

# Distance Sensor M10

- Measuring
- Controlling
- Monitoring

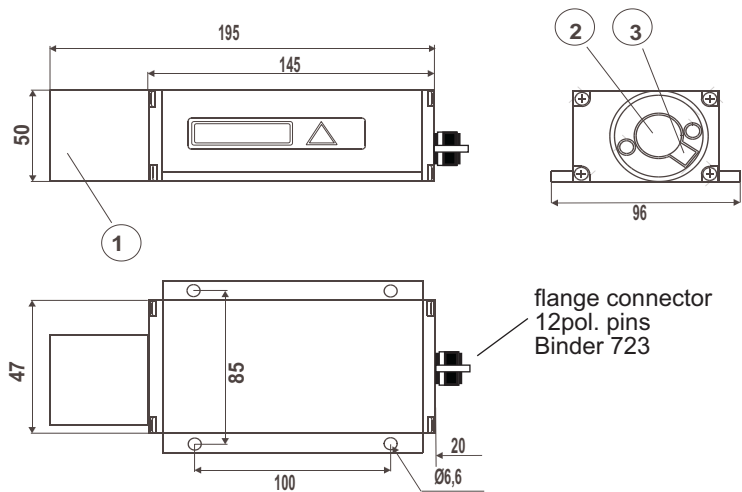
Measurement up to 30 m,  
with reflector up to 100m

Comparative phase measurement



Distance sensor for distance from 0.2 to more than 100 Meter. The sensor measures on all natural surfaces, except glass and water. Measurement of distance below 30 Meter needs no reflector. Laser beam divergence and Laser spot is small. This allows measurement in small tubes.

For protection of the optical system, touch, mechanical hazards, a protective cover is mounted at the front of the unit. The protective cover is available in different length.



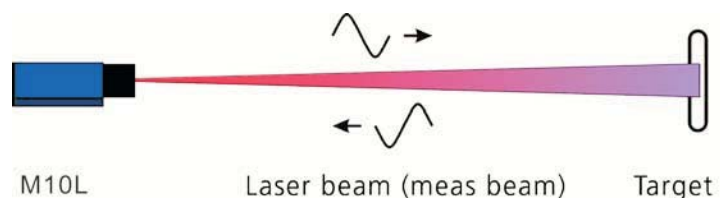
weight 850 g

- 1 protective cover
- 2 receiver optic
- 3 sender optic

- surveillance of cranes and elevators
- measurement of loose parts
- security applications
- object recognition detection of presence control from a big distance

## Measurement Principle

The M10 uses phase comparison method. The M10 sends out modulated visible laser light in different frequencies. The diffuse reflected light from the target is compared to the internal reference signal. A microprocessor calculates the distance from the phase shift to the reference. Accuracy is  $\pm 2$  mm and resolution 0.1 mm within a range of 1 m.



# Laser Sensor M10

ranges programmable, e. g. range 0,5m, range begin 9,5 m

Sensor	M10L/100 - 10 Hz	M10L/100 - 50 Hz
Range	100 m, reflection foil is necessary for range > 30 m	
Range begin	0,2 m	
Linearity*	± 2 mm for range < 30 m, ± 3 mm for range > 30 m	
Resolution**	1 mm	
Light spot diameter	< 6 mm with 10 m, < 30 mm with 50 m, < 60 mm with 100 m	
Measuring frequency	1 ... 10 Hz	50 Hz

Light source	Laser, 650 nm, red visible
Laser protection class	2
Distance output	4 ... 20 mA, RS 232, optional: RS 422; 2 ... 10 V
Analog outputs	programmable thresholds
Load resistor	500 Ohm
Temperature drift	0,005% of range / K
Switching output	MAX 0,5 A programmable
Trigger input	3 ... 24 V, delay time 5 ms, adjustable up to 10s
Operation temperature	-10° ... +50°C
Storage temperature	-20° ... +70°C
Humidity	bis 90% RH
Protection class	IP 65
Supply	10 ... 30 V / 150 mA

\* typical measuring accuracy under average conditions within specified measuring range

\*\*within the treshold of 1 m = 0,1 mm, outputs only with 4...20 mA oder 2...10V

## Delivery:

- Sensor without connection cable
- Demo-Software
- Manual

## Options:

- Interface 422
- Distance output 2...10 V

## Accessories:

- connection cable 2m, 5 m or 10 m
- connection box

Connection cable (accessories):

color	M10L/100 - RS 232	M10L/100 - RS 422
green	TxD RS 232-data transmission	RX+ RS 422-received data +
yellow	RxD RS 232-received data	RX- RS 422-received data -
brown	TRIG external trigger input	TRIG external trigger input
red	lout analog output	lout analog output
black	n.c.	TX- RS 422-data transm. -
violet	n.c.	TX+ RS 422-data transm.+
orange	U <sub>V</sub> supply	U <sub>V</sub> supply
white	ALARM digital switching output	ALARM digital switching output
grey	GND Ground	GND Ground
blue	GND Ground	GND Ground

Connection cable with connection box (accessories):

