

GESTRA Steam Systems

URS 2

EN
English

Installation Instructions 818869-01

Limit Switch URS 2

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Important Notes

Usage for the intended purpose

Use limit switch URS 2 only for signalling limits based on the 0/-20 mA input.

Safety note

The equipment must only be installed and commissioned by qualified and competent staff. Retrofitting- and maintenance work must only be performed by qualified staff who – through adequate training – have achieved a recognised level of competence.



Danger

The terminal strips of the URS 2 are live during operation.

This presents the risk of severe cases of electric shock!

Cut off power supply before mounting or removing the terminal strips and the housing cover.



Attention

The name plate specifies the technical features of the equipment. Note that any piece of equipment without its specific name plate must neither be commissioned nor operated.

ATEX (Atmosphère Explosible)

According to the the European Directive 94/9/EC the equipment must not be used in potentially explosive areas.

Note on the Declaration of Conformity / Declaration by the Manufacturer **CE**

For details on the conformity of our equipment according to the European Directives see our Declaration of Conformity or our Declaration of Manufacturer.

The current Declaration of Conformity / Declaration of Manufacturer are available in the Internet under www.gestra.en/documents or can be requested from us.

Explanatory Notes

Scope of supply

URS 2

1 Limit switch URS 2

1 Installation manual

Explanatory Notes - continued -

Description

Universal signalling of two limits for MIN/MAX alarm based on 0/-20 mA input. The equipment is connected to a measuring sensor with current output 0 - 20 mA or 4 - 20 mA.

Application for instance in combination with GESTRA level transmitter NRT 2-1b, continuous blowdown controller LRR 1-5b und conductivity transmitter LRT 1-5b, LRT 1-6b or level monitoring system NRG 26-1 and conductivity monitoring system LRGT 16-1, LRGT 16-2.

Function

In the URS 2 a MIN switchpoint and a MAX switchpoint are assigned by means of a rotary potentiometer to the 0/-20 mA output signal coming from an external measuring sensor. Once the current output signal of the external device reaches the MIN/MAX switchpoint adjusted in the URS 2, the red LED signals ALARM and the MAX or MIN relay contact in the URS 2 is energized.

- MIN alarm (according to the selected 0/-20 mA signal)
- Normal operation
- MAX alarm (according to the selected 0/-20 mA signal)

Two adjustment knobs for setting the MIN and MAX switchpoints.

Two red LEDs signal MIN and MAX alarm.

System components

NRT 2-1

Level transmitter **NRT 2-1**

LRR 1-5

Continuous blowdown controller **LRR 1-5**

LRR 1-6

Continuous blowdown controller **LRR 1-6**

LRT 1-5

Conductivity transmitter **LRT 1-5**

LRT 1-6

Conductivity transmitter **LRT 1-6**

NRGT 26-1

Level monitoring system **NRGT 26-1**

LRGT 16-1

Conductivity monitoring system **LRGT 16-1**

LRGT 16-2

Conductivity monitoring system **LRGT 16-2**

Design

URS 2

Plug-in unit in plastic case for installation in control cabinets. The terminals are accessible after removing the cover from its base. Thanks to the code plug the equipment cannot be connected inadvertently to wrong GESTRA equipment. The equipment may be clipped onto a 35 mm supporting rail or screwed into position on a mounting panel.

Technical Data

URS 2

Input

For measuring sensor with current output 0 to 20 mA (with external wire link for 4 to 20 mA), input resistance 100 Ω .

Output

2 volt-free relay contacts,
contact rating 250 V, 500 W, 3 A resistive with a life of 4×10^5 switching cycles or
0.35 A inductive at 2×10^6 switching cycles,
contact material: silver, hard gold plated.

Switching hysteresis

1 %

Adjustment knob

Two knobs with scales 0 - 100 % for MAX and MIN alarm, continuously adjustable.

Indicators

One LED for MAX alarm and one LED for MIN alarm.

Mains voltage

24 V, 110 V, 120 V, 220 V, 240 V, 50 to 100 Hz, 3.5 VA (please state voltage when ordering),
ancillary unit URN-1 can also be fed with 24 V DC.

