

## Industrial-Grade Potentiometers with Current Interface

Series IPE6000



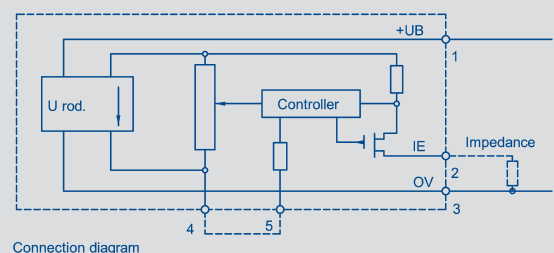
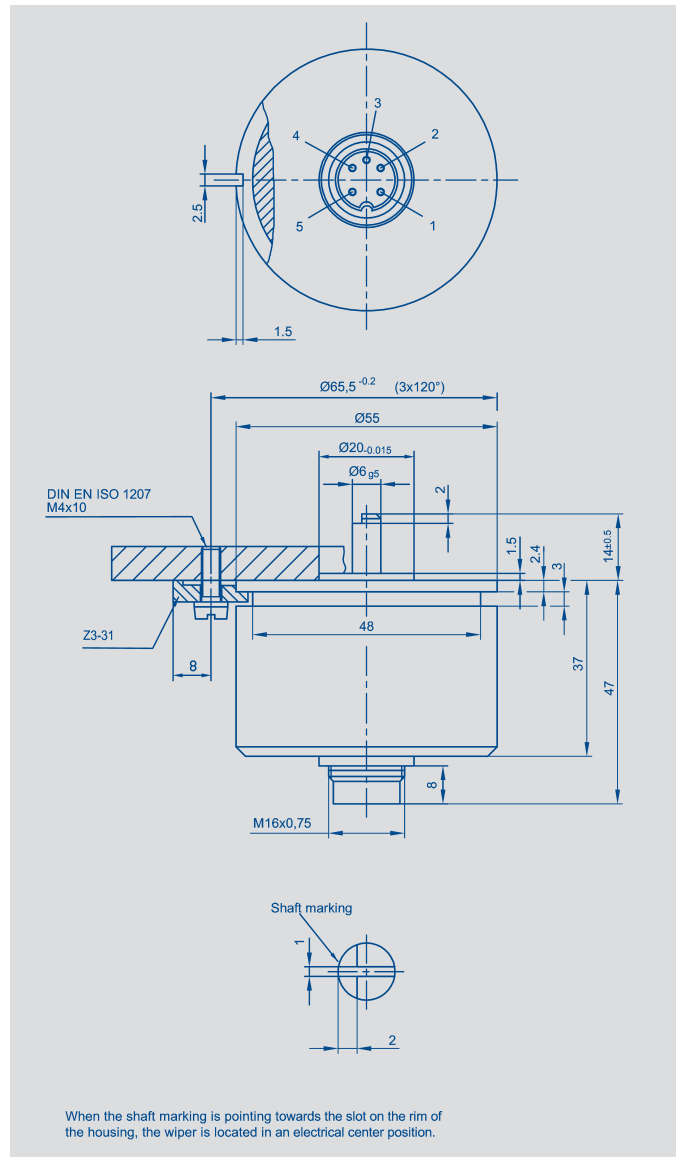
### Special features

- 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  $\pm 0.1\%$  (345°) or  $\pm 0.3\%$  (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.

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 unregulated 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.



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Description	
Case	aluminium anodized, shaft passage sealed
Shaft	stainless steel
Bearings	stainless steel ball bearings
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper
Electrical connections	5pin connector (see „Accessories“)
Reverse voltage protection	by means of internal diode

Mechanical Data	
Dimensions	see drawing
Mounting	with 3 clamps Z 3-31
Mechanical travel	360, continuous °
Permitted shaft loading (axial and radial) static or dynamic force	45 N
Starting torque	<1.5 Ncm
Maximum operational speed	2 000 min <sup>-1</sup>
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° at 90°	± 0.1 % ± 0.3 %
Repeatability	0.007 °
Temperature coefficient of the zero point of the range	≤ 10 ppm/K ≤ 15 ppm/K
Insulation resistance (500 VDC, 1 bar, 2 s)	≥ 10 MΩ
Dielectric strength (50 Hz, 2 s, 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.

Environmental Data	
Temperature range	-25..+70 °C
Vibration	5...2000 Hz A <sub>max</sub> = 0.75 mm a <sub>max</sub> = 20 g
Shock	50 g 11 ms
Life	100 x 10 <sup>6</sup> movem.
Protection class	IP 65 (DIN 400 50 / ICE 529)

**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

Range	Pins in the receptacle	4	5
0...20 mA	open	0	0
4...20 mA	connected	0	0

Current increase cw viewed at the shaft

Order designations	
Type	Art.no.
IPE6501 S0055 for 345°	010040
IPE6501 S0056 for 90°	010041

