

# Absolute encoders - modular bus covers

High resolution, through hollow shaft

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

CANopen® / DeviceNet / EtherNet-IP / Profibus / PROFINET

## GBAMH, GBMMH



GBAMH with modular bus cover

### Features

- Encoder single- or multiturn / bus cover
- Optical sensing method
- Total resolution max. 31 bit
- Through hollow shaft up to  $\varnothing 14$  mm
- CANopen®/DeviceNet/EtherNet-IP/Profibus/PROFINET
- Cost-efficient mounting
- 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	$\leq 100$ mA (24 VDC)
Initializing time typ.	250 ms after power on
Interfaces	CANopen®, DeviceNet, EtherNet/IP, Profibus-DPV0, PROFINET
Device address	Rotary switch in bus cover or via interface
Steps per turn	$\leq 262144$ / 18 bit
Absolute accuracy	$\pm 0.01^\circ$
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>GBAMH</b>	
Function	Singleturn
<b>GBMMH</b>	
Function	Multiturn
Number of turns	$\leq 8192$ / 13 bit

### Technical data - mechanical design

Size (flange)	$\varnothing 58$ mm
Shaft type	$\varnothing 10$ mm (through hollow shaft) $\varnothing 12$ mm (through hollow shaft) $\varnothing 14$ mm (through hollow shaft)
Protection DIN EN 60529	IP 54, IP 65 (optional)
Operating speed	$\leq 6000$ rpm (mechanical) $\leq 6000$ rpm (electric)
Starting acceleration	$\leq 1000$ U/s <sup>2</sup>
Starting torque	$\leq 0.04$ Nm (+25 °C, IP 54)
Rotor moment of inertia	20 gcm <sup>2</sup>
Materials	Housing: aluminium Flange: aluminium Bus cover: 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.	600 g
Connection	Bus cover

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#### Part number

#### Singleturn

GBAMH.  20

	Interface
3EA2	PROFINET / connector M12
3P32	Profibus-DPV0 / cable gland
3PA2	Profibus-DPV0 / connector M12
5P32	CANopen® / cable gland
8EA2	EtherNet/IP / connector M12
8P22	DeviceNet / cable gland
<u>Through hollow shaft / clamping ring</u>	
8	∅10 mm, without pin / on flange
9	∅10 mm, pin 15 mm / on flange
0	∅12 mm, without pin / on flange
1	∅12 mm, pin 15 mm / on flange
4	∅14 mm, without pin / on flange
5	∅14 mm, pin 15 mm / on flange
L	∅12 mm, without pin / on housing
A	∅12 mm, pin 23.5 mm / on housing
M	∅14 mm, without pin / on housing
E	∅14 mm, pin 23.5 mm / on housing

#### Multiturn

GBMMH.  20

	Interface
3EA2	PROFINET / connector M12
3P32	Profibus-DPV0 / cable gland
3PA2	Profibus-DPV0 / connector M12
5P32	CANopen® / cable gland
8EA2	EtherNet/IP / connector M12
8P22	DeviceNet / cable gland
<u>Through hollow shaft / clamping ring</u>	
8	∅10 mm, without pin / on flange
9	∅10 mm, pin 15 mm / on flange
0	∅12 mm, without pin / on flange
1	∅12 mm, pin 15 mm / on flange
4	∅14 mm, without pin / on flange
5	∅14 mm, pin 15 mm / on flange
L	∅12 mm, without pin / on housing
A	∅12 mm, pin 23.5 mm / on housing
M	∅14 mm, without pin / on housing
E	∅14 mm, pin 23.5 mm / on housing

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

#### Accessories

##### Mounting accessories

Z 119.041	Torque support by rubber buffer for encoders with 15 mm pin
Z 119.050	Spring coupling for one-side attachment, length 35 mm
Z 119.053	Spring coupling for motor's fan guard
Z 119.072	Spring coupling for encoders with ∅58 mm housing, hole distance 73 mm
Z 119.073	Spring coupling for encoders with ∅58 mm housing, hole distance 68 mm
Z 119.076	Spring coupling for one-side attachment, length 115 mm
Z 119.082	Spring coupling for encoders with ∅58 mm housing, hole distance 63 mm

