



More Precision

induSENSOR // Linear inductive displacement sensors





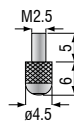
- Proven LVDT technology
- Measuring ranges $\pm 1 \dots \pm 10 \text{ mm}$
- Low cost especially for high volume applications
- Sensor diameter of just $\varnothing 8\text{mm}$
- Models with pneumatic push

LVDT gauging sensors DTA-xG8 are primarily used for the measurement and inspection of workpiece geometry (length, width, diameter, thickness, depth, height). They are ideally suitable for high volume applications.

These gauges have an axial cable output and are equipped with either a plain bearing-guided plunger and spring, or with a pneumatic push rod.

Probe tips

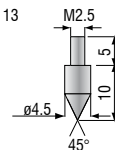
Standard: type 2



Option: type 11



Option: type 13



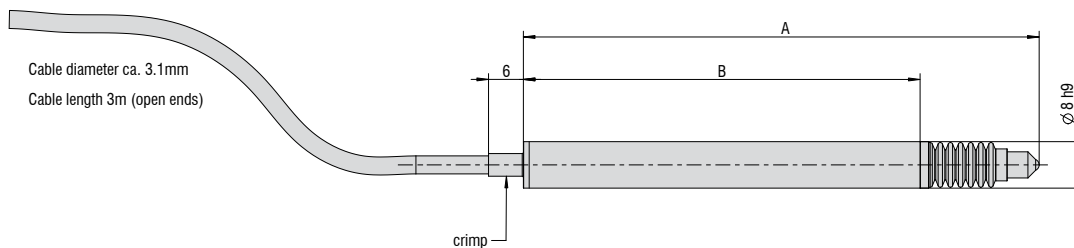
Article designation

DT	A-	5-	G8-	3-	CA-	V
Gauging sensor options: V: pneumatic push						
Connection (axial): CA integral cable (3m)						
Linearity: 3 ($\pm 0.3 \%$)						
Function: gauging sensor						
Measuring range in mm						
Excitation AC						
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	0.3 % FSO							
Repeatability	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/°C							
Temperature range	-20...+80 °C (without bellows) / 0...+80 °C (with bellows)							
Diameter	8h9 mm							
Sensor material	stainless steel / FPM							
Connection / pin connector	open ends							
Protection class (sensor)	IP65 (with bellows) / IP54 (without bellows)							
Cable output	axial							
Cable length (sensor)	3 m							
Life cycle MTBF	5 million cycles							
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
Suitable controller	MSC7401 (pages 10 - 11)							

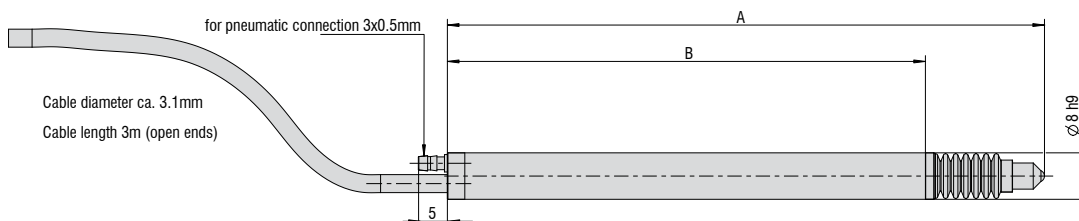
FSO = Full Scale

DTA-xG8-3-CA



Model	A (zero position)	B
DTA-1G8-3-CA	83 mm	64.3 mm
DTA-3G8-3-CA	89 mm	68.3 mm
DTA-5G8-3-CA	118 mm	89.5 mm
DTA-10G8-3-CA	155 mm	121.7 mm

DTA-xG8-3-CA-V



Model	A (zero position)	B
DTA-1G8-3-CA-V	95 mm	76.3 mm
DTA-3G8-3-CA-V	103 mm	82.3 mm
DTA-5G8-3-CA-V	134 mm	105.3 mm
DTA-10G8-3-CA-V	170.8 mm	137.3 mm



- *Wear-free and maintenance-free*
- *Temperature stability*
- *Operating temperature range up to 160 °C*
- *Compact design – short installation length*
- *Small sensor diameter*
- *High measurement signal quality*

The specific sensor configuration of the LDR series of linear displacement sensors is characterized by its short, compact design and small diameter. Three connections are required as an interface to the sensor. The compact design and the small sensor diameter facilitate the installation of the measuring systems in locations where space is restricted.

