



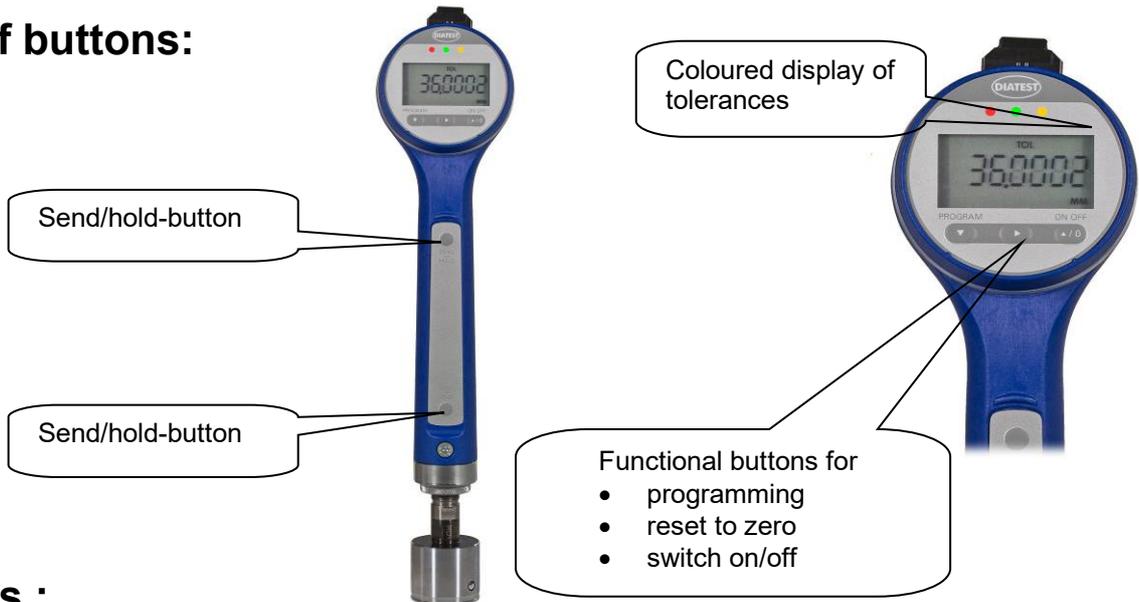
www.diatest.com



0,0001 mm  
0.000005 Inch

DIATRAN1000

## Layout of buttons:



## Functions :

|    |   |                               |
|----|---|-------------------------------|
| 1. | <b>Switch on →short push</b><br>( LCD-Display switches on)  | ON OFF<br>▲ / 0               |
| 2. | <b>Reset of display to zero →short push</b> <ul style="list-style-type: none"> <li>• Run-Mode: The unit is set to zero to the preset dimension</li> <li>• MIN; MIN: "triG" appears in the display. When SEND/HOLD button is pressed again, the unit is zero-set to the preset value</li> <li>• MIN-MAX/MIN-MAX/two: When SEND/HOLD button is pressed again, the display is set to zero.</li> </ul>  | ON OFF<br>▲ / 0               |
| 3. | <b>Switch off →long push</b><br>(LCD-display switches off)  | ON OFF<br>▲ / 0<br>(>1,8sec.) |
| 4. | <b>Transfer of measured values by radio transmission to receiver</b><br>If there is no radio transmission module or if the receiver doesn't acknowledge reception, the display switches to HOLD. The measured value is frozen. The HOLD-mode can be finished by pressing the button SEND again.<br>For dynamic measurements (MAX/MIN/MAX-MIN) the button SEND/HOLD prompts the start and stop-function in addition. The measured value is only transmitted after the stop signal. Both of buttons in the holder are parallel-connected. | SEND<br>HOLD                  |
| 5. | <b>The programming menu opens up</b>  | PROGRAM<br>▼<br>(>1,8sec)     |

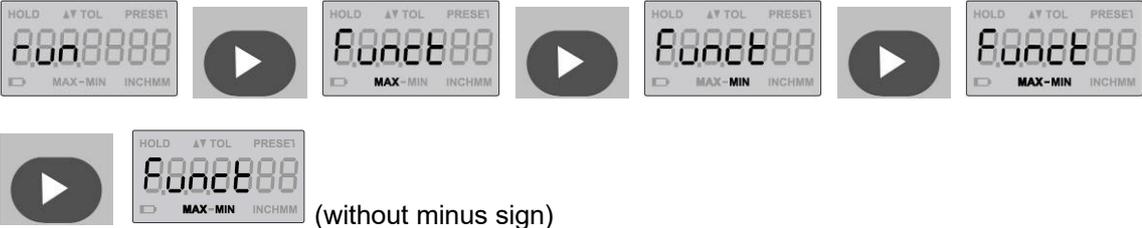
# Programming mode

To enter programming mode press:



