

Industrial-Grade Potentiometers

AW360 ZE Series



In addition to direct analog applications, the AW360 ZE can be used in conjunction with an external A/D converter. In these applications, the AW360 ZE operates as an angle transducer with 12-bit resolution and 10- or 11-bit absolute accuracy depending on model selected. Only six connections are required and these are made via a 6-pole, waterproof plug and socket.

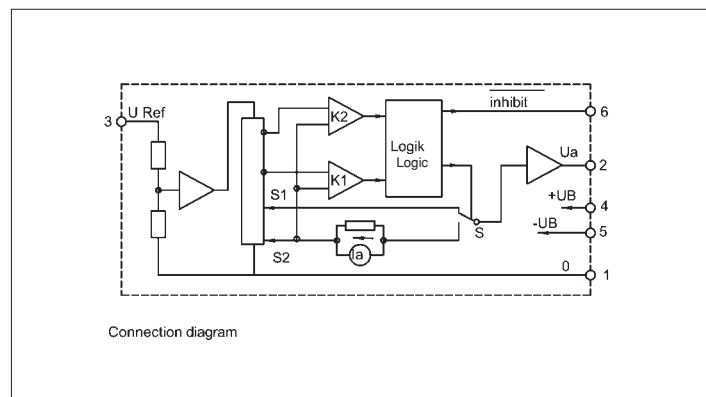
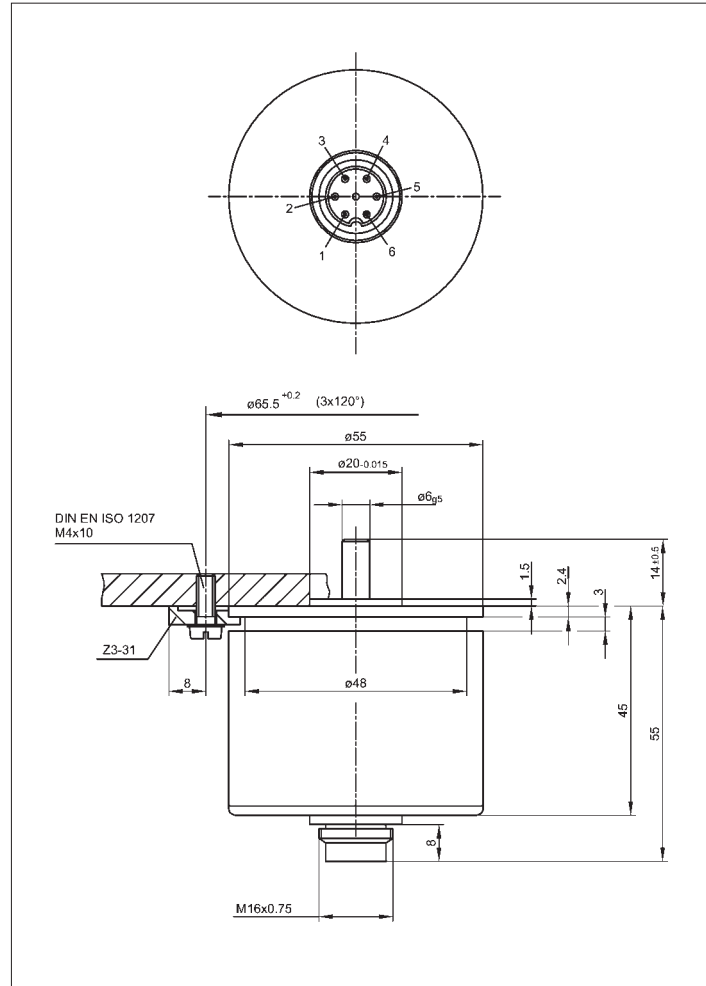
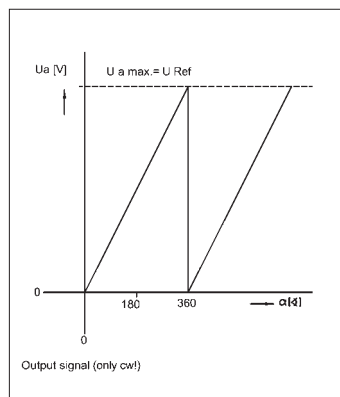
Special features

- gap-free output over all 360°
- very high absolute linearity
- interchangeable without electrical adjustment
- guaranteed 12-bit resolution and repeatability
- long life – 50 x 10⁶ movements
- protection class IP 65

The anodized aluminum housing is in compliance with protection class IP 65 with a conformable plug making the AW360 ZE particularly suited to the stringent requirements found in heavy manufacturing environments.