##### Programming accessories

Z 150.022	CD with describing files & manuals
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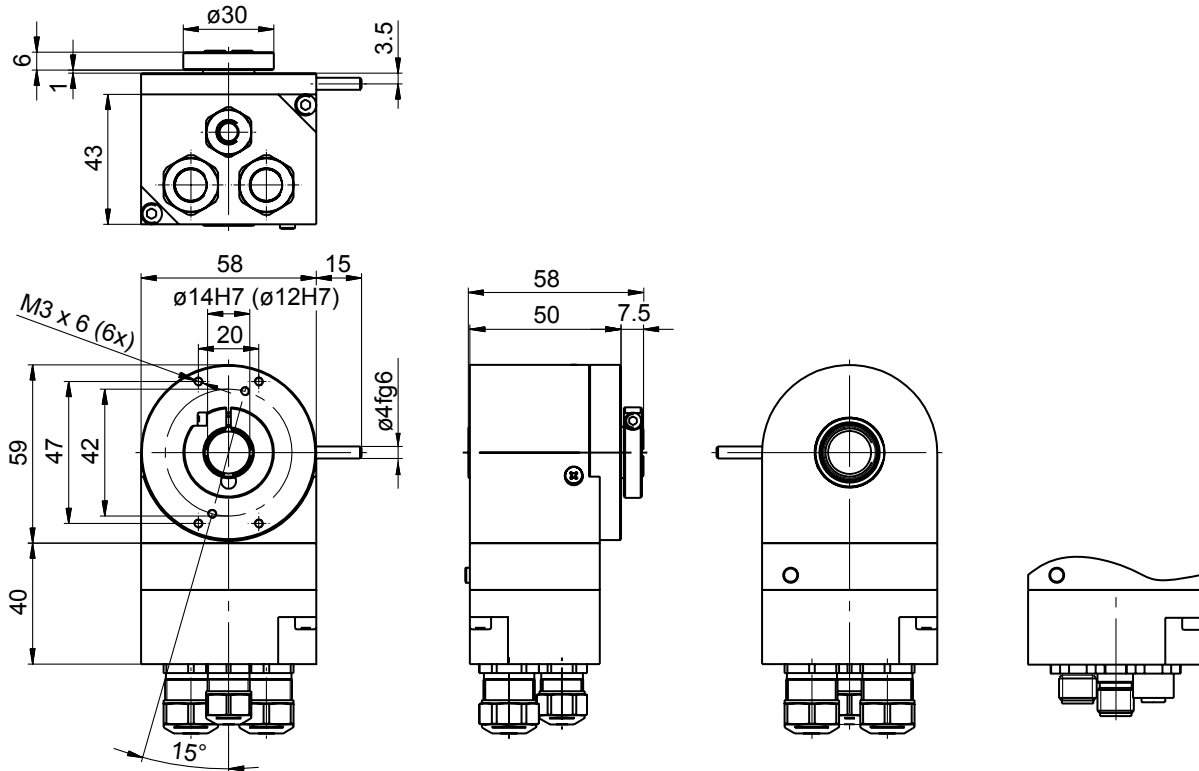
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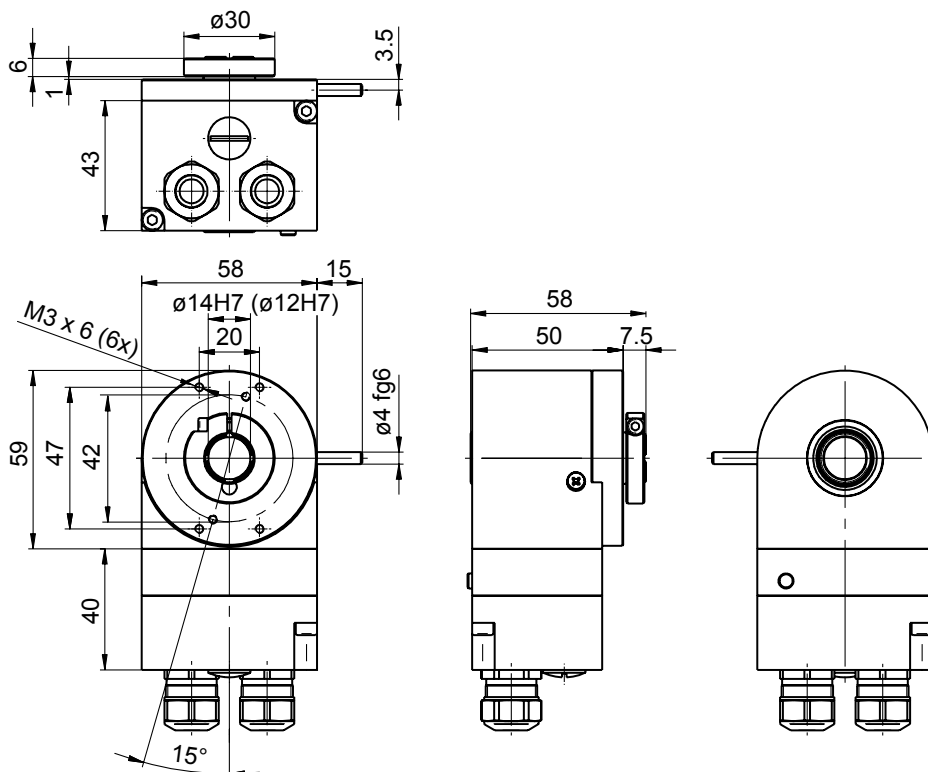
## GBAMH, GBMMH

