

Absolute encoders - parallel

Solid shaft with clamping or synchro flange

Optical singleturn encoders, 2880 steps, Gray Excess

GXA1W - parallel



GXA1W with clamping flange

Features

- Encoder singleturn / parallel
- Optical sensing method
- Clamping or synchro flange
- Encoder with capped gray code
- Short-circuit proof push-pull outputs
- Output release by enable signal

Technical data - electrical ratings

Voltage supply	10...30 VDC
Reverse polarity protection	Yes
Consumption w/o load	≤60 mA (24 VDC)
Initializing time typ.	20 ms after power on
Interface	12 parallel outputs
Function	Singleturn
Steps per revolution	2880
Absolute accuracy	±0.05 °
Sensing method	Optical
Code	Gray excess
Code sequence	CW/CCW coded by connection
Inputs	UP/DOWN inv. ENABLE inv. STORE inv.
Output stages	Push-pull short-circuit proof
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Approval	UL approval / E63076

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 torque	≤0.015 Nm (+25 °C, IP 54) ≤0.03 Nm (+25 °C, IP 65)
Rotor moment of inertia	14.5 gcm ²
Admitted shaft load	≤20 N axial ≤40 N radial
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
Weight approx.	250 g
Connection	Connector M23, 16-pin

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Part number

GXA1W.

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		<u>Code</u>
		01 2880 Gray Excess 608
		02 360 Gray Excess 76
		<u>Connection</u>
		B0 Connector M23, 16-pin, axial
		B1 Connector M23, 16-pin, radial
		<u>Flange / Solid shaft</u>
0		Clamping flange / ø10 mm, IP 54
A		Clamping flange / ø10 mm, IP 65
1		Synchro flange / ø6 mm, IP 54
B		Synchro flange / ø6 mm, IP 65

Accessories

Connectors and cables

10117731	Female connector M23, 16-pin, without cable (Z 131.001)
11034166	Female connector M23, 16-pin, 2 m cable (Z 131.003)
10142336	Female connector M23, 16-pin, 5 m cable (Z 131.005)
10141369	Female connector M23, 16-pin, 10 m cable (Z 131.007)

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)
11034088	Adaptor plate for clamping flange, mounting by eccentric fixings (order separately) (Z 119.025)
10158124	Bearing flange for encoders with synchro flange (Z 119.035)
10141132	Spring washer coupling D1=6 / D2=10 (Z 121. C01)

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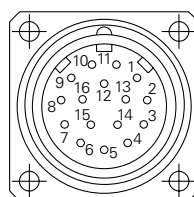
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Terminal significance	
UB	Encoder voltage supply.
GND	Encoder ground connection relating to UB.
Outputs D0-D11	Up to 12 parallel output signals.
$\overline{\text{UP/DOWN}}$	$\overline{\text{UP/DOWN}}$ counting direction input. This input is standard on High. $\overline{\text{UP/DOWN}}$ means ascending output data with clockwise shaft rotation when looking at flange. $\overline{\text{UP/DOWN}}$ -Low means ascending values with counterclockwise shaft rotation when looking at flange.
$\overline{\text{ENABLE}}$	Input for activating the output drivers that are triggered by input level Low. Upon being on High (or less potential) the output drivers switch to high-impedance (Tristate).
$\overline{\text{STORE}}$	Input for output data storage. Upon a Low input level the encoder data are stored in the intermediate memory. Upon being on High (or less potential) the current encoder position data are switched to the output drivers. This line must be applied for reliable data readout in binary code.

Terminal assignment			
Connector	Core colour	Assignment 01	Assignment 02
Pin 1	violet	Output D0	Output D0
Pin 2	white/brown	Output D1	Output D1
Pin 3	white/green	Output D2	Output D2
Pin 4	white/yellow	Output D3	Output D3
Pin 5	white/grey	Output D4	Output D4
Pin 6	white/pink	Output D5	Output D5
Pin 7	white/blue	Output D6	Output D6
Pin 8	white/red	Output D7	Output D7
Pin 9	white/black	Output D8	Output D8
Pin 10	green/brown	Output D9	$\overline{\text{Output D8}}$
Pin 11	green/grey	Output D10	N.C.
Pin 12	blue	GND	GND
Pin 13	yellow	$\overline{\text{ENABLE}}$	$\overline{\text{ENABLE}}$
Pin 14	brown	$\overline{\text{UP/DOWN}}$	$\overline{\text{UP/DOWN}}$
Pin 15	red	UB	UB
Pin 16	pink	Output D11	$\overline{\text{STORE}}$



