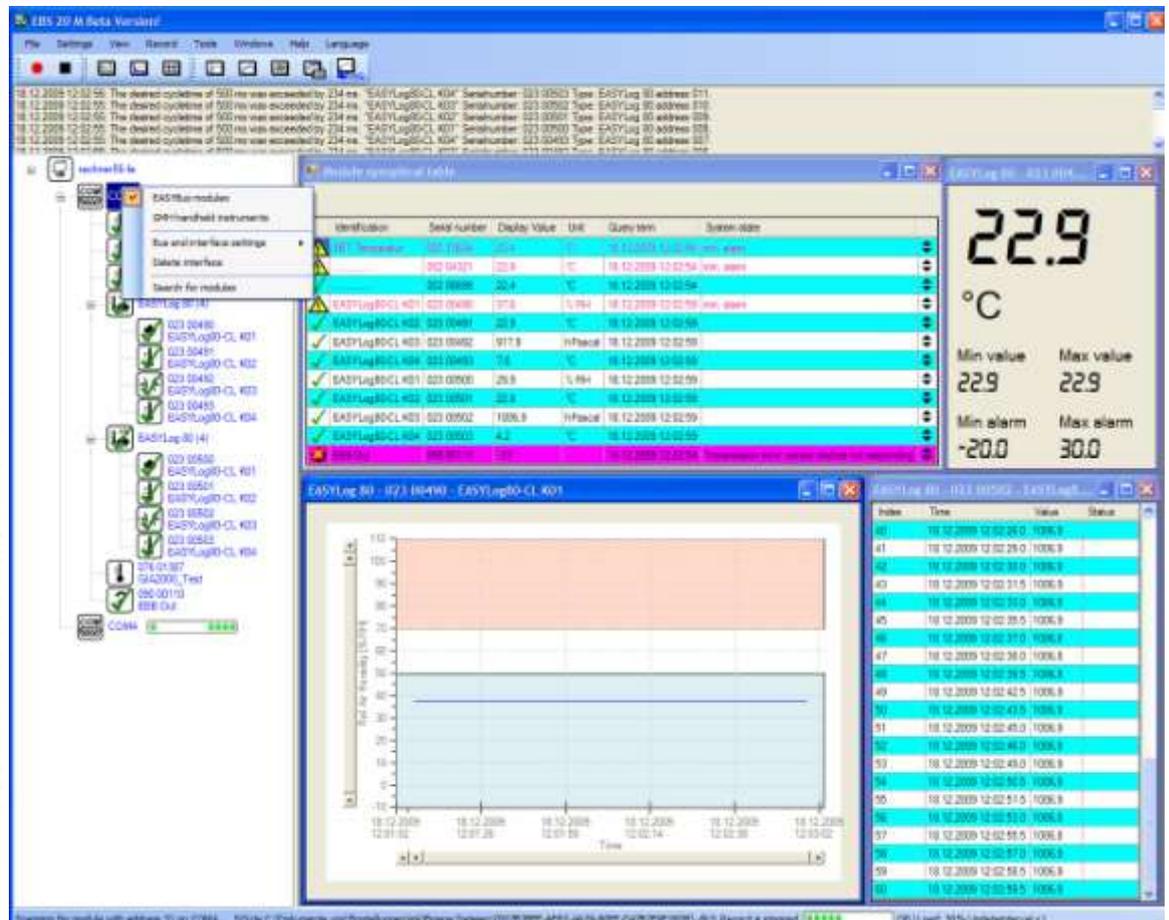


Operating Manual
Configuration software
for EASYBus devices

as of version V2.4 **EASYBus-Configurator**



- Please carefully read these instructions before use!
- Please consider the safety instructions!
- Please keep for future reference!



WEEE-Reg.-Nr. DE 93889386

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1 General Note

Read this document carefully and get used to the operation of the device before you use it. Keep this document within easy reach near the device for consulting in case of doubt.

Mounting, start-up, operating, maintenance and removing from operation must be done by qualified, specially trained staff that have carefully read and understood this manual before starting any work.

