

# Absolute encoders - modular bus covers

High resolution, solid shaft

Optical single and multiturn encoders 18 bit ST / 13 bit MT

## GBAMW, GBMMW



GBMMW with modular bus cover

### Features

- Encoder single- or multiturn / bus cover
- Optical sensing method
- Total resolution max. 31 bit
- Clamping or synchro flange
- High resistance to shock and vibrations
- CANopen®/DeviceNet/EtherCAT/EtherNet-IP  
SAEJ1939/PROFINET/PoE/POWERLINK/Profibus/SSI
- Code continuity check optional by bus
- Maximum resistant against magnetic fields

### Technical data - electrical ratings

Voltage supply	10...30 VDC
Reverse polarity protection	Yes
Consumption w/o load	≤100 mA (24 VDC)
Initializing time typ.	250 ms after power on
Interfaces	CANopen®, DeviceNet, EtherCAT, EtherNet/IP, PoE, Profibus, PROFINET, POWERLINK, SAEJ1939, SSI
Device adress	Rotary switch in bus cover
Steps per turn	≤262144 / 18 bit
Absolute accuracy	±0.01 °
Sensing method	Optical
Code	Binary
Code sequence	CW/CCW programmable
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Programmable parameters	Steps per revolution Number of revolutions Preset Scaling Rotating direction
Diagnostic functions	Position or parameter error Multiturn sensing
Status indicator	DUO-LED integrated in bus cover
Approval	UL approval / E63076
<b>GBAMW</b>	
Function	Singleturn
<b>GBMMW</b>	
Function	Multiturn
Number of turns	≤8192 / 13 bit

### 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 <sup>2</sup>
Starting torque	≤0.015 Nm (+25 °C, IP 54) ≤0.03 Nm (+25 °C, IP 65)
Rotor moment of inertia	20 gcm <sup>2</sup>
Admitted shaft load	≤20 N axial ≤40 N radial
Materials	Housing: steel Flange: aluminium Bus cover: zinc die-cast
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.	600 g
Connection	Bus cover

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## Part number

### Singleturn

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	Interface
3P32	Profibus-DPV0 / cable gland
3PA2	Profibus-DPV0 / connector M12
3V32	Profibus-DPV2 / cable gland
3VA2	Profibus-DPV2 / connector M12
3EA2	PROFINET / connector M12
EPA6	EtherCAT / connector M12
8EA2	EtherNet/IP / connector M12
EEA2	Power over EtherCAT / connector M12*
5EA4	POWERLINK / connector M12
5P32	CANopen® / cable gland
5PA2	CANopen® / connector M12
8P22	DeviceNet / cable gland
8PA2	DeviceNet / connector M12
2PA2	SSI / connector M12
5B32	SAEJ1939 / cable gland
5BA2	SAEJ1939 / connector M12

#### Flange / Solid shaft

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

CD with file descriptions is not included in the delivery.  
You may order them on CD as accessory under part number Z 150.022.

\* Power over EtherCAT on request

### Multiturn

GBMMW.  20

	Interface
3P32	Profibus-DPV0 / cable gland
3PA2	Profibus-DPV0 / connector M12
3V32	Profibus-DPV2 / cable gland
3VA2	Profibus-DPV2 / connector M12
3EA2	PROFINET / connector M12
EPA6	EtherCAT / connector M12
8EA2	EtherNet/IP / connector M12
EEA2	Power over EtherCAT / connector M12*
5EA4	POWERLINK / connector M12
5P32	CANopen® / cable gland
5PA2	CANopen® / connector M12
8P22	DeviceNet / cable gland
8PA2	DeviceNet / connector M12
2PA2	SSI / connector M12
5B32	SAEJ1939 / cable gland
5BA2	SAEJ1939 / connector M12

#### Flange / Solid shaft

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

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### Accessories

#### Mounting accessories

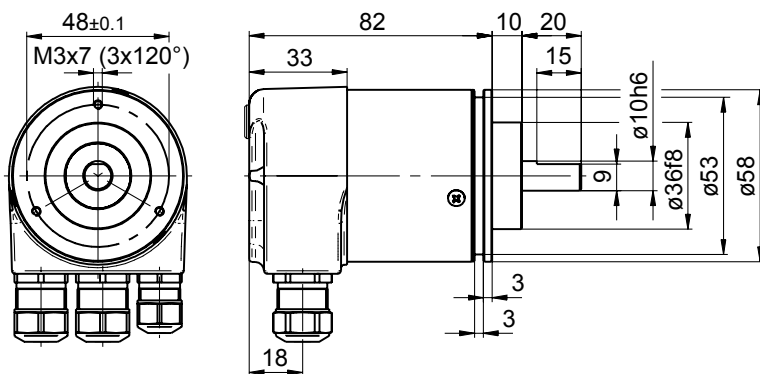
Z 119.006	Eccentric fixing, single
Z 119.013	Adaptor plate for clamping flange for modification into synchro flange
Z 119.015	Mounting adaptor for synchro flange
Z 119.017	Mounting adaptor for clamping flange (M3)
Z 119.035	Bearing flange for encoders with synchro flange