Typical applications

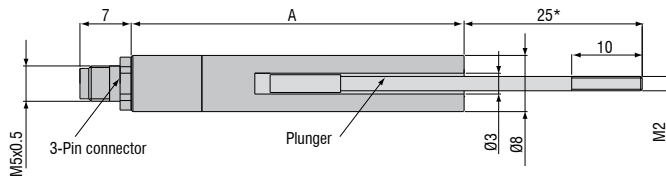
Low-cost LDR sensors are also particularly suitable for large-scale installation under restricted spatial conditions and in industrial environments with a high measuring rate.

Model	LDR-10-		LDR-25-		LDR-50-	
Connection	SA	CA	SA	CA	SA	CA
Measuring range	10 mm		25 mm		50 mm	
Measuring principle	LDR - sensor					
Linearity	typ. $\pm 0.30\%$ FSO		typ. $\pm 0.35\%$ FSO		typ. $\pm 0.5\%$ FSO	
	± 0.030 mm		± 0.088 mm		± 0.35 mm	
	max. $\pm 0.50\%$ FSO				max. $\pm 0.70\%$ FSO	
Excitation frequency	16 kHz		12 kHz		8 kHz	
Excitation amplitude	1 V_{eff}		1 V_{eff}		2.6 V_{eff}	
Sensitivity	51 mV/Vmm		21 mV/Vmm		5.5 mV/Vmm	
Temperature range	SA	Storage: $-40 \dots +80$ °C / Operation: $-15 \dots +80$ °C				
	CA	Storage: $-40 \dots +160$ °C / Operation: $-40 \dots +160$ °C				
Temperature stability ¹⁾	Zero	30 ppm / °C			40 ppm / °C	
	Max. temp. error	100 ppm / °C			150 ppm / °C	
Housing (material)	ferromagnetic stainless steel					
Weight sensor (without plunger)	9 g	24 g	14 g	28 g	23 g	37 g
Weight (plunger)	1.5 g		2.2 g		3.5 g	
Minimum bending radius (sensor cable fixed/moved)	8 / 15 mm	10 / 30mm	8 / 15 mm	10 / 30mm	8 / 15 mm	10 / 30mm
Outer diameter (sensor cable)	3.1 mm	1.8 mm	3.1 mm	1.8 mm	3.1 mm	1.8 mm
Protection class	IP67					
Shock	40 g, 3000 shocks / axis					
	100 g radial, 300 g axial					
Vibration	5 ... 44 Hz ± 2.5 mm / 44 ... 500 Hz ± 20 g					
Electrical connection	SA	3-pin plug-in connection (accessory cable, article 0157047/047, 3 or 5 m)				
	CA	integral axial cable (shielded), 2 m				
Suitable controller	MSC7401 (pages 10 - 11)					

FSO = Full Scale Output SA = connector axial CA = cable axial

¹⁾ Determined according to box method ($-40 \dots +160$ °C)

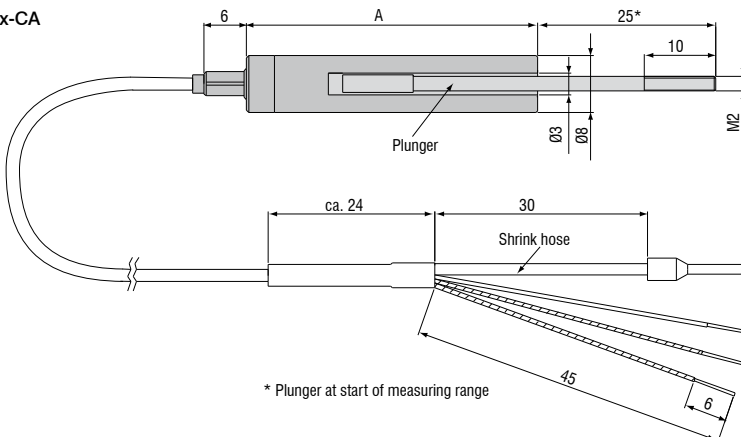
LDR-x-SA



* Plunger at start of measuring range

Model	A
LDR-10-SA	47 mm
LDR-25-SA	73 mm
LDR-50-SA	127 mm

LDR-x-CA



* Plunger at start of measuring range

Model	A
LDR-10-CA	41 mm
LDR-25-CA	67 mm
LDR-50-CA	121 mm

General accessories

2960031	MC25D	Digital micrometer calibration fixture
2420062	PS2020	Power supply on DIN rail, input 100 - 240 VAC, output 24 VDC / 2.5 A
2984026		Function and linearity inspection certificate incl. protocol with listed measurement data of the linearity inspection and documentation
2213034		IF7001 single-channel USB/RS485 converter

Accessories for LDR series**Connection cables**

0157047	C7210-5/3	Sensor cable, 5 m, with cable connector
0157048	C7210/90-5/3	Sensor cable, 5 m, with 90° cable connector

