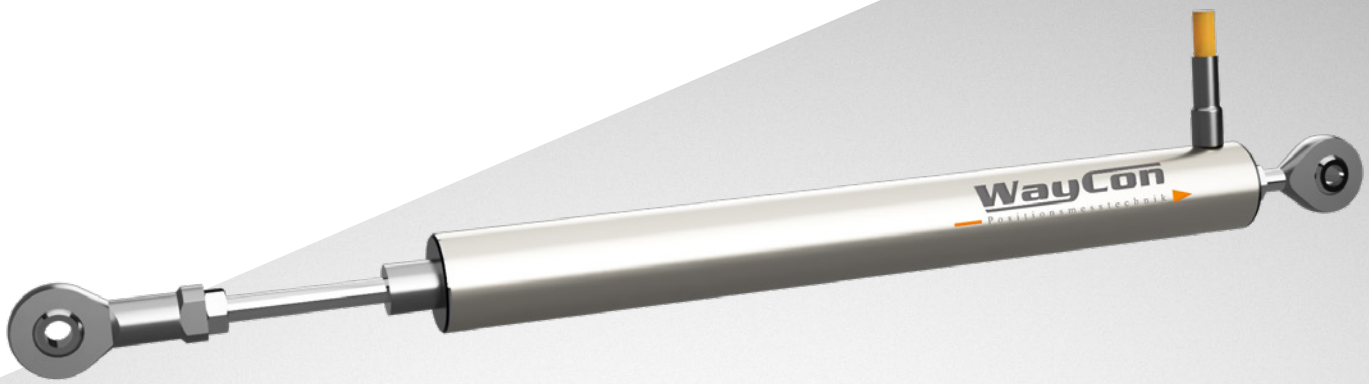
INDUCTIVE SENSOR LVDT

Links to further documents for this series:
Installation guide
Teaching guide LVA2



LVIG SERIES

Key-Features:
- *Sensor with integrated or external electronics*
- *Rod with ball joint eyes*
- *Measurement ranges from 50 mm to 200 mm*
- *Linearity up to ±0.35 %*
- *Analog output: 0...10 V or 4...20 mA*
- *Protection class up to IP67*
- *Temperature range up to -35...+120 °C*

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TECHNICAL DATA - SENSOR WITH INTEGRATED ELECTRONICS

Measurement range	[mm]	50	100 [1)]	200 [1)]
Linearity	[% F.S.]	<±0.5 / optional: <±0.35	<±1	
Output		0...10 V / 4...20 mA		
Supply	[VDC]	24 ±20 %		
Current consumption (no load)	[mA]	Voltage output: <20 / Current output: <40		
Load resistance	[kΩ]	Voltage output: >10 / Current output: <0.5		
Noise	[mV_{RMS}]	<10		
Cut-off frequency (-3 dB)	[Hz]	100		
Connection		Cable output, radial, 5 poles		
Protection class		IP65		
Operating temperature	[°C]	0...+70 (at low humidity, not freezing)		
Storage temperature	[°C]	-30...+80		
Temperature coefficient	[% F.S./K]	±0.04		
Shock resistance		100 g, 2 ms (DIN IEC68T2-27)		
Vibration resistance		10 g, 2...2000 Hz (DIN IEC68T2-6)		
Housing		Nickel plated steel		
Core		Nickel iron alloy		
Weight approx.	[g]	305	510	860

[1)] For a horizontal installation, the sensor housing must be stabilized additionally. An axial alignment must be ensured. Otherwise the sensor could bend due to its own weight! We recommend to use 3 mounting bocks.

