



More Precision

eddyNCDT 3005 // Eddy current displacement measurement system





- Compact and robust design
- Temperature compensation up to 180°C
- High precision measurement accuracy
- High frequency response
- Sensor for ferro- and non-ferromagnetic targets
- Easy to use (plug & play)
- Perfect for machine integration

Eddy current displacement measurement

Eddy current sensors from Micro-Epsilon are designed for displacement, distance, movement and position measurements, but also for detecting oscillations and vibrations. Non-contact operating eddy current sensors from Micro-Epsilon are renowned for their extreme precision, and are even used for micrometre-accuracy measurements.

Robust eddy current measurement system

The eddyNCDT 3005 is a new, powerful eddy current measurement system for fast, high precision displacement measurements. The system comprises a compact controller, a sensor and an integrated cable and is factory-calibrated for ferromagnetic and non-ferromagnetic materials.

As sensor and controller are temperature-compensated, high measurement accuracies can be achieved even in fluctuating temperatures. The sensors are designed for ambient temperatures up to max. +125°C but can optionally be custom engineered for temperatures from -30°C to +180°C. The measurement system is pressure-resistant up to 10 bar and so is ideally suited to machine integration.

Ideal for integration into plant and machinery

The eddyNCDT 3005 provides ease of use and high measurement accuracy, offering an outstanding price/performance ratio. Therefore, the sensor is ideally suited to OEM integration and mechanical engineering applications. Particularly where pressure, dirt, oil and high temperatures are present, the eddyNCDT 3005 is suitable. Where high volume orders are required, customer-specific designs can be tailored to suit individual requirements.

Multi-channel operation without mutual interference

If two or more systems operate next to one another, there is no need for synchronisation. For operating several systems, a new frequency separation is provided, which enables to operate these systems in parallel without influencing one another. Tuning via synchronisation cable is not necessary.

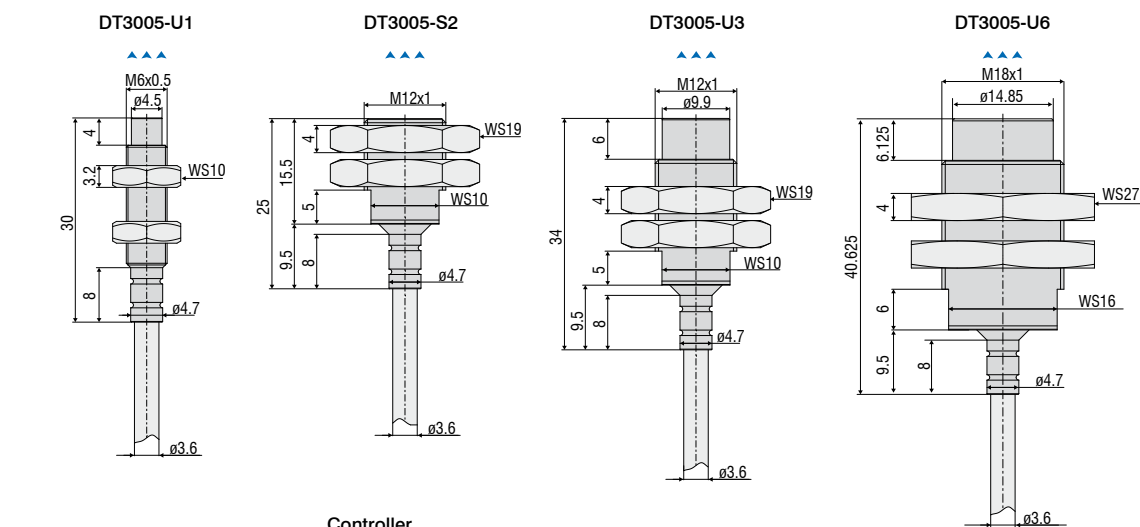
Model		DT3005- U1-A-C1	DT3005- U1-M-C1	DT3005- S2-A-C1	DT3005- S2-M-C1	DT3005- U3-A-C1	DT3005- U3-M-C1	DT3005- U6-A-C1	DT3005- U6-M-C1
Measurement object ¹⁾		aluminium	steel	aluminium	steel	aluminium	steel	aluminium	steel
Measuring range		1mm		2mm		3mm		6mm	
Offset distance		0.1mm		0.2mm		0.3mm		0.6mm	
Linearity	≤0.25% FSO	2.5µm		5µm		7.5µm		15µm	
Resolution ²⁾	≤0.05% FSO	0.5µm		1µm		1.5µm		3µm	
Repeatability		≤0.05% FSO							
Max. sensitivity deviation		≤1%							
Frequency response		5kHz(-3dB)							
Temperature stability (MMR)		0.025% FSO / °C							
Temperature compensation range	sensor	10°C ... +125°C (optional -30°C ... 180°C)							
	controller	10°C ... +60°C							
Ambient temperature	sensor	-30°C ... +125°C (optional -30°C ... 180°C)							
	controller	-20°C ... +70°C							
Design		unshielded		shielded			unshielded		unshielded
Recommended measurement object geometry (flat)		ø24mm		ø24mm			ø48mm		ø72mm
Sensor cable length		1m							
Connection		connector 5-pin M12							
Output		0.5 ... 9.5V							
Power supply		12V ... 32V							
Protection class		IP67							
Pressure resistance		10bar (sensor, cable and controller)							
Weight		70g		75g		77g		95g	

FSO = of full scale output

MMR = midrange

¹⁾ Steel: ST37 DIN 1.0037 / aluminium: AlCuMgPb3.1645

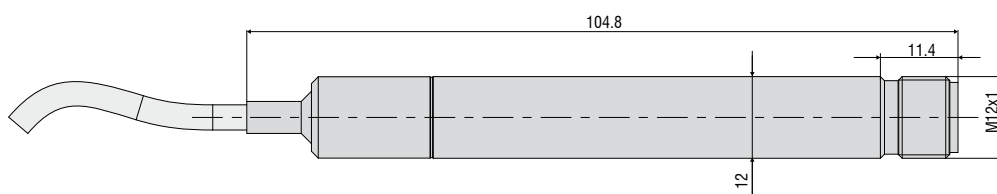
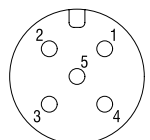
²⁾ RMS noise relates to centre of measuring range at 5kHz



Controller

Pin assignment

Pin	Description
1	supply +24V
2	displacement signal
3	ground
4	internal
5	internal



Measurement direction Dimensions in mm, not to scale.

High performance sensors made by Micro-Epsilon



Sensors and systems for displacement and position



Sensors and measurement devices for non-contact temperature measurement



2D/3D profile sensors (laser scanner)



Optical micrometers, fibre optic sensors and fibre optics



Colour recognition sensors, LED analyzers and colour online spectrometer



Measurement and inspection systems



MICRO-EPSILON Headquarters
Koenigbacher Str. 15 · 94496 Ortenburg / Germany
Tel. +49 (0) 8542 / 168-0 · Fax +49 (0) 8542 / 168-90
info@micro-epsilon.com · www.micro-epsilon.com

MICRO-EPSILON UK Ltd.
No.1 Shorelines Building · Shore Road · Birkenhead · CH41 1AU
Phone +44 (0) 151 355 6070 · Fax +44 (0) 151 355 6075
info@micro-epsilon.co.uk · www.micro-epsilon.co.uk