




Operating manual
Level switch
conductive

GNS 20E






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



WEEE-Reg.-Nr. DE 93889386

GREISINGER electronic GmbH

D - 93128 Regenstauf, Hans-Sachs-Straße 26

 +49 (0) 9402 / 9383-0  +49 (0) 9402 / 9383-33  info@greisinger.de

Index

1	GENERAL NOTE	2
2	SAFETY	2
2.1	SAFETY SIGNS AND SYMBOLS	2
2.2	SAFETY GUIDELINES	3
3	PRODUCT DESCRIPTION	3
3.1	SCOPE OF SUPPLY	3
3.2	FUNCTIONAL PRINCIPLE	3
3.3	DEVICE DESIGN.....	4
4	MOUNTING	4
4.1	MECHANICAL MOUNTING.....	4
5	CONFIGURATION AND ELECTRIC CONNECTION	5
5.1	ELECTRIC CONNECTION	5
5.2	CONFIGURATION	5
6	SETTING-UP, MAINTENANCE AND REASSEMBLY	5
6.1	SETTING-UP	5
6.2	MAINTENANCE	5
6.3	REASSEMBLY.....	5
7	SPECIFICATIONS	6
7.1	MECHANICAL DESIGN / DIMENSIONS	6
8	RESHIPMENT AND DISPOSAL	6

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.
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 device or connected devices.
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.
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.

3 Product description

Conductive level switches are mainly used to detect level, for full / empty signals of tube or tanks with liquid media and to protect pumps against dry running

3.1 Scope of supply

- Level switch with package
- This manual

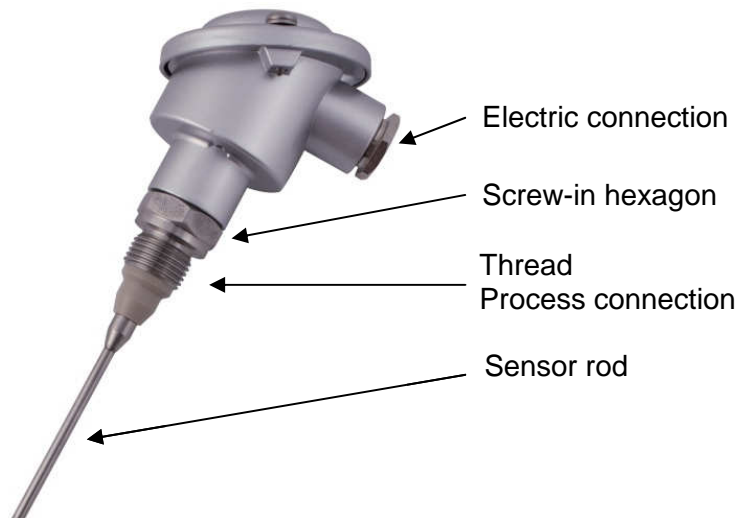
3.2 Functional principle

The GNS 20E is a conductive level switch. It detects the level of liquid media (must not be used in Ex-areas). The measuring principle utilizes a resistance measurement in conducting liquids via AC voltage between the electrodes.



For the measurement 2 electrodes are mandatory. The GNS 20E with one electrode uses the metallic wall of the tank as second electrode.

3.3 Device design



4 Mounting

4.1 Mechanical mounting

Mounting in tubes or tanks.

The device is not suited for abrasive media.



The sensor must not be used as weld-in support. The welding may lead to damage of the electronics.



For correct measuring it is most important that the process connection thread has proper contact to the wall of the tank.

