MICRO-EPSILON

More Precision.

induSENSOR // Linear inductive displacement sensors

- Proven LVDT technology
- Measuring ranges ±1 … ±10 mm
- Low cost especially with a large number of pieces
- Sensor diameter of just ø8mm
- Models with pneumatic push

LVDT gauge sensors DTA-xG8 are primarily used for the measurement and inspection of workpiece geometry (e.g. length, width, diameter, thickness, depth, height). Therefore, different measuring ranges from ±1 mm to ±10 mm are available. The gauges are particularly suitable for applications involving a large number of pieces.

These gauges have an axial cable outlet and are equipped with either a plain bearing-guided plunger and a return spring, or with a pneumatic push rod. Depending on the measuring object, different probe tips are available.

DTA gauges can be operated with every MSC controller. Depending on this controller, single-/dual-/multi-channel measurements are possible. In addition to the well-established analog output, modern fieldbuses are available for integration purposes.

Based on modern interfaces and multi-channel capability, the MSC controllers open up new fields of application.

Plunger and return spring

Article designation

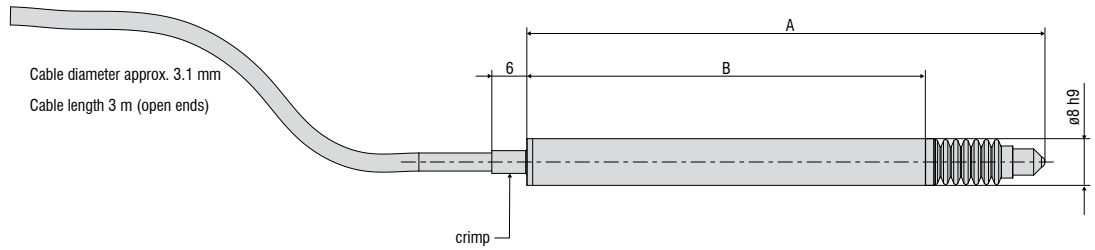
DT	A-	5-	G8-	3-	CA-	V

- V: Gauge options: V: pneumatic push
- CA: Connection (axial): CA integral cable (3m)
- 3: Linearity: 3 (±0.3 %)
- G8: Function: gauge
- 5: Measuring range in mm
- A: Excitation AC
- DT: Principle: Differential Transformer (LVDT)

Model		DTA-1G8	DTA-3G8	DTA-5G8	DTA-10G8	DTA-1G8-V	DTA-3G8-V	DTA-5G8-V	DTA-10G8-V
Measuring range		±1 mm	±3 mm	±5 mm	±10 mm	±1 mm	±3 mm	±5 mm	±10 mm
Linearity		≤ ±3 µm	≤ ±9 µm	≤ ±15 µm	≤ ±30 µm	≤ ±3 µm	≤ ±9 µm	≤ ±15 µm	≤ ±30 µm
		≤ ±0.3% FSO							
Repeatability [1]		≤0.15 µm	≤0.45 µm	≤0.75 µm	≤1.5 µm	≤0.15 µm	≤0.45 µm	≤0.75 µm	≤1.5 µm
Temperature stability		≤ 250 ppm FSO/K							
Sensitivity		133 mV / mm/V	85 mV / mm/V	53 mV / mm/V	44 mV / mm/V	133 mV / mm/V	85 mV / mm/V	53 mV / mm/V	44 mV / mm/V
Excitation frequency		5 kHz	5 kHz	5 kHz	2 kHz	5 kHz	5 kHz	5 kHz	2 kHz
Excitation voltage		550 mV							
Connection		integrated cable (3 m) with open ends; axial cable outlet; drag-chain suitable; cable diameter of 3.1 mm; min. bending radii: fixed installation 25 mm, moving 38 mm, drag chain 47 mm							
Temperature range	Storage	-40 … +80 °C							
	Operation	-20 …+80 °C (without bellows); 0 … 80 °C (with bellows)							
Pressure resistance		atmospheric pressure							
Shock (DIN EN 60068-2-27)		40 g / 6 ms in 3 axes, 1000 shocks each							
Vibration (DIN EN 60068-2-6)		±1.5 mm / 10 … 58 Hz in 2 axes, 10 cycles each ±20 g / 58 … 500 Hz in 2 axes, 10 cycles each							
Protection class (DIN EN 60529)		IP65 (with bellows); IP54 (without bellows)							
Material		Stainless steel (housing); FPM (bellows); PUR (cable sheath); PVC/PP (cable braids)							
Weight		approx. 70 g	approx. 70 g	approx. 75 g	approx. 85 g	approx. 70 g	approx. 70 g	approx. 80 g	approx. 85 g
Typical spring forces [2]	SMR	1.3 N	0.8 N	1 N	0.7 N	depending on air pressure			
	MMR	1.55 N	1.5 N	1.9 N	1.9 N				
	EMR	2 N	2.5 N	3 N	3.5 N				
Compatibility		MSC7401, MSC7802, MSC7602							
Typ. service life		5 million cycles							

