

Intrinsically safe bargraph indicator

BGI 210 i *** G



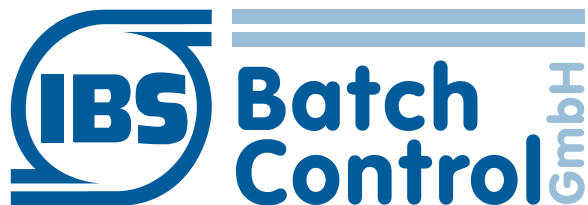
Operating instructions

Only valid in conjunction with the installation guide CTR210i/BGI210i

Device software version 2.00

Version 2.01

IBS BatchControl GmbH
Im Sträßchen 2-4
53925 Kall
Germany



Tel.: +49 2441 9199801
Fax.: +49 2441 9199871
Internet: www.ibs-batchcontrol.com

General safety instructions



Attention!

Please read the entire installation guide before starting the installation!

The compact bargraph indicator may only be installed by qualified personnel who have been authorised to do so by the plant operator.

For start-up, please read these operating and programming instructions.

All units are supplied with installation instructions, which are an integral part of these operating instructions.

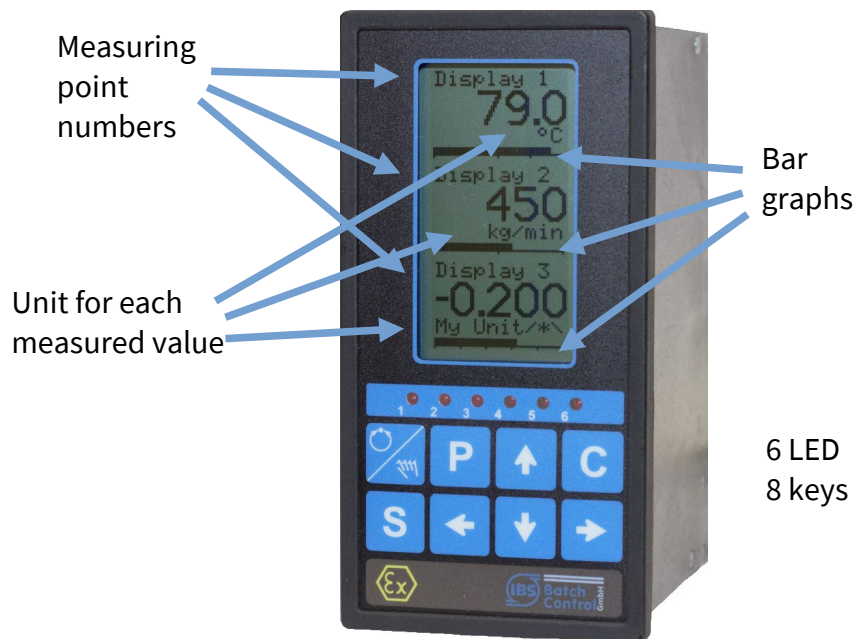
Validity of the operating instructions

- These operating and programming instructions are valid for software version 2.00 and higher. These instructions only describe the operation and programming.
- Your IBS agent will be able to give you information about any improvements or modifications.
- The manufacturer is not responsible for damage caused by incorrect or unauthorised use. Conversions and changes to the instrument must not be made, otherwise the certification and guarantee become invalid.

Table of contents

1. Operating and display elements.....	4
1.1. Display.....	4
1.2. Keypad.....	4
2. Programming/Configuration.....	6
3. Calibration Level.....	8
3.1. Calibration of Analogue Inputs.....	8
3.2. Calibration of the analogue outputs.....	9
4. Linearisation Menu.....	10
5. Input and Output Test.....	11
5.1. Overview Test Menu.....	11
6. Configure alarm.....	12
6.1. Select alarm.....	12
7. Display level.....	13
7.1. Select display/bar graph.....	13
8. Input Level.....	15
8.1. Select analogue input.....	15
9. Function block level.....	16
9.1. Select function block.....	16
9.2. Function block example.....	18
10. Analogue output.....	19
10.1. Select analogue output.....	19
10.2. Example analogue output parametrisation.....	20
11. Structure level.....	21
11.1. Language.....	21
11.2. Select alarm adjustment.....	21
11.3. Interface.....	21
11.4. Level coding.....	21
12. Error message.....	22
13. Software settings.....	23

1. Operating and display elements



1.1. Display

Up to three measuring points are shown on the display. Each measuring point is shown as a numerical value with a unit and a bar graph. A measuring point number can be entered for each display.

The unit can be selected from a wide range or set freely.

The bar graph can be displayed without or with adjustable scaling.

1.2. Keypad

The bar graph indicator is operated via 8 short-stroke keys.

1.2.1. Manual/Automatic key



This button is not used alone on the BGI210i.

1.2.2. Programming button



switches to programming mode. The P key must be pressed for approx. one second. The unit type, software version and unit number are displayed briefly.

1.2.3. Adjustment key

-   enable, for example, direct adjustment of the alarms. In programming mode, they are used to select the programming level.
-  selects the displayed programming level or parameter in programming mode. In addition, the digit to be adjusted can be selected for parameter values.
-  selects the digit to be adjusted.

1.2.4. Clear key

-  is used to exit the programming levels without saving changes.

1.2.5. Store button

-  saves the individual subitem.
The change is not yet taken into account.

1.2.6. Final storage

-   pressed simultaneously for about one second, saves all the settings made. The display disappears for about two seconds. After that, the settings are taken into account.

It is essential to press the P and S keys at the same time to apply changes permanently. If only the P key is pressed, the old settings are retained.



Note!

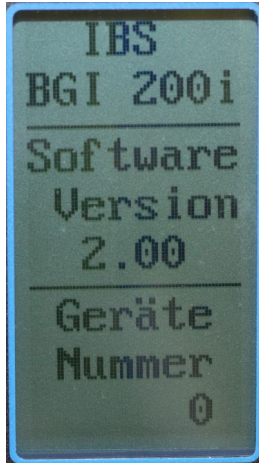
1.2.7. Reset settings

-   at the same time when switching on resets all settings. All settings must be entered again. The calibration, the input selection (Pt100/mA) and the unit number are preserved.

2. Programming/Configuration

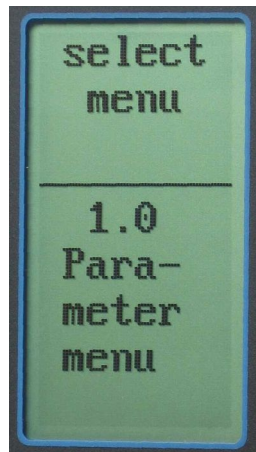
It is easy to adapt the bargraph indicator to the various requirements.

The function of each key is described earlier in section 4.



You access the programming level by pressing the P key. The instrument number and the software version number are then displayed for about two seconds.

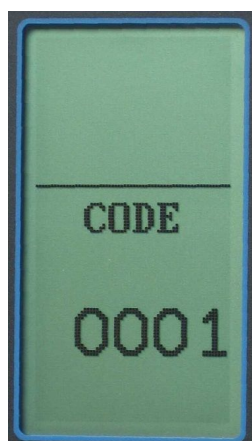
Then you are invited to select the wanted menu level. The parameter menu is always the first level to be displayed. You can move between the individual levels with the ▲ or ▼ keys. Some levels are not available for all indicators. They are not displayed yet.



Pressing the ► key select the programming level. If a code number protects a level, you will first be required to enter the code number.

The code is entered using the four arrow keys. The digit currently being set flashes. When the correct code has been entered, confirm it by pressing the S key; the controller will then allow access to the selected menu.

If you enter the wrong code, the controller returns to the selection menu.



Changes are confirmed with S or cleared with C.

