Technical data sheet

Dynamic reference diffuse sensor

Part no.: 50150353
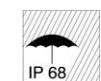
DRT33C.3R/LG-M8

Contents

For Illustration purposes only

Technical data

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Basic data

Series	33C
Operating principle	Reference teach on reference surface (plastic roller chain or plastic link conveyor)
Application	Detection of bottle and can containers

Optical data

Operating range	0.08 ... 0.4 m, Max. distance to reference surface
Operating range limit, white 90%	0.05 ... 0.45 m
Light source	LED, Red
Wavelength	640 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)

Electrical data

Protective circuit	Polarity reversal protection
	Short circuit protected

Performance data

Supply voltage U_B	12 ... 30 V, DC, Incl. residual ripple
Residual ripple	0 ... 15 %, From U_B
Open-circuit current	0 ... 40 mA

Outputs

Number of digital switching outputs	2 Piece(s)

Switching outputs

Type	Digital switching output
Voltage type	DC
Switching current, max.	100 mA
Switching voltage	high: ≥(U_B-2.5V)
	low: ≤ 2.5 V

Switching output 1

Assignment	Connection 1, pin 4
Switching element	Transistor, Push-pull
Switching principle	IO-Link / light switching (PNP)/dark switching (NPN)

Switching output 2

Assignment	Connection 1, pin 2
Switching element	Transistor, Push-pull
Switching principle	Dark switching (PNP)/light switching (NPN)

Time behavior

Switching frequency	300 Hz
Response time	1.6 ms
Readiness delay	300 ms

Interface

Type	IO-Link

IO-Link

COM mode	COM3
Profile	Smart sensor profile
Min. cycle time	COM3 = 0.4 ms
Frame type	2.5
Specification	V1.1
Device ID	2135
SIO-mode support	Yes
Process data IN	8 bit
Process data OUT	8 bit

Connection

Number of connections	1 Piece(s)

Connection 1

Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M8
Type	Male
Material	Stainless steel
No. of pins	4 -pin

Mechanical data

Dimension (W x H x L)	18.8 mm x 52.8 mm x 32.4 mm
Housing material	Stainless steel
Material of operational control	Plastic (POM Hostaform C9021, copolyester Tritan TX1001), non-diffusive
Housing roughness	Ra ≤ 0,8, Typical value for the stainless steel housing
Stainless steel housing	AISI 316L, DIN X2CrNiMo17132, W. No1.4404
Lens cover material	Plastic (PMMA+) with scratch-resistant Indium protective coating
Net weight	120 g
Housing color	Silver
Type of fastening	Housing fit
Compatibility of materials	CleanProof+
	ECOLAB
	Johnson Diversey

Operation and display

Type of display	LED
Number of LEDs	2 Piece(s)
Operational controls	Teach button
Function of the operational control	Teach-in on reference surface

Environmental data

Ambient temperature, operation	-40 ... 60 °C, (70 °C ≤15min)
Ambient temperature, storage	-40 ... 70 °C

Certifications

Degree of protection	IP 67
	IP 68
	IP 69K
Protection class	III
Approvals	c UL US
Standards applied	IEC 60947-5-2

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2/7

Technical data

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Customs tariff number	85365019
ECLASS 5.1.4	27270903
ECLASS 8.0	27270903
ECLASS 9.0	27270903
ECLASS 10.0	27270903
ECLASS 11.0	27270903
ECLASS 12.0	27270903
ECLASS 13.0	27270903
ECLASS 14.0	27270903
ECLASS 15.0	27270903
ECLASS 16.0	27270903
ETIM 5.0	EC001821
ETIM 6.0	EC001821
ETIM 7.0	EC001821
ETIM 8.0	EC001821
ETIM 9.0	EC001821
ETIM 10.0	EC001821

Dimensioned drawings

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All dimensions in millimeters

