

GESTRA® Industrial Electronics · Product Range Group B1
**LRG 17
LRG 19**
**Conductivity Electrodes
LRG 17, LRG 19**
Purpose and Application
I Monitoring of Conductivity

Continuous monitoring of boiler water for increase in density with the GESTRA conductivity controller type LRS.

Application in steam boilers, in particular plants operated automatically, e. g. in accordance with the regulations for operation without constant supervision (TRD 604).

II Continuous Blowdown Control

Automatically controlled continuous blowdown to reduce blowdown wastage and increase the operating safety with the GESTRA continuous blowdown controller type LRR 1-5 and the GESTRA continuous blowdown valve type BAE. Automatic closing of blowdown line during boiler shut-down.

Design

The conductivity electrodes types LRG 17 and LRG 19 are provided with an electrode rod completely insulated by a PTFE tubing with the exception of the measuring tip. A system of compression springs ensures a pressure-tight sealing between flange and electrode rod even at varying temperatures.

The following designs are available:

Conductivity electrode type LRG 17-1 with flanged connection, PN 63, DN 50 mm or flanged ANSI 400/600, 2".

Conductivity electrode type LRG 19-1 with flanged connection, PN 63, DN 50 mm or flanged ANSI 900/1500, 2".

Installation inside the steam boiler or outside into a measuring pot.

Operation

For monitoring the boiler water, its conductivity is used. The conductivity produces a proportional current if measuring surface and voltage supply remain constant.

Technical Data
Max. service pressure

LRG 17-1: 63 barg (915 psi g) at 120 °C,
60 barg (870 psi g) at saturation
temperature 275 °C

LRG 19-1: 160 barg (2320 psi g) at 120 °C,
60 barg (870 psi g) at saturation
temperature 275 °C

Connection

LRG 17-1: Flanged DIN PN 63, DN 50 mm
or
flanged ANSI 400/600 2"
inspection to 3.1 B

LRG 19-1: Flanged DIN PN 160, DN 50 mm
or
flanged ANSI 900/1500 2"
inspection to 3.1 B

Materials

Body: 15 Mo 3 (DIN No. 1.5415)
Electrode rod: X 6 CrNiMoTi 17 12 2 (1.4571)
Insulating tubing: PTFE

Cell constant of electrode

C = 1.0 [1/cm]

Max. permissible ambient temperature at terminal box

60 °C

Protection terminal box

IP 54

Electric connection

in the terminal box with screw terminals,
cable strain relief and cable gland Pg 11

Approx. weight

LRG 17-1: 9 kg

LRG 19-1: 10 kg

Important Notes

Cable required for wiring: Screened cable, e. g. 4 x 0.5 mm², max. cable length 50 m.

The conductivity electrode may be installed vertically or inclined up to 85°.

The electrode tip must be constantly submerged, which has to be taken into account when installing electrode.

When mounting the electrode into steam or pressurized hot water boilers the relevant regulations must be considered.

Explosion protection for zone 1 is possible on request by connecting Zener barriers.

Order and Enquiry Specifications

GESTRA conductivity electrode as sensor for conductivity monitoring or continuous blowdown control:

Conductivity electrode type LRG 17-1,
with flanged connection, PN 63, DN 50 mm or
flanged ANSI 400/600, 2"

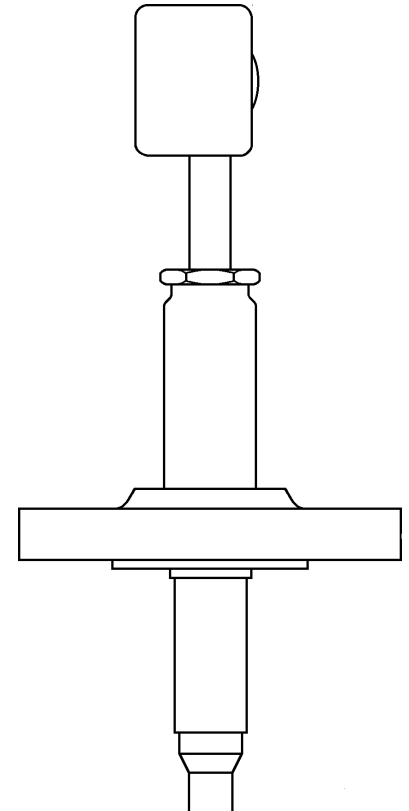
or

Conductivity electrode type LRG 19-1,
with flanged connection, PN 160, DN 50 mm
or flanged ANSI 900/1500, 2".

