

Rotational Absolute Magnetic Encoder Displacement Sensor



KEY BENEFITS

- Absolute accuracy: $\pm 0.33\%$ at 25 °C (0.58 % over temperature range)
- Resolution: 12 bits
- Output: analog
- Diameter: 27 mm
- Plug and play
- Ball bearings, stainless steel shaft, and housing protected
- Good magnetic immunity
- Weight ≤ 50 g (including cable of 250 mm)
- ITAR-free

APPLICATIONS

- Industrial market: joystick (one and two mechanical axis), electrical actuators (position feedback), and machine tools (printing, textile, milling...) for position feedback or metrology functions and robotics (position feedback)
- Military market: joystick and missile flat control surfaces
- Medical: actuators

RESOURCES

- Datasheet: RAME027 - www.vishay.com/doc?32543
- For technical questions contact mcbprecisionpot@vishay.com
- Material categorization: for definitions please see www.vishay.com/doc?99912



Rotational Absolute Magnetic Encoder Displacement Sensor


FEATURES

- Hall effect principle
- OTP (one-time programmable) technology
- Plug and play
- Good magnetic immunity
- Ball bearings
- Stainless steel shaft
- Housing protected
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

QUICK REFERENCE DATA

Sensor type	ROTATIONAL, magnetic technology
Output type	Cable
Market appliance	Industrial, railway
Dimensions	1 1/16" (27 mm)

ELECTRICAL SPECIFICATIONS

PARAMETER	
Voltage supply	5 V \pm 0.25 V
Current supply	\leq 20 mA at 5 V (with a load $>$ 5 k Ω)
Output	From 0.5 V _{DC} to 4.5 V _{DC}
Connection	Shielded cable
Useful electrical angle	360°
Absolute accuracy at 25 °C	\pm 1.2° on 359° (0.33 %)
Absolute accuracy at -25 °C to +85 °C	\pm 2.1° on 359° (0.58 %)
Resolution	0.09° (~ 12 bits)
Startup time	\leq 10 ms
Response time	1 ms (for an angle of 20° in 6 ms)
Dielectric strength	1000 V _{AC} / 1 min
Insulation resistance	$>$ 50 M Ω / 500 V _{DC}
Magnetic field	$<$ 10 mT with $\Delta U <$ 1°

MECHANICAL SPECIFICATIONS

PARAMETER	
Mechanical angle	360°
Axial charge	3 N
Radial charge	3 N
Weight	\leq 50 g (with cable of 250 mm)

Revision 8-Dec-16

SAP PART NUMBERING GUIDELINES

TYPE	MODEL	DESIGN	SIZE (mm)	TYPE	FUNCTION	ACCURACY (BITS)	RESOLUTION (BITS)	OUTPUT	PACKAGING
R = rotational	AM	E = encoder with housing	027	R	1	07	12	A = analog CW	B = box