

# Distance Sensor M72

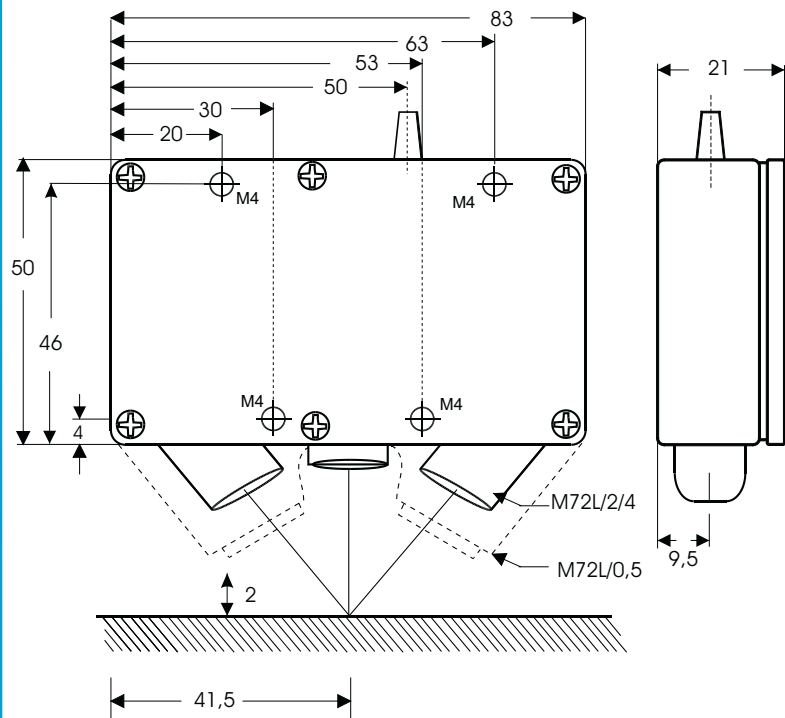
Laser Sensor up to 10 kHz  
measuring range 0,5 ... 4 mm

Triangulation analog



- Measuring
- Controlling
- Monitoring

**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  $\mu\text{m}$  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:

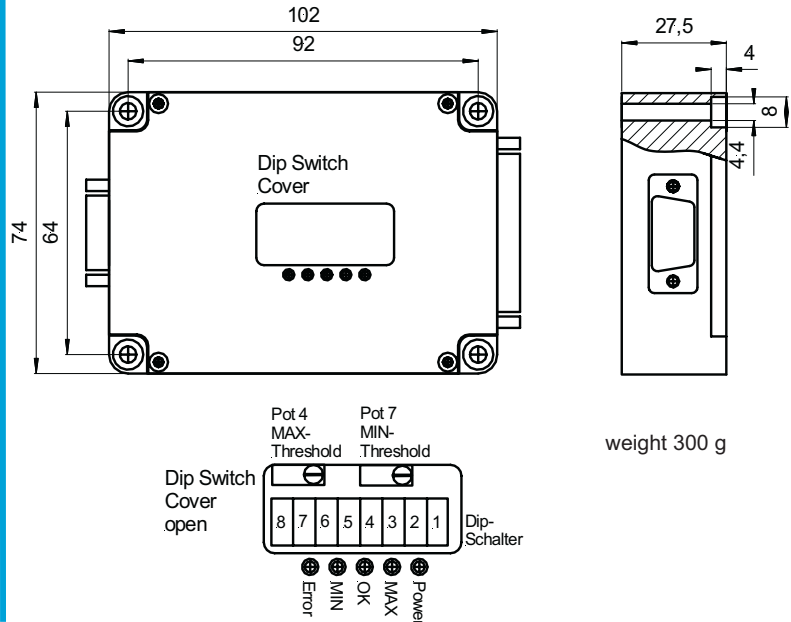
- Thickness-measuring system
- Increases laser capacity
- Protection casing
- Interference filter
- RS 232- Interface
- Extension cable 2m
- Power supply
- Plug-on power supply
- Digital display (display in mm)
- More accessories on request

Special types on request

# Electronic unit M7-series

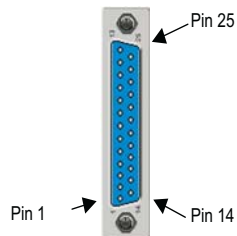


Standard delivery of M7, M72 and M74



## Pin assignment 25 pin SUB-D connector:

Pin	Function
1	Distance output $\pm 10$ 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/ms
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