

Absolute encoders - bus interfaces

Solid shaft with clamping or synchro flange

Optical multiturn encoders 13 bit ST / 12 bit MT, RS485-SLIN

GXM7W - SLIN



GXM7W with clamping flange

Technical data - electrical ratings

Voltage supply	10...30 VDC
Reverse polarity protection	Yes
Consumption w/o load	≤50 mA (24 VDC)
Initializing time typ.	250 ms after power on
Interface	RS485, SLIN protocol
Function	Multiturn
Transmission rate	9.6...115 kBaud
Device adress	Coded by connection
Steps per revolution	8192 / 13 bit
Number of revolutions	4096 / 12 bit
Absolute accuracy	±0.025 °
Sensing method	Optical
Code	Binary
Code sequence	CCW default
Output stages	RS485
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Approval	UL approval / E63076

Features

- Encoder multiturn / SLIN
- Optical sensing method
- Resolution: singleturn 13 bit, multiturn 12 bit
- Clamping or synchro flange
- SLIN protocol
- Up to 8 bus users
- Bus access according to master/slave principle
- Permanent check of code continuity
- Maximum resistant against magnetic fields

Optional

- Integration of customer-specific RS485 protocols

Technical data - mechanical design

Size (flange)	ø58 mm
Shaft type	ø10 mm solid shaft (clamping flange) ø6 mm solid shaft (synchro flange)
Flange	Clamping or synchro flange
Protection DIN EN 60529	IP 54 (without shaft seal), IP 65 (with shaft seal)
Operating speed	≤10000 rpm (mechanical) ≤6000 rpm (electric)
Starting acceleration	≤1000 U/s ²
Starting torque	≤0.015 Nm (+25 °C, IP 54) ≤0.03 Nm (+25 °C, IP 65)
Rotor moment of inertia	20 gcm ²
Admitted shaft load	≤20 N axial ≤40 N radial
Materials	Housing: steel 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
Weight approx.	400 g
Connection	Connector M23, 12-pin Cable 1 m

Absolute encoders - bus interfaces

Solid shaft with clamping or synchro flange

Optical multiturn encoders 13 bit ST / 12 bit MT, RS485-SLIN

GXM7W - SLIN

Part number

GXM7W.	10		
--------	----	--	--

Interface
 02 SLIN protocol 9.6 kBaud
 03 SLIN protocol 115.2 kBaud
 04 SLIN protocol 19.2 kBaud

Connection
 A0 Connector M23, 12-pin, axial
 A1 Connector M23, 12-pin, radial
 11 Cable 1 m, axial
 21 Cable 1 m, radial

Flange / Solid shaft
 0 Clamping flange / \varnothing 10 mm, IP 54
 A Clamping flange / \varnothing 10 mm, IP 65
 1 Synchro flange / \varnothing 6 mm, IP 54
 B Synchro flange / \varnothing 6 mm, IP 65

Accessories

Connectors and cables

11034154	Female connector M23, 12-pin, without cable (Z 130.001)
10138559	Female connector M23, 12-pin, 2 m cable (Z 130.003)
10126594	Female connector M23, 12-pin, 5 m cable (Z 130.005)
10129757	Female connector M23, 12-pin, 10 m cable (Z 130.007)

Mounting accessories

10117669	Eccentric fixing, single (Z 119.006)
10141255	Adaptor plate for clamping flange for modification into synchro flange (Z 119.013)
10117667	Mounting adaptor for encoders with synchro flange (Z 119.015)
10125051	Mounting adaptor for encoders with clamping flange (M3) (Z 119.017)
10158124	Bearing flange for encoders with synchro flange (Z 119.035)
10141132	Spring washer coupling D1=6 / D2=10 (Z 121. C01)

Absolute encoders - bus interfaces

Solid shaft with clamping or synchro flange

Optical multiturn encoders 13 bit ST / 12 bit MT, RS485-SLIN

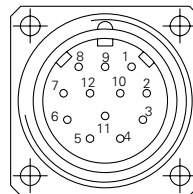
GXM7W - SLIN

Terminal significance

UB	Encoder voltage supply.							
GND	Encoder ground connection relating to UB.							
T,R IN	Serial data lines.							
T,R OUT	To avoid stub lines the data lines are guided outside on a pair of 2 wires. The arriving bus is on T,R+ IN and T,R- IN, the departing bus on T,R+ OUT und T,R-. If the encoder serves as bus termination or is the only user, only the pair of wires T,R+ IN and T,R- IN is utilized. Note: External connection of terminating resistor 150 Ω to final user.							
Ident 0...2	Ident 0...2 are utilized for setting the encoder addresses (identifiers). Less potential the inputs are internally against UB (=“1”) by pull-up resistors what equals address 1.							
Address no.	1	2	3	4	5	6	7	8
Ident 0	1	0	1	0	1	0	1	0
Ident 1	1	1	0	0	1	1	0	0
Ident 2	1	1	1	1	0	0	0	0