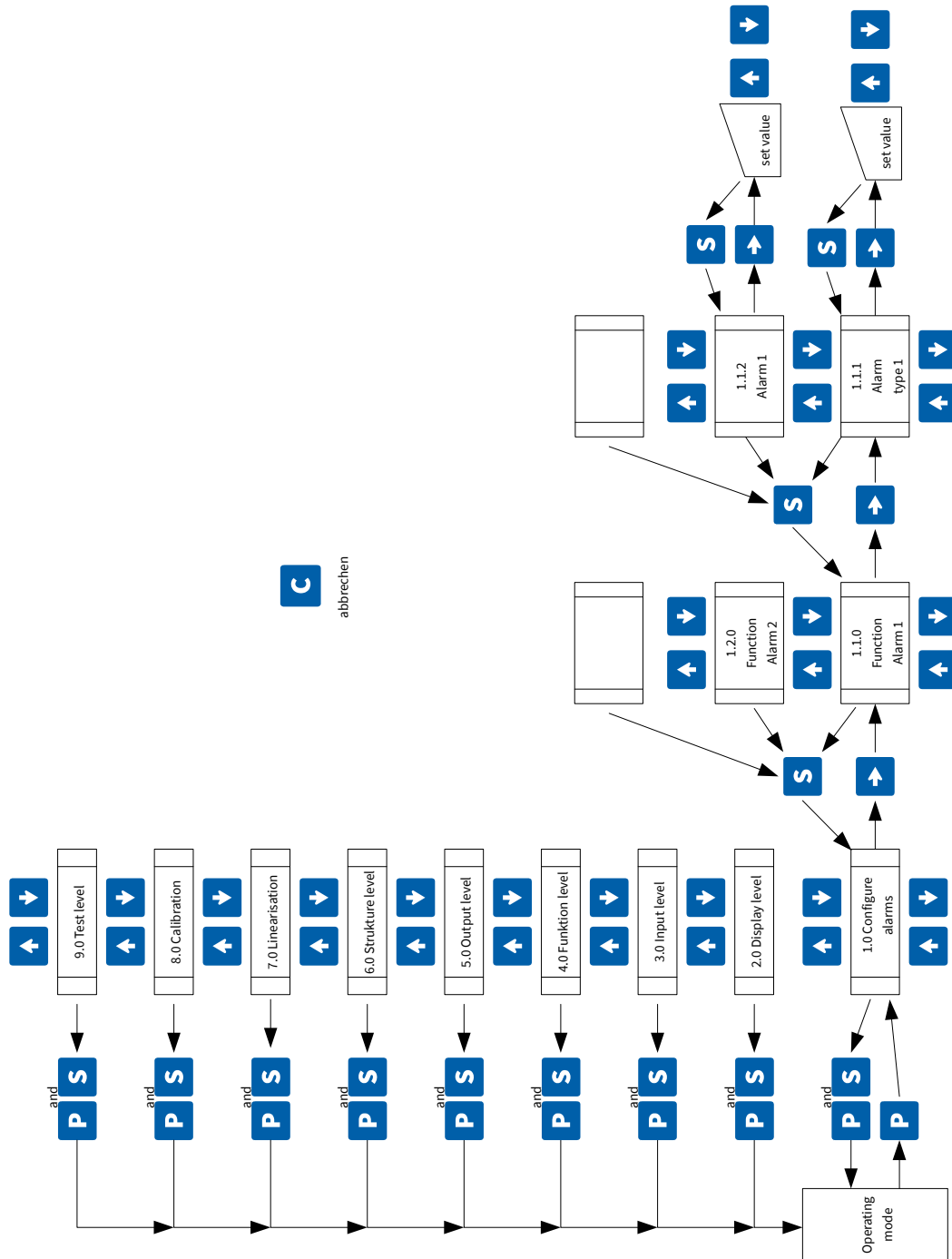
The changes are saved by pressing P and S together.

You can save from every menu or submenu with P and S. Then the controller go back to operating mode.



Note!

The settings of the BGI210i are made in nine levels:



3. Calibration Level

Level 8.0



Attention!

The BGI210i may only be calibrated if doing so will not cause a malfunction or fault in the plant. Note that the controller blocks the analogue outputs or sets them to various current values when you enter the calibration menu.

You access the calibration menu as in section 2 described. The calibration menu is protected at the factory with code 0001.

This prevents unintentional alteration of the calibration parameters.

3.1. Calibration of Analogue Inputs

<i>Calibration of analogue inputs</i>	<i>current calibration source</i>	<i>Pt-100-calibration source 2- or 3- wire circuit</i>
connect calibration source to input 1	clamps 1 and 2	clamps 1, 2 and 3
select 8.2 temperature 1 0% with ▲ (for Pt100 only)		Enter 0 % value of the Pt100 in the BGI (e.g. -20°C)
store with ► or S		
select 8.3 temperature 1 100% with ▲ (for Pt100 only)		Enter 100 % value of the Pt100 in the BGI (e.g. 400°C)
store with ► or S		
select 8.4 analogue input 1 0 % or e.g. -20°C with ▲	pretend 0% (e.g. 4 mA)	pretend 0% (e.g. -20°C)
store with ► or S		
select 8.5 analogue input 1 100 % or e.g. 400°C with ▲	pretend 100% (e.g. 20 mA)	pretend 100% (e.g. 400°C)
store with ► or S		
connect calibration source to input 2	clamps 4 and 5	clamps 4, 5 and 6
select 8.7 temperature 2 0% with ▲ (for Pt100 only)		Enter 0 % value of the Pt100 in the BGI (e.g. -20°C)
store with ► or S		
select 8.8 temperature 2 100% with ▲ (for Pt100 only)		Enter 100 % value of the Pt100 in the BGI (e.g. 400°C)
store with ► or S		
select 8.9 analogue input 2 0 % or e.g. -20°C with ▲	pretend 0% (e.g. 4 mA)	pretend 0% (e.g. -20°C)
store with ► or S		
select 8.10 analogue input 2 100 % or e.g. 400°C with ▲	pretend 100% (e.g. 20 mA)	pretend 100% (e.g. 400°C)
store with ► or S		

Calibration of analogue inputs	current calibration source	Pt-100-calibration source 2- or 3- wire circuit
connect calibration source to input 3	clamps 7 and 8	clamps 7, 8 and 9
select 8.12 temperature 3 0% with ▲ (for Pt100 only)		Enter 0 % value of the Pt100 in the BGI (e.g. -20°C)
store with ► or S		
select 8.13 temperature 3 100% with ▲ (for Pt100 only)		Enter 100 % value of the Pt100 in the BGI (e.g. 400°C)
store with ► or S		
select 8.14 analogue input 3 0 % or e.g. -20°C with ▲	pretend 0% (e.g. 4 mA)	pretend 0% (e.g. -20°C)
store with ► or S		
select 8.15 analogue input 3 100 % or e.g. 400°C with ▲	pretend 100% (e.g. 20 mA)	pretend 100% (e.g. 400°C)
store with ► or S		

Die angezeigte Zahl im unterem Displayteil ist der Rohwert vom AD-Wandler.

3.2. Calibration of the analogue outputs

Calibration of analogue outputs	ammeter
connect a multimeter to analogue output 1	clamps 13 (+) and 14 (-)
change to level 8.16 Analogue output 1 0% with ▲ and enter the level with ►	adjust 4 mA current with the ▲ and ▼ keys
store with S	
change to level 8.17 Analogue output 1 100% with ▲ and enter the level with ►	adjust 20 mA current with the ▲ and ▼ keys
store with S	
connect a multimeter to analogue output 2	clamps 15 (+) and 16 (-), clamps 17 (+) and 18 (-)
change to level 8.17 Analogue output 2 0% with ▲ and enter the level with ►	adjust 4 mA current with the ▲ and ▼ keys
store with S	
change to level 8.18 Analogue output 2 100% with ▲ and enter the level with ►	adjust 20 mA current with the ▲ and ▼ keys
store with S	
P and S together stored the settings and leave the level. The calibration is stored in the FRAM.	

The displayed value in the lower display part is the da-converter raw value.

