

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 ²
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):

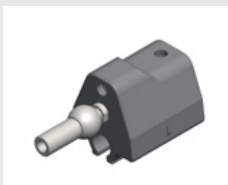
For 4 pole valve connector:

- 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)

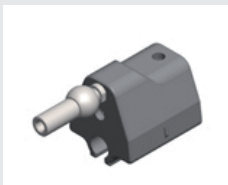
Cursor:



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

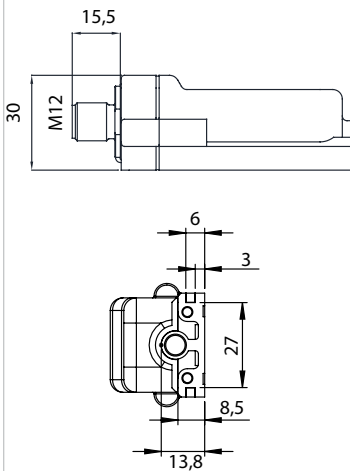
For higher quantities or on-going demand, additional options are available as described below on request

For example:

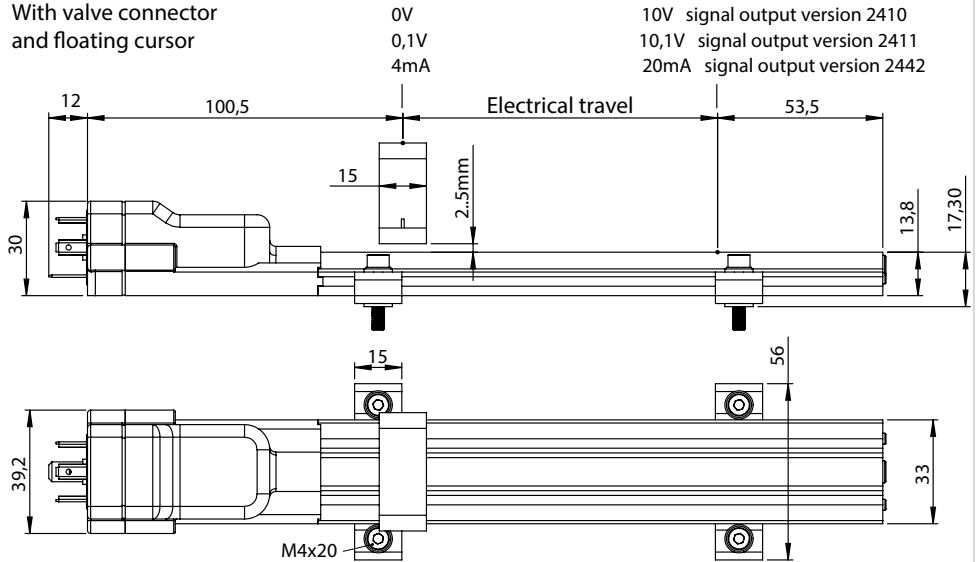
- Special connectors, assembled cables with / without connector

Drawing Sensor

With M12 connector



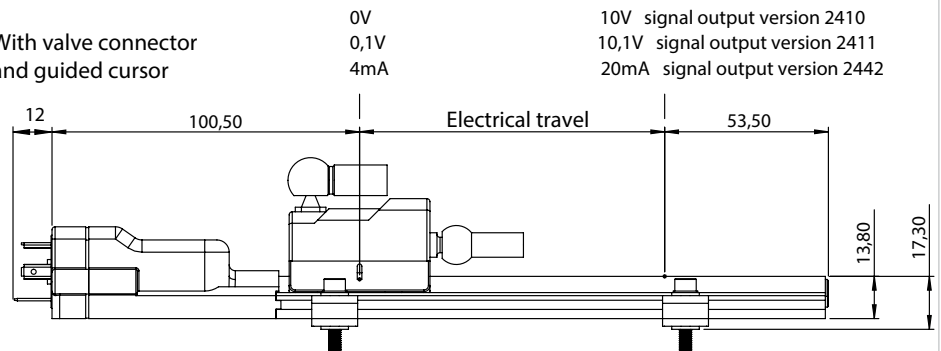
With valve connector and floating cursor



