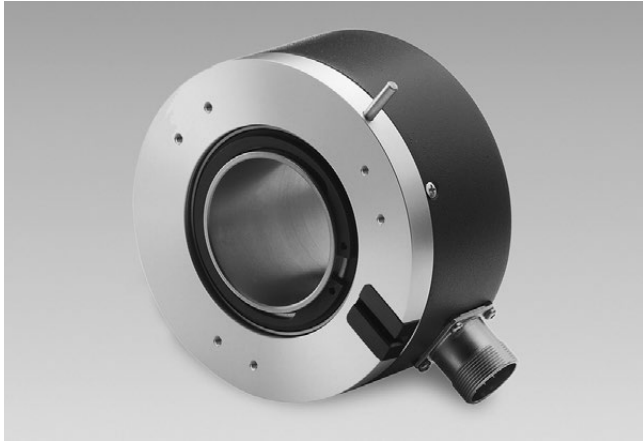


Absolute encoders - SSI

Through hollow shaft up to $\varnothing 50.8$ mm

Optical multiturn encoders 13 bit ST / 12 bit MT

G2M2H



G2M2H with through hollow shaft

Features

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

Technical data - electrical ratings

Voltage supply	10...30 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 revolution	8192 / 13 bit
Number of revolutions	4096 / 12 bit
Absolute accuracy	$\pm 0.025^\circ$
Sensing method	Optical
Code	Gray or binary
Code sequence	CW/CCW coded by connection
Inputs	SSI clock Control signals UP/DOWN inv. 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

Size (flange)	$\varnothing 116$ mm
Shaft type	$\varnothing 50.8$ mm (through hollow shaft)
Protection DIN EN 60529	IP 54, IP 65 (optional)
Operating speed	≤ 2000 rpm (mechanical) ≤ 6000 rpm (electric)
Starting torque	≤ 0.5 Nm (+25 °C)
Rotor moment of inertia	11000 gcm ²
Materials	Housing: aluminium Flange: aluminium
Operating temperature	-25...+85 °C
Relative humidity	95 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration ± 0.75 mm - 10-58 Hz 10 g - 58-2000 Hz DIN EN 60068-2-27 Shock 200 g, 6 ms
Weight approx.	1200 g
Connection	Connector M23, 12-pin

Absolute encoders - SSI

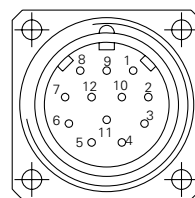
Through hollow shaft up to $\varnothing 50.8$ mm

Optical multiturn encoders 13 bit ST / 12 bit MT

G2M2H

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 inv.). Connect to GND after setting operation for maximum interference immunity. Impulse duration >100 ms.
DATAVALID inv.	Diagnostic output. An error warning is given at level Low. Important: Interferences must be filtered by the downstream electronics.
DATAVALID MT inv.	Diagnostic output for monitoring the multiturn sensor voltage supply. Upon dropping below a defined voltage level the DV MT inv. output is switched to Low.
UP/DOWN inv.	UP/DOWN inv. counting direction input. This input is standard on High. UP/DOWN inv. means ascending output data with clockwise shaft rotation when looking at flange. UP/DOWN inv.-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 inv.
Pin 9	pink	UP/DOWN inv.
Pin 10	black/yellow	DATAVALID MT inv.
Pin 11-12	–	–



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

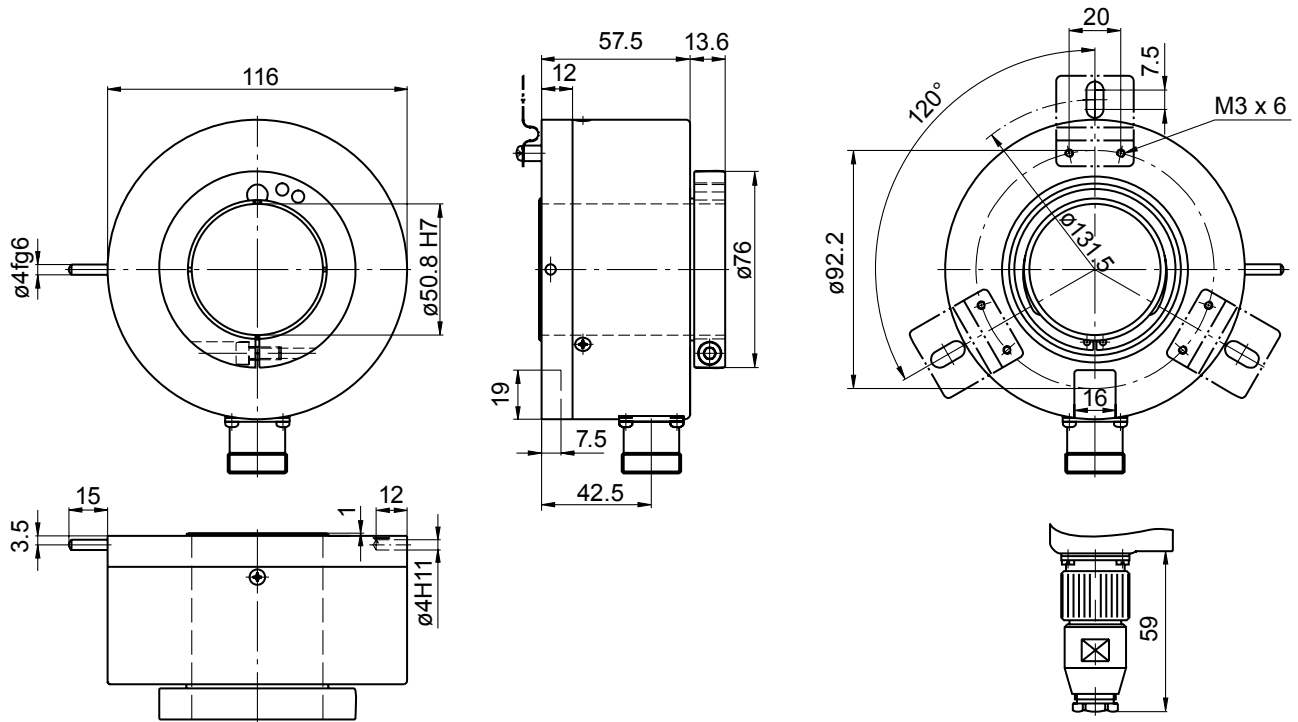
Trigger level	
SSI	Circuit
SSI-Clock	Optocoupler
SSI-Data	Linedriver RS485
Control inputs	
Control inputs	Input circuit
Input level High	>0.7 UB
Input level Low	<0.3 UB
Input resistance	10 k Ω

Absolute encoders - SSI

Through hollow shaft up to $\varnothing 50.8$ mm
Optical multiturn encoders 13 bit ST / 12 bit MT

G2M2H

Dimensions



· Subject to modification in technic and design. Errors and omissions excepted.