

INDUCTIVE SENSOR LVDT



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Series LV

Key-Features:

- Spring loaded or guided rod
- Measurement ranges 2, 5, 10 and 25 mm
- Linearity up to $\pm 0.1\%$
- Resolution up to 0.01 %
- Output with external electronics: 0...10 V, 4...20 mA
- Protection class up to IP67
- Operating temperature -40...+120 °C

TECHNICAL DATA SENSOR LV

Measurement range MR	[mm]	2	5	10	25
Linearity ¹⁾	[%]	±0.2			
Improved linearity (optional) ¹⁾	[%]	±0.1			
Resolution	[%]	0.04	0.02	0.01	
Sensitivity	[mV/V/mm]	68	74	64	41
Calibrated at		3 V _{RMS} / 5 kHz			
Excitation voltage	[V _{RMS}]	1...10			
Excitation frequency	[kHz]	2...10			
Connection		connector output M12. axial or cable output. axial (TPE cable. standard length 2 m)			
Cable length to electronics max.	[m]	100			
Protection class		version without bellow (T / S): IP65 version with bellow (TF / SF): IP67			
Operating temperature	[°C]	-40...+120			
Temperature coefficient ¹⁾	[%/K]	±0.02			
Version ²⁾		spring-loaded rod with bellow (TF) or without bellow (T), guided rod with bellow (SF) or without bellow (S)			
Spring force MR centre (version TF)	[N]	1.5	1.7	-	
Spring force MR centre (version T)	[N]	1.2	1.5	1.6	1.5
Spring constant (version TF)	[N/mm]	0.15			-
Spring constant (version T)	[N/mm]	0.12			0.09
Motion frequency (1 mm stroke)	[Hz]	max. 100		max. 70	max. 25
Mounting	[mm]	clamping shaft: Ø 8 h6 or housing: Ø 12			
Housing		stainless steel			
Weight (without cable)	[g]	<100			

¹⁾ based on the measurement range

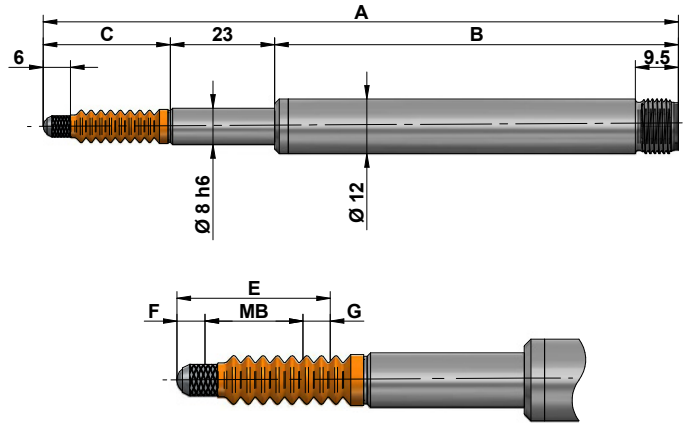
²⁾ Versions with guided rod (S and SF) are protected against falling out of the rod.
Versions with bellow (TF and SF) are not available for measurement range 25 mm.

TECHNICAL DATA ELECTRONICS LVA

Output		0...10 V / 4...20 mA
Linearity	[% F.S.]	< ±0.01
Noise	[mV _{RMS}]	<20
Supply	[VDC]	18...36
Current consumption (without load)	[mA]	<50
Isolation voltage	[VDC]	500
Isolation resistance		1 GΩ at 500 VDC
Cut-off frequency		max. 10 % of excitation frequency
Sensor supply	[V _{RMS}]	3
Carrier frequency	[kHz]	5
Protection class		IP65
Operating temperature	[°C]	-25...+85
Storage temperature	[°C]	-25...+85
Temperature coefficient sensitivity	[% F.S./K]	< ±0.04
Temperature coefficient zero point	[% F.S./K]	< ±0.015
Mounting		DIN rail
Housing		Polyamid PA6.6

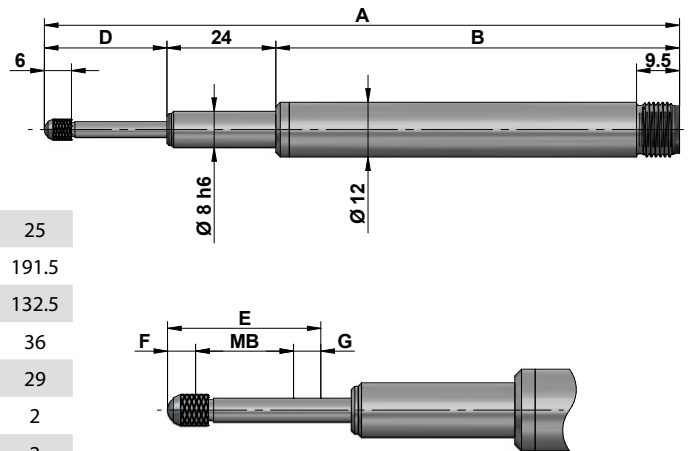
TECHNICAL DRAWING SENSOR LV

Version with bellow (TF and SF)



