

OMS2 linear sensors are used in harsh environments who requiring a rugged, non-contact and low-profile sensor with very long lifespan. The high performance in terms of EMC immunity make the linear sensor suitable for use in industrial environments with presence of electromagnetic interferences.

- For 50..1500 mm strokes
- Direct and inverse analogue output
- Wear-free measuring principle with absolute analogue signal
- For harsh conditions IP67
- Very flat construction with only 14 mm installation height
- High precision due to high resolution and good linearity
- Electromagnetic compatibility 2014/30/EU (EMC)

Electrical Data	Output: 0,1..10,1 V / 0..10 V	Output: 4..20 mA
Effective electrical travel in mm 1.)	50 / 75 / 100 / 130 / 150 / 175 / 200 / 225 / 250 / 300 / 350 / 360 / 400 / 450 / 500 / 550 / 600 / 650 / 700 / 750 / 800 / 850 / 900 / 950 / 1000 / 1100 / 1200 / 1250 / 1300 / 1400 / 1500	
Independent linearity (best straight line) 1.)	≤ ±0,04% (Min. ± 0,090 mm) with guided cursor	
Output signal	0.1..10.1 V / 0..10 V	4..20 mA
Theoretical resolution 1.)	Almost infinite (only limited by the output noise)	
Backlash (Hysteresis) 1.)	< 0.02 mm	
Update rate	1 ms (50..600 mm) / 1.5 ms (650..900 mm) / 2 ms (950..1300 mm) / 3 ms (1400..1500 mm)	
Supply voltage	24 V ±20 %	
Power consumption (no load)	≤35 mA	≤60 mA
Output load	≥ 10 kOhm	≥50..500 Ohm
Power ripple	≤ 5 mVpp	
Output value	≤ 12 V	≤ 30 mA
Alarm output value	10.5 V	21 mA
Isolation voltage 1.)	50 V	
Protection against polarity inversion, overvoltage, power supply in output: Yes		

Mechanical Data, Environmental Conditions, Miscellaneous		
Mechanical stroke in mm 1.)	50 / 75 / 100 / 130 / 150 / 175 / 200 / 225 / 250 / 300 / 350 / 360 / 400 / 450 / 500 / 550 / 600 / 650 / 700 / 750 / 800 / 850 / 900 / 950 / 1000 / 1100 / 1200 / 1250 / 1300 / 1400 / 1500	
Lifetime (90% effective electrical travel) 2.)	Almost infinite	
Max. operational speed	< 10 m/s	
Max. acceleration	≤ 100 m/s <sup>2</sup>	
Operational temperature	-20 °C up to +75 °C	
Storage temperature	-40 °C up to +100 °C	
Protection grade (IEC60529)	IP67	
Vibration (IEC 68-2-6, Test Fc)	12 g (10..2000 Hz)	
Shock (IEC 68-2-27, Test Ea)	100 g, halfsine, 11 ms	

# Data Sheet for Linear Sensors

Magnetic (magnetostrictive) Linear Transducer with analogue output

Series OMS2

## Mechanical Data, Environmental Conditions, Miscellaneous

Housing length (+ 154 mm)	50 / 75 / 100 / 130 / 150 / 175 / 200 / 225 / 250 / 300 / 350 / 360 / 400 / 450 / 500 / 550 / 600 / 650 / 700 / 750 / 800 / 850 / 900 / 950 / 1000 / 1100 / 1200 / 1250 / 1300 / 1400 / 1500
Fastening parts included in delivery	1 mounting set: 2 x clamps + 4 x screws + 4 x spring washer
Cursor	Not included in delivery
Material housing	Anodized Aluminium, Nylon 66 G 25
Material Cursor	Plastic
Electrical connection	4 pole valve connector EN 175301-803 design A / 5 pole M12 connector
Sensor mounting	Adjustable mounting brackets

1.) According IEC 60393

2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

### Accessory (not included in delivery):

*For 4 pole valve connector:*

- Mating connector (STV) #110767: angled, without cable, 3-pole + PE, IP65, not shielded (STV E 3POLPE IP65 NS)
- Mating connector with cable (STV): angled, with cable 3 meters, 3-pole + PE, IP67, not shielded (STV K3M 3POLPE IP67 NS)

