optoNCDT 2300 – 50 kHz laser displacement sensor for extreme dynamic measurements

The optoNCDT 2300 is the latest high-end model of laser triangulation sensors from Micro-Epsilon. The new series offers an adjustable measuring rate up to 49 kHz. An impressive and worldwide unique fact regarding this sensor class is that the complete electronics has already been integrated in the compact sensor.

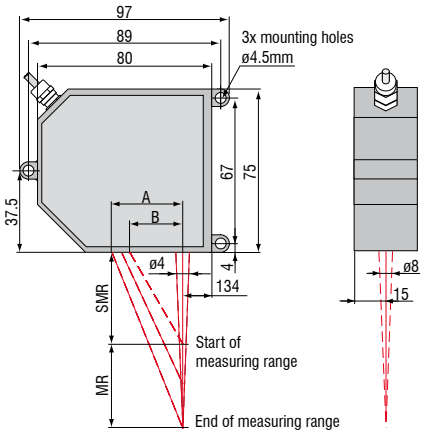
The new A-RTSC (Advanced Real-Time-Surface-Compensation) is a further development of the proven RTSC. Therefore, a more precise real-time surface compensation during the measuring process is ensured due to an increased dynamic range.

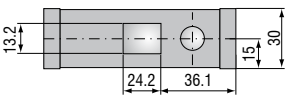
The data are output via Ethernet or RS422. The Ethercat version is available from QII/2011. If the sensor is operated with the controller unit CSP2008 (optional), an analogue output is provided, too. The complete sensor configuration is effected via a comfortably designed web interface.

The optoNCDT 2300 is especially used in the case of fast measurements such as vibration monitoring or measurements against challenging surfaces.

Features

- Measuring ranges 2mm - 50mm
  (Measuring ranges up to 200mm available from QIII / 2011)
- Adjustable measurement rate up to 49 kHz
- A-RTSC (Advanced-Real-Time-Surface-Compensation),
  for extreme stability and precision
- Ethernet / EtherCat (available 06/2011)
- Linearity ±0.02% FSO thanks to innovative high end lenses





(Dimensions in mm, not to scale)

optoNCDT 2300 Technical data

Model		ILD 2300-2	ILD 2300-10	ILD 2300-20	ILD 2300-50
Measuring range		2mm	10mm	20mm	50mm
Start of measuring range		24mm	30mm	40mm	45mm
Midrange		25mm	35mm	50mm	70mm
End of measuring range		26mm	40mm	60mm	95mm
Linearity		0.4µm	2µm	4µm	10µm
		≤ ±0.02% FSO			
Resolution (20 kHz)		0.03µm	0.15µm	0.3µm	0.8µm
		0.0015 % FSO			
Measuring rate		adjustable via software 49 / 30 / 20 / 10 / 5 / 2.5 / 1.5kHz (49.057kHz with reduced measuring range)			
Permissable ambient light		10,000lx …40,000lx			
Spot diameter	SMR	80µm	110µm	160µm	215µm
	MMR	35µm	50µm	60µm	80µm
	EMR	80µm	110µm	160µm	215µm
Light source		semiconductor laser <1mW, 670nm (red)			
Protection class		IP 65			
Operation temperature		0 ... +50°C			
Storage temperature		-20 ... +70°C			
Inputs / Outputs		Ethernet / Ethercat (available 06/2011) RS422 Analog ouput via CSP2008			
Inputs		Laser on/off			
Power supply		24 Vdc (11…30V); PV < 2W			
LEDs	Status LED	off = Laser OFF			
		red = poor target; out of range			
		yellow = MR			
		green = ok			
	Power LED	out = power off			
		green = Ethernet / RS422			
Sensor cable	Standard	0.25 m (with cable connector)			
	Option	3 / 10 m with Sub D 15 pin connector			
Electromagnetic compatibility (EMC)		EN 55011/12.1998 and EN 50082-2/ 02.1996			
Vibration		2 g / 20 ... 500 Hz			
Shock		15 g / 6 ms / 3 axes			

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

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