To exit programming mode press:



|   |   |
|---|---|
| <p>1.</p>  | <p><b>Passwort prompt when PC_on (Menu item 6)</b></p>  <p>Input as for preset (see item 3.1)</p>   |
| <p>2.</p>  | <p><b>Selection of measuring mode</b> (<i>RUN [static], RUN 1/2/3, MAX, MIN, MAX – MIN, MIN - MAX/2</i>)</p>  <p>(without minus sign)</p> <p>If a dynamic measuring mode is selected, the message "triG" appears after exiting the programming mode.</p> <p>In addition, the following options can be selected in the run mode:</p>  <p><b>This function is only for use with radio or cable transmission of the measured values!</b></p> <p>The transmitter addresses are changed in the loop</p> <p>Run 1= normal behaviour of the dial gauge with alternating transmitter address.<br/>Sequence: set transmitter address, then set address +1</p> <p>Run 2= normal behaviour of the dial gauge with alternating transmitter address. Sequence: set transmitter address, then set address +1 then transmitter address+2)</p> <p>Run 3= normal behaviour of the dial gauge with alternating transmitter address. Sequence: set transmitter address, then set address +1 then transmitter address+2 then transmitter address +3)</p> |

### 3.

#### Setting to zero: With or without supplementary linearization

(supplementary linearization of BMD gauge by two setting rings max + min)



Attention: The DIATRON1000 calculates a new offset factor by using the two setting masters. The new offset is also active when you switch off the mode "2nd on".

If offset factor is  $\neq 1$  the UP/DOWN icon is displayed in the menu „2ndON/OFF“

Offset=1



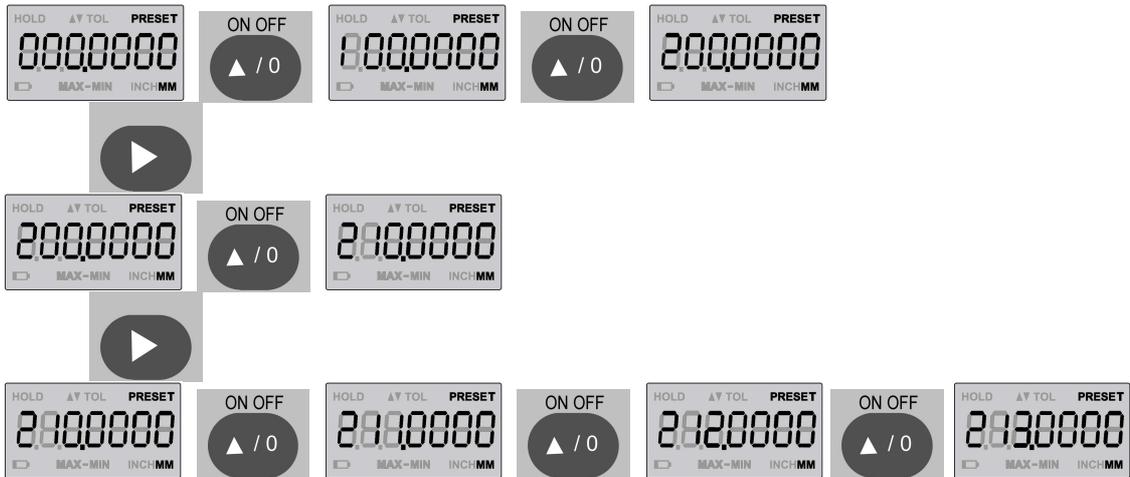
New offset  $\neq 1$  determined by the function „2ndOn“



The offset can be deleted by pressing the key combination for two seconds. The message „Clr.CAL“ is displayed for confirmation.

### 3.1

#### Setting of preset value (only visible if 2nd\_off)



### 3.2

#### Setting of maximum preset value (only visible if 2nd\_on)



..... Setting of absolute value see 3.1

### 3.3

#### Setting of minimum preset value *(only visible if 2nd\_on)*



..... Setting of absolute value see 3.1

Remark: For calibration with 2 setting masters in measuring process the sequence is not significant. The DIATRON1000 automatically detects the max. and min setting master.