The AW360 ZE provides absolute 360° angle encoding in heavy-duty industrial environments. Unlike single-wiper potentiometers that have a dead band, the AW360 ZE has two wipers and hybrid circuitry to provide a full 360° measurement range. The reset voltages at the beginning and end of the saw tooth are well defined and the function-angle tolerance normally associated with potentiometers is eliminated.

The transducer delivers a logical signal separately from analog output. This signal can then be used to inhibit A/D conversion during the reset period to avoid measuring errors. These features together with the fact that the maximum output voltage is determined by the applied voltage means that the units may be interchanged or replaced without the need for electrical adjustment or trimming.



Description	
Case	aluminum anodized, sealed shaft
Shaft	stainless steel
Bearings	stainless steel ball bearings
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper
Electrical circuitry	hybrid circuit built into potentiometer housing
Connections	6-pin connector (see "Accessories")

Mechanical Data

Dimensions	see drawing	
Mounting	with 3 mounting 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	170	g

Electrical Data

Actual electrical travel	360	°
Absolute linearity AW 360ZE-10	±0.07	%
AW 360ZE-11	±0.035	%
Repeatability	0.002 ($\Delta \leq 0.007^\circ$)	%
Effective temperature coefficient of resistance	100	ppm/K
Supply volt. $\pm U_B$ of the electronic circuitry	±15 (±1)	V
Potentiometer supply voltage U_{Ref}	≤ +10	V
Inhibit signal from $\pm U_B$ to zero	approx. 50	μs
Zero offset	< 2	mV
Max. difference of supply voltage U_{Ref}	±2	mV
Max. output current	5, short-circuit protected	mA
Output resistance	< 0.1	Ω
Quiescent current of electronic circuitry	10	mA
Insulation resistance (250 VDC, 1 bar, 2 s)	≥ 10	MΩ
Dielectric strength (50 Hz, 2 s, 1 bar, 250 VAC)	≤ 100	μA

Environmental Data

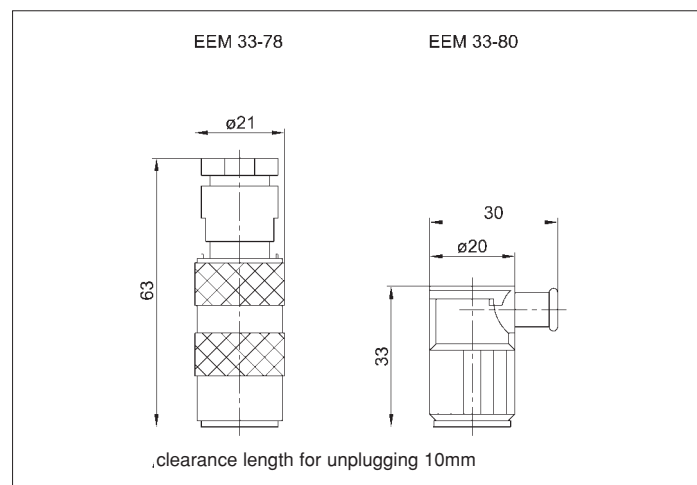
Temperature range	0...+70	°C
Vibration	10...2000 $A_{max} = 0.76$ $a_{max} = 20$	Hz mm g
Shock	50 11	g ms
Life	50 million	movem.
Protection class	IP 65 (DIN 400 50 / IEC 529) (with connector EEM 33-78)	

Included in delivery

3 mounting clamps Z 3-31

Recommended accessories

Mating plug EEM 33-78
protection class IP 67,
Right-angled plug EEM 33-80
protection class IP 40,
Fork couplings Z 104 G 6
(backlash-free),
Fork couplings Z 105 G 6
(backlash-free),
MAP process-control indicators
and display. MUP or MUK signal
conditioner for standardized
output signals.



Order designations

Type	Art. no.
AW360 ZE-10	001121
AW360 ZE-11	001122