Inputs or outputs that are not calibrated can be skipped by pressing ▲.

4. Linearisation Menu

Level 7.0

With the linearisation tables in menu 7 you get the possibility to correct non-linear input signals. In the factory, the linearisation level is blocked with "0001". The code should be changed.

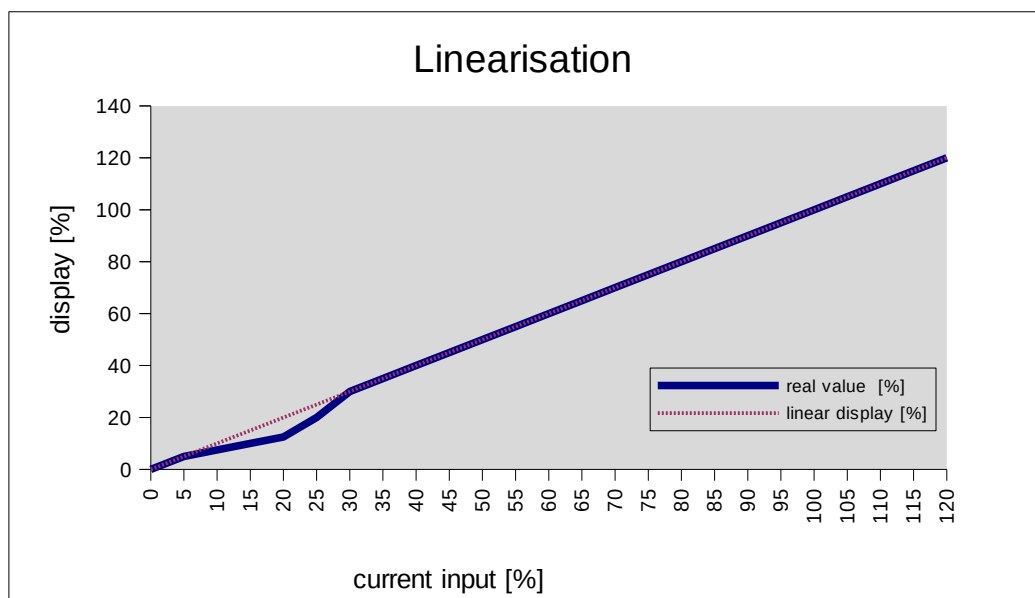
For each analogue input, 25 interpolation points from -10% to +110% are available at intervals of 5%.

You must always convert the display values for the correction into %.

Example:

A non-linearity has occurred in a current signal in the following value range:

<i>current input in [%]</i>	<i>current in put in [mA]</i>	<i>actual value in [%]</i>	<i>entry in the support point in [%]</i>
5	4,8	5	5,00
10	5,6	7,5	7,50
15	6,4	10	10,00
20	7,2	12,5	12,50
25	8,0	20	20,00
30	8,8	30	30,00



This illustration shows the effect of linearisation. If linearisation is not desired, you can skip the linearisation points with the ▲ key.

5. Input and Output Test

Level 9.0

The BGI210i may only be tested if doing so will not cause a malfunction or fault in the plant. Note that the controller blocked the analogue and digital outputs after entering the test menu and set them to several values.



You access the test menu in the same way as the other menus. First enter the programming menu by pressing the P key. The parameter menu is always shown first. You access the test menu by pressing the ▲ or ▼ keys several times.

You enter the test menu with the ► key. If a code number has been specified for this menu, this will first be requested (factory setting 0001). By pressing the ▲ or ▼ keys you select the input or output for test.

The controller can indicate you which signal is at the analogue inputs. Therefore you have to enter the test menu with the ► key. With the ▲ or ▼ keys you alternate to analogue raw-value. With the S or ► key you will go back.

By the analogue outputs the shown current is taken out by pressing the ► key.

In the function 9.10 the activated digital input is switched to the digital output and the LED at the front. Digital input 1 switches digital output 1. At the same time the input is shown in the display (hex-format).

5.1. Overview Test Menu

<i>Function</i>		<i>Remark</i>
9.1	display analogue input 1	value in %
9.2	display analogue input 2	value in %
9.3	display analogue input 3	value in %
9.4	current analogue output 1	0 % (4 mA) driven
9.5	current analogue output 1	50 % (12 mA) driven
9.6	current analogue output 1	100 % (20 mA) driven
9.7	current analogue output 2	0 % (4 mA) driven
9.8	current analogue output 2	50 % (12 mA) driven
9.9	current analogue output 2	100 % (20 mA) driven
9.10	Digital input and output test, LED (front) test	digital input 1 to 6 switches digital output 1 to 6 (LED 1 to 6), displayed at the LCD

6. Configure alarm

Level 1.0

You can parametrise the alarms, the permanently assigned six digital outputs and LEDs and the associated displays for alarm signalling on the LCD in menu 1.0.

6.1. Select alarm

You select which alarm you want to configure.

6.1.1. Alarm-Type

The alarm type is set in menu item 1.x.1. You can specify the alarm as minimum alarm, maximum alarm or sensor break 1 to 3. If the alarm is not needed, it can be switched off.

6.1.2. Assign alarm to a display/bar graph

In menu item 1.x.2, the minimum or maximum alarm is assigned to one of the three displays or bar graphs. In case of a sensor break, the selection is hidden.

6.1.3. Set alarm value

You set the alarm value of the selected minimum or maximum alarm in menu item 1.x.3.

6.1.4. Set alarm hysteresis

In menu item 1.x.2 the hysteresis of the selected minimum or maximum alarm is set.

6.1.5. Set the direction of action of the digital output

The direction of action of the alarm is set in menu item 1.x.5. You can choose between normally open or Normally closed. Please note that the digital output is always open when the BGI210i is not supplied or switched on.

7. Display level

Level 2.0

The LCD is organised into three areas. In this level, you configure each of these three areas.

7.1. Select display/bar graph

In the menu item 2.1.0, 2.2.0 or 2.3.0, select the display or bar graph you want to configure. You can place all analogue inputs, the alarms or function blocks on the display or bar graph.

7.1.1. Assign a function

In menu item 2.1.1, 2.2.1 or 2.3.1, assign an analogue input, an alarm or a function to display 1 to 3. If not all displays and bargraphs are needed, they can be hidden in these menu items. The unit must then be set so that no unit is displayed.

7.1.2. Enter unit

A unit is assigned to the decimal number to be displayed in menu 2.x.2. You can select many units directly. If you have selected without a unit, the user-defined unit entered in 2.x.10 is displayed. You can freely describe this unit. If the display 1 to 3 is switched off, "without unit" must be selected and the user-defined unit must be empty for no unit to be displayed.

7.1.3. Set decimal point

In menu 2.x.3 you set the position of the decimal point. The display has a maximum of four digits.

7.1.4. Enter start of measuring range

The value entered here in menu item 2.x.4 is displayed when the measured signal is 0% (e.g. 4 mA for current input).

7.1.5. Enter end of measuring range

The value entered here in menu item 2.x.5 is displayed when the measured signal is 100% (e.g. 20 mA).

7.1.6. Enter start of bar graph

In menu item 2.x.6, enter the measured value at which 0% of the bar graph is to be displayed.

7.1.7. Enter end of bar graph

In menu item 2.x.7, enter the measured value at which 100% of the bar graph is to be displayed.

7.1.8. Set scaling

The scaling of the bar graphs is set in 2.x.8. You can select 0 and 100, all 20%, 25%, 50% or no scaling. Depending on the setting, a small line is displayed on the bar graph.

7.1.9. Measuring point number

In menu item 2.x.10, enter a measuring point number or measuring point description with up to eight digits.

7.1.10. User defined unit

If you need a unit that is not listed in the selection, you can enter it yourself in menu 2.x.11 with up to eight characters. The entry is made using the arrow keys or via the Modbus interface.

8. Input Level

Level 3.0

In the input level, you configure the analogue inputs.