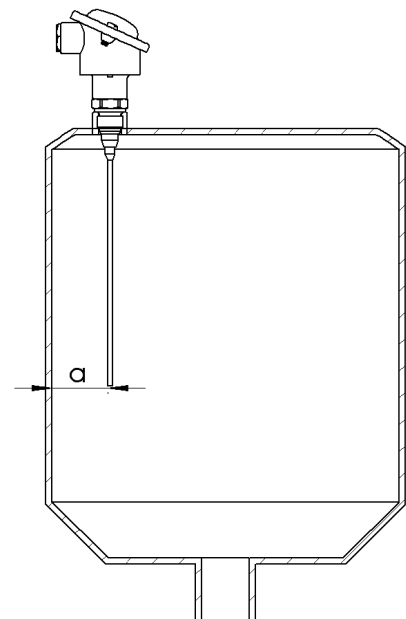
- Please use exclusively the designated screw-in hexagon for tightening or loosening of the sensor, but in no case the connection head. In fast-flowing media the sensor rod must be supported (electrically isolated!).
- The rods can be cut by a usual saw to the desired length (to adjust the switching level).



Please position the sensor as near as possible to the wall of the tank for correct measuring.

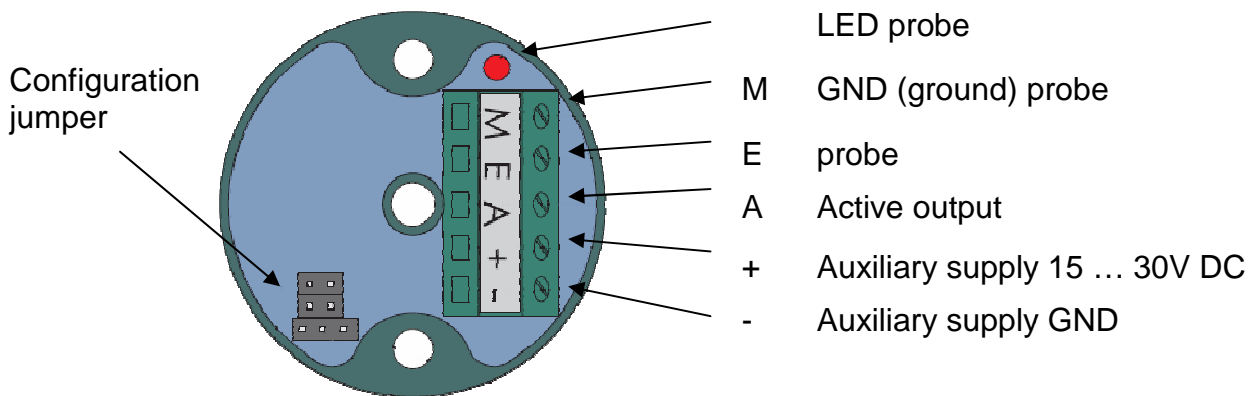
Recommended distances to tank wall

Minimum conductivity of the medium	Distance to tank wall a
25 μS	< 2 cm
100 μS	2-5 cm
500 μS	2-30 cm
>500 μS	10-50 cm

