

The new limiter systems for low-water level and high-level alarm – certified to SIL 3 –

With publication of the standards EN 12952 (water-tube boilers) and 12953 (shell boilers), the parts relating to equipment (EN 12952-7 and EN 12953-6, section 4.3.2, issue 12.2008) demand, for the first time, a hazard analysis for each limiting device function. The minimum requirement for boiler protection systems is SIL 2.

With the new systems NRG 1x-50 (PN 40–320) / NRS 1-50, NRG 16-36 / NRS 1-50(LW) and NRG 1x-51 (PN 40–160) / NRS 1-51 (HW), we not only meet the latest requirements but also offer new highlights in respect of safety, functionality and service.

The new systems comply with SIL 3 (Safety Integrity Level) and were developed and manufactured to fulfil the requirements of IEC 61508 ("Functional safety of electrical/electronic/programmable electronic safety-related systems").

For optimum system adaptation, the NRS 1-50 is available as ONE- and TWO-electrode versions.

The lifetime and proof-test interval is 20 years, i.e. the certification according to IEC 61508 SIL 3 expires after 20 years. During this period, no special functional tests are necessary.

Other features include:

- ▶ Well accessible, removable connection terminals (possibility of quick and easy measurement)
- ▶ Power supply 24 V DC +/- 20% (independence from the various mains voltage levels, avoidance of special versions, suitability for secure battery networks without the need for additional components such as inverters etc.) As an option, 100–240 V +10/-15%, 47–63 Hz is also available
- ▶ Reduction in the number of special variants at added cost, thanks to high functionality
- ▶ Fault analysis, indicated by light-emitting diodes
- ▶ Reduction in the control cabinet expenses, through the use of one controller for two electrodes (optionally also available as a ONE-electrode unit)
- ▶ Variable connection of the output contacts (adaptation to the national differences in technical codes still applying within the various European member states)
- ▶ Two independent, direct-action signalling contacts for indicating LL I / LL II
- ▶ Reduction of the system costs for a system using two limiter electrodes
- ▶ Optimization of the electrode design, i.e. without the need for special flanges in the range > PN 63



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