# POTENTIOMETER ELEMENT ROTARY

**This analog conductive plastic potentiometer element provides absolute measurement and is used as a position sensor.**

**It consists of a potentiometer element, wiper, and wiper carrier, which we design and manufacture as a customized solution for your specific application.**

**In addition, it is possible to equip the potentiometer element with an integrated switch.**

**Advantages**
– Adjustable measuring range: 0–355°
– High thermal stability
– Long service life
– High resolution, precision and measurement accuracy
– Space-saving design

**Application Examples**
– Rotation angle detection
– In robot axes or arms of surgical and industrial robots
– In joysticks for determining the deflection angle
– For torque and speed control of power tools



| General data | |
|---|---|
| Sensor technology | Potentiometric |
| Type of contact | Wiper |
| Sensor type | Absolute measuring |
| Circuit | As voltage divider |

| Electrical data | |
|---|---|
| Measuring range | 0° – 355°, adjustable |
| Independent linearity | ± 2 %, ± 0.25 % optional |
| Resolution | Analog, near-infinite |
| Resistance range | 5 kΩ, 10 kΩ |
| Resistance tolerance | ± 20 % |
| Max. Wiper current | 5 mA in case of malfunction |
| Supply voltage | 5 VDC typ., 3 to 30 VDC possible |
| Output signal | Analog<br>0 to 100 % of supply voltage |

| Mechanical data | |
|---|---|
| Dimensions | Customizable |
| Sensor thickness | 1.5 mm<br>Others on request |
| Travel speed | 2 m/sec |
| Mounting | Self-adhesive, screw |
| Lifetime | Up to 50 million cycles* |

| Environmental data | |
|---|---|
| Operating temperature | -40 °C to +125 °C |
| Protection class acc. to IEC 60529 | – |
| EMC | Uncritical |
| ESD | Uncritical |

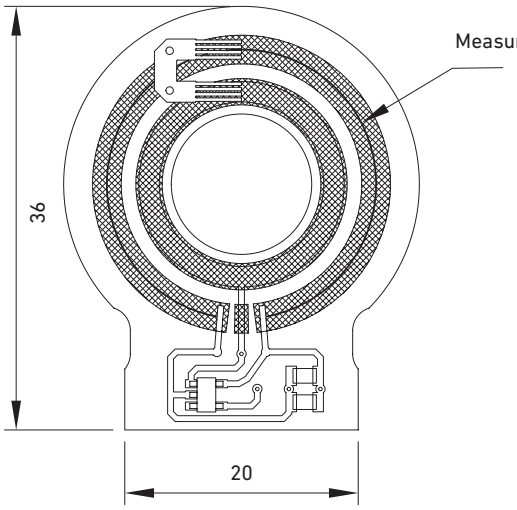
| Material | |
|---|---|
| Basic material | FR4<br>Other materials on request |
| Resistance material | Conductive plastic |
| Metallux wiper | Noble metal alloy |

| Electrical connection | |
|---|---|
| | Solder pad<br>Pitch 2.54 mm |

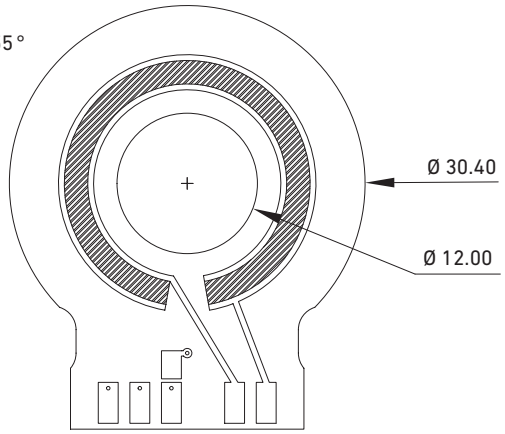
* Only valid in conjunction with Metallux wipers and with correct application of the Metallux Design Rules

# POTENTIOMETER ELEMENT ROTARY

Front




Back




All dimensions in mm

## Installation instructions

To install the sensor, remove the protective film on the rear side. To ensure proper installation and function, the surface to which the sensor is to be applied must meet the following properties:
– be flat and smooth
– be free of moisture, oil, grease, and dust

Please use a suitable cleaning agent, for example, isopropanol or MEK, to clean the carrier material. Avoid temperature differencies between the sensor and the carrier material.

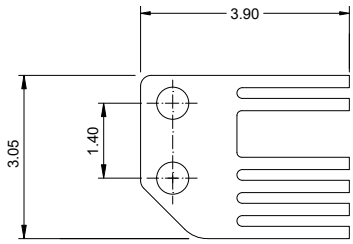
Adhesive tape: The recommended processing temperature is 18°C to 35°C.

Storability is 2 years at room temperature and a humidity of 50 to 70%.

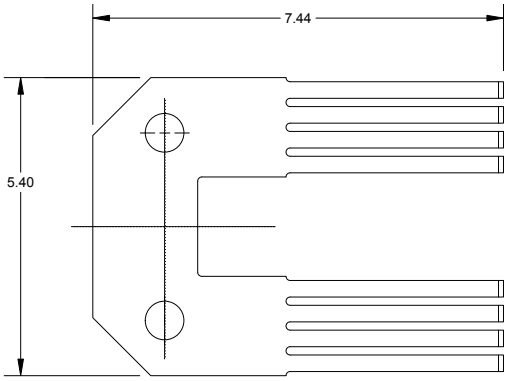
## Wiper and wiper carrier

We offer two different wiper sizes, depending on the specific element or available space. The wiper carrier is adapted to the application and is therefore always customized. We handle the design for you.

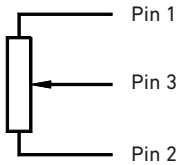
Wiper 1




Wiper 2




## Electrical connection




## Sample order

| Article no. | Product name | Measuring range | Electrical connection |
|---|---|---|---|
| E040200216 | Potentiometer element | 350° | Solder pad |
| H903560002 | Wiper 2 | | |

Metallux cannot picture the customer's operating and application conditions and the customer's existing environmental influences.
We therefore recommend that you carry out your own investigations into the planned use of the products under the actual operating conditions.

We continuously improve our products and also update our data sheets regularly. In this respect, there may be changes in the specification.
These changes will apply to orders received by us from the time of the update, unless otherwise agreed.

Our products comply with Directive 2011/65/EU (RoHS) including Directive 2015/863/EU and Regulation (EC) No. 1907/2006 (REACH).