

en 03-2015/05 50110211



M30
10 mm
22 mm



Embedded
10 - 30 V
DC
1,2 kHz

- Slim and short cylindrical metal housing M30
- Chromium-plated brass housing
- Built-in short circuit protection, inductive protection and polarity reversal protection
- LED for switching state visible from 360°



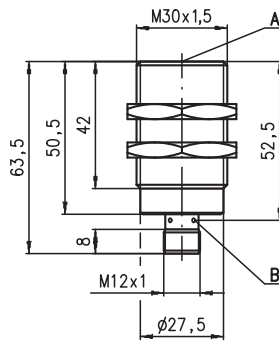
Accessories:

(available separately)

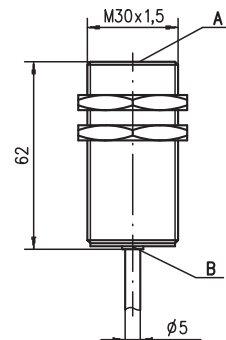
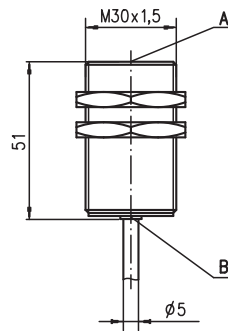
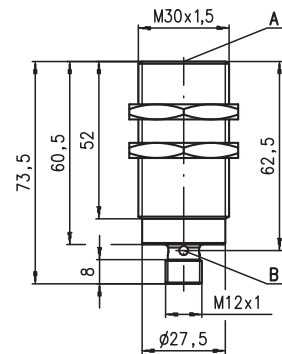
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Mounting clamp (MC 030...)

Dimensioned drawing

IS 230...-10E...



IS 230...-22E...

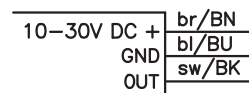


Tightening torque of the fastening nuts < 40Nm !

- A Active surface
- B Yellow indicator diode

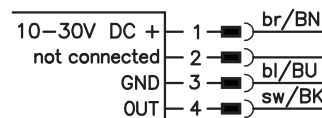
Electrical connection

Cable

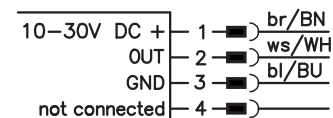


M12 connector

...NO... (normally open)



...NC... (normally closed)



...NO...-S12 (normally open):
...NC...-S12 (normally closed):

3-pin or 4-pin M12 connection cables can be used.
only 4-pin M12 connection cables can be used.

We reserve the right to make changes • DS_IS230E_en_50110211.fm

Specifications

General specifications

Type of installation
 Typ. operating range limit S_n
 Operating range S_a

IS 230...-10E...
 embedded installation
 10.0mm
 0 ... 8.1mm

IS 230...-22E...
 22.0mm
 0 ... 17.8mm

Electrical data

Operating voltage U_B ¹⁾
 Residual ripple σ
 Output current I_L
 Open-circuit current I_0
 Residual current I_r
 Switching output/function

10 ... 30VDC
 $\leq 20\%$ of U_B
 ≤ 200 mA
 ≤ 10 mA
 $\leq 100\mu$ A
 .../4NO... PNP transistor, make-contact (NO)
 .../4NC... PNP transistor, break-contact (NC)
 .../2NO... NPN transistor, make-contact (NO)
 .../2NC... NPN transistor, break-contact (NC)

Voltage drop U_d
 Hysteresis H of S_r
 Temperature drift of S_r
 Repeatability

≤ 2 V
 $\leq 10\%$
 $\leq 10\%$ ²⁾
 $\leq 5\%$ ³⁾

Timing

Switching frequency f
 Delay before start-up

1.2kHz
 ≤ 300 ms
 200Hz
 ≤ 200 ms

Indicators

Yellow LED (visible from 360°)

switching state

Mechanical data

Housing
 Standard surface plate
 Active surface
 Weight (M12 plug/cable)
 Connection type

chromium-plated brass
 30 x 30mm², Fe360
 PBTP
 approx. 155g/approx. 210g
 M12 connector 4-pin or
 cable: 2m, PVC, 3 x 0.34mm², \varnothing 5.0mm
 66 x 66mm², Fe360

Environmental data

Ambient temperature
 Protection class
 Protective circuit ⁴⁾
 Standards applied
 Electromagnetic compatibility

-25°C ... +70°C
 IP 67
 1, 2, 3
 IEC/EN 60947-5-2
 IEC 60255-5
 IEC 61000-4-2
 IEC 61000-4-3
 IEC 61000-4-4
 1kV
 Level 3 air 8kV (ESD)
 Level 3 10V/m (RFI)
 Level 3 2kV (Burst)

- 1) Observe the safety regulations and installation instructions regarding power supply and wiring; for UL applications: only for use in "Class 2" circuits acc. to NEC
- 2) Over the entire operating temperature range
- 3) For $U_B = 20 \dots 30$ VDC, ambient temperature $T_a = 23^\circ\text{C} \pm 5^\circ\text{C}$
- 4) 1=polarity reversal protection, 2=short circuit protection, 3=inductive protection for all outputs

Remarks

Operate in accordance with intended use!