TECHNICAL DATA - SENSOR FOR EXTERNAL ELECTRONICS

Measurement range	[mm]	50	100 [1)]	200 [1)]
Linearity	[% F.S.]	<±0.5 / optional: <±0.35	<±1	
Sensitivity	[mV/V/mm]	27	3.6	7
Calibrated at		3 V_{RMS} / 5 kHz / RL = 1 MΩ		
Excitation voltage	[V_{RMS}]	1...10		
Excitation frequency	[kHz]	0.5...5		
Input resistance typ.	[Ω]	221	460	820
Input impedance typ.	[Ω]	369	2240	5770
Output impedance typ.	[Ω]	525	2140	5060
Connection		Cable output, radial, 5 poles		
Protection class		IP65 / optional: IP67		
Operating temperature	[°C]	-35...+120 (at low humidity, not freezing)		
Storage temperature	[°C]	-55...+120		
Temperature coefficient	[% 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		
Weight approx.	[g]	180	230	290

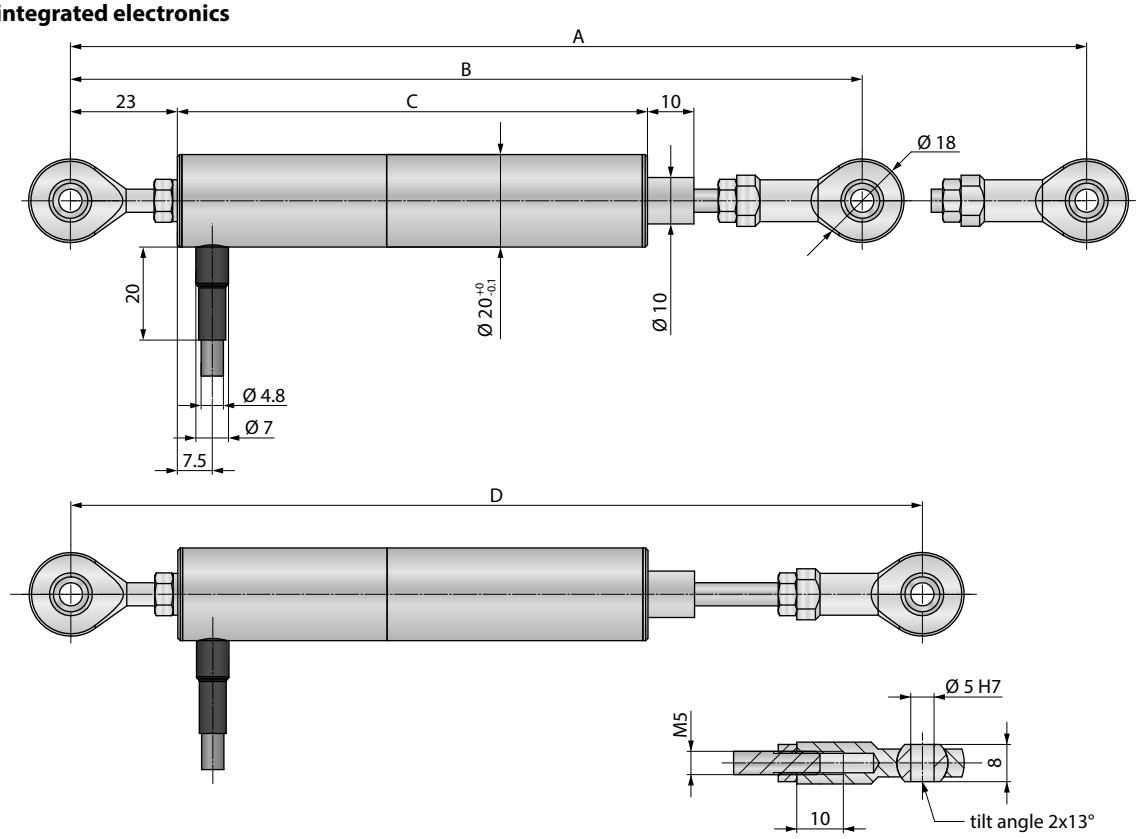
[1)] For a horizontal installation, the sensor housing must be stabilized additionally. An axial alignment must be ensured. Otherwise the sensor could bend due to its own weight! We recommend to use 3 mounting bocks.

