

Operating and assembly instructions

UO-EGS-R Standard speed switches

UO-ERC-R Standard position switches

U-ONE®-LWL

Universal encoder system – Generation II

Read this operating and assembly manual before completing assembly, starting installation, or completing other work.
Store the manual for future use.

Manufacturer / author

Johannes Hübner

Phone: +49 641 7969 0

Fabrik elektrischer Maschinen GmbH

Fax: +49 641 73645

Siemensstr. 7

Website: www.huebner-giessen.com

35394 Giessen / Germany

E-Mail: info@huebner-giessen.com

Further current information on this product series is available online in our Service Point.

Just scan the QR code and open the link in the browser.



These instructions and the enclosed declaration of conformity can also be accessed via our Service Point. For this purpose, the QR code on the type plate of the corresponding device must be scanned.

Trademark

Brand and product names are trademarks or registered trademarks of their respective owners. Protected trademarks [™] or [®] are not always designated as such in this manual. However, this does not mean that they may be used freely.

Copyright protection

This operating and assembly manual, including the figures it contains, are copyright protected. Third party usage of this operating and assembly manual in deviation from copyright regulations is prohibited. The reproduction, translation or electronic and photographic archiving and amendment of this manual shall require written approval by the manufacturer. Violations will result in claims for damages.

Copyright © Johannes Hübner Fabrik elektrischer Maschinen GmbH

Reservation of rights

This operating and assembly manual has been prepared carefully. However, it may contain formal errors or errors in content.

All rights reserved.

Table of contents

1 General information	4
1.1 Information on the Operating and assembly manual	4
1.2 Scope of delivery	4
1.3 Explanation of symbols	4
1.4 Warranty and liability	5
1.5 Organisational measures	5
1.6 Copyright protection	5
1.7 Warranty provisions	5
1.8 Customer service	5
2 Basic safety information	6
2.1 Responsibility of the operator	6
2.2 Selecting and qualifying personnel; basic obligations	6
2.3 Proper use	6
2.4 Improper use	7
2.5 Safety information	7
3 Assembly	8
3.1 Safety information	8
3.2 Basic regulations.....	8
3.3 Replacing function modules	8
3.4 Type plate	9
3.5 Type designation.....	9
4 Structure and function	10
4.1 Electrical data	10
4.1.1 Operating statuses and displays.....	11
5 Inspections	11
6 Transportation, packaging and storage	11
6.1 Transportation safety information	11
6.2 Incoming goods controlling.....	11
6.3 Packaging (disposal).....	11
6.4 Storing packages (devices)	11
6.5 Returning equipment (repair/goodwill/warranty)	12
6.6 Disposal	12
7 Documents	13
7.1 Dimensional drawing.....	13
7.2 Wiring diagram.....	13

1 General information

1.1 Information on the Operating and assembly manual

This operating and assembly manual provides important information on handling the UO-SGS-R and UO-SRC-R electronic function modules. It must be read carefully before starting all work and complied with. The electronic function modules UO-SGS-R and UO-SRC-R are referred to as ERC-R/EGS/R in the following documentation.





Furthermore, the local accident prevention regulations and general safety regulations applicable for the area where the device will be used must be observed.

1.2 Scope of delivery

The scope of delivery for the function module includes the operating and assembly manual and the software & support CD.

1.3 Explanation of symbols

Warning information is designated using symbols. Information is preceded by signal words which express the extent of the danger involved. Always comply with these notices, and use caution to avoid accidents, personal injury and property damage.

