

Data Sheet for Linear Sensors

Incremental linear transducer

Series MSO



The linear sensor has a very accurate glass scale inside the sensor housing which passes through an electronic board with an optical detector and generates count pulses in TTL, OC or line driver level up to 1 μm resolution.

- Probe with spring return
- Measuring length 12 mm, 30 mm or 50 mm
- Resolution 1..10 μm
- Output signals Linedriver, Open-Collector, TTL

Electrical Data	Open Collector (OC)	Voltage Output (TTL)	Line Driver (LD)
Output channels	A, B		A, /A, B, /B
Effective electrical travel 1.)	12.5 \pm 0.5 mm / 30.5 \pm 0.5 mm / 50 \pm 0.5 mm		
Theoretical resolution 1.)	1 μm , 2 μm , 5 μm , 10 μm		
Output voltage high	< 30 V @ < 20 mA load	> 3,5 V @ \leq 10 mA load	RS422 @ 20 mA load
Output voltage low	< 0.5 V @ < 20 mA load	< 0.4 V @ \leq 10 mA load	RS422 @ 20 mA load
Differential output voltage	--	--	3.8 V
Max. ripple VSUP	1 Vpp		
Supply voltage	5 VDC \pm 5 %		
Power consumption (no load)	\leq 60 mA	\leq 80 mA	
Output load	20 mA	10 mA	20 mA
Max. pull-up voltage	< 30 V	--	--
Insulation voltage 1.)	1000 VAC @ 50 Hz, 1 min (50 V DC)		
Insulation resistance 1.)	20 MOhm		

Mechanical Data, Environmental Conditions, Miscellaneous	12 mm	30 mm	50 mm
Mechanical stroke 1.)	12.5 \pm 0.5 mm	30.5 \pm 0.5 mm	50 \pm 0.5 mm
Max. operational speed	\leq 0.5 m/s		
Max. acceleration	\leq 10 m/s ²		
Operational force @ RT 1.) 2.)	< 0.6 \pm 0.2 N		
Operational temperature	0 °C up to +50 °C		
Storage temperature	-20 °C up to +70 °C		
Protection grade (IEC60529)	IP40		

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Mechanical Data, Environmental Conditions, Miscellaneous	12 mm	30 mm	50 mm
Vibration (IEC 68-2-6, Test Fc)	12 g (10..2000 Hz, 0.75mm)		
Shock (IEC 68-2-27, Test Ea)	50 g, halfsine, 11 ms		
Housing length	66.5 mm	111 mm	149 mm
Mass	ca. 240 g	ca. 300 g	ca. 420 g
Mounting parts (included in delivery)	None		
Probe tip	Included in delivery		
Material housing	Painted sheet steel		
Material push rod	Stainless steel		
Material measuring rod	Float glass with grating		
Connection type	Cable 1 m		
Sensor mounting method	Screws		

1.) According IEC 60393

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

Order Code					
Description	Selection: standard=black/bold , possible <i>options=grey/italic</i>				
Series:	MSO				
Effective electrical travel:					
12,5 mm		12			
30,5 mm		30			
50,5 mm		50			
Spring return:					
With spring return as probe tip			R		
<i>Option without spring return</i>			-		
Resolution:					
1 µm				1	
2 µm				2	
5 µm				5	
10 µm				10	
Output electronics:					
Voltage output					TTL
Linedriver					LD
Open Collector					OC
Electrical connection:					
Cable 1 m					K
<i>Option cable length in m (xx)</i>					<i>Kxx</i>

