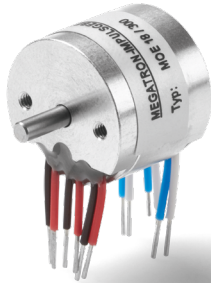


# Data Sheet for Angle Sensors

Optical incremental Encoder

Series MOE18



Incremental encoder with sinusoidal signal in robust miniature design for small applications

- 2 x ball bearing for highest lifespan
- Max. operational speed 6000 rev./min.
- Compact design (Ø18 mm x 13 mm) in metal housing
- Up to 360 pulses per revolution

## Electrical Data

Output signal	5 V - A, B, Z reference pulse
Number of pulses	100..360 ppr
Output voltage (min.)	150 mVp-p Min
Variations of output voltage amplitude	max. 40%
Limit frequency	10 kHz
Output electronics	Sinusoidal output signal

## Electrical Data optical system

	LED	Photo-transistor
Maximum permissible current	$I_F$ 60 mA	$I_C$ 20 mA
Voltage	Reverse voltage < 4 V	Collector-Emitter $V_{CEO}$ < 20 V Emitter-Collector $V_{ECO}$ < 5 V
Power loss (25..70°C)	-1,73 mW/° C	-1,0 mW/° C
Power loss	95 mW	75 mW

## Mechanical Data, Environmental Conditions, Miscellaneous

Mechanical angle of rotation 1.)	360° without stop
Bearing	2 x ball-bearing
Max. operational speed	6000 rev. / min.
Operational torque @ RT 1.) 2.)	0,49E-5 Nm
Operating temperature range	0..+50 °C
Storage temperature range	-20..+80 °C
Protection grade (IEC 60529)	IP40
Vibration (IEC 68-2-6, Test Fc)	10..55 Hz / 1,5mm, X, Y, Z each 2h
Shock (IEC 68-2-27, Test Ea)	30g, 11 ms X, Y, Z each 3 times
Moment of inertia	0,1E-8 kg/m <sup>2</sup>

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## Mechanical Data, Environmental Conditions, Miscellaneous

Housing diameter	18 mm
Housing depth	15 mm
Shaft diameter	2,5 mm
Shaft type	Solid shaft
Max. radial load	1,96 N
Max. axial load	1,96 N
Connection type	Single strands
Connection position	Radial
Sensor mounting	Flange
Mass	ca. 25 g
Fastening parts included in delivery	None
Material shaft	Stainless steel
Material housing	Metal
Material disc	Metal etched

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 incremental Encoder

Series MOE18

## Order code

Description	Selection: standard=black/bold, possible options=grey/cursive				
<b>Series:</b>	<b>MOE18</b>				
<b>Front shaft:</b> <b>Ø2,5 x 7 mm</b> <i>Option shaft length in mm</i> <i>Option shaft diameter in mm (≤2,5 mm)</i>		- <i>Ax,xx</i> <i>DMx,xx</i>			
<b>Pulses per revolution:</b>					
<b>100 pulses</b> <i>Option 176 pulses</i>			<b>100</b> <i>176</i>		
<b>200 pulses</b> <i>Option 250 pulses</i> <i>Option 256 pulses</i>			<b>200</b> <i>250</i> <i>256</i>		
<b>300 pulses</b>			<b>300</b>		
<b>360 pulses</b>			<b>360</b>		
<b>Supply voltage:</b> <b>5 V</b>				<b>5</b>	
<b>Output signal:</b> <i>Option only signal A</i> <i>Option signal A+B</i> <b>Signal A+B+Z</b>					<i>A</i> <i>B</i> <b>BZ</b>

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

For example:

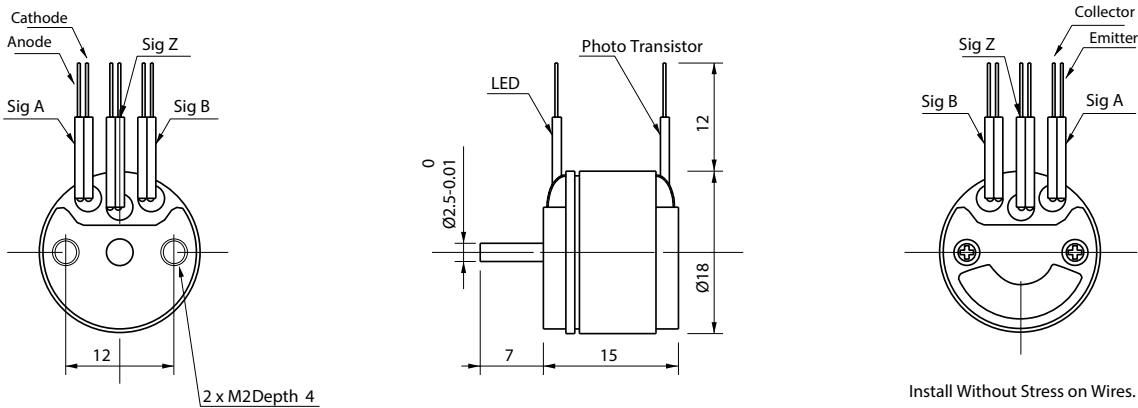
- Other number of pulses
- Special shaft
- Other operational torques

# Data Sheet for Angle Sensors

Optical incremental Encoder

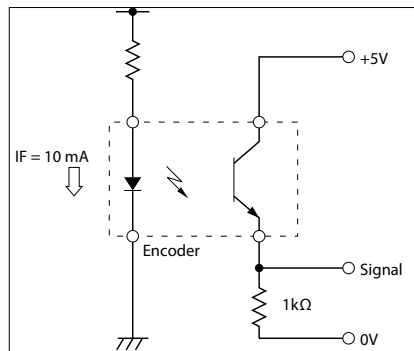
Series MOE18

## Drawing

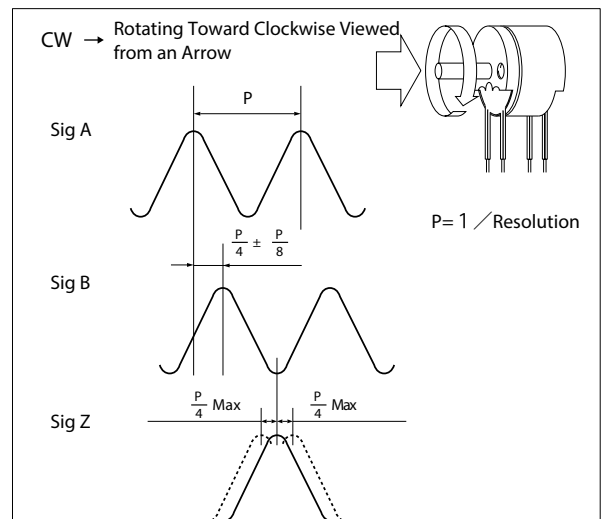


## Electrical Connections

Color	Signal
Red	Anode
Black	Cathode
Blue	Collector
White	Emitter

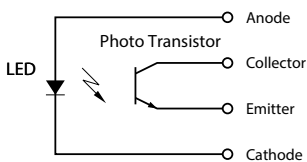


## Wave Form

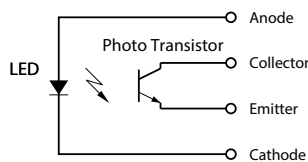


## Output Circuit

Only Signal A



Signal A + B



Signal A + B + Z

