

M22/M52 Distance sensor



Highest resolution 0.005 % FSO
 High measuring rate of 10 kHz
 Excellent linearity 0.03 %
 Auto zero and signal averaging
 Real-time surface compensation

Technical Data

Model	M22-2	M22-10	M22-20	M22-40	M22-50	M22-100	M22-200
Measuring range	2 mm (.08 ")	10 mm (.4 ")	20 mm (.8 ")	40 mm (1.57 ")	50 mm (2 ")	100 mm (4 ")	200 mm (8 ")
Start measuring range (SMR)	24 mm (0.94 ")	30 mm (1.18 ")	40 mm (1.57 ")	175 mm (6.89 ")	45 mm (1.76 ")	70 mm (2.72 ")	130 mm (5.06 ")
Reference distance midrange	25 mm (0.98 ")	35 mm (1.38 ")	50 mm (1.97 ")	195 (7.67 ")	70 mm (2.76 ")	120 mm (4.72 ")	230 mm (9.06 ")
End measuring range (EMR)	26 mm (1.02 ")	40 mm (1.58 ")	60 mm (2.37 ")	215 (8.46 ")	95 mm (3.76 ")	170 mm (6.72 ")	330 mm (13.06 ")
Linearity	1 μ m	3 μ m	6 μ m	12 μ m	15 μ m	30 μ m	60 μ m
	± 0.05 % FSO	± 0.03 % FSO					
Resolution	0.1 μ m	0.5 μ m	1 μ m	2 μ m	2.5 μ m	5 μ m	10 μ m
Measuring rate	10 kHz						
Permissible ambient light	30,000 lx						
Spot diameter (start m.range)	80 μ m	110 μ m	160 μ m	230 μ m	215 μ m	350 μ m	1300 μ m
Spot diameter (midrange)	35 μ m	50 μ m	60 μ m	210 μ m	80 μ m	130 μ m	1300 μ m
Spot diameter (end m. range)	80 μ m	110 μ m	160 μ m	230 μ m	215 μ m	350 μ m	1300 μ m
Light source	1 mW laser, wavelength: 670 nm (visible/red)						
Laser safety class 2	DIN EN 60825-1/A1 12.99 / IEC 825-1/A1 12.99 / FDA						
Protection class	Sensor: IP 65 Controller: IP 50						
Temperature stability	0.01 % d.M./K						
Operating temperature	0 to 50 °C (32 to 122 °F)						
Storage temperature	-20 to 70 °C (-4 to 158 °F)						
Output	Analog: ± 5 V Digital: RS 485 / 691.2 kBaud						
Supply	24 VDC (± 15 %), max. 500 mA						
Sensor cable	2 m (6.5 ') - integrated 5/10 m (16.5 '/33 ') - without additional calibration						
Controller	auto zero / signal averaging 143 x 145 x 52 mm (5.6 " x 5.6 " x 2 ") - without mounting clips						
Electromagnetic compatibility (EMC)	EN 50081-1 und EN 50082-2						
Vibration	2 g / 20 ... 500 Hz						
Shock	15 g / 6 ms / 3 Axis						

FSO = Full Scale Output

All specifications apply for a diffusely reflecting matt white ceramic target

Model		M52-2	M52-10	M52-20	M52-50	M52-100	M52-200
Measuring range		2 mm	10 mm	20 mm	50 mm	100 mm	200 mm
Start of measuring range	SMR	24 mm	30 mm	40 mm	45 mm	70 mm	130 mm
Midrange	MMR	25 mm	35 mm	50 mm	70 mm	120 mm	230 mm
End of measuring range	EMR	26 mm	40 mm	60 mm	95 mm	170 mm	330 mm
Linearity		1 μ m	3 μ m	6 μ m	15 μ m	30 μ m	60 μ m
		± 0.05 %FSO	± 0.03 % FSO				
Resolution (at 20 kHz without averaging)		0.03 μ m	0.15 μ m	0.3 μ m	0.8 μ m	1.5 μ m	3 μ m
		0.0015 % FSO					
Measuring rate		20 kHz					
Permissible ambient light		30.000 lx					
Spot diameter	SMR	80 μ m	110 μ m	160 μ m	215 μ m	350 μ m	1300 μ m
	MMR	35 μ m	50 μ m	60 μ m	80 μ m	130 μ m	1300 μ m
	EMR	80 μ m	110 μ m	160 μ m	215 μ m	350 μ m	1300 μ m
Light source		semiconductor laser <1 mW, 670 nm (red)					
Laser safety class		class 2 acc. DIN EN 60825-1/A1 12.99 / IEC 825-1/A1 12.99 / FDA					
Protection class		sensor: IP 65 / controller: IP 50					
Temperature stability		0.01 % FSO/ $^{\circ}$ C					
Operation temperature		0 ... +50 $^{\circ}$ C					
Storage temperature		-20 ... +70 $^{\circ}$ C					
Output		analog: ± 5 V digital: RS 422 / 691.2 kBaud					
Power supply		24 VDC (± 15 %), max. 500 mA					
Sensor cable length		standard: 2 m - integrated option: 5 m/10 m					
Controller		functions: auto zero / signal averaging					
Electromagnetic compatibility (EMC)		EN 50081-1 and EN 61000-6-2					
Vibration		2 g / 20 ... 500 Hz					
Shock		15 g / 6 ms / 3 Axis					

FSO = Full Scale Output

All specifications apply for a diffusely reflecting matt white ceramic target

SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

Accessories

Sensor cable extension Digital readout, programmable

Signal and output cable **Serial interfaces**

