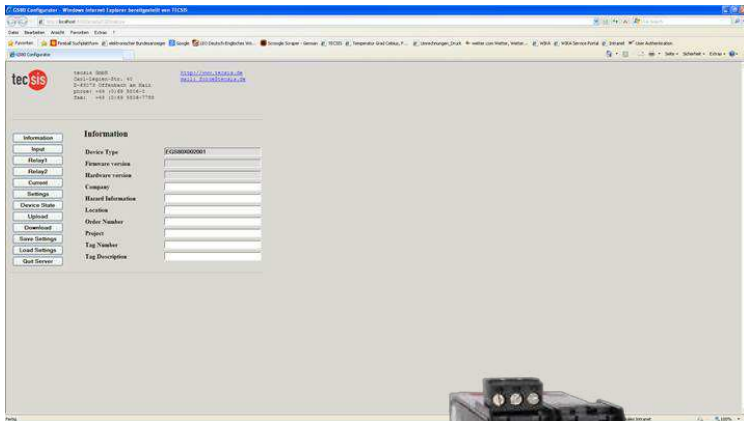


Operating Instructions



EGS80 Configuration Software

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1 General points about software and putting into service

The EGS80 configurator software for the EGS80 limit switch makes parameterization of the device a simple task. All settable parameters are selected or entered via screen forms. Once all of the settings have been made, they can be saved in a file under the desired file name and/or downloaded at any time onto series EGS80 devices. This saves having to do the parameterization via the keypad on the limit switch.

Programming the limit switch during operation is permissible. For operation of the EGS80 limit switch, refer to the BE 987 operating instructions.

1.1 Putting into service

The following are required:

- a EGS80 limit switch
- a PC with Windows 2000/NT/XP and an RS-232 interface
- Internet Explorer or other browser
- an RS-232 adapter cable, length 3m, part no. BR EZE53X001010
a jack plug at EGS80 end / SUB-D9/D25 socket at PC end,
with galvanic isolation/function isolation acc. to IEC 62103
(see also the illustrations on the next page) or
USB adapter cable EZE53X001014
- Voltage supply for the EGS80 (20-90 VDC or 48-253 VAC)

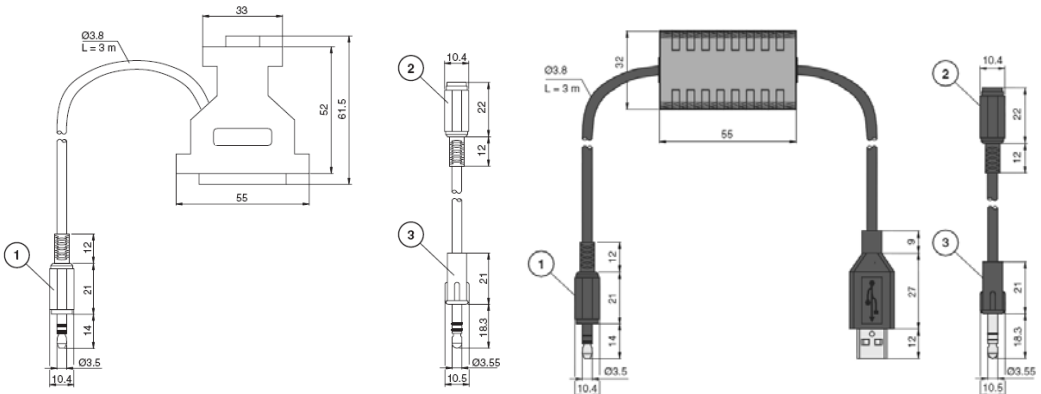
First steps in putting into service:

- Install the EGS80 configurator software on the PC
- Connect up the EGS80 limit switch and PC via the RS-232 interface cable
- Start the EGS80 configuration software
- In the EGS80 configuration software, specify the RS-232 connection port chosen on the PC, e.g. COM1 (on the "Settings" screen, see section 6, Service, of these operating instructions)
- If everything is connected and installed correctly, the configuration software finds the EGS80 limit switch automatically

Front view



Figure: Front view of EGS80 limit switch



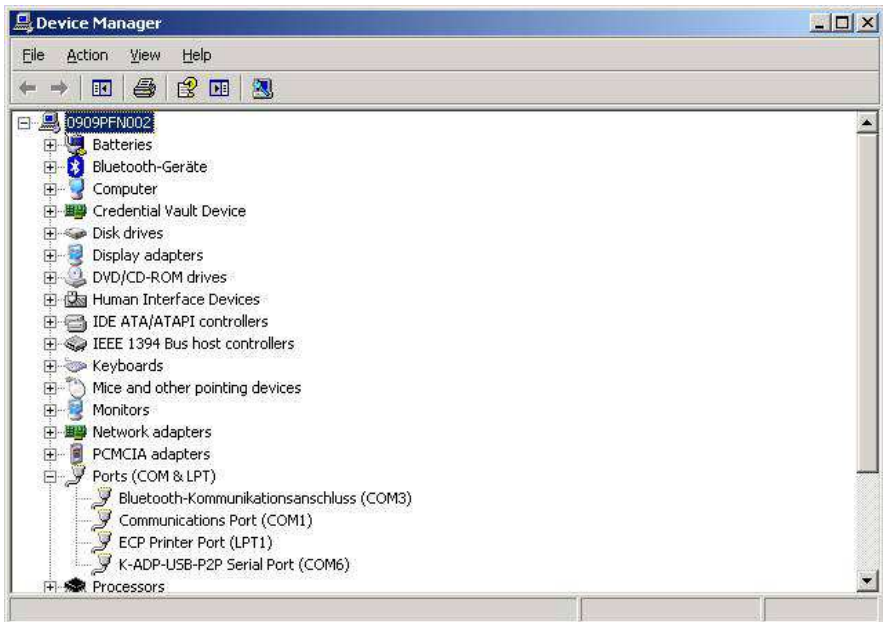
RS-232 adapter cable with jack plug (Pos.1),
jack adapter (Pos. 2 and 3) and SUB-D9/25 socket*)
and SUB- D9/25 socket*
Ordering code EZE53X001010

