

RF42

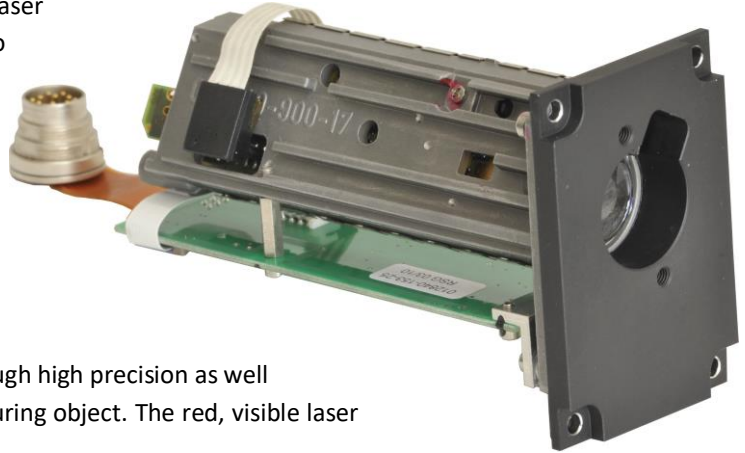
OEM laser module for distance measurement

The RF42 is an OEM laser module to integrate laser distance measurement capabilities into existing measurement equipment. It is an optoelectronic distance measuring device for industrial applications with an analogue interface.

It works contact-free on the principle of comparative phase measurement (amplitude modulation) and facilitates precisely accurate measurement of distances.

The OEM laser module RF42 distinguishes itself through high precision as well as high independence from the surface of the measuring object. The red, visible laser beam allows for easy alignment.

Compared to the industrial laser distance measurement gauge LDM42A only the housing is omitted.



Key Features

- OEM laser module
- Millimetre precise measurement on various surfaces
- Long range reflector-less distance measurement
- With additional reflectors on the target object measurements over 100 m
- Operation in extreme ambient temperatures with high precision and range
- High supply voltage range between 10 V and 30 V DC with low power consumption
- Safe operation through laser class 2
- Easy adjustment through visible laser beam
- One connection cable for supply voltage, serial data interface, switching and analogue output
- Customized parameterization via PC
- Display of measured values in meters, feet, inches and others due to free scaling

Applications

- Distance measurement and determination of position
- Diameter measurement of rolls / coils
- Fill level measurement
- Position control
- Monitoring of safety-relevant parts
- Monitoring of lifting plants / lifting height measurement and positioning of elevators
- Monitoring and positioning of cranes and conveyor systems

Technical Data

Measuring range ¹⁾	0.2 m ... 30 m on almost all natural surfaces, Over 100 m achievable depending on the degree of reflection of surfaces
Measuring uncertainty ²⁾	±2 mm under defined measuring conditions ³⁾ ±3 mm (+15 °C ... +30 °C) ±5 mm (-10 °C ... +50 °C)
Resolution	0.1 mm, free scalable
Reproducibility ⁴⁾	0.5 mm
Measuring time	0.1 s ... 6 s adjustable or automatic in mode DT 0.1 s, fix in DW mode on white surface 0.02 s in mode DX on good reflecting surface (80%)
Laser divergence ⁵⁾	0.6 mrad
Laser class	Laser class2 acc. to DIN EN 60825-1:2014 (650 nm, red)
Operating temperature	-10 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Supply voltage	10 V ... 30 V DC
Power consumption	Ca. 1.5 W
Serial interface ⁶⁾	RS232 or optional RS422, max. Baud rate 115.200, ASCII, Setting of measuring functions, scaling, measuring time via commands, display of measured values, internal temperature of the device and error code
Switching output	Programmable switching threshold and hysteresis, "High-Side" switch, maximum load 0.5 A
Digital input	External trigger, 3 V – 24 V, programmable delay
Analog output	4 mA to 20 mA, Programmable distance range limits, adjustable reaction on error(3 mA, 21 mA or last valid distance value)
Dimensions (without connector)	135 mm × 75 mm × 50 mm
Weight	220 g
MTTF	30,000 hours at 25 °C
Mounting	4 drill holes in front plate for M4 screws, 65 mm x 41 mm

¹⁾ Dependent on target reflectance, influence of extraneous light and atmospheric

²⁾ Statistical spread 95 %

³⁾ Measurement on planar, vertical white surface at standstill or in continuous, + 15 °C ... +30 °C

⁴⁾ Dependent on target reflectance, influence of extraneous light and atmospheric

⁵⁾ At a distance of 10 m the beam diameter is 6 mm, at 100 m it is 6 cm

⁶⁾ Please specify option RS422 when placing the order (-RS422)