

Technical data sheet

Inductive switch

Part no.: 50114207

IS 240PP/44-4E0

Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
- Part number code
- Notes



Figure can vary



Technical data

Basic data

Series	240
Typ. operating range limit S_n	4 mm
Operating range S_a	0 ... 3.2 mm

Characteristic parameters

MTTF	1,530 years
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Electrical data

Protective circuit	Inductive protection
	Polarity reversal protection
	Short circuit protected

Performance data

Supply voltage U_B	10 ... 30 V, DC
Residual ripple	0 ... 20 %, From U_B
Open-circuit current	0 ... 10 mA
Repeatability, max. (in % of S_r)	10 %, For $U_B = 20 ... 30$ VDC, ambient temperature $T_a = 23^\circ\text{C} \pm 5^\circ\text{C}$
Switching hysteresis	5 %

Outputs

Number of digital switching outputs	2 Piece(s)
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Switching outputs

Voltage type	DC
Switching current, max.	250 mA
Residual current, max.	0.1 mA
Voltage drop	≤ 2 V

Switching output 1

Switching element	Transistor, PNP
Switching principle	NO contact – Antivalent

Switching output 2

Switching element	Transistor, PNP
Switching principle	NC contact – Antivalent

Timing

Switching frequency	1,400 Hz
Readiness delay	300 ms

Connection

Number of connections	1 Piece(s)
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Connection 1

Function	Signal OUT
	Voltage supply
Type of connection	Cable
Cable length	2,000 mm
Sheathing material	PVC
Cable color	Black
Number of conductors	4 -wire
Wire cross section	0.5 mm ²

Mechanical data

Design	Cubic
Dimension (W x H x L)	12 mm x 40 mm x 26 mm
Type of installation	Embedded
Housing material	Plastic
Plastic housing	PA 66
Sensing face material	Plastic, Polyamide (PA 66)
Net weight	110 g
Housing color	Black
	Red, RAL 3000
Type of fastening	Fastening on back
	Through-hole mounting
Standard measuring plate	12 x 12 mm ² , Fe360

Operation and display

Type of display	LED
Number of LEDs	1 Piece(s)

Environmental data

Ambient temperature, operation	-25 ... 70 °C
Ambient temperature, storage	-25 ... 70 °C

Certifications

Degree of protection	IP 67
Protection class	II
Certifications	c UL US
Test procedure for EMC in accordance with standard	IEC 61000-4-2
	IEC 61000-4-3
	IEC 61000-4-4
Standards applied	IEC 60947-5-2

Correction factors

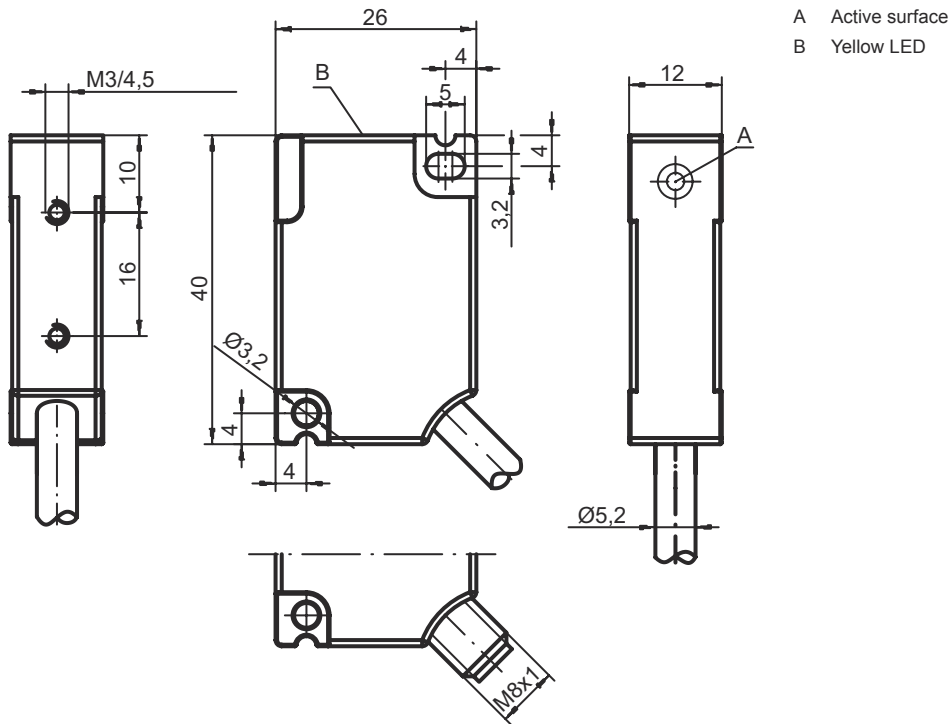
Aluminum	0.4
Stainless steel	0.8
Copper	0.45
Brass	0.55
Fe360 steel	1