### 4.

#### Tolerance display on/off



Note: LEDs are only switched on if "Hold/Send" button is pressed

### 4.1.

#### Setting of upper tolerance limit *(only visible if TOL On was selected)*



(Setting of tolerances as absolute value= same procedure as described under item 3.1)

### 4.2.

#### Setting of lower tolerance limit *(only visible if TOL On was selected)*



(Setting of tolerances as absolute value= same procedure as described under item 3.1)

### 4.3.

#### Setting of LED glow time *(only visible if TOL On was selected)*



Coloured display is deactivated with LED 00. Glow time is indicated in seconds. Limitation of max.glow time to 10 sec., display returns to 00.

### 5.

#### Setting of unit



## 6.

### Password prompt on/off



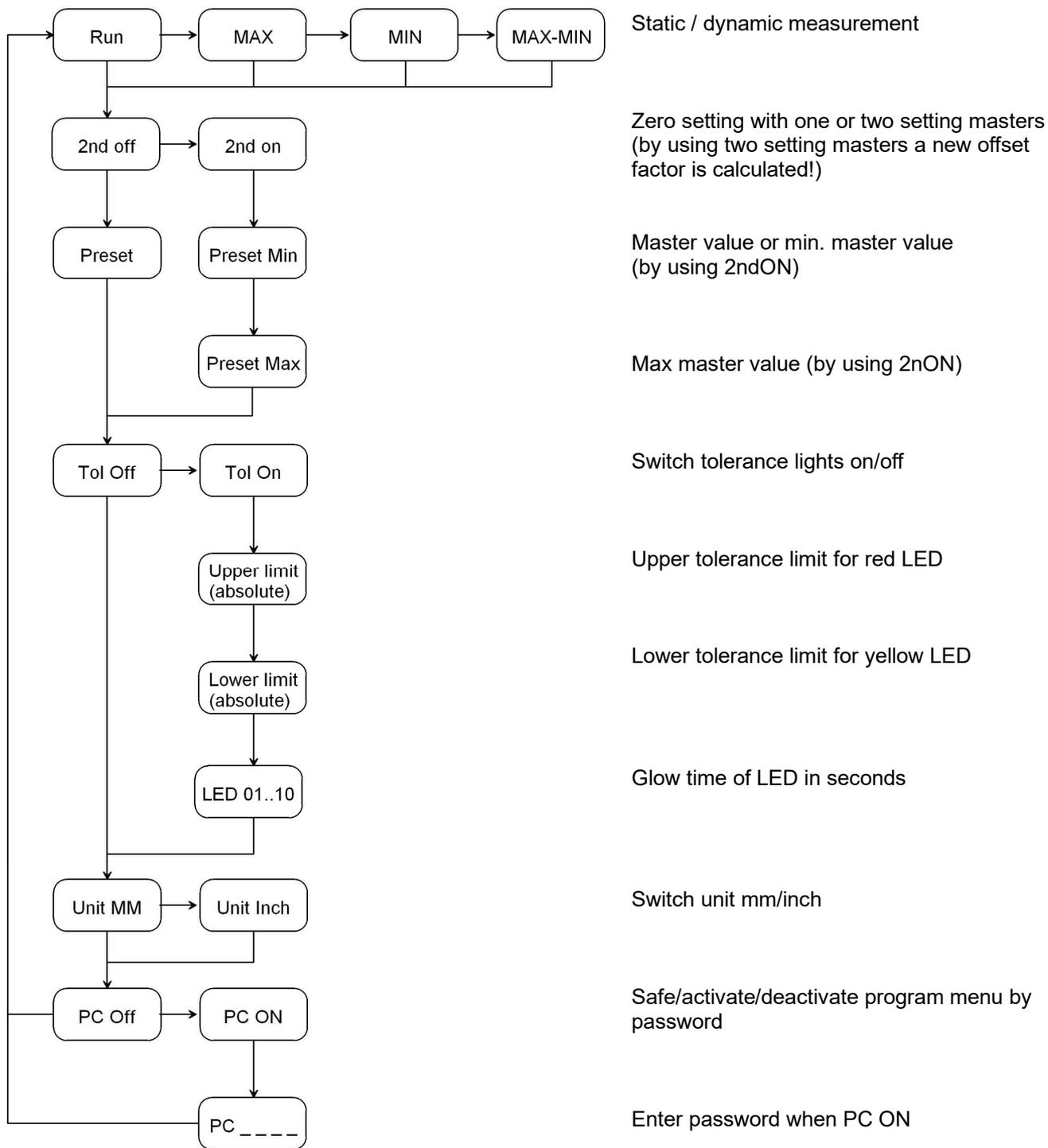
## 6.1

### Entering the password *(only visible if PC\_on)*



Setting = same procedure as described for preset value under item 3.1  
If the password is lost, the programming menu can be entered by using the master password „9837“.

