




## Operating Manual Electrode control unit

as of version 1.0

# ALSCHU 300 FG/SP






-  Please carefully read these instructions before use!
-  Please consider the safety instructions!
-  Please keep for future reference!



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## 1 General Note

Read this document carefully and get used to the operation of the device before you use it. Keep this document within easy reach near the device for consulting in case of doubt.

Mounting, start-up, operating, maintenance and removing from operation must be done by qualified, specially trained staff that have carefully read and understood this manual before starting any work.

The manufacturer will assume no liability or warranty in case of usage for other purpose than the intended one, ignoring this manual, operating by unqualified staff as well as unauthorized modifications to the device. The manufacturer is not liable for any costs or damages incurred at the user or third parties because of the usage or application of this device, in particular in case of improper use of the device, misuse or malfunction of the connection or of the device.

The manufacturer is not liable for misprints.

## 2 Safety

### 2.1 Safety signs and symbols

Warnings are labeled in this document with the followings signs:



**Caution!** This symbol warns of imminent danger, death, serious injuries and significant damage to property at non-observance.



**Attention!** This symbol warns of possible dangers or dangerous situations which can provoke damage to the device or environment at non-observance.



**Note!** This symbol point out processes which can indirectly influence operation or provoke unforeseen reactions at non-observance.

## 2.2 Safety guidelines

This device has been designed and tested in accordance with the safety regulations for electronic devices. However, its trouble-free operation and reliability cannot be guaranteed unless the standard safety measures and special safety advises given in this manual will be adhered to when using the device.

1. Trouble-free operation and reliability of the device can only be guaranteed if the device is not subjected to any other climatic conditions than those stated under "Specification".

If the device is transported from a cold to a warm environment condensation may cause in a failure of the function. In such a case make sure the device temperature has adjusted to the ambient temperature before trying a new start-up.

2. If there is a risk whatsoever involved in running it, the device has to be switched off immediately and to be marked accordingly to avoid re-starting.



**DANGER**

Operator safety may be a risk if:

- there is visible damage to the device
  - the device is not working as specified
  - the device has been stored under unsuitable conditions for a longer time.
- In case of doubt, please return device to manufacturer for repair or maintenance.

3. When connecting the device to other devices the connection has to be designed most thoroughly as internal connections in third-party devices (e.g. connection GND with protective earth) may lead to undesired voltage potentials that can lead to malfunctions or destroying of the GMH 5155 and the connected devices.



**DANGER**

This device must not be run with a defective or damaged power supply unit.  
Danger to life due to electrical shock!

4. Do not use these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury or material damage. Failure to comply with these instructions could result in death or serious injury and material damage.



**DANGER**

5. This device must not be used at potentially explosive areas! The usage of this device at potentially explosive areas increases danger of deflagration, explosion or fire due to sparking.



**DANGER**

## 3 Product Specification

### 3.1 Intended use

Level controller for automatic control of drainage pumps and overflow protection or low liquid level control, automatic filling or emptying of tanks, basins, reservoir and controlling the liquid levels of aquaria, storage tanks, etc. The level controller is suitable for detection of conducting medium (water, etc.). It is less applicable for badly or non-conducting medium (oils or fatty liquids), medium forming conducting foam or medium causing an electrically isolating disposal on the electrodes.

### 3.2 Scope of supply

The scope of supply includes:

- ALSCHU 300 FG or ALSCHU 300 SP
- Operating manual

### 3.3 Accessories (not included in scope of supply)

GMS-3P:	3-pole level sensor
GNS-3P-S:	3-pole level sensor with coating
GSS-1:	Level sensor with 2m cable. Float switch for electrically conducting media.
GNS-1:	Level sensor 2-pole (stainless steel electrodes)
GSAS-1:	Self-adhesive magnetic contact

## 4 Initial operation and function description

### 4.1 Initial operation

Please consider the common rules and safety regulations for electrical systems and low and high voltage installations, especially the customary safety regulations (e.g. VDE 0100).

1. Connect sensors to ALSCHU 300 .. (see chapter 5 "Terminal configuration")
2. Connect the device that should be controlled to the ALSCHU 300 .. (see chapter 5 "Terminal configuration"). Please consider maximal switching power for this.
3. Place the sensors at the desired spot.
4. Connect the power supply to the ALSCHU 300.. (see chapter 5 "Terminal configuration").
5. Switch on the power supply. The LED "Power" lights up.

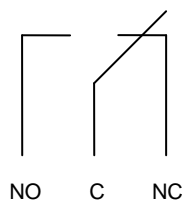
**The device is now ready for operation.**

### 4.2 Operating mode

If a conducting medium (water, etc.) is detected by sensor 1, the LED "Sensor1" lights up. If a conducting medium is detected by sensor 2, the LED "Sensor2" lights up. If both sensors detect a medium, the internal relay switches on and the LED "Relay" lights up. An additional output for the ext. buzzer is turn on for the ALSCHU 300 FG only. If a sensor detects no longer the medium the corresponding LED goes off. The state of relay and acoustic signal is not changed. If both sensors detect no longer the medium, the internal relay switches off. The alarm state of the external buzzer is confirmed via the Set-button (at ALSCHU 300 FG). Additional information can be found in chapter 6.