Classification

Customs tariff number	85365019
eCl@ss 5.1.4	27270101
eCl@ss 8.0	27270101
eCl@ss 9.0	27270101
eCl@ss 10.0	27270101
eCl@ss 11.0	27270101
ETIM 5.0	EC002714
ETIM 6.0	EC002714
ETIM 7.0	EC002714

Dimensioned drawings

All dimensions in millimeters



Electrical connection

Connection 1

Function	Signal OUT Voltage supply
Type of connection	Cable
Cable length	2,000 mm
Sheathing material	PVC
Cable color	Black
Number of conductors	4 -wire
Wire cross section	0.5 mm ²

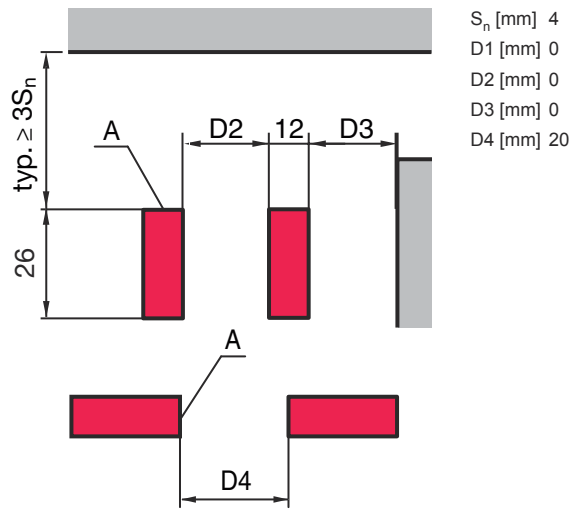
Conductor color

Conductor assignment

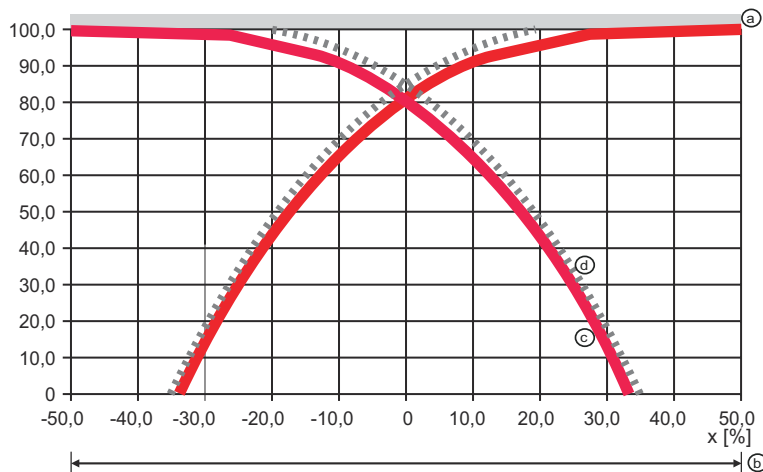
Brown	V+
White	OUT 2
Blue	GND
Black	OUT 1

