

NRG 10-52, NRG 16-52 with five-pole connector

## Level Electrode

### NRG 10-52

### NRG 16-52

#### Description

The level electrode NRG 10-52 / NRG 16-52 in conjunction with level switch NRS 1-.. is designed for signalling up to four different water levels and used for instance in steam boiler plants and (pressurised) hot-water installations or in condensate and feedwater tanks, e. g. as water level limiter with MIN/MAX alarm.

The level electrode can be used in combination with the following level switches: NRS 1-52, NRS 1-53, NRS 1-54 and NRS 1-55 or NRS 1-1, NRS 1-2, NRS 1-3 and NRS 1-5.

#### Function

The electrode operation is based on the conductive measuring principle using the electrical conductivity of the water for signalling water level.

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.

The level electrode NRG 16-52 can be installed together with one GESTRA level electrode for water level limiting or for high-level alarm in a single protection tube or external level pot.

#### Directives and standards

##### VdTÜV Bulletin "Wasserstand 100" (= Water Level 100)

The level electrode NRG 10-52, NRG 16-52 in conjunction with the following level switches is type approved according to VdTÜV Bulletin "Wasserstand 100": NRS 1-52, NRS 1-53, NRS 1-54 and NRS 1-55 or NRS 1-1, NRS 1-2, NRS 1-3 and NRS 1-5.

The VdTÜV Bulletin "Wasserstand (=Water Level) 100" specifies the requirements made on water level control and limiting equipment for boilers.

##### ATEX (Atmosphère Explosible)

The equipment is a simple item of electrical equipment according to EN 60079-11 paragraph 5.7.

According to the European Directive 94/9/EC the equipment must be equipped with approved Zener barriers if used in potentially explosive areas. Applicable in Ex zones 1, 2 (1999/92/EC). The equipment does not bear an Ex marking.

The suitability of the Zener barriers is certified in a separate wiring diagram provided by the manufacturer.

##### UL/cUL (CSA) Approval

The equipment complies with the requirements of the following standards: UL 508 and CSA C22.2 No. 14-13, Standards for Industrial Control Equipment. File E243189.

#### Technical Data

##### Operating pressure

NRG 10-52: PN 6, 6 bar at 164 °C  
NRG 16-52: PN 40, 32 bar at 238 °C

##### Mechanical connection

Screwed G 1 A, ISO 228

##### Materials

Screw-in body 1.4571, X6CrNiMoTi17-12-2  
Electrode tips 1.4571, X6CrNiMoTi17-12-2  
Insulation, spacer disks PTFE  
Five-pole connector 3.2161 G AISi8Cu3

##### Lengths available

1000 mm, 1500 mm

##### Electrical connection

Five-pole connectors, cable gland Pg 11

##### Protection

IP 65 to EN 60529

##### Ambient temperature

Max. 70 °C

##### Weight

Approx. 1.6 kg (NRG 16-52 L = 1000 mm)

##### Approvals

TÜV type approvals acc. to VdTÜV Bulletin "Wasserstand 100": Requirements made on water level limiting & control equipment.  
Type approval no. TÜV - WR / WB - 08-302; 10-424 (see name plate)

#### Important Notes

##### Installation

One level electrode NRG 10-52 / NRG 16-52 can be installed together with one GESTRA level electrode, one compact level switch or transmitter in a single protection tube or external level pot (inside diameter 100 mm). If the level limiting electrode is installed inside the vessel, it must be at least 40 mm away from the upper vent hole.

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(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>.

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

## Level Electrode

### NRG 10-52

### NRG 16-52

#### Order & Enquiry Specification

GESTRA Level electrode type NRG 1-52  
 PN ..., connection G 1", inspection .....  
 Length supplied .....mm

#### Key

- 1 Thermal insulation, provided on site, d = 20 mm (outside of thermal insulation of steam boiler)
- 2 Electrode thread G 1 A, ISO 228
- 4 Flange PN 40, DN 50, DIN EN 1092-01  
Flange PN 40, DN 100, DIN EN 1092-01
- 5 For the approval of the boiler standpipe with connecting flange the relevant regulations must be considered.
- 6 Vent hole
- 7 Distance between electrode rods and protection tube  $\geq 14$  mm
- 8 High water (HW)
- 9 Electrode rods  $\varnothing = 5$  mm
- 10 Protection tube  $\geq$  DN 80
- 11 Low water LW
- 12 Reducer DIN 2616-2, K-88.9x3.2-42.4 x 2.6 W
- 13 Level pot  $\geq$  DN 80

#### Dimensions NRG 10-52, NRG 16-52

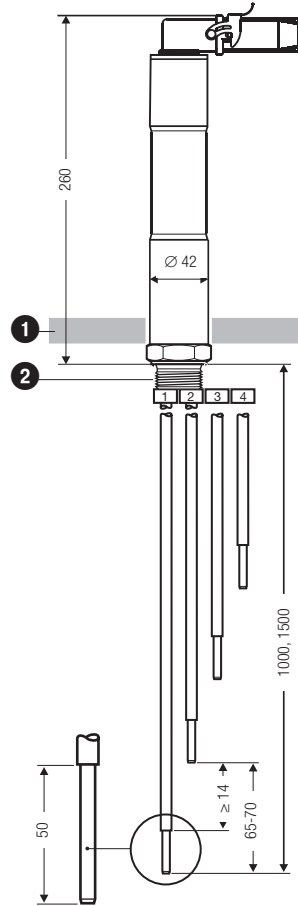


Fig. 1 NRG 10-52, NRG 16-52

#### Examples of installation

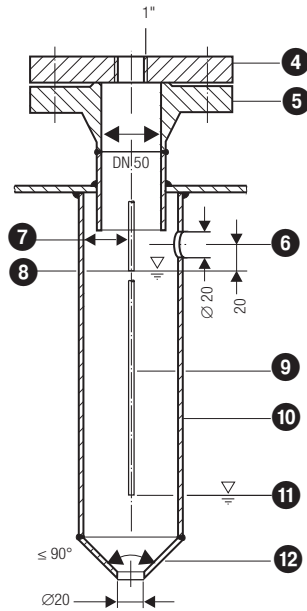


Fig. 2 Protection tube (provided on site) for installation inside the boiler

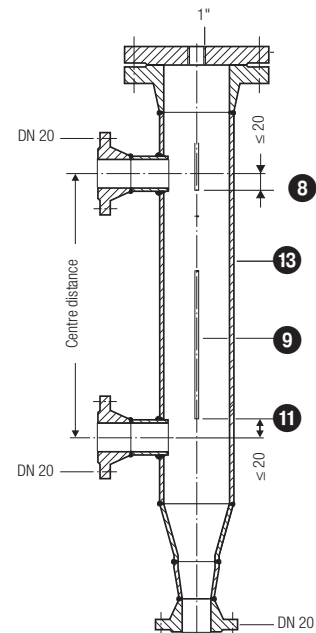


Fig. 3 Level pot DN 80 for external installation

Supply in accordance with our general terms of business.

## GESTRA AG

P. O. Box 10 54 60, D-28054 Bremen  
 Münchener Str. 77, D-28215 Bremen  
 Tel. 0049 (0) 421 35 03-0, Fax 0049 (0) 421 35 03-393  
 E-mail gestra.ag@flowserve.com, Web www.gestra.com



GESTRA