#### Programming accessories

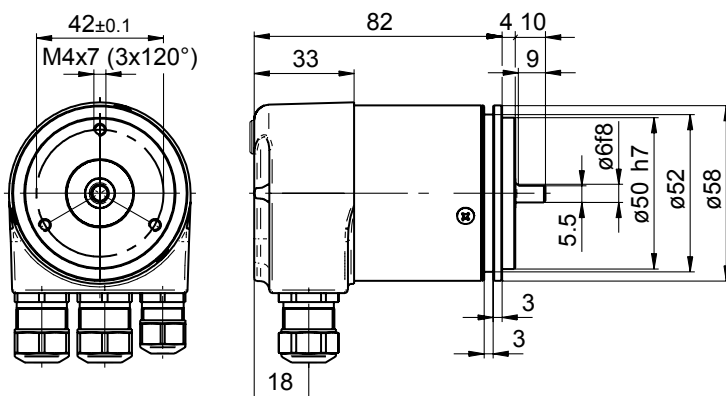
Z 150.022	CD with describing files & manuals
Z 139.008	Programming cable for encoders with SSI bus cover, CD with software and manual

### Dimensions

#### GBAMW, GBMMW - clamping flange



#### GBAMW, GBMMW - synchro flange



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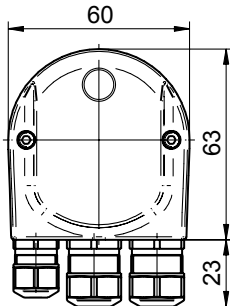
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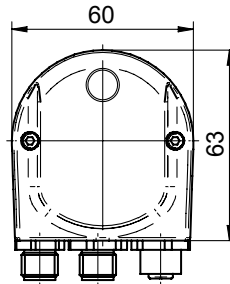
GBAMW, GBMMW

## Dimensions

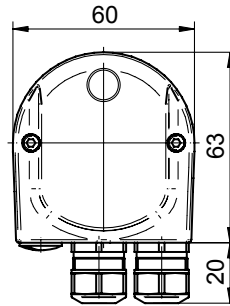
Profibus-DP/CANopen®



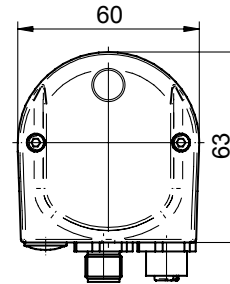
Profibus-DP - M12



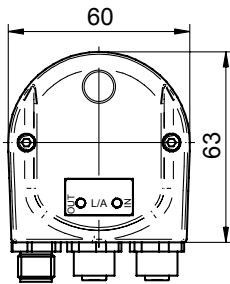
DeviceNet



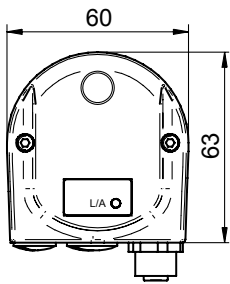
CANopen®/DeviceNet M12



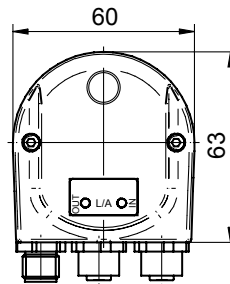
EtherCAT/EtherNet-IP



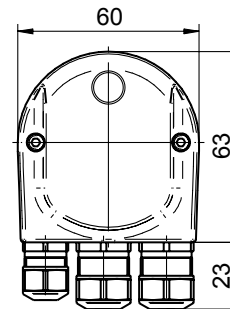
Power over EtherCAT



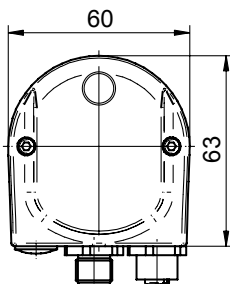
PROFINET/POWERLINK



SAEJ1939



SAEJ1939 - M12



SSI

