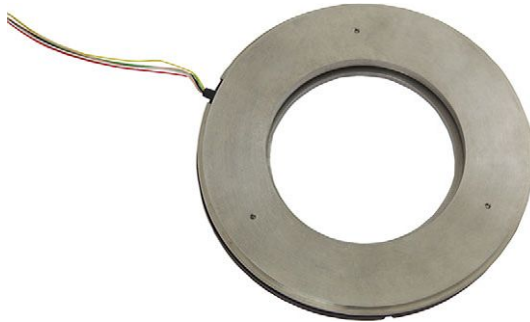


# Rotational Absolute Magnetic Kit Encoder Version 90 mm Displacement Sensor



## 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)
- Protected design, patent EP 2711663
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

## 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

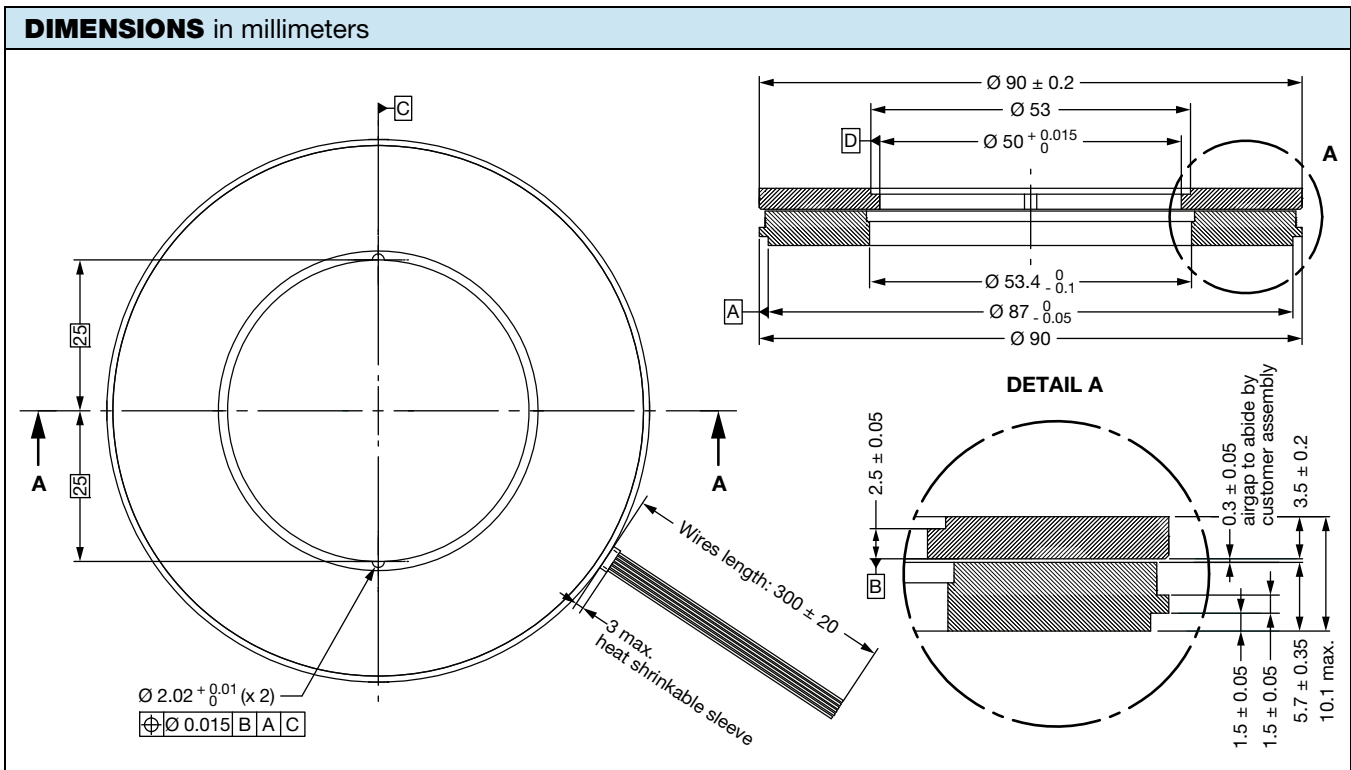
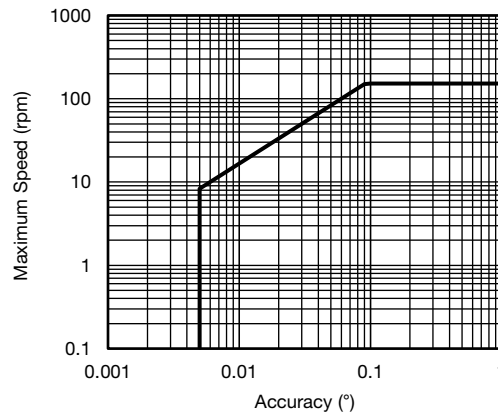
TYPE	MODEL	DESIGN	SIZE (mm)	TYPE	FUNCTION	ACCURACY (BITS)	RESOLUTION (BITS)	OUTPUT	PACKAGING
R = rotational	AM	K = kit	090	M = hard conditions	1	16	19	J = SSI CCW	B = box
						16	20 <sup>(1)</sup>		

#### Note

<sup>(1)</sup> With design 4 ears

PERFORMANCE	
PARAMETER	
Operating temperature range	-40 °C to +85 °C (-55 °C to +105 °C on request)
Storage temperature range	-40 °C to +105 °C (-55 °C to +105 °C on request)
Vibration	0.05 g <sup>2</sup> /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