TECHNICAL DATA - EXTERNAL ELECTRONICS LVA2

Output		0...10 V / 4...20 mA
Resolution		13.3 bit (approx. 10,000 steps)
Noise	[mV_{RMS}]	<3
Measurement range teachable		Yes
Supply	[VDC]	18...30
Current consumption (without load)	[mA]	<80 (at 24 V)
Isolation voltage	[VDC]	500
Isolation resistance at 500 VDC	[GΩ]	10
Cut-off frequency		max. 10 % of excitation frequency
Sensor supply	[V_{RMS}]	3
Carrier frequency	[kHz]	5
Protection class		IP40
Operating temperature	[°C]	-25...+85
Storage temperature	[°C]	-25...+85
Temperature coefficient sensitivity	[% F.S./K]	<±0.02
Temperature coefficient zero point	[% F.S./K]	<0.003
Mounting		DIN rail
Housing		Polyamide PA6.6

TECHNICAL DRAWING - SENSOR

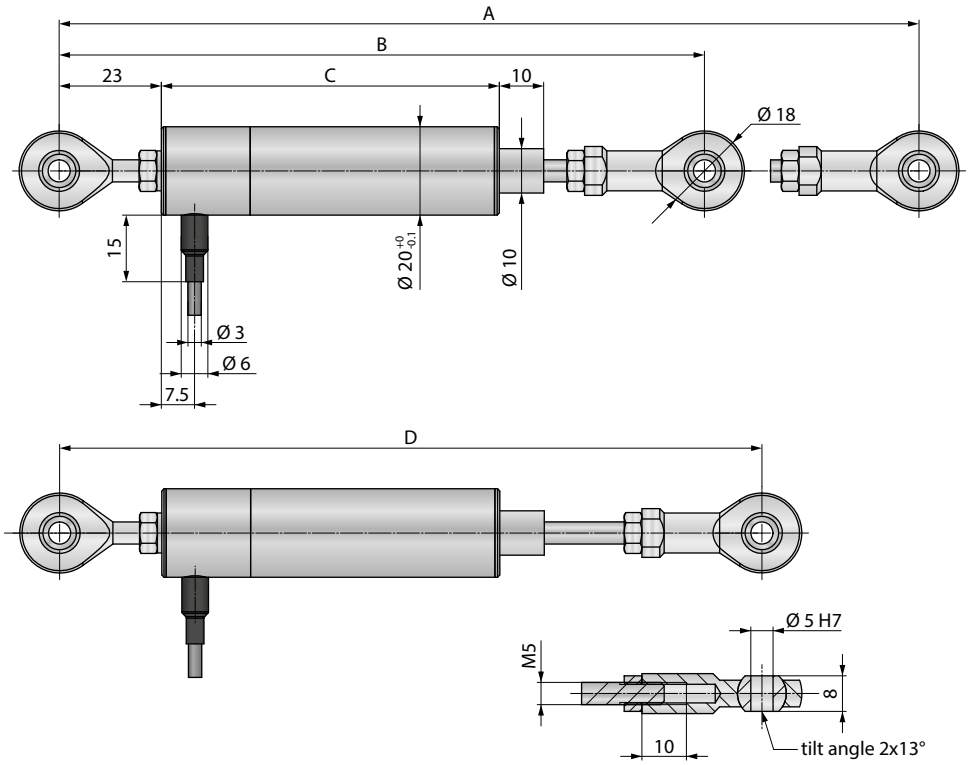
Sensor with integrated electronics



Measurement range		50	100	200
Rod outer position	**A**	310	515	785
Rod inner position	**B**	250	384	570
Housing length	**C**	185	320	490
Middle of stroke ±1	**D**	280	443	678

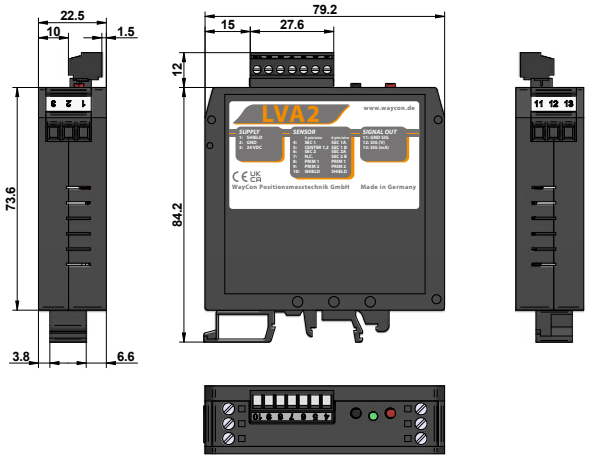
TECHNICAL DRAWING - SENSOR

Sensor for external electronics



Measurement range		50	100	200
Rod outer position	A	285	490	760
Rod inner position	B	225	359	545
Housing length	C	160	295	465
Middle of stroke ±1	D	255	418	653

