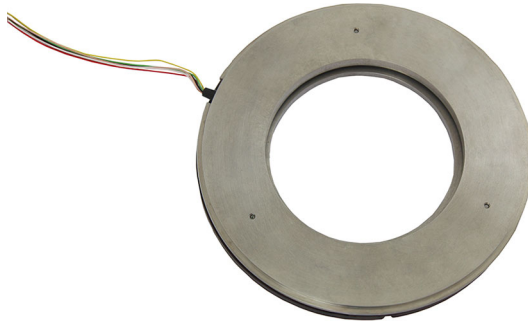


Rotational Absolute Magnetic Kit Encoder Version 90 mm Displacement Sensor



FEATURES

- Hall effect principle
- Especially dedicated to hard 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
- Very high precision (VHP)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



LINKS TO ADDITIONAL RESOURCES



3D Models

QUICK REFERENCE DATA

Sensor type	ROTATIONAL, magnetic technology
Output type	Wires or cables
Market appliance	Industrial
Dimensions	Diameter 90 mm

ELECTRICAL SPECIFICATIONS

PARAMETER	
Voltage supply	5 V ± 0.25 V
Current supply	≤ 200 mA max. at 5 V
Output	SSI
Connection	Ultra-flex AWG32 wires (shielded cable and connector on request)
Useful electrical angle	360° (single turn)
Absolute accuracy at -40 °C to +85 °C	Standard: ± 0.0055° = 16 bits
Resolution	19 bits (524 288 points) (20 bits on request)
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	8 rpm (up to 150 rpm with decreasing of accuracy, see "Maximum Speed vs. Accuracy" chart)
Weight	185 g ± 20 %

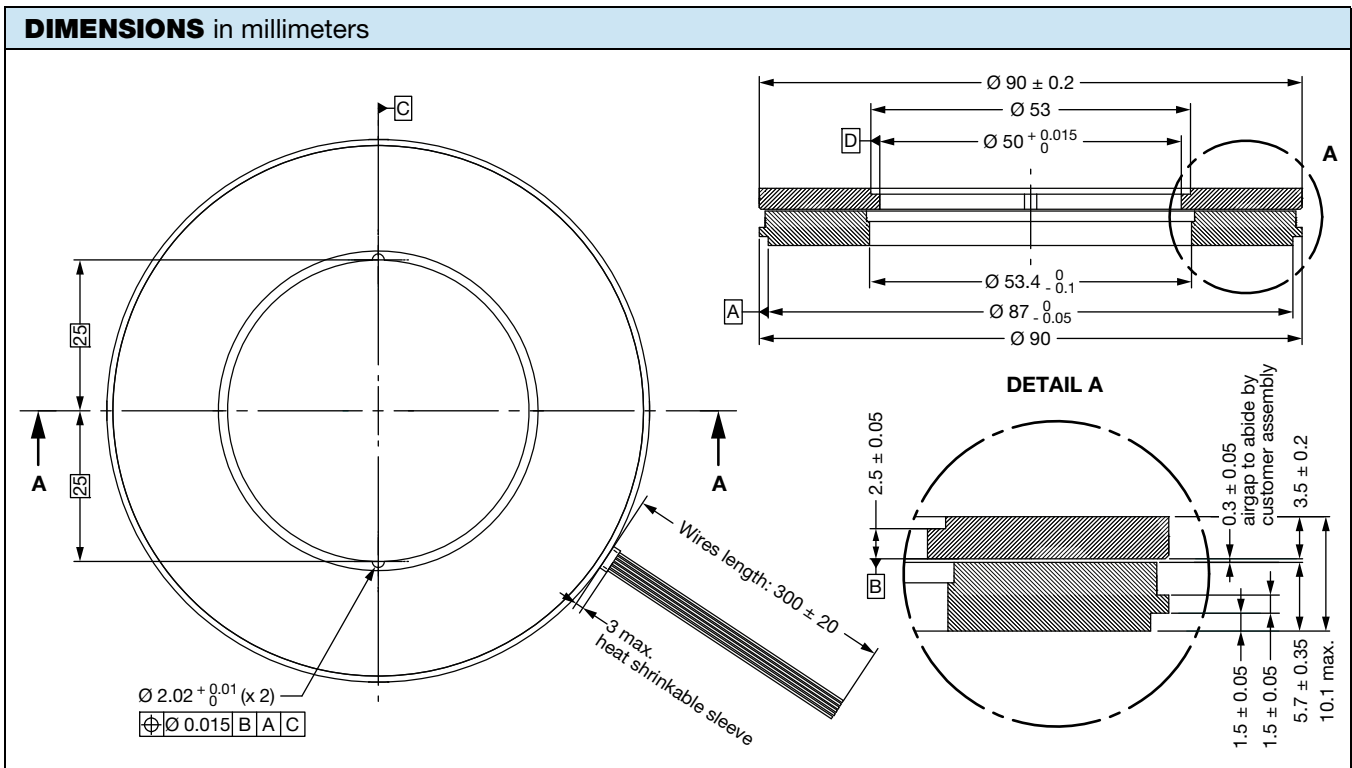
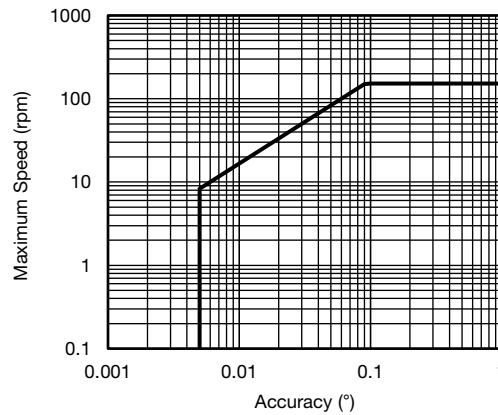
SAP PART NUMBERING GUIDELINES