	<p>WARNING! Indicates a potentially hazardous situation that could lead to death or severe injury if it is not avoided.</p>
	<p>CAUTION! Indicates a potentially hazardous situation that could lead to minor or slight injuries if it is not avoided.</p>
	<p>CAUTION! Indicates a potentially hazardous situation that could lead to property damage if it is not avoided.</p>
	<p>NOTE! Emphasises useful tips and recommendations, and provides information useful for efficient, smooth operation.</p>
	<p>DANGER! Mortal danger due to electric current. Indicates a life-threatening situation caused by electric current. Failure to observe the safety information may result in serious injuries or death. Work may only be carried out by an electrician.</p>

1.4 Warranty and liability


Only the “General Terms and Conditions” of Johannes Hübner Fabrik elektrischer Maschinen GmbH apply. These will be provided to the operator at the latest when the order is confirmed or when the contract is concluded. All warranty and liability claims for personal injury and property damage are excluded, and the operator's operating permit will be null and void if one or more of the following apply:

- Failure to observe the operating and configuration manual.
- Improper use of the function module.
- Improper assembly, installation, commissioning and programming of the function module.
- Operating the function module despite technical defects.
- Independently carrying out mechanical or electrical modifications to function modules.
- Independently carrying out repairs.
- Catastrophes due to external interference or force majeure.
- Use of non-qualified personnel.
- Opening the function module.

1.5 Organisational measures

- The operating and assembly manual must always be stored easily within reach in the area where the function module is used.
- In addition to the operating and assembly manual, general statutory and other binding regulations on accident prevention and environmental protection must be observed. Operators must be trained on these regulations.
- Applicable national, local, and system-specific provisions and requirements must be observed.
- The operator is obligated to inform personnel of special operating considerations and requirements.
- The type plate and any prohibitions or notice signs adhered to the function modules must always be legible.
- Repairs may only be carried out by the manufacturer, or by an agency or individual authorised by the manufacturer.

1.6 Copyright protection

	<p>NOTE!</p> <p>Content information, texts, drawings, images, and other illustrations are copyright protected and subject to industrial property rights. Copying of any kind not associated with use of the function module is prohibited without a written declaration from the manufacturer. Violations will result in claims for damages.</p>
---	---

1.7 Warranty provisions

Warranty provisions are outlined in the manufacturer's General Delivery Conditions.

1.8 Customer service

Contact persons are available by phone, fax, or e-mail for technical questions. See the manufacturer's address on page 2.

2 Basic safety information

<p>DANGER! This section provides an overview of all significant safety aspects necessary to protect personnel and ensure safe, fault-free operation of the function module. Failure to observe this information may result in significant danger.</p>
--

2.1 Responsibility of the operator

The function modules are used in a commercial capacity. The operator of the function modules, therefore, is subject to statutory occupational safety requirements and the safety, accident prevention and environmental regulations applicable to the areas in which the function modules are used.

2.2 Selecting and qualifying personnel; basic obligations

- All work on function modules may be carried out only by qualified personnel. Qualified personnel are personnel with the training, experience, and instruction, as well as expertise on relevant standards, specifications, accident prevention regulations and operating circumstances necessary to carry out the required work, and who have been authorised to do so by the persons responsible for the safety of the system. They are able to identify and avoid potential hazards.
- In addition, please see standards VDE 0105-100 and IEC 364 for the definition of “qualified personnel” (reference, e.g. Beuth Verlag GmbH, VDE-Verlag GmbH)
- Responsibilities for assembly, installation, commissioning and operation must be clearly defined. Personnel who are receiving instruction or training must be supervised.

2.3 Proper use

The ERC-R/EGS-R can be used in conjunction with an UO-ECU for


- position-dependent switching of potential-free relay contacts (UO-ERC-R)
- speed-dependent switching of potential-free relay contacts (UO-EGS-R)
- error-dependent switching of potential-free relay contacts (UO-ERC-R / UO-EGS-R)

The system manufacturer must review whether the properties of the function module fulfil the safety requirements in its specific application. The system manufacturer is responsible for use of the function module and for deciding whether to use the module. Function modules are designed for unsupervised, continuous operation.



