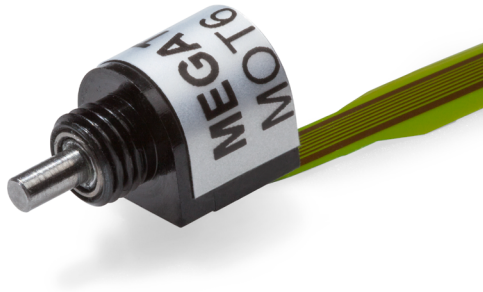


# Data Sheet for Angle Sensors

## Optical Encoders

## Series MOT6



- Ultra compact high-end encoder in top quality
- Only 6mm housing diameter (housing bottom flattened)
- 1024 pulses per revolution (64 x 16 multiplier)
- 2 channels + index
- Ball bearing
- Supply voltage 3.2 ±0.1V
- Voltage output

The unique characteristic of the MOT6 is its almost unbeatable small housing size in combination with a relative high resolution. Due to its price structure, the MOT6 is reserved for special applications in which the currently technically feasible in miniaturization in combination with a possible high resolution and product quality are required.

### Electrical Data

Output Signal	A, B, Z (Index)
Number of pulses	1024 ppr. (64 pulses x 16 multiplier)
Output high voltage @ IOH	≥ VSUP -0.3V (when IOH = -1mA)
Output low voltage @ IOL	VOL ≤ 0.3 V (when IOL +1mA)
Limit Frequency	100 kHz
Supply voltage	3.2 VDC ±0,1 V
Power consumption (no load)	≤ 20 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/s <sup>2</sup> , each 3 times in X, Y, Z

# Data Sheet for Angle Sensors

Optical Encoders

Series MOT6

## Mechanical Data and Environmental Data

Housing diameter / length	6 mm (bottom flattened)
Housing depth	6.1 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-8S-HF-N1 incl. PCB with plug
Connection position	Radial
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

# Data Sheet for Angle Sensors

Optical Encoders

Series MOT6

## Order Code

Description	Selection: standard=black/bold, possible options=grey/cursive					
Series:	<b>MOT6</b>					
Number of pulses (ppr.): Standard 1024 ppr.		<b>1024</b>				
Supply voltage: Standard 3.2 V			<b>3.2</b>			
Output signal: Standard 2 channels with index (A, B, Z)				<b>BZ</b>		
Output electronics: Standard Voltage output					<b>NPN</b>	
Electrical connection: Standard FPC-Connector <b>IL-FPR-8S-HF-N1</b> incl. 150 mm ±2 mm signal cable and connector <i>Option user defined cable length in m</i>						-  X.XX

## Order example MOT6

### Requirement:

1024 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:

MOT6 1024 3.2 BZ NPN

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

For example:

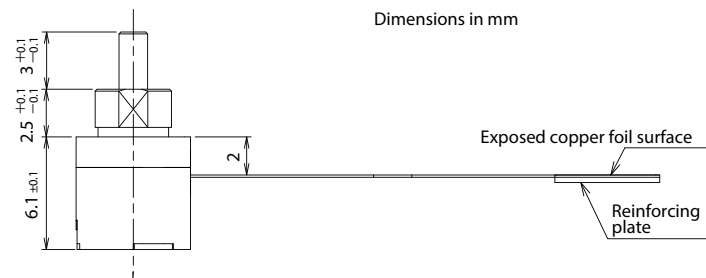
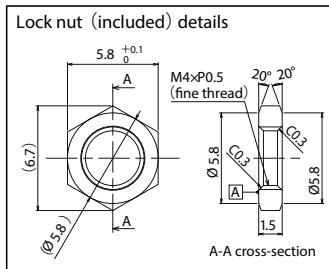
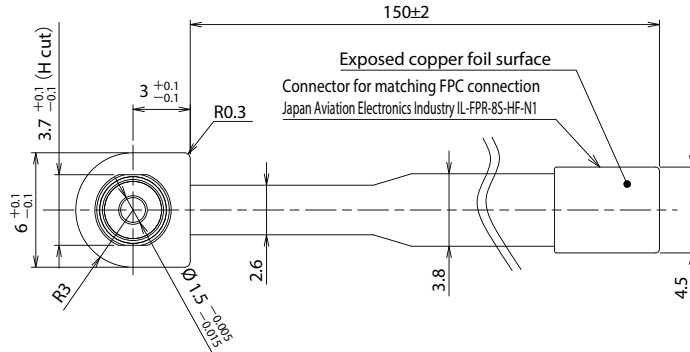
- Other resolutions
- Specials shaft design
- Special connector and cable design

# Data Sheet for Angle Sensors

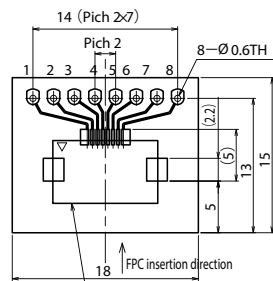
Optical Encoders

Series MOT6

## Drawing



### Terminal board (included) details

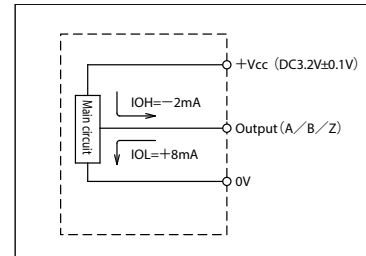


Connector: Japan Aviation Electronics Industry  
IL-FPR-85-HF-N1

### Wiring chart

TH No.	Signal name
1	Vcc (DC3.2V±0.1V)
2	N.C. (Not connected)
3	N.C. (Not connected)
4	Vcc (DC3.2V±0.1V)
5	Z phase output
6	B phase output
7	A phase output
8	0V

### Output circuit diagram



### Output waveform