USB interface cable (isolated)
with jack plug and jack adapter (Pos. 2 and 3)
Ordering code EZE53X001014

*)Note: Because in the past the EGS80 limit switch was equipped with programming jacks of standard size $\text{Ø}3.55 \text{ mm} \times 18.3 \text{ mm}$ (Pos. 3) but later devices had the $\text{Ø}3.5 \text{ mm} \times 14 \text{ mm}$ size (Pos.1), an adapter is enclosed with the interface cable (Pos. 2) so that all devices can be parameterized. If only the 18.3 mm version of the interface cable is available during an urgent service deployment, it may be used, but it is important to note that the plug juts out by about 4 mm on new devices. Forcefully pressing the plug in could result in damage to the device.
The different length of the plugs has no effect on their operation.

1.2 Software installation (USB driver)

1. Install driver
 - a. Win_32: Win XP, Windows Vista, Windows 7 32 Bit
2. Plug in USB connector, Driver will then be initialized
3. Check in the Windows Device Manager (Start -> Settings -> Control Panel -> System -> Hardware -> Device Manager) which COM Port is assigned for K-ADP-USB (in the Example below: COM 6):



4. In the tecsis EGS80 Windows Software this valid COM Port. Attention: COM port must be < COM 7, if necessary assign a COM Port < COM 7
 - a. Click K-ADP-USB in the Device Manager
 - b. Select the tab „Port Settings“
 - c. Click Button „Advanced“
 - d. Now the COM Port can be assigned manually

Advanced Settings for COM6 [?] [X]

COM Port Number: **COM6** [v]

OK

Cancel

Defaults

USB Transfer Sizes

Select lower settings to correct performance problems at low baud rates.
Select higher settings for faster performance.

Receive (Bytes): **4096** [v]

Transmit (Bytes): **4096** [v]

BM Options

Select lower settings to correct response problems.

Latency Timer (msec): **16** [v]

Miscellaneous Options

Minimum Read Timeout (msec): **0** [v]

Minimum Write Timeout (msec): **0** [v]