The manufacturer will assume no liability or warranty in case of usage for other purpose than the intended one, ignoring this manual, operating by unqualified staff as well as unauthorized modifications to the device. The manufacturer is not liable for any costs or damages incurred at the user or third parties because of the usage or application of this device, in particular in case of improper use of the device, misuse or malfunction of the connection or of the device.

The manufacturer is not liable for misprints.

2 Safety

2.1 Intended Use

EASYBus-Configurator is for configuring and setting up EASYBus systems. After performing a system initialisation general module's properties can be configured.

2.2 Safety signs and symbols

Warnings are labeled in this document with the followings signs:



Caution! This symbol warns of imminent danger, death, serious injuries and significant damage to property at non-observance.



Attention! This symbol warns of possible dangers or dangerous situations which can provoke damage to the device or environment at non-observance.



Note! This symbol point out processes which can indirectly influence operation or provoke unforeseen reactions at non-observance.

2.3 Safety guidelines

Please do always use current operating systems with latest hot-fixes and service packs and always use the latest Software version. Depending on the bought software version an update to the latest version is for free.



Attention! Support is only possible when using a current operating system with the latest service pack, the latest software version. There will be no support from GHM Messtechnik GmbH or from their subsidiaries when using an operating system that is no longer supported by Microsoft.

3 Product Specification

3.1 Scope of supply

The Software is available as download, so there is no scope of supply

3.2 System requirements

- CD-ROM-drive
- Mouse, keyboard
- 1.0 GHz processor (suggested 1.6 GHz dual core processor)
- 1 GB RAM, 150 MB hard disc (your databases need additional disc space)
- Resolution: at least 1024x764
- EASYBus-interface converter
 - free serial port (COM1...255) for EBW 1, EBW 2, EBW 64, EBW 64E, EBW 240
 - or free USB-interface for EBW 3
- Vista, Windows 7 or Windows 8 (or corresponding server operating system) with latest Service Pack. (Software will run from Windows XP)
- Microsoft .net Framework Version 4.0 with latest Service- and Language Pack

3.3 Hinweis zum Auslieferungszustand der Datenlogger

Bei der Auslieferung befindet sich der EASYLog im 'Schlafzustand': Es wird nichts im Display angezeigt, der Stromverbrauch ist minimal. Sobald eine Kommunikation mit der Software aufgenommen wird, erwacht das Gerät, die Anzeige wechselt zwischen dem aktuellen Messwert und ‚Stop‘, der Datenlogger ist betriebsbereit. Es werden noch keine Daten aufgezeichnet! Dazu muss erst eine Loggeraufzeichnung gestartet werden. Die Loggeraufzeichnung kann mit der Software GSOFT40k gestartet werden. Vorhandene Loggerdaten können ebenfalls mit GSOFT40k ausgelesen und archiviert werden.

