Data Sheet for Angle Sensors

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MEGATRON

Optical Encoders

Series MOT5

- Ultra compact high-end encoder in top quality
- Only 5mm housing diameter
- 64 or 100 pulses per revolution
- 2 channels + index
- Ball bearing
- Supply voltage 3.2 ±0.1V
- Voltage output

The unique characteristic of the MOT5 is its almost unbeatable small housing size, in terms of the used technology of a contactless optical incremental encoder. Due to its price structure, the MOT5 is reserved for special applications in which the currently technically feasible in miniaturization and product quality are required.

Electrical Data	
Output Signal	A, B, Z (Index)
Number of pulses	Resolution (pulses per rev.) 64, 100
Output high voltage @ IOH	≥ VSUP -0.3V (when IOH = -1mA)
Output low voltage @ IOL	≤ 0.3 V (when IOL= +1mA)
Limit Frequency	100 kHz
Supply voltage	3.2 VDC ±0.1 V
Power consumption (no load)	≤ 15 mA
Output load	IOL = +8mA, IOH = -2mA
Max. pull-up voltage	≤ 3.3V
Output electronics	Voltage output (NPN)
Switch-on delay	max. 2 µs

Mechanical and Environmental Data	
Mechanical angle of rotation /stroke 1.)	360° without stop
Bearing	Ball bearing
Max. operational speed	6000 rpm.
Operational torque @ RT 1.) 2.)	≤ 0.1 Ncm
Operating temperature range	0..+60 °C
Storage temperature range	-20..+80 °C
Protection grade (IEC 60529)	IP40
Vibration (IEC 68-2-6, Test Fc)	55 Hz; 1.5 mm; each 2 h in X, Y, Z
Shock (IEC 68-2-27, Test Ea)	(50 G) 500 m/s², each 3 times in X, Y, Z

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Mechanical Data and Environmental Data	
Housing diameter / length	5 mm
Housing depth	7.1 mm
Shaft diameter	1.5 mm
Shaft type	Solid shaft
Max. radial load	0.98 N
Max. axial load	0.98 N
Connection type	Foil flatbandcable app. 150 mm with FPC-Connector IL-FPR-6S-HF-N1 incl. PCB with connector
Connection position	Axial
Sensor mounting	Bushing
Mass	app. 5g (incl. cable)
Fastening parts included in delivery	Hex nut AF6
Fastening torque mounting nut	≤ 1 Nm
Material shaft	Stainless steel
Material housing	Aluminium
Material disc	Nickel

1.) According IEC 60393
2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

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Optical Encoders — Series MOT5

Order Code

Description	Selection: standard=black/bold, possible options=grey/cursive					
Series:	**MOT5**					
Number of pulses (ppr.]: **Standard: 64 ppr.** *Option 100 ppr.*		**64** *100*				
Supply voltage: **Standard: 3.2 V**			**3.2**			
Output signal: **Standard: 2 channels with index (A, B, Z)**				**BZ**		
Output electronics: **Standard: Voltage output**					**NPN**	
Electrical connection: **Standard: FPC-Connector** **IL-FPR-6S-HF-N1** incl. 150 mm ±2 mm signal cable and connector *Option user defined cable length in m*						**-** *x,xx*

Order example MOT5

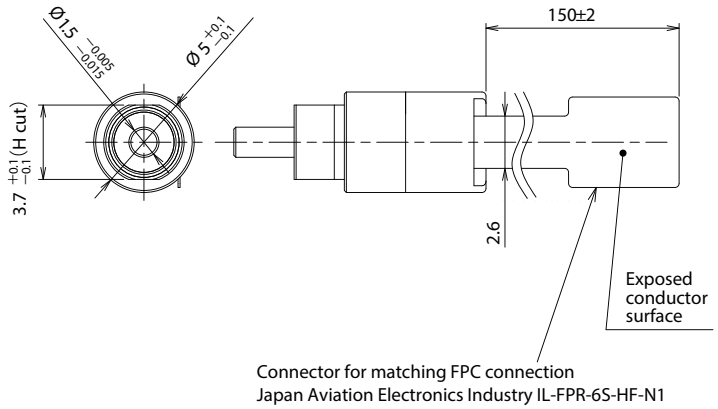
Requirement:
64 pulses per revolution, supply voltage 3.2V, 2 channels + index, output electronics voltage output, electrical connection FPC-Connector with 150 mm signal cable