Serial Printer

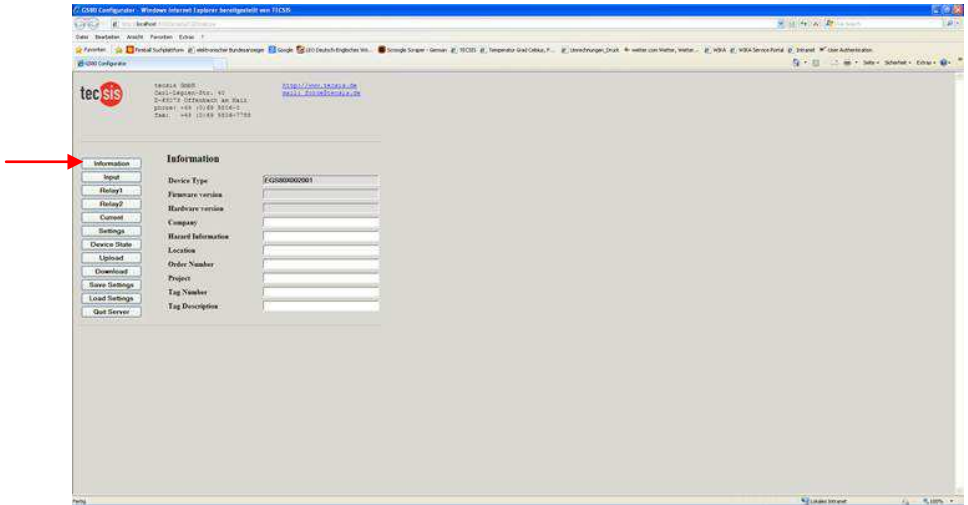
Cancel If Power Off

Event On Surprise Removal

Forced XON/XOFF Mode

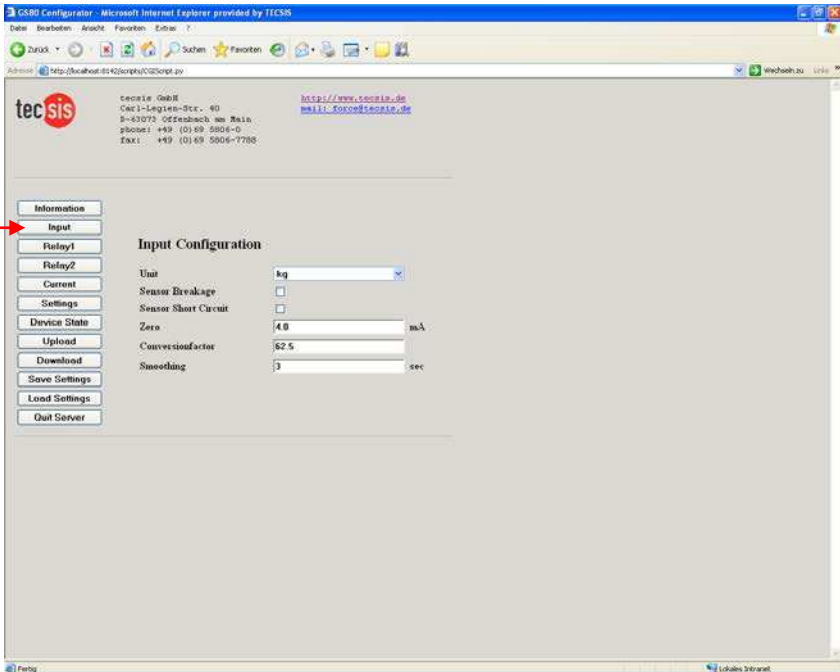
2 Input of project data ("Information" screen)

The following illustration shows the screen form for the project data. This screen can be used to enter the company name and project numbers etc., which can then be saved in a file together with the parameterization data that has been entered (see section 10).



3 Setting input parameters ("Input" screen)

The following illustration shows the input parameters:



Unit

The **unit** can be selected (mA, %, N, t, kg, bar, Pa, ..). The limit switch measures in mA. The device measures in mA. If you have selected different units, the device calculates the measured value in the selected units using the parameters Zero point and Conversion factor (see BE 987, section 6.3.2). This chosen unit is then used when displaying measured values and for all relevant settings in the parameterization mode. The menu items and zero conversion factor does not appear when selecting a unit mA (section 6.2, BE987).

Sensor Breakage

If you select **ON SB** (by ticking this box), an open circuit is displayed if the input current is <0.2 mA (see also Chapter 5 of BE 987 Operating Instructions for EGS80).

Sensor Short Circuit

If you select **ON SC** (by ticking this box), a sensor short circuit is displayed if the input current >22 mA (see Chapter 5 of BE 987 Operating Instructions for EGS80).

Zero

The **zero point** is the start of the measuring range for the input current (0% input value). If you select a value < 0.2 mA, you need to deselect open-circuit monitoring (LB OFF), otherwise the latter will report a fault within the measuring range. The usual value for the zero point is 0 mA or 4 mA.

Conversionfactor

The Transmitter Power Supply measures in mA. If you have selected different units (section 6.2, BE987), the device calculates the measured value in the selected units using the parameters Zero point and Conversion factor in accordance with the following formula:

- Measured value in the selected units = (original measured value – zero point) x conversion factor An arbitrary value between -15 mA und +15 mA can be set as the Zero point, and values between 0.100 and 5000 can be set as the Conversion factor.

Example:

- Selected **unit t**, 4 mA input current to 0 t corresponds to 20 mA input current 10.00 t. The zero point is 4 to choose, as the conversion factor of 0.625 ($t = 10.00 / 16 \times 0.625$).
- Example with zero offset (tare): selected **unit t**, 7.8 mA input current to 0 t correspond to 20 mA input current 8.155 tonnes. The zero point is to choose 7.8 as the conversion factor 0.668 ($\text{Range} = 20 \text{ mA} - 7.88 \text{ mA} = 12.2 \text{ mA}$; $8,155 \text{ value display: Range } 12.2 = \text{Conversion factor of } 0.668$).
- Selected **unit %**, 4 mA input current to 0% corresponds to 20 mA input current 100 %. The zero point is 4 to choose, as the conversion factor of 6.25 ($100 \% : 6.25 = 16 \text{ mA}$).
- Selected **unit bar**, 2 mA input current is to correspond with 0 bar, 10 mA input current with 4 bar. The zero point is selected as 2 and 0.5 as the conversion factor.
- Selected **unit °C**, 20 mA input current is to correspond with 0 °C, 0 mA input current -100 °C. The zero point is selected as 20 and 5 as the conversion factor.

