

Level Monitoring with CAN-DeviceNet NRG 16-42 D

Issue Date: 12/99

System Description

The level electrode type NRG 16-42 D works according to the conductivity measurement principle. With the NRG 16-42 D a maximum of 4 levels can be signalled in conductive liquids:

- 4 Levels with one switchpoint each

Use level electrode NRG 16-42 D in combination with CAN-Bus DeviceNet. The level data are transferred to an external process automation unit by the DeviceNet protocol.

Application

The NRG 16-42 D is designed to detect and signal different levels in conductive liquids. It is appropriate for use in the power supply, water and chemical industries and particularly suitable for applications in steam boilers and feedwater tanks.

Max. Pressure/Temperature Rating

32 barg / 238 °C

Design

- NRG 16-42 screwed 1" BSP, DIN ISO 228

Functioning

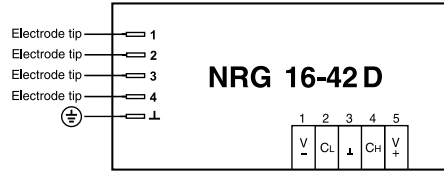
The conductivity of the liquid is used to signal the liquid level. Some liquids are conductive, which means that they allow an electric current to flow through them. For the safe functioning of this device a minimum conductivity of the liquid to be measured is required.

The conductivity measurement method can detect two conditions: electrode rod submerged or exposed, meaning switchpoint reached (or exceeded) or not yet reached. Before installation, the length of the electrode rod must be cut to the required switching levels, e.g. for max./min. alarm, controlling of a valve or pump.

CAN-Bus – DeviceNet

The CAN bus used for the level electrode NRG 16-42 D is based on the DeviceNet protocol. For more details about the configuration refer to the attached "Electronic Data Sheet" and "Application Objects".

Wiring Diagram



Technical Data

Type approval n°

This product has been tested by ODVA's authorized Independent Test Lab and found to comply with ODVA Conformance Test Software version 2.0

Max. service pressure

32 barg at 238 °C

Connections

Screwed 1" BSP, DIN ISO 228
Flanged DN 50, PN 40, DIN 2635

Materials

Enclosure:
Die cast aluminium 3.2161 (G AlSi8Cu3)
Body: S. S. 1.4571 (CrNiMoTi 17 12 2)
Flange: Forged steel 1.0460 (C 22.8)
Measuring electrodes:
S. S. 1.4571 (CrNiMoTi 17 12 2)
Electrode insulation: PTFE
Spacer disc: PTFE

