

Distance Sensor M72

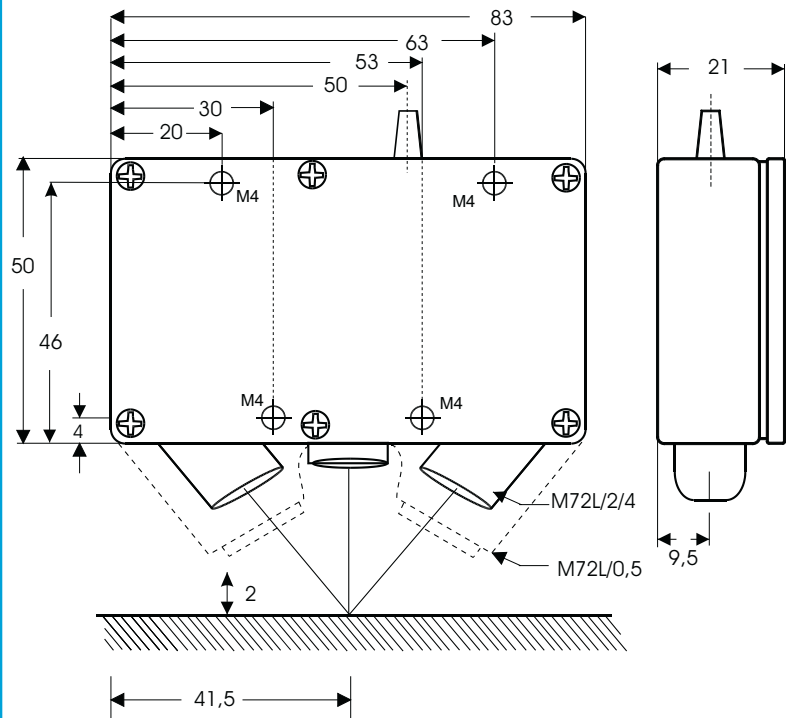
- Measuring
- Controlling
- Monitoring

Laser Sensor up to 10 kHz
measuring range 0,5 ... 4 mm

Triangulation analog



Sensor head M72 Type /0,5 /2 /4
weight 300 g, cable length 2 m



- for mirroring surfaces
- double sensor with two receivers for high accuracy
- independent from object surface: bright, dark
- easy adjusting of measuring frequency and reaction time

Double sensor M72L, for high accuracy

For changing surfaces with bright/dark contrasts, scratches or crystalline surfaces a double sensor may be used to achieve higher accuracy than a single sensor.

Two receivers take care that irregularities are reduced, higher accuracies of better than 0,1 μm are possible on surfaces like tinned steel.

Laser Sensor M72

For special surfaces like solder

Sensor	M72L/ 0,5	M72L/ 2	M72L/ 4
Range [mm]	0,5	2	4
Range begin [mm]	23,75	23	22
Linearity* ± [mm]	0,001	0,004	0,008
Resolution* [mm]	0,0001	0,0005	0,001
Light spot diameter [mm]	0,1	0,2	0,3

	Light source	Laser, 670 nm, red visible
	Sampling frequency	54 kHz
	Distance output	±10 V (optional 0 ... 10 V / 0 ... 5 V / ±5 V) RS 232 / 4 ... 20 mA (optional 0 ... 20 mA)
	Impedance	approx. 0 Ohm (10 mA max.)
Analog outputs	Angle error	with 30° of inclination (A-axis): approx. 0,5% on white surface
	Reaction time	0,1 ... 67 ms
	Bandwith	0,015 ... 10 kHz (-3 dB)
	Temperature drift	0,02% of range / K
	Intensity output	0 ... 10 V
	MIN	+24 V / 10 mA when lower than MIN, LED yellow
Switching outputs	OK	+24 V / 10 mA when higher than MIN and lower than MAX, LED green
	MAX	+24 V / 10 mA when higher than MAX, LED orange
	Error output	+24 V / 10 mA, LED red
	Switching hysteresis	approx. 0,5% of range
	Ambient light	20.000 Lux
	Operation time	50.000 h for Laser diode
	Isolation voltage	200 VDC, 0V against case
	max. Vibration	5 g up to 1 kHz (sensor head, 20 g optional)
	Operation temperature	0° ... +50°C
	Storage temperature	-20° ... +70°C
	Humidity	up to 90% RH
	Protection class	Sensor: IP 64, Electronic system: IP 40
	Supply	+24 VDC / 200 mA (10 ... 30 V)

