

Operating and Assembly Instructions

Electronic function module UO-EM-FG4

Evaluation to U-ONE® - Incremental encoder

**Read the operating and assembly instructions prior to assembly,
starting installation and handling!
Keep for future reference!**

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1 General

1.1 Information about the operating and assembly instructions

These operating and assembly instructions provide important instructions for working with the device. They must be carefully read prior to starting all tasks, and the instructions contained herein must be followed.

In addition, applicable local regulations for the prevention of industrial accidents and general safety regulations must be complied with.

For other, non SIL certified electronic function modules please refer to the separate Operating and Installation Instructions.

1.2 Scope of supply

The scope of supply includes the electronic function module UO-EM-FG4 and the operating and assembly instructions.

The operating and assembly instructions for the electronic function module is also included on the supplied CD.

1.3 Explanation of symbols

Warnings are indicated by symbols in these operating and assembly instructions. The warnings are introduced by signal words that express the scope of the hazard.

The warnings must be strictly heeded; you must act prudently to prevent accidents, personal injury, and property damage.



WARNING!

Indicates a possibly dangerous situation that can result in death or serious injury if it is not avoided.



CAUTION!

Indicates a possibly dangerous situation that can result in minor injury if it is not avoided.



CAUTION!

Indicates a possibly dangerous situation that can result in material damage if it is not avoided.



NOTES!

Indicates useful tips and recommendations as well as information for efficient and trouble-free operation.



NOTES!

Do not use a hammer or similar tool when installing the device due to the risk of damage occurring to the bearings or coupling!



DANGER!

Life-threatening danger due to electric shock!

Indicates a life-threatening situation due to electric shock. If the safety instructions are not complied with there is danger of serious injury or death. The work that must be executed should only be performed by a qualified electrician.

1.4 Disclaimer

All information and instructions in these operating and assembly instructions have been provided under due consideration of applicable guidelines, as well as our many years of experience.

The manufacturer assumes no liability for damages due to:

- Failure to follow the instructions in the operating and assembly instructions
- Non-intended use
- Deployment of untrained personnel
- Opening of the device or conversions of the device

In all other aspects the obligations agreed in the delivery contract as well as the delivery conditions of the manufacturer apply.

1.5 Copyright



NOTES!

Content information, text, drawings, graphics, and other representations are protected by copyright and are subject to commercial property rights.

It is strictly forbidden to make copies of any kind or by any means for any purpose other than in conjunction with using the device without the prior written agreement of the manufacturer. Any copyright infringements will be prosecuted.

1.6 Guarantee terms

The guarantee terms are provided in the manufacturer's terms and conditions.

1.7 Customer service

For technical information personnel is available that can be reached per telephone, fax or email. See manufacturer's address on page 2.

2 Safety



DANGER!

This section provides an overview of all the important safety aspects that ensure protection of personnel, as well as safe and trouble-free device operation.

If these safety instructions are not complied with significant hazard can occur.

2.1 Responsibility of the owner

The device is used in commercial applications. Consequently the owner of the device is subject to the legal occupational safety obligations, and subject to the safety, accident prevention, and environmental protection regulations that are applicable for the devices area of implementation.

2.2 Personnel

Qualified personnel only are permitted to install, mount, program, commission, operate, maintain and take out of service the devices.

Qualified personnel are people who have received

- training to qualify as an electrician or
- instructions from qualified trades personnel

entitling them to work with and on devices, systems, machinery and plant in accordance with generally accepted standards and safety engineering guidelines.

In addition, the owner is obliged to deploy only personnel who

- are familiar with the fundamental regulations covering work safety and accident prevention,
- have read and understood the chapter "Safety" in these Operating and Installation Instructions,
- and are familiar with the basic and specialist standards that apply to the specific application.

3 Technical Data

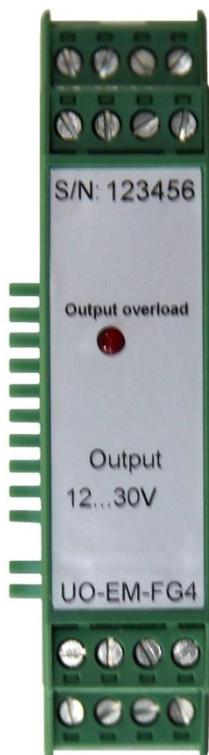
Electronic function module for U-ONE Incremental encoder Type: UO-EM-FG4

3.1 Type plate / Connection diagram

			
Typ Type	: UO-EM-FG4		
ID	: 15910		
S/N	: 123456 Bj/Y : 2019		
Johannes Hübner Fabrik elektrischer Maschinen GmbH Siemensstrasse 7 - 35394 Giessen - Germany			