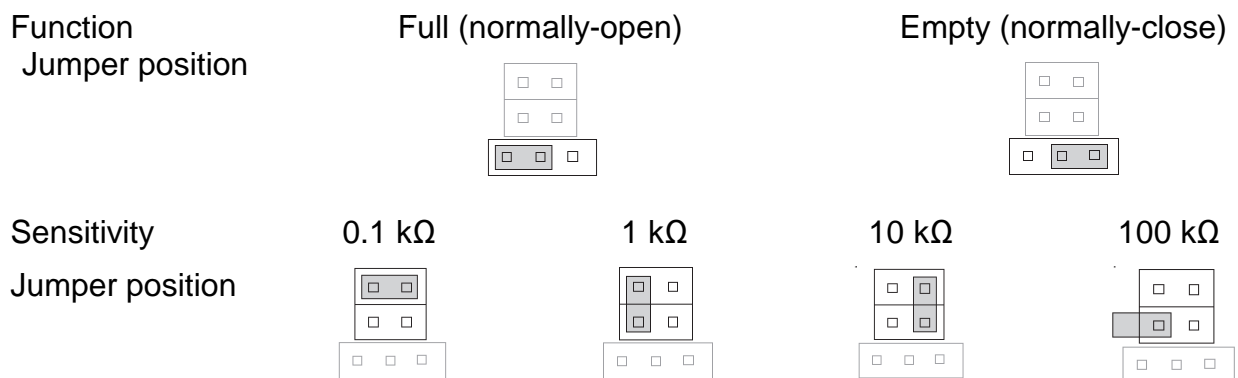


5 Configuration and electric connection

5.1 Electric connection



5.2 Configuration



6 Setting-up, maintenance and reassembly

6.1 Setting-up

- Check the tightness at the muffle
- Make sure that the cable fitting is assembled tightly
- Apply supply voltage
- Set the switching function. Select lowest sensitivity value (0.1 kΩ). See configuration.
- Coat the sensor rod with medium.
- If the output switches the state, the selected sensitivity can be kept. Otherwise the sensitivity has to be gradually increased until the output switches the state.

6.2 Maintenance

Treat device carefully. Use only in accordance with its specification. (do not throw, hit against etc.). Protect from soiling.

Sensor:

Depending on the application the sensor tip might get soiled and thus influencing the measuring result. If the medium is known for strong building of occur, a regular cleaning is recommended. (Mind the material durability!)

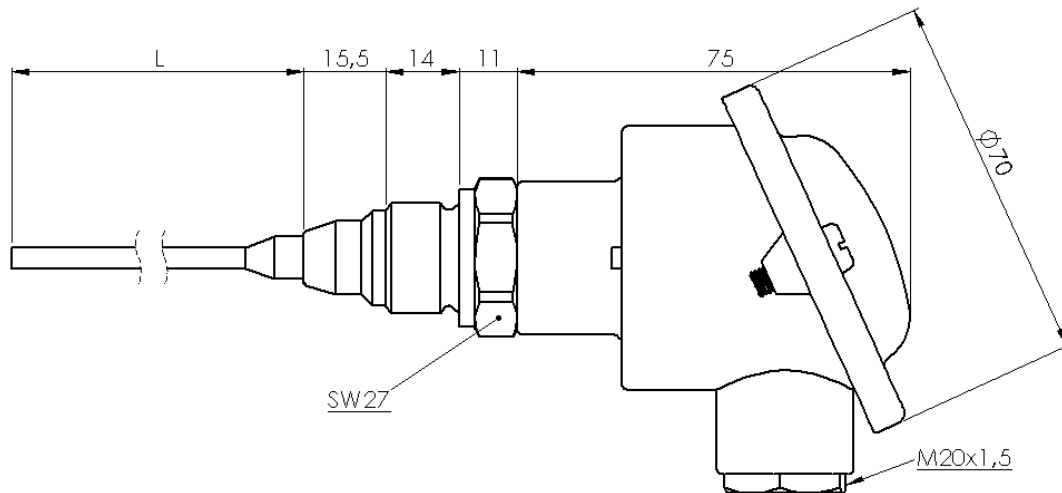
6.3 Reassembly

The sensor should be cleaned carefully and with adequate tools and cleanser after disassembly and before reassembly.

7 Specifications

Connection head	Aluminum DIN B-head
Thread	G ½ (stainless steel)
Electrode	Stainless steel bright GNS20E-200: Ø 4 x 200 mm GNS20E-500: Ø 4 x 500 mm
Electrode connection	2-wire
Sensitivity	0.1, 1, 10, 100 kOhm (selectable via jumpers)
Auxiliary supply	15 ... 36 V DC
Output	Active output
Output voltage	Auxiliary voltage -10 %
Max. output current	50 mA (short-circuit proof)
Switching function	Full / empty status signal (selectable via jumpers)
Delay	0.5 seconds
Operating conditions	-10 ... + 60 °C 0 ... 95 % RH (non condensing)
Storage conditions	-20 ... + 60 °C
Electric connection	Via screw terminals max. wire cross section: 2.5 mm ²
Protection class	IP54
Weight	Approx. 270 g

7.1 Mechanical design / Dimensions



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 an 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



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.