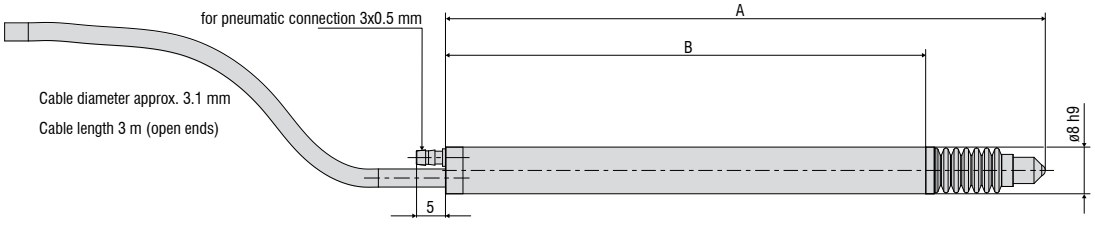
FSO = Full Scale Output
SMR = Start of measuring range, MMR = Mid of measuring range, EMR = End of measuring range
[1] Averaging over 100 values; 200 repetitions
[2] Removing the bellows changes the spring forces

DTA-xG8-3-CA



Model	A (zero position)	B
DTA-1G8-3-CA	82.8 mm	64.3 mm
DTA-3G8-3-CA	88.2 mm	68.3 mm
DTA-5G8-3-CA	118.0 mm	89.5 mm
DTA-10G8-3-CA	155.0 mm	121.7 mm

DTA-xG8-3-CA-V



Modell	A (zero position)	B
DTA-1G8-3-CA-V	94.8 mm	76.3 mm
DTA-3G8-3-CA-V	102.8 mm	82.3 mm
DTA-5G8-3-CA-V	134.0 mm	105.3 mm
DTA-10G8-3-CA-V	171.0 mm	137.3 mm

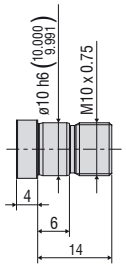
Dimensions in mm, not to scale

Sensor cables

C701-3	Sensor cable, 3 m, with cable connector and tin-plated free ends
C701-6	Sensor cable, 6 m, with cable connector and tin-plated free ends
C701/90-3	Sensor cable, 3 m, with 90° cable connector and tin-plated free ends
IF7001	Single-channel USB/RS485 converter for MSC7xxx

Service

Assembly of screw flange - DTA-xG8
Connector assembly M9 and cable reduction XXXX mm - DTA-x
Connector assembly M9 - DTA-x

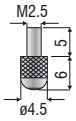


Screw flange

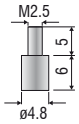
Probe tips

Type 2 probe tip / hard metal
Type 2 probe tip / plastics
Type 2 probe tip / ruby
Type 2 probe tip / steel
Type 10 probe tip / steel
Type 11 probe tip / steel
Type 13 probe tip / steel