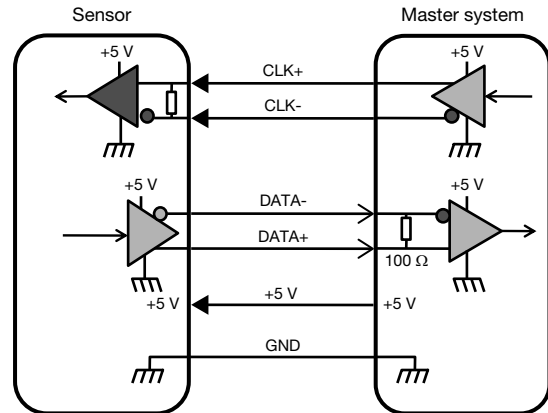
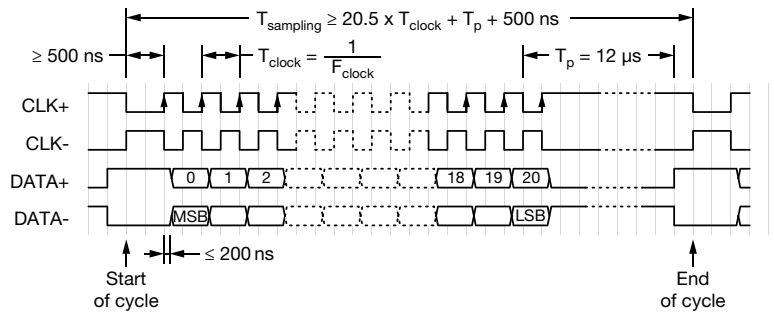
**MAXIMUM SPEED VS. ACCURACY CHART**



**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

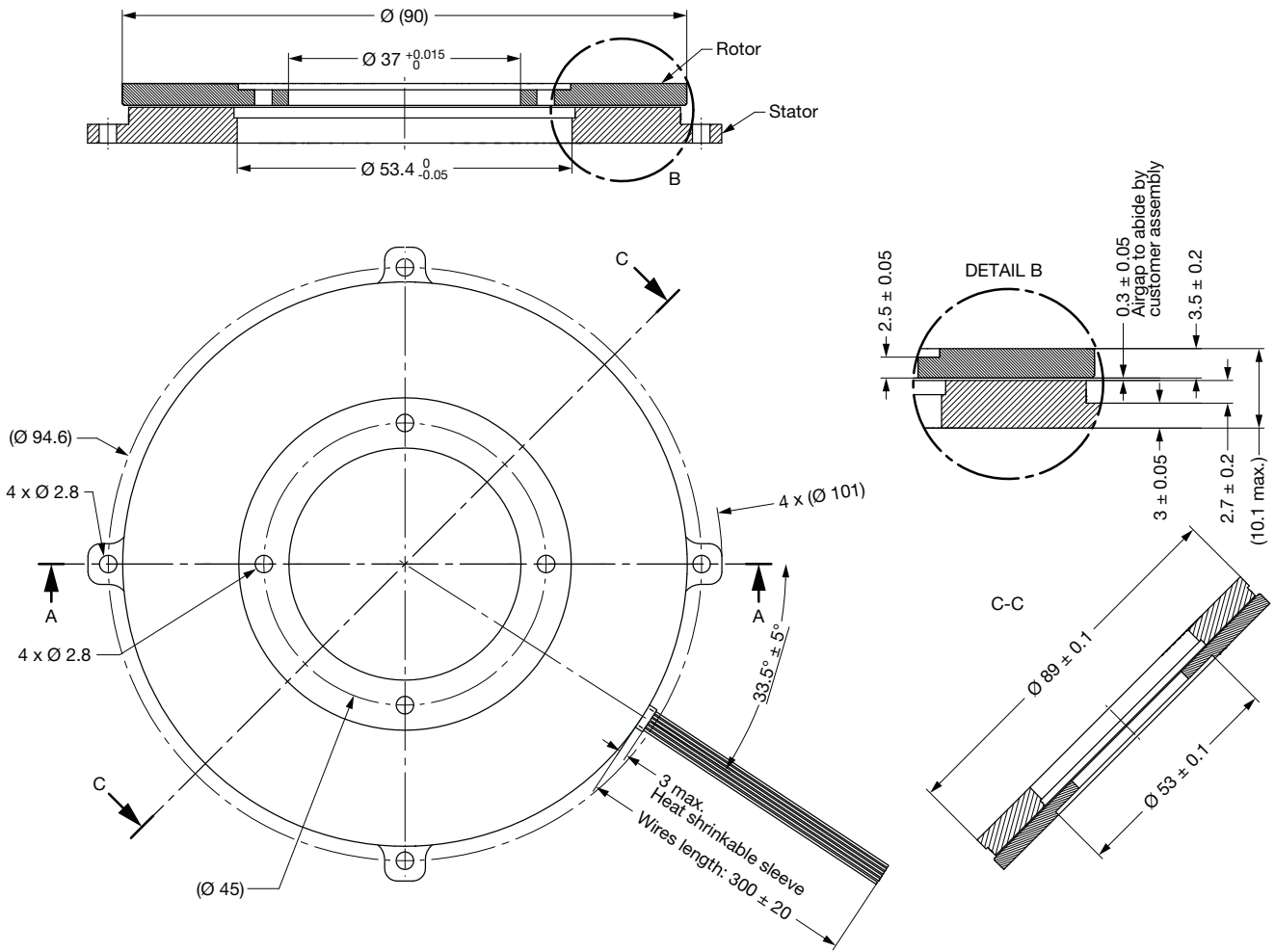

**Timing Diagram**


**OPTIONS**

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

**DIMENSIONS** in millimeters

**DESIGN ON REQUEST**





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