4 Handling

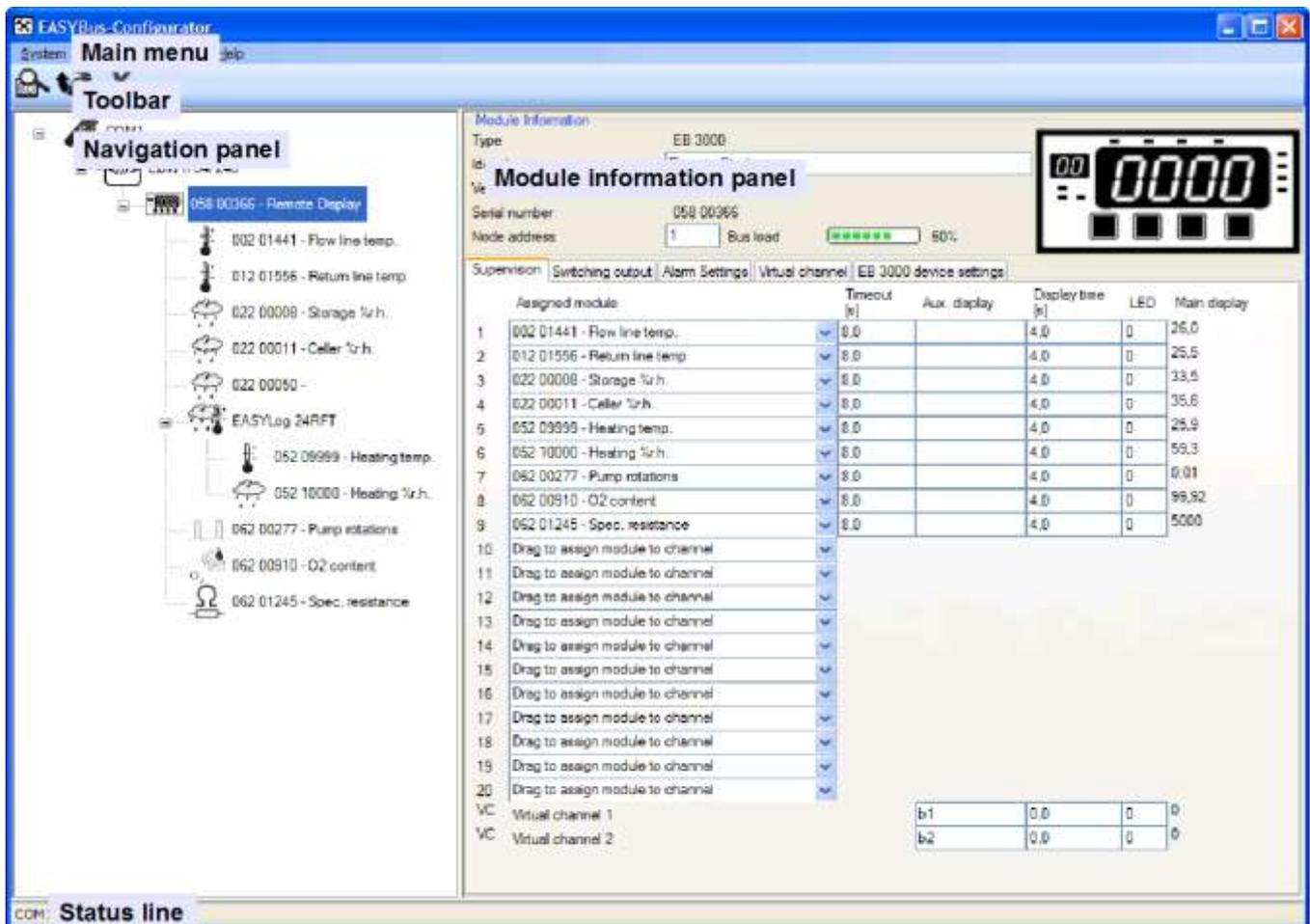
The handling of the software is based on standard Windows programs. Some basic Windows knowledge is required to run this software successfully

4.1 Installation and commissioning

- Start your operating system
- Install [Microsoft .NET Framework 4.0](#)
- Put CD in CD in CD/DVD-ROM drive
- The installation program is started by autorun. If this is deactivated, please start the program with 'SETUP.EXE'
- Follow instructions of the installation program.
- The software can be started by clicking the EASYBus-Configurator icon. This is placed on your desktop, the quickstart menu or in your start menu folder under "All Programs" → "EASYBus-Configurator" by default. The exact location is depending on your selection during the installation of the program.
- After starting up you may want to change the programs language, this can be done under "Settings".

4.2 Layout of user interface

The Layout is divided into 5 elements that are described in the following paragraphs.



4.2.1 Main menu

All program functions can be reached easily via the Main menu.

4.2.1.1 Menu item "System"

Here all system functions are shown in useful groups.

"System Initialisation"

A system has to be read in whenever connected to a computer. Execute a "System Initialisation" whenever a system has never been initialized or configured.

The connected system will be arranged new completely when doing a "System Installation".

The configuration of an existing system has to be done again. This concerns all the properties of an EB 3000 that already had modules set to it's switching outputs.

When changing the system it may be possible having a new module assigned to an address that was assigned to an EB 3000 channel. Therefore the EB 3000 settings may be completely wrong. For this reason the EB 3000's channel-assignments will be removed completely, when doing a "System Initialisation".

