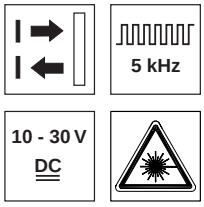
RTL 318

Energetic diffuse reflection laser scanner

en 06-2011/01 50108672



0 … 350 mm

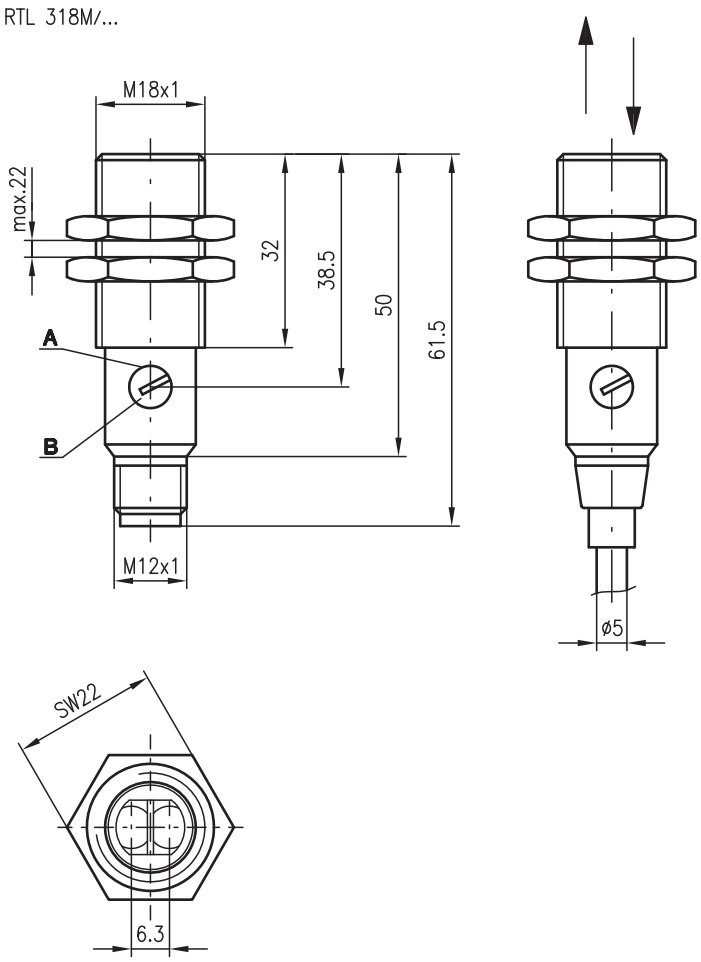
- Energetic diffuse reflection light scanner with red laser light and straight optics
- Robust cylindrical stainless steel housing M18x1, protection class IP 67 for industrial application
- Fixed beam geometry, convergent
- High switching frequency
- Complementary switching outputs for light/dark switching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

Accessories:

(available separately)

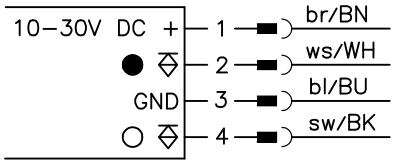
- Mounting systems (BT 318, BT 318-ARH)
- M12 connectors (KD …)
- Ready-made cables (K-D …)

Dimensioned drawing



A Indicator diode
B Sensitivity adjustment

Electrical connection



Specifications

Optical data

Typ. scanning range limit (white 90 %) [1]	0 … 350 mm
Scanning range [2]	see tables
Adjustment range	120 … 350 mm
Light spot diameter	see diagrams
Light source	laser
Wavelength	650 nm (visible red light)
Impulse duration	3 µs
Max. power	5 mW

Timing

Switching frequency	5000 Hz
Response time	0.1 ms
Delay before start-up	≤ 30 ms

Electrical data

Operating voltage U_B [3]	10 … 30 VDC
Residual ripple	≤ 10 % of U_B
Open-circuit current	≤ 20 mA
Switching output	2 transistor outputs, complementary
Function characteristics	light/dark switching
Signal voltage high/low	≥ (U_B-1.6 V)/≤ 1.6 V
Output current	max. 100 mA
Sensitivity	adjustable

Indicators

Red LED	reflection
LED red flashing	reflection, no performance reserve

Mechanical data

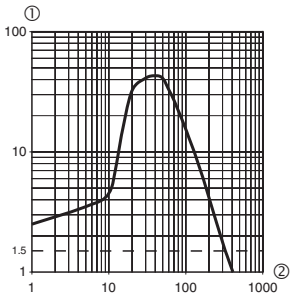
Housing	stainless steel
Optics cover	polyamide 12
Weight	20 g (M12)
Connection type	M12 connector, 4-pin

Environmental data

Ambient temp. (operation/storage)	-25 °C … +60 °C/-40 °C … +70 °C
Protective circuit [4]	1, 2, 3, 4
VDE safety class [5]	II, all-insulated
Protection class	IP 67
Laser class	2 (according to EN 60825-1 and 21 CFR 1040.10 with Laser Notice No. 50)
Standards applied	IEC 60947-5-2, UL 508

1) Typ. scanning range limit: max. attainable range without performance reserve
2) Scanning range: recommended range with performance 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 250 VAC

Diagrams



Typical behaviour object distance / relative intensity of received light
(with white 90 %, 10x10 cm)

1 Relative intensity of received light
2 Object distance in [mm]

Order guide

Selection table Equipment ↓	Order code →	RTL 318M/P-300-S12 Part no. 500 83188					
Housing	Stainless steel	●					
Scanning range	300 mm	●					
Connection	M12 connector	●					
Switching output	PNP	●					
Connection diagram		1					

Tables

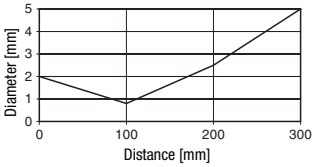
1	0	300	350
2	13	140	180
3	18	75	100

1	white 90 %
2	grey 18 %
3	black 6 %

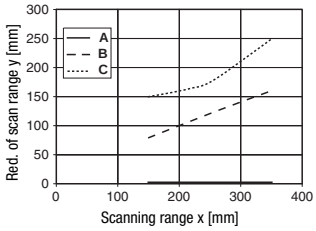
Scanning range [mm]
Typ. scanning range limit [mm]

Diagrams

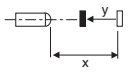
Typ. light spot



Typ. black/white behaviour



A white 90 %
B grey 18 %
C black 6 %



Remarks

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

Approved purpose:
This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.