TYPE	MODEL	DESIGN	SIZE (mm)	TYPE	FUNCTION	ACCURACY (BITS)	RESOLUTION (BITS)	OUTPUT	PACKAGING
R = rotational	AM	K = kit	090	M = hard conditions	1	16	19	J = SSI CCW	B = box
						16	20 ⁽¹⁾		

Note

⁽¹⁾ With design 4 ears

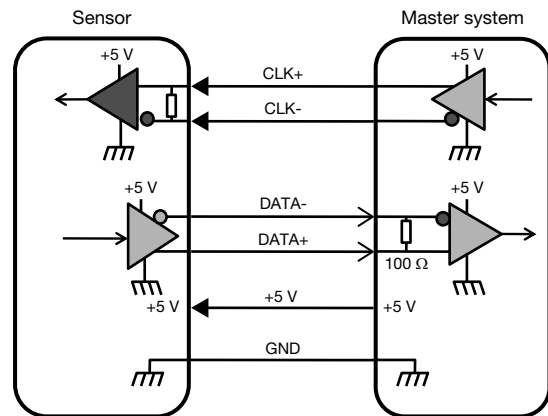
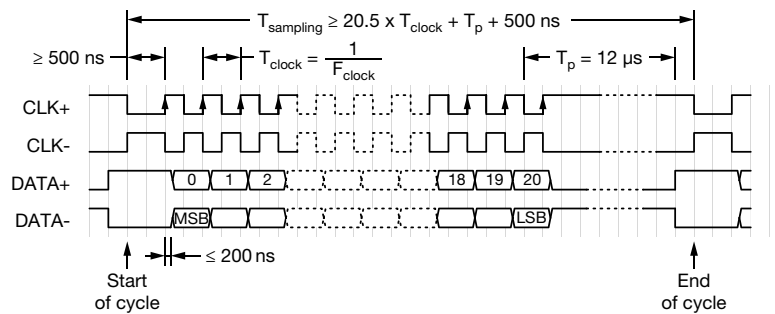
PERFORMANCE	
PARAMETER	
Operating temperature range	-40 °C to +85 °C
Storage temperature range	-55 °C to +105 °C
Vibration	0.05 g ² /Hz, 20 Hz to 2000 Hz for 1 h along the three major axis
Shock	180 g, 14 ms, 1/2 sine
EMC	MIL-STD-461F - CS114: conducted susceptibility, bulk cable injection, 10 kHz to 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
Magnetic protection	No influence up to 0.5 mT