The following test certificates can be issued on request, at extra cost:

In accordance with DIN 50049-2.1, -2.2 and -3.1 B.

All inspection requirements have to be stated with the order. After supply of the equipment certificates can no longer be established. Charges and extent of the above mentioned certificates as well as the different tests confirmed therein are listed in our leaflet "Test and Inspection Charges for Standard Equipment". For other tests and inspections than those listed above, please consult us.



Conductivity electrode
LRG 17-1, LRG 19-1

Conductivity Electrodes LRG 17, LRG 19

Associated Equipment

for conductivity monitoring:
Conductivity controller type LRS 1-...

For continuous blowdown control:
Continuous blowdown controller type LRR 1-...
continuous blowdown valve type BAE.

Installation and Service Instructions

The electrodes are measuring probes and should be handled with care. Avoid subjecting electrode tip to shocks.

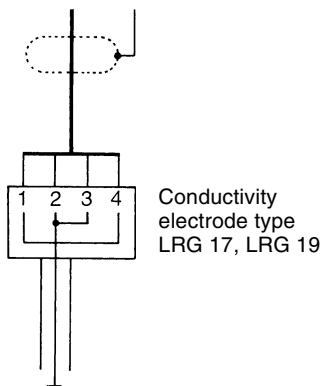
Installation

Mount conductivity electrode on boiler or vessel standpipe.

The electrode body situated above the flange must not be insulated.

Wiring

Always use screened cable for wiring.



Wiring the terminal box

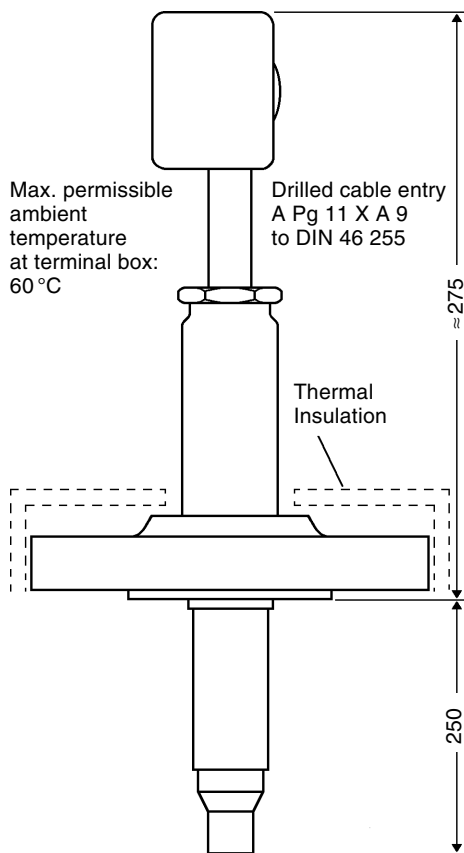
(For wiring to the electronic unit see corresponding data sheets.)

Maintenance

The electrode does not require any particular maintenance. It is, however, recommended to check the electrode tip every six months. Cleaning is possible by rubbing of the tip with emery paper.

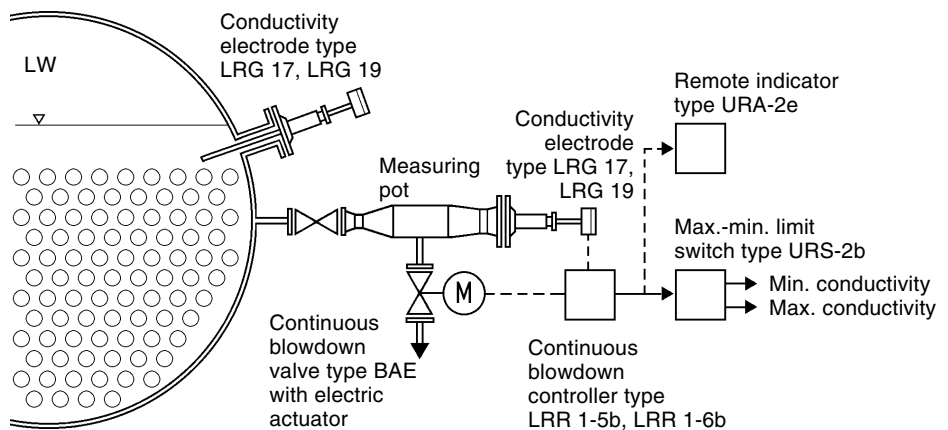
Supply in accordance with our general terms of business.

Dimensions



Conductivity electrode type LRG 17-1, LRG 19-1

Example of Installation



Installation of conductivity electrodes types LRG 17, LRG 19 in a measuring pot

