EL-GSH40B-S04G-M01		BES M12EL-PSC15B-S04G-HM01	BES M12EL-PSC20B-S04G-M01
24 V DC	24 V DC		24 V DC	24 V DC
10...55 V DC	10...55 V DC		10...30 V DC	10...30 V DC
≤ 3.7V	≤ 3.7V		≤ 3.7 V	≤ 3.5 V
250 V AC	250 V AC		75 V DC	75 V DC
200 mA	200 mA		200 mA	200 mA
3 mA	3 mA		3 mA	3 mA
≤ 0.65 mA	≤ 0.65 mA		≤ 10 mA	≤ 8 mA
yes	yes		≤ 80 µA	≤ 80 µA
yes	yes		yes	yes
≤ 0.2 µF	≤ 0.2 µF		≤ 0.5 µF	≤ 0.5 µF
≤ 5 %	≤ 5 %		≤ 5 %	≤ 5 %
-40...+105 °C	-40...+105 °C		-25...+70 °C	-25...+70 °C
3000 Hz	1000 Hz		300 Hz	800 Hz
DC 13	DC 13		DC 13	DC 13
yes	yes		yes	yes
IP 68 acc. BWN Pr. 20	IP 68 acc. BWN Pr. 20		IP 68 acc. BWN Pr. 20	IP 68 acc. BWN Pr. 20
stainless steel EP (Duromer) connector	stainless steel EP (Duromer) connector		stainless steel EP connector	stainless steel LCP connector
BKS-S 23/BKS-S 24	BKS-S 23/BKS-S 24		BKS-B 19-3- <u>Y</u> /BKS-B 20-3- <u>Y</u> 5.85 × 2,4/636594 10 × 5.9 × 1/705918	BKS-B 19-3- <u>Y</u> /BKS-B 20-3- <u>Y</u>
60 bar	60 bar		500 bar	



+ high pressure rated



6
Connectors,
clamps ...
page 6.2 ...
in main sensor
catalog

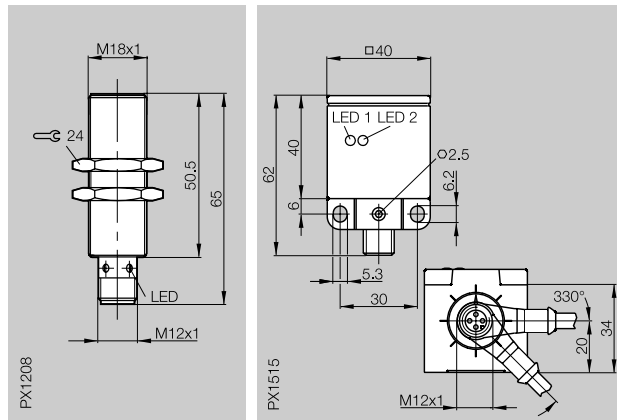
Inductive Sensors

DC 3-Wire
M18, Unicomact
 s_n 5 mm, 15 mm

Housing size	M18x1	40x40x62 Unicomact
Mounting	flush	flush
Rated operating distance s_n	5 mm	15 mm
Assured operating distance s_a	0...4.1 mm	0...12.2 mm



DESINA
diagnostic
+ magnetic field-immune
weld-immune
Multimetal/Factor 1

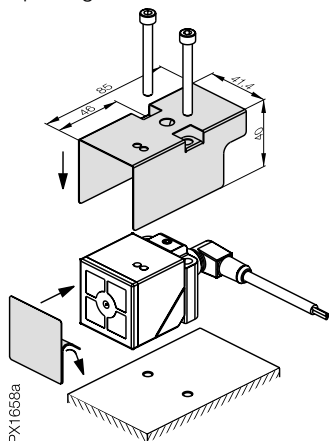


Additional functions

These sensors have in addition to the diagnostic function the "Multimetal/Factor 1" characteristics, meaning their switching distance remains the same for all metals. The BESM18MI-PSC50A-S04G-WM01 is weld-immune by virtue of its Teflon coated housing, and the BES Q40KFU-PSC15A-S04G-M01 through its Teflon coated protective cover.

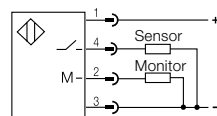
Weld protection BES Q40-SH-1 for BES Q40KFU-PSC15A-S04G-M01 (please order separately)

consists of a protective cover and a self-adhesive PTFE film to protect the active surface. It is not necessary to remove the weld protection when replacing the sensor head.



PNP	Normally-open	BES M18MI-PSC50A-S04G-WM01	BES Q40KFU-PSC15A-S04G-M01
Rated operational voltage U_e		24 V DC	24 V DC
Supply voltage U_B		10...30 V DC	10...30 V DC
Voltage drop U_d at I_e		≤ 3.5 V	≤ 3.5 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.		≤ 23 mA	≤ 28 mA
Off-state current I_r		≤ 80 μ A	≤ 80 μ A
Protected against polarity reversal		yes	yes
Short circuit protected		yes	yes
Load capacity		≤ 0.5 μ F	≤ 0.5 μ F
Repeat accuracy R		≤ 5 %	≤ 5 %
Ambient temperature range T_a		-25...+70 °C	-25...+70 °C
Frequency of operating cycles f		200 Hz	13 Hz
Utilization categories		DC 13	DC 13
Function/supply voltage indication		yes/no	yes/yes
Degree of protection per IEC 60529		IP 67	IP 67
Insulation class			
Housing material		CuZn, PTFE coated brass	PBT
Material of sensing face		LCP und PTFE	PBT
Connection		connector	connector
Approval		cULus	
Recommended connector		BKS-B 19/BKS-B 20	BKS-B 19/BKS-B 20

Wiring diagram



For additional information see our main catalog.



Balluff GmbH
Schurwaldstrasse 9
73765 Neuhausen a.d.F.
Germany
Phone +49 (0) 71 58/1 73-0
Fax +49 (0) 71 58/50 10
E-Mail: balluff@balluff.de
<http://www.balluff.de>