

Industrial-Grade Potentiometers with Current Interface

IPE6000 Series



Special features

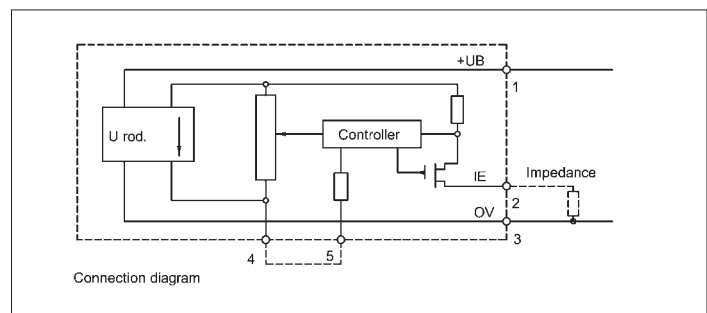
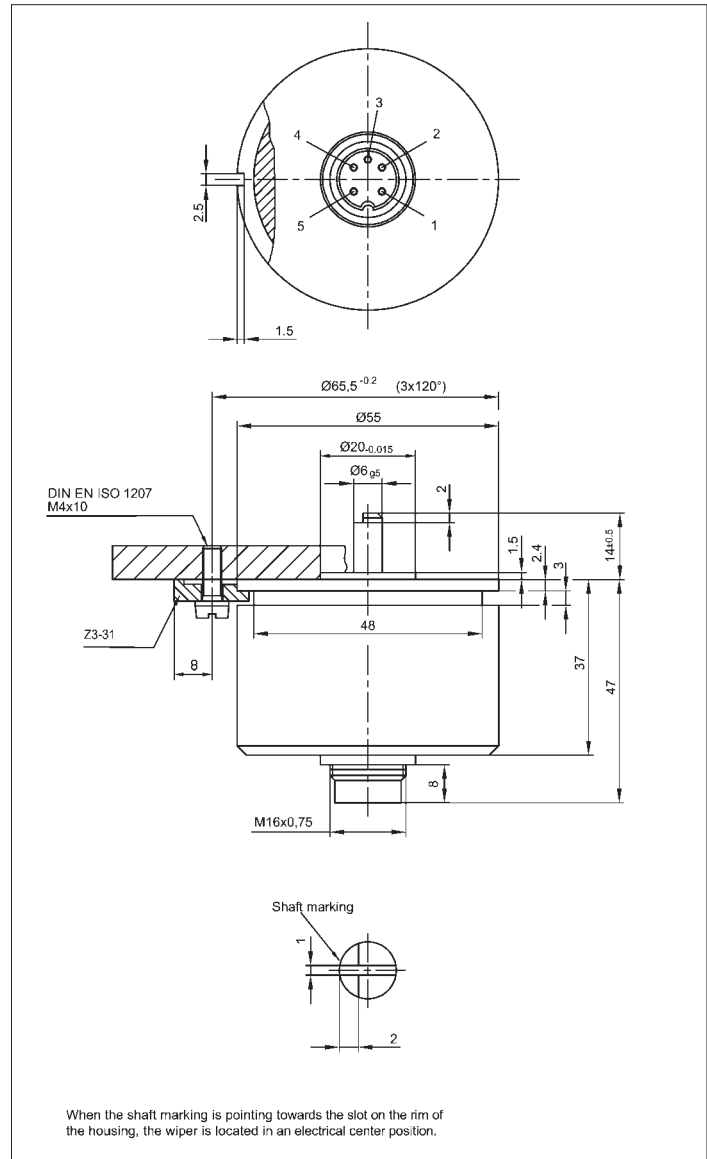
- standardized output current over 90/345°
- output current selection 0...20 mA or 4...20 mA
- electronic system integrated in the case
- very good absolute linearity $\pm 0.1\%$ (345°) or $\pm 0.3\%$ (90°)
- very high repeatability 0.007°
- unrestricted continuous rotation
- protection class IP 65

Based on Novotechnik's proven IP6000 series, the IPE6000 precision angle encoder integrates electronics into the potentiometer, eliminating the need for an external transformer. Electronics using SMD technology control the supply voltage and transform angle-proportional voltage into output current. This ensures signal transmission interference immunity over long cable distances.

The integrated electronic system supplies an optional standard output of 0 to 20 mA or 4 to 20 mA. Operating voltage can be supplied from an unstabilized DC source.

The IPE6000 features a rugged anodized aluminum housing, sealed to protection class IP 65, and a precision ball bearing designed to withstand high mechanical strains. This makes the IPE6000 ideal for applications in stringent manufacturing and industrial environments.

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



Description	
Case	aluminum 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	5-pin 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	RPM
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 ≤ 15	ppm/K 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 coefficient quoted is valid for the output current.
If a load resistor is used its temperature coefficient will be additional.

Environmental Data

Temperature range	-25..+70	°C
Vibration	5..2000 $A_{max} = 0.75$ $a_{max} = 20$	Hz mm g
Shock	50 11	g ms
Life	100 million	movem.
Protection class	IP 65 (DIN 400 50 / ICE 529)	

Included in delivery

3 mounting clamps Z 3-31

Recommended accessories

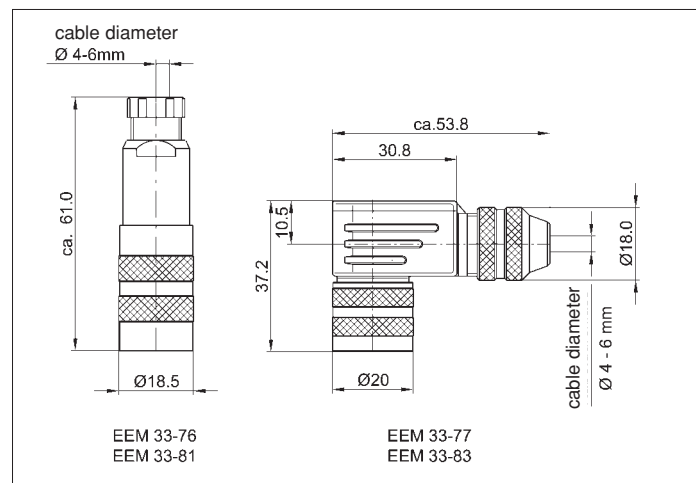
Fork coupling Z 104 G 6
(backlash-free),
Fork coupling Z 105 G 6
(backlash-free),
Mating plug EEM 33-76
protection class IP 67,
Right-angled plug EEM 33-77
protection class IP 67,
MAP process-control indicators
and display. MUP or MUK signal
conditioner for standardized
output signals.

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°	001040
IPE6501 S0056 for 90°	001041



EEM 33-76
EEM 33-81

EEM 33-77
EEM 33-83