

NRGT 26-2

NRGT 26-2s

Level Transmitter

NRGT 26-2 NRGT 26-2s

System description

Use as a water level controller

NRGT 26-2 and NRGT 26-2s level transmitters can be used to continually measure the water level in pressurised steam and hot-water plants, or in condensate and feedwater tanks. The calibrated measuring range from 0 % to 100 % constitutes the linear profile of the 4-20 mA current output.

- The transmitter's secure 4-20 mA actual value output (SIL 2) can be used with a suitable level controller, as a water level controller with MIN/MAX alarm, for example.
- The level transmitters are installed on the inside of pressurised steam plants, tanks or feed lines of pressurised hot-water plants. A protective tube provided on site ensures reliable function.
- A capacitive NRGT 26-2 or NRGT 26-2s level transmitter and a conductive NRG 1x-60 or NRG 1x-61 level electrode can be installed in the same protective tube or level pot.

Influence of the fluid to be monitored

NRGT 26-2 and NRGT 26-2s level transmitters can be used in fluids with different conductivity. However, a conductivity of less than 100 $\mu\text{S}/\text{cm}$ has a major influence on the measured capacitance, which is why recalibration of the measuring range at the operating point and after a cold start is extremely important.

To achieve the best possible reproducibility and maintain high-quality measurements (see "Technical data"), the sensor must be installed in a protective tube.

Function

Transmitter function

The transmitter function is the ability of the electrode to provide a scalable measuring range on the 4-20 mA current output interface and to make this available to one or more recipients for analysis.

The level transmitters do not have any controlling or limiting functions.

Behaviour in normal operation (no faults) *

The display shows the scaled level reading (3 digits + 1 decimal place), e.g. 050.3, and converts the level data into a level-dependent current signal from 4-20 mA.

Behaviour in the event of malfunctions *

The error state or malfunction is permanently shown on the display by a fault code, e.g. E.005.

Every time there is a fault, 0 mA is displayed via the current output.

Setting parameters and changing factory settings

You can set parameters and change factory settings using a rotary knob on the terminal box.

Display and signals

NRGT 26-2 and NRGT 26-2s level transmitters feature a green 4-digit, 7-segment display for showing readings, status information and fault codes. The operating status is indicated by a red and green LED.

Technical data

Model and mechanical connection

- NRGT 26-2: Thread G $\frac{3}{4}$ A, EN ISO 228-1
- NRGT 26-2s: Flange DN 50, PN 40, DIN 1092-01

Nominal pressure rating, admissible service pressure and temperature

- NRGT 26-2, NRGT 26-2s: PN 40, 32 bar (g) at 238 °C

Materials

- Terminal box: 3.2581 G AISI12, powder-coated
- Sheath: 1.4301 X5 CrNi 18-10
- Electrode rod insulation: PTFE
- Screw-in body: 1.4571, X6CrNiMoTi17-12-2
- NRGT 26-2s:
 - ◆ Flange 1.0460 P250GH
 - ◆ Spacer disc PTFE

Max. electrode length at 238 °C, all measurements in mm

- See "How to order", tables in Fig. 1, Fig. 2
- Do **not shorten** the electrode rod.

Measurement quality

The information below applies to a compensated fluid conductivity range from 100 – 10000 $\mu\text{S}/\text{cm}$ based on 25 °C.

- Reading error: +/- 1 % of set measuring range at the operating point
- Resolution of reading on display: 0.1 %
- Resolution for internal processing: 15 bits with plus or minus sign (16 bits)
- Resolution of 4-20 mA output: 15 bits equivalent to 0.49 $\mu\text{A}/\text{digit}$

Supply voltage

- 24 V DC +/- 20 %

Power consumption

- Max. 7 VA

Current input

- Max. 0.3 A

Internal fuse

- T2A

Safety cutout at excessive ambient temperature

- The cutout takes place at an excessive ambient temperature of $T_{\text{amb.}} = 75 \text{ °C}$

Analogue output

- 1 x actual value output 4 - 20 mA, proportional to level, galvanically isolated
- Maximum output load 500 Ω
- M12 connector, 5-pole, A-coded

Indicators and controls

- 1 x green 4-digit, 7-segment display for showing status information
- 1 x red LED for indicating an error state
- 1 x green LED for indicating an OK state
- 1 x rotary knob IP65 with button for menu navigation and test function

Protection class

- III Safety Extra Low Voltage (SELV)

IP rating to EN 60529

- IP 65

Admissible ambient conditions

- Service temperature: 0 °C - 70 °C
- Storage temperature: - 40 °C - 80 °C
- Transport temperature: - 40 °C - 80 °C
- Air humidity: 10 % - 95 % (non-condensing)

Weight (dependent on length of electrode)

- NRGT 26-2
approx. 1.8 kg (with 300 mm measuring range)
- NRGT 26-2s
approx. 5.9 kg (with 275 mm measuring range)

Admissible installation positions

- Vertical
- Oblique to a maximum inclination of 45°. In this case, the length of the electrode rod is limited to 688 mm maximum.

