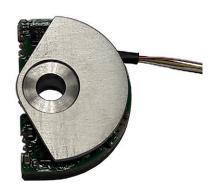


Vishay MCB

# Rotational Absolute Magnetic Kit Encoder Version 27 mm Sector Displacement Sensor



QUICK REFERENCE DATA				
Sensor type	ROTATIONAL, magnetic technology			
Output type	Wires or cables			
Market appliance	Industrial			
Dimensions	Diameter 27.3 mm			

### **FEATURES**



- · Hall effect principle
- Especially dedicated to harsh conditions (vibrations, shocks, CEM, ...)
- Not sensitive to external magnetic fields and temperature
- Not sensitive to moisture and pollution
- Plug and play
- Small error due to misalignment
- High Precision (HP)
- Protected design, patent EP 2711663
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

ELECTRICAL SPECIFICATIONS				
PARAMETER				
Voltage supply	5 V ± 0.25 V			
Current supply	≤ 110 mA at 5 V			
Output	SSI			
Connection	Ultra-flex AWG32 wires (shielded cable and connector on request)			
Useful electrical angle	± 30° (bigger on request)			
Absolute accuracy at 25 °C	± 0.03° > 13 bits			
Absolute accuracy at -40 °C to +105 °C	± 0.05° ~ 13 bits			
Resolution	≈ 0.003° (16.95 bits, 126 976 points) over 360°			
Startup time	≤ 20 ms			
Refresh time	≤ 100 µs			
Latency time	≤ 200 µs			
Sampling rate	10 kHz ± 5 %			

MECHANICAL SPECIFICATIONS			
PARAMETER			
Mechanical angle	360°		
Maximum speed rotation	50 rpm (up to 700 rpm with decreasing of accuracy, see "Maximum Speed vs. Accuracy" chart)		
Weight	Rotor: 11 g ± 3 g; stator: 6 g ± 3 g		



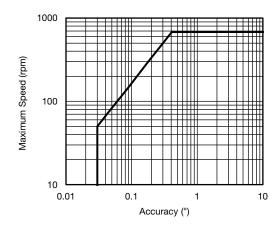
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SAP PART NUMBERING GUIDELINES										
TYPE	MODEL	DESIGN	SIZE (mm)	TYPE	FUNCTION	ACCURACY (BITS)	RESOLUTION (BITS)	OUTPUT	PACKAGING	3 DIGITS
R = rotational	АМ	K = kit	027	М	1	13	16	U	B = box	To consult Vishay for dedicated 3 digits

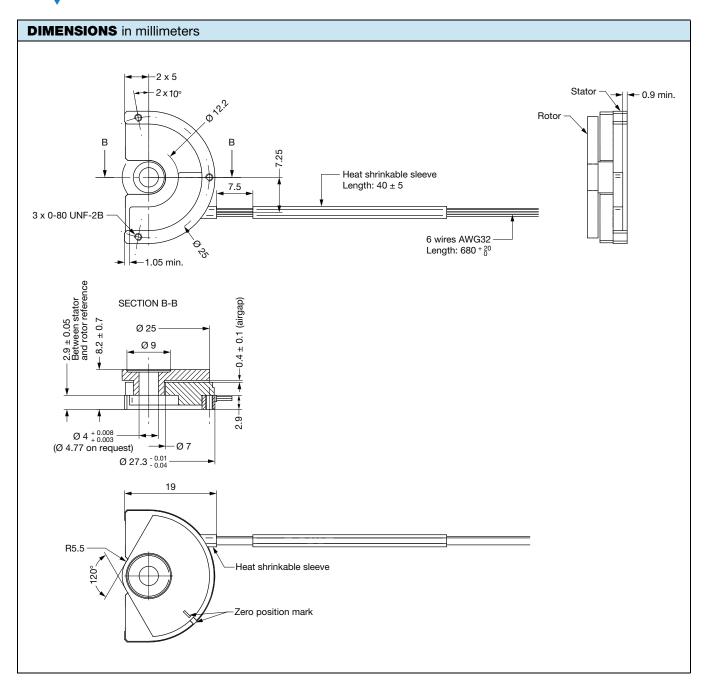
PERFORMANCE			
PARAMETER			
Operating temperature range	-40 °C to +105 °C (-55 °C to +105 °C on request)		
Storage temperature range	-45 °C to +105 °C (-55 °C to +105 °C on request)		
Acceleration	70 <i>g</i> for 1 s		
Vibration	$0.05\ g^2$ /Hz, 20 Hz to 2000 Hz for 1 h along the three major axis		
Shock	180 g, 14 ms, 1/2 sine		
EMC	MIL-STD-461F -CS114: conducted susceptibility, bulk cable injection,10 kHz to 200 MHz table VI army ground level common mode injection and differential mode on positive -RS101: magnetic susceptibility, magnetic field, fig. RS101-2 from 30 Hz to 100 kHz -RS103: radiated susceptibility, electric field, 2 MHz to 18 GHz (level: 50 V/m) -RE102: radiated emissions, electric field, fig. RE102-4 - navy mobile and army - 10 kHz to 18 GHz		
Humidity	HR ≤ 80 % (non-condensing)		

### **MAXIMUM SPEED VS. ACCURACY CHART**





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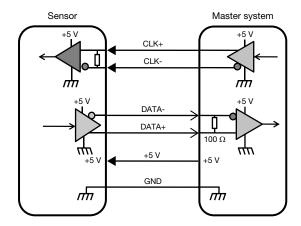




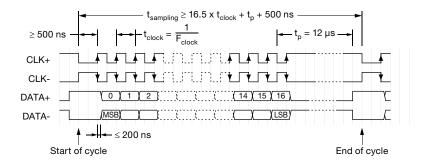
## **ELECTRICAL INTERFACE DESCRIPTION - SSI INTERFACE**

6 WIRES CONNECTIONS				
NAME	WIRE COLOR			
GND	Black			
+5 V	Red			
CLK+	White			
CLK-	Clear			
DATA+	Yellow			
DATA-	Green			

SSI PARAMETERS					
Output code	Binary				
Data differential interface	RS422 according to EIA-RS422				
CLK differential interface	RS422 according to EIA-RS422				
Minimum clock frequency	300 kHz				
Maximum clock frequency	4 MHz				
Data bit (n)	17 bits				



### **Timing Diagram**



### **OPTIONS**

• Other design on request (mechanical interfaces, electrical interfaces, ...)



## **Legal Disclaimer Notice**

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