*For 5 pole connector:*

- Mating connector (STEM12) #125482: M12 thread, 5-pole, IP67, straight, shieldable (STE M12 5POL IP67 G S)
- Mating connector (STEM12) #125483: M12 thread, 5-pole, IP67, angled, shielded (STE M12 5POL IP67 W GS)
- Mating connector with cable (STKM12) #127527: M12 thread, 5-pole, IP67, angled, shielded, 5 m (STK M12 5POL IP67 W GS 5M AWG24)
- Mating connector with cable (STKM12) #127287: M12 thread, 5-pole, IP67, straight, shielded, 2 m (STK M12 5POL IP67 G GS 2M AWG24)

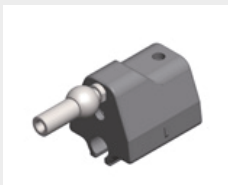
*Cursor:*



Cursor guided with axial joint low  
#134575



Cursor guided with angle joint  
#134577



Cursor guided with axial joint high  
#134576



Free cursor #134574

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Magnetic (magnetostrictive) Linear Transducer with analogue output

Series OMS2

## Order Code

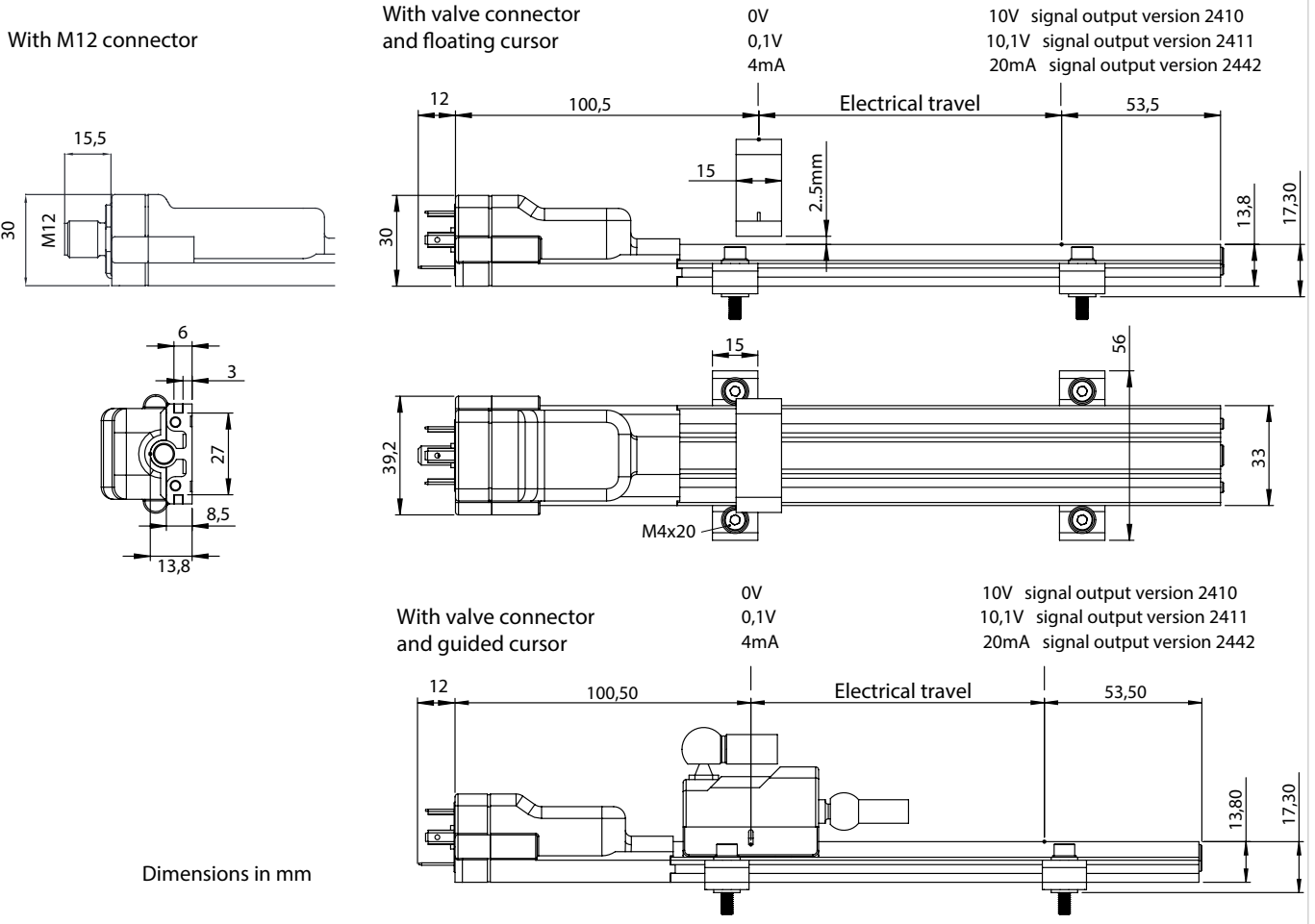
Description		Selection: <b>standard=black/bold</b> , possible <i>options=grey/italic</i>		
Series:	OMS2			
<b>Elektrisch wirksamer Einstellweg:</b>				
50 mm		<b>50</b>		
75 mm		<b>75</b>		
100 mm		<b>100</b>		
130 mm		<b>130</b>		
150 mm		<b>150</b>		
175 mm		<b>175</b>		
200 mm		<b>200</b>		
225 mm		<b>225</b>		
250 mm		<b>250</b>		
300 mm		<b>300</b>		
350 mm		<b>350</b>		
360 mm		<b>360</b>		
400 mm		<b>400</b>		
450 mm		<b>450</b>		
500 mm		<b>500</b>		
550 mm		<b>550</b>		
600 mm		<b>600</b>		
650 mm		<b>650</b>		
700 mm		<b>700</b>		
800 mm		<b>800</b>		
850 mm		<b>850</b>		
900 mm		<b>900</b>		
950 mm		<b>950</b>		
1000 mm		<b>1000</b>		
1100 mm		<b>1100</b>		
1200 mm		<b>1200</b>		
1250 mm		<b>1250</b>		
1300 mm		<b>1300</b>		
1400 mm		<b>1400</b>		
1500 mm		<b>1500</b>		
<b>Elektrischer Anschluss:</b>				
4 pole valve connector (3+PE)			<b>S</b>	
5 pole connector			<b>S5</b>	
<b>Output signal:</b>				
4..20 mA				<b>2442</b>
0,1..10,1 V				<b>2411</b>
0..10 V				<b>2410</b>

