

# Position Sensor Model TLH

Type 2119A...

## for Displacement, Tolerance Measurements and Continuous Position Sensing

Designed for direct, accurate measurement of displacement or length in control, regulation and measuring applications.

- Rodless design
- Ball coupling avoids side loads
- Long life: >100x10<sup>6</sup> movements
- Outstanding linearity
- High resolution – better than 0,01 mm
- Very high operating speed



### Description

The rodless design allows the actuator to be driven from the side, along the unit length, thereby avoiding the "pump" effect problem normally associated with conventional sensors.

A magnetically restrained stainless steel band completely covers the opening through which the actuator operates. The ball coupling is a new design which prevents forces, generated through parallel or angular offsets, from being transmitted to the bearing surfaces.

Fixing is achieved through the use of clamps which permit fine adjustment after initial mounting. Due to the design and the selected materials the temperature coefficient of the sensor is extremely small.

Careful attention to detail and choice of materials has resulted in a sensor with an extremely low temperature drift. The robust design ensures reliable operation even under harsh environmental conditions such as vibration or temperature changes. The simplicity of the measuring technique – both passive and absolute – ensures that the sensor is immune to external electrical interference, and does not require any built-in power supply to maintain positional information in the event of power failure.

Housing	Aluminum, anodized
Sliding parts	Aluminium with plastic inserts
Coupling ball	Coupling, incorporating a hardened ball, with spring and hardened plate
Resistance element	Conductive plastic
Wiper assembly	Precious metal multi-finger wiper, elastomer-damped
Electrical connection	4 pin socket to DIN 43650

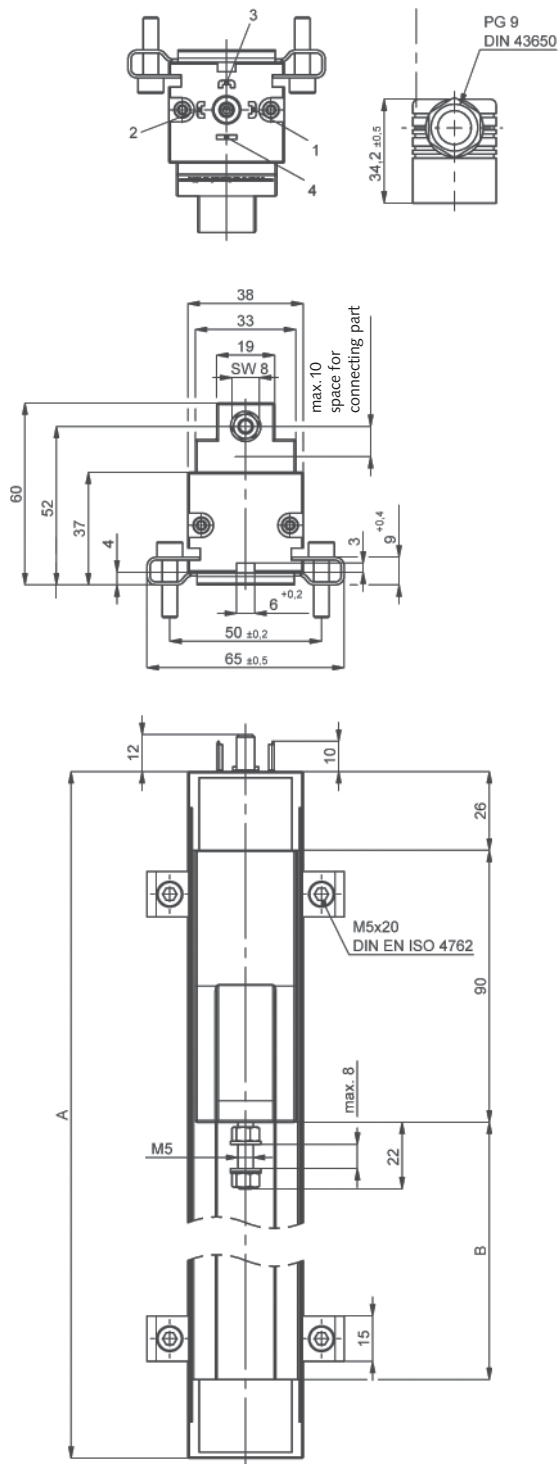
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**Technical Data**

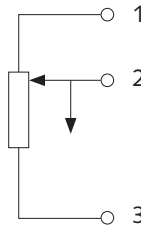
Model		TLH100	TLH225	TLH1250
<b>Electrical Data</b>				
Defined electrical range	mm	100	225	1 250
Nominal resistance	kΩ	3	3	10
Linearity, independent	±%	0,1	0,07	0,03
Repeatability	mm		0,01	
Max. permissible applied voltage	V		42	
Recommended operating wiper current	<μA		1	
Max. wiper current in case of malfunction	mA		10	
<b>Mechanical Data</b>				
Overall length (dimension A <sup>+1 mm</sup> )	mm	250	376	1 418
Mechanical stroke (dimension B <sup>+1,5 mm</sup> )	mm	108	234	1 276
Total weight	g	440	620	2 110
Operating force (horizontal)	≤N		0,4	
(vertical)	≤N		1,1	
<b>Environmental Data</b>				
Temperature range	°C		-30 ... 100	
Vibration	Hz		5 ... 2 000	
Shock	g/ms		50/11	
Operating speed (max.)	m/s		10	
Operating acceleration (max.)	m/s <sup>2</sup>		200 (20 g)	
Protection class (En 40050)	IP		54 (mounted "up-side-down")	

**Important:** All the values given in this data sheet for linearity, lifetime and temperature coefficient in the voltage dividing mode are quoted for the device operating with the wiper voltage driving on operational amplifier working as a voltage follower, where virtually no load is applied to the wiper (I<sub>e</sub> ≤ 0,1 μA).

## Dimensions



## Schematic



## Included Accessories

- Fixing clamps Z-43
- 1 plug connector GDM 3009
- 1 seal GDM 3-16

## Accessories (Optional)

- Connecting cable for CoMo Net®/View®/Sys
- Connecting cable for DMF-P family
- Connecting cable for maXYmo family
- Connecting cable for SigMo Sys

## Type

- 1200A153ASP
- 1200A153BSP
- 1200A153CSP
- 1200A153DSP

## Ordering Key

Type 2119A

## Position Sensor TLH

100 mm	<b>100</b>
225 mm	<b>225</b>
1 250 mm	<b>1250</b>