Proper use also includes:


- observing all information in this operating and assembly manual
- observing type plates and any prohibition or information signs
- observing the operating manual of the machine or system manufacturer
- operating the function module within the limits stipulated in the technical data
- not engaging in improper use

2.4 Improper use

	<p>WARNING!</p> <p>Danger of death, physical injury and property damage due to improper use of the function module!</p> <p>In particular, the following uses are prohibited:</p> <ul style="list-style-type: none"> • Use in environments with an explosive atmosphere. • Use in environments with radioactive radiation. • Use on ships. • Use for medical purposes.
---	--


2.5 Safety information

 	<p>WARNING! ATTENTION! NOTE!</p> <p>Destruction, damage or impact to the function of the function module.</p> <ul style="list-style-type: none"> • Only complete wiring work and only connect or disconnect electrical connections when the module is powered down. • Review any potential hazards due to interactions with other systems and devices currently installed in the surrounding area, or which are to be installed. The user is responsible for taking relevant measures. • The power supply must be secured with a fuse appropriate for the diameter of the intake line. • Cables used must be suitable for the temperature range. • Defective function modules may not be operated. • Opening function modules is prohibited. • The type plates specify the technical properties of the function modules. If a type plate is no longer legible, or if a type plate is missing entirely, the function module may not be operated. Contact Hübner service (see page 2).
---	--

	<p>NOTE!</p> <p>Disposal:</p> <p>If the function module needs to be disposed after its service life, applicable national regulations must be observed.</p>
---	--


3 Assembly

3.1 Safety information

	<p>WARNING!</p> <ul style="list-style-type: none"> • Assembly and disassembly may only be carried out by qualified personnel. Observe the safety information in section 2. • In general, the requirements and acceptance conditions for the system as a whole must be observed.
---	--

 	<p>DANGER! ATTENTION!</p> <p>Danger of death, severe physical injury and/or property damage due to deactivating safety functions, caused by an unsecured shaft drive.</p> <ul style="list-style-type: none"> • In general, the requirements and acceptance conditions for the system as a whole must be observed.
--	--

3.2 Basic regulations

	<p>WARNING!</p> <ul style="list-style-type: none"> • Power and signal lines must be installed separately. • Observe the manufacturer's information when installing converters, shielding on power lines between the frequency converter and motor. • Ensure the energy supply is sufficient for the application.
---	--

3.3 Replacing function modules

When replacing function modules, observe the following:

- The new function module must have the same item no. (ID) as the old one.
- The configuration of the function module to be replaced may be transferred to the new function module (see configuration instructions).
- When recommissioning the replaced function module, a secure test run must be completed first to ensure it functions correctly.

3.4 Type plate

The following image shows an example of a type plate.

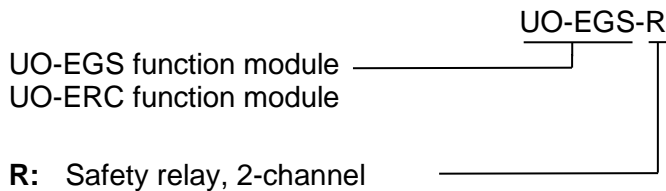


Fig. 3-1: Type plate (example)

The type plate is located on the outside of the housing, and includes the following information:

- Manufacturer
- Type, year of construction
- CE mark
- Serial number (S/N)
- Protective class
- ID number

3.5 Type designation



Label	Description
UO-ERC-R	3 position switches with forcibly guided relay Switching voltage max. 230V AC / DC
UO-EGS-R	3 speed switches with forcibly guided relay Switching voltage max. 230V AC / DC

4 Structure and function

The ERC-R/EGS-R is a switching module with 3 position switches or 3 speed switches. The ERC-R/EGS-R has forcibly guided relays, each with 2 N/O contacts as shown in the following graphic. The switching statuses are illustrated in a powered-down state. A green LED on the front plate indicates that a switch is closed. The switch states are configured using the US42Pro software.

