

NRG 16-36

## Level Electrode NRG 16-36

### Description

The level electrode NRG 16-36 is used in conjunction with level switch NRS 1-50 as water level limiter for steam boilers and (pressurized) hot-water installations and in conjunction with level switches NRS 1-52 / NRS 1-54 or NRS 1-2 / NRS 1-5 as water level controller.

Water level limiters switch off the heating when the water level falls below the set minimum level (low water).

### Function

The NRG 16-36 is a combination level electrode consisting of 1 electrode tip for low level alarm (LW) and 3 electrode tips for water level control with high level alarm (MAX).

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

The length of the individual electrode rods determines the switchpoints for the respective water levels.

The level electrode is installed inside steam boilers, vessels or in an external level pot. If the electrode is installed inside the boiler or vessel, a protection tube provided on side ensures 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 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

#### Operating pressure

PN 40, 32 bar at 238 °C

#### Mechanical connection

Screwed BSP 1 ½ A, ISO 228-1

#### Materials

Screw-in body 1.4571, X6CrNiMoTi17-12-2

Electrode tips 1.4571, X6CrNiMoTi17-12-2

Electrode insulation Gylon®, PTFE

Spacer disks PTFE

Terminal box 3.2161 G AISi8Cu3

#### Lengths available

500 mm, 1000 mm, 1500 mm

#### Electrical connection

Terminal box made from aluminium, with 2 four pole connector with screw terminals, 2 cable glands Pg 11

#### Protection

IP 65 to EN 60529

#### Ambient temperature

Max. 70 °C

#### Weight

Approx. 4.5 kg (L=1000 mm)

### Application in potentially explosive areas

This device must not be used in potentially explosive areas.

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## Important Notes

### Installation

If installed outdoors the level electrode must be equipped with a GESTRA weather protection cover. The level electrode shall be installed vertically.

### Electrical connection

To connect the level electrode use two multi-core overall screened control cables in separated conduits.

To connect the level tip for low water level (LW) alarm please use:

- For the level switch NRS 1-50 with a response sensitivity of 10  $\mu$ S: Multi-core screened control cable, min. conductor size 0.5 mm<sup>2</sup>, e. g. LiYCY 4 x 0.5 mm<sup>2</sup>, max. length 100 m.
- For the level switch NRS 1-50 with a response sensitivity of 0.5  $\mu$ S: Multi-core double-screened low-capacitance data cable, min. conductor size 0.5 mm<sup>2</sup>, Li2YCY PiMF 2 x 2 x 0.5 mm<sup>2</sup>, max. length 30 m.

To connect the electrode tips 6, 7 and 8 use multi-core screened control cable, min. conductor size 0.5 mm<sup>2</sup>, e. g. LiYCY 5 x 0.5 mm<sup>2</sup>, max. length 100 m.

Connect the screen only once to the central earthing point (CEP) in the control cabinet.

## Order & Enquiry Specification

GESTRA Level electrode type NRG 16-36  
PN ..., connection G 1 1/2, Inspection .....  
Length supplied .....mm

## Key

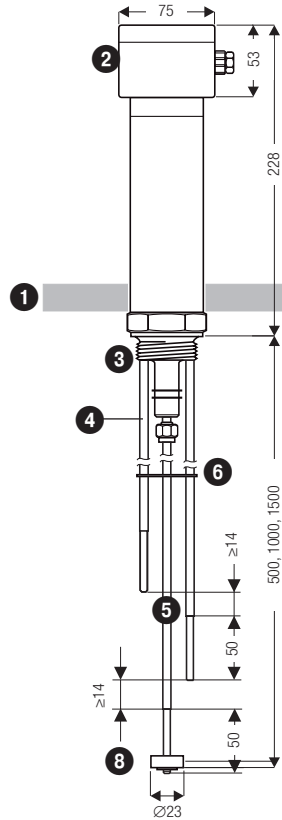
- 1 Thermal insulation, provided on site, d = 20 mm (outside of thermal insulation of steam boiler)
- 2 Terminal box
- 3 Electrode thread BSP 1 1/2 A, ISO 228
- 4 Electrode tips 6, 7 and 8
- 5 Electrode tip for low water (LW)
- 6 Spacer disc
- 7 Measuring surface extension for electrode tips 6, 7, 8
- 8 Measuring surface extension for low water (LW)
- 9 Flange PN 40, DN 50, DIN EN 1092-01
- 10 For the approval of the boiler standpipe with connecting flange the relevant regulations must be considered.
- 11 Vent hole
- 12 Distance between electrode tips and protection tube  $\geq 14$  mm
- 13 Protection tube DN 100
- 14 Low water (LW)
- 15 Reducer DIN 2616-2, K-114.3 x 3.6-48.3 x 2.9 W
- 16 Flange PN 40, DN 100, DIN EN 1092-01
- 17 High water (HW)
- 18 Level pot  $\geq$  DN 80

## Directives and Standards

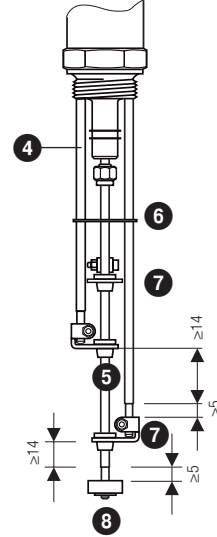
You can find details on the conformity of the equipment and the applicable standards and directives in our Declaration of Conformity and the relevant certificates or approvals.

Supply in accordance with our general terms of business.

## Dimensions NRG 16-36

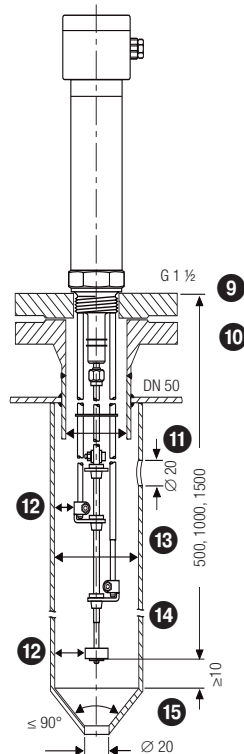


**Fig. 1** NRG 16-36 (dimensions are applicable for conductivity < 10  $\mu$ S/cm / measuring length > 1000 mm)

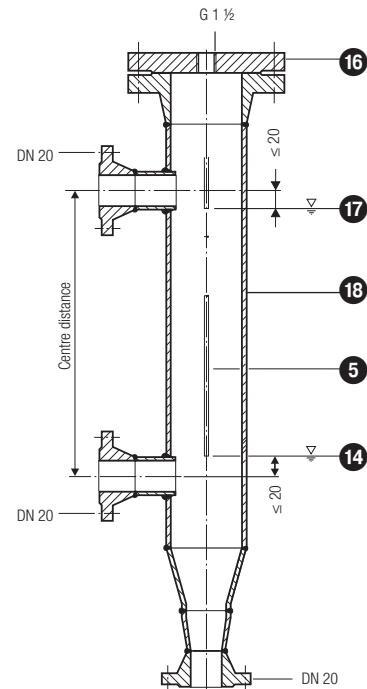


**Fig. 2** NRG 16-36 (dimensions are applicable for conductivity < 10  $\mu$ S/cm / measuring length > 1000 mm)

## Examples of installation



**Fig. 3** Protection tube (provided on site) if electrode is used as internal water-level limiter



**Fig. 4** Level pot if electrode is used as external water level limiter

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