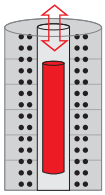
MICRO-EPSILON

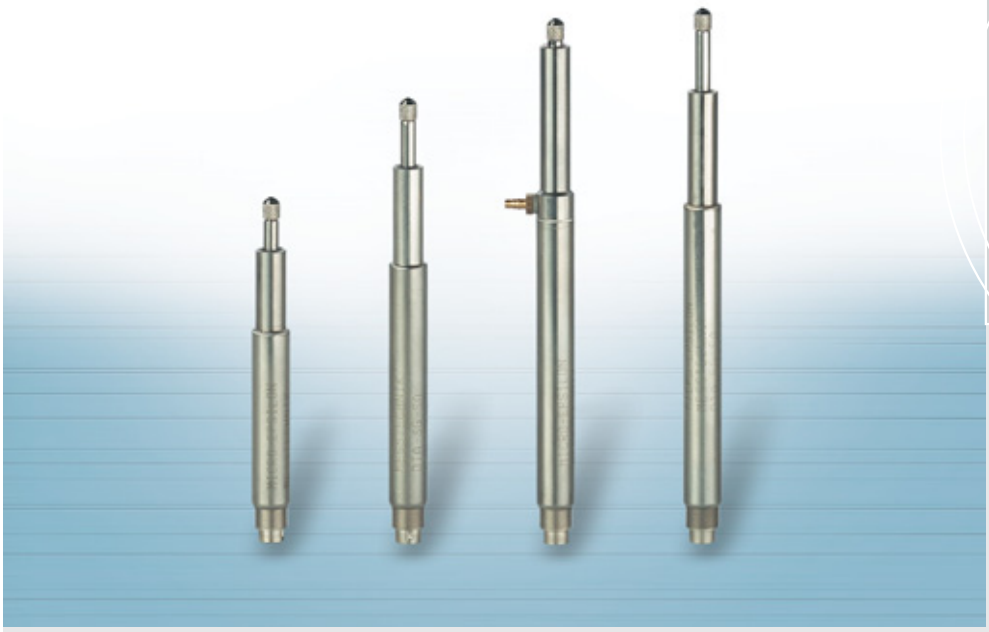
More Precision.

induSENSOR

Linear inductive displacement sensors



LVDT series: Gauging sensor with external electronics



Measurement ranges ±1 … ±10 mm

Extremely accurate even under difficult ambient conditions

Long-term stability, because wear-free

Easy fitting/operation

Gauging sensor with plunger guided in plain bearings and fitted with return spring. The measuring probe is mounted via a standard M2.5 thread and can be interchanged with commercially available measurement probes. Measurement probes are primarily used for the measurement and inspection of work-piece geometry (length, width, diameter, thickness, depth, height, etc.).

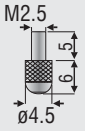
Article

DTA - ***5*** G - ***3*** - ***CA*** - ***V***

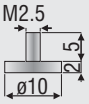
- DTA: principle: differential transformator (LVDT)
- excitation AC
- ***5***: measuring range ± mm
- G: function: gauging sensor
- ***3***: Linearity 3 (± 0.3 %) / 1.5 (± 0.15 %)
- ***CA***: Connection (axial): CA integral cable (3 m) / SA plug connection
- ***V***: gauging sensor option: V pneumatic push