Protection

IP 40

Admissible ambient temperature

0 °C bis 55 °C

Housing material

Base: Noryl SE 1-GFN 2 UL 94 V0

Weight

Approx. 0.5 kg

Technical Data - continued -

Corrosion resistance

If the equipment is used for the intended purpose, its safety is not impaired by corrosion.

Name plate / marking

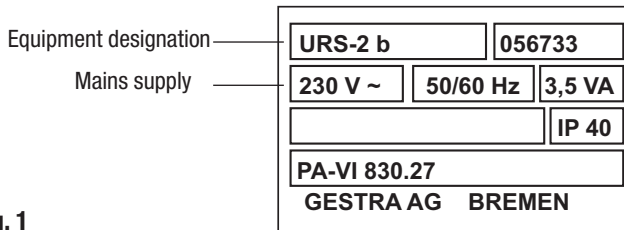


Fig. 1

Dimensions

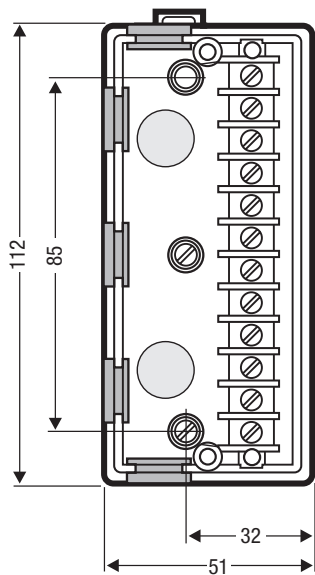


Fig. 2

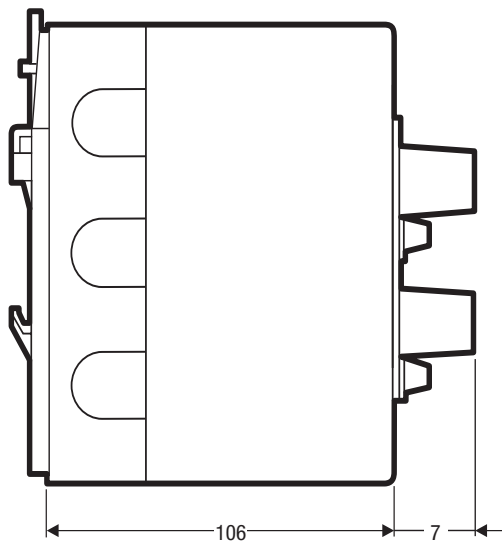


Fig. 3

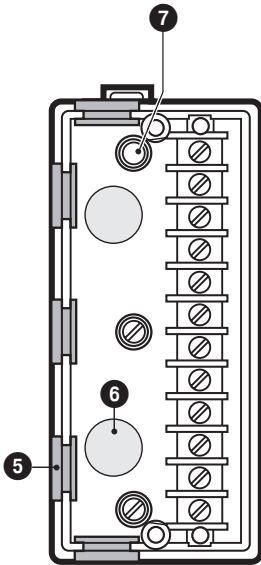


Fig. 4

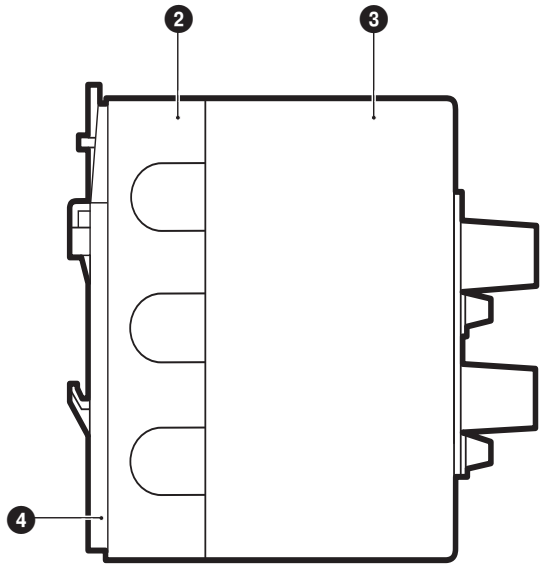


Fig. 5

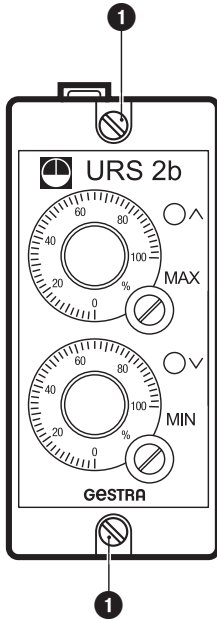


Fig. 6

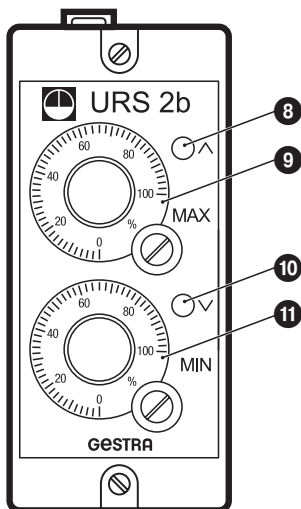
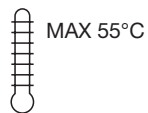


Fig. 7

Design / Functional Elements

Key

- 1 Cover screws
- 2 Base
- 3 Upper part of the housing
- 4 Mounting clip
- 5 Cable entry (flexible)
- 6 Cable entry (housing)
- 7 Fixing holes $d = 4.3 \text{ mm}$
- 8 LED MAX Alarm
- 9 Adjustment knob for setting the MAX switchpoint
- 10 LED MIN alarm
- 11 Adjustment knob for setting the MIN switchpoint

Installation

URS 2

On supporting rail

1. Clip temperature switch onto supporting rail.
2. Loosen cover screws ❶ and detach cover ❸ from its base ❷.
3. Select cable entry ❺ and remove corresponding seal.

On mounting panel

1. Loosen cover screws ❶ and detach cover ❸ from its base ❷.
2. Unscrew mounting clip ❹.
3. Drill hole ❷ marked in the base to \varnothing 4.3 mm.
4. Select cable entry ❺ / ❻ and remove corresponding seal.
5. Fix base with two M4 screws onto mounting panel.



Attention

- To provide sufficient ventilation, ensure a minimum spacing of 20 mm between adjacent units.

Tools

- Screwdriver (5.5/100)

Key

- ❶ Cover screws
- ❷ Base
- ❸ Upper part of the housing
- ❹ Mounting clip
- ❺ Cable entry (flexible)
- ❻ Cable entry (housing)
- ❼ Fixing holes $d = 4.3$ mm
- ❽ Supporting rail TS 35 x 15 DIN EN 50022