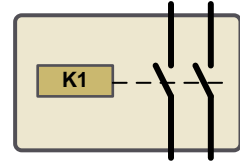


Fig. 4-1:
Switch layout

A full description of the configuration is provided in the separate configuration manual.

!	<p>ATTENTION! The module may only be configured while stopped. If a rotational movement is detected during configuration, the U-ONE® universal encoder system is set into a safe state.</p>
----------	--

When using the switch as an error switch

!	<p>CAUTION! The error switch must be set such that the application opens the relay contacts if there is an error.</p>
----------	--

4.1 Electrical data

Information	Value
Supply voltage	Delivered to the ECU module via the bus connector
Module power consumption	< 3 W
Switching voltage, current	5 VAC ... 250 VAC 5 mA ... 500 mA 5 VDC ... 30 VDC 5 mA ... 500 mA > 30 VDC ... 230 VDC 5 mA ... 180 mA
Mechanical relay service life	> 10,000,000 switching cycles
Time between 2 switching requests to a relay	≥ 135 ms
Switching time	≤ 10 ms
Protective class in accordance with DIN EN 60529	IP20 for cabinet installation Degree of protection of cabinet: ≥ IP54
Connection technology	Screw terminals 0.25 mm ² - 1.5 mm ²
Elevation above sea level	≤ 3000 m

The relay contacts must be protected against overcurrent via a back-up fuse (max. 2A).

	<p>WARNING! Overvoltage category III: If there is mixed installation between neighbouring relay outputs with SELV / PELV and mains voltage, then the applied voltage must be ≤ 150 V AC or ≤ 212 V DC (elevations up to 2000 m). For higher voltages or higher elevations, the operator must ensure that sufficient distance is maintained, for instance by leaving a relay output disconnected between them.</p>
--	--

4.1.1 Operating statuses and displays

Operating status	Status LED	Switching status
Start	flashing yellow/green 2 Hz	open
normal	green	according to program
module not config- ured	yellow	open
configure the mod- ule	flashing yellow/green 1 Hz	according to program
switch test	flashing yellow/green 1 Hz	according to test
bootloader	flashing yellow/red 1 Hz	open
Fault	Red	open

5 Inspections

The ERC-R/EGS-R can only be operated in conjunction with the UO-ECU function module. Please observe the measures described in the relevant section of the UO-ECU operating manual.

6 Transportation, packaging and storage

6.1 Transportation safety information

!	<p>CAUTION! Property damage due to improper transportation! These symbols and information on the packaging must be observed: Do not throw, risk of breakage, protect against wetness</p>
----------	--

6.2 Incoming goods controlling


The delivery must be checked promptly for transportation damage and to ensure it is complete upon receipt.

If there is transportation damage, the carrier must be informed directly upon delivery (take photos as evidence).

6.3 Packaging (disposal)

Packaging will not be taken back, and must be disposed of according to applicable statutory specifications and local regulations.

6.4 Storing packages (devices)

	<p>Protect against wetness! Protect packages against wetness, store in a dry and dust-free location.</p>
---	---

In case of long storage times (> 6 months), we recommend packaging the devices in protective packaging (with desiccants).

6.5 Returning equipment (repair/goodwill/warranty)

Service requests (repair/goodwill/warranty) can be initiated directly via the following online form:

<https://www.huebner-giessen.com/en/service-support/service/>

There you will also find contact details for our service, as well as questions and answers regarding the processing.

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

Devices that have come into contact with biological or chemical substances that could be hazardous to health must be decontaminated before they are returned.

A clearance certificate must be enclosed.

6.6 Disposal

The manufacturer is not obligated to take back the devices.

