Absolute encoders - SSI

Through hollow shaft max. ø50.8 mm Optical multiturn encoders 13 bit ST / 12 bit MT

G1M2H, G2M2H - SSI



Features

- Encoder multiturn / SSI
- Optical sensing
- Resolution: singleturn 13 bit, multiturn 12 bit
- Through hollow shaft of 1" and 2" diameter
- Electronic setting of zero point
- Counting direction input
- High resistance to shock and vibrations
- Suitable for high positive, negative accelerations

lechnical data - electrical ratings		
Voltage supply	1030 VDC	
Reverse polarity protection	Yes	
Consumption w/o load	< 50 mA (24 VDC)	
Initializing time typ.	20 ms after power on	
Interface	SSI	
Function	Multiturn	
Steps per turn	8192 / 13 bit	
Number of turns	4096 / 12 bit	
Absolute accuracy	±0.025 °	
Sensing method	Optical	
Code	Gray or binary	
Code sequence	CW/CCW coded by connection	
Inputs	SSI clock Control signals UP/DOWN and zero	
Output stages	SSI data: linedriver RS485 Diagnostic outputs push-pull	
Interference immunity	DIN EN 61000-6-2	
Emitted interference	DIN EN 61000-6-4	
Diagnostic functions	Self-diagnosis Multiturn sensing	
Approval	UL approval / E63076	

Technical data - mechanical design Protection DIN EN 60529 IP 54, IP 65 (optional) Materials Housing: aluminium Flange: aluminium Operating temperature -25...+85 °C -40...+85 °C (optional) Relative humidity 95 % non-condensing Resistance DIN EN 60068-2-6 Vibration 10 g, 16-2000 Hz DIN EN 60068-2-27 Shock 200 g, 6 ms Connection Connector M23, 12-pin G1M2H Size (flange) ø90 mm Shaft type ø25.4 mm (through hollow shaft) Operating speed ≤3800 rpm (mechanical) ≤6000 rpm (electric) Starting torque ≤0.35 Nm Rotor moment of inertia 2000 gcm² Weight approx. 890 g G2M2H Size (flange) ø116 mm Shaft type ø50.8 mm (through hollow shaft) ≤2000 rpm (mechanical) Operating speed ≤6000 rpm (electric) Starting torque ≤0.5 Nm Rotor moment of inertia 11000 gcm²

1200 g

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Weight approx.

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length 35 mm

torque support

length 35 mm

Rubber buffer element 18.5 mm long, as

Set of adjusting angles as torque support

Torque support by rubber buffer element for

Spring coupling for one-side attachment,

Shoulder screw M5 as torque support

encoders with 15 mm pin

Mounting accessories for G2M2H

Z 119.037

Z 119.039

Z 119.040

Z 119.041

Z 119.050

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Terminal significance			
UB	Encoder voltage supply.		
GND	Encoder ground connection relating to UB.		
Data+	Positive, serial data output of differential linedriver.		
Data-	Negative, serial data output of differential linedriver.		
Clock+	Positive SSI clock input. Clock+ together with clock- forms a current loop. A current of approx. 7 mA towards clock+ input means logic 1 in positive logic.		
Clock-	Negative SSI clock input. Clock- together with clock+ forms a current loop. A current of approx. 7 mA towards clock- input means logic 0 in positive logic.		
Zero setting	Input for setting a zero point anywhere within the programmed encoder resolution. The zero setting operation is triggered by a High impulse and has to be in line with the selected direction of rotation (UP/DOWN). Connect to GND after setting operation for maximum interference immunity. Impulse duration >100 ms.		
DATAVALID	Diagnostic output. An error warning is given at level Low. Important: Interferences must be filtered by the downstram electronics.		
DATAVALID MT	Diagnostic output for monitoring the multiturn sensor voltage supply. Upon dropping below a defined voltage level the DV MT output is switched to Low.		
UP/DOWN	UP/DOWN counting direction input. This input is standard on High. UP/DOWN means ascending output data with clock- wise shaft rotation when looking at flange. UP/DOWN-Low means ascending values with counterclockwise shaft rotation when looking at flange.		

Terminal assignment			
Connector	Core colour	Assignment	
Pin 1	brown	UB	
Pin 2	black	GND	
Pin 3	blue	Clock+	
Pin 4	beige	Data+	
Pin 5	green	Zero setting	
Pin 6	yellow	Data-	
Pin 7	violet	Clock-	
Pin 8	brown/yellow	DATAVALID	
Pin 9	pink	UP/DOWN	
Pin 10	black/yellow	DATAVALID MT	
Pin 11-12	_	-	



Please use cores twisted in pairs (for example clock+ / clock-) for extension cables of more than 10 m length.

Trigger level	
SSI	Circuit
SSI-Clock	Optocoupler
SSI-Data	Linedriver RS485
Control inputs	Input circuit
Input level High	>0.7 UB
Input level Low	<0.3 UB
Input resistance	10 kΩ

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Dimensions









G2M2H