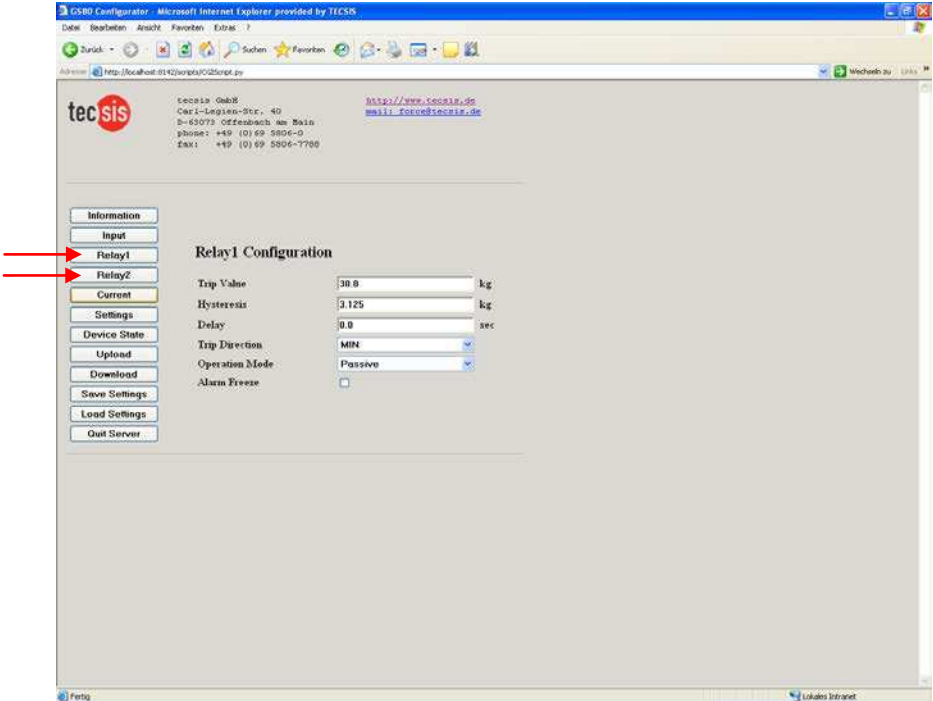
Smoothing

For strongly varying measured values you can apply **smoothing** to affect how quickly an output responds to a change in input value:

0 sec. = no smoothing, 255 sec. = maximum smoothing.

4 Relay output ("Relay 1 and Relay 2 Configuration" screens)

The following illustration shows the screen form for the relay output parameters, in which you can enter your own parameters for the chosen relay. As the screen forms are completely identical for both relays, the description is given for just the first of these.



Trip Value and Hysteresis

When entering values for **trip value** and **hysteresis**, please note:

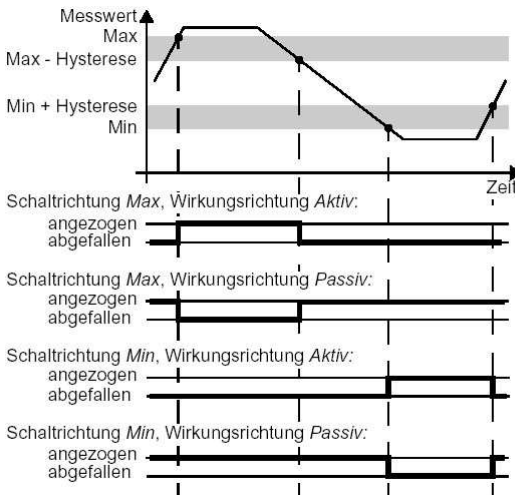
- Both values are to be entered in the unit that was chosen earlier under Unit (see Chapter 6.2). The values entered can be between 0/4 mA and 20 mA (according to the current output characteristic) or between 0% and 100%.
- The hysteresis value should be chosen >1% of the trip value to avoid relay chatter.
- As the depiction of trip response in Chapter 6.4.1 shows, for trip direction MAX the value (trip value - hysteresis) must be > 0 and for trip direction MIN the value (trip value + hysteresis) must be ≤ upper limit of the trip value entry.

Trip Direction and Operation Mode

Max or Min can be selected as the **trip direction**, and active or passive as the **operation mode** (see also Chapter 6.4 in the BE 987 for EGS80).

Areas of application:

- Trip direction MAX, active operation mode:
Alarm when limit exceeded, e.g. horn on
- Trip direction MAX, passive operation mode:
Overfill safeguard, e.g. pump off;
- MIN-MAX mode in the case of large hysteresis, e.g. pump on/off
- Trip direction MIN, active operation mode:
Alarm when limit not reached, e.g. horn on
- Trip direction MIN, passive operation mode:
Overload protection, e.g. pump off when flow has halted

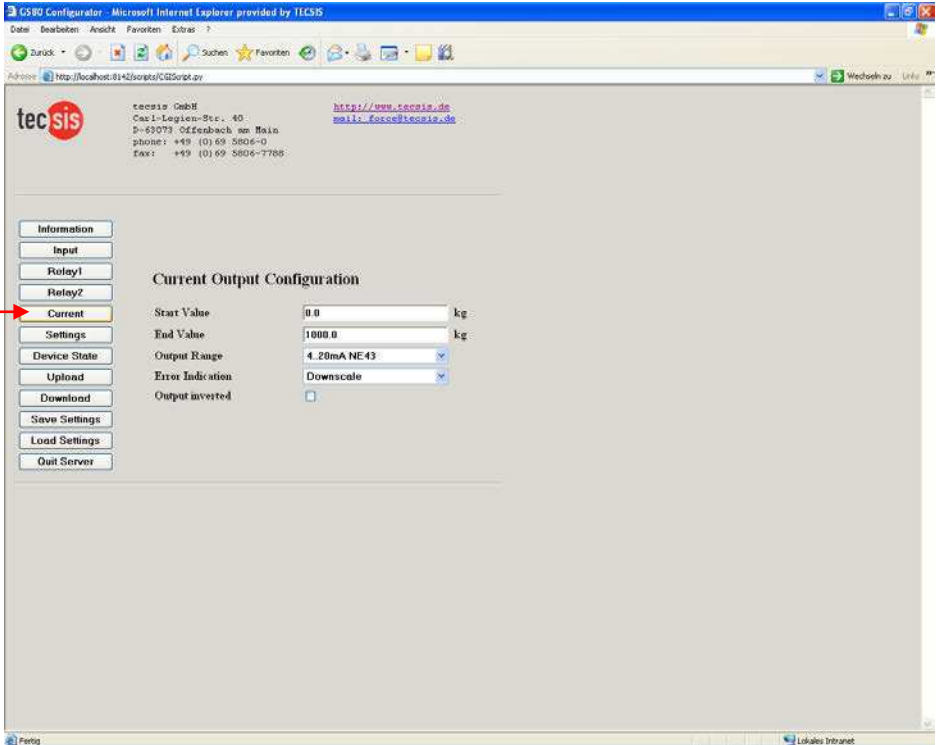


Alarm Freeze

The **alarm freeze** prevents short-term limit overruns from going unnoticed by personnel. When alarm freeze ON is selected, the new state is maintained after a relay trips until either of the following is performed: a device restart or pressing the ESC key. Either of these actions will reset the relay, unless the limit transgression still persists.

