

INDUCTIVE SENSOR LVDT



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Series LVISM

Key-Features:

- Miniature sensor with housing \varnothing 4 mm
- Unguided rod with thread M2.5
- Measurement ranges 2, 5 and 10 mm
- Linearity ± 0.5 %, optional ± 0.25 %
- Output with external electronics: 0...10 V, 4...20 mA
- Protection class IP65
- Operating temperature -25...+85 °C

TECHNICAL DATA SENSOR

Measurement range	[mm]	2	5	10
Linearity ¹⁾	[% F.S.]	< ±0.5 / optional: < ±0.25		
Sensitivity	[mV/V/mm]	130	105	60
Calibrated at		3 V _{RMS} / 40 kHz / RL = 1 MΩ		
Excitation voltage	[V _{RMS}]	3		
Excitation frequency	[kHz]	40		
Input resistance typ.	[Ω]	120		
Input impedance typ.	[Ω]	610		
Output impedance typ.	[Ω]	520		
Connection		Cable output 1 m, axial, 5 poles		
Protection class		IP65		
Operating temperature	[°C]	-25...+85		
Storage temperature	[°C]	-40...+85		
Temperature coefficient zero signal	[% F.S./K]	±0,02		
Shock resistance		200 g, 2 ms (DIN IEC68T2-27)		
Vibration resistance		10 g, 2...2000 Hz (DIN IEC68T2-6)		
Housing		Nickel plated steel		
Core		Nickel iron alloy		
Core weight	[g]	1.5		

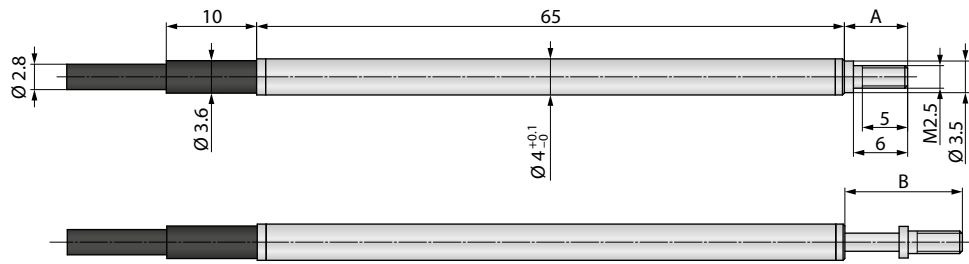
¹⁾ if used with the DIN rail electronics LVA linearity is ±1 % F.S.

TECHNICAL DATA ELECTRONICS

		DIN rail electronics LVA	Cable electronics LVC
Output		0...10 V / 4...20 mA	
Linearity ¹⁾	[% F.S.]	<±0.01	
Noise	[mV _{RMS}]	<20	<5 (DC...20 MHz)
Supply	[VDC]	18...36	24 ±10 %
Current consumption (without load)	[mA]	<80 (at 24 V) / <100 (at 18 V)	<80 (at 24 V)
Isolation voltage	[VDC]	500	
Isolation resistance		1 GΩ at 500 VDC	
Cut-off frequency		max. 10 % of excitation frequency	
Sensor supply	[V _{RMS}]	3	4
Carrier frequency	[kHz]	20	40
Protection class		IP40	
Operating temperature	[°C]	-25...+85	
Storage temperature	[°C]	-25...+85	
Temperature coefficient sensitivity	[% F.S./K]	<±0.04	<±0.02
Temperature coefficient zero point	[% F.S./K]	<±0.015	<±0.01
Mounting		DIN rail	2 x mounting holes M3
Housing		Polyamide PA6.6	Aluminium anodised

¹⁾ To achieve an optimal measuring result, it is recommended to power up the electronics for 10 minutes before the measurement.

