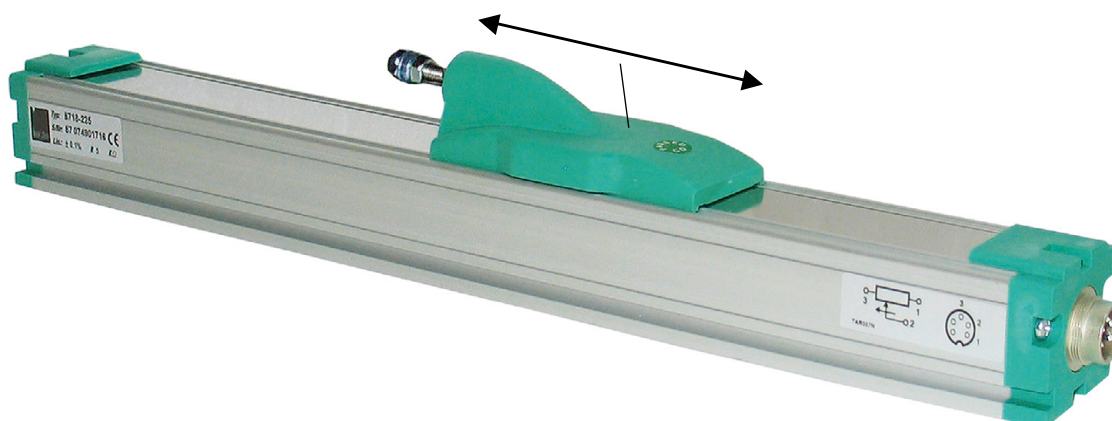


# Potentiometric Displacement Sensor

Without rod

Model 8718

|           |           |
|-----------|-----------|
| Code:     | 8718 EN   |
| Delivery: | ex stock  |
| Warranty: | 24 months |



- Measurement ranges from 0 ... 100 mm to 0 ... 2000 mm
- Non-linearity up to 0.05 % F.S.
- Compact design, without rod
- Displacement speed up to 10 m/s
- Durability >10<sup>8</sup> operations

## Application

The high resolution allows linear measurements to be accurately sized even in large measurement ranges. Conversion of rotatory and translational motion by spindles, wires or others is not necessary for direct displacement measurement.

Areas of application are:

- ▶ Hydraulic and pneumatic cylinders
- ▶ Detection of positions on coordinate inspection machines
- ▶ Displacement of plungers, knee levers or extruders
- ▶ Coil and de coil lengths
- ▶ Strokes on chassis
- ▶ Metering strokes

## Description

Displacement sensors model 8718, using a resistance track made of conductive plastic material, are suitable for direct, accurate and absolute measurements of displacements and lengths.

Special processes are applied to give the resistance tracks low friction, low tendency to stick/slip, resistance to abrasion and long-term stability.

The vibration-cushioned slider allows a clear signal output even by slight shocks or high operating speeds up to 10 m/s. Due to its simple design the sensor is largely protected against electrical interference fields (AI-housing), it keeps the measured value after a power failure and does not generate any electrical interference.

A magnetically hold steel band covers the whole measurement device gap free. Any lateral forces are avoided by a ball joint coupling mounted to the sensor.

8718 EN

## Technical Data

|                                 |       |       |       |       |       |        |        |        |        |        |        |        |        |
|---------------------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Meas. Range [mm]                | 100   | 150   | 200   | 300   | 400   | 500    | 600    | 750    | 1000   | 1250   | 1500   | 1750   | 2000   |
| Max. Electr. Usable Length [mm] | 103   | 153   | 204   | 305   | 406   | 509    | 611    | 763    | 1017   | 1271   | 1521   | 1771   | 2021   |
| Max. Deflection A [mm]          | 113   | 163   | 214   | 315   | 416   | 519    | 621    | 773    | 1027   | 1281   | 1531   | 1781   | 2031   |
| Non-Linearity [F.S.]            | ±0.1% | ±0.1% | ±0.1% | ±0.1% | ±0.1% | ±0.05% | ±0.05% | ±0.05% | ±0.05% | ±0.05% | ±0.05% | ±0.05% | ±0.05% |
| Resistance [kΩ]                 | 5     | 5     | 5     | 5     | 10    | 10     | 10     | 10     | 10     | 20     | 20     | 20     | 20     |
| Length of Housing B [mm]        | 253   | 303   | 354   | 455   | 556   | 659    | 761    | 913    | 1167   | 1421   | 1671   | 1921   | 2171   |
| Total Weight [kg]               | 0.5   | 0.58  | 0.65  | 0.80  | 0.95  | 1.1    | 1.25   | 1.5    | 1.85   | 2.25   | 2.6    | 3.0    | 3.8    |
| Order Code 8718-                | 100   | 150   | 200   | 300   | 400   | 500    | 600    | 750    | 1000   | 1250   | 1500   | 1750   | 2000   |

## Electrical values

|                                             |                                |
|---------------------------------------------|--------------------------------|
| Tolerance of resistance:                    | ± 20 %                         |
| Operating current in slider circuit:        | recomm. < 0.1 µA<br>max. 10 mA |
| Max. power rating at 40 °C (0 W at 120 °C): | 3 W                            |
| Max. operating voltage:                     | 50 V                           |
| Insulation resistance:                      | > 100 MΩ at 500 V, 2s          |
| Voltage resistance:                         | < 100 µA at 500 V~, 50 Hz, 2s  |