MAXIMUM SPEED VS. ACCURACY CHART


ELECTRICAL INTERFACE DESCRIPTION - SSI INTERFACE

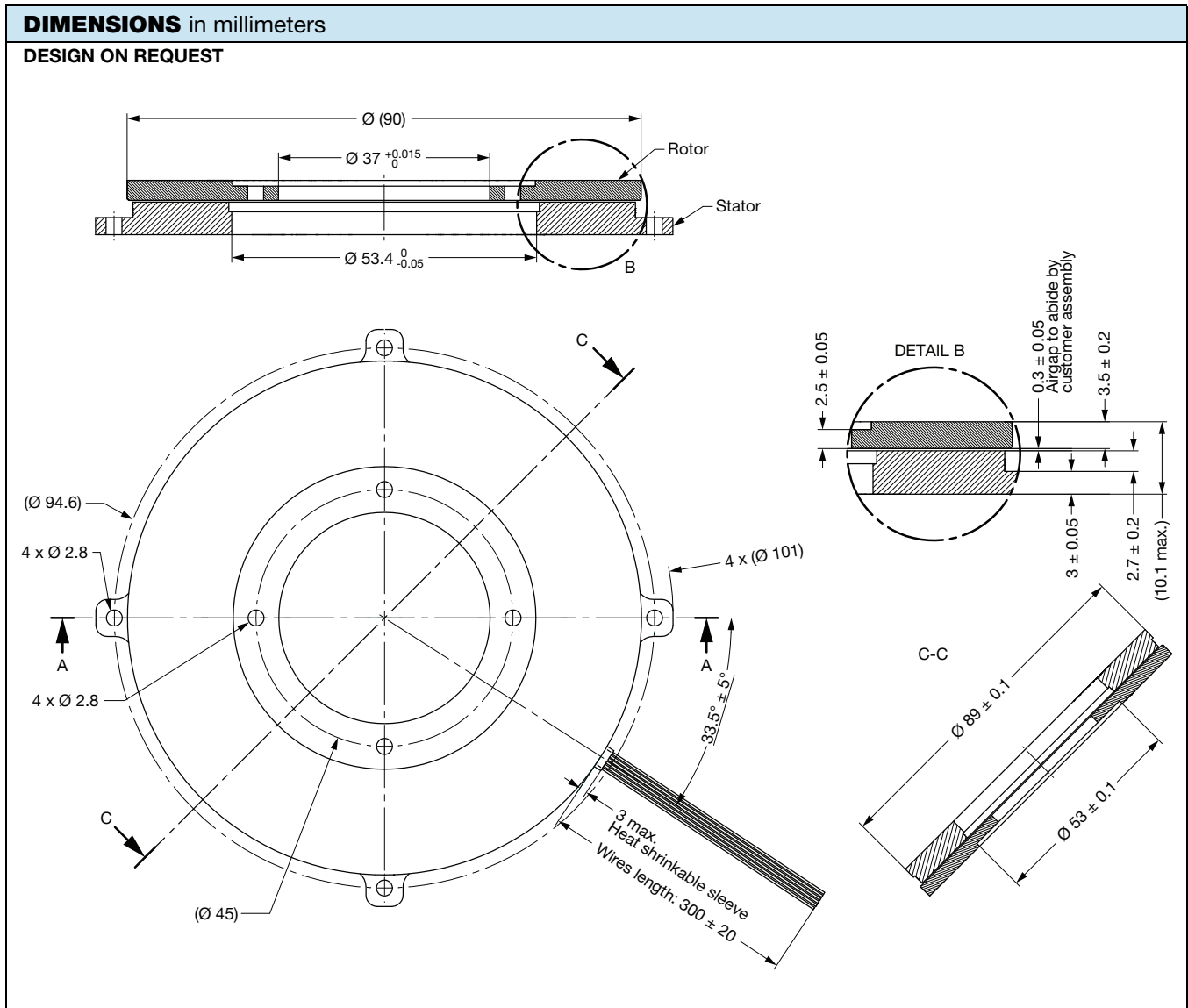
6 WIRES CONNECTIONS	
NAME	WIRE COLOR
GND	Black
+5 V	Red
CLK+	White
CLK-	Clear
DATA+	Green
DATA-	Yellow

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)	21 bits


Timing Diagram


OPTIONS

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





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