Applicable directives:

NRGT 26-2 and NRGT 26-2s level transmitters have been tested and approved for use in the scope governed by the following directives and standards:

- Directive 2014/68/EU EU Pressure Equipment Directive
- Directive 2014/35/EU Low Voltage Directive
- Directive 2014/30/EU EMC Directive
- Directive 2011/65/EU RoHS II Directive

Notes for planning

Installation

If a level transmitter is installed outside the boiler in a level pot that can be shut off, the connecting pipes must be flushed regularly.

If the steam pipe is ≥ 40 mm and the water pipe is ≥ 100 mm, installation is regarded as internal. In this case, upstream monitoring of flushing processes can be dispensed with.

Electrical connection

Use a shielded, multi-core control cable with a minimum conductor size of 0.5 mm², e.g. LiYCY 4 x 0.5 mm².

Pre-wired control cables (with plug and coupling) are available as accessories in various lengths.

The NRGT 26-2 or NRGT 26-2s level transmitter is supplied with 24 V DC.

A safety power supply unit that delivers a Safety Extra Low Voltage (SELV) and is isolated from connected loads must be used to supply the equipment with 24 V DC.

Connecting the actual value output (4 - 20 mA)

Please note the maximum output load of 500 Ω .

Maximum cable length = 100 m.

How to order:

Level transmitter 26-2

Type: NRGT 26-2 Stock code: 34820.. xx

A = electrode length (mm) B = measuring range (mm)		xx
A	B	
373	300	40
477	400	41
583	500	42
688	600	43
794	700	44
899	800	45
1004	900	46
1110	1000	47
1214	1100	48
1319	1200	49
1423	1300	50
1528	1400	51
1636	1500	52
2156	2000	53

Fig. 1

How to order:

Level transmitter 26-2s

Type: NRGT 26-2s Stock code: 32120.. xx

A = electrode length (mm) B = measuring range (mm)		xx
A	B	
316	275	52
420	375	53
526	475	54
631	575	55
737	675	56
842	775	57
947	875	58
1053	975	59
1157	1075	60
1262	1175	61
1366	1275	62
1471	1375	63
1579	1475	64
2099	1975	65

Fig. 2

Additional modules of the NRGT 26-2 and NRGT 26-2s:

- Level switch: NRS 2-50, NRS 2-51
- Level controller: NRR 2-50 or NRR 2-52 with URB 50
- Pump control unit: NRSP 1-51, NRSP 2-51, NRSP 2-52
- Universal controller: KS 92-1w
- Power supply unit: SITOP PSU100C 24V/0.6A

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Dimensions of NRGT 26-2

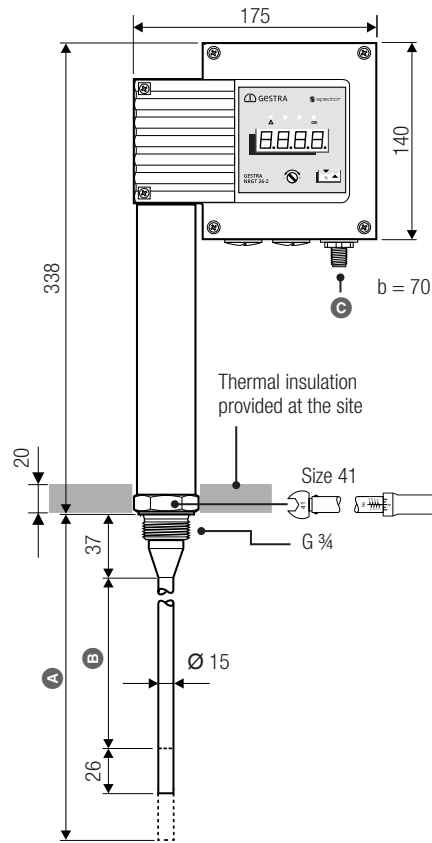


Fig. 3 **A** Maximum electrode length at 238 °C
 B Measuring range
 see table Fig. 1

Dimensions of NRGT 26-2s

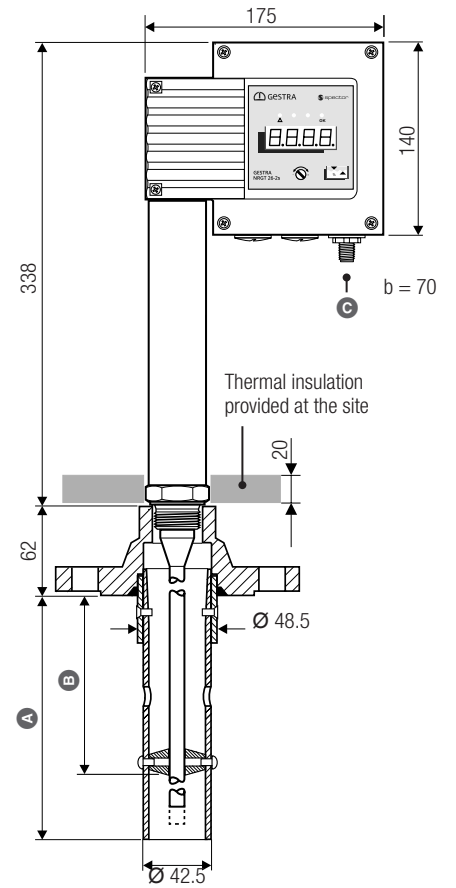


Fig. 4 **A** Maximum electrode length at 238 °C
 B Measuring range
 see table Fig. 2

Connections

- C** M12 connector, 5-pole, A-coded

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