Examples of Installation

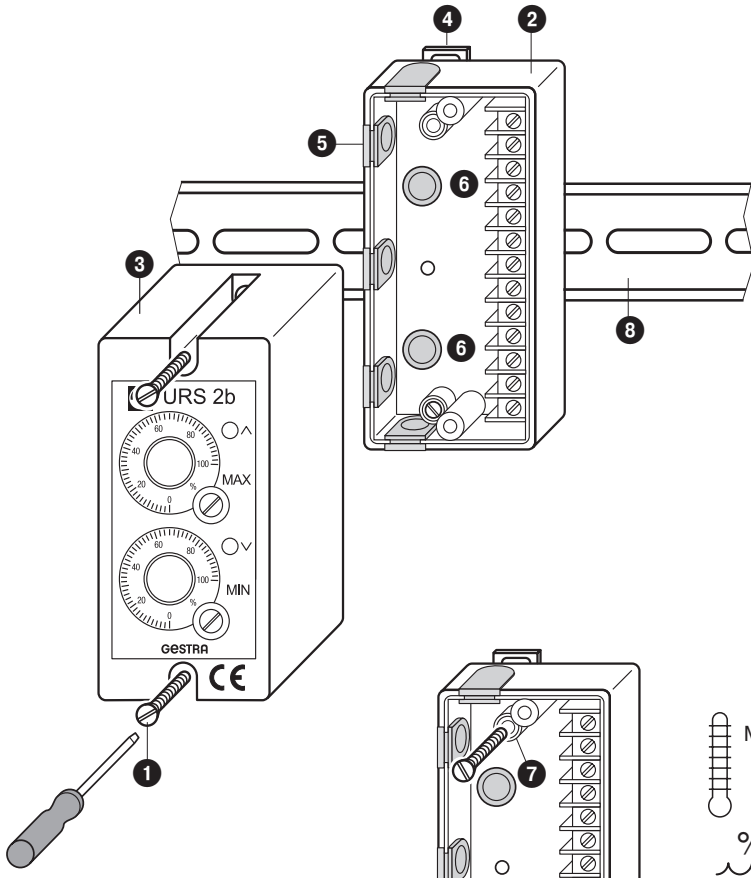



Fig. 8

Fig. 9

 MAX 55°C

 %
MAX 95%

IP 20

CE

Electrical Connection

URS 2

Flexible multi-core control cable can be used for wiring, min. conductor size 1.5 mm².



Note

- The rated voltage is indicated on the name plate.
- When switching off inductive loads, voltage spikes are produced that may impair the operation of control and measuring systems. We recommend to provide these consumers with commercial arc suppressor RC combinations e.g. 0.1 µF/100 Ω.

Tools

- Screwdriver for slotted screws, size 2.5 completely insulated according to DIN VDE 0680-1

Wiring diagram

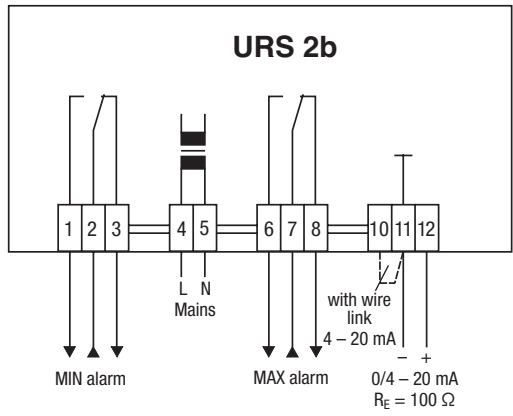


Fig. 10

Commissioning

Checking electrical connection

Make sure that the URS 2 is wired according to the wiring diagram. **Fig. 10**

Applying mains voltage

Apply mains voltage to the limit switch URS 2.

Performance test

Limit switch

1. Increase the 0/-20 mA signal of the external measuring sensor until it exceeds the MAX switchpoint adjusted in the URS 2. The LED **8** must light up and the MAX relay must be energized.
2. Decrease the 0/-20 mA signal of the external measuring sensor until it falls below the MIN switchpoint adjusted in the URS 2. The LED **10** must light up and the MIN relay must be energized.

Operation

Limit switch

Operation in combination with external measuring sensors, e. g. GESTRA level transmitter NRT 2-1b, continuous blowdown controller LRR 1-5b und conductivity transmitter LRT 1-5b, LRT 1-6b or level monitoring system NRGT 26-1 and conductivity monitoring system LRGT 16-1, LRGT 16-2.



Note

- To analyse and eliminate malfunctions refer to section “Fault finding list for troubleshooting” on page 17.

Operation Malfunctions

Fault-finding list for troubleshooting

An alarm is triggered although the measured values do not pass outside the adjusted limits.

Fault: Incorrect selection of input 0 mA or 4 mA.

Remedy: Check the output signal of the sensor and adapt the input of the URS 2 accordingly.

If faults occur that are not listed above or cannot be corrected, please contact our service centre or authorized agency in your country.

Decommissioning



Danger

The terminal strips are live during operation.

This presents the risk of severe cases of electric shock!

Cut off power supply before mounting or removing the terminal strips and the housing cover.

Disposal

For the disposal of the equipment observe the pertinent legal regulations concerning waste disposal.

For your notes



Agencies all over the world:

www.gestra.de