## Environmental conditions

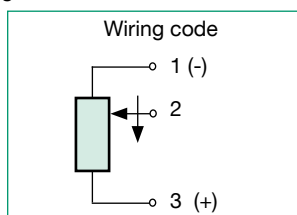
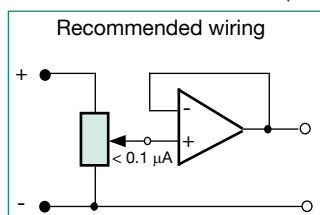
|                                            |                       |
|--------------------------------------------|-----------------------|
| Operation temperature range:               | - 30 °C ... + 100 °C  |
| Storage temperature range:                 | - 50 °C ... + 120 °C  |
| Temperature coefficient of resistance:     | - 200 ... ± 200 ppm/K |
| Temperature coefficient of output voltage: | < 1.5 ppm/K           |

## Mechanical values

|                                  |                                                                   |
|----------------------------------|-------------------------------------------------------------------|
| Resolution:                      | 0.01 mm                                                           |
| Durability:                      | 10 <sup>8</sup>                                                   |
| Displacement force (horizontal): | ≤ 1.2 N                                                           |
| Displacement speed:              | standard 10 m/s                                                   |
| Vibration:                       | 5 ... 2000 Hz, A <sub>max</sub> = 0.75 mm, a <sub>max</sub> = 20g |
| Acceleration in operation:       | max. 200 m/s <sup>2</sup> (20g)                                   |
| Shock resistance:                | 50 g, 11 ms                                                       |
| Weight of the slider:            | 67 g                                                              |
| Protection class:                | acc. EN 60529 IP40                                                |
| Material:                        | slider stainless steel AISI303<br>housing anodized aluminium      |

## Electrical connection:

Plug-in connector 5 pin model 9991 in scope of deliver  
(Mating connector refer to accessories)



## Important

The technical data stated are only evident, if the sensor is used properly. The sensor only shows its excellent characteristics when the slider current in the voltage divider is < 0.1 µA. If the measurement chain requires higher currents, it is advisable to connect an operational amplifier as a voltage follower (I < 0.1 µA) (refer to drawing above). Usage near the slider blocks (slider at the end of the conductor track) may cause a higher measurement error.

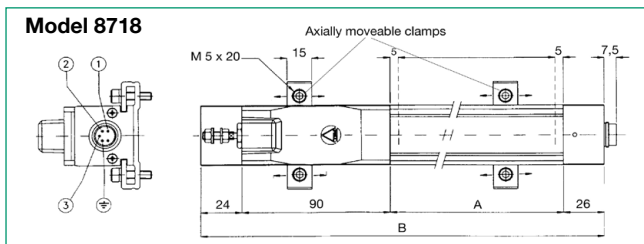
## Mounting:

By clamps with adjustable distance or with guard rail on the bottom side for alternative mounting.

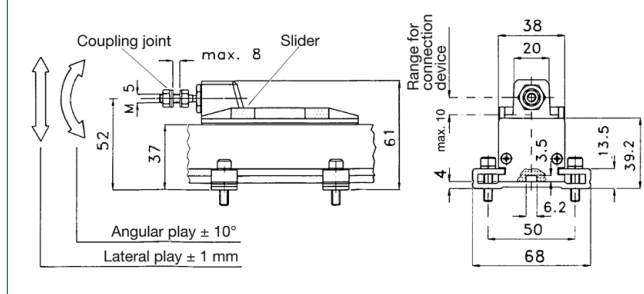
## Mounting Advice

The clamps allow a fine adjustment of the sensor's mounting position. It may be an advantage to mount the sensors with the ball joint coupling in the lower position. This will bring the drainage areas on both sides of the slider into work and the masking band is better protected against pollution, also in rough environments.

## Dimensional drawing



## Slider with coupling joint



The CAD drawing (3D/2D) for this sensor can be imported online directly into your CAD system.

Download via [www.burster.com](http://www.burster.com) or directly at [www.traceparts.com](http://www.traceparts.com). For further information about the burster traceparts cooperation refer to data sheet 80-CAD-EN.

## Order Information

Potentiometric displacement sensor  
standard version, measurement range 500 mm **Model 8718-500**

## Accessories

|                                                                                                |                                 |
|------------------------------------------------------------------------------------------------|---------------------------------|
| Mating connector (cable coupling 5 pin)                                                        | <b>Model 9991</b>               |
| 1 unit is part of delivery                                                                     |                                 |
| Connecting cable, length 3 m, one end open                                                     | <b>Model 99130</b>              |
| Connecting cable suitable to burster desktop devices with 12 pin plug-in connector, length 3 m | <b>Model 99132</b>              |
| Connecting cable to DIGIFORCE® 9310, length 3 m                                                | <b>Model 99209-591A-0090030</b> |
| Connecting cable to 9163 desktop version:                                                      | <b>Model 99209-591B-0090030</b> |

Mounting clamps (1 set is included in scope of delivery) for sensors with meas. lengths up to 750 mm\* **Model 87018**  
for sensors with meas. lengths from 1000 to 2000 mm\*\* **Model 87019**  
(1 set = 2 parts), \*\* (1 set = 3 parts)

Supply units, amplifiers and process control units like indicator model 9163, modular amplifier model 9243 or DIGIFORCE®  
refer to section 9 of the catalog.

## Manufacturer Calibration Certificate (WKS)

Calibration of the displacement sensor with or without evaluation electronics in 20 % increments of the whole measurement range (6 points).