- ⚠ This product is not a safety sensor and is not intended as personnel protection.
- ⚠ The product may only be put into operation by competent persons.
- ⚠ Only use the product in accordance with the intended use.

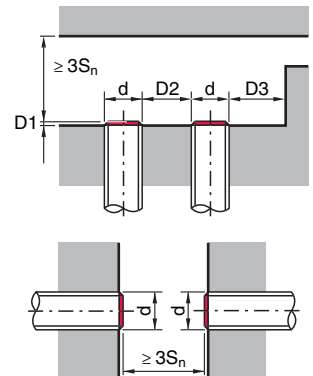
Tables

Reduction factors:

| | for $S_n = 10.0$ mm | | for $S_n = 22.0$ mm | |
|-----------------|---------------------|--|---------------------|------|
| Steel Fe360 | 1 | | Steel Fe360 | 1 |
| Copper | 0.40 | | Copper | 0.35 |
| Aluminum | 0.45 | | Aluminum | 0.40 |
| Brass | 0.55 | | Brass | 0.45 |
| Stainless steel | 0.80 | | Stainless steel | 0.66 |

Mounting

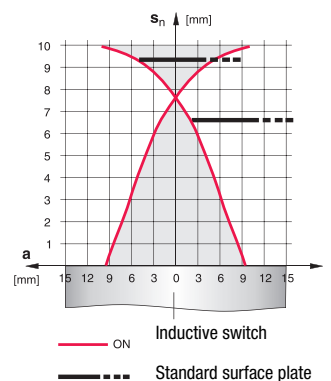
Embedded installation:



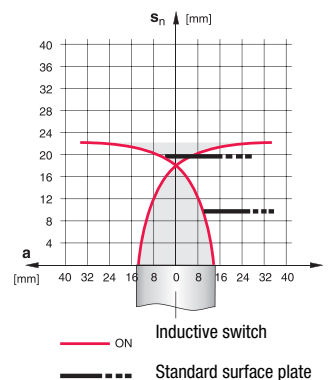
| Ferromagnetic and non-ferromagnetic materials | | | |
|---|---------|---------|---------|
| S_n [mm] | D1 [mm] | D2 [mm] | D3 [mm] |
| 10.0 | 0 | 30.0 | 10.0 |
| 22.0 | 6.0 | 50.0 | 22.0 |

Diagrams

Models with $S_n = 10.0$ mm



Models with $S_n = 22.0$ mm



Type key

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | S | 2 | 3 | 0 | M | M | / | 4 | N | 0 | - | 1 | 0 | E | - | S | 1 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Operating principle / construction
IS Inductive switch / Standard

Series
230 Series with M30 x 1.5 external thread

Housing / thread
MM Metal housing (active surface: plastic) / metric thread

Output function
4NO PNP transistor, make-contact (NO)

4NC PNP transistor, break-contact (NC)

2NO NPN transistor, make-contact (NO)

2NC NPN transistor, break-contact (NC)

Measurement range / type of installation
10E Typ. scan range limit 10.0 mm / embedded installation

22E Typ. scan range limit 22.0 mm / embedded installation

Electrical connection
N/A Cable, PVC, standard length 2000 mm

S12 M12 connector, 4-pin, axial

200-S12 Cable, PVC, length 200 mm with M12 connector, 4-pin, axial

Order guide

The sensors listed here are preferred types; current information at www.leuze.com.

| | Designation | Part No. |
|------------------------------|-----------------------|-----------------|
| S_n = 10 mm | IS 230 MM/4NO-10E | 50109712 |
| | IS 230 MM/4NO-10E-S12 | 50109713 |
| | IS 230 MM/4NC-10E | 50129369 |
| | IS 230 MM/4NC-10E-S12 | 50111871 |
| | IS 230 MM/2NO-10E-S12 | 50109714 |
| S_n = 22 mm | IS 230 MM/4NO-22E | 50109720 |
| | IS 230 MM/4NO-22E-S12 | 50109721 |
| | IS 230 MM/4NC-22E-S12 | 50109722 |
| | IS 230 MM/2NO-22E | 50109723 |