TECHNICAL DRAWING - EXTERNAL ELECTRONICS



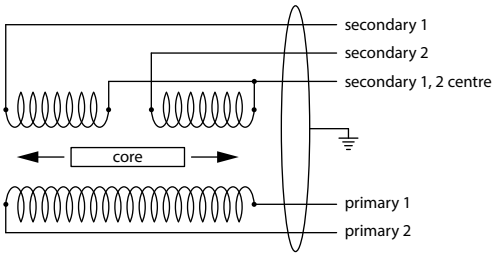
ELECTRICAL CONNECTION - SENSOR

Sensor with integrated electronics

Function	Cable colour
+V	BN
GND_{Supply}	GY
Signal	GN
GND_{Signal}	WH
n. c.	YE

Sensor for external electronics

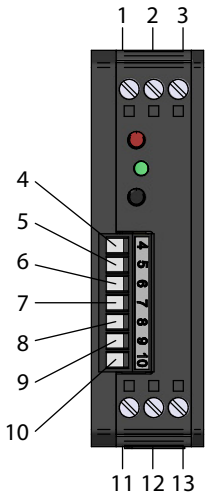
Function	Cable colour
Primary 1	RD
Primary 2	BK
Secondary 1	OG
Secondary 2	YE
Secondary 1, 2 centre	WH
Shield	Housing



ELECTRICAL CONNECTION - EXTERNAL ELECTRONICS

DIN-rail electronics LVA2

Function	Terminal
Shield	1
GND_{supply}	2
+V	3
Secondary 1	4
Center 1, 2	5
Secondary 2	6
n. c.	7
Primary 1	8
Primary 2	9
Shield	10
GND_{signal}	11
Signal 0...10 V	12
Signal 4...20 mA	13



ORDER CODE - SENSOR WITH INTEGRATED ELECTRONICS

LVIG – □ – □ – □ – □

Measurement range [mm] 50 / 100 [1] / 200 [1]	e. g. 50
Output Voltage 0...10 V Current 4...20 mA	10V 420A
Connection Cable output, radial [2]	KR_ _

- L35	**Version** Standard without options Improved linearity ±0.35 %
Option L35	**Not combinable with** Ranges 100 / 200

[1] For a horizontal installation, the sensor housing must be stabilized additionally. An axial alignment must be ensured. Otherwise the sensor could bend due to its own weight! We recommend to use 3 mounting bocks.
[2] Length in m (min. 1 m). Example: KR01 = 1 m (standard), KR02 = 2 m

ORDER CODE - SENSOR FOR EXTERNAL ELECTRONICS

LVIG – □ – □ – □

Measurement range [mm] 50 / 100 [1] / 200 [1]	e. g. 50
Connection Cable output, radial [2]	KR_ _

- L35 IP67	**Version** Standard without options Improved linearity ±0.35 % Improved protection class IP67
Option L35	**Not combinable with** Ranges 100 / 200

[1] For a horizontal installation, the sensor housing must be stabilized additionally. An axial alignment must be ensured. Otherwise the sensor could bend due to its own weight! We recommend to use 3 mounting bocks.
[2] Length in m (min. 1 m). Example: KR01 = 1 m (standard), KR02 = 2 m

ORDER CODE - EXTERNAL ELECTRONICS

LVA2 – □ – □ – □ □

Supply 24 VDC	24
Output signal Voltage 0...10 V Current 4...20 mA	10V 420A

5	**Carrier frequency** 5 kHz
3	**Sensor supply** 3 V

Subject to change without prior notice.

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