

**Level Monitoring with CAN-DeviceNet
NRG 26-40 D**

Issue Date: 12/99

System Description

The level electrode NRG 26-40 D works according to the capacitance measurement principle. The NRG 26-40 D is used for signalling different levels in conductive and non-conductive liquids:

- Level always within defined measuring range of electrode.

The level electrode NRG 26-40 D works in combination with the CAN-bus. The level data are transferred to an external process automation unit by the CAN bus.

Application

The NRG 26-40 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

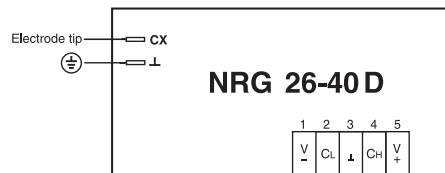
- NRG 26-40 D screwed 3/4" BSP, DIN ISO 228

Functioning

The principle of capacitance measurement is applied to determine level. The electrode rod and the vessel wall form the respective plates of a capacitor. The electrode rod is completely insulated, forming the dielectric of the capacitor. A conductive liquid is considered to be part of one of the capacitor plates – viz. the vessel wall. Varying the liquid level has the effect of proportionately varying the size of one of the plates of the capacitor, and hence the capacitance value of the installation. In the case of a non-conductive liquid, the capacitor plates remain of fixed dimension, and the dielectric itself varies. Variations in liquid level therefore have the effect of proportionate changes in the capacitance of the installation. After calibration of the installed electrode to establish the set point and/or measuring range (0 %/100 %), the level can be read from a remote display unit. The level measuring range can be changed during operation.

CAN-Bus – DeviceNet

The CAN bus used for the level electrode NRG 26-40 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 3/4" BSP, DIN ISO 228
Flanged DN 50 mm, PN 40, DIN 2635

Materials

Enclosure:
Die cast aluminium 3.2161 (G AlSi8Cu3)
Body: S. S. 1.4571 (CrNiMoTi 17 12 2)
Measuring electrodes:
S. S. 1.4571 (CrNiMoTi 17 12 2)
Electrode insulation: PTFE

Supply voltage

18 – 28 V DC

Current consumption

65 mA

Fuse

 Thermal fuse $T_{max} = 80 °C$
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

