



## GESTRA Boiler controls acc. to TRD 604, sheet 1, 24/72 hrs unsupervised steam boiler operation

Function	required	recommended	TRD 604	Equipment	Type approval no.
2 Low-level limiters	yes		Section 1.4 Section 3.6.1	<b>NRG 16-40/NRS 1-40</b> Self-monitoring equipment with automatic routine testing	TÜV WB 99-403 EG BAF-MUC 00 07 103881 001
				<b>NRG 16-11/NRS 1-7</b> Self-monitoring equipment with automatic routine testing	TÜV WB 01-354
Feedwater controller with high-level alarm	yes		Section 1.4 Section 3.4	<b>NRGS 16-1</b> Compact system for on-off control	TÜV WRB 01-388
				<b>NRG 16-42/NRS 1-42</b> Bus-based on-off control	TÜV WR 98-399
				<b>ER 56/NRS 1-5</b> On-off control – discontinued –	TÜV WR 98-302
				<b>NRGT 26-1</b> Compact system for continuous monitoring, current output 4...20 mA	TÜV WR 97-391
				<b>NRG 26-40/NRS 2-40</b> Bus-based on-off controller with adjustable switchpoints	TÜV WR 98-399
				<b>NRG 26-21/NRS 2-1</b> On-off control – discontinued – with adjustable switchpoints	TÜV WR/WS 99-317
				<b>NRGT 26-40/NRS 2-40</b> <b>URB</b> Bus-based modulating controller with adjustable limits	TÜV WR 98-399
				<b>NRG 26-21/NRR 2-1</b> Modulating control – discontinued –	TÜV WR 99-317
Separate high-level alarm	yes »72h«		Section 1.8 Section 5.1	<b>ER 16/NRS 1-2</b> Conventional design	TÜV WR 98-302
				<b>NRG 16-12/NRS 1-8</b> Self-monitoring equipment with automatic routine testing	TÜV approval 01-91-0112
				<b>NRG 16-41/NRS 1-41</b> Self-monitoring equipment with automatic routine testing	coming soon

According to TRD regulations you may only combine low-level limiters with level controls or high-level alarms.

## GESTRA Boiler controls acc. to TRD 604, sheet 1, 24/72 hrs unsupervised steam boiler operation – continued –

Function	required	recommended	TRD 604	Equipment	Type approval no.
Self-monitoring temperature limiter	yes		Section 1.7 Section 1.6 Section 3.6.3	<b>TRG 5-5../TRS 5-6</b> PT 100	STW (STB) 985 98 S <b>EG</b> 01 202 931-B-01-0008
				<b>TRG5-../TRS 5-7</b> Thermocouple type K	STW (STB) 986 98 S <b>EG</b> 01 202 931-B-01-0007
				<b>TRG 5-53 to TRG 5-58/TRS 5-8</b>	DIN Reg. no. DIN TW 106595
				<b>DSH ... F 001</b>	TÜV-SDB 97 191
Safety pressure limiter	yes		Section 1.3 Section 3.6.4	<b>DSN..F 001</b> Self-monitoring	TÜV DWFS (SDB) 97-197
Conductivity (TDS) control for boiler water*	yes		Section 5.2	<b>LRG 16-4/LRS 1-5</b> manual temperature-compensation	not available**
Automatic continuous boiler blowdown system*	optional	yes	Section 2.1 Section 4.8	<b>LRG 16-4/LRS 1-5</b> On-off control	not required
				<b>LRG 16-4/LRR 1-5</b> On-operation-off manual temperature compensation	not required
				<b>LRG 16-5/LRR 1-9</b> Three-position stepping control, automatic temperature compensation	TÜV approval 09-99-0141
Automatic continuous boiler blowdown with signalling of limit levels*) <sup>1)</sup>	optional yes »72 h«	yes	Section 5.2	<b>LRG 16-4/LRR 1-5/URS 2</b> On-operation-off manual temperature compensation	not available**
				<b>LRG 16-5/LRR 1-9</b> Three-position stepping control, automatic temperature compensation	TÜV approval 09-99-0141
				<b>LRGT 16-1/KS90</b>	TÜV.WÜL.01-003 <b>EG</b> BAF-MUC 01 04 105620 01
				<b>LRG 16-40/LRR 1-40</b>	coming soon
Automatic intermittent boiler blowdown	optional	yes	Section 2.1/5.2 Section 4.8	<b>TA/MPA</b>	not required
Conductivity (TDS) control for make-up water	yes »72 h«		Section 2 Section 4.8 Section 5.2	<b>ERL 16/LRS 1-6</b>	not available**
Residual hardness of make-up water (process titration)*	yes »72 h«		Section 5.2	<b>Aquacon RH</b> <b>Aquacon TRD</b>	not available** TÜV-test report WÜH-001-01
Condensate monitoring: oil and turbidity detection*	yes »72 h« 2 detectors		Section 2.1/4.8	<b>OR 42</b>	not available**
			Section 5.2	<b>OR 52</b>	TÜV approval 09-99-0132
Contamination detection of acids, alkalis etc.*	yes		Section 2.1/4.8 Section 5.2	<b>LRG 12-1/LRT 1-6</b> <b>URS 2</b>	not available**

### Explanatory notes:

\* Approximate values and limits according to TRD 611 / EN 12952 and EN 12953

\*\* no test guidelines available

1) Combining continuous boiler blowdown and limit control precludes the need for pure limit signalling.

T.D.S. = Total Dissolved Solids



## Type Approval Number Code

**T Ü V** | **W R** | **9 8** | **3 9 9**

**Function**

- B = Limiter
- R = Controller
- S = Switch

**VdTÜV Bulletin**

**Year of approval  
or extension**

### Classification societies for marine applications

- GL Germanischer Lloyd
- LR Lloyd's Register
- See BG See-Berufsgenossenschaft
- RINA Registro Italiano Navale

### Abbreviations for temperature control equipment:

- STW = Safety temperature controller
- (STB) = Safety temperature limiter designed with interlocking facility
- TW = Temperature controller

Function	Equipment	Type Approval Number
Water-level controller with high-level alarm	<b>NRGS 16-1S</b> Compact system for on-off control <b>NRGT 26-1S</b> <b>PKC</b> <b>NRS 2-3</b> Compact system for modulating control, current output 4...20 mA	GL99250-96 HH LR/20075 RINA No ELE/30298/1 GL 99249-96 HH LR 98/20074 RINA No ELE/30298/2
Water-level limiter	<b>NRG 16-11S</b> <b>NRS 1-7</b> Self-monitoring equipment with automatic routine testing	LR 98/20076 GL WB-93-349001 RINA No ELE/95695/1
Combination electrode 2 Water-level limiters	<b>NRG 16-38S</b> <b>NRS 1-7</b>	LR 01/20026 GL 40 601 - 01 HH ABS 01-HG227959-PDA
Combination electrode 2 Water-level limiters	<b>NRG 16-39S</b> <b>NRS 1-7 (2x)</b> Self-monitoring equipment with automatic routine testing combined with compact system for continuous monitoring current output 4...20 mA	
Safety temperature limiter	<b>TRG 5-5../TRS 5-6</b>	GL 99251-HH LR 00/20051