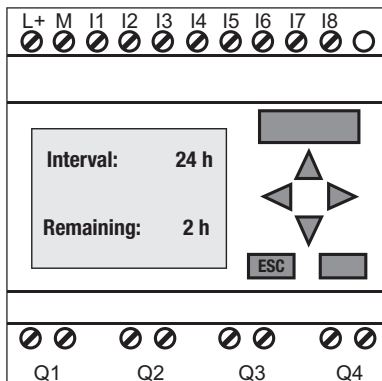


- ⊗ Standby
- ⊗ Bypass
- ⊗ Shutdown



Logic Unit SRL 63-a

Description

For the installation of low-level limiters of “high-integrity design” in measuring pots mounted outside of the boiler, it is imperative that the periodic purging of the connecting lines to the boiler be monitored properly.

To achieve this, the connecting lines are shut off one after the other at defined intervals and the measuring pot is drained.

The logic unit SRL 63 monitors compliance with the preset times and the sequence of valve operations; in addition, it bypasses the low-level limiter to ensure that the system is not shut down during purging.

The logic unit for monitoring the purging cycle consists of a compact PLC, a safety time-lag relay and a coupling relay. The design complies with EN 50156.

Function

The logic unit monitors the following times:

- **Interval time:** This is the time interval at which, depending on the mode (24h / 72h operation), the connecting lines have to be purged.
- **Standby period:** The purging process must be initiated during this time. The standby period begins when the interval time has elapsed.
- **Purging time:** During this period, the purging process must be performed through actuation of the valves. Actuation of the valves is signalled by means of the limit switches; similarly, when the electrode of the low-level limiter is exposed, this is sensed through the output contact of the corresponding level switch. If a signal is not received within the purging time, the safety circuit is opened. Since a low-level limiter may be bypassed for a maximum of 5 minutes, monitoring of the purging time is a safety-relevant function.

The interval time is started when the logic unit is switched on. The display of the PLC shows the full hours of the remaining time. This can be synchronized at any time by closing an interconnection valve (E or D), i.e. the purging time begins and the interval time is reset to its initial value (e.g. 24h, 72h etc.).

During operation, the standby period is started at the end of the interval time, which is immediately reset to its initial value (e.g. 24h, 72h etc.). The PLC then starts the purging time when an interconnection valve (E or D) leaves the end position “Open”.

The safety circuit is opened when the standby time or the purging time is exceeded, and it is only closed again when the purging process has been completed properly.

During the purging time, the output contact of the low level limiter is bypassed. This bypass is triggered by the undelayed contact of the safety time-lag relay and limited to 5 minutes by the delayed contact of this relay.

Once all valves signal that they have reached their initial positions and the level switch of the low-level limiter senses that the level electrode is exposed, the purging process has ended and the bypassing of the low-level limiter is terminated.

In the event that the mains supply fails during the purging time, the bypassing of the low-level limiter is cancelled and the safety circuit is opened. If the mains supply is switched on again, the bypass remains deactivated and the safety circuit is only closed again after the purging process has been completed properly.

Expiry of the purging time and standby period, as well as deactivation of the safety circuit, are indicated by means of pilot lamps.

Design

SRL 63-a

Logic unit SRL 63-a with 3 LEDs and a compact PLC, for wall mounting, with clear lid. 5 cable glands for connecting wires.

External dimensions: 295 x 281 x 168.2 mm

Technical Data

Inputs

- 5 volt-free contacts from the limit switches of the valves
- 1 volt-free contact from a second SRL which may be mounted at the same boiler (interlock)
- 1 volt-free contact from the low-level limiter

Outputs

- 2 volt-free change-over contacts each for bypassing/deactivating the safety circuit
- Thermal current I_{th} : 4A, switching capacity acc. to AC-15: 3 A / 230 V a.c.
- 1 volt-free change-over contact as a signalling contact for a second logic unit
- Contractors must be interference-suppressed as per manufacturer's instructions (RC combination)
- 3 contacts for internal or external indication of status (pilot lamps)

Interval time

Adjusted at our works within the range 2 to 336 hours, in compliance with TRD 24/72h

Standby period

Adjusted at our works within the range 15 minutes to 2 hours, in compliance with TRD 1h

Purging time

Set at our works to 5 minutes

Indicators and adjustors

- 1 control panel at the PLC for triggering a test
- 3 pilot lamps for standby period / purging time, bypassing of the low-level limiter and deactivation of the safety circuit

Mains voltage

230 V +10/-15 %, 50 - 60 Hz

Voltage of the safety circuit

230 V, 50 - 60 Hz, optional 24 V, 50 - 60 Hz

Power consumption

26 W

Protection

Enclosure: IP 65 to EN 60529

Permissible ambient temperature

Maximum 55 °C

Case

Field case for wall mounting, with clear lid
Case material: polystyrene/polycarbonate, colour light gray

Cable entry / electrical connection

5 cable glands, M16, electrical connection via two terminal strips

Weight

Approx. 3.3 kg

Logic Unit SRL 63-a

Please note:

If both low-level limiter electrodes of a boiler are installed in external measuring pots, simultaneous purging and bypassing of the low-level limiters is not admissible.

To prevent this happening, the two logic units **must** be interlocked by means of parallel connections between the terminals 16 to 20 of either unit.

For connecting the limit switch, we recommend a control cable, e.g. Ölflex 110 H, 7x1 mm², length max. 100 m. To protect the relay contacts, fit the safety circuit with a fuse T 2.5 A (slow-blow) or 1 A (TRD 604, 72h operation).