8.1. Select analogue input

Select the analogue input to be configured in menu item 3.1.0 to 3.3.0.

8.1.1. Set filter time

The selected analogue input is provided with a filter. Enter the filter time in menu item 3.x.1.

8.1.2. Set sensor break

You can switch the sensor break monitoring on or off in menu item 3.x.2.

8.1.3. Set minimum sensor break limit

If the sensor break is switched on, the value below which a sensor break is indicated is set in menu item 3.x.3.

8.1.4. Set maximum sensor break limit

If the sensor break is switched on, the value above which a sensor break is displayed is set in menu item 3.x.4.

8.1.5. Measuring range start

In menu item 3.x.5, you specify the value from which the measuring range is to be evaluated. For example, an analogue input calibrated to 0 to 400°C can be set to -50° to +200°C. Here you enter the beginning of the measuring range.

8.1.6. End of measuring range

In menu item 3.x.6 enter the end of the measuring range.

8.1.7. Show sensor break on display

The display of a sensor break can be assigned to no display or to display 1 to 3 in menu item 3.x.7. This is independent of the setting of which value or function is shown on the selected display. The display S-BREAK then flashes instead of the measured value.

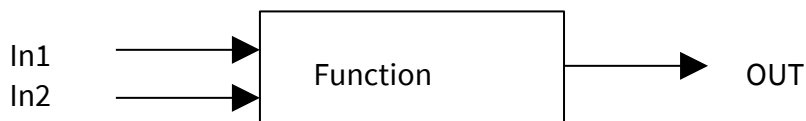
9. Function block level

Level 4.0

Nine function blocks are available to you to perform various mathematical functions and linearisation.

9.1. Select function block

From the nine function blocks, you select the one to be configured in menu item 4.x.0. A function block has up to two inputs and one output.



The calculation is always made in percent and not with physical units.

9.1.1. Define function

You define in menu item 4.x.1 which type of function the function block is to carry out. In the following description, the inputs of the function block are designated In1 and In2. The output is designated OUT. F1 and F2 are the factors by which In1 and In2 are multiplied.

9.1.1.1. Switched off

No function is assigned to the function block.

9.1.1.2. Adding function

The function block adds In1 to In2.

$$\text{OUT} = \text{In1} * \text{F1} + \text{In2} * \text{F2} + \text{O1}$$

9.1.1.3. Multiplying Function

The function block multiplies In1 by In2.

$$\text{OUT} = (\text{In1} * \text{F1} + \text{O1}) * (\text{In2} * \text{F2} + \text{O2}) + \text{O3}$$

9.1.1.4. Dividing Function

The function block divides In1 by In2.

$$\text{OUT} = (\text{In1} * \text{F1} + \text{O1}) / (\text{In2} * \text{F2} + \text{O2}) + \text{O3}$$

9.1.1.5. Radicatung Function

The function block square root In1. This function has only one input.

$$\text{OUT} = \text{SQRT}(\text{In1} * \text{F1} + \text{O1}) + \text{O2}$$

9.1.1.6. Linearising Function

The function block linearises In1 with the selected linearising function (see section 4 Function 7). This function has only one input.

OUT = LIN(In1) according to linearisation table 1, 2 or 3

9.1.2. Set inputs of the function block

The signals to be applied to the inputs In1 and In2 of the function block are defined in menu item 4.x.2 and 4.x.3. You can choose between the following settings:

- switched off

- Analogue input 1 to analogue input 3

- Alarm 1 to alarm 6

- Function 1 to Function 9

9.1.3. Determine Factors

In menu items 4.x.4 and 4.x.5, the factors to be applied to the input value are set. The setting range is from -99.99 to 99.99.

9.1.4. Set offset

In the menu items 4.x.6 to 4.x.8, the offsets to be applied to the function are defined. The setting range is from -999.9 to 999.9%.

9.2. Function block example

The indicator is to be used to calculate a third variable from two input variables.

The first analogue input receives the signal from a volumetric meter with a measuring range of 0 to 10000 l/h. The second analogue input receives the corresponding density in the range of 0.8 to 1.2 kg/l.

The mass is to be indicated and output on the display and at the analogue output.

Display 1 shows the volume flow in m³/h. The measuring range is set to 0 to 10.00 m³/h.

Display 2 shows the density. The measuring range is set to 0.8 to 1.2 t/m³.

Display 3 shows function block 1. The measuring range is set from 0 to 12.00 t/h.

The following settings are made in the function block:

The multiplying function block $[OUT = (In1 * F1 + O1) * (In2 * F2 + O2) + O3]$ is selected.

In1 is switched to analogue input 1. The associated factor is 1.

In2 is switched to analogue input 2. The corresponding factor is 0.33 and is calculated as follows:

1,2 t/m³ correspond to 100%

0,8 t/m³ are therefore 66,7%

the area used is therefore 100% - 66,7 % = 33,3 %

The offset 1 is 0, the offset 2 is 66.7 (to display the range correctly again) and the offset 3 is 0.

The third display/bar graph shows the calculated value. At the analogue output, the calculated value is output as current (4 - 20mA $\hat{=}$ 0 - 12.00 t/h).

10. Analogue output

Level 5.0

In the output level, you configure the analogue outputs.

10.1. Select analogue output

You select which analogue output you want to configure in the menu item 5.x.0.

10.1.1. Analogue output Function

You set which signal is to be output at the analogue output in 5.x.1. You have the option of outputting an analogue input, an alarm or a function as a current value.

10.1.1.1. Analogue output off

The analogue output has no function. The output is always 4mA.

10.1.1.2. Enable analogue input to analogue output

The analogue output delivers the value of the selected analogue input without change.

10.1.1.3. Enable alarm value on analogue output

The analogue output indicates the value of the selected alarm.

10.1.1.4. Output of the function block to analogue output

The analogue output delivers the calculated value of the selected function block.

10.1.2. Set the start size of the analogue output

In menu item 5.x.2, you specify at which displayed or calculated value of the display in % the output current of 4 mA is to be emitted. If, for example, the current output is to provide 0 to 20 mA, 20 % must be entered here. If the current output is to be inverted, enter 100 % here.

10.1.3. Set the final value of the analogue output

In menu item 5.x.3, you specify at which displayed or calculated value of the display in % the output current of 20 mA is to be given out. If the current output is to be inverted, enter 0 % here.

10.1.4. Set the minimum current of the analogue output

In menu item 5.x.4, enter the lowest possible current. The current can thus be limited to e.g. 4 mA.

10.1.5. Set the maximum current of the analogue output

In menu item 5.x.5, enter the maximum possible current. The current can thus be limited to e.g. 20 mA.

10.2. Example analogue output parametrisation

The analogue input displays a value from 0 to 100 %. The analogue output is to emit the display range from 10 to 90% as 4 to 20 mA. To do this, set the start value in 5.1.2 to 10 % and the end value in 5.1.3 to 90 %.

By default, the minimum and maximum current is limited to 4 and 20mA. In the menu items 5.1.4 and 5.1.5 you can additionally specify that the current can also be e.g. 3.6 mA to 20.4 mA.

If you want to reverse the effective direction, enter the larger value in 5.1.2 and the smaller value in 5.1.3.

11. Structure level

Level 6.0

In the structure level, you configure the device language, the alarm adjustment and the interface. You also enter the code for the levels. The structure level is coded with 1 ex works.

11.1. Language

You can select German or English as the operating language in menu item 6.1.

11.2. Select alarm adjustment

Normally, an alarm is set to Parameter. The alarm value can only be changed in the alarm level. If the alarm is changed to user level in menu item 6.2.x, it is not necessary to enter the programming level to adjust the alarm.

After pressing the ► key, the first alarm in the user level immediately appears on the display and can be adjusted. If several alarms have been placed in the user level, you can select the alarm to be adjusted with the arrow keys ▲▼. Select the value of the alarm to be adjusted with ►. The setting is then made with all arrow keys and with the S key the new alarm value is accepted and the normal standard display is switched on again directly.

