



**GB Assembly Instructions**

**G0AMH, G0LMH, G0MMH**  
**GBAMH, GBLMH, GBMMH**  
**GEMMH**  
**Absolute Encoder – EtherNet/IP**

**9-16**



**Danger**  
Warnings of possible danger.



**General instructions**  
Information on appropriate product handling.



**General remarks**

**Additional information**

The installation instruction is supplementary to already existing documentation (e.g. catalog, data sheet, manual).



It is imperative to read the manual carefully prior to starting the device.

**Appropriate use**

- The encoder is a precision measuring device. It is explicitly designed for registration of angular positions and revolutions as well as evaluation and supply of measuring values as electric output signals for the subsequently connected device. The encoder must not be used for any other purpose.

**Start up**

- Installation and assembly of the encoder only by electrically skilled and qualified personnel.  
- Consider also the operation manual of the machine manufacturer.



**Safety instructions**

- All electrical connections are to be revised prior to starting the system.  
- Incorrect assembly and electrical connections or any other inappropriate work at encoder and system may lead to malfunction or failure of the encoder.  
- Any risk of personal injury, damage of the system or company equipment due to failure or malfunction of the encoder has to be eliminated by corresponding safety measures.  
- Do not operate encoder beyond the limit values stated in the data sheet.



Any disregard may lead to malfunctions, material damage and personal injury.

**Disposal**

Encoder components are to be disposed of according to the regulations prevailing in the respective country.



**Transport and storing**

- In original packing only.  
- Do not drop or expose encoder to major shocks.

**Assembly**

- Open clamping ring completely before mounting the encoder.  
- Avoid punches or shocks on case and shaft.  
- Avoid case distortion.  
- Do not open or modify encoder in any mechanical way.  
- The spring arm of the spring coupling has to be free movable.



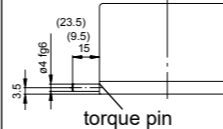
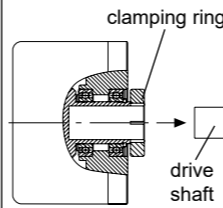
Hollow shaft, bearing, glass disc or electronic components might be damaged and a secure operation is no longer guaranteed.

**Hollow shaft mounting**

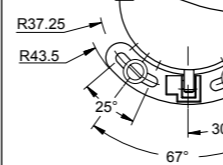
Mounting with clamping ring  
Plug encoder completely onto drive shaft (ISO-fit f7) and tighten clamping ring firmly. The drive shaft must penetrate the encoder's hollow shaft to a depth of at least 35 mm.

**Mechanical assembly**

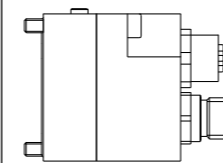
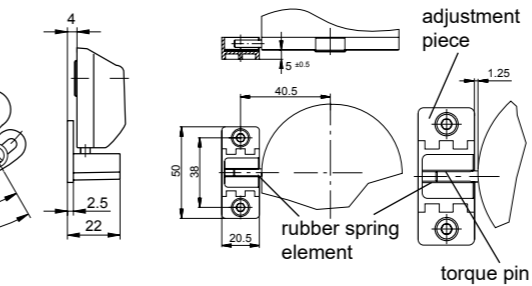
Slide encoder onto the drive shaft and insert torque pin into the adjusting element provided by customer or insert pin into the mounted adjusting part (with rubber spring element) provided by customer.



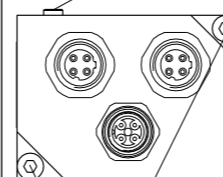
adjustment piece with torque pin 9.5 mm



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DUO-LED



fixing screws

**Exchange bus cover**

The bus cover is to be stored and transported whilst in the ESD bag only. The bus cover has to fit the case tightly and has to be firmly secured by screws.

**Remove bus cover**

- Unscrew both fixing screws of the bus cover.  
- Loosen both bus cover elements carefully and remove it in axial direction.