## 5 Terminal configuration

Pin	ALSCHU 300 SP	Pin	ALSCHU 300 FG
1	Sensor 1	1	Sensor 2
2	GND	2	GND
3	Sensor 2	3	GND
4	Not assigned	4	Sensor 1
5	Not assigned	5	Not assigned
6	Not assigned	6	Ext. buzzer
7	Relay: NC (normally close contact)	7	GND
8	Relay: NO (normally open contact)	8	Relay: NO (normally open contact)
9	Relay: C (input)	9	Relay: C (input)
10	Power supply	10	Relay: NC (normally close contact)
11	Not assigned	11	Power supply
12	Power supply	12	Power supply



## 6 State description

### ALSCHU 300 SP:

State	Input / Output		LEDs			Note		
	Sensor 1	Sensor 2	Relay	Power	Sensor1		Sensor2	Relay
Voltage switched on	not immersed	not immersed	off	on after 2s	off	off	off	
Internal reference monitoring detects error	arbitrary	arbitrary	off	flashes, 1s cycle	off	off	off	Device defective, has to be sent to manufacturer
Normal state without media contact	not immersed	not immersed	off	on	off	off	off	
Electrode 1 gets immersed, detection after 1s	immersed	not immersed	off	on	on	off	off	
Electrode 2 gets immersed, detection after 1s	immersed	immersed	on	on	on	on	on	
Normal state with both electrodes immersed	immersed	immersed	on	on	on	on	on	Electrodes can also be changed, function is the same
Electrode 2 not immersed any more, detection after 1s	immersed	not immersed	on	on	on	off	on	
Electrode 1 not immersed any more, detection after 1s	not immersed	immersed	off	on	off	off	off	

### ALSCHU 300 FG:

State	Input / Output		Relay	ext. buzzer	LEDs			“Set” button	Int. components Note
	Sensor 1	Sensor 2			Power	Sensor1	Sensor2		
Voltage switched on	not immersed	not immersed	off	off	on after 2s	off	off	arbitrary	
Internal reference monitoring detects error	arbitrary	arbitrary	off	off	flashes, 1s cycle	off	off	arbitrary	Device defective, has to be sent to manufacturer
Normal state without media contact	not immersed	not immersed	off	off	on	off	off	arbitrary	
Electrode 1 gets immersed, detection after 1s	immersed	not immersed	off	off	on	on	off	arbitrary	
Electrode 2 gets immersed, detection after 1s	immersed	immersed	on	2 s on / 2 s off	on	on	on	not pressed	
Normal state with both electrodes immersed	immersed	immersed	on	2 s on / 2 s off	on	on	on	not pressed	Electrodes can also be changed, function is the same
Electrode 2 not immersed any more, detection after 1s	immersed	not immersed	on	2 s on / 2 s off	on	on	off	not pressed	
Electrode 1 not immersed any more, detection after 1s	not immersed	immersed	off	off	on	off	off	not pressed	
Alarm deleted	arbitrary	arbitrary	arbitrary	off	on	arbitrary	arbitrary	pressed	

## 7 Specifications

### Housing

Housing type	: ALSCHU 300 FG: field frame for wall mounting ALSCHU 300 SP: snap-on housing for DIN rail mounting
Protection class	: ALSCHU 300 FG: IP65 ALSCHU 300 SP: IP20
Display	: 2 LEDs for switching state and status (supply)

### Ambient conditions

Working temperature	: -20..+60 °C
Storage temperature	: -40..+80 °C
Permitted humidity Feuchte	: < 75 % RH (non condensing)

### Signal input

Number	: 2
Triggering level	: < 80 kΩ
Reaction time	: 2s

### Relay switching output

Number	: 1
Switching voltage	: ≤ 250 V AC
Switching current	: ≤ 5 A (ohmic load)

### External buzzer (only ALSCHU 300 FG)

Voltage	: 8V DC
Frequency	: 3 kHz
Switching current	: ≤ 5 mA (ohmic load)

### Power supply

Permitted voltage	: 18..250 V AC/DC,
Power consumption	: < 2 VA

<b>EMC</b>	: The device corresponds to the essential protection ratings established in the Regulations of the Council for the Approximation of Legislation for the member countries regarding electromagnetic compatibility (2004/108/EG).
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## 8 Reshipment and Disposal

### 8.1 Reshipment



All devices returned to the manufacturer have to be free of any residual of measuring media and/or other hazardous substances. Measuring residuals at housing or sensor may be a risk for persons or environment



Use a adequate transport package for reshipment, especially for fully functional devices. Please make sure that the device is protected in the package by enough packing materials.

### 8.2 Disposal instructions



Batteries must not be disposed in the regular domestic waste but at the designated collecting points.  
The device must not be disposed in the unsorted municipal waste! Send the device directly to us (sufficiently stamped), if it should be disposed. We will dispose the device appropriate and environmentally sound.