

## Commissioning Procedure for Process Controller KS 90-1, Ref. N°. 1503210

This document describes the commissioning procedure for the process controller KS 90-1 in conjunction with a conductivity measuring electrode LRGT 16-1 or LRGT 16-2 (4 – 20 mA) and a continuous blowdown valve (BAE). For more information on wiring terminals, troubleshooting etc. please refer to the installation & operating manual supplied with the equipment.

### Danger

Observe the safety notes stated in the installation & operating manual for the LRGT 16- 1 / LRGT 16-2 / KS 90.

### Commissioning the controller with input = 4 – 20 mA and output = actuator steps

To adjust the controller use the two arrow keys and the enter key on the right hand side of the keypad.

Use the arrow keys to adjust the setpoint indicated in the read-out display. You can also change the setpoint during operation.

Press the enter key several times until the first parameter "**OuL.1**" appears on the display. Scale the lower measuring input of the controller. Use the arrow keys to set the corresponding value. When using the measuring electrode LRGT 16-1 set this value to 1 (µS), when using the measuring electrode LRGT 16-2 set it to **100** (µS).

Press the enter key several times until the parameter "**OuH.1**" appears on the display. Scale the upper measuring input of the controller. Use the arrow keys to set the corresponding value. When using the measuring electrode LRGT 16-1 set this value to e. g. 200 (µS), when using the measuring electrode LRGT 16-2 set it to e. g. 3000 (µS). Make sure that these settings agree with the settings of the measuring electrode. For more details refer to the installation & operating manual LRGT 16- 1 / LRGT 16-2 / KS 90.

Press the enter key several times until the parameter "**t.F1**" appears on the display. Set the dampening factor for the input signal (4 – 20 mA). Note that strong movements of the fluid at the LRGT 16-1/2 will lead to fluctuating readings. The higher the filter time setting the more these fluctuations will be dampened for the controller.

Press the enter key several times until the parameter "**Pb1**" appears on the display. Set the proportional band of the controller. The smaller "Pb1", the greater the control action of the controller in the event of a deviation will be.

Press the enter key several times until the parameter "**ti1**" appears on the display. Set the integral action time of the controller. The greater "ti1", the smoother the control action will be.

Press the enter key several times until the parameter "**SH**" appears on the display. Set the dead band (neutral zone) of the controller. The higher this setting, the higher the admissible deviation from the setpoint before control action will take place

Press the enter key several times until the parameter "**L.1**" appears on the display. Set the lower limit (MIN alarm).

Press the enter key several times until the parameter "**H.2**" appears on the display. Set the upper limit (MAX alarm).

Changes are saved automatically. To quit the programming mode press the enter key several times until the display of the controller indicates the setpoint or wait for approx. 30 seconds. The controller will then automatically switch back to the read-out display. Press the "Manual/Automatic" key to switch to manual mode. You can now directly open and close the connected valve by pressing the respective arrow key. The "F" key does not have a function.

### Additional functions:

#### Control OFF

To activate the function "Control OFF" switch on digital input 1 (strip A1, terminals 1 and 2). A 5 minute closing impulse is then sent to the continuous blowdown valve, which prevents the steam boiler from running dry when the control is switched off.

#### External setpoint specification

To activate the function "External setpoint specification" switch on digital input 2 (strip A1, terminals 2 and 3). The continuous blowdown controller will now expect a current of 0/4 – 20 mA at input 2 (strip A1, terminals 6 and 7+).

To set the parameters for input 2 of the continuous blowdown controller proceed as follows:

Press and hold down the enter key for approx. 5 seconds. The equipment switches to parameterisation mode. Press the enter key once to confirm the parameterisation mode.

Use the arrow buttons to navigate to the menu item: Input 2 (InP.2). Press the enter key once to confirm.

#### The menu item "Input 2" has five parameter settings:

InL.2: For setting the lower current input value (0/4 – 20 mA)

OuL.2: For setting the lower output value (1/100 µS)

InH.2: For setting the upper current input value (20 mA)

OuH.2: For setting the upper output value  
(e. g. 200/500 or 3000/5000 µS)

T.F.2: For setting the dampening factor of the  
current input value (0/4 – 20 mA)

Changes are saved automatically. To quit the programming mode press the enter key several times until the display of the controller indicates the setpoint or wait for approx. 30 seconds.

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