

GESTRA Steam Systems

Product Range B1

Level Switch NRS 1-2b

NRS 1-2

Description

Level switch for indicating one high and one low liquid level (MIN alarm, MAX alarm), designed for use with GESTRA level electrodes NRG 16-4, ER 50 and ER 56. Application in steam and (pressurised) hot water plants according to TRD 602 and TRD 604, sheet 1 and sheet 2.

Function

The level switch NRS 1-2 has one channel and is designed for signalling one MAX and one MIN alarm. The level switch has a manual test function. The button "TEST LW" can simulate a malfunction in the level electrode. As a precaution in case of a power failure the normally closed contacts will trigger an alarm. The level switch features the following four operating modes:

- Normal operation (no running dry, no high water)
- MIN alarm (running dry)
- MAX alarm (high water)
- Alarm (malfunction in level switch or level electrode)

Two red LEDs indicate low water (LW), high water (HW) or system error alarm.

Technical Data

Approval no.

TÜV · WR/WB · 03-302

Note:

TÜV · WR/... for NRS 1-1, 1-2, 1-5,
TÜV.../WB... for NRS 1-3;

The type approval allows the combination of a water level controller and a water level limiter in conjunction with the associated level electrodes.

Input

Three connections for two electrode rods and earth

Output

Two volt-free relay contacts,
contact rating 250 V, 500 W, 3 A resistive with a service life of 4×10^5 switching cycles or
0.35 A inductive with 2×10^6 switching cycles.

Contact material: silver, hard-gold plated

Sensitivity of response

10 μ S/cm (other settings available on request)

Electrode voltage

11 V AC (free of DC)

Indicators and adjustors

1 LED for MAX alarm, 1 LED for MIN alarm, 1 button for simulating a MIN alarm

Mains voltage

24 V, 110 V, 120 V, 220 V, 240 V, 50 to 100 Hz
(please indicate voltage when ordering).

When using the ancillary unit URN 1 the equipment can also be supplied with 24 V DC.

Power consumption

Approx. 3.5 VA

Protection

IP 40

Admissible ambient temperature

0 °C to 50 °C

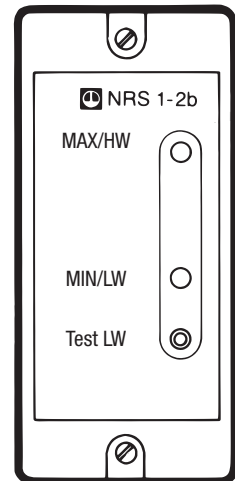
Housing material

Base: Noryl SE 1-GFN 2 UL 94 VO, black

Cover: R-ABS UL 94 VO, light grey

Weight

Approx. 0.8 kg



NRS 1-2b

Level Switch NRS 1-2b

Important Notes

Recommended cable for wiring to the electrode(s):
Screened cable, e.g. I-Y (St) Y 2 x 2 x 0.8 or LIYCY
4 x 0.5 mm², max. cable length 100 m.

When mounting the electrode(s) into steam or pres-
surized hot water boilers the relevant regulations must
be considered.

Order and Enquiry Specifications

GESTRA level switch for signalling one high level and
one low level (MAX and MIN alarms):

Level controller type NRS 1-2b, plug-in unit in plastic
case for installation in control cabinets

Mains supply V

Associated Equipment

- Multiple level-control electrodes type ER 5... with
three electrode tips and a common earth tip.
- Level electrode NRG 16-4 with one electrode rod
- Level switch NRS 1-1b as water level controller with
MIN alarm.

ATEX (Atmosphère Explosible)

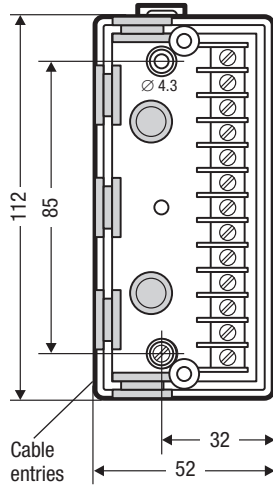
The equipment constitutes a simple item of electrical
equipment as defined in DIN EN 50020 section 5.4. Accord-
ing to the European Directive ATEX 94/9/EC the equipment
may only be used in potentially explosive atmospheres if
it is provided with approved Zener barriers.

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 document.

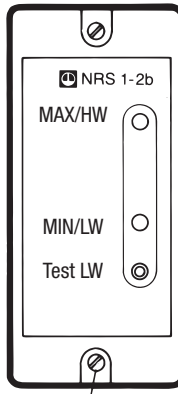
Supply in accordance with our general terms
of business.

Dimensions

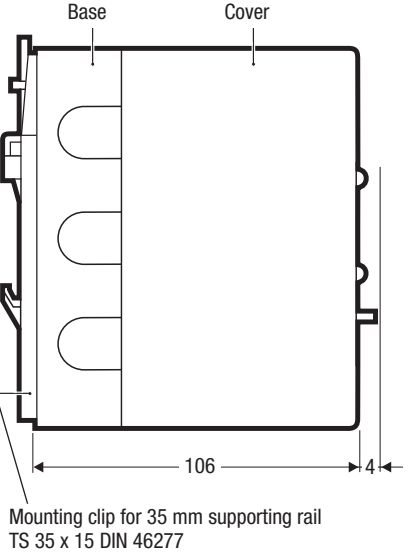
Base with terminals



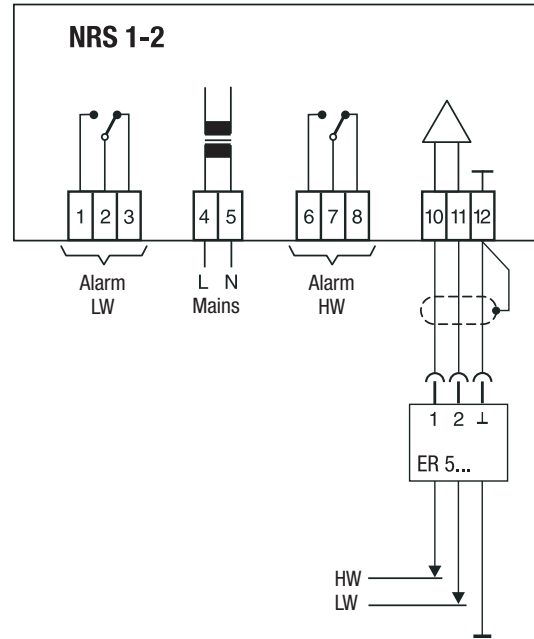
Front view



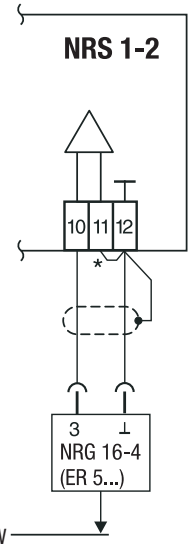
Side view



Wiring Diagram



Drawn position of contacts:
relays deenergized, i.e. alarm



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