Standard probe tip: type 2

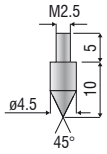


Option: type 10



Option: type 11

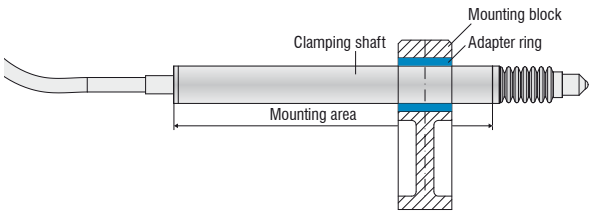
Option: type 13



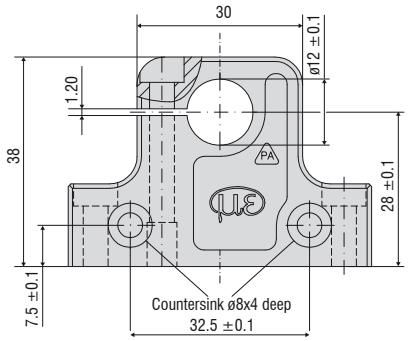
Sensor mounting

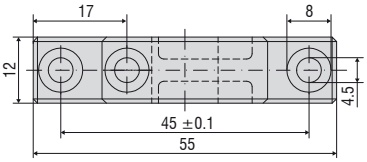
MBS12/8 Mounting block
MBS12/8 Adapter ring

Sensor mounting for circumferential clamping for reduction to D8 (gauge)