5 Current output ("Current Output Configuration" screen)

The following illustration shows the screen form for setting the analogue output:

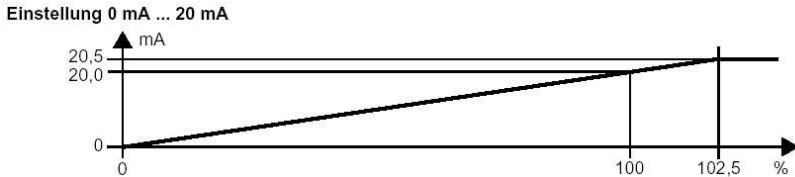


Please note when entering Start value and End value:

- Both values are to be entered in the units, which were selected under Units (section 6.2, BE987).
- Values between 0 mA and 20 mA can be entered, or between the values of these limits converted into the selected units, using the parameters Zero point and Conversion factor (see section 6.3.2, BE987). The difference between End value and Start value must be at least 1 % of the End value (preset automatically by the Transmitter Power Supply).

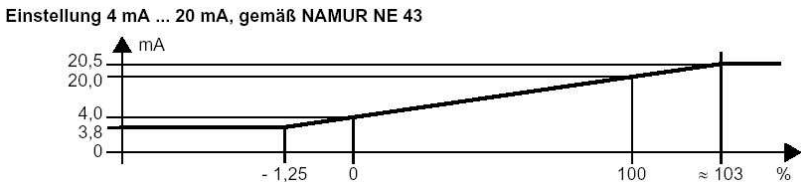
Output Range (characteristic)

The various options for setting the output range have the significance described and graphically illustrated below (for setting the zero point and span, refer to Chapter 6.3 of the BD 987 operating instructions; if you select the **inverted** output, the conversion of zero point and zero point + span is transposed):



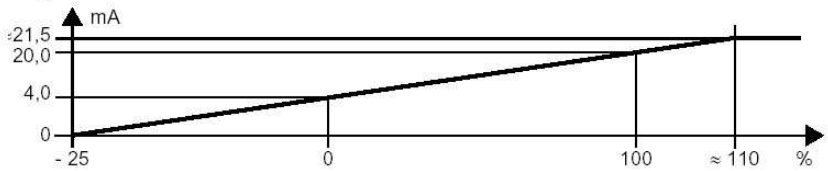
With this setting the zero point is converted to 0 mA, the zero point + span value to 20 mA, with intermediate values proportional.

Evaluation is not possible if the zero point is undershot (output 0 mA). With overshoot of zero point + span, the output current climbs linearly to a maximum of 20.5 mA (102.5% of the measuring range). Further overshoots cannot be evaluated (output 20.5 mA).



With this setting the zero point is converted to 4 mA, the zero point + span value to 20 mA, with intermediate values proportional. If the zero point is undershot, the output current falls linearly to a minimum of 3.8 mA (-1.25% of the measuring range). Further undershoots cannot be evaluated (output 3.8 mA). With overshoot of zero point + span, the output current climbs linearly to a maximum of 20.5 mA (approx. 103% of the measuring range). Further overshoots cannot be evaluated (output 20.5 mA).

Einstellung 4 mA ... 20 mA



With this setting the zero point is converted to 4 mA, The zero point + span value to 20 mA, with intermediate values proportional.

If the zero point is undershot, the output current falls linearly down to 0 mA (-25% of the measuring range). Further undershoots cannot be evaluated (output 0 mA). With overshoot of zero point + span, the output current climbs linearly to approx. 21.5 mA (approx. 110% of the measuring range). Further overshoots cannot be evaluated (output approx. 21.5 mA).

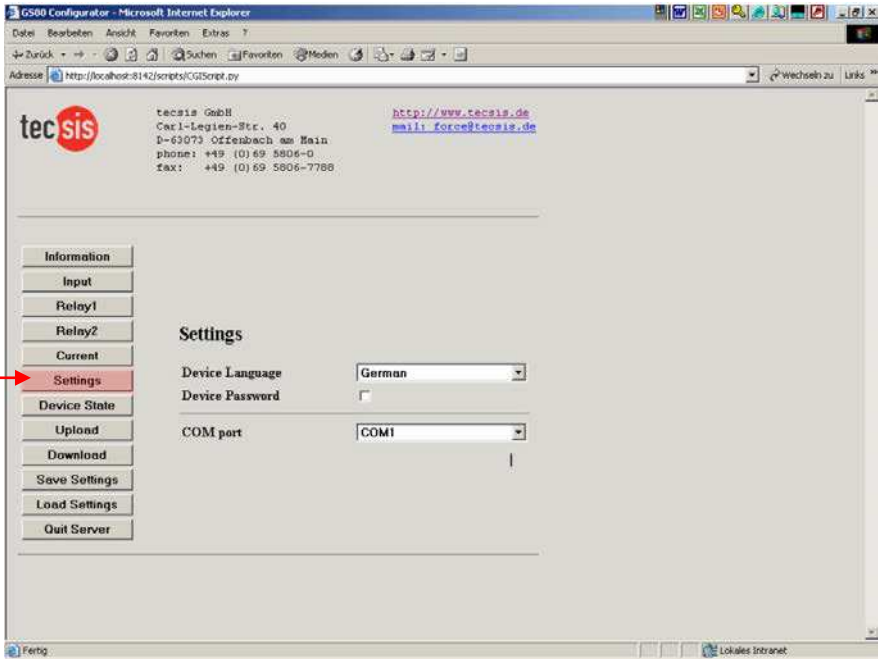
Error Indication (fault current)