A "System Initialisation" should only be performed when having a new system or a new module was attached to an existing one.

"Seek Modules"

This should be executed, whenever an existing system that already was configured should be read in for changing module-parameters or just for getting a summary of the bus.

"Seek Modules" will search modules from address 1 until the last module that responds.

"Check EASYBus"

When an existing system may have defective modules connected, "Check EASYBus" will try finding all responding modules from address 1 ... 239.

"Save System"

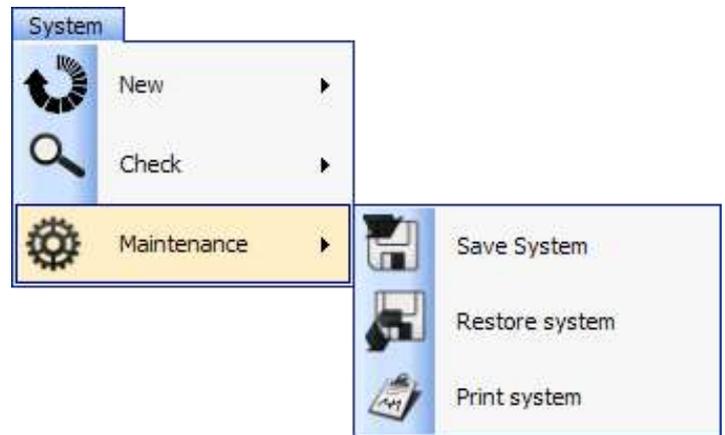
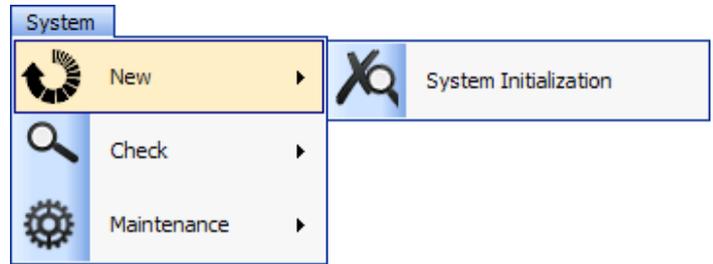
Save system settings to a file. Even all EB 3000 settings except for the virtual functions are stored. A "Restore system" can be done with this file anytime.

"Restore system"

Restore settings of an attached system. At first the file is compared against the connected system. If everything is consistent, the settings are transferred to the modules. All settings are restored except the virtual functions of the EB 3000.

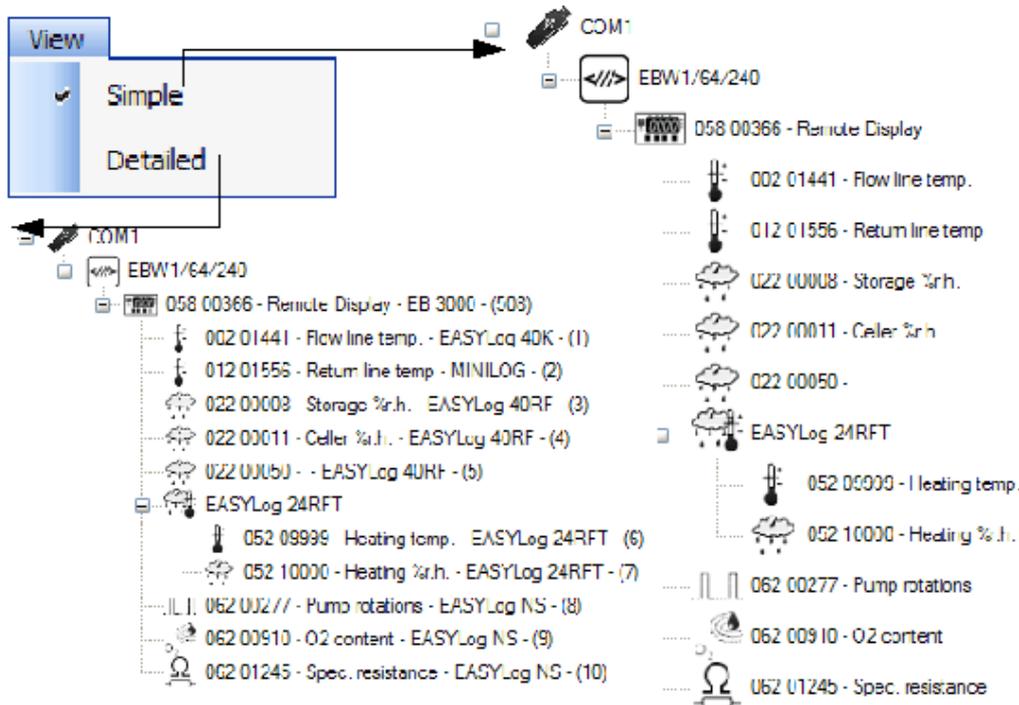
"Print system"