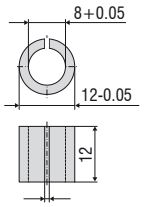


Mounting block MBS12/8

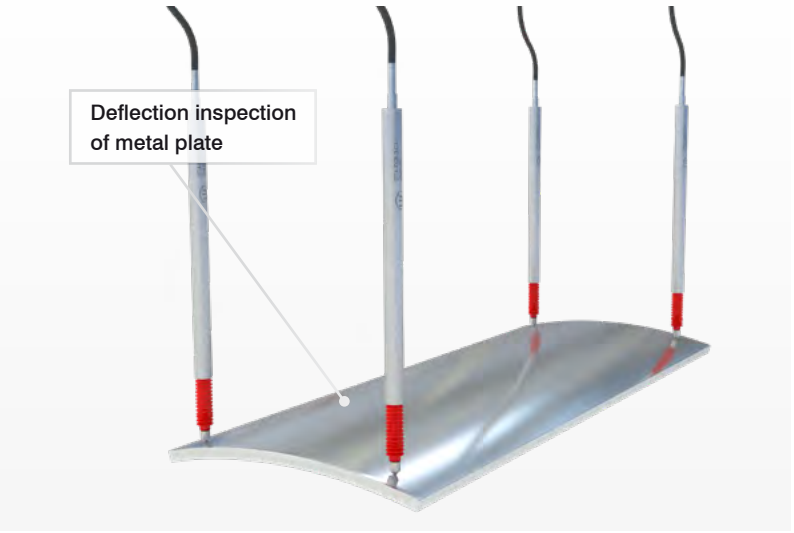


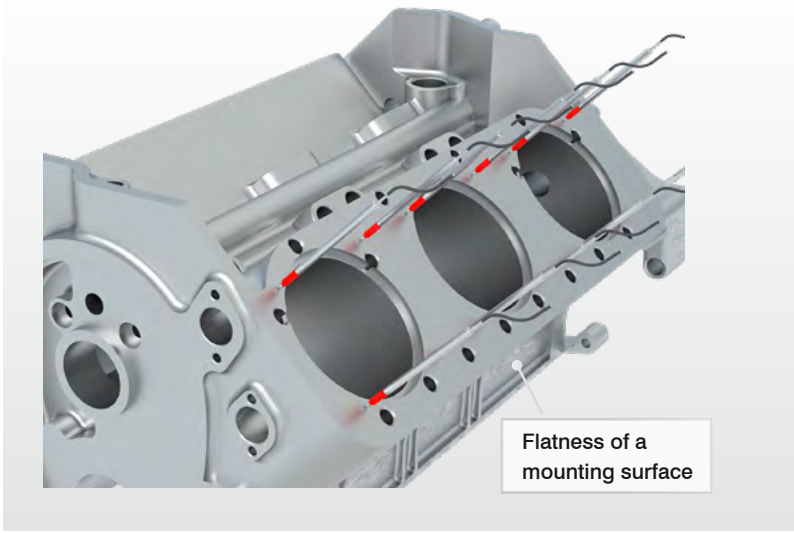


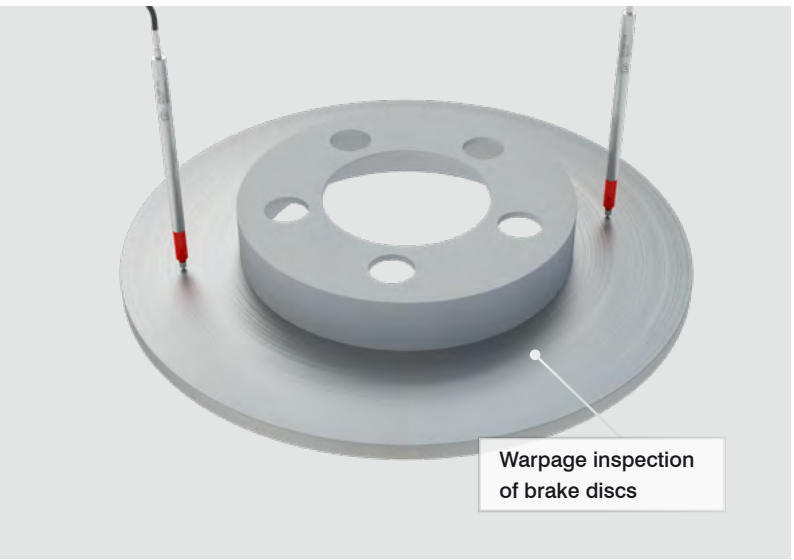
Adapter ring

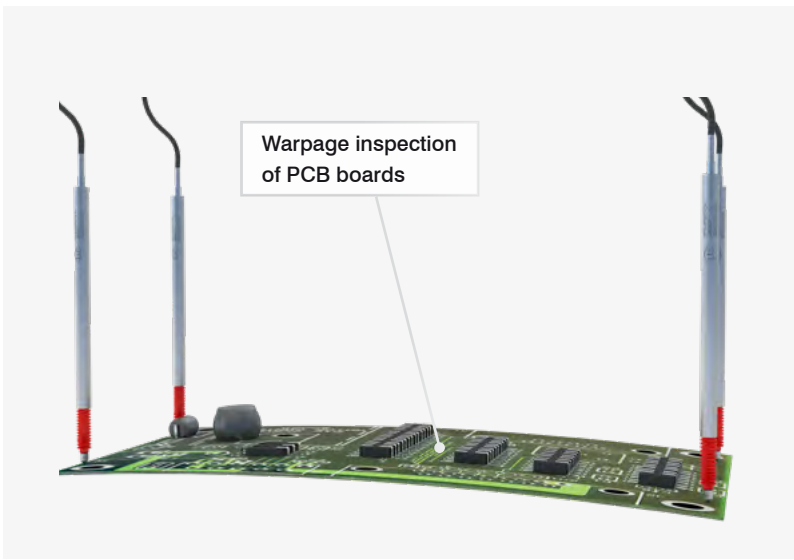


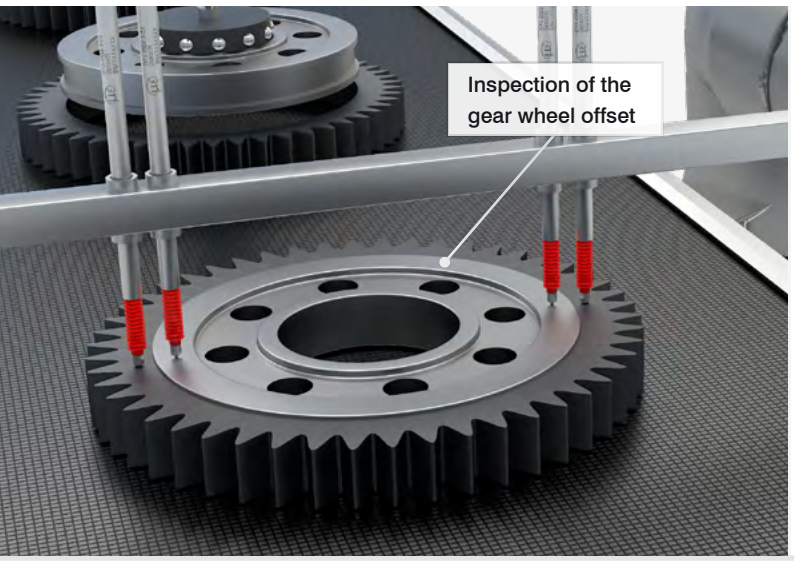
Gauges from Micro-Epsilon have many possible fields of application. Due to different measuring ranges and configuration settings, the gauges are suitable for numerous measurement and inspection tasks. Combined with multi-channel controllers, the DTA gauges are often used for dimensional measurement and inspection tasks, e.g., in automated quality control, R&D and production monitoring.