11.3. Interface

11.3.1. Interface address

You set the desired interface address in menu item 6.3.1 between 1 and 255. The BGI210i works with a MODBUS RTU protocol. The transmission takes place with 8 data bits, parity even.

11.3.2. Baud rate

You can connect the BGI210i to a serial interface with an IPC300i interface card. Enter the desired transmission speed in this menu item 6.3.2.

Setting range: 2400, 4800, 9600, 19200 and 38400 Baud

11.4. Level coding

In menu item 6.4.x you define a four-digit code for individual levels to protect against unauthorised changes. This is requested before entering the level. The calibration level, linearisation level and test level are set to 0001 in the factory. If 0000 is set, no code is requested.

11.4.1. Contrast

The LCD contrast is set here.

12. Error message

The controller monitors all functions and modules.

In the event of an error, an error message appears on the LCD.

The BGI210i must be shipped in.

13. Software settings

Menu item	Description	Setting range	Adjusted value	P.
1.0	Configure alarms			12
1.1.0	Function Alarm 1			
1.1.1	Alarm type 1	Minimum alarm Maximum alarm Sensor break input 1 Sensor break input 2 Sensor break input 3 Alarm off Factory setting: Minimum alarm		12
1.1.2	Alarm 1	Display 1 Display 2 Display 3 Factory setting: Display 1		12
1.1.3	Alarm value 1	Setting range from -10% to 110% Factory setting: 10%		12
1.1.4	Alarm hysteresis 1	Setting range from 0 to 20% Factory setting: 0,10%		12
1.1.5	Direction of action Digital output 1	Normally open (NO) Normally closed (NC) Factory setting: 0,1%		12
1.2.0	Function Alarm 2			12
1.2.1	Alarm type 2	Minimum alarm Maximum alarm Sensor break input 1 Sensor break input 2 Sensor break input 3 Alarm off Factory setting: Maximum alarm		12
1.2.2	Alarm 2	Display 1 Display 2 Display 3 Factory setting: Display 1		12
1.2.3	Alarm value 2	Setting range from -10% to 110% Factory setting: 90%		12
1.2.4	Alarm hysteresis 2	Setting range from 0 to 20% Factory setting: 0,10%		12
1.2.5	Direction of action Digital output 2	Normally open (NO) Normally closed (NC)		12
1.3.0	Function Alarm 3			12

Menu item	Description	Setting range	Adjusted value	P.
1.3.1	Alarm type 3	Minimum alarm Maximum alarm Sensor break input 1 Sensor break input 2 Sensor break input 3 Alarm off Factory setting: Alarm off		12
1.3.2	Alarm 3	Display 1 Display 2 Display 3 Factory setting: Display 1		12
1.3.3	Alarm value 3	Setting range from -10% to 110% Factory setting: 10%		12
1.3.4	Alarm hysteresis 3	Setting range from 0 to 20% Factory setting: 0,10%		12
1.3.5	Direction of action Digital output 3	Normally open (NO) Normally closed (NC) Factory setting: 0,10%		12
1.4.0	Function Alarm 4			12
1.4.1	Alarm type 4	Minimum alarm Maximum alarm Sensor break input 1 Sensor break input 2 Sensor break input 3 Alarm off Factory setting: Alarm off		12
1.4.2	Alarm 4	Display 1 Display 2 Display 3 Factory setting: Display 1		12
1.4.3	Alarm value 4	Setting range from -10% to 110% Factory setting: 90%		12
1.4.4	Alarm hysteresis 4	Setting range from 0 to 20% Factory setting: 0,10%		12
1.4.5	Direction of action Digital output 4	Normally open (NO) Normally closed (NC)		12
1.5.0	Function Alarm 5			12
1.5.1	Alarm type 5	Minimum alarm Maximum alarm Sensor break input 1 Sensor break input 2 Sensor break input 3 Alarm off Factory setting: Alarm off		12

Menu item	Description	Setting range	Adjusted value	P.
1.5.2	Alarm 5	Display 1 Display 2 Display 3 Factory setting: Display 1		12
1.5.3	Alarm value 5	Setting range from -10% to 110% Factory setting: 10%		12
1.5.4	Alarm hysteresis 5	Setting range from 0 to 20% Factory setting: 0,1%		12
1.5.5	Direction of action Digital output 5	Normally open (NO) Normally closed (NC) Factory setting: 0,1%		12
1.6.0	Function Alarm 6			12
1.6.1	Alarm type 6	Minimum alarm Maximum alarm Sensor break input 1 Sensor break input 2 Sensor break input 3 Alarm off Factory setting: Alarm off		12
1.6.2	Alarm 6	Display 1 Display 2 Display 3 Factory setting: Display 1		12
1.6.3	Alarm value 6	Setting range from -10% to 110% Factory setting: 90%		12
1.6.4	Alarm hysteresis 6	Setting range from 0 to 20% Factory setting: 0,1%		12
1.6.5	Direction of action Digital output 6	Normally open (NO) Normally closed (NC)		12
2.0	Display level			13
2.1.0	Display 1			13
2.1.1	Function Display 1	Analogue input 1 Analogue input 2 Analogue input 3 Alarm 1 Alarm 2 Alarm 3 Alarm 4 Alarm 5 Alarm 6 Factory setting: Analogue input 1	Function 1 Function 2 Function 3 Function 4 Function 5 Function 6 Function 7 Function 8 Function 9 hidden	13

Menu item	Description	Setting range	Adjusted value	P.
2.1.2	Unit 1	%, °C, °F, t/h, kg/h, l/h, m ³ /h, Nm ³ /h mbar, mbar _{abs} , Hz, t, t/min, t/s, kg, kg/min, kg/s, g, g/h, g/min, g/s, l, l/min, l/s, m, m/h, m/min, m/s, cm, m ³ , Nm ³ , U/min, rpm, bar, kg/dm ³ , t/m ³ , A, (pH), PSIA, PSIG, mmHg, ppm, ppb, F, uS, mS, %LEL, Pa, kPa, %HR, RH%, without unit resp. adjustable free text (10 characters) Factory setting: %		13
2.1.3	Decimal point 1	0000 000.0 00.00 0.000 Factory setting: 000.0		13
2.1.4	Working range start 1	Unit as 2.1.1, Decimal point wie 2.1.3 Setting range from -9999 to 9999 Factory setting: 0,0%		13
2.1.5	Working range end 1	Unit as 2.1.1, Decimal point wie 2.1.3 Setting range from -9999 to 9999 Factory setting: 100,0%		13
2.1.6	Bargraph start 1	Unit as 2.1.1, Decimal point wie 2.1.3 Setting range from -9999 to 9999 Factory setting: 0,0%		13
2.1.7	Bargraph end 1	Unit as 2.1.1, Decimal point wie 2.1.3 Setting range from -9999 to 9999 Factory setting: 100,0%		13
2.1.8	Bargraph scaling	every 20% every 25% every 50% only 0-100% disabled		14
2.1.9	TAG number 1	eight digits freely adjustable		14
2.1.10	User defined unit	eight digits freely adjustable		14
2.2.0	Display 2			13

Menu item	Description	Setting range		Adjusted value	P.
2.2.1	Function Display 2	Analogue input 1 Analogue input 2 Analogue input 3 Alarm 1 Alarm 2 Alarm 3 Alarm 4 Alarm 5 Alarm 6	Function 1 Function 2 Function 3 Function 4 Function 5 Function 6 Function 7 Function 8 Function 9 hidden		13
		Factory setting: Analogue input 2			
2.2.2	Unit 2	%, °C,... without unit resp. adjustable free text (10 characters)			13
2.2.3	Decimal point 2	0000 000.0 00.00 0.000			13
2.2.4	Working range start 2	Unit as 2.2.1, Decimal point wie 2.2.1 Setting range from Factory setting:			13
2.2.5	Working range end 2	Unit as 2.2.1, Decimal point wie 2.2.1 Setting range from Factory setting:			13
2.2.6	Bargraph start 2	Unit as 2.2.1, Decimal point wie 2.2.1 Setting range from Factory setting:			13
2.2.7	Bargraph end 2	Unit as 2.2.1, Decimal point wie 2.2.1 Setting range from Factory setting:			13
2.2.8	Bargraph scaling	every 20% every 25% every 50% only 0-100% disabled			13
2.2.9	TAG number 2	eight digits freely adjustable			13
2.2.10	User defined unit	eight digits freely adjustable			14
2.3.0	Display 3				13