Supply cable

2901087	PC710-6/4	Supply/output cable, 6 m
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Spare plungers

0800136	LDR-10	Spare plunger
0800137	LDR-25	Spare plunger
0800138	LDR-50	Spare plunger

Service

Connector installation and adjustment

Accessories for EDS series**Service**

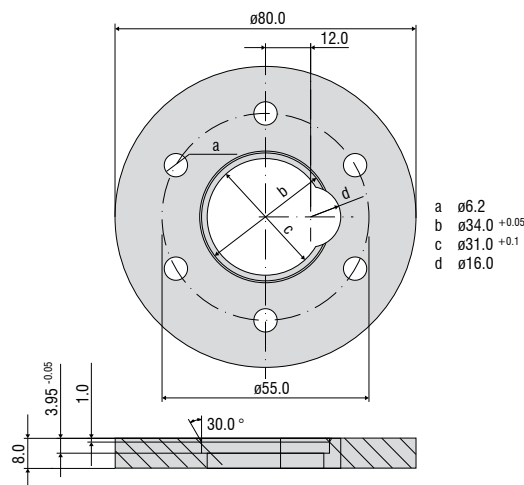
2985001		Function and linearity inspection for EDS series incl. pressure inspection and documentation without recalibration
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Connection cables

0157043	C703-5	VIP/LVP/EDS 7-pin connection cable for S series, 5 m
2902084	C703-5/U	VIP/LVP/EDS 7-pin connection cable for S series, 5 m for voltage output 1 - 5 V
0157050	C703/90-5	VIP/LVP/EDS 7-pin connection cable for S series, 5 m with 90° cable connector
2901143	C705-5	VIP-/LVP-/EDS 5-pin connection cable for F series, 5 m
2901160	C705-15	VIP-/LVP-/EDS 5-pin connection cable for F series, 15 m

Installation ring

0483326		EDS mounting ring
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Linearity inspection certificate

Accessories for LVDT series

Sensor cables

2902004	C701-3	Sensor cable, 3 m, with cable connector and tin-plated free ends
2902013	C701-6	Sensor cable, 6 m, with cable connector and tin-plated free ends
2902009	C701/90-3	Sensor cable, 3 m, with 90° cable connector and tin-plated free ends
2213034	IF7001	Single-channel USB/RS485 converter for MSC7xxx

Service

2981010	Connector installation and calibration
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Connection cables

2901087	PC710-6/4	Supply/output cable, 6 m, open ends
29011154	PC5/5-IWT	Supply/output cable, 5 m, open ends/M12

Spare plungers

0800001	DTA-1D	Spare plunger
0800002	DTA-3D	Spare plunger
0800003	DTA-5D	Spare plunger
0800004	DTA-10D	Spare plunger
0800005	DTA-15D	Spare plunger
0800006	DTA-25D	Spare plunger

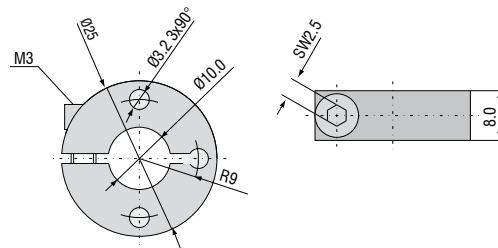
Flanges

0483090.01	DTA-F10	Mounting flange, slotted for DTA-1D, DTA-3D, DTA-5D, DTA-10D
0483083.02	DTA-F20	Mounting flange, slotted for DTA-15D, DTA-25D

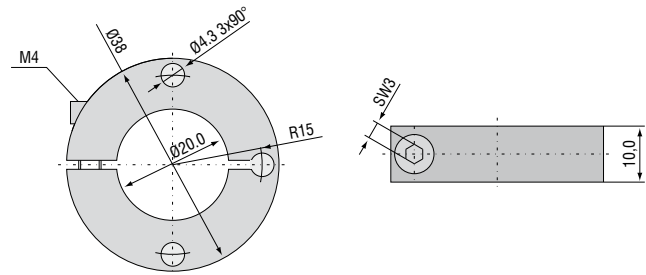
Probe tips

0459002	Type 2
0459001	Type 2 (hard metal)
0459003	Type 11
0459004	Type 13

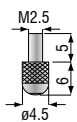
Flange DTA-F10



Flange DTA-F20



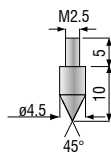
Standard probe tip: type 2



Option: type 11



Option: type 13



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, fiber optic sensors and fiber optics



Color recognition sensors, LED analyzers and color online spectrometer



Measurement and inspection systems