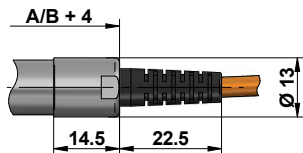
Measurement range MB	2	5	10
A	113	126	140
B	69	79	89
C	21	24	28
E (total stroke)	5	8	12
F (start stroke)	1.5	1.5	1
G (end stroke)	1.5	1.5	1

Version without bellow (T and S)

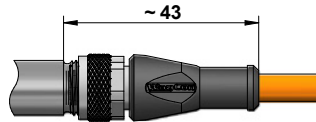


Measurement range MB	2	5	10	25
A	113	126	140	191.5
B	69	79	89	132.5
D	20	23	27	36
E (total stroke)	5	8	12	29
F (start stroke)	1.5	1.5	1	2
G (end stroke)	1.5	1.5	1	2

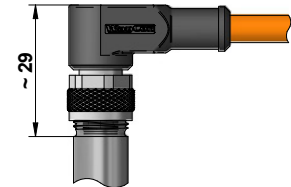
cable output



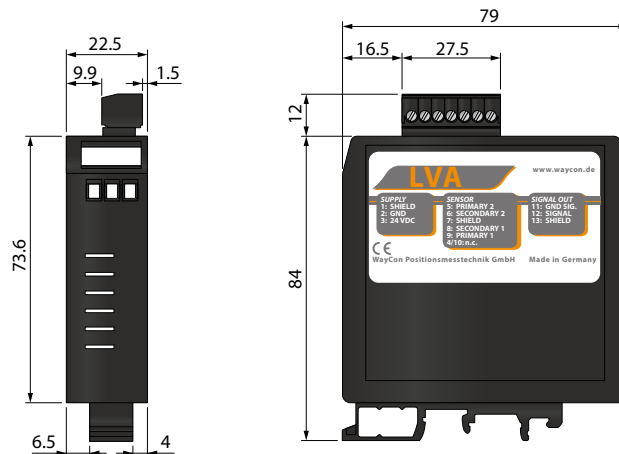
connector output with connection cable, straight connector



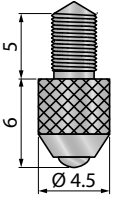
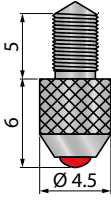
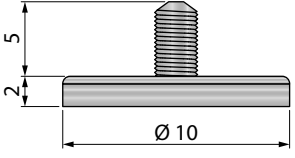
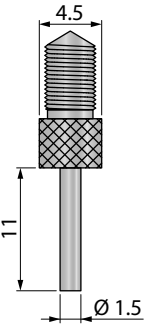
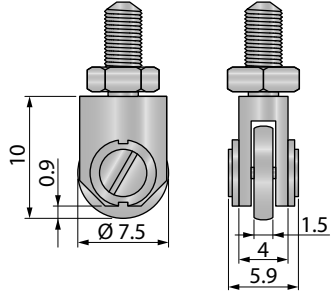
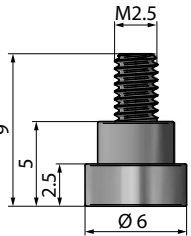
connector output with connection cable, angular connector



TECHNICAL DRAWING ELECTRONICS LVA

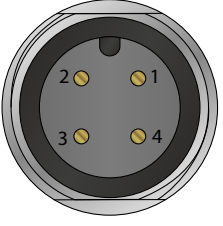


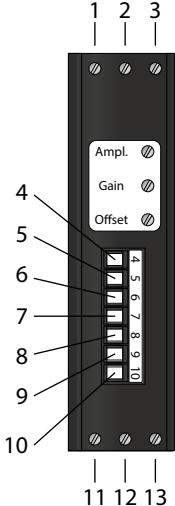
ACCESSORIES PROBE TIPS

<p>Standard: ball probe tip, steel</p> 	<p>TP-K-6-R: ball probe tip, ruby</p> 	<p>TP-T-10-S: probe plate</p> 
<p>TP-S-11-S: probe pin, steel</p> 	<p>TP-R-7.5-S: probe roller, steel</p> 	<p>TP-T-6-M: magnetic probe tip Magnetic holding force: approx. 560 g Temperature range: up to 120 °C</p> 