Terminal assignment

Connector	Core colour	Assingment
Pin 1	brown	UB
Pin 2	black	GND
Pin 3	blue	T,R+ IN
Pin 4	beige	Ident 0
Pin 5	green	T,R- OUT
Pin 6	yellow	Ident 1
Pin 7	violet	T,R- IN
Pin 8	brown/yellow	–
Pin 9	pink	T,R+ OUT
Pin 10	black/yellow	Ident 2
Pin 11	–	–
Pin 12	–	–



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

Trigger level

SLIN-interface	Circuit
SLIN-Data	Linedriver RS485
Control inputs	Input circuit
Input level High	>0.7 UB
Input level Low	<0.3 UB
Input resistance	10 kΩ

Absolute encoders - bus interfaces

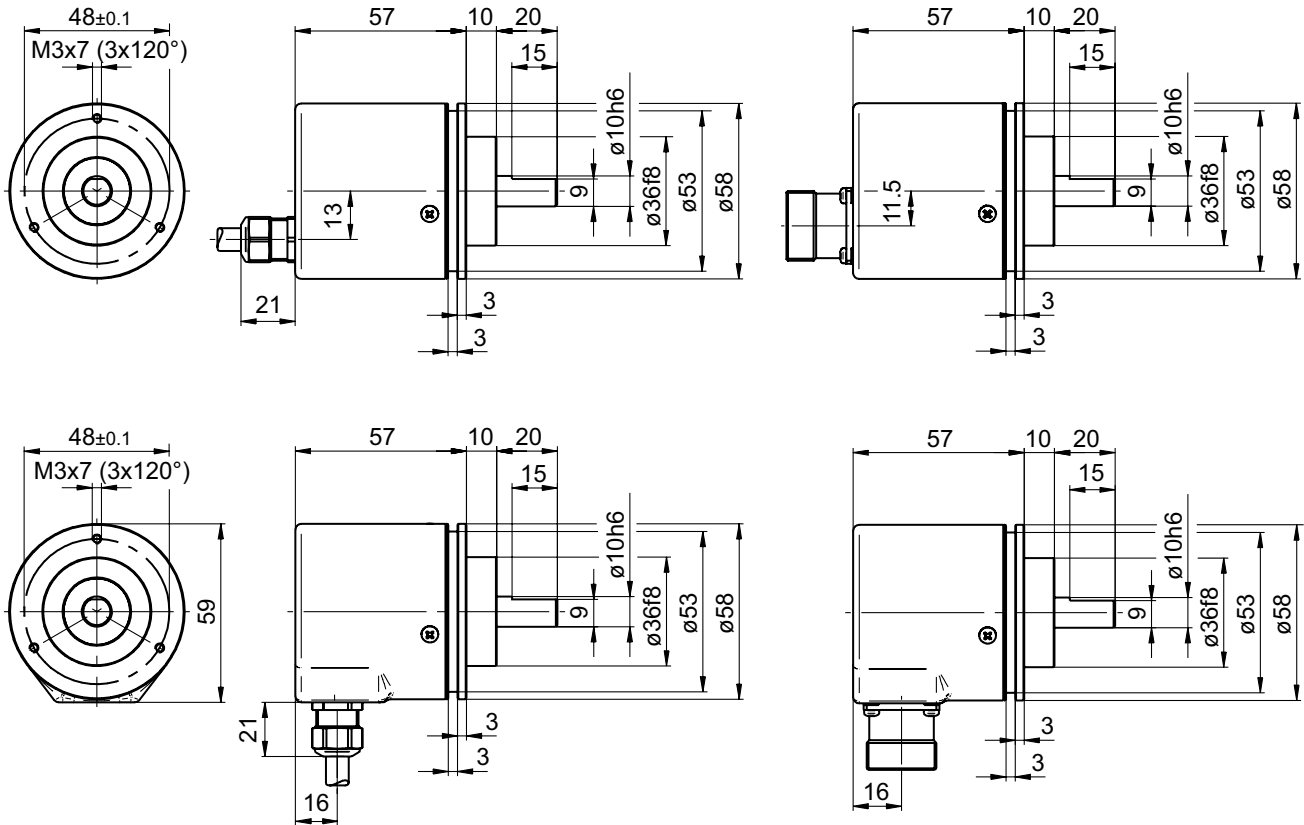
Solid shaft with clamping or synchro flange

Optical multiturn encoders 13 bit ST / 12 bit MT, RS485-SLIN

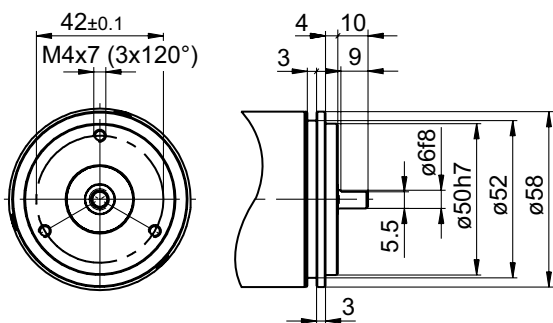
GXM7W - SLIN

Dimensions

GXM7W - clamping flange



GXM7W - synchro flange



GXM7W - connector dimensions