Pin	Signal	Waveform	Output
1	90 GRAD		AUSGANG OUTPUT
2	0 GRAD		
3	MARKER		
4	GND		5 V
5	90 GRAD		
6	0 GRAD		12...30V
7	MARKER		
8	GND		<input type="checkbox"/> <input checked="" type="checkbox"/>
9	FG CHECK		
10	NC		
11	NC		
12	GND		<input type="checkbox"/> <input checked="" type="checkbox"/>
13	FG CHECK		
14	NC		
15	NC		
16	GND		

3.2 Connections and indicators



Anzeigen	
Output overload	LED lit: in case of an error

Universal encoder system U-ONE®

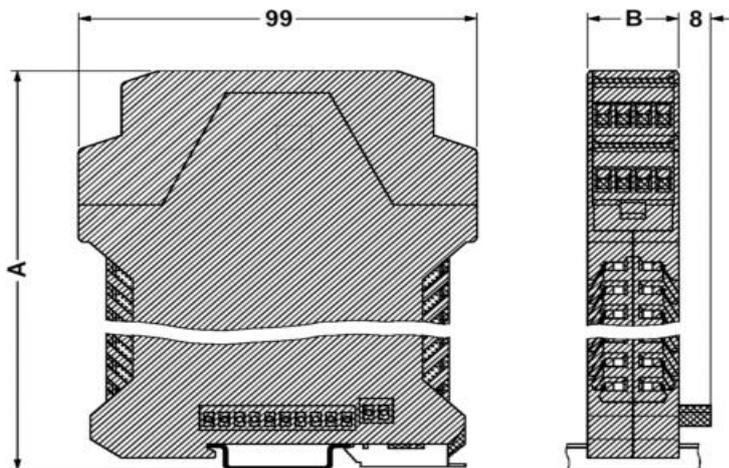
Electronic function module UO-EM-FG4

3.3 Connected loads environment

Description	Value
Supply voltage	12 ... 30 V DC
Power consumption	max. 2 W plus power consumption of next electronic function modules
Number of pulses	1024 symmetrical square wave pulses
Equipped with the following options Option (90) Option (N) Option (G)	90 dgr. phase displacement to basic pulse marker pulse, mechanically fixed inverted signals
Connection	<ul style="list-style-type: none"> COMBICON®-terminal strip
Outputs	Current limited- short-circuit proof push-pull line driver
Signal amplitude	HTL approx. as supply voltage, optional 5V, RS 422
Connecting diagram	EL 671a
Device temperature range	-25 ... + 70 °C
Degree of protection	IP20

3.4 Dimension drawing

A = 114,50 mm B = 22,50 mm



3.5 Mounting the module

Snap the modules onto the top-hat rail and slide together.



CAUTION!

Ensure you do not damage the connectors when you snap the modules onto the rail and push them together!

Ensure the modules contact reliably when joining them together on the top-hat mounting rail. Fit the supplied shrouding covers to both ends of the mounted terminals.

Follow the connection diagram!

4 Proper use

The electronic function module UO-EM-FG4 has been designed and built solely for the intended purpose described in these operating and assembly instructions.

We do not accept liability of any kind for damages arising from improper use of the device. The owner bears sole responsibility for any improper use.

4.1 Improper use

- Do not use the device in potentially explosive areas.
- It is not permitted to use the device in locations higher than 3000 m above sea level.

4.2 Faults table

Faults	Possible cause	Remedy
LED lit	Output overload (short circuit)	Remove short circuit
Contact Hubner-Service (page 2) if none of the actions listed above provide a solution!		

5 Transport, packaging and storage

5.1 Safety information concerning transport



CAUTION!

Material damage caused by improper transport!

Observe the symbols and information on the packaging:

- Do not throw - risk of breakage
- Keep dry
- Do not expose to heat above 40 °C or direct sunlight.

5.2 Goods inward inspection

Check the delivery immediately upon receipt for transit damage or short delivery.

Inform the carrier immediately on receipt if you determine that damage has occurred during transit (take photos as proof).

5.3 Packaging (disposal)

The packaging is not taken back; dispose of according to the respective valid statutory provisions and local regulations.

5.4 Storing packages (devices)



Keep dry

Keep packages dry and free from dust; protect from moisture.



Protect against heat

Protect packages from heat above 40 °C and direct sunlight.

If you intend to store the device for a longer period of time (> 6 months) we recommend you use protective packaging (with desiccant).

5.5 Returning devices (repairs/goodwill/warranty)

Devices that have come into contact with radioactive radiation or radioactive materials are not taken back.

Decontaminate devices that have may come into contact with harmful chemical or biological substances before returning.

They must also be accompanied by a safety clearance certificate.

5.6 Disposal

The manufacturer is not obliged to take back the device.

The device is classed as electronic equipment and subject to the WEEE Directive; observe local, country-specific laws when disposing of the device.

For information on environmentally sound disposal please contact your local authority or a specialist disposal company.