Lengths supplied

500 mm
1000 mm
1500 mm

Supply voltage

18 – 28 V DC

Current consumption

65 mA

Fuse

Thermal fuse $T_{max} = 80\text{ °C}$

Electrode voltage

10 V_{SS}

Data exchange

CAN bus to DIN 11898
DeviceNet® protocol

Cable entry

Cable gland with integral cable clamp
1 x PG 16

Protection

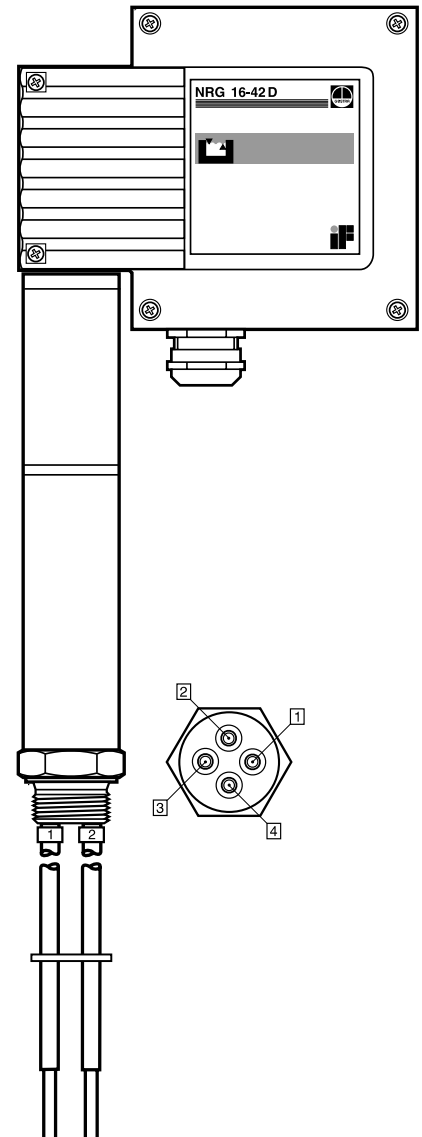
IP 65 to DIN 40050

Max. admissible ambient temperature

70 °C

Weight

approx. 2.5 kg



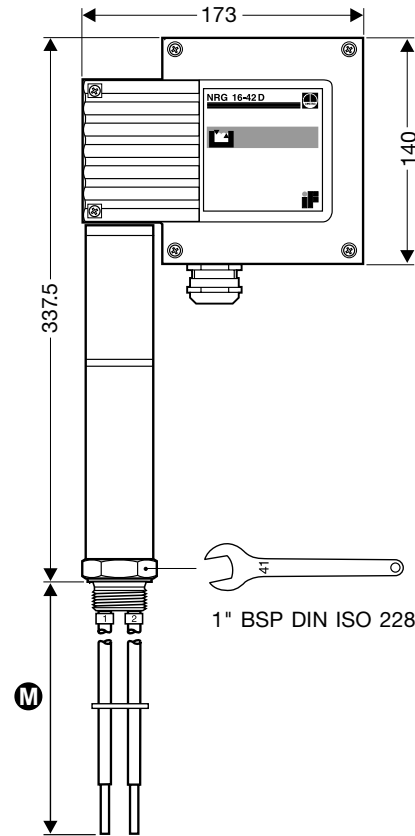
Important Note

When installing the level electrode in hot-water or steam boilers observe the relevant safety regulations.

Order and Enquiry Specification

GESTRA Level electrode type NRG 16-42 D

Dimensions



MAX 70°C

MAX 95%

IP 65

CE

Fig. 1 NRG 16-42 D

- A** Flange PN 40, DN 50, DIN 2527
Flange PN 40, DN 100, DIN 2527
- B** For the approval of the boiler stand-pipe with connecting flange the relevant regulations must be considered
- C** Vent hole
- D** High water (HW)
- E** Electrode rod $d = 5 \text{ mm}$
- F** Protection tube $\geq \text{DN } 100$
- G** Electrode distance
- H** Low water (LW)
- I** Reducer K-88.9 x 3.2 - 42.4 x 2.6 W
- M** Lengths supplied:
500 mm
1000 mm
1500 mm

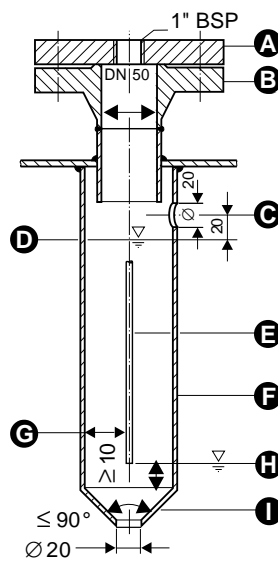


Fig. 2 Protection tube for installation of electrode inside the boiler

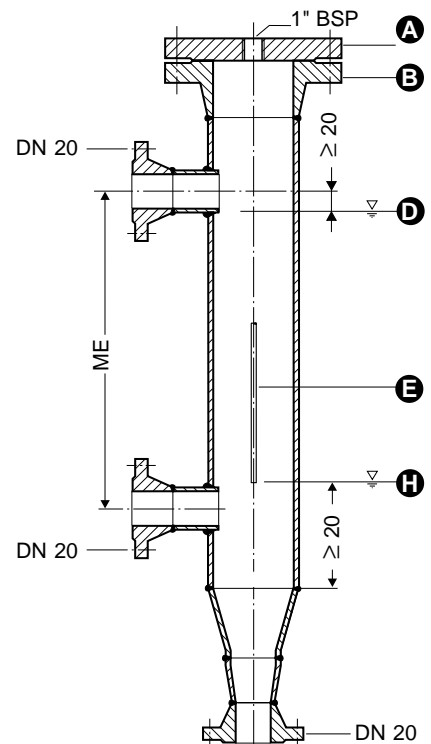


Fig. 3 External measuring pot

Supply in accordance with our general terms of business.