

HRT 96

Laser light scanner

Part No. 501 11239



100 ... 2500mm



- Detection of reflective tape
- No influences from, e.g., metallic, mirroring, or white surfaces
- Large detection range due to optimised ray geometry
- Reliable detection under inclination, e.g. during curved movement
- Phase measurement permits a high consistency of the switching points
- Teachable switching points for time- and space-saving installation

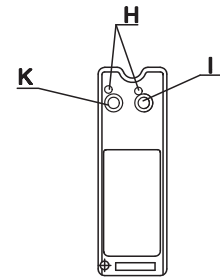
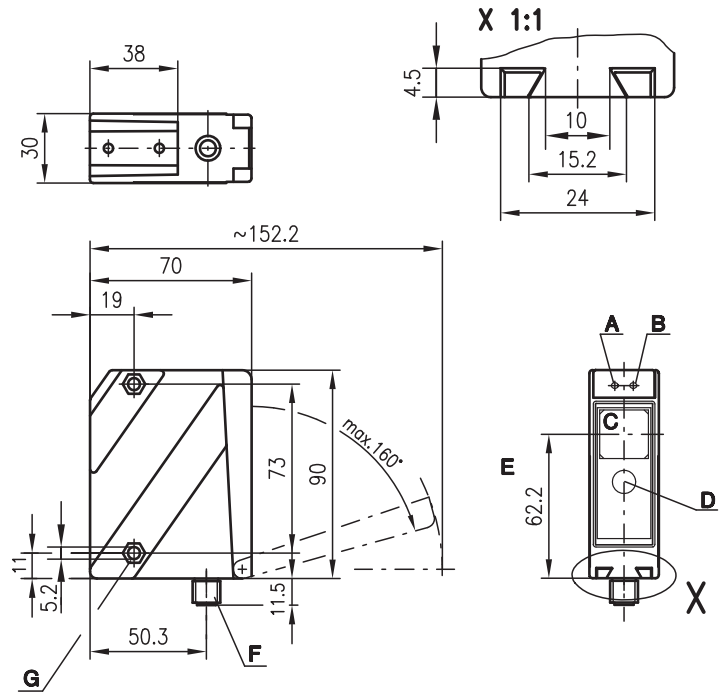


Accessories:

(available separately)

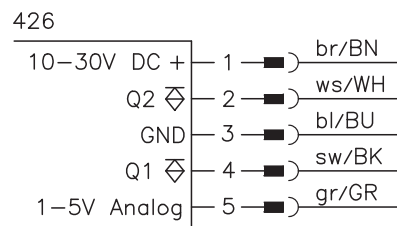
- Mounting systems (BT 96, BT 96.1, UMS 96, BT 450.1-96)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)

Dimensioned drawing



- A** Indicator diode green
- B** Indicator diode yellow
- C** Receiver
- D** Transmitter
- E** Optical axis
- F** Device plug M12x1
- G** Countersinking for SK nut M5, 4.2 deep
- H** Indicator diodes yellow
- I** Scanning range adjustment Q₂
- K** Scanning range adjustment Q₁

Electrical connection



We reserve the right to make changes • 96_d10gb.fm

Specifications

Optical data

Typ. scanning range limit (reflective tape) ¹⁾	2500mm/5000mm
Scanning range ²⁾	50 ... 2500mm
Adjustment range ²⁾	400 ... 2500mm
Light source	laser (red light)
Wavelength	660nm
Laser warning notice	see remarks

Timing

Switching frequency	10Hz
Response time	50ms
Delay before start-up	≤ 200ms

Electrical data

Operating voltage U_B	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of U_B
Bias current	≤ 40mA
Switching output	PNP transistor
Function characteristics	light or dark switching
Signal voltage high/low	≥ ($U_B - 2V$) / ≤ 2V
Output current	max. 100mA

Indicators

Sensor front

LED green
LED yellow

Sensor back

ready
reflection (Q₁)
see table

Mechanical data

Housing
Optics cover
Weight
Connection type

Metal housing

diecast zinc
glass
380g
M12 connector, 5-pin

Environmental data

Ambient temp. (operation/storage)	0°C ... +40°C / -30°C ... +70°C
Protective circuit ³⁾	1, 2, 3, 4
VDE safety class ⁴⁾	II, all-insulated
Protection class	IP 67, IP 69K ⁵⁾
Laser class	2 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2

- 1) With reflective tape approx. 400 x 100mm²
 2) Scanning range: recommended range with performance reserve, may be extended to 5000mm each via configuration
 3) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs, 4=interference blanking
 4) Rating voltage 250VAC
 5) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test

Order guide

Selection table		Order code →				
Equipment ↓		HRT 96M/P-336W.21-5000-426 Part No. 501 02286	HRT 96M/P-336W.22-5000-426 Part No. 501 11221			
Housing	metal	●	●			
Light source	red light (laser)	●	●			
Connection	M12 connector	●	●			
Outputs	2 switching points	●	●			
	light switching		●			
	dark switching	●				
	analogue output 1 ... 5V	●	●			
	switching points settable via teach buttons	●	●			

Tables

Switching points	no reflection	object detected
Light switching		
LED yellow Q1	off	on
LED yellow Q2	off	on
Dark switching		
LED yellow Q1	on	off
LED yellow Q2	on	off

Remarks

- With the set scanning range, a tolerance of the upper scanning range limit is possible depending on the reflection properties of the reflective tape.
- Resolution 50mm.
- Switching points can be set as required within the adjustment range.
- Detection under inclination up to approx. 45°.
- Scanning range/reflectivity:

Object/diffuse reflection	
Reflective tape (standard)	0.1 ... 2.5m/5m (parameterisable range adjustment)

- Laser warning notice:

LASER LIGHT DO NOT STARE INTO BEAM	
Maximum Output:	1.8mW
Pulse duration:	0.5µs
Wavelength:	670nm
CLASS 2 LASER PRODUCT EN60825-1:2003-10	

Notices on Teaching

- Teach Q1 first, followed by Q2. For this purpose: scanning range Q₂ ≤ scanning range Q₁.
- Apply the scanning range for the two switching points by pressing the respective teach button.
- Approved purpose:**
The diffuse reflection light scanners are optoelectronic sensors for optical, contactless detection of objects.