Trigger level	
Control inputs	Input circuit
Input level High	>0.7 UB
Input level Low	<0.3 UB
Input resistance	10 kΩ
Parallel outputs	Output circuit Push-pull circuit-proof
Output level High	>UB -3.5 V (I = -20 mA)
Output level Low	<0.5 V (I = 20 mA)
Load High	<-30 mA
Load Low	<30 mA
Tristate	<10 μA

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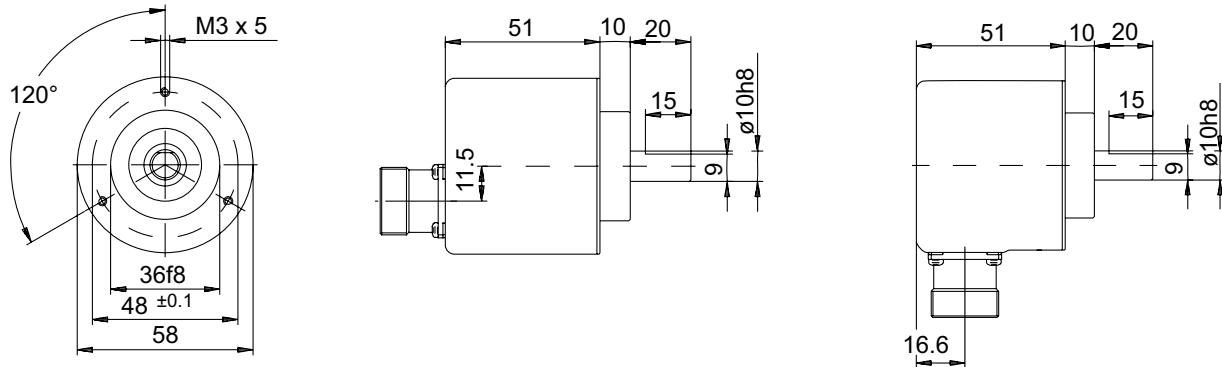
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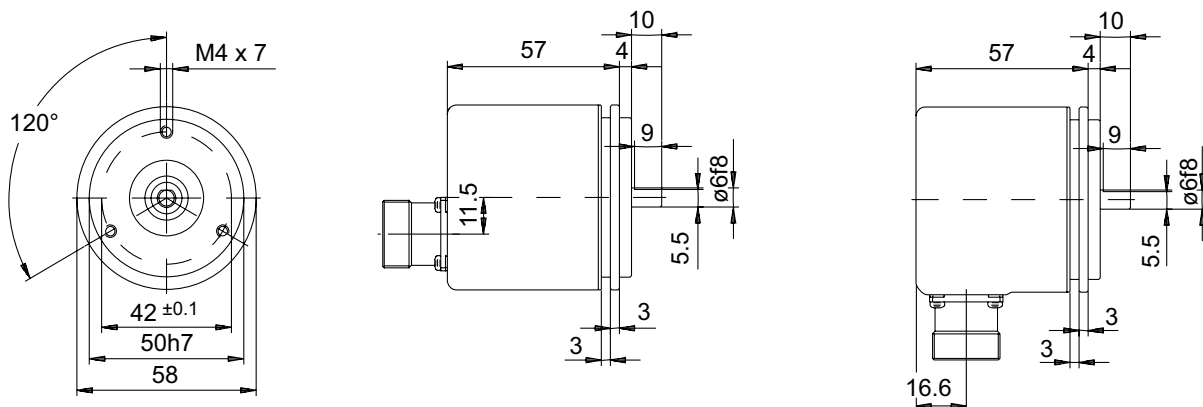
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Dimensions

GXA1W - clamping flange



GXA1W - synchro flange



GXA1W - connector dimensions