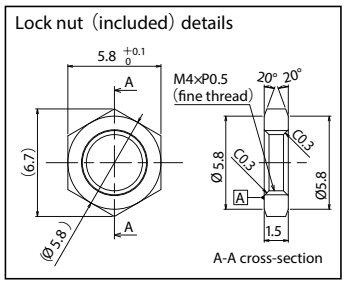
Example for order code:
MOT5 64 3.2 BZ NPN

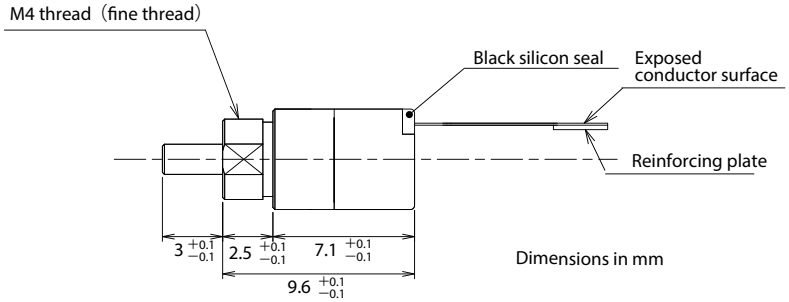
For higher quantities or on-going demand, additional options are available as described below

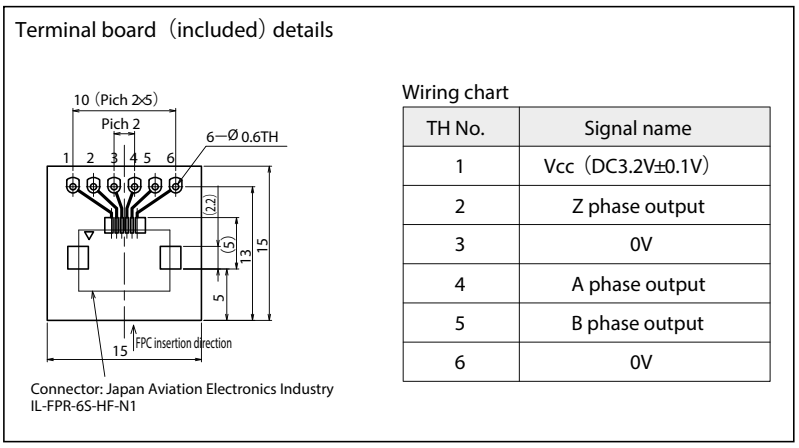
For example:
- Other resolutions
- Specials shaft design
- Special connector and cable design

Drawing





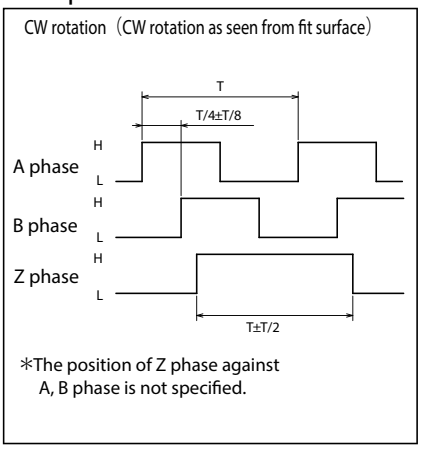




Wiring chart

TH No.	Signal name
1	Vcc (DC3.2V±0.1V)
2	Z phase output
3	0V
4	A phase output
5	B phase output
6	0V

Output waveform



Output circuit diagram