Industrial-Grade Potentiometers with Current Interface

Series IPE6000

The electronic system integrated into the potentiometer replaces an external transformer and supplies an optional standardized output current of 0...20 mA or 4...20 mA. The wide operating voltage range permits supply from an unsta-bilized DC source. The housing is in compliance with protection class IP 65 with the conformable plug and is particularly suited to stringent requirements in the machine, plant and vehicle design sector. The precision ball bearing is designed to withstand high mechanical strains.

In order to ensure the EMV, the cable shielding must be connected with the housing via the plug. The shielding connection can take place galvanic or by a coupling capacitor towards ground.

Special features
- standardised output current over 90/345°
- output current selection 0...20 mA or 4...20 mA
- electronic system integrated in the case
- very good absolute linearity ± 0.1 % (345°) or ± 0.3 % (90°)
- very high repeatability 0.007°
- unrestricted continuous rotation
- Protection class IP 65

On the basis of the tried and tested IP 6000, this precision angle encoder is equipped with a signal interface integrated in the case. It has now been fitted with an electronic system using SMD technology for control of the supply voltage and transformation of angle-proportional voltage into an output current.

This ensures optimum interference immunity in signal transmission even over long cable distances.
Environmental Data

Temperature range -25..+70 °C
Vibration 5...2000 Hz
Amax = 0.75 mm
amax = 20 g
Shock 50 g
11 ms
Life 100 x 10^6 movem.
Protection class IP 65 (DIN 400 50 / ICE 529)

Mechanical Data

Dimensions see drawing
Mounting with 3 clamps Z 3-31
Mechanical travel 360, continuous °

Permitted shaft loading (seal and radial) static or dynamic force 45 N
Starting torque <1.5 Nm
Maximum operational speed 2 000 min⁻¹
Weight 200 g

Electrical Data

Operating voltage 24 ±6 V DC
Electrical range 90 or 345 °
Max. current consumption 35 mA
Load impedance 0-500 Ω

Absolute linearity
at 345° ± 0.1 %
at 90° ± 0.3 %

Repeatability 0.007 °

Temperature coefficient of the zero point of the range ≤ 10 ppm/K
Insulation resistance (500 VDC, 1 bar, 2 s) ≥ 10 MΩ
Dielectric strength (50 Hz, 2 k, 1 bar, 500 VAC) ≤ 100 μA

Current range fluctuations relative to operating voltage alteration ≤ 10 ppm/V

The temperature co-efficient quoted is valid for the output current. If a load resistor is used its temperature co-efficient will be additional.

Included in delivery
3 mounting clamps Z3-31

Recommended accessories
Fork coupling Z 104 G 6 (backlash free),
Fork coupling Z 105 G 6 (backlash free),
Mating plug EEM 33-76 protection class IP 67,
Right-angled plug EEM 33-77 protection class IP 67,
Process-controlled indicators MAP... with display

Order designations

<table>
<thead>
<tr>
<th>Type</th>
<th>Art.no.</th>
<th>Range</th>
<th>Pins in the receptacle</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPE6501 30055 for 345°</td>
<td>010040</td>
<td>0...20 mA open</td>
<td>0 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4...20 mA connected</td>
<td>0 0</td>
</tr>
</tbody>
</table>

Reverse voltage protection by means of internal diode.