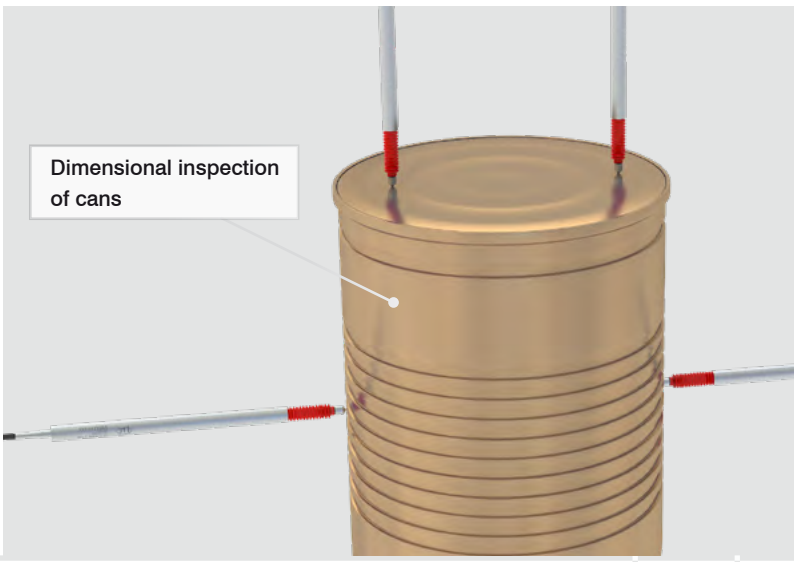












Sensors and Systems from Micro-Epsilon

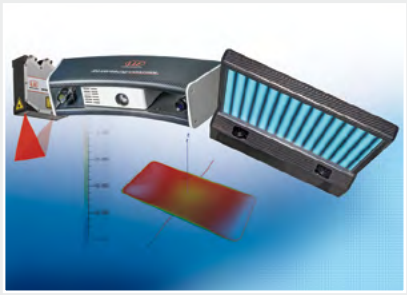
Sensors and systems for displacement, distance and position

Sensors and measurement devices for non-contact temperature measurement

Measuring and inspection systems for metal strips, plastics and rubber

Optical micrometers and fiber optics, measuring and test amplifiers

Color recognition sensors, LED analyzers and inline color spectrometers



3D measurement technology for dimensional testing and surface inspection

MICRO-EPSILON

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