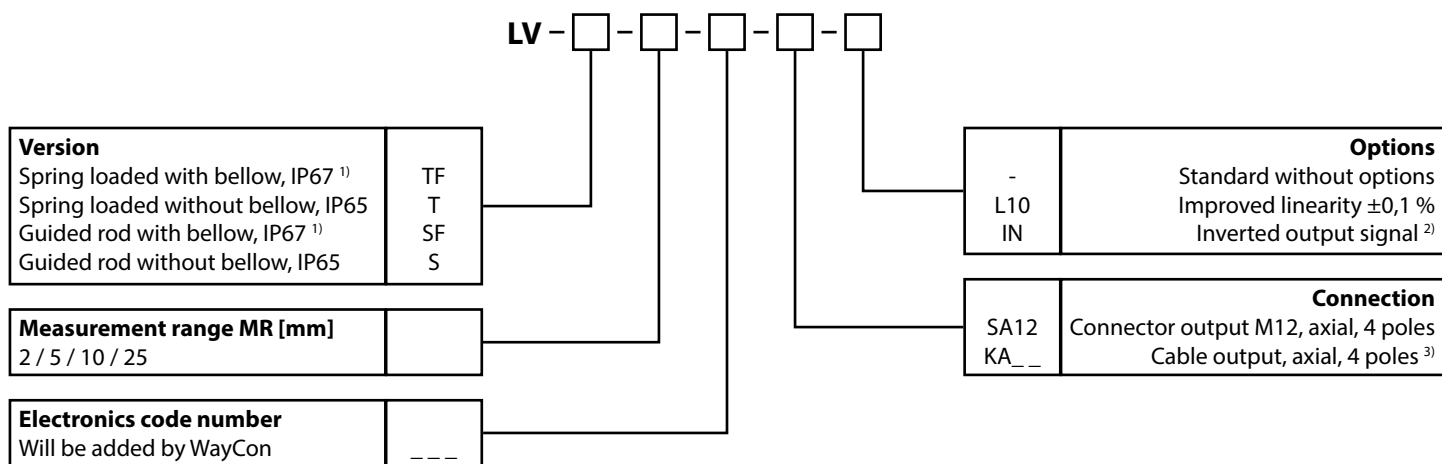
ELECTRICAL CONNECTION

Sensor LV			DIN rail electronics LVA	
Function	Connector output, M12 (male)	Cable output Cable colour	Function	Pin
Primary 1	Pin 1	BN	Shield	1
Primary 2	Pin 2	WH	GND _{supply}	2
Secondary 1	Pin 3	BU	+V	3
Secondary 2	Pin 4	BK	n. c.	4
			Primary 2	5
			Secondary 2	6
			Shield	7
			Secondary 1	8
			Primary 1	9
			n. c.	10
			GND _{signal}	11
			Signal	12
			Shield	13





ORDER CODE SENSOR

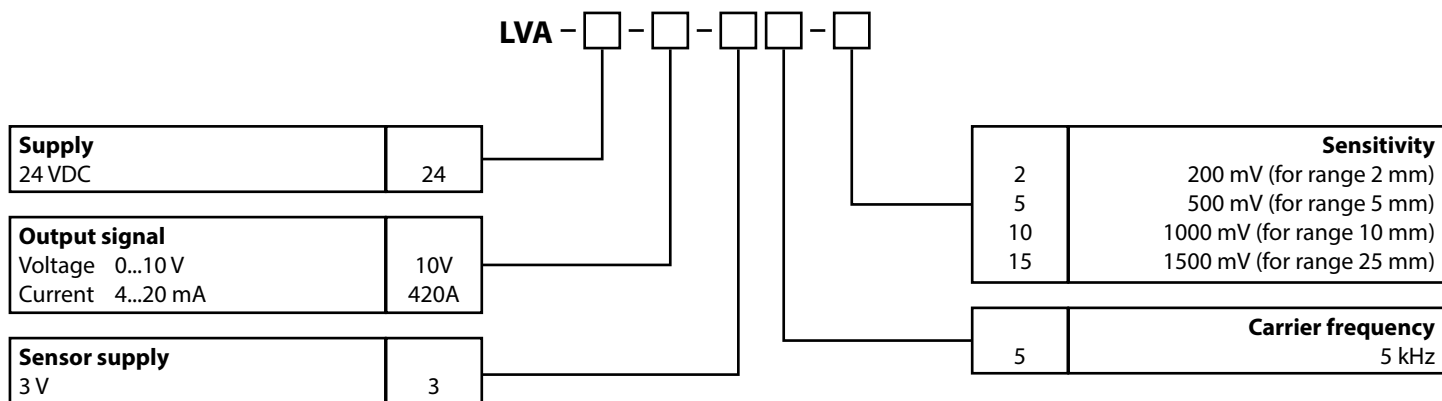


¹⁾ not available with measurement range 25 mm

²⁾ only in combination with electronics LVA.

³⁾ Length in m (min. 2 m). Example: KA02 = 2 m (standard length), KA05 = 5 m

ORDER CODE ELECTRONICS



ACCESSORIES

Probe tips

TP-K-6-R	Ball probe tip, ruby
TP-T-10-S	Probe plate, steel
TP-S-11-S	Probe pin, steel
TP-R-7.5-S	Probe roller, steel
TP-T-6-M	Magnetic probe tip

Cable with connector (female) M12, 4 poles, shielded

K4P2M-S-M12	2 m, straight connector
K4P5M-S-M12	5 m, straight connector
K4P10M-S-M12	10 m, straight connector
K4P2M-SW-M12	2 m, angular connector
K4P5M-SW-M12	5 m, angular connector
K4P10M-SW-M12	10 m, angular connector

Subject to change without prior notice.

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