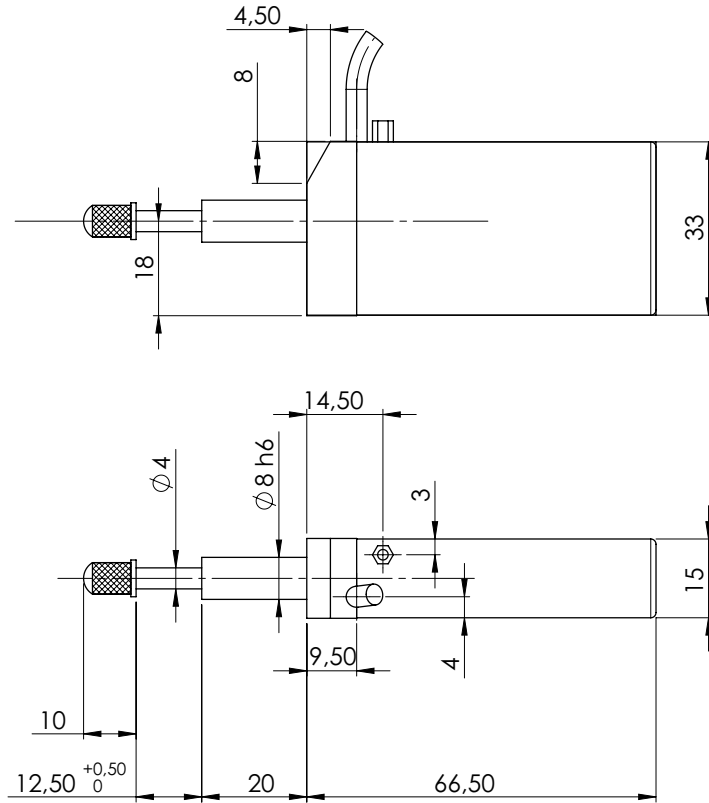
For higher quantities or on-going demand, additional options are available as described below

For example:

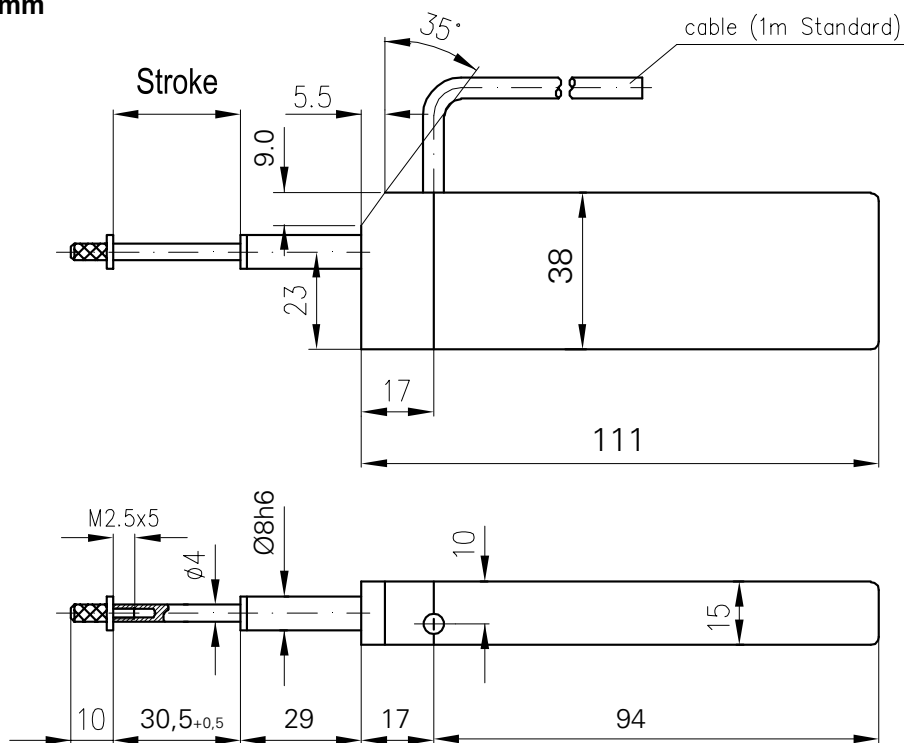
- Assembled cables with connector and much more