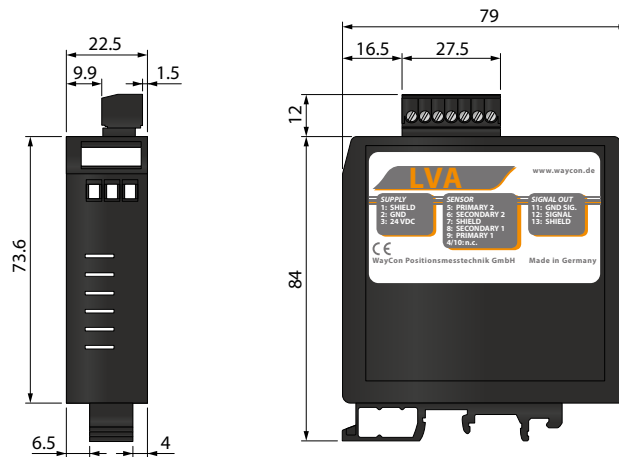
TECHNICAL DRAWING SENSOR



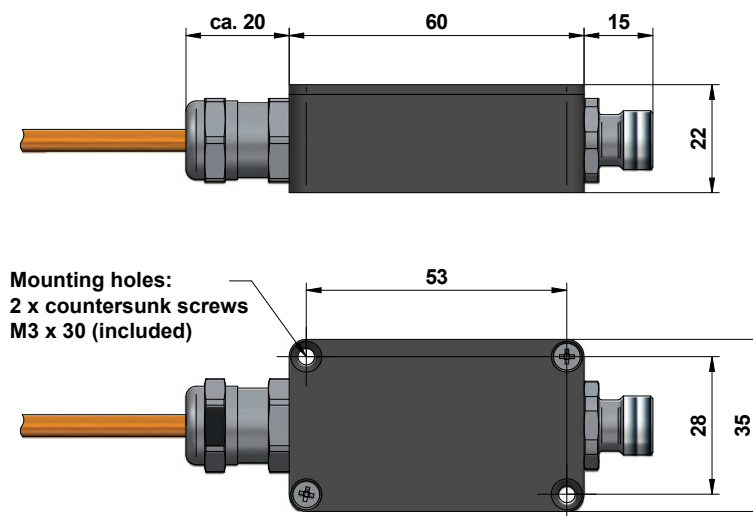
Measurement range		2	5	10
Rod inner position	A		7	
Centre of stroke ± 1	B		13	

TECHNICAL DRAWING ELECTRONICS

DIN Rail Electronics LVA



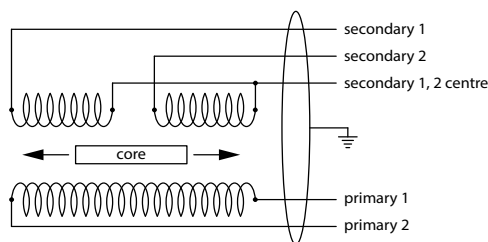
Cable Electronics LVC



ELECTRICAL CONNECTION

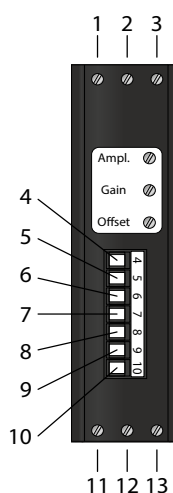
Sensor LVISM

Function	Cable colour
Primary 1	BK
Primary 2	BU
Secondary 1	YE
Secondary 2	GN
Secondary 1, 2 centre	WH
Shield	Housing



DIN Rail Electronics LVA

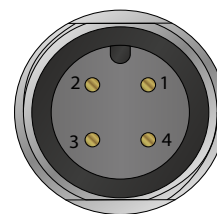
Function	Terminal
Shield	1
GND _{Supply}	2
+V	3
n. c.	4
Primary 2	5
Secondary 2	6
Shield	7
Secondary 1	8
Primary 1	9
n. c.	10
GND _{Signal}	11
Signal	12
Shield	13



Cable Electronics LVC

Function	Connector output	Connection cable K4P...
+V	Pin 1	BN
Signal	Pin 2	WH
GND _{Supply}	Pin 3	BU
GND _{Signal}	Pin 4	BK

Connector M12, male



ORDER CODE SENSOR

LVISM - [] - [] - [] - []

Measurement range [mm]
2 / 5 / 10

Electronics code number

Sensor without external electronics	000
For LVA with output 4...20 mA	300
For LVA with output 0...10 V	310
For LVC with output 4...20 mA	100
For LVC with output 0...10 V	110

Linearity
Standard: linearity $\pm 0.5\%$ ¹⁾
Improved linearity $\pm 0.25\%$ ²⁾

Connection
KA01 Cable output 1 m, axial, 5 poles

¹⁾ Please note that the sensor only achieves a linearity of $\pm 1\%$ F.S. in combination with DIN rail electronics LVA.

²⁾ Not combinable with LVA (electronics code numbers 300 and 310).

ORDER CODE ELECTRONICS LVA

LVA - [] - [] - [] - [] - []

Supply 24 VDC	24
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Output signal Voltage 0...10 V Current 4...20 mA	10V 420A
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Sensor supply 3 V	3
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Sensitivity
500 mV (for range 2 mm)
1000 mV (for ranges 5 and 10 mm)

Carrier frequency
20 kHz