Order & Enquiry Specification

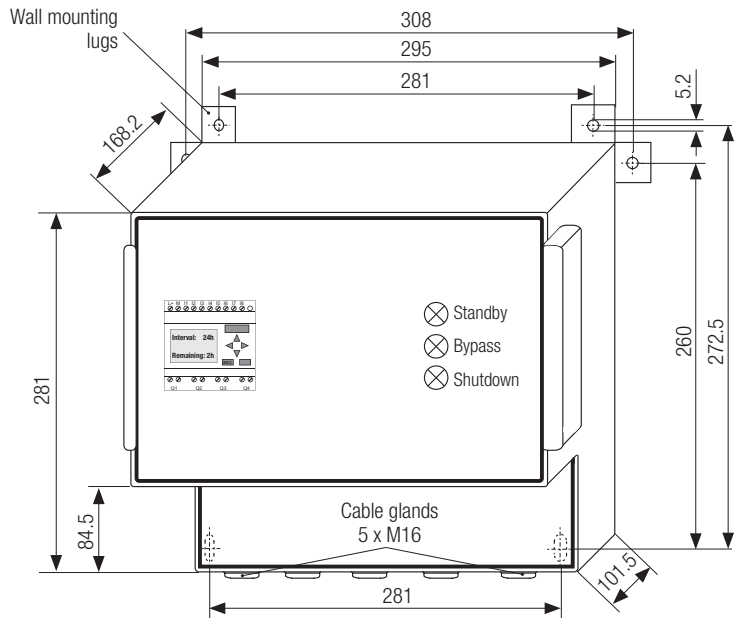
GESTRA Logic Unit SRL 63-a

Interval time h
Purging time min
Voltage of the safety circuit V

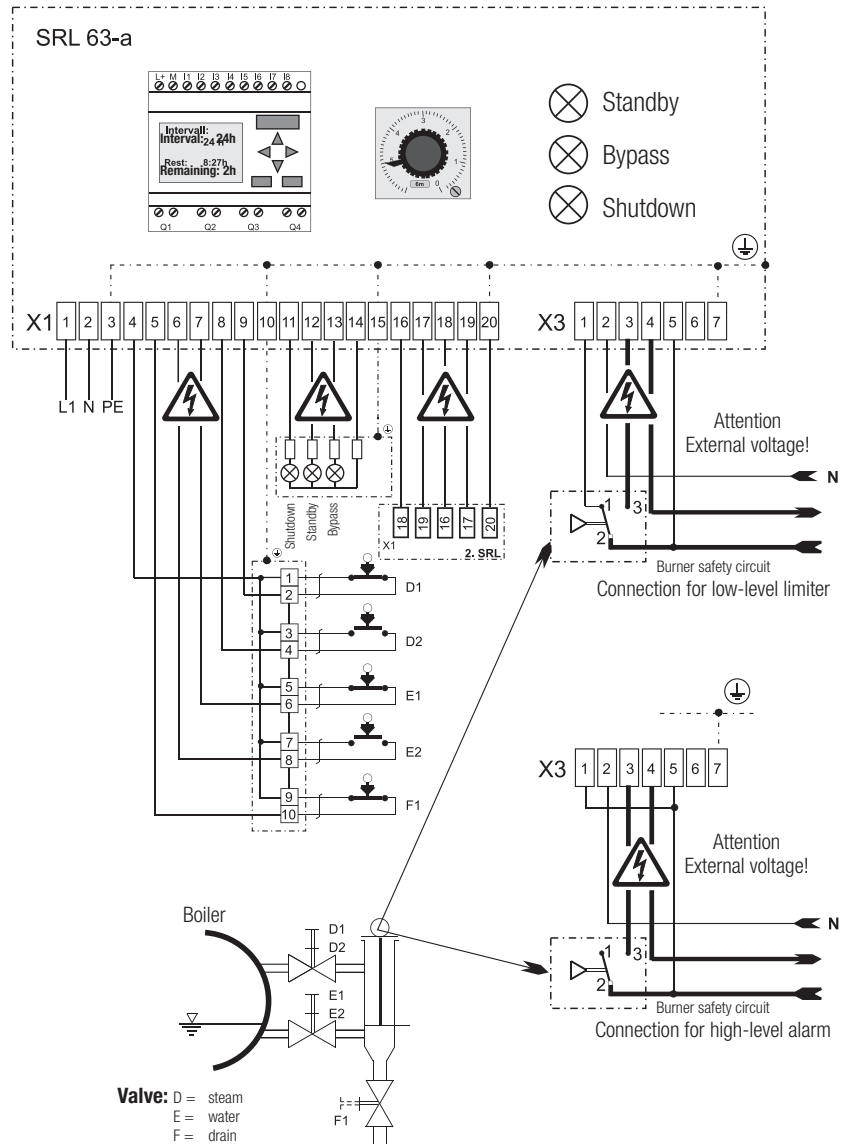
Ancillary Units

- High-integrity self-monitoring level limiter with control unit NRS 1-7 / NRS 1-9 and level electrode NRG 1x-11 / NRG 16-36
- High-integrity self-monitoring high level alarm with control unit NRS 1-8 and level electrode NRS 1x-12
- Measuring pot MFxxx for level electrodes
- Two shut-off valves GAVxxx-II
- One drain valve GAVxxx-I

Dimensions



Wiring diagram



Supply in accordance with our general terms of business.

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