Drawing

MSO 12 mm



MSO 30 mm



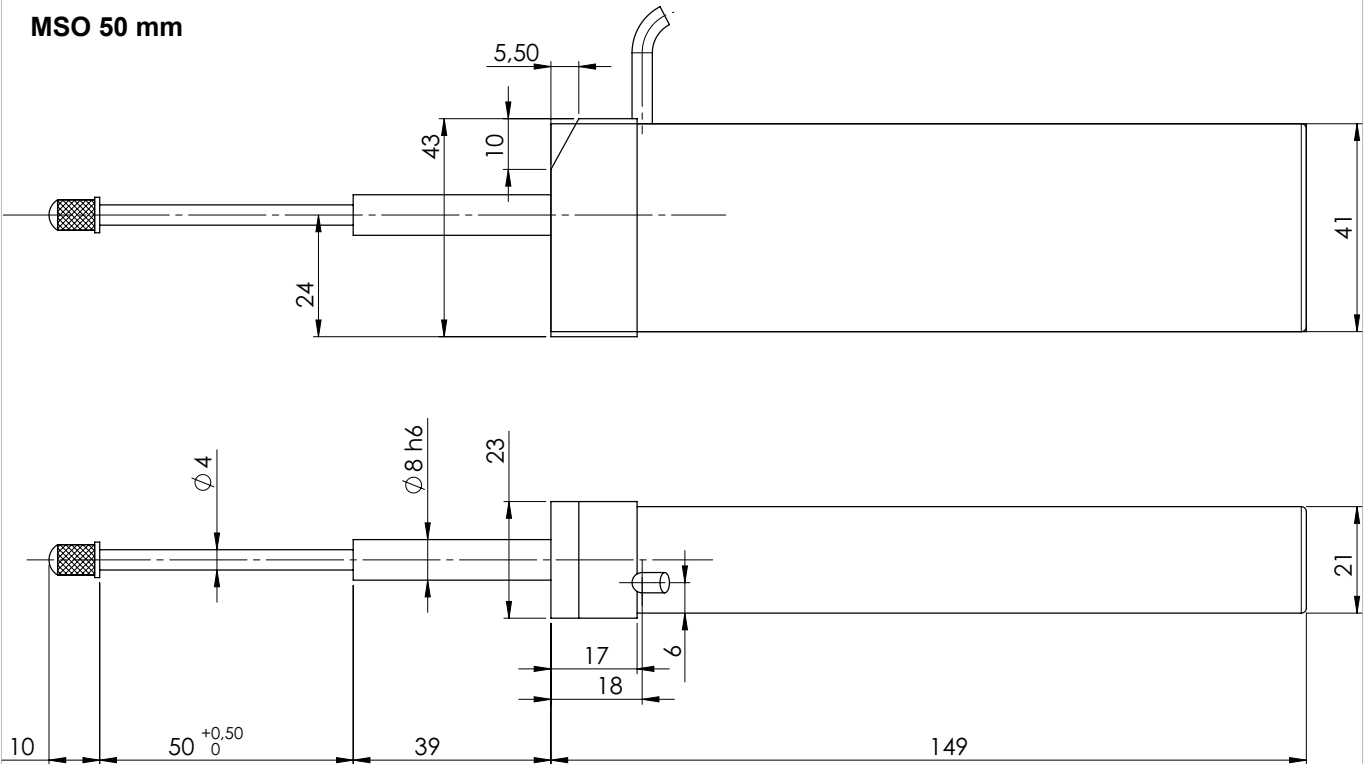
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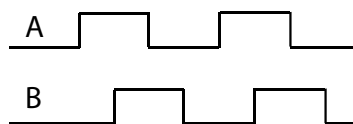
Drawing

MSO 50 mm



Connection		
Wire Color	Linedriver	TTL / OC
grey	Channel /A	not existing
pink	Channel /B	not existing
white	Channel A	Channel A
yellow	Channel B	Channel B
brown	Supply +5V	Supply +5V
green	Supply 0V	Supply 0V
shielding	internal	internal

Waveform TTL/OC



Waveform Linedriver