Menu item	Description	Setting range	Adjusted value	P.
2.3.1	Function Display 3	Analogue input 1 Analogue input 2 Analogue input 3 Alarm 1 Alarm 2 Alarm 3 Alarm 4 Alarm 5 Alarm 6 Factory setting: Analogue input 3	Function 1 Function 2 Function 3 Function 4 Function 5 Function 6 Function 7 Function 8 Function 9 hidden	13
2.3.2	Unit 3	%, °C,... without unit resp. adjustable free text (10 characters)		13
2.3.3	Decimal point 3	0000 000.0 00.00 0.000		13
2.3.4	Working range start 3	Unit as 2.3.1, Decimal point wie 2.3.1 Setting range from Factory setting:		13
2.3.5	Working range end 3	Unit as 2.3.1, Decimal point wie 2.3.1 Setting range from Factory setting:		13
2.3.6	Bargraph start 3	Unit as 2.3.1, Decimal point wie 2.3.1 Setting range from Factory setting:		13
2.3.7	Bargraph end 3	Unit as 2.3.1, Decimal point wie 2.3.1 Setting range from Factory setting:		13
2.3.8	Bargraph scaling	every 20% every 25% every 50% only 0-100% disabled		14
2.3.9	TAG number 3	eight digits freely adjustable		13
2.3.10	User defined unit	eight digits freely adjustable		14
3.0	Input level			15
3.1.0	Analogue input 1			15
3.1.1	Filter Analogue input 1	Unit: s Setting range: 0,1s to 999,9s Factory setting: 0,1s		15

Menu item	Description	Setting range	Adjusted value	P.
3.1.2	Sensor break Analogue input 1	off on Factory setting: off		15
3.1.3	Sensor break Minimum Analogue input 1	Unit: mA Setting range: 0 to 22 mA Factory setting: 3 mA		15
3.1.4	Sensor break Maximum Analogue input 1	Unit: mA Setting range: 0 to 22 mA Factory setting: 22 mA		15
3.1.5	Measuring range start 1	Unit: mA Setting range: 0 to 22 mA Factory setting: 4 mA		15
3.1.6	Measuring range end 1	Unit: mA Setting range: 0 to 22 mA Factory setting: 20 mA		15
3.1.7	Sensor break Display	no display display 1 display 2 display 3 Factory setting: no display		15
3.2.0	Analogue input 2			15
3.2.1	Filter Analogue input 2	Unit: s Setting range: 0,1s to 999,9s Factory setting: 0,1s		15
3.2.2	Sensor break Analogue input 2	off on Factory setting: off		15
3.2.3	Sensor break Minimum Analogue input 2	Unit: mA Setting range: 0 to 22 mA Factory setting: 3 mA		15
3.2.4	Sensor break Maximum Analogue input 2	Unit: mA Setting range: 0 to 22 mA Factory setting: 22 mA		15
3.2.5	Measuring range start 2	Unit: mA Setting range: 0 to 22 mA Factory setting: 4 mA		15
3.2.6	Measuring range end 2	Unit: mA Setting range: 0 to 22 mA Factory setting: 20 mA		15
3.2.7	Sensor break Display	no display display 1 display 2 display 3 Factory setting: no display		15
3.3.0	Analogue input 3			15

Software settings

Menu item	Description	Setting range	Adjusted value	P.
3.3.1	Filter Analogue input 3	Unit: s Setting range: 0,1s to 999,9s Factory setting: 0,1s		15
3.3.2	Sensor break Analogue input 3	off on Factory setting: off		15
3.3.3	Sensor break Minimum Analogue input 3	Unit: mA Setting range: 0 to 22 mA Factory setting: 3 mA		15
3.3.4	Sensor break Maximum Analogue input 3	Unit: mA Setting range: 0 to 22 mA Factory setting: 22 mA		15
3.3.5	Measuring range start 3	Unit: mA Setting range: 0 to 22 mA Factory setting: 4 mA		15
3.3.6	Measuring range end 3	Unit: mA Setting range: 0 to 22 mA Factory setting: 20 mA		15
3.3.7	Sensor break Display	no display display 1 display 2 display 3 Factory setting: no display		15
4.0	Configure function			16
4.1.0	Function 1			16
4.1.1	Function 1	off adding function multiplying function dividing function radicating function linearising function 1 linearising function 2 linearising function 3 Factory setting: off		16
4.1.2	Function 1 input 1	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 1		17
4.1.3	Function 1 input 2	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 2		17
4.1.4	Function 1 factor 1	Setting range: from -99,99 to 99,99 Factory setting: 1,00		16

Menu item	Description	Setting range	Adjusted value	P.
4.1.5	Function 1 factor 2	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.1.6	Function 1 offset 1	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.1.7	Function 1 offset 2	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.1.8	Function 1 offset 3	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.2.0	Function 2			16
4.2.1	Function 2	off adding function multiplying function dividing function radicating function linearising function 1 linearising function 2 linearising function 3 Factory setting: off		16
4.2.2	Function 2 input 1	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 1		17
4.2.3	Function 2 input 2	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 2		17
4.2.4	Function 2 factor 1	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.2.5	Function 2 factor 2	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.2.6	Function 2 Offset 1	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.2.7	Function 2 Offset 2	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.2.8	Function 2 Offset 3	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.3.0	Function 3			16

Menu item	Description	Setting range	Adjusted value	P.
4.3.1	Function 3	off adding function multiplying function dividing function radicating function linearising function 1 linearising function 2 linearising function 3 Factory setting: off		16
4.3.2	Function 3 input 1	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 1		17
4.3.3	Function 3 input 2	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 2		17
4.3.4	Function 3 factor 1	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.3.5	Function 3 factor 2	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.3.6	Function 3 Offset 1	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.3.7	Function 3 Offset 2	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.3.8	Function 3 Offset 3	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.4.0	Function 4			16
4.4.1	Function 4	off adding function multiplying function dividing function radicating function linearising function 1 linearising function 2 linearising function 3 Factory setting: off		16
4.4.2	Function 4 input 1	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 1		17

Menu item	Description	Setting range	Adjusted value	P.
4.4.3	Function 4 input 2	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 2		17
4.4.4	Function 4 factor 1	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.4.5	Function 4 factor 2	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.4.6	Function 4 Offset 1	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.4.7	Function 4 Offset 2	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.4.8	Function 4 Offset 3	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.5.0	Function 5			16
4.5.1	Function 1	off adding function multiplying function dividing function radicating function linearising function 1 linearising function 2 linearising function 3 Factory setting: off		16
4.5.2	Function 1 input 1	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 1		17
4.5.3	Function 1 input 2	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 2		17
4.5.4	Function 1 factor 1	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.5.5	Function 1 factor 2	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.5.6	Function 1 Offset 1	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.5.7	Function 1 Offset 2	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.5.8	Function 1 Offset 3	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.6.0	Function 6			16

Menu item	Description	Setting range	Adjusted value	P.
4.6.1	Function 6	off adding function multiplying function dividing function radicating function linearising function 1 linearising function 2 linearising function 3 Factory setting: off		16
4.6.2	Function 6 input 1	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 1		17
4.6.3	Function 6 input 2	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 2		17
4.6.4	Function 6 factor 1	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.6.5	Function 6 factor 2	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.6.6	Function 6 Offset 1	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.6.7	Function 6 Offset 2	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.6.8	Function 6 Offset 3	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.7.0	Function 7			16
4.7.1	Function 7	off adding function multiplying function dividing function radicating function linearising function 1 linearising function 2 linearising function 3 Factory setting: off		16
4.7.2	Function 7 input 1	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 1		17