Diagrams

Embedded installation



Typical approach curve



- a Standard measuring plate
- b Diameter of the active surface
- c Switching point
- d Hysteresis

Operation and display

LED	Display	Meaning
1	Yellow, continuous light	Switching output/switching state

Part number code

Part designation: ISX YYY ZZ/AAA.BB-CCC-DDD-DDD

ISX	Operating principle / construction
	IS: inductive switch, standard design
	ISS: inductive switch, short construction

Part number code

YYY	<p>Series</p> <p>203: series with Ø 3 mm 204: series with Ø 4 mm 205: series with M5 x 0.5 external thread 206: series with Ø 6.5 mm 208: series with M8 x 1 external thread 212: series with M12 x 1 external thread 218: series with M18 x 1 external thread 230: series with M30 x 1.5 external thread 240: series in cubic design 244: series in cubic design 255: series with 5 x 5 mm² cross section 288: series with 8 x 8 mm² cross section</p>
ZZ	<p>Housing / thread</p> <p>MM: metal housing (active surface: plastic) / metric thread FM: full-metal housing (active surface: stainless steel AISI 316L) / metric thread MP: metal housing (active surface: plastic) / smooth (without thread)</p>
AAA	<p>Output current / supply</p> <p>4NO: PNP transistor, NO contact 4NC: PNP transistor, NC contact 2NO: NPN transistor, NO contact 2NC: NPN transistor, NC contact 1NO: relay, NO contact / AC/DC 1NC: relay, NC contact / AC/DC 44: 2 PNP transistor switching outputs, antivalent (NO + NC) 22: 2 NPN transistor switching outputs, antivalent (NO + NC)</p>
BB	<p>Special equipment</p> <p>n/a: no special equipment 5F: food version 5: housing material V2A (1.4305, AISI 303)</p>
CCC	<p>Measurement range / type of installation</p> <p>1E0: typ. range limit 1.0 mm / embedded installation 1E5: typ. range limit 1.5 mm / embedded installation 2E0: typ. range limit 2.0 mm / embedded installation 3E0: typ. range limit 3.0 mm / embedded installation 4E0: typ. range limit 4.0 mm / embedded installation 5E0: typ. range limit 5.0 mm / embedded installation 6E0: typ. range limit 6.0 mm / embedded installation 8E0: typ. range limit 8.0 mm / embedded installation 10E: typ. range limit 10.0 mm / embedded installation 12E: typ. range limit 12.0 mm / embedded installation 15E: typ. range limit 15.0 mm / embedded installation 20E: typ. range limit 20.0 mm / embedded installation 22E: typ. range limit 22.0 mm / embedded installation 2N5: typ. range limit 2.5 mm / non-embedded installation 4N0: typ. range limit 4.0 mm / non-embedded installation 8N0: typ. range limit 8.0 mm / non-embedded installation 10N: typ. range limit 10.0 mm / non-embedded installation 12N: typ. range limit 12.0 mm / non-embedded installation 14N: typ. range limit 14.0 mm / non-embedded installation 15N: typ. range limit 15.0 mm / non-embedded installation 20N: typ. range limit 20.0 mm / non-embedded installation 22N: typ. range limit 22.0 mm / non-embedded installation 25N: typ. range limit 25.0 mm / non-embedded installation 40N: typ. range limit 40.0 mm / non-embedded installation</p>
DDD	<p>Electrical connection</p> <p>n/a: cable, standard length 2000 mm S12: M12 connector, 4-pin, axial 200-S12: cable, length 200 mm with M12 connector, 4-pin, axial 200-S8.3: cable, length 200 mm with M8 connector, 3-pin, axial S8.3: M8 connector, 3-pin, axial 005-S8.3: cable, length 500 mm with M8 connector, 3-pin, axial 050: cable, standard length 5000 mm, 3-wire</p>

Note



A list with all available device types can be found on the Leuze website at www.leuze.com.

Notes



Observe 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 its intended use.



For UL applications:



- ⌘ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).