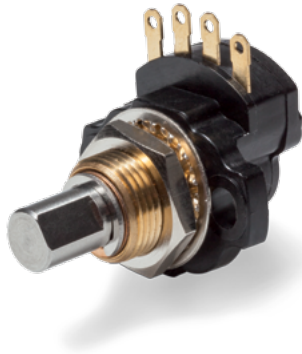


Data Sheet for Angle Sensors

Hall-Effect Single-Turn Rotary Encoder

Series MP1618



Picture shows version with solder terminals (LF)

- Wide operating temperature range -40..+105 °C
- Also available with redundant electronics
- Less power consumption ≤ 7 mA (single), ≤ 14 mA (redundant)
- Bushing or flange mounting
- $\varnothing 6$ mm shaft
- Resolution nearly infinite
- Sleeve bearing
- Effective electrical angle of rotation $\pm 45^\circ$ ($=90^\circ$)
- 5 V supply voltage
- Voltage output

The MP1618 is particularly suitable in low-power applications and requirements for a large operating temperature range. The option with a redundant electronic makes it also from interest for applications with increased operational safety requirements. The installation via flange or bushing makes this rotary encoder compatible with a variety of installation situations.

Electrical Data	Single Output	Redundant Crossed Output
Effective electrical angle of rotation ^{1.)}	$\pm 45^\circ$ ($=90^\circ$)	
Independent linearity (best straight line) ^{1.)}	$\pm 1,5$ % @ 90°	
Output signal	VSUP x 0.1..0.9 V (sense of rotation CW 0° .. 90°)	Output 1: VSUP x 0.1..0.9 V (sense of rotation CW 0° .. 90°) Output 2: VSUP x 0,1..0.9 V (sense of rotation CCW 0° .. 90°)
Resolution	Nearly infinite	
Supply voltage	5 V ± 10 %	
Power consumption (no load)	≤ 7 mA	≤ 14 mA
Output load	≥ 10 kOhm	
Insulation voltage	± 4 kV contact discharge, ± 4 kV aerial discharge (IEC 61000-4-2)	
Insulation resistance ^{1.)}	> 100 MOhm @ 250 VDC	

Mechanical and Environmental Data	
Mechanical angle of rotation ^{1.)}	360° without stop
Lifetime ^{2.)}	> 50 mio. shaft revolutions
Bearing	Sleeve bearing
Max. operational speed	400 rev./min.
Operational torque @ RT ^{1.) 2.)}	< 0.2 Ncm
Operating temperature range	-40 °C up to +105 °C
Storage temperature range	-50 °C up to +105 °C
Protection grade (IEC 60529)	IP40
Vibration (IEC 68-2-6, Test Fc)	10 to 2000 Hz 196 m/s ²
Shock (IEC 68-27, Test Ea)	980 m/s ² 6ms

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Mechanical and Environmental Data, Miscellaneous

Housing diameter / length	22 mm
Housing depth	12 mm
Shaft diameter	6 mm
Shaft type	Solid shaft
Max. allowed radial load	1 N
Max. allowed axial load	1 N
Connection type	Solder terminals or single strands AWG26 150 mm
Connection position	Radial
Sensor mounting	Mounting via bushing or flange
Mass	app. 15 g
Fastening parts included in delivery	Hex nut, tooth washer
Fastening torque mounting nut	< 0.15 Nm
Material shaft	Stainless steel
Material housing	Plastic

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

Hall-Effect Single-Turn Rotary Encoder

Series MP1618

Order Code (non redundant version)

Description	Selection: standard=black/bold , possible <i>options=grey/italic</i>					
Series:	MP1618					
Shaft diameter / shaft length: Ø 6.00 mm x 16.4 mm <i>Option: User defined shaft [mm]</i>		6x16,4 <i>XxXX</i>				
Supply voltage / output signal: VSUP=5 V ±10 % / output signal: VSUP x 0.1..0.9 V (sense of rotation CW 0°..90°)			0505			
Sense of rotation output signal: Signal increases by turning the shaft clockwise <i>Option: signal increases by turning the shaft counter-clockwise</i>				CW <i>CCW</i>		
Effective electrical angle: ±45° (=90°) <i>Option: user defined effective electrical angle</i> <i>(User defined effective electrical angle ±10° ≤ α ≤ ±45° in 5° steps)</i>					090 <i>xxx</i>	
Electrical connection: Solder terminals Single strands cable length 0.15 [m] <i>Option: single strands cable length in x.xx [m]</i>						LF L0,15 <i>Lx,xx</i>

Order example MP1618:

Requirement:

Shaft Ø 6.00 mm, shaft length 16.4 mm, VSUP = 5 V / Out = VSUP x 0.1..0.9 V, sense of rotation CW, effective electrical angle ±45° (=90°), electrical connections solder terminals

Example for order code:

MP1618 6x16,4 0505 CW 090 LF

Data Sheet for Angle Sensors

Hall-Effect Single-Turn Rotary Encoder

Series MP1618

Order example (redundant version)

Description	Selection: standard=black/bold , possible <i>options=grey/italic</i>						
Series:	MP1618						
Redundant output:	X						
Shaft diameter / shaft length: Ø 6.00 mm x 16.4 mm <i>Option: user defined shaft [mm]</i>		6x16,4 <i>XxXX</i>					
Supply voltage / output signal: VSUP=5 V ±10 % / output voltage: Output 1: VSUP x 0.1..0.9 V (sense of rotation CW 0°..90°), Output 2: VSUP x 0.1..0.9 V (sense of rotation CCW 0°..90°) <small>Galvanically not insulated electronics (one supply voltage, one ground, =4 electrical connections [1xVSUP, 1xGround, Out 1, Out2])</small>			0505				
Sense of rotation output signal 1: Signal 1 increases by turning the shaft clockwise <i>Option: Signal 1 decreases by turning the shaft clockwise</i>				CW <i>CCW</i>			
Sense of rotation output signal 2: Signal 1 decreases by turning the shaft clockwise <i>Option: Signal 1 increases by turning the shaft clockwise</i>					CCW <i>CW</i>		
Effective electrical angle: ±45° (=90°) <i>Option: user defined effective electrical angle</i> <small>(User defined effective electrical angle ±10° ≤ α ≤ ±45° in 5° steps)</small>						090 <i>XXX</i>	
Electrical connection: Solder terminals Single strands cable length 0.15 [m] <i>Option: single strands cable length x,xx [m]</i>							LF L0,15 <i>Lx,xx</i>

Order example MP1618X (redundant version):

Requirement:

Shaft Ø 6.00 mm, shaft length 16.4 mm, VSUP=5 V, Out 1 = VSUP x 0.1..0.9 V (sense of rotation CW 0°..90°), Out 2 = VSUP x 0.1..0.9 V (sense of rotation CCW 0°..90°), sense of rotation CW/CCW, effective electrical angle ±45° (=90°), electrical connections solder terminals

Example for order code:

MP1618X 6x16,4 0505 CW CCW 090 LF

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

For example:

- Changed shaft design, e.g.:
 - Slot in the shaft
 - Special shaft flattening
- Special cable and connection design

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Series MP1618

Drawing

