

# 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 turn	2880
Absolute accuracy	±0.05 °
Sensing method	Optical
Code	Gray excess
Code sequence	CW/CCW coded by connection
Inputs	UP/DOWN ENABLE STORE
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 <sup>2</sup>
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 / $\varnothing$ 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

Z 131.001	Female connector M23, 16-pin, without cable
Z 131.003	Female connector M23, 16-pin, 2 m cable
Z 131.005	Female connector M23, 16-pin, 5 m cable
Z 131.007	Female connector M23, 16-pin, 10 m cable

##### Mounting accessories

Z 119.006	Eccentric fixing, single
Z 119.013	Adaptor plate for clamping flange for modification into synchro flange
Z 119.015	Mounting adaptor for synchro flange
Z 119.017	Mounting adaptor for clamping flange (M3)
Z 119.025	Adaptor plate for clamping flange, mounting by eccentric fixings (order separately)
Z 119.035	Bearing flange for encoders with synchro flange

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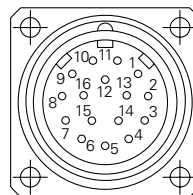
#### GXA1W - parallel

##### Terminal significance

UB	Encoder voltage supply.
GND	Encoder ground connection relating to UB.
Outputs D0-D11	Up to 12 parallel output signals.
UP/DOWN	UP/DOWN counting direction input. This input is standard on High. UP/DOWN means ascending output data with clockwise shaft rotation when looking at flange. UP/DOWN-Low means ascending values with counterclockwise shaft rotation when looking at flange.
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).
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	Output D8
Pin 11	green/grey	Output D10	N.C.
Pin 12	blue	GND	GND
Pin 13	yellow	ENABLE	ENABLE
Pin 14	brown	UP/DOWN	UP/DOWN
Pin 15	red	UB	UB
Pin 16	pink	Output D11	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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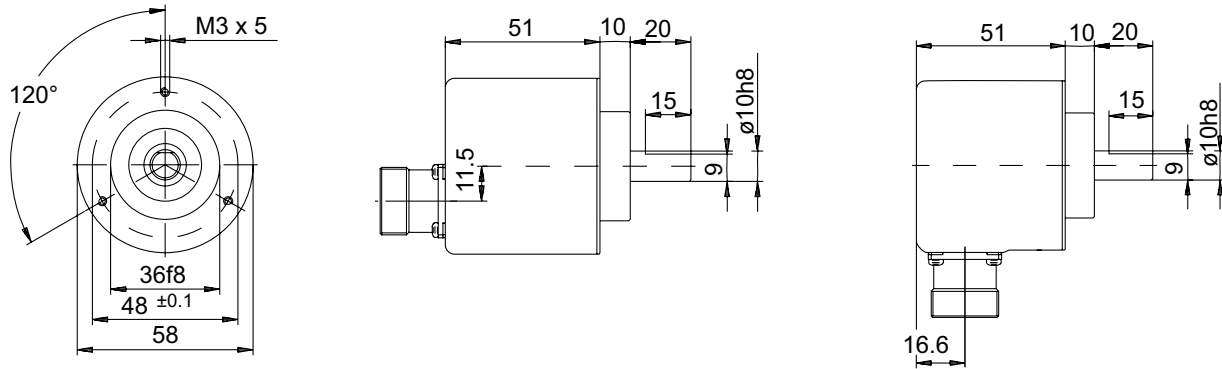
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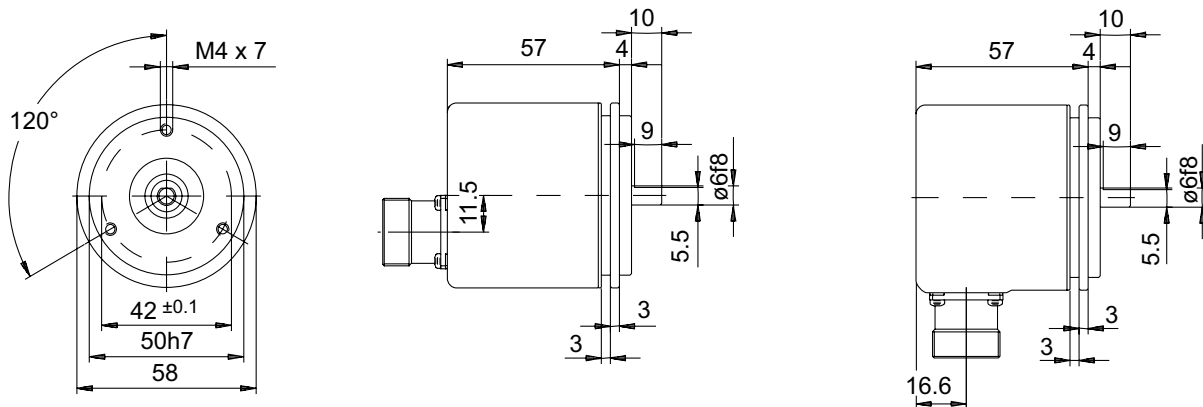
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#### Dimensions

##### GXA1W - clamping flange



##### GXA1W - synchro flange



##### GXA1W - connector dimensions

