# **Operating Instructions**



# EGS80 Configuration Software





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# Contents

OPER	ATING INSTRUCTIONS1
1	GENERAL POINTS ABOUT SOFTWARE AND PUTTING
	INTO SERVICE4
1.1	PUTTING INTO SERVICE 4
1.2	SOFTWARE INSTALLATION (USB DRIVER)
2	INPUT OF PROJECT DATA ("INFORMATION" SCREEN)8
3	SETTING INPUT PARAMETERS ("INPUT" SCREEN)
4	RELAY OUTPUT
	("RELAY 1 AND RELAY 2 CONFIGURATION" SCREENS)12
5	CURRENT OUTPUT
	("CURRENT OUTPUT CONFIGURATION" SCREEN)14
6	SERVICE ("SETTINGS" SCREEN)
7	INTERROGATE DEVICE STATUS ("DEVICE STATE" SCREEN)
8	READOUT OF ALL PARAMETERIZATION DATA FROM THE EGS80
	("UPLOAD" BUTTON)19
9	READ-IN AND SAVING OF ALL PARAMETERIZATION DATA IN THE
	EGS80 ("DOWNLOAD" BUTTON )
10	SAVING ALL PARAMETERIZATION DATA IN A FILE
	("SAVE SETTINGS" SCREEN)
11	LOADING IN A PARAMERIZATION DATA FILE
	("LOAD SETTINGS" SCREEN)
12	ENDING THE EGS80 CONFIGURATOR SOFTWARE
	("QUIT SERVER" BUTTON)23
	· · ·

### 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



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 Ø3.55 mm x 18.3 mm (Pos. 3) but later devices had the Ø3.5 mm x 14 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 affect 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
- 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):



- In the tecsis EGS80 Windows Software this valid COM Port. <u>Attention:</u> COM port must be < COM 7, if necessary assign a COM Port < COM 7</li>
  - 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

anced Settings for COM6					4
DM Port Number: COM6	•				ОК
USB Transfer Sizes					Cancel
Select lower settings to correct Select higher settings for faster	performance p performance.	problems at lov	v baud rates.		Defaults
Receive (Bytes):	4096	•			
Transmit (Bytes):	4096	•			
BM Options	1				
Latency Timer (msec):	response prob	iems.			
Miscellaneous Options					
Minimum Read Timeout (msec)	0	•	Serial Printer	Ē	
Minimum Write Timeout (msec)	0	•	Event On Surprise Removal Forced XDN/X0FF Mode	Ē	

## 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).

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	Information				
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Current	Randware Tersaes				
Settings	Company	-			
Device State	Location	4			
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Download	Treed	-			
Save Settings	Tag Number	1			
Load Setings	Tag Description	The second secon			
Gut Server					

## 3 Setting input parameters ("Input" screen)

The following illustration shows the input parameters:

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c <mark>sis</mark>	cecsis GMDH Catl-Legies-Str. 40 B-3073 Offenbech am Rain phone: 49 (0)59 5005-0 Tax: 449 (0)59 5005-7785	http://www.secmim.de mail: force@imorie.de	
Information			
Relayl	Input Configuration		
Relay2			
Current	Unit	kg 📉	
Settings	Sensor Breakage Sansor Short Curvit		
Device State	Zara	140 md	
Upload	Comparisonfactor	62.6	
Download	Encoding	12	
Save Settings	sunooranaž	32 344	
ood Settings			
Quit Server			

#### 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 =  $10.00 \ 16 \ x \ 0.625$ ).

• 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 (Range = 20 mA - 7.88 mA = 12.2 mA; 8,155 value display: Range 12.2 = 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 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.

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Information					
Input					
Relay1	Relay1 Configuration				
Relay2	Trin Value	30.8	ke		
Current	Uniterestic	130.0			
Settings	Delen	0.0			
Device State	Trin Diraction	ju.u	And a		
Upload	Operation Mode	Parson			
Download	Alarm Freeze				
Save Settings		here.			
Load Settings					
Quit Server					

#### **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  $\leq$  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:

🖙 💽 http://localhost:0	1142/scripts/CGIScript.py			 😤 🛃 Wechseln a
ecsis	tecsis GmbH Carl-Legien-Str. 40 D+65073 Offenbach am Main phone: +49 (0)68 5606-0 fax: +49 (0)69 5606-7788	http://www.tecsis.d wall: force9tecsis.	5. 38.	
Information Input Relay1	Current Output Confi	guration		
Current	Start Value	0.0	kg	
Settings	End Value	1000.0	kg	
Device State	Output Range	4.20mA NE43		
Upload	Error Indication	Downscale		
Download	Output invested	0		
Save Settings				
Load Settings				
Quit Server				

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).



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</i> overrange)
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:

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Information						
Input						
Relay1						
Relay2	Settings					
Current						
Settings	Device Language	German	1			
Device State	Device Password	Г				
Upload	COM port	COM1	2			
Download			1			
Save Settings						
Load Settings						
Quit Server						
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#### 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.

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Information	Device State			
Input		122 6026		
Relay1	Dieastreinent	73.0075		
Relay2	Current	15.178	mA	
Current	Relay I State		( Denut	
Settings	Relay 1 Juan Preeze	not active		
Device State	Relay 2 State	jou	C. Brownit	
Upload	Relay 2 Alarm Freeze	ant active	rieset	
Download	Lead Breakage	00		
Save Settings	Short Circuit	no		
Load Settings	Device Error	no		
Quit Server				

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)

Chart Circuits (VEQ/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. <u>The current screen form does not change</u>, but a message in the bottom left corner indicates an "Upload" has taken place.

Stesse St. Ntp://localhost:8	142/scripts/CGIScript.py			· Orwechselt su Urks
tecsis	tecsis GmbH Carl-Legien-Str. 40 D-63073 Offenbach am Main phone: +49 (0)69 5806-0 fax: +49 (0)69 5806-7784	http://www.t meili forceĝ	erzia.de Lecola.de	
Information	Device State		v	
Input	Maarmanaat	0.0		
Relayl	Comment	2.0		
Relay2	Current	12.0	mox	
Current	Relay I State	lott		
Settings	Relay I Alarm Freeze	not active	Reset	
Device State	Relay 2 State	off	(i (i))	
Upload	Relay 2 Alarm Freeze	not active	Reset	
Download	Lead Breakage	Ves		
Save Settings	Short Circuit	00		
Load Settings	Device Error	wes		
1		9.00		

# 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.

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Information	Device State					
Input		1000				
Relay1	Measurement	10.0	mA			
Relay2	Current	2.0	mA			
Current	Relay 1 State	off				
Settings	Relay 1 Alarm Freeze	not active	Reset			
Device State	Relay 2 State	off				
Upload	Relay 2 Alarm Freeze	not active	Reset			
	the set of	ves				
Download	Lead Breakage					
Download Save Settings	Lead Breakage Shart Circuit	Ino				
Download Save Settings Load Settings	Lead Breakage Short Circuit	no	_			

# 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.

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Information						
Input						
Relayl	Save Settings					
Relay2		default				
Current		test				
Settings	Defenderer 100 e.e.					
Device State	Existing rues					
Upload						
Download		1				
Save Settings	New File Name	test	Save Delete			
Load Settings						
100112205						

#### 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 paramerization 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.

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Information						
Input	Load Sattings					
Relay1	Load Settings					
Relay2		default	-			
Current		lest				
Settings	Existing Files					
Device State						
Upload						
Download			- 1			
Save Settings	Load File	test	Load			
Load Settings						
Quit Server						
Quit Server						
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#### Load File

The paramerization 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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