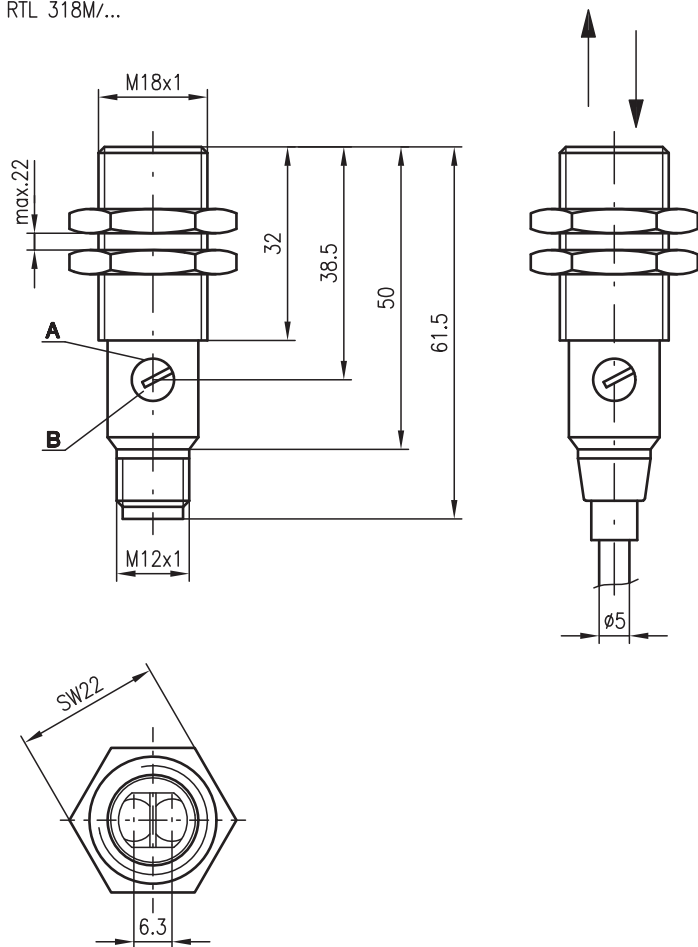


RTL 318

Laser energetic diffuse reflection sensors

Dimensioned drawing

RTL 318M/...



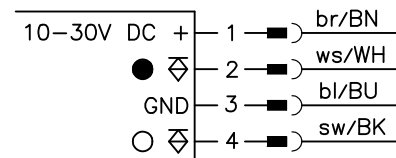
- A** Indicator diode
B Sensitivity adjustment

Accessories:

(available separately)

- Mounting systems (BT 318, BT 318-ARH)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)

Electrical connection



2024/06/18 50108672-02



0 ... 350mm

- Energetic diffuse reflection sensor with laser-generated red light and straight optics
- Sturdy cylindrical stainless steel housing M18x1, degree of protection IP 67 for industrial application
- Fixed beam geometry, convergent
- High switching frequency
- Complementary switching outputs for light/dark switching or as a control function
- Very short construction for use in limited spaces

We reserve the right to make changes

Technical data

Optical data

Typ. maximum range (white 90%) ¹⁾	0 ... 350mm
Operating range ²⁾	See tables
Adjustment range	120 ... 350mm
Light spot diameter	See diagrams
Light source	Laser
Laser class	2 in acc. with IEC 60825-1:2014 / EN 60825-1:2014+A11:2021
Wavelength	650nm (visible red light)
Impulse duration	3µs
Max. power	5mW

Time behavior

Switching frequency	5000Hz
Response time	0.1ms
Readiness delay	≤ 30ms

Electrical data

Operating voltage U_B ³⁾	10 ... 30VDC
Residual ripple	≤ 10% of U_B
Open-circuit current	≤ 20mA
Switching output	2 transistor outputs, antivalent
Function	Light/dark switching
Signal voltage high/low	≥ ($U_B - 1.6V$) / ≤ 1.6V
Output current	Max. 100mA
Sensitivity	Adjustable

Indicators

Red LED	Reflection
Red LED, flashing	Reflection, no function reserve

Mechanical data

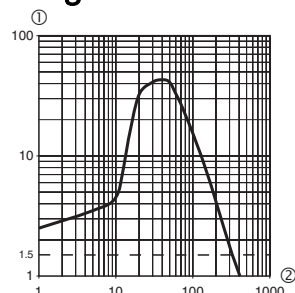
Housing	Stainless steel
Optics cover	Polyamide 12
Weight	20g (M12)
Connection type	M12 connector, 4-pin

Environmental data

Ambient temp. (operation/storage)	-25°C ... +60°C / -40°C ... +70°C
Protective circuit ⁴⁾	1, 2, 3, 4
VDE protection class ⁵⁾	II, all-insulated
Degree of protection	IP 67
Standards applied	IEC 60947-5-2
Certifications	UL 508, C22.2 No.14-13 ³⁾ ⁶⁾

- 1) Typ. maximum range: max. attainable range without function reserve
- 2) Operating range: recommended range with function reserve
- 3) For UL applications: for use in "class 2" circuits according to NEC only
- 4) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs, 4=interference blanking
- 5) Rating voltage 250VAC
- 6) 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)

Diagrams



Typical behavior – object distance / relative intensity of received light
(with white 90%, 10x10cm)

