

## Technical data sheet

### Throughbeam photoelectric sensor transmitter

Part no.: 50148156

LS53C/8X-M8



For illustration purposes only

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## Technical data

### Basic data

Series	53C
Operating principle	Throughbeam principle
Device type	Transmitter

### Special version

Special version	Activation input HYGIENE design
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### Optical data

Operating range	0.05 ... 8.5 m (guaranteed operating range)
Operating range limit	0.05 ... 10 m (typical operating range)
Beam path	Divergent
Light source	LED, Red
Wavelength	645 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)
Light spot size [at sensor distance]	4 mm [100 mm]
Type of light spot geometry	Round

### Electrical data

Protective circuit	Polarity reversal protection Short circuit protected
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### Performance data

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

### Inputs

Number of activation inputs	1 Piece(s)
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### Activation inputs

Type	Activation input
Voltage type	DC
Switching voltage	high: $\geq 8V$ low: $\leq 2 V$

### Activation input 1

Assignment	Connection 1, pin 4
Active switching state	High

### Time behavior

Readiness delay	300 ms
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### Connection

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

Function	Signal IN 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)	14 mm x 35.4 mm x 20.4 mm
Housing material	Stainless steel
Material of operational control	Plastic (POM Hostaform C9021, copoly-ester Tritan TX1001), non-diffusive
Housing roughness	$Ra \leq 0,8$ , 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	48 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)

### Environmental data

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

### Certifications

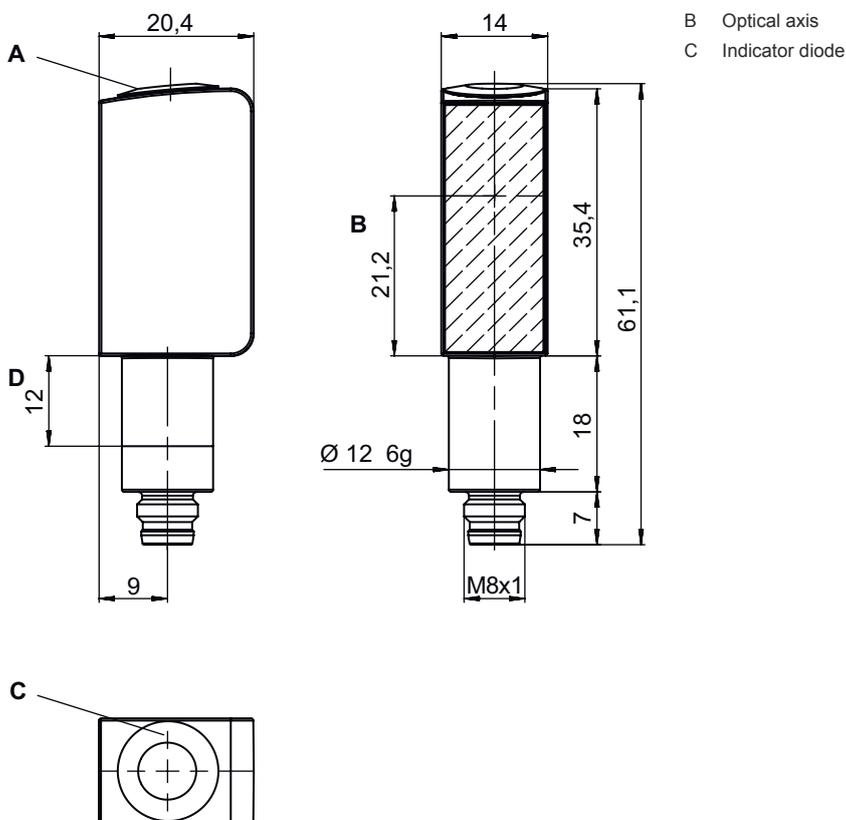
Degree of protection	IP 67 IP 68 IP 69K
Protection class	III
Approvals	c UL US
Standards applied	IEC 60947-5-2

### Classification

Customs tariff number	85365019
ECLASS 5.1.4	27270901
ECLASS 8.0	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ECLASS 13.0	27270901
ECLASS 14.0	27270901
ECLASS 15.0	27270901
ECLASS 16.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
ETIM 9.0	EC002716
ETIM 10.0	EC002716