The table below shows current output for each setting when a fault occurs:

| Setting | 0 mA ... 20 mA | 0 mA ... 20 mA, acc. to NAMUR NE 43 | 0 mA ... 20 mA |
|---------------|-----------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------|
| Hold | Last measured value before the fault | | |
| Max (upscale) | ~ 21.5 mA | ~ 21.5 mA | ~ 21.5 mA with short-circuit (not distinguishable from <i>End value overrange</i>) |
| Min (upscale) | 0 mA with lead breakage (not distinguishable from <i>Start value</i> measurement) | 2.0 mA | ~ 21.5 mA (not distinguishable from <i>Start value</i> measurement) |

6 Service ("Settings" screen)

The following illustration shows the screen form for selecting the service settings:



Device Language

Selection of the language for the setup menu of the EGS80 limit switch.

Device Password

Checkbox to activate password protection. This safeguards the parameter settings from unauthorised changes.

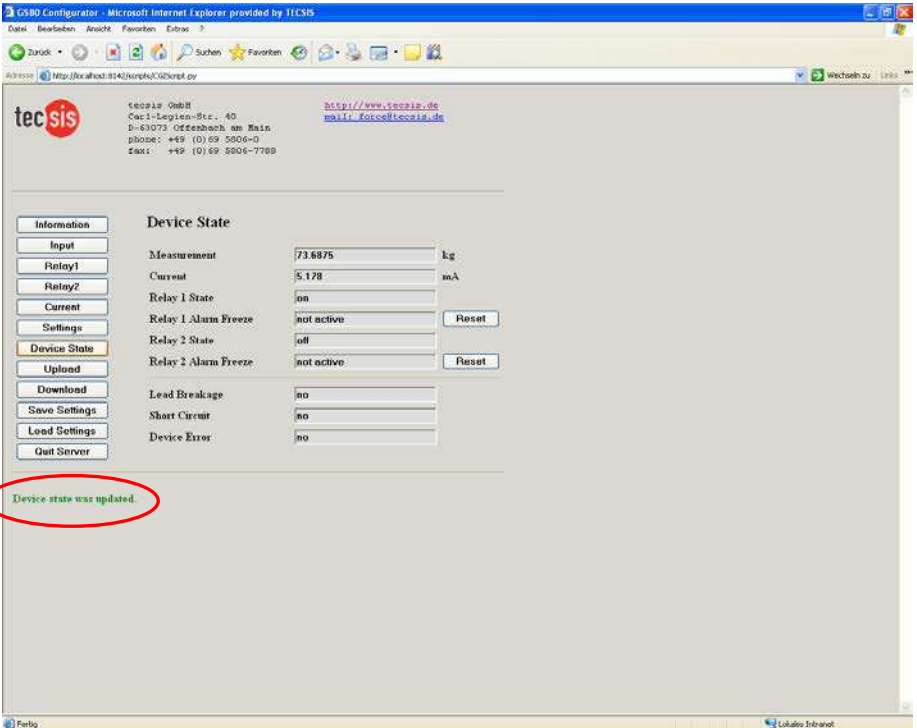
When password protection is active, the various settings can be viewed, but not altered, in parameterization mode before the password is entered. At the first attempt to alter a setting, the device automatically requests entry of the password (see also Chapter 6.1.2 of the BD 987 Operating Instructions).

COM port (serial interface)

Select the PC port to be used for the connection via the RS-232 interface.

7 Interrogate device status ("Device State" screen)

The following illustration shows the screen form used to interrogate the current state of the EGS80 limit switch.



The values shown are:

Measurement: Current measured value at the signal input

Current: Current value at the current output

Relay 1 State: Status of relay 1 ON/OFF

Relay 1 Alarm Freeze: Status of alarm freeze for relay 1, ACTIVE/NOT ACTIVE (the "Reset" button allows the relay to be reset, if necessary).

Relay 2 State: Status of relay 2 ON/OFF

Relay 2 Alarm Freeze: Status of alarm freeze for relay 2, ACTIVE/NOT ACTIVE (the "Reset" button allows the relay to be reset, if necessary).

Lead Breakage: (YES/NO)

Short Circuit: (YES/NO)

Device Error: (YES/NO)

8 Readout of all parameterization data from the EGS80 ("Upload" button)

If the "Upload" button is pressed, all of the parameterization data stored in the EGS80 limit switch is read out and displayed in the separate screen forms of this program. The current screen form does not change, but a message in the bottom left corner indicates an "Upload" has taken place.