Menu item	Description	Setting range	Adjusted value	P.
4.7.3	Function 7 input 2	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 2		17
4.7.4	Function 7 factor 1	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.7.5	Function 7 factor 2	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.7.6	Function 7 Offset 1	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.7.7	Function 7 Offset 2	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.7.8	Function 7 Offset 3	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.8.0	Function 8			16
4.8.1	Function 8	off adding function multiplying function dividing function radicating function linearising function 1 linearising function 2 linearising function 3 Factory setting: off		16
4.8.2	Function 8 input 1	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 1		17
4.8.3	Function 8 input 2	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 2		17
4.8.4	Function 8 factor 1	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.8.5	Function 8 factor 2	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.8.6	Function 8 Offset 1	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.8.7	Function 8 Offset 2	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.8.8	Function 8 Offset 3	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.9.0	Function 9			16

Software settings

Menu item	Description	Setting range	Adjusted value	P.
4.9.1	Function 9	off adding function multiplying function dividing function radicating function linearising function 1 linearising function 2 linearising function 3 Factory setting: off		16
4.9.2	Function 9 input 1	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 1		17
4.9.3	Function 9 input 2	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: input 2		17
4.9.4	Function 9 factor 1	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.9.5	Function 9 factor 2	Setting range: from -99,99 to 99,99 Factory setting: 1,00		17
4.9.6	Function 9 Offset 1	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.9.7	Function 9 Offset 2	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
4.9.8	Function 9 Offset 3	Setting range: from -999,9 to 999,9 Factory setting: 0,0		17
5.0	Output level			19
5.1.0	Analogue output 1			19
5.1.1	Function Analogue output 1	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: off		19
5.1.2	Start value at 4 mA output current Analogue output 1	Unit: % Setting range: -9999 to 9999 Factory setting: 0 %		19
5.1.3	End value at 20mA output current Analogue output 1	Unit: % Setting range: -9999 to 9999 Factory setting: 100 %		19
5.1.4	Minimum output current Analogue output 1	Unit: mA Setting range: 0,00 to 21,00 Factory setting: 3,6 mA		19

Menu item	Description	Setting range	Adjusted value	P.
5.1.5	Maximum output current Analogue output 1	Unit: mA Setting range: 0,00 to 21,00 Factory setting: 21,00		19
5.2.0	Analogue output 2			19
5.2.1	Function Analogue output 2	input 1 to input 3 alarm 1 to alarm 6 function 1 to function 9 off Factory setting: off		19
5.2.2	Start value at 4 mA output current Analogue output 2	Unit: % Setting range: -9999 to 9999 Factory setting: 0 %		19
5.2.3	End value at 20mA output current Analogue output 2	Unit: % Setting range: -9999 to 9999 Factory setting: 100 %		19
5.2.4	Minimum output current Analogue output 2	Unit: mA Setting range: 0,00 to 21,00 Factory setting: 3,6 mA		19
5.2.5	Maximum output current Analogue output 2	Unit: mA Setting range: 0,00 to 21,00 Factory setting: 21,00		19
6.0	Strukture level			21
6.1	Sprache Language	Deutsch English		21
6.2.0	Alarm adjust			21
6.2.1	Alarm 1 adjust	Parameter User level		21
6.2.2	Alarm 2 adjust	Parameter User level		21
6.2.3	Alarm 3 adjust	Parameter User level		21
6.2.4	Alarm 4 adjust	Parameter User level		21
6.2.5	Alarm 5 adjust	Parameter User level		21
6.2.6	Alarm 6 adjust	Parameter User level		21
6.3.0	Interface			21
6.3.1	Adress	Setting range: 1 to 255 Factory setting: 1		21
6.3.2	Baudrate	Unit: bps Setting range: 4800, 9600, 19200m 38400 Factory setting: 19200		21
6.4.0	Code			21

Software settings

Menu item	Description	Setting range	Adjusted value	P.
6.4.1	Code alarm level/ Verstellung	Setting range: 0000 to 9999 Factory setting: 0000		21
6.4.2	Code display level	Setting range: 0000 to 9999 Factory setting: 0000		21
6.4.3	Code input level	Setting range: 0000 to 9999 Factory setting: 0000		21
6.4.4	Code function level	Setting range: 0000 to 9999 Factory setting: 0000		21
6.4.5	Code output level	Setting range: 0000 to 9999 Factory setting: 0000		21
6.4.6	Code strukture level	Setting range: 0000 to 9999 Factory setting: 0000		21
6.4.7	Code linearisation	Setting range: 0000 to 9999 Factory setting: 0001		
6.4.8	Code calibration	Setting range: 0000 to 9999 Factory setting: 0001		21
6.4.9	Code test	Setting range: 0000 to 9999 Factory setting: 0001		21
6.5	Contrast			21
7.0	Linearisation			10
7.1.0	Linearisation 1			10
7.1.1	corrected value at -10.0%	Setting range: -10% to 110% Factory setting: -10.0%		10
7.1.2	corrected value at - 5.0%	Setting range: -10% to 110% Factory setting: - 5.0%		10
7.1.3	corrected value at - 0.0%	Setting range: -10% to 110% Factory setting: - 0.0%		10
7.1.4	corrected value at 5.0%	Setting range: -10% to 110% Factory setting: 5.0%		10
7.1.5	corrected value at 10.0%	Setting range: -10% to 110% Factory setting: 10.0%		10
7.1.6	corrected value at 15.0%	Setting range: -10% to 110% Factory setting: 15%		10
7.1.7	corrected value at 20.0%	Setting range: -10% to 110% Factory setting: 20%		10
7.1.8	corrected value at 25.0%	Setting range: -10% to 110% Factory setting: 25%		10
7.1.9	corrected value at 30.0%	Setting range: -10% to 110% Factory setting: 30%		10
7.1.10	corrected value at 35.0%	Setting range: -10% to 110% Factory setting: 35%		10
7.1.11	corrected value at 40.0%	Setting range: -10% to 110% Factory setting: 40%		10
7.1.12	corrected value at 45.0%	Setting range: -10% to 110% Factory setting: 45%		10

Menu item	Description	Setting range	Adjusted value	P.
7.1.13	corrected value at 50.0%	Setting range: -10% to 110% Factory setting: 50%		10
7.1.14	corrected value at 55.0%	Setting range: -10% to 110% Factory setting: 55%		10
7.1.15	corrected value at 60.0%	Setting range: -10% to 110% Factory setting: 60%		10
7.1.16	corrected value at 65.0%	Setting range: -10% to 110% Factory setting: 65%		10
7.1.17	corrected value at 70.0%	Setting range: -10% to 110% Factory setting: 70%		10
7.1.18	corrected value at 75.0%	Setting range: -10% to 110% Factory setting: 75%		10
7.1.19	corrected value at 80.0%	Setting range: -10% to 110% Factory setting: 80%		10
7.1.20	corrected value at 85.0%	Setting range: -10% to 110% Factory setting: 85%		10
7.1.21	corrected value at 90.0%	Setting range: -10% to 110% Factory setting: 90%		10
7.1.22	corrected value at 95.0%	Setting range: -10% to 110% Factory setting: 95%		10
7.1.23	corrected value at 100.0%	Setting range: -10% to 110% Factory setting: 100%		10
7.1.24	corrected value at 105.0%	Setting range: -10% to 110% Factory setting: 105%		10
7.1.25	corrected value at 110.0%	Setting range: -10% to 110% Factory setting: 110%		10
7.2.0	Linearisation 2			10
7.2.1	corrected value at -10.0%	Setting range: -10% to 110% Factory setting: -10.0%		10
7.2.2	corrected value at - 5.0%	Setting range: -10% to 110% Factory setting: - 5.0%		10
7.2.3	corrected value at - 0.0%	Setting range: -10% to 110% Factory setting: - 0.0%		10
7.2.4	corrected value at 5.0%	Setting range: -10% to 110% Factory setting: 5.0%		10
7.2.5	corrected value at 10.0%	Setting range: -10% to 110% Factory setting: 10.0%		10
7.2.6	corrected value at 15.0%	Setting range: -10% to 110% Factory setting: 15%		10
7.2.7	corrected value at 20.0%	Setting range: -10% to 110% Factory setting: 20%		10
7.2.8	corrected value at 25.0%	Setting range: -10% to 110% Factory setting: 25%		10
7.2.9	corrected value at 30.0%	Setting range: -10% to 110% Factory setting: 30%		10