A   Green LED
B   Yellow LED
C1 Optical axis (receiver)
C2 Optical axis (transmitter)
D   Range adjustment
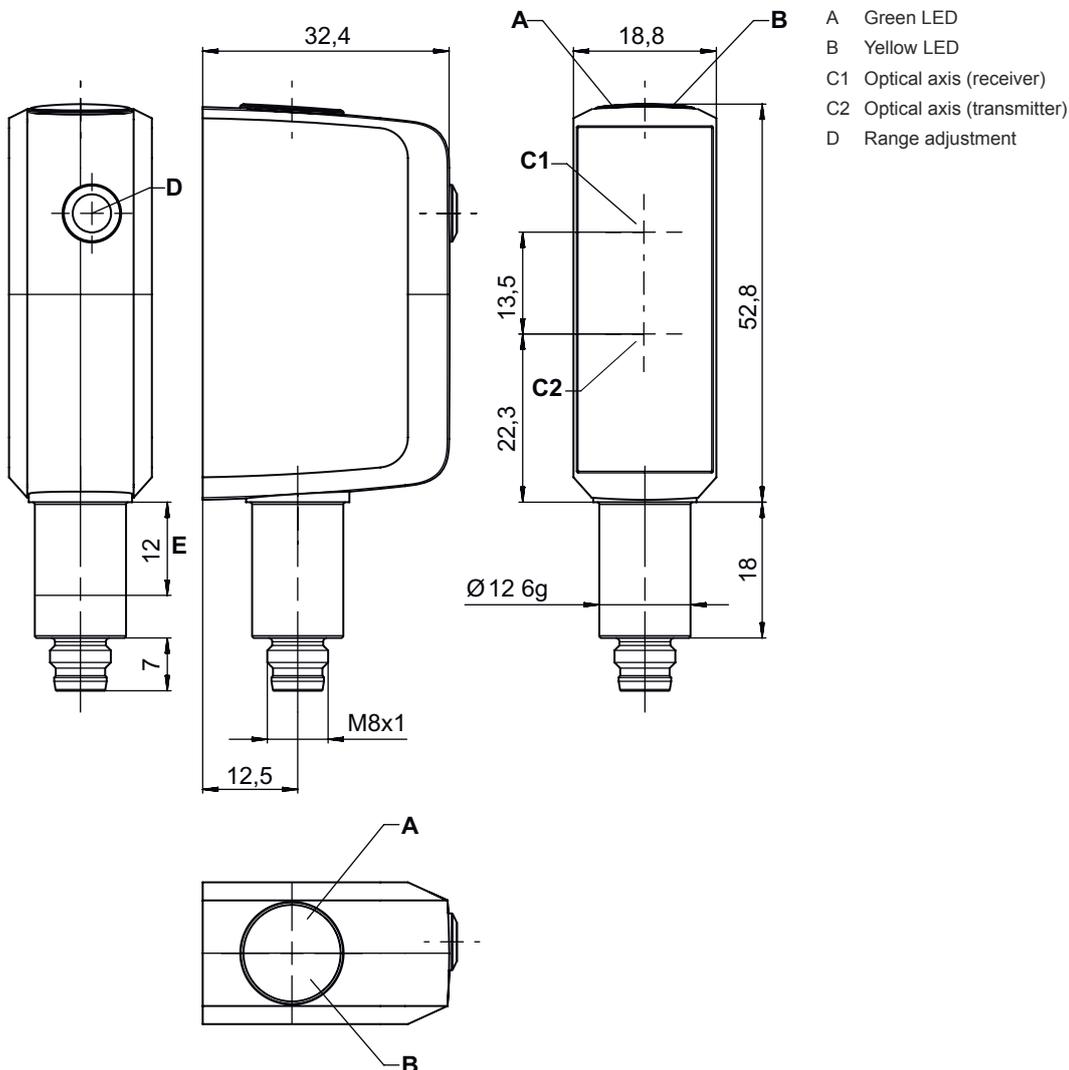
Electrical connection

Connection 1

Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M8
Type	Male
Material	Stainless steel
No. of pins	4 -pin

Pin	Pin assignment
1	V+
2	OUT 2
3	GND
4	IO-Link / OUT 1

Operation and display

LED	Display	Meaning
1	Green, continuous light	Operational readiness
2	Yellow, continuous light	Object detected

Part number code

Part designation: **AAA33C d EE.GGH/iJ-K**

AAA33C	**Operating principle** LS33C: Throughbeam photoelectric sensor transmitter LE33C: Throughbeam photoelectric sensor receiver PRK33C: Retro-reflective photoelectric sensor with polarization filter HT33C: Diffuse reflection sensor with background suppression DRT33C: Dynamic reference diffuse sensor
d	**Light type** n/a: red light I: infrared light
EE	**Light source** n/a: LED PP: Power PinPoint® LED L1: laser class 1
GG	**Equipment** A: Autocollimation principle (single lens) D: Detection of stretch-wrapped objects X: extended model XL: Extra long light spot TT: autocollimation principle (single lens) for highly transparent bottles with tracking R: greater operating range XXR: super power transmitter
H	**Operating range adjustment** 1: 270° potentiometer 2: multiturn potentiometer 3: teach-in via button
i	**Switching output/function OUT 1/IN: Pin 4 or black conductor** X: pin not used 8: activation input (activation with high signal) L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching)
J	**Switching output / function OUT 2/IN: pin 2 or white conductor** T: teach-in via cable G: Push-pull switching output, PNP dark switching, NPN light switching X: pin not used
K	**Electrical connection** M8: M8 connector, 4-pin (plug)

Note	
ℹ️	↳ 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.

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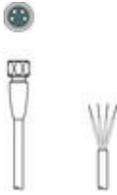
5/7

Further information

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- Ambient temperature, operation: +70 °C permissible only briefly (≤ 15min)
- IP 69K only with internal tube installation of M8 connector
- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C

Accessories

Connection technology - Connection unit

Part no.	Designation	Article	Description
50144900	MD 798i-11-82/L5-2222	IO-Link master	Current consumption, max.: 11,000 mA Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET Connections: 12 Piece(s) Sensor connections: 8 Piece(s) Degree of protection: IP 67, IP 65, IP 69K

Connection technology - Connection cables

Part no.	Designation	Article	Description
50106153	K-D M8A-4P-5m-FAB	Connection cable	Application: Hygienic and wet areas Connection 1: Connector, M8, Axial, Female, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC
50148347	KD U-M8-4A-T0-050 F+B	Connection cable	Application: Chemical resistant, Hygienic and wet areas Connection 1: Connector, M8, Axial, Female, A-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: TPE
50130850	KD U-M8-4A-V1-050	Connection cable	Application: Chemical resistant Connection 1: Connector, M8, Axial, Female, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC

Mounting technology - Other

Part no.	Designation	Article	Description
50145361	BTU 053M.5F-D12-T	Mounting system	Design of mounting device: Mounting system Fastening, at system: Screw type Mounting bracket, at device: For 12 mm rod Type of mounting device: Turning, 360°, Adjustable Material: Stainless steel

Accessories

Note
↳ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.