The system settings will be read in, after that the settings are saved to a file and printed.



4.2.1.2 Menu item "View"

Two different display modes for the navigation panel can be selected here.



„Simple“ will display large icons, the module's serial number and the identification of the module.
 „Detailed“ will display a small icon, erial number, module type, the designator and the assigned address.

4.2.1.3 Menu item "Settings"

The language and the COM port can be selected here.

4.2.1.4 Menu item "Help"

System Information will show you the software's version number.

4.2.2 Toolbar

Additionally shows the functions "Seek Modules", "Check EASYBus" and "System Initialisation".

4.2.3 Navigation panel

Here all found modules will be shown. Depending on the selection in "View". There will be shown different information, at least an icon matching the modules display unit, the module's serial number and the module's identification.

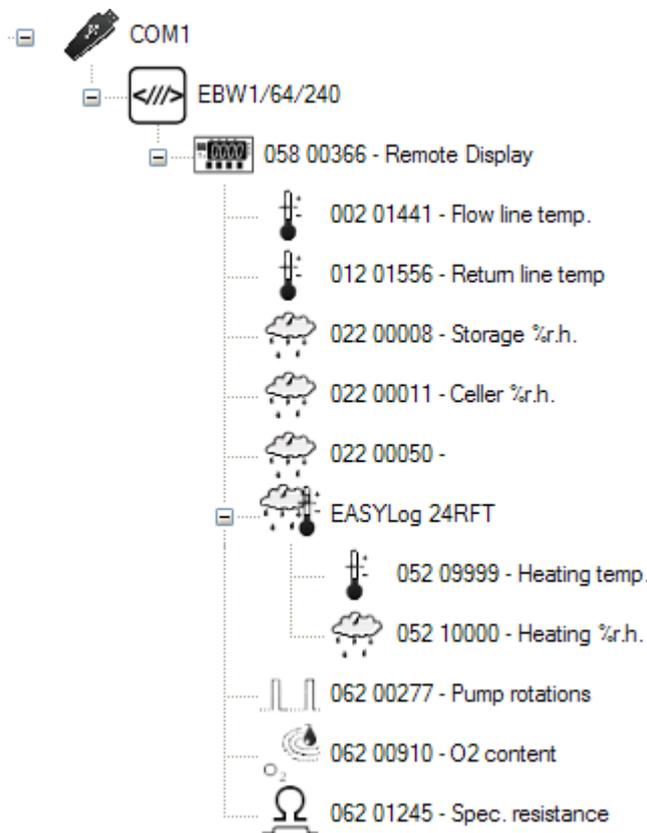
The tree view corresponds to the physical bus structure. At first the COM port is shown, usually following an EASYBus converter and its related modules. Multichannel modules will be shown as an own branch. Above an icon with the module-type is shown following each channel of the module. You can find a description of the used icons in chapter 5 „Symbol description“ on page 19

4.2.4 Module information panel

The properties of the selected module will be displayed here. All properties can only be changed in the modules information panel.

4.2.5 Status line

Here the selected COM port will always show up on the left side of the status indicator line. While working there will be a status bar and an information text displayed additionally on the status indicator line. It shows the process progress and the action that is actually performed by the application.