## Flow chart of the DIATRON1000 menu:



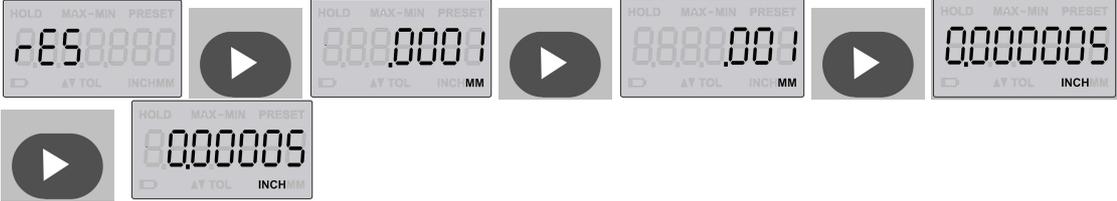
# Hidden menu

To enter press button:



Exit programming mode by pressing



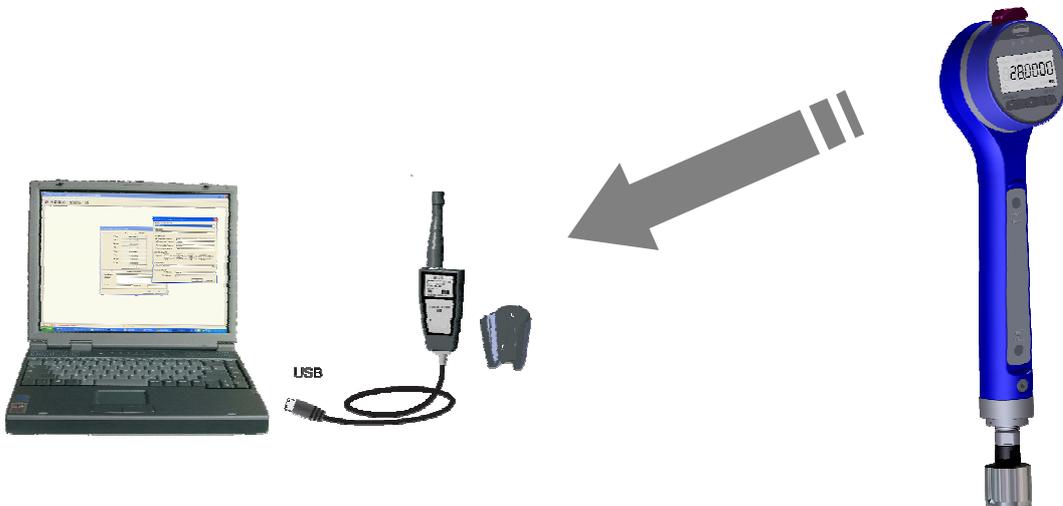
|  |  |
|--|--|
| <b>1.</b><br><br> | <b>Select measuring direction</b> ( <i>internal; external</i> )<br><br>             |
| <b>2.</b><br><br> | <b>Adjust resolution (0,001 - 0,0001mm – 0,00005 inch – 0,000005 inch)</b><br><br> |

All settings can be configured and transferred to DIATRON1000 via cable via the free software DT1000\_PC. In order to connect DIATRON1000 with PC you need one of following cables:

Cable for the USB connection, order code: DT1000-USB  
 Cable for the RS232 connection, order code: DT1000-RS232

As an option DT1000 can be equipped with a radio module:

Radio sender for DIATRON1000, order code: DT1000-S  
 Receiver module for PC with USB interface, order code: USB-R  
 Receiver module for PC with RS232 interface, order code: RS232-R



