

Technical data sheet

Diffuse sensor with background suppression

Part no.: 50156049

HT20-15F/4.FL

Contents

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



For illustration purposes only



Technical data

Basic data

Series	20 flat
Operating principle	Diffuse reflection principle with background suppression

Optical data

Black-white error	< 7%
Operating range	Guaranteed operating range
Operating range, white 90%	0.001 ... 0.015 m
Operating range, gray 18%	0.002 ... 0.015 m
Operating range, black 6%	0.002 ... 0.014 m
Operating range limit	0.01 ... 0.015 m
Operating range limit	Typical operating range
Permanently set operating range	0.015 m
Beam path	Typ. focus at 15 mm
Light source	PinPoint LED, Red
Wavelength	630 nm
LED group	Exempt group (in acc. with EN 62471)
Light spot size [at sensor distance]	4 mm [15 mm]
Type of light spot geometry	Round
Minimum detectable object size	typ. 0.2 mm
Light beam exit	Frontal

Electrical data

Protective circuit	Overload protection Polarity reversal protection
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Performance data

Supply voltage U_B	10 ... 30 V, DC
Residual ripple	0 ... 10 %, From U_B
Open-circuit current	15 mA

Outputs

Number of digital switching outputs	1 Piece(s)
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Switching outputs

Type	Digital switching output
Switching voltage, type.	30 V
Voltage type	DC
Switching current, max.	50 mA

Switching output 1

Assignment	Connection 1, conductor 2
Switching element	Transistor, PNP
Switching principle	Light switching

Time behavior

Switching frequency	1,000 Hz
Response time	0.5 ms
Switch-on delay string	< 100 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	3 -wire
Wire cross section	0.1 mm ²

Mechanical data

Dimension (W x H x L)	14 mm x 20.5 mm x 4.2 mm
Housing material	Plastic
Plastic housing	PBT+ABS
Lens cover material	Plastic / PMMA
Net weight	10 g
Housing color	Red
Type of fastening	Through-hole mounting, 2 x ø 2.2 mm

Operation and display

Type of display	LED
Number of LEDs	2 Piece(s)

Environmental data

Ambient temperature, operation	-25 ... 55 °C
Ambient temperature, storage	-30 ... 70 °C

Certifications

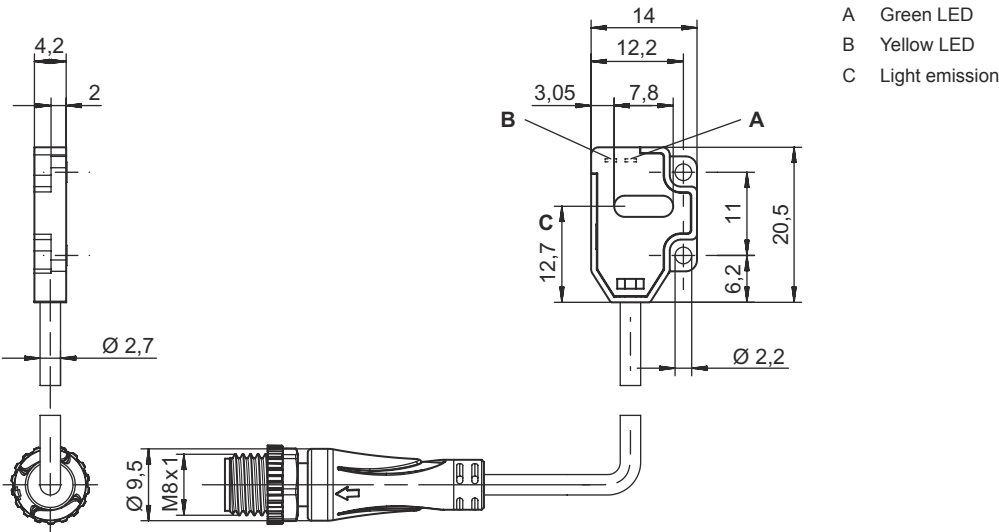
Degree of protection	IP 67
Protection class	III
Approvals	c UL US CE
Standards applied	IEC 60947-5-2

Classification

Customs tariff number	85365019
ECLASS 5.1.4	27270904
ECLASS 8.0	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ECLASS 13.0	27270903
ECLASS 14.0	27270903
ECLASS 15.0	27270903
ECLASS 16.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
ETIM 9.0	EC002719
ETIM 10.0	EC002719
UNSPSC 26.08	39121528

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	3 -wire
Wire cross section	0.1 mm²

Conductor color

Conductor assignment

Brown	V+
Black	OUT
Blue	GND

Operation and display

LED	Display	Meaning
1	Green	Operational readiness / Stability indicator
2	Orange	Switching output function

Part number code

Part designation: AAA20 D-E/GG.HH-JJ

AAA20	Operating principle / construction SETLS+LE20: Throughbeam photoelectric sensor transmitter + receiver HT20: Diffuse reflection sensor with background suppression
D	Light type n/a: red light

Part number code

E	Preset range (optional) 15F: 15 mm 30F: 30 mm 150: operating range 150 mm 500: operating range 500 mm 1000: operating range 1000 mm
GG	Switching output / Function 2: NPN transistor output, light switching 4: PNP transistor output, light switching N: NPN transistor output, dark switching P: PNP transistor output, dark switching X: n.c.
HH	Electrical connection n/a: Cable, standard length 2000 mm, 2 wire (LS), 3 wire (LE, HT) M8: M8 connector, 4-pin (plug) 200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug)
JJ	Design detail n/a: Slim FL: Flat

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).