- ① Relative intensity of received light
- ② Object distance in (mm)

Order guide

Selection table		Order code			
Equipment		RTL 318MP-300-S12 Part no. 500 83188			
Housing	Stainless steel	●			
Range	300 mm	●			
Connection	M12 connector	●			
Switching output	PNP	●			
Connection diagram		1			

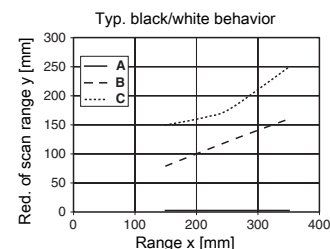
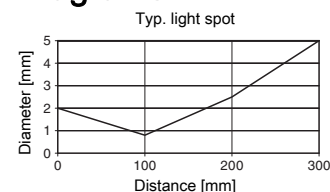
Tables

1	0	300	350
2	13	140	180
3	18	75	100

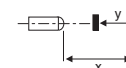
1	White 90%
2	Gray 18%
3	Black 6%

	Operating range [mm]
	Typ. maximum range [mm]

Diagrams



- A White 90%
- B Gray 18%
- C Black 6%



Notes

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.

- With the set detection range, a tolerance of the upper and lower operating range limit is possible depending on the reflection properties of the material surface.

Laser safety notices

⚠ ATTENTION, LASER RADIATION – CLASS 2 LASER PRODUCT**Do not stare into beam!**

The device satisfies the requirements of IEC 60825-1:2014 / EN 60825-1:2014+A11:2021 safety regulations for a product of **laser class 2** and complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

- ⚠ Never look directly into the laser beam or in the direction of reflected laser beams!
If you look into the beam path over a longer time period, there is a risk of injury to the retina.
- ⚠ Do not point the laser beam of the device at persons!
- ⚠ Interrupt the laser beam using a non-transparent, non-reflective object if the laser beam is accidentally directed towards a person.
- ⚠ When mounting and aligning the device, avoid reflections of the laser beam off reflective surfaces!
- ⚠ **CAUTION!** Use of controls or adjustments or performance of procedures other than specified herein may result in hazardous light exposure.
- ⚠ Observe the applicable statutory and local laser protection regulations.
- ⚠ The device must not be tampered with and must not be changed in any way.
There are no user-serviceable parts inside the device.
- CAUTION!** Opening the device may result in hazardous radiation exposure!
Repairs must only be performed by Leuze electronic GmbH + Co. KG.

NOTE**Affix laser information and warning signs!**

Laser warning and laser information signs are affixed to the device (see ①). In addition, self-adhesive laser warning and information signs (stick-on labels) are supplied in several languages (see ②).

- ⚠ Affix the laser information sheet to the device in the language appropriate for the place of use.
When using the device in the US, use the stick-on label with the "Complies with 21 CFR 1040.10" notice.
- ⚠ Affix the laser information and warning signs near the device if no signs are attached to the device (e.g., because the device is too small) or if the attached laser information and warning signs are concealed due to the installation position.
Affix the laser information and warning signs so that they are legible without exposing the reader to the laser radiation of the device or other optical radiation.

①

**A** Laser aperture

②

50106176-04

LASERSTRAHLUNG NICHT IN DEN STRAHL BLICKEN Max. Leistung (peak): 5 mW Impulsdauer: 3 µs Wellenlänge: 655 nm LASER KLASSE 2 EN 60825-1:2014+A11:2021	RADIAZIONE LASER NON FISSARE IL FASCIO Potenza max. (peak): 5 mW Durata dell'impulso: 3 µs Lunghezza d'onda: 655 nm APPARECCHIO LASER DI CLASSE 2 EN 60825-1:2014+A11:2021
LASER RADIATION DO NOT STARE INTO BEAM Maximum Output (peak): 5 mW Pulse duration: 3 µs Wavelength: 655 nm CLASS 2 LASER PRODUCT EN 60825-1:2014+A11:2021	RAYONNEMENT LASER NE PAS REGARDER DANS LE FASCEAU Puissance max. (crête): 5 mW Durée d'impulsion: 3 µs Longueur d'onde: 655 nm APPAREIL À LASER DE CLASSE 2 EN 60825-1:2014+A11:2021
RADIACIÓN LASER NO MIRAR FIJAMENTE AL HAZ Potencia máx. (peak): 5 mW Duración del impulso: 3 µs Longitud de onda: 655 nm PRODUCTO LASER DE CLASE 2 EN 60825-1:2014+A11:2021	RADIAÇÃO LASER NÃO OLHAR FIXAMENTE O FEIXE Potência máx. (peak): 5 mW Período de pulso: 3 µs Comprimento de onda: 655 nm EQUIPAMENTO LASER CLASSE 2 EN 60825-1:2014+A11:2021
LASER RADIATION DO NOT STARE INTO BEAM Maximum Output (peak): 5 mW Pulse duration: 3 µs Wavelength: 655 nm CLASS 2 LASER PRODUCT IEC 60825-1:2014 Complies with 21 CFR 1040.10	激光辐射 勿直视光束 最大输出 (峰值): 5 mW 脉冲持续时间: 3 µs 波长: 655 nm 2 类激光产品 IEC 60825-1:2014