# Software DT1000\_PC

DIATRON1000 can be connected to PC via the software DT1000\_PC for

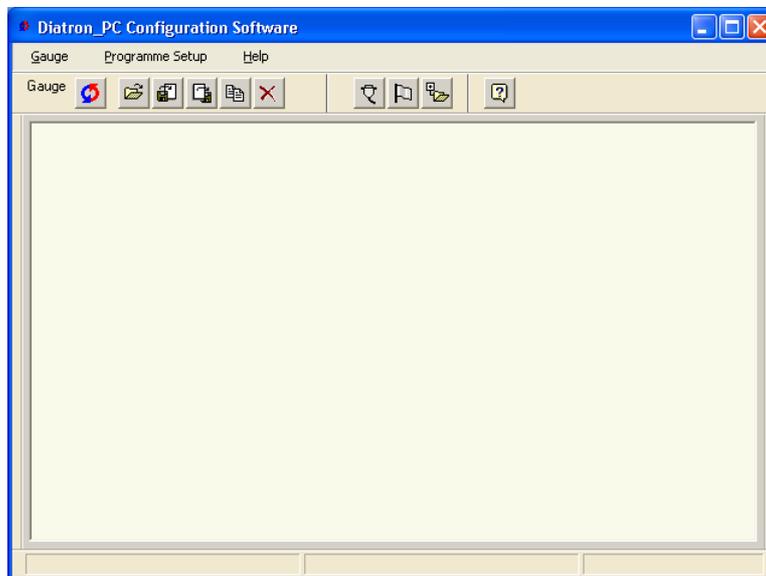
- Programming features of DIATRON1000
- Downloading measuring program from PC to DIATRON1000
- Downloading measuring program from DIATRON to PC
- Updating firmware

You will need a special connection cable for this:

- For a connection by USB-interface (order code DT1000-USB)
- For a connection by RS232-interface (order code DT1000-RS232)

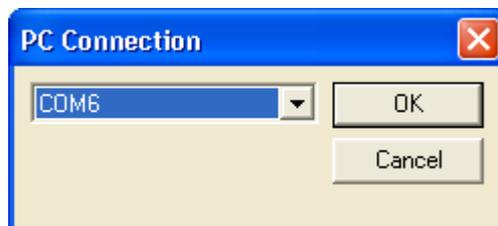
Before using the software you have to install it. Afterwards, you will find a new menu item „DT1000\_PC“ in the windows start menu.

After starting the program you will see the following:



You have to choose connection interface between DIATRON1000 and PC before Diatron will be able to communicate with PC.

Please define COM-interface in menu „*Program Setup* → *PC Connection*“:

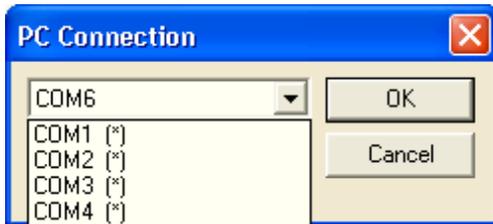


Note: By using a USB-connection cable a COM-interface will be addressed as well. You can find and modify the right interface in windows device manager.

## Menu „Program settings“

### Connection to PC or button

Before starting data transmission to DIATRON1000 the connection has to be configured.



DIATRON1000 communicates exclusively via COM-interfaces even if a USB-cable is used.

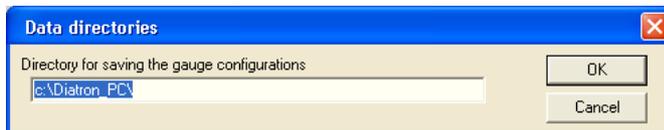
To allow communication between PC and DIATRON1000, the right interface has to be selected. If you define the wrong interface, no connection is established between the two devices!

### Language or button



You can choose between both of the programming languages: German and English. This choice has no influence on DIATRON1000.

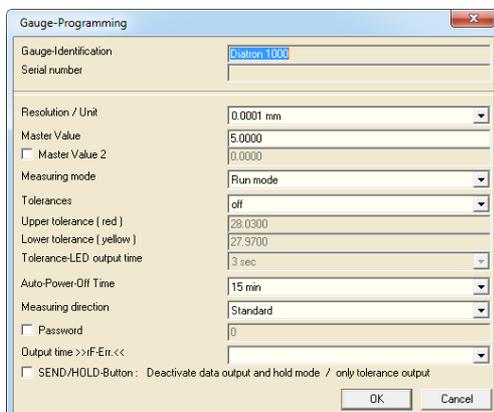
### Data directory or button



This menu item determines where the programs for the DIATRON1000 are filed on the PC.