# Dimensioned drawings

All dimensions in millimeters

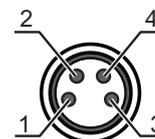


## Electrical connection

### Connection 1

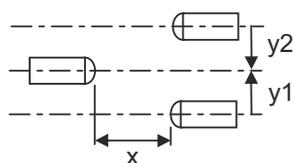
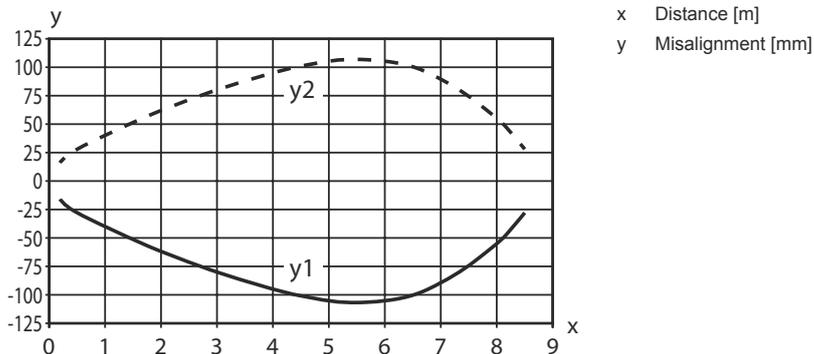
Function	Signal IN
	Voltage supply
Type of connection	Connector
Thread size	M8
Type	Male
Material	Stainless steel
No. of pins	4 -pin

Pin	Pin assignment
1	V+
2	n.c.
3	GND
4	IN 1



# Diagrams

## Typ. response behavior



## Operation and display

LED	Display	Meaning
1	Green, continuous light	Operational readiness
2	Yellow, continuous light	Transmitted beam active

## Suitable receivers

	Part no.	Designation	Operating range Operating range limit	Description
	50148157	LE53C/LG-M8	0.05 ... 8.5 m 0.05 ... 10 m	Special version: HYGIENE design Supply voltage: DC Digital switching outputs: 2 Piece(s) Switching output 1: Transistor, Push-pull, IO-Link / light switching (PNP)/dark switching (NPN) Switching output 2: Transistor, Push-pull, Dark switching (PNP)/light switching (NPN) Switching frequency: 1,000 Hz Interface: IO-Link Connection: Connector, M8, Stainless steel, 4 -pin

## Part number code

Part designation: AAA53C d EE-f.GGGG H/I J-K.LL

AAA53C	<b>Operating principle / construction</b> HT53C: Diffuse reflection sensor with background suppression LS53C: Throughbeam photoelectric sensor transmitter LE53C: Throughbeam photoelectric sensor receiver PRK53C: Retro-reflective photoelectric sensor with polarization filter ODT53C: Distance diffuse sensor with background suppression
d	<b>Light type</b> n/a: red light l: infrared light

## Part number code

<b>EE</b>	<b>Light source</b> n/a: LED L1: laser class 1 L2: laser class 2
<b>f</b>	<b>Preset range (optional)</b> n/a: operating range acc. to data sheet xxxF: Preset range [mm]
<b>GGGG</b>	<b>Equipment</b> n/a: standard A: Autocollimation principle (single lens) for positioning tasks F: Permanently set range H2O: Detection of aqueous liquids Fill-level monitoring S: small light spot T: autocollimation principle (single lens) for highly transparent bottles without tracking TT: autocollimation principle (single lens) for highly transparent bottles with tracking V: V-optics XL: Extra long light spot X: extended model
<b>H</b>	<b>Operating range adjustment</b> n/a with HT: range adjustable via 8-turn potentiometer n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable 1: 270° potentiometer 3: teach-in via button
<b>i</b>	<b>Switching output/function OUT 1/IN: Pin 4 or black conductor</b> 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching) 8: activation input (activation with high signal) X: pin not used 1: IO-Link / light switching (NPN) / dark switching (PNP) 7: Input for sensitivity adjustment
<b>J</b>	<b>Switching output / function OUT 2/IN: pin 2 or white conductor</b> 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching T: teach-in via cable X: pin not used 8: activation input (activation with high signal) 9: deactivation input (deactivation with high signal)
<b>K</b>	<b>Electrical connection</b> M8: M8 connector, 4-pin (plug)
<b>LL</b>	<b>Parameterization</b> P1: different configuration

### 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.

## Notes

### For UL applications:



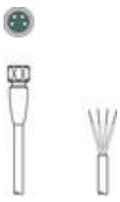
- For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).
- These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)

## Further information

- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C
- Response time: For short decay times, an ohmic load of approx. 5kOhm is recommended
- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C
- Permissible operating temperature range during IO-Link operation: -10 °C to +60 °C
- Ambient temperature, operation: +70 °C permissible only briefly (≤ 15min)
- IP 69K only with internal tube installation of M8 connector

## Accessories

### Connection technology - Connection cables

	Part no.	Designation	Article	Description
	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.