Probe tips

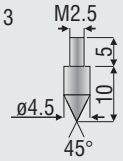
standard



option: type 11



option: type13



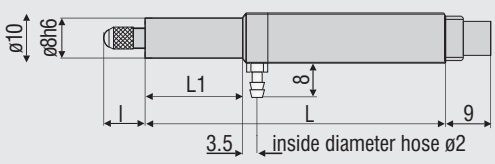
Model		DTA-1G-		DTA-3G-		DTA-5G-		DTA-10G-	
Connection		**CA**	**SA**	**CA**	**SA**	**CA**	**SA**	**CA**	**SA**
Measuring range		±1 mm		±3 mm		±5 mm		±10 mm	
Linearity	standard ±0.3 % FSO	6 µm		18 µm		30 µm		60 µm	
	optional ±0.15 % FSO	3 µm		9 µm		15 µm		30 µm	
Repeatability	<0.0075 %	<0.15 µm		<0.45 µm		<0.75 µm		<1.5 µm	
Excitation frequency		5 kHz						2 kHz	
Excitation amplitude		5 V_{eff}							
Sensitivity		133 mV/Vmm		85 mV/Vmm		53 mV/Vmm		44 mV/Vmm	
Force in midrange (typical)		0.95 N		1.00 N		1.18 N		1.23 N	
Spring force		0.22 N/mm		0.14 N/mm		0.12 N/mm		0.08 N/mm	
Temperature range		-20 °C ... 80 °C							
Options		option V with pneumatic push							
Operating temperature		-20 °C ... +80 °C							
Storage temperature		-40 °C ... +80 °C							
Temperature stability	zero	±50 ppm / °C							
	sensitivity	±100 ppm / °C							
Housing		stainless steel incl. magnetic shielding							
Protection class		SA: IP 40 / IP 54 * CA: IP 54							
Minimum cable bending radius		20 mm							
Outer diameter cable		~4,6 mm							
Shock	IEC 68-2-29	40 g, 1000 shocks / axis							
	IEC 68-2-27	100 g, 3 shocks / axis							
Vibration	IEC 68-2-6	10 Hz ... 58 Hz ±1.5 mm / 58 Hz ... 500 Hz ±20 g							

FSO = Full Scale Output *) depends on connector

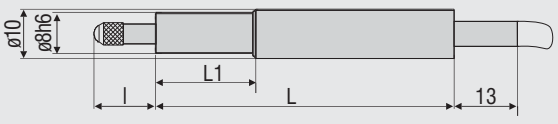
Basic model		DTA-1G-			DTA-3G-			DTA-5G-			DTA-10G-		
Connection		**CA**	**SA**	**Opt. V**	**CA**	**SA**	**Opt. V**	**CA**	**SA**	**Opt. V**	**CA**	**SA**	**Opt. V**
Length of housing L	mm	67	67	69	89	89	92,1	108	108	120	135	135	145
Length of clamping cylinder L_1	mm	21	21	19	26	26	25,1	30	30	38	42	42	46
Length of plunger l *	mm	9.5	9.5	10	12.5	12.5	12.7	14	14	17.5	20	20	22.2

* Plunger in zero position (±10 % FSO ±1 mm)

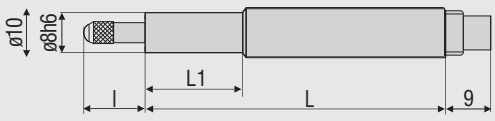
gauging sensor type - SA-V with pneumatic push



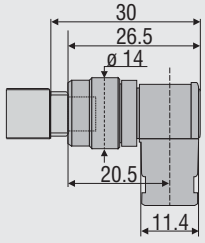
gauging sensor type - CA with integral cable



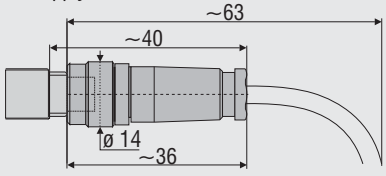
gauging sensor type - SA with axial connection



