

## Low Level Alarm Electrode NRG 16-11S

### Description

The level electrode NRG 16-11 S is used in conjunction with level switch NRS 1-50 (de-energizing delay: 15 seconds) as water-level limiter for steam boilers and (pressurized) hot-water installations on board of seagoing vessels, mobile offshore platforms or river boats. Water level limiters switch off the heating when the water level falls below the set minimum level (low water).

### Function

When the water level falls below the low level, the level electrode is exposed and a low level alarm is triggered in the level switch NRS 1-50. This switchpoint "Low water level (LW)" is determined by the length of the electrode tip.

After the de-energizing delay has elapsed, the two output contacts of the level switch will open the safety circuit for the heating. The equipment has a factory set default de-energizing delay of 15 seconds to compensate for the movements of the ship.

The electrode operation is based on the conductive measuring principle using the electrical conductivity of the water for signalling water level. The self-monitoring function ensures that an alarm will also be triggered if the electrode insulation is contaminated or has developed a leak or if there is a malfunction in the electrical connection.

The level electrode is installed inside steam boilers, vessels or inlet lines of hot-water systems. The protection tube provided on site ensures the correct functioning.

If the level electrode is installed in an isolatable level pot outside the boiler, make sure that the connecting lines are rinsed regularly. In addition, the logic unit SRL 6-50 is required to monitor the purging times and the purging sequence.

If the connecting lines for steam  $\geq 40$  mm and water  $\geq 100$  mm, the installation is considered to be internal. In this case the rinsing processes do not have to be monitored.

### Technical data

#### Service pressure

NRG 16-11S: 32 bar g @ 238°C

#### End connection

Flange, PN 40, DN 50

#### Materials

Flange 1.0460 C22.8  
Measuring electrode 1.4401, X5CrNiMo17-12-2  
Electrode insulation Gylon  
Terminal box: Polyamid (PA)

#### Lengths available

500 mm	1000 mm
1500 mm	2000 mm

#### Cell constant C

0.13 cm<sup>-1</sup> **with** measuring surface extension  
0.3 cm<sup>-1</sup> **without** measuring surface extension

#### Response sensitivity

10 µS/cm at 25°C, cell constant 0.3 cm<sup>-1</sup>  
0.5 µS/cm at 25°C, cell constant 0.13 cm<sup>-1</sup>

#### Terminal box

Four-pole connector, cable glands M 16 (PG 9)

#### Protection

IP 65 to EN 60529

#### Admissible ambient temperature

Max. 70°C

#### Weight

Approx. 6.0 kg

### Important Notes

To connect the level electrode(s) use screened multi-core control cable with a min. conductor size 0.5 mm<sup>2</sup>, e.g. LiYCY 4 x 0.5 mm<sup>2</sup>.

Max. length 100 m with an electrical conductivity of the boiler water > 10 µS/cm at 25 °C.

Self-monitoring level electrode  
**NRG 16-11S**

**Please note:**

- For the approval of the boiler standpipe the relevant regulations must be considered.
- If installed outdoors the level electrode must be equipped with a GESTRA weather protection cover.

**Order & Enquiry Specification**

GESTRA High integrity self-monitoring low level alarm electrode with routine self-testing, in accordance with TRD 604 and TRD 602

Level electrode type NRG 16-11S

Certification: .....

C-value: .....

Length supplied ..... mm

The following test certificates can be issued on request, at extra cost: In accordance with EN 10204-2.1, -2.2 and -3.1B.

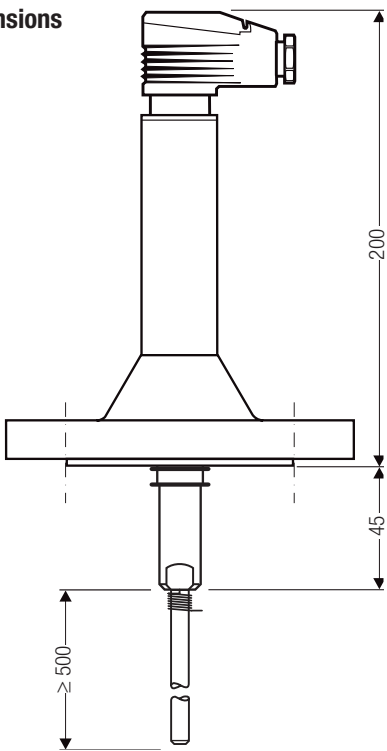
**Accessories**

- Logic unit SRL 6 for monitoring intermittent boiler blow-down in an external level pot
- GESTRA weather protection cover to protect the equipment if it is installed outdoors.

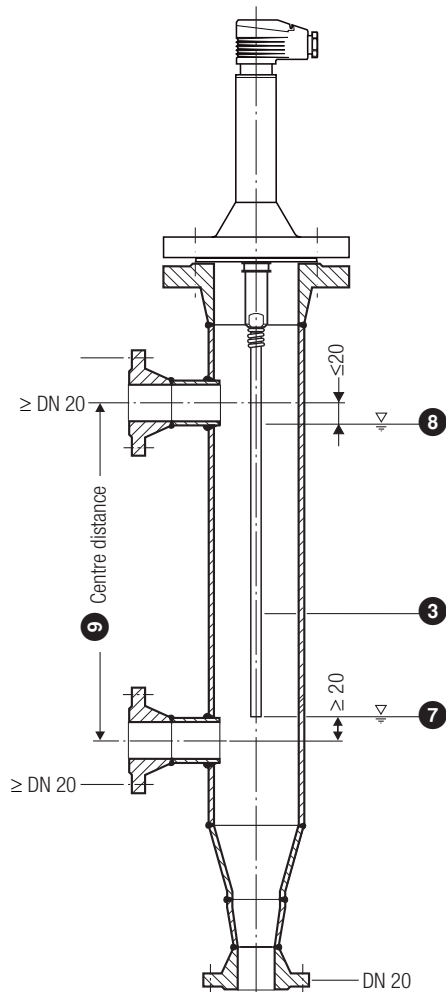
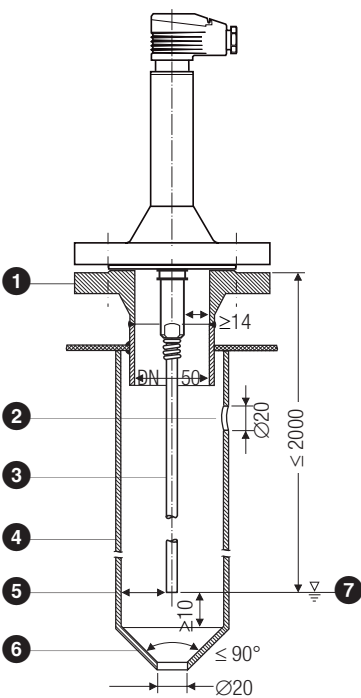
**Key**

- 1 Flange PN 40, DN 50, DIN 2501-1  
For the approval of the boiler standpipe with connecting flange the relevant regulations must be considered.
- 2 Vent hole  
Provide vent hole as close to the boiler wall as possible!
- 3 Electrode rod  $d = 8\text{ mm}$
- 4 Protection tube DN 80
- 5 Electrode distance  $\geq 14\text{ mm}$
- 6 Reducer DIN 2616-2, K-88.9x3.2-42.4x2.6 W
- 7 Low water (LW)
- 8 High water (HW)
- 9 ME = Centre distance

**Dimensions**



**Examples of installation**



Supply in accordance with our general terms of business.

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