For higher quantities or on-going demand, additional options are available as described below on request

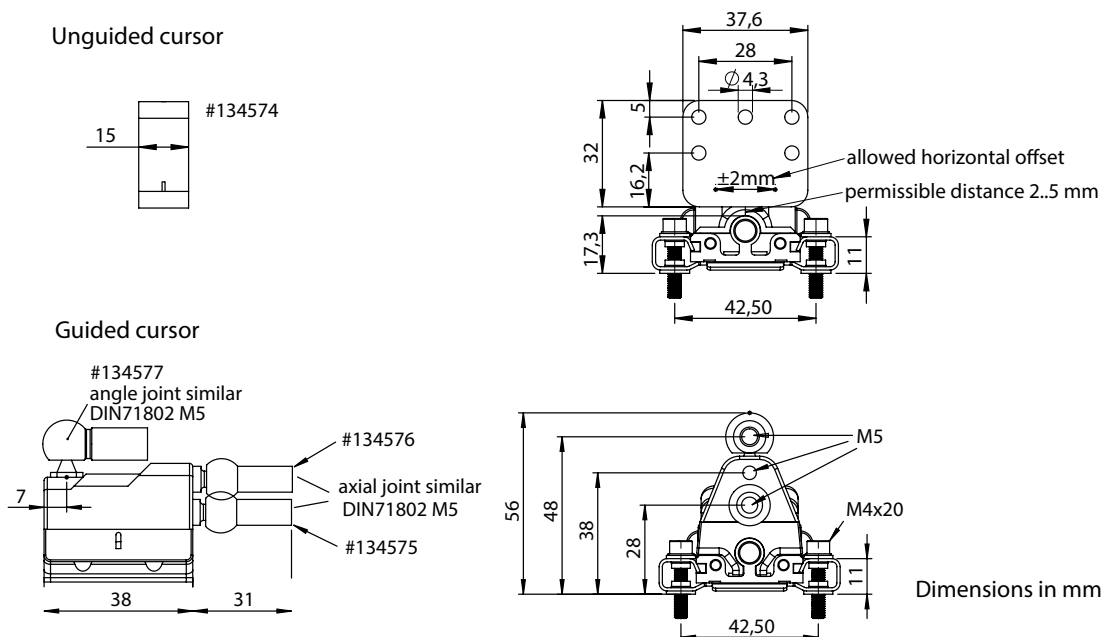
For example:

- Special connectors, assembled cables with / without connector

### Drawing Sensor

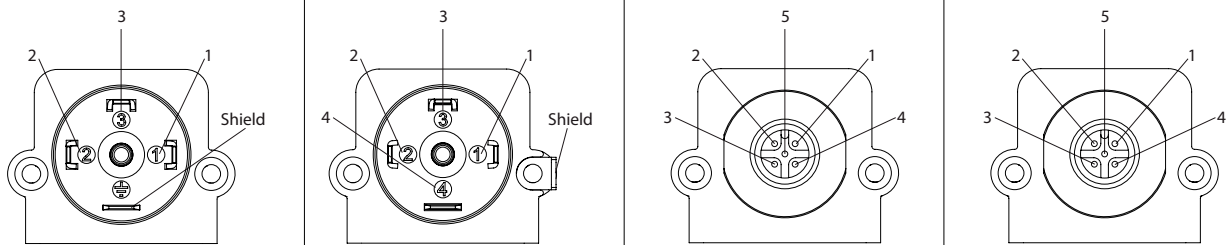


### Drawing Cursor

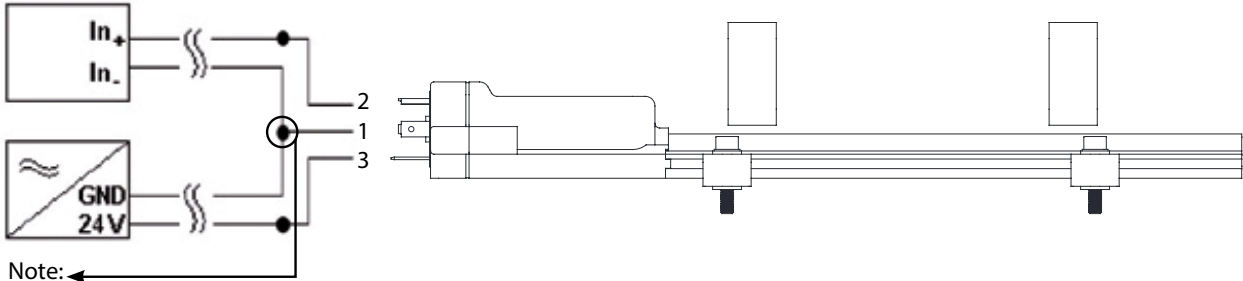


### Drawing

#### Electrical connections



PIN	Valve single output	Valve double output	5 pin M12 single output	5 pin M12 double output
1	Power supply -	Power supply -	Direct output	Direct output
2	Direct output	Direct output	GND output	GND output
3	Power supply +	Power supply +	n.d.	Reverse output
4	Shield	Reverse output	Power supply -	Power supply -
5			Power supply +	Power supply +
		Shield	Connector body	Connector body



Note: Make a connection as close as possible to transducer

#### Analog output

The OMS2 magnetostrictive transducers provide a direct and reverse voltage or current analogue output proportional to the magnetic cursor's position. Since the output is direct, no signal electronic processing is required if interfaced with controllers or measurement instruments.