Software settings

Menu item	Description	Setting range	Adjusted value	P.
7.2.10	corrected value at 35.0%	Setting range: -10% to 110% Factory setting: 35%		10
7.2.11	corrected value at 40.0%	Setting range: -10% to 110% Factory setting: 40%		10
7.2.12	corrected value at 45.0%	Setting range: -10% to 110% Factory setting: 45%		10
7.2.13	corrected value at 50.0%	Setting range: -10% to 110% Factory setting: 50%		10
7.2.14	corrected value at 55.0%	Setting range: -10% to 110% Factory setting: 55%		10
7.2.15	corrected value at 60.0%	Setting range: -10% to 110% Factory setting: 60%		10
7.2.16	corrected value at 65.0%	Setting range: -10% to 110% Factory setting: 65%		10
7.2.17	corrected value at 70.0%	Setting range: -10% to 110% Factory setting: 70%		10
7.2.18	corrected value at 75.0%	Setting range: -10% to 110% Factory setting: 75%		10
7.2.19	corrected value at 80.0%	Setting range: -10% to 110% Factory setting: 80%		10
7.2.20	corrected value at 85.0%	Setting range: -10% to 110% Factory setting: 85%		10
7.2.21	corrected value at 90.0%	Setting range: -10% to 110% Factory setting: 90%		10
7.2.22	corrected value at 95.0%	Setting range: -10% to 110% Factory setting: 95%		10
7.2.23	corrected value at 100.0%	Setting range: -10% to 110% Factory setting: 100%		10
7.2.24	corrected value at 105.0%	Setting range: -10% to 110% Factory setting: 105%		10
7.2.25	corrected value at 110.0%	Setting range: -10% to 110% Factory setting: 110%		10
7.3.0	Linearisation 3			10
7.3.1	corrected value at -10.0%	Setting range: -10% to 110% Factory setting: -10.0%		10
7.3.2	corrected value at - 5.0%	Setting range: -10% to 110% Factory setting: - 5.0%		10
7.3.3	corrected value at - 0.0%	Setting range: -10% to 110% Factory setting: - 0.0%		10
7.3.4	corrected value at 5.0%	Setting range: -10% to 110% Factory setting: 5.0%		10
7.3.5	corrected value at 10.0%	Setting range: -10% to 110% Factory setting: 10.0%		10
7.3.6	corrected value at 15.0%	Setting range: -10% to 110% Factory setting: 15%		10

Menu item	Description	Setting range	Adjusted value	P.
7.3.7	corrected value at 20.0%	Setting range: -10% to 110% Factory setting: 20%		10
7.3.8	corrected value at 25.0%	Setting range: -10% to 110% Factory setting: 25%		10
7.3.9	corrected value at 30.0%	Setting range: -10% to 110% Factory setting: 30%		10
7.3.10	corrected value at 35.0%	Setting range: -10% to 110% Factory setting: 35%		10
7.3.11	corrected value at 40.0%	Setting range: -10% to 110% Factory setting: 40%		10
7.3.12	corrected value at 45.0%	Setting range: -10% to 110% Factory setting: 45%		10
7.3.13	corrected value at 50.0%	Setting range: -10% to 110% Factory setting: 50%		10
7.3.14	corrected value at 55.0%	Setting range: -10% to 110% Factory setting: 55%		10
7.3.15	corrected value at 60.0%	Setting range: -10% to 110% Factory setting: 60%		10
7.3.16	corrected value at 65.0%	Setting range: -10% to 110% Factory setting: 65%		10
7.3.17	corrected value at 70.0%	Setting range: -10% to 110% Factory setting: 70%		10
7.3.18	corrected value at 75.0%	Setting range: -10% to 110% Factory setting: 75%		10
7.3.19	corrected value at 80.0%	Setting range: -10% to 110% Factory setting: 80%		10
7.3.20	corrected value at 85.0%	Setting range: -10% to 110% Factory setting: 85%		10
7.3.21	corrected value at 90.0%	Setting range: -10% to 110% Factory setting: 90%		10
7.3.22	corrected value at 95.0%	Setting range: -10% to 110% Factory setting: 95%		10
7.3.23	corrected value at 100.0%	Setting range: -10% to 110% Factory setting: 100%		10
7.3.24	corrected value at 105.0%	Setting range: -10% to 110% Factory setting: 105%		10
7.3.25	corrected value at 110.0%	Setting range: -10% to 110% Factory setting: 110%		10
8.0	Calibration			8
8.1	mA/Pt100	only IBS intern		
8.2	Temperature 1 0%			8
8.3	Temperature 1 100%			8
8.4	Analogue input 1 0%			8
8.5	Analogue input 1 100%			8
8.6	mA/Pt100	only IBS intern		
8.7	Temperature 2 0%			8

Software settings

Menu item	Description	Setting range	Adjusted value	P.
8.8	Temperature 2 100%			8
8.9	Analogue input 2 0%			8
8.10	Analogue input 2 100%			8
8.11	mA/Pt100	only IBS intern		
8.12	Temperature 3 0%			8
8.13	Temperature 3 100%			8
8.14	Analogue input 3 0%			8
8.15	Analogue input 3 100%			8
8.16	Analogue output 1 0%			9
8.17	Analogue output 1 100%			9
8.18	Analogue output 2 0%			9
8.19	Analogue output 2 100%			9
9.0	Test level			11
9.1	Analogue input 1			11
9.2	Analogue input 2			11
9.3	Analogue input 3			11
9.4	Analogue output 1 0%			11
9.5	Analogue input 1 50%			11
9.6	Analogue input 1 100%			11
9.7	Analogue output 2 0%			11
9.8	Analogue input 2 50%			11
9.9	Analogue input 2 100%			11
9.10	Test digital input and outputs			11

Stichwortverzeichnis

A	Interface address.....21
Adding function.....16	K
adjustment key.....5	keypad.....4
alarm.....12	L
alarm adjustment.....21	Language.....21
alarm hysteresis.....12	Linearising Function.....17
alarm value.....12	M
Alarm-Type.....12	Manual/Automatic key.....4
analogue input.....15	maximum alarm.....12
analogue output.....19	maximum current of the analogue output...19
B	measured signal.....13
bar graph.....13	measuring point number.....14
Baud rate.....21	minimum alarm.....12
Bedienelemente.....4	minimum current of the analogue output...19
C	Multiplying Function.....16
calibration level.....8	P
clear key.....5	programming.....6
code.....6	Programming button.....4
coding.....21	programming level.....6
configuration.....6	R
D	Radicatung Function.....16
decimal point.....13	reset settings.....5
Determine Factors.....17	S
display.....4	safety instructions.....2
Dividing Function.....16	sensor break.....12
E	sensor break monitoring.....15
Error message.....22	Set offset.....17
F	software version.....6
final value of the analogue output.....19	start size of the analogue output.....19
function block.....16	start-up.....2
H	storage.....5
hysteresis.....12	store button.....5
I	T
Input and Output Test.....11	TAG.....14
input level.....15	U
instrument number.....6	unit.....13