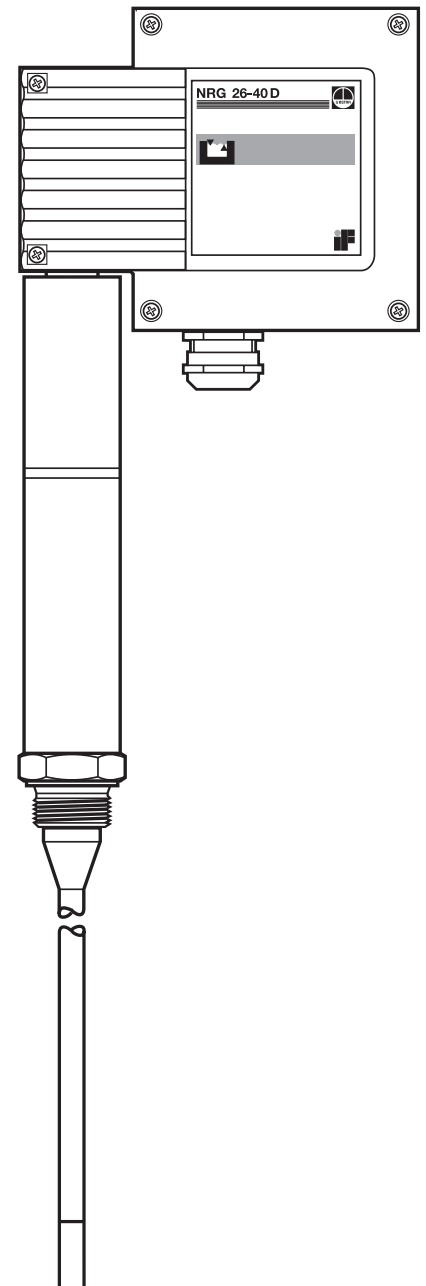
IP 65 to DIN 40050

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 NRS 26-40 D

Dimensions

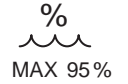
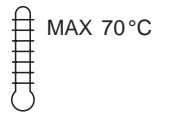
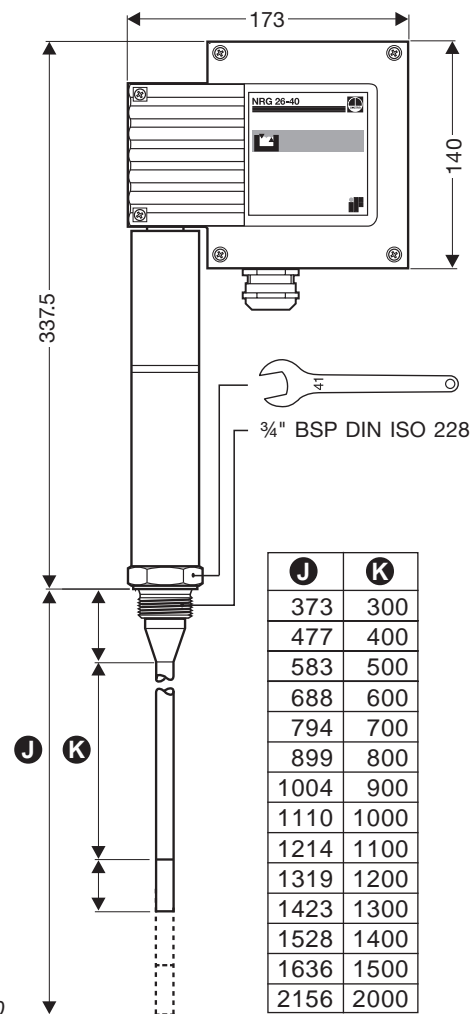


Fig. 1 NRG 26-40

- 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 $d = 15$ mm
- F** Protection tube \geq DN 100
- G** Electrode distance
- H** Low water (LW)
- I** Reducer K-88.9 x 3.2 - 42.4 x 2.6 W
- J** Max. length of installation at 238 °C
- K** Effective measuring range

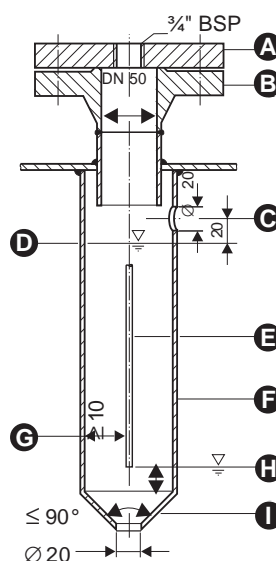


Fig. 2 Protection tube for installation of electrode inside the boiler

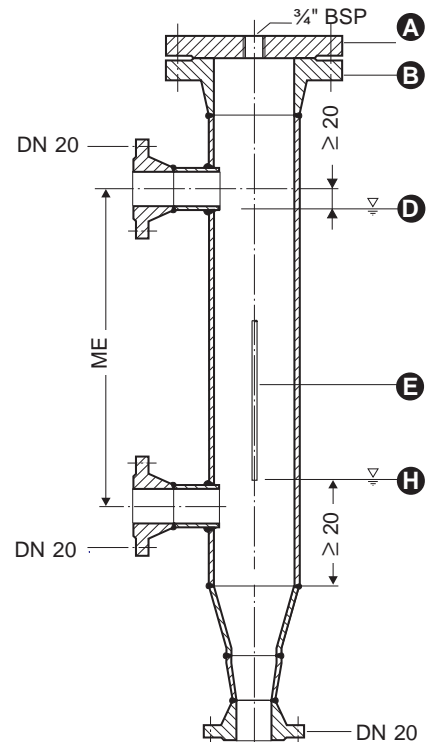


Fig. 3 External measuring pot

Supply in accordance with our general terms of business.