

Distance Sensor M10

- Measuring
- Controlling
- Monitoring

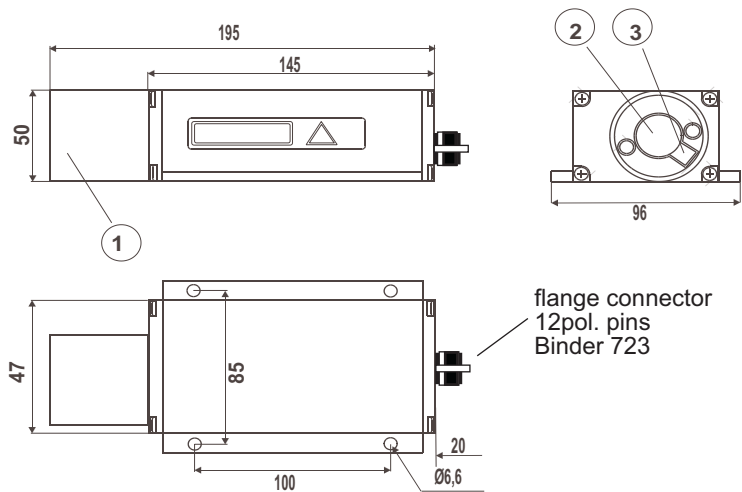
Measurement up to 30 m,
with reflector up to 150 m

Comparative phase measurement



Distance sensor for distance measurement from 0.1 up to 150 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 measurements in small tubes.

For protection of the optical system, touch, mechanical hazards, a protective cover is mounted at the front of the unit.



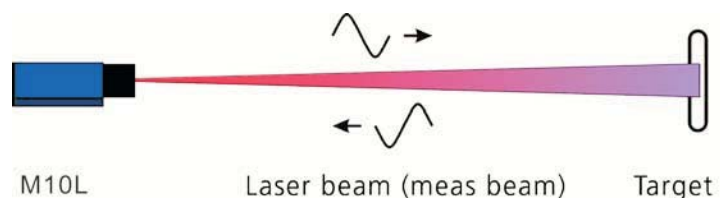
weight 850 g

- 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.



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		150 m, reflection foil is necessary for range > 30 m	
Range begin		0.1 m	
Measuring accuracy		± 2 mm for range < 30 m, ± 3 mm for range > 30 m	
Resolution		≤ 0.4 mm	
Measuring resolution		depending on scale factor	
Light spot diameter		< 10 mm at 10 m, < 33 mm at 50 m, < 62 mm at 100 m	
Measuring frequency		1 ... 10 Hz	50 Hz
Light source		Laser, 650 nm, red visible	
Laser protection class		2 (conforming to standard IEC 825-1 / EN 60825), ≤ 1 mW	
Analog outputs		Distance output: 4 ... 20 mA, adjustable thresholds; 2 ... 10 V (optional) RS 232 or RS 422 (optional)	
		Load resistor: ≤ 500 Ohm	
Switching output		HIGH = $U_v - 2 V$ / LOW < 2 V, rated for loads up to 0.5 V switching thresholds and hysteresis adjustable	
Trigger input		3 ... 24 V, Trigger delay: 5 ms + selectable delay time (0 ... 9999 ms) until start of measurement	
Temperature drift		0.005% or range / K	
Operation temperature		-10° ... +50°C	
Storage temperature		-20° ... +70°C	
Humidity		bis 90% RH	
Protection class		IP 65	
Supply		10 ... 30 V / max. 150 mA	

Delivery:

- Sensor without connection cable
- Demo-Software
- Manual

Options:

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

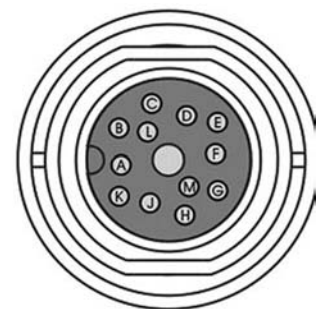
Accessories:

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

Connection cable (accessories):

Pin	color	RS 232	RS 422
A	green	TxD	RX+
B	yellow	RxD	RX-
C	brown	TRIG	TRIG
D	red	lout	lout
E	black	n.c.	TX-
F	violet	n.c.	TX+
G	orange	U_v	U_v
H	white	ALARM	ALARM
J	grey	GND	GND
L	blue	GND	GND

12-pole round-type (flange-mount)-Binder series 723:



Connection cable with connection box (accessories):