## Menu „Gauge“

### Programming online or button

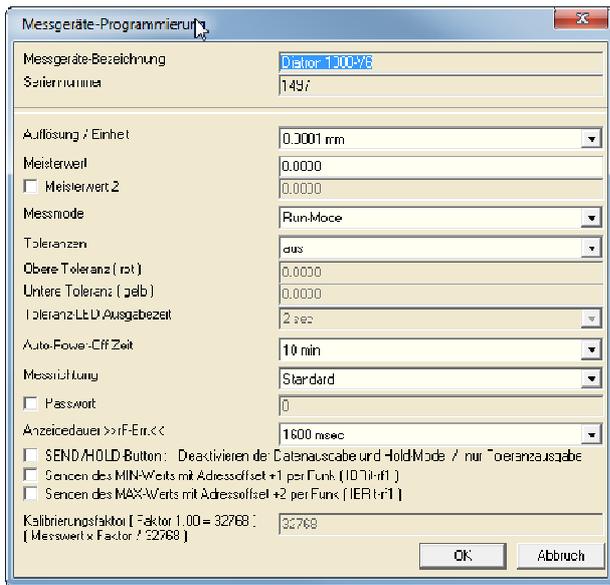


For online programming the data from DIATRON1000 will be read and can be edited.

After that modified data will be transmitted back to DIATRON1000.

**Note:** There has to be a connection between PC and DIATRON1000 (via cable) for this!

The following additional functions are available here:



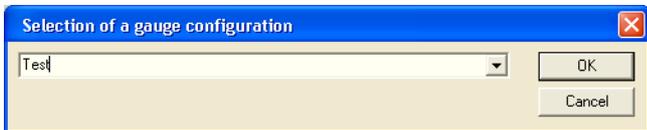
- Auto-Power-Off-Time: time until automatic switch-off 0 to two49 min
- Output time >>rF-Err<<: error message in display from 160-2560 msec.
- Activate/Deactivate SEND/HOLD button: If function is active and in case of active TOL-function, LED-display is illuminated. If transmission fails, the display shows "rF-Err". If function is deactivated (in general if no radio module is used), NO value can be transmitted!
- If function TOL is active, LED light up by pressing SEND/HOLD button (No transmission of measured value, no output of rF-Err).
- Sending of min-value.. and sending of

Max-Value: if these options are activated, the MIN or MAX-value is additionally transmitted to dynamic MIN/MAX-mode. The addresses of additional values correspond to modul address+1 or +2!

**Note:** Transfer exclusively works in MIN-MAX mode!!!

### Create/change configuration or button

To create a new program or change an existing one for DIATRON1000:  
The following menu opens up:



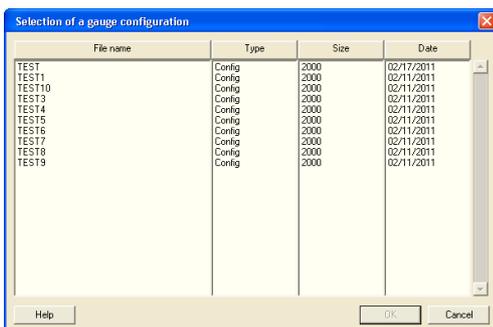
Enter a new name for a program....



or open an existing program to change it!  
Program screen opens next to define the parameters:

Click on „OK“ to save program on PC.

### Copy configuration to gauge or button



It's possible to copy existing programs saved on PC to DIATRON1000:

Initially all programs saved on PC are displayed:

Select the required program

Before sending measured data to DIATRON1000 programming screen will be displayed

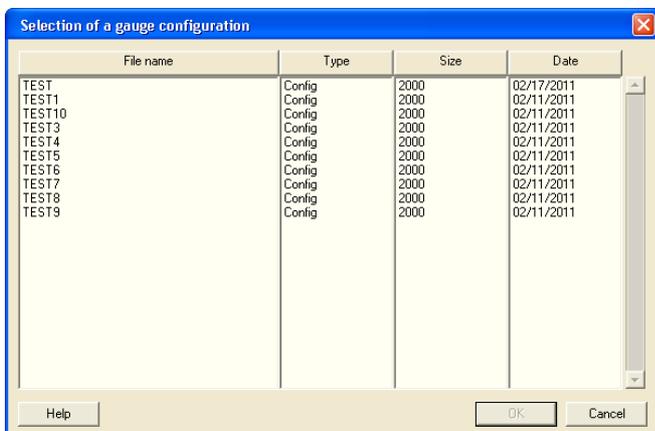
Data will be transmitted to DIATRON1000 after clicking button „OK“.