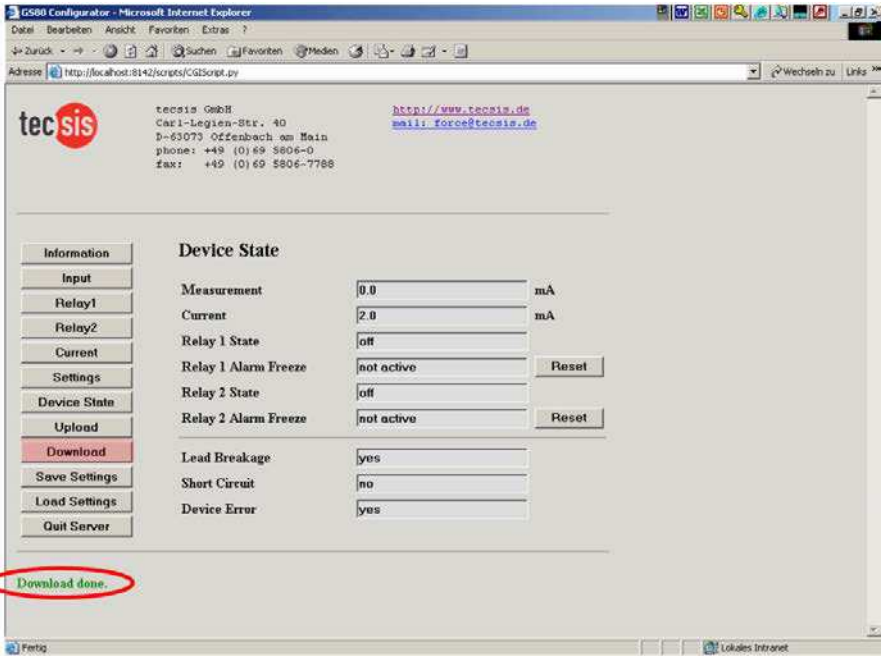
The screenshot shows the EGS80 Configurator web interface in Microsoft Internet Explorer. The browser address bar shows `http://localhost:8142/scripts/CGIScript.py`. The page header includes the 'tecsis' logo and contact information for 'tecsis GmbH' located at 'Caci-Legien-Str. 40, D-63073 Offenbach am Main'. The main content area is titled 'Device State' and contains a table of parameters with input fields and 'Reset' buttons. The 'Upload' button in the left sidebar is highlighted in red. A red arrow points to a red-bordered box at the bottom left containing the text 'Upload done.'

| Device State | |
|----------------------|------------------------------------------------------------------------------|
| Measurement | <input type="text" value="0.0"/> mA |
| Current | <input type="text" value="2.0"/> mA |
| Relay 1 State | <input type="text" value="off"/> |
| Relay 1 Alarm Freeze | <input type="text" value="not active"/> <input type="button" value="Reset"/> |
| Relay 2 State | <input type="text" value="off"/> |
| Relay 2 Alarm Freeze | <input type="text" value="not active"/> <input type="button" value="Reset"/> |
| Lead Breakage | <input type="text" value="yes"/> |
| Short Circuit | <input type="text" value="no"/> |
| Device Error | <input type="text" value="yes"/> |

Upload done.

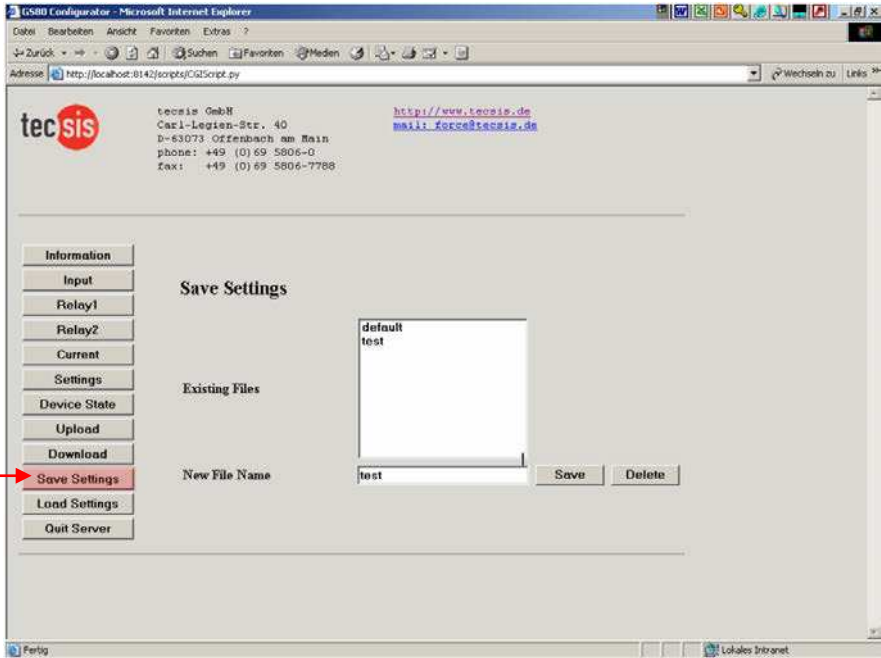
9 Read-in and saving of all parameterization data in the EGS80 ("Download" button)

If the "Download" button is pressed, all of the parameterization data entered and altered in this program is read into EGS80 limit switch and saved there. The screen form does not change, but a message in the bottom left corner indicates that a "Download" has taken place.