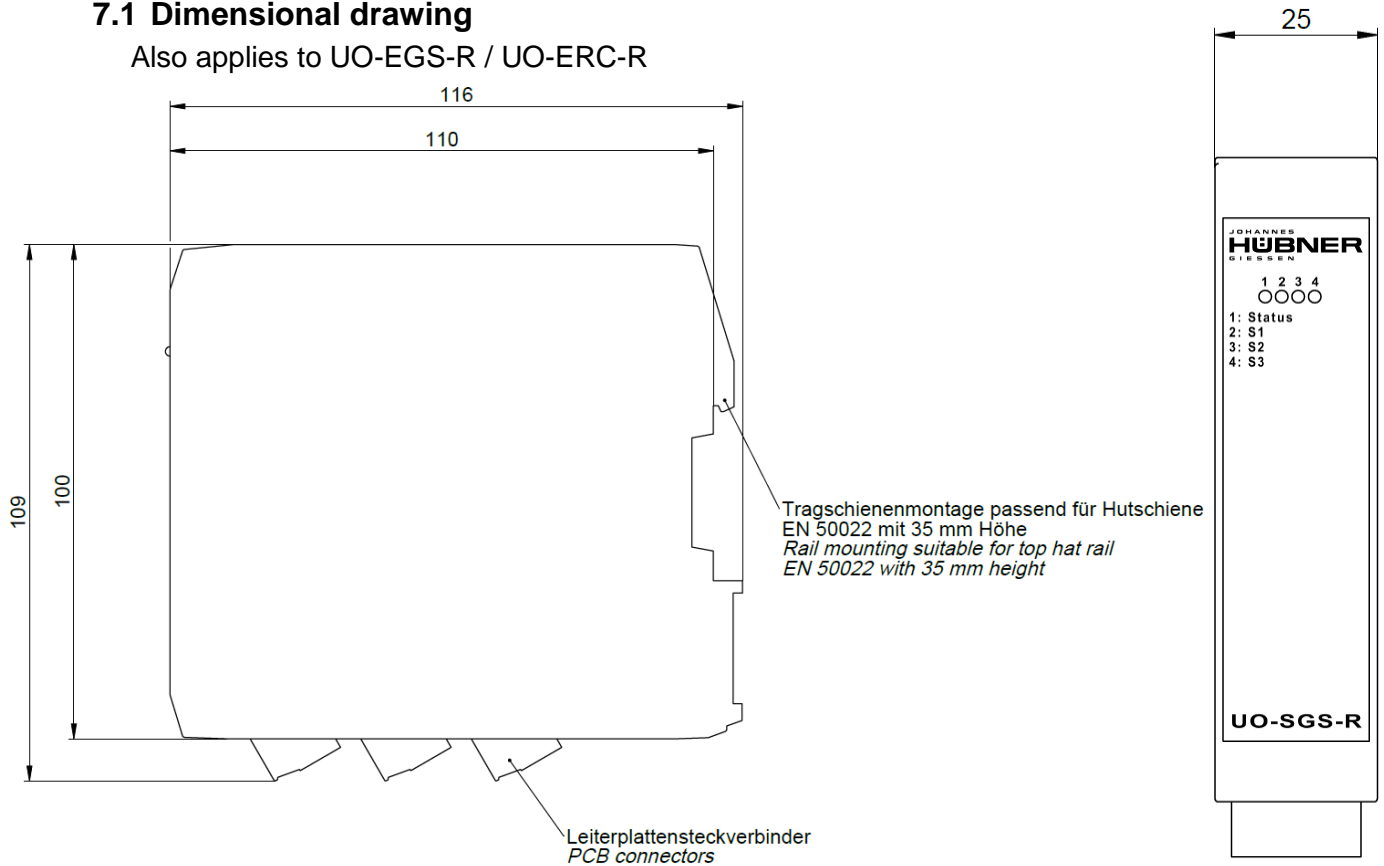
The ERC-R/EGS-R must be treated as special electronic waste, and must be disposed of according to specific national law.

Local municipal authorities or speciality disposal companies can provide information on environmentally-appropriate disposal.

7 Documents

7.1 Dimensional drawing

Also applies to UO-EGS-R / UO-ERC-R



7.2 Wiring diagram