## Download configuration from gauge or button



Program is downloaded from DIATRON1000 and saved on PC under its name (see input line of example = „Test1“):

## Copy configuration or button

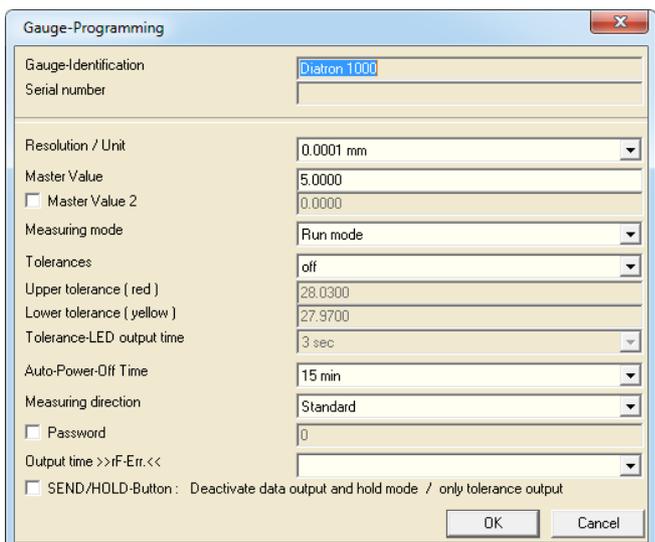


To copy or modify a stored program:

Select program to be copied from menu



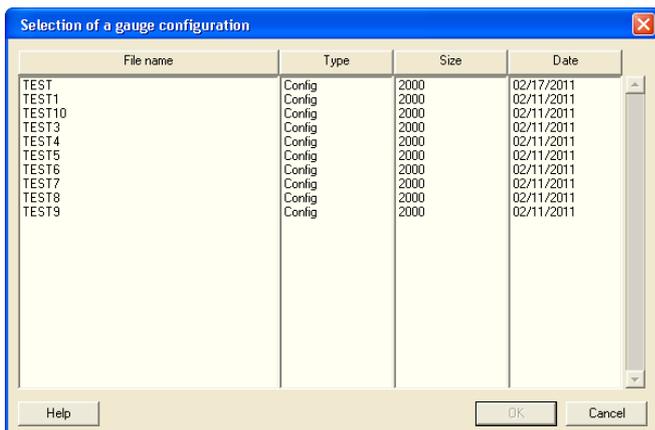
Enter new name of program into following dialog:



Programming screen opens. Changes can be made here:

Click „OK“ to save the new program on your PC

## Delete configuration or button



To delete programs saved on PC:

Select program to be deleted and click „OK“.

Note: The deletion is definitive and irreversible!

## Error table

### System errors

System errors are reported if hardware is defective. These error messages will help support team to analyse disfunctions.

| Error   | Error description                        | Correction   |
|---------|--|--|
| Error 1 | Timeout during sensor scan               | Remove battery<br>Short-circuit between the two battery contacts<br>Replace battery<br><i>If error cannot be eliminated please return gauge for repair</i> |
| Error 2 | Sensor cannot calculate a value<br><br>o | Remove battery<br>Short-circuit between the two battery contacts<br>Replace battery<br><i>If error cannot be eliminated please return gauge for repair</i> |
| Error 3 | reserved                                 | ----   |
| Error 4 | Error on writing data in EEPROM          | <i>Defective hardware → pls. return gauge for repair</i>   |