0V
0,1V
4mA

10V signal output version 2410
10,1V signal output version 2411
20mA signal output version 2442

With valve connector and guided cursor



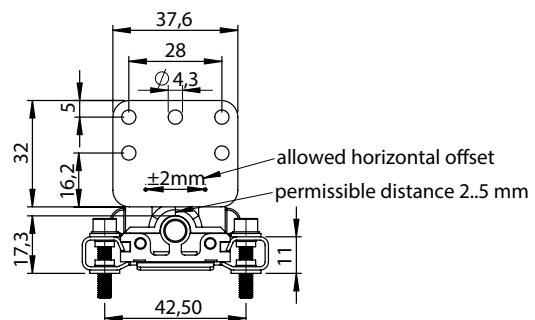
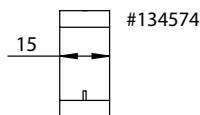
0V
0,1V
4mA

10V signal output version 2410
10,1V signal output version 2411
20mA signal output version 2442

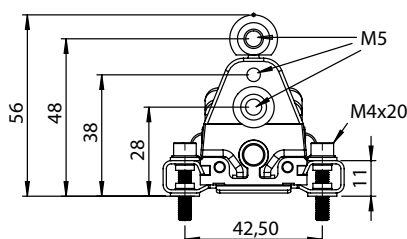
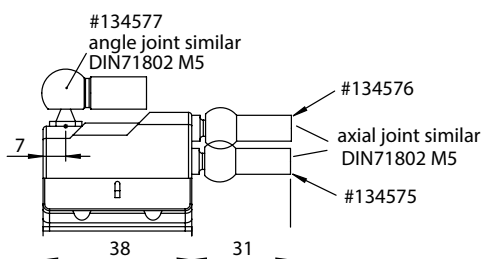
Dimensions in mm

Drawing Cursor

Unguided cursor



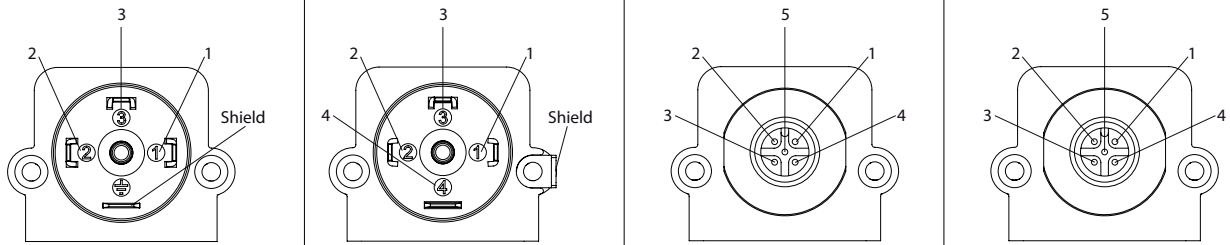
Guided cursor



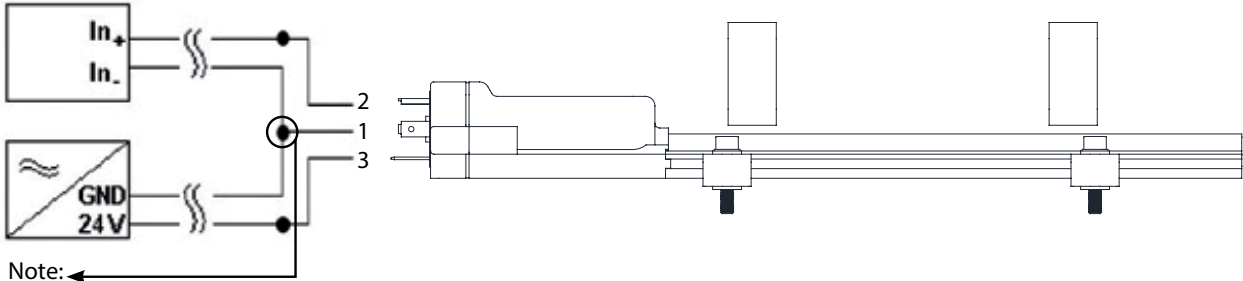
Dimensions in mm

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.