**Plug on bus cover**

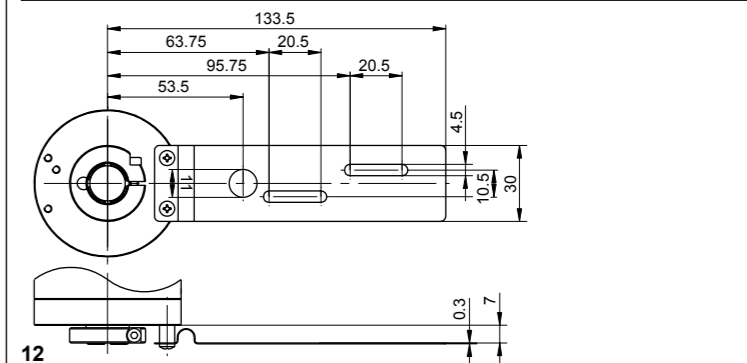
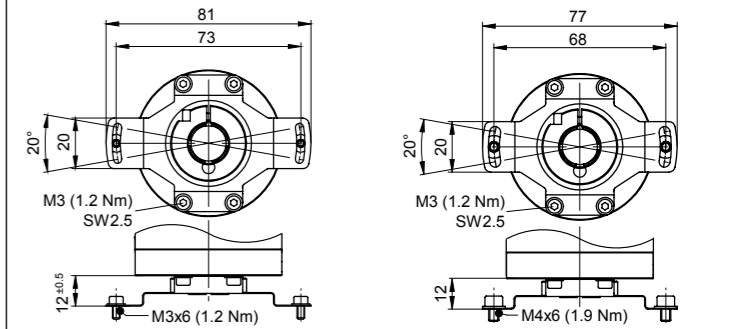
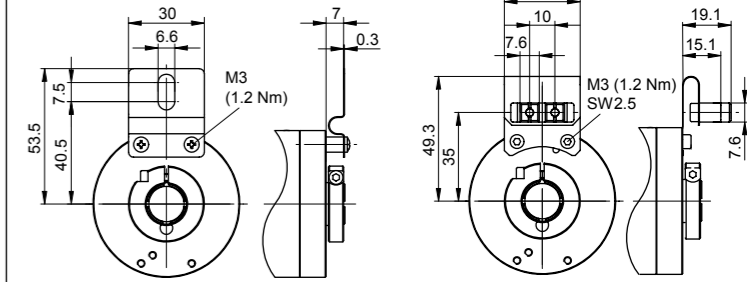
- Plug the bus cover carefully onto the D-SUB plug of the basic encoder, then push it over the rubber seal. Avoid the case getting wedged. The bus cover has to fit tightly the basic encoder.  
- Tighten both fixing screws firmly and conformable.  
- An optimized connection between encoder case and the braiding shield of the supply cable is only achieved by a complete and close fit of the bus cover onto the basic encoder (interlock).



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**Spring coupling**

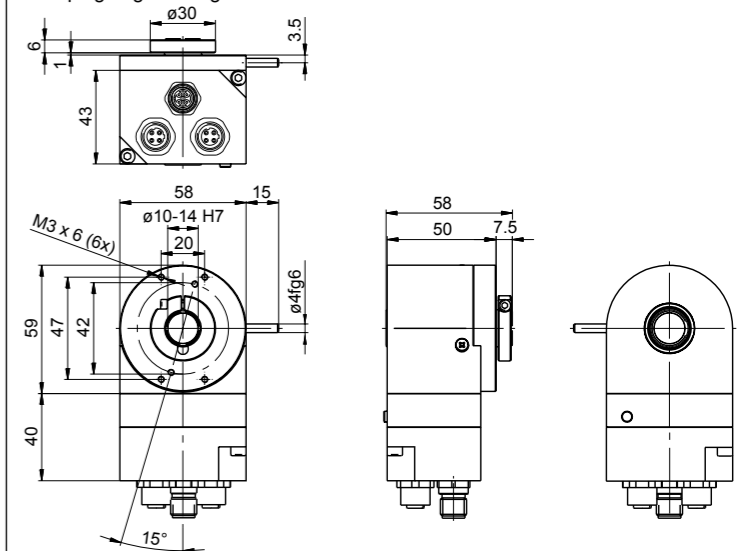
Fasten spring coupling at the fixing holes provided on housing by means of screws. Slide encoder onto the drive shaft and fasten spring coupling at the surface provided with screws.



