

## Technical data sheet

### Inductive switch

Part no.: 50114211

IS 244PP/22-20E-TB.4

#### Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Diagrams
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- Notes



Figure can vary



## Technical data

### Basic data

Series	244
Typ. operating range limit $S_n$	20 mm
Operating range $S_a$	0 ... 16.2 mm

### Special version

Special version	Antivalent
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### Characteristic parameters

MTTF	1,230 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 ... 20 mA
Repeatability, max. (in % of $S_p$ )	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.	200 mA
Residual current, max.	0.5 mA
Voltage drop	$\leq 2$ V

### Switching output 1

Switching element	Transistor, NPN
Switching principle	NO contact – Antivalent

### Switching output 2

Switching element	Transistor, NPN
Switching principle	NC contact – Antivalent

### Timing

Switching frequency	440 Hz
Readiness delay	80 ms

### Connection

Number of connections	1 Piece(s)
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### Connection 1

Function	Signal OUT
	Voltage supply
Type of connection	Terminal
No. of pins	4 -pin

### Mechanical data

Design	Cubic
Dimension (W x H x L)	40 mm x 40 mm x 118 mm
Type of installation	Embedded
Housing material	Plastic
Plastic housing	PA 66
Sensing face material	Plastic, Polyamide (PA 66)
Net weight	225 g
Housing color	Black
Type of fastening	Through-hole mounting
Standard measuring plate	60 x 60 mm <sup>2</sup> , Fe360

### Operation and display

Type of display	LED
Number of LEDs	4 Piece(s)

### Environmental data

Ambient temperature, operation	-25 ... 85 °C
Ambient temperature, storage	-25 ... 85 °C

### Certifications

Degree of protection	IP 68
	IP 69K
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

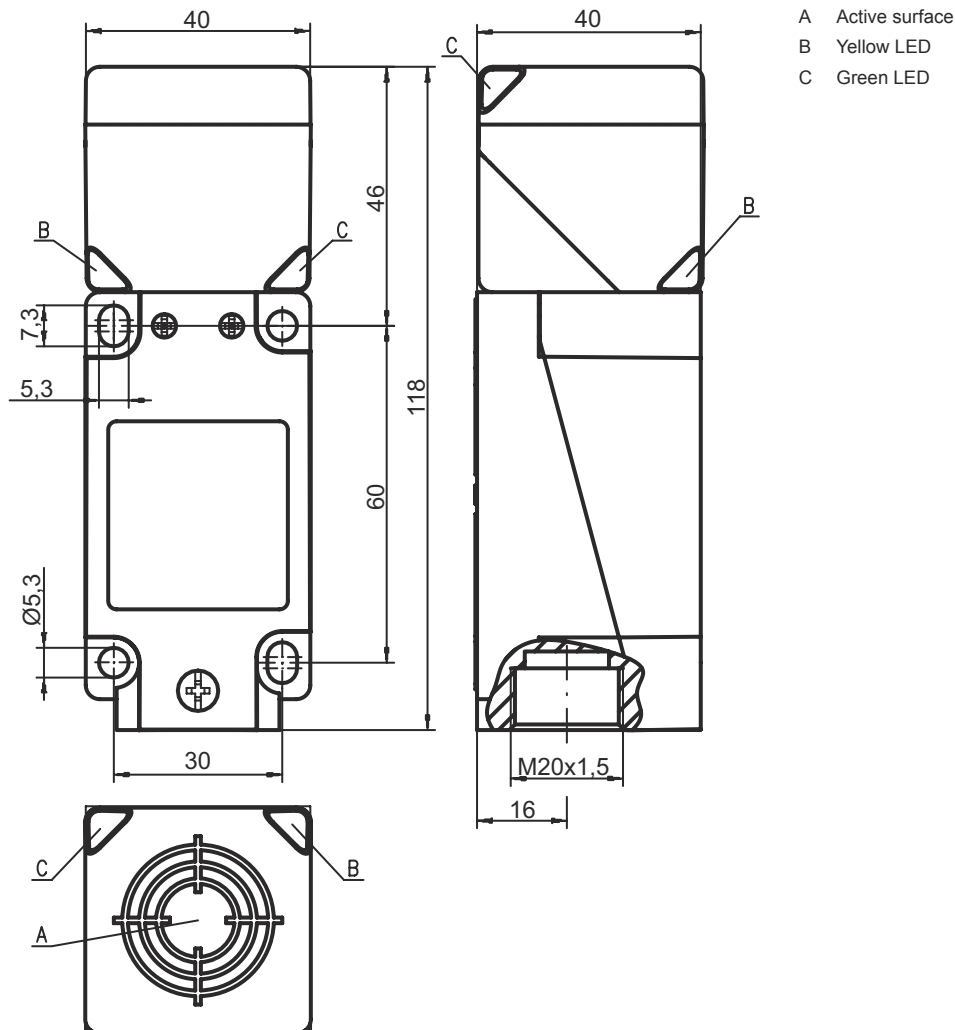
Aluminum	0.33
Stainless steel	0.74
Copper	0.31
Brass	0.38
Fe360 steel	1

### 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

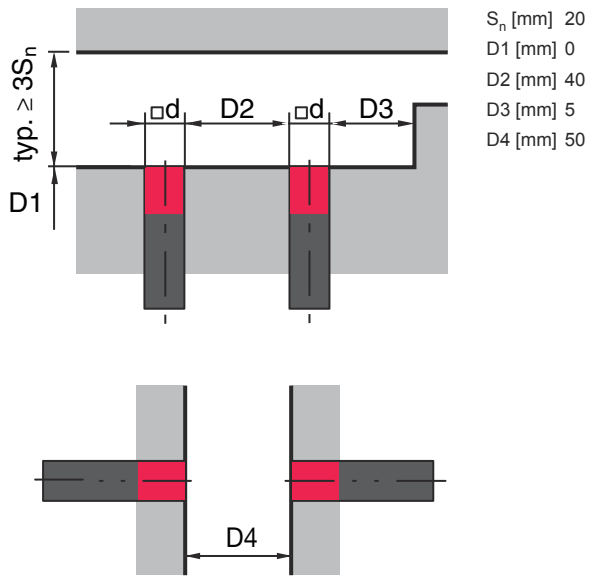
### Connection 1

Function	Signal OUT
	Voltage supply
Type of connection	Terminal
No. of pins	4 -pin

Pin	Pin assignment
	1
1	V+
	2
2	OUT 2
	3
3	GND
	4
4	OUT 1

# Diagrams

## Embedded installation



## Typical approach curve



## Operation and display

LED	Display	Meaning
1	Yellow, continuous light	Switching output/switching state
2	Green, continuous light	Operational readiness
3	Yellow, continuous light	Switching output/switching state
4	Green, continuous light	Operational readiness

# Part number code

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

<b>ISX</b>	<b>Operating principle / construction</b> IS: inductive switch, standard design ISS: inductive switch, short construction
<b>YYY</b>	<b>Series</b> 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 mm <sup>2</sup> cross section 288: series with 8 x 8 mm <sup>2</sup> cross section
<b>ZZ</b>	<b>Housing / thread</b> 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)
<b>AAA</b>	<b>Output current / supply</b> 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)
<b>BB</b>	<b>Special equipment</b> n/a: no special equipment 5F: food version 5: housing material V2A (1.4305, AISI 303)
<b>CCC</b>	<b>Measurement range / type of installation</b> 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
<b>DDD</b>	<b>Electrical connection</b> 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

**Note**



A list with all available device types can be found on the Leuze website at [www.leuze.com](http://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).