### Dimensions

GBAMH, GBMMH - clamping ring on flange / CANopen®, Profibus



GBAMH, GBMMH - clamping ring on flange / DeviceNet



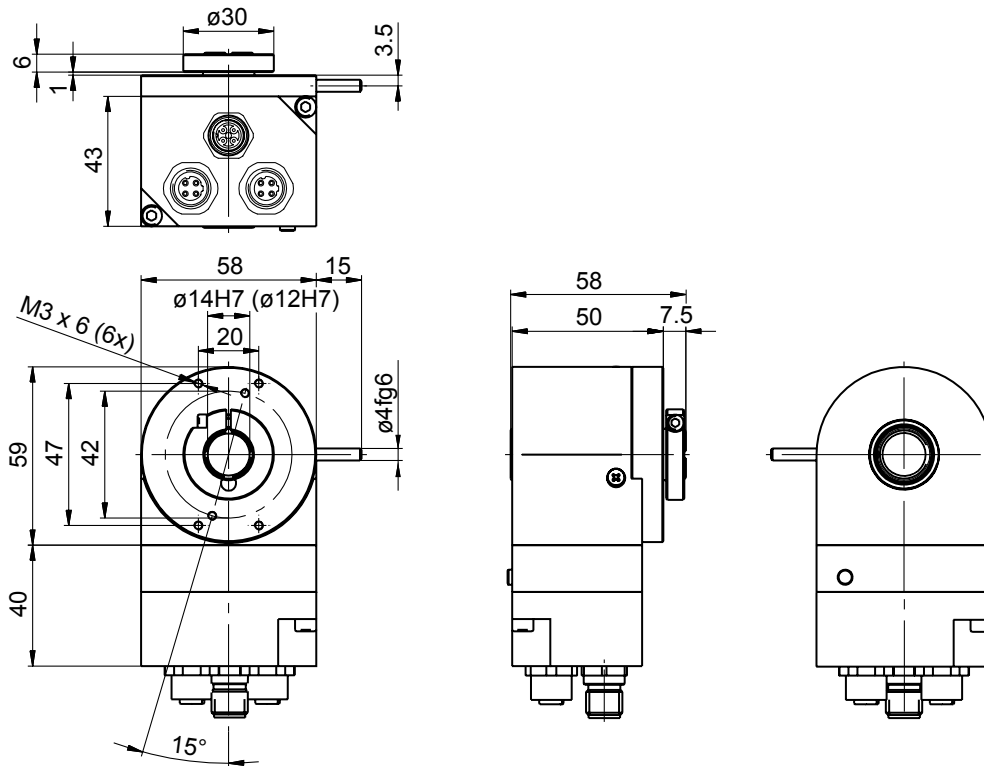
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## Dimensions

GBAMH, GBMMH - clamping ring on flange / EtherNet-IP, PROFINET



GBAMH, GBMMH - clamping ring on housing