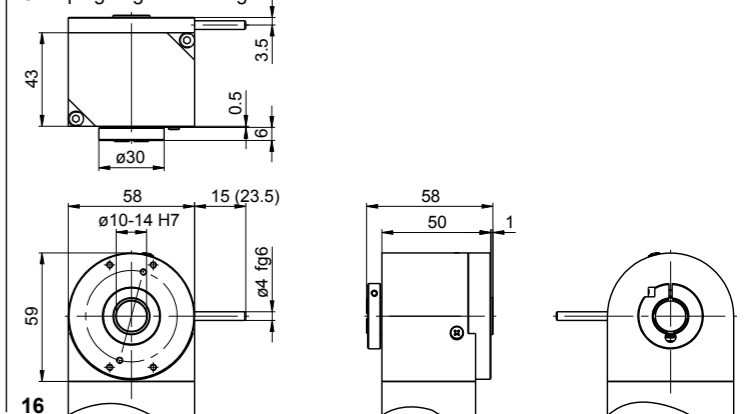
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**Dimensions**

**Clamping ring on flange**



**Clamping ring on housing**



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All movable adjusting elements need tolerance in both axial and radial direction in order to equalize shifts by temperature and of mechanical nature. Tighten both fixing and clamp ring screws firmly.

**Electrical installation**

- Do not modify encoder in any electrical way and carry out any wiring work under power supply.  
- Any electrical connection and plugging-on whilst under power supply is not permitted.  
- A separate encoder supply has to be provided with consumers with high interference emission.  
- Installation of the whole system has to be according to EMC standards. Installation environment as well as wiring have an impact on the encoder's EMC. Encoder and supplying lines are to be in separated locations or remote from lines with high interference emission (frequency transformers, protections, etc.).  
- Encoder case and supply cable have to be completely screened.  
- Ground (PE) encoder by using screened cables. The braided shield has to be connected to cable gland or plug. Grounding (PE) on both sides is recommended. Ground the case by the mechanical assembly, if latter is electrically isolated a second connection has to be provided. Ground cable screen by the subsequently connected devices.  
- In case of ground loop problems at least grounding on one side is imperative.



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1 x connector M12 (male), A-coded



2 x connector M12 (female), D-coded

**Terminal assignment**

**Voltage supply**

Pin	UB	Voltage supply
Pin 1	UB	
Pin 2	N.C.	Not assigned
Pin 3	GND	Ground for UB
Pin 4	N.C.	Not assigned

**EtherNet/IP (data line)**

Pin 1	TxD+	Transmission data+
Pin 2	RxD+	Receiving data+
Pin 3	TxD-	Transmission data-
Pin 4	RxD-	Receiving data-

**Assignment – connector M12**

Follow also the instructions of the respective supplier.

- Press mating connector softly into the plug.  
- Turn mating connector carefully until the code mark is interlocking the corresponding space provided by the plug. Insert bushing completely. Tighten the nut as far as possible.



An optimized connection between encoder case and the braided shield of the connection cable is only achieved by the braided shield being placed generously onto the connector and the nut being secured firmly.

**Starting torque**

Screwing - bus cover max. 1.9 Nm

Spring coupling mounting max. 1.2 Nm

Clamping ring mounting max. 1.2 Nm

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