10 Saving all parameterization data in a file ("Save Settings" screen)

This screen is used to save to a file the existing settings that have currently been made in the program. A new file name can be assigned for this, if desired.



New File Name

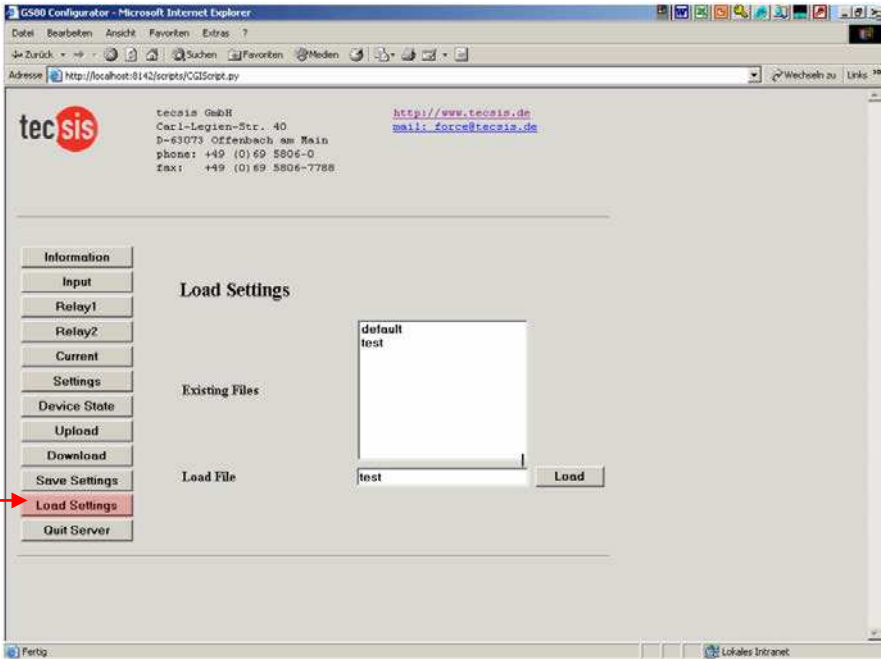
A new file name can be entered and the data will then be saved under this name when the "Save" button is pressed. The file will be stored in the folder: *C:\Programme\EGS80-Konfigurator\projects*
By pressing the "Delete" button, the file is deleted.

Existing Files

All previously created files for parameter settings are shown in a list in this field and are contained in the folder:
C:\Programme\EGS80-Konfigurator\projects .

11 Loading in a parameterization data file ("Load Settings" screen)

With this screen form you can load in an existing file that contains parameterization data. The data saved in this file is now displayed in the separate screen forms of the EGS80 configurator software. It can now be viewed, checked, perhaps altered, and read into or saved in the limit switch by pressing the "Download" button.



Load File

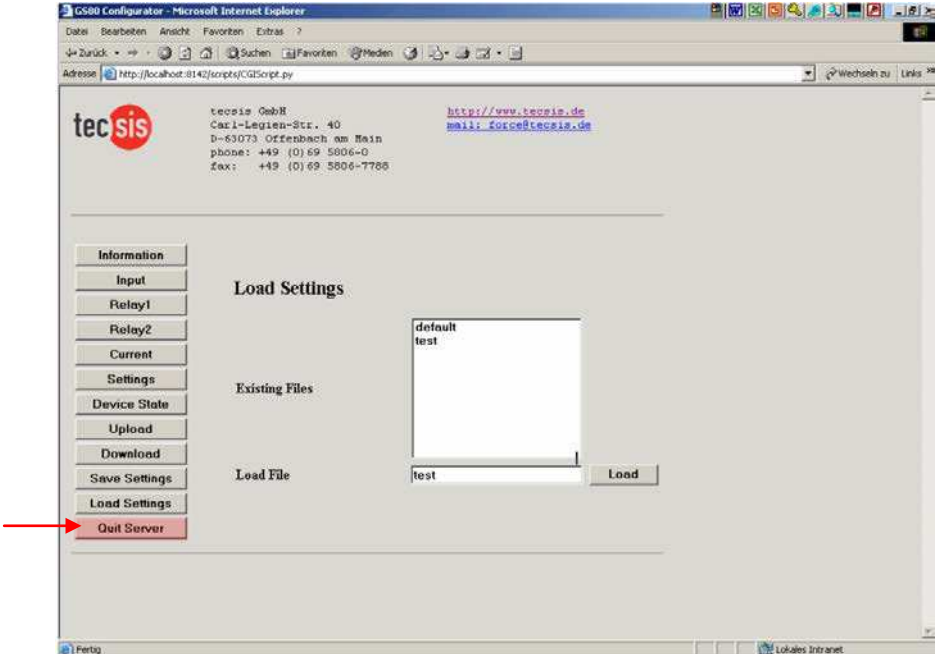
The parameterization data of the chosen file is retrieved and read into the separate screen forms of the EGS80 configurator software by pressing the "Load" button. It can now be viewed, checked, perhaps altered, and read into or saved in the limit switch by pressing the "Download" button.

Existing Files

All previously created files for parameter settings are shown in a list in this field (saved in the folder *C:\Programme\EGS80-Konfigurator\projects*) and can be selected to be read in.

12 Ending the EGS80 configurator software ("Quit Server" button)

Pressing the "Quit Server" button ends and quits the EGS80 configurator software program.



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