female connector 90°
dimensions apply for all models



female connector
dimensions apply for all models



MSC710
sensor controller for LVDT series

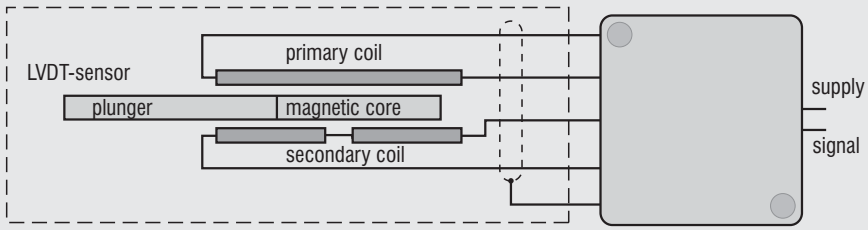
Excellent linearity and resolution

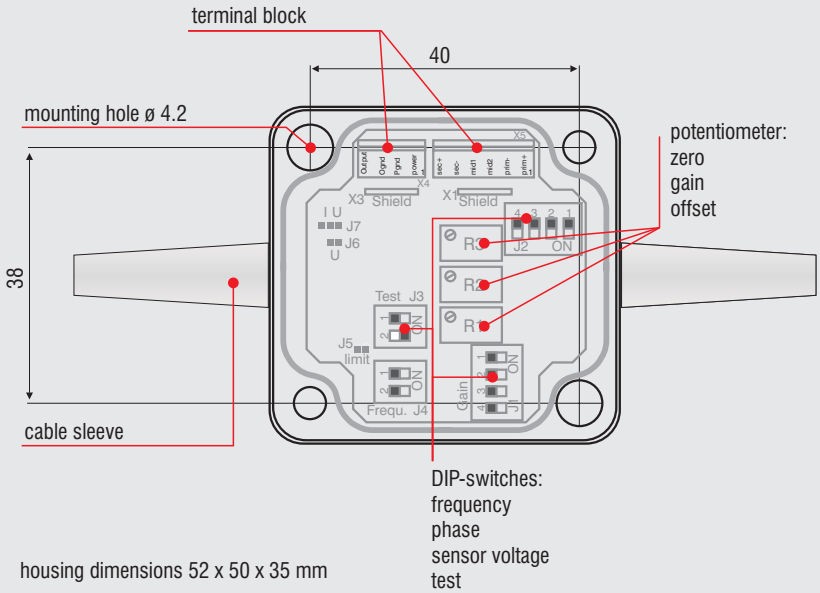
Zero and gain adjustable coarse/fine

Excitation frequency 1 ... 10 kHz (selectable)

Compact and robust EMI-proofed housing

The MSC710 is a single-channel miniature sensor controller for the operation of inductive displacement sensors based on the LVDT principle (Linear Variable Differential Transformer). Its compact, but rugged design, makes it suitable for both industrial and laboratory applications.
Easily accessible and simple to operate, by using DIP-switches. The electronic unit can be matched to a wide range of sensors.





Model		MSC710-U	MSC710-I
Power supply		18 ... 30 VDC (18 ... 45 mA)	
Protection		Reverse plarity protection, overvoltage protection	
Sensor principle		for LVDT sensors	
Sensor excitation		150 ... 400 mV	
		1/2/5 kHz (selectable by DIP-switches)	
Input impedance	sensor	10 kOhm	
Range	gain	-20 ...+350 % (trimpot)	
	zero	±50 % (trimpot)	
Output signal		2 ... 10 VDC (R_a >1 kOhm)	4 ... 20 mA (load <500 Ohm)
Noise		< 1.5 mV_{eff}*	< 3 μA_{eff}*
		< 15 mV_{ss}	< 30 μA_{ss}
Linearity		<0.02 % FSO	
Frequency response		300 Hz (-3dB)	
Temperature range	storage	-40 °C ... +85 °C	
	operating	0 °C ... +70 °C	
Temperature stability		±100 pmm / °C	
Protection class		IP 65	
Weight		80 g	
Housing material		ABS-plastic	
Electromagnetic compatibility (EMC)		EN 50081-2 (spurious emission)	
		EN 50082-2 (immunity to interference)	
Vibration		EN 60068-2-64 (noise)	
Shock		EN 60068-2-29 (continous shock)	

FSO = Full Scale Output
* RMS AC-Measuring, Frequency 3 Hz ... 300 Hz

More Precision.

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Sensors and systems
for displacement, position and dimension

Sensors and measurement devices
for non-contact temperature measurement

Measurement systems
for online/offline quality control

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