* Measurement on object color white – bandwith 15 Hz

Delivery:

- Sensor with connection cable 2m
- Electronic unit
- 25 pin D-connector, soldering version
- Calibration report

Options:

- Special cable length
- Sensor head with integrated protection window
- Sensor head vibration resistant

Accessories:

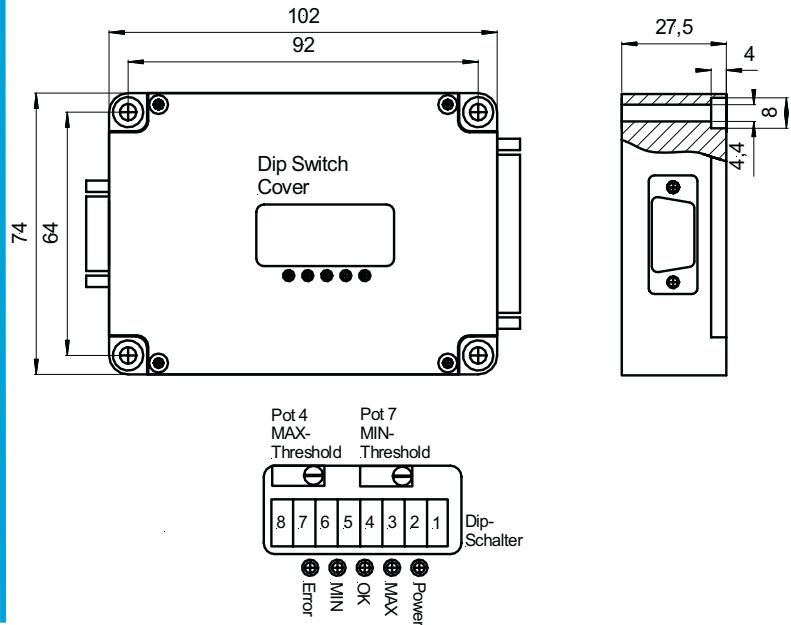
- Thickness-measuring system
- Increases laser capacity
- Protection casing
- Interference filter
- RS 232- Interface
- Extension cable 2m
- Power supply
- Plug-on power supply
- Digital display (display in mm)
- More accessories on request

Special types on request

Electronic unit M7-series

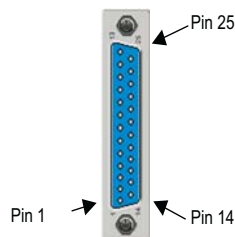


Standard delivery of M7, M72 and M74



Pin assignment 25 pin SUB-D connector:

Pin	
1	Distance output ± 10 V
2	Error +24 V / 10 mA
3	Laser OFF, 0V
4	TXD
5	Range OK, +24 V / 10 mA
6	4 ... 20 mA
7	RXD
8	0V supply
14	Analog GND
16	MAX, +24 V / 10 mA
17	Input Sensor 2
18	RTS
19	MIN, +24 V / 10 mA
20	Intensity 0 ... 10 V
21	+24 V supply



Dip switch settings:

SW1	Function
on	RS 232 Software Trigger with RXD
off	Stop with RTS

SW2	Function
on	RS 232 Baud rate = 38,4 kBaud
off	RS 232 Baud rate = 115,2 kBaud

SW3 unconnected

SW4	SW5	SW6	F/kHz	T/ μ s
on	on	on	10	0,1
off	on	on	7	0,14
on	off	on	4	0,25
off	off	on	1	1
on	on	off	0,25	4
off	on	off	0,1	10
on	off	off	0,025	40
off	off	off	0,015	67

SW7	SW8	Function
on	on	Normal-Laser off when I/O = GND
off	on	Trigger with I/O = GND
on	off	Sensor = Master
off	off	Sensor = Slave

Default setting 4 kHz