### Operating and programming errors

| Error          | Error description  | Correction   |
|----------------|--|--|
| <b>Error 5</b> | Difference between the two setting masters is too big<br>(difference > 6,5 mm ).         | Repeat calibration with two setting masters with a smaller difference.   |
| <b>Error 6</b> | During automatic calibration of measuring points the same setting master was used twice. | Repeat calibration with two different setting masters.   |
| <b>Error 7</b> | Difference between two programmed master values is too big.                              | Select menu <b>PRESET</b> and change master values to applicable values  |
| <b>Error 8</b> | Error in automatic calibration of measuring points<br>Calibration factor is too big      | Difference between programmed master values is much higher than measured difference between master values.<br>Repeat calibration and check programmed master values in menu <b>PRESET</b> .  |
| <b>Error 9</b> | Error in automatic calibration of measuring points<br>Calibration factor is too small    | Difference between programmed master values is much smaller than measured difference between master values.<br>Repeat calibration and check programmed master values in menu <b>PRESET</b> . |

## TRIPLE-I Interface

### Static measuring mode without Triple-I-cable and radio module

By pressing the SEND/HOLD button gauge switches to mode HOLD and sends the value in format Opto-RS232. Message „SEND“ is shown on LCD-display for 300 msec.

As no cable or radio module is connected gauge cannot confirm receipt of measured value and remains in HOLD-mode. By pressing SEND/HOLD button again gauge will quit HOLD mode. When quitting the HOLD mode no value will be sent.

### Static measuring mode via PC cable

By pressing the SEND/HOLD button gauge switches to mode HOLD and sends the value in format Opto-RS232. Message „SEND“ is shown on LCD-display for 300 msec. Upon receiving the measured value PC sends a request command „?“<cr>. By receiving this request command gauge automatically quits HOLD mode and repeats sending the measured value.

### **Static measuring mode via radio module**

By pressing SEND/HOLD button gauge switches to mode HOLD and sends the value in format Opto-RS232. Message „SEND“ is shown on LCD-display for 300 msec.

The radio module interrupts transfer of measured value in format Opto and requests measured value. Now, radio module sends the value to receiver up to four times. After successful data transfer the radio module acknowledges the transmission (from sender to PC) to the gauge. HOLD Mode is quit and message SEND is replaced by latest measurement on LCD display.

If data transfer was not successful the error message „rF-Err.1“ is displayed for 1 second on LCD. HOLD mode remains active. To quit HOLD mode repeat press SEND/HOLD button.

### **Static measuring mode with permanent data transfer**

By pressing SEND/HOLD button for more than two seconds gauge switches to continuous data transfer mode. In this mode „rF“ is permanently displayed on LCD. Whenever a new measured value is transmitted „rF-Send“ briefly appears. Short key press of „SEND/HOLD“ button: Exit the mode.

After a measurement the program checks whether the measured value has changed. A new value will only be sent in format Opto-RS232 if the measured value has changed. Radio module interrupts transfer of the value in Opto format and requests a new value in radio mode. In this mode neither radio module nor processor are waiting for a transmission confirmation by receiver. (Therefore receiver won't get any commands!)

### **Dynamic measuring mode without Triple-I-cable / radio module**

When SEND/HOLD button is pressed once dynamic measuring is started (Max/Min- icons on LCD display are flashing). By pressing the button for the second time dynamic measuring is stopped ( Max/Min icons on LCD display permanently glow). By quitting measured value is automatically sent in OPTO-RS232 format. Gauge does not expect any confirmation and starts a new dynamic measuring by pressing the SEND/HOLD key again.

### **Dynamic measuring mode via Triple-I-cable**

By first pressing the SEND/HOLD button dynamic measuring is started (Max/Min- icons on LCD display flashing). With the second keystroke dynamic measuring mode is stopped ( Max/Min icons on LCD display permanently glow). By quitting measured value is automatically sent in OPTO-RS232 format. In case the PC requests a value, only the current display value is transmitted. This request has no influence on the dynamic measuring mode!

### **Dynamic measuring mode via radio module**

When pressing SEND/HOLD key for the first time the dynamic measuring mode will be started ( Max/Min icons on LCD display are flashing). With the second keystroke dynamic measurement will be stopped (Max/Min icons on LCD display permanently glow). By quitting measured value is sent in OPTO-RS232 format. Message SEND is displayed. Radio module interrupts transfer of value and requests measured value. Radio module now sends the value up to 4 times to receiver. After successful data transfer the radio module acknowledges the transmission of the measured value (from sender to PC) to the gauge. Dynamic measuring result is displayed on the LCD. A new dynamic measuring can be started by pressing the SEND/HOLD key again.

If data transfer failed error message „rF-Err.1“ is displayed on LCD. After confirming the output of the error message the dynamic value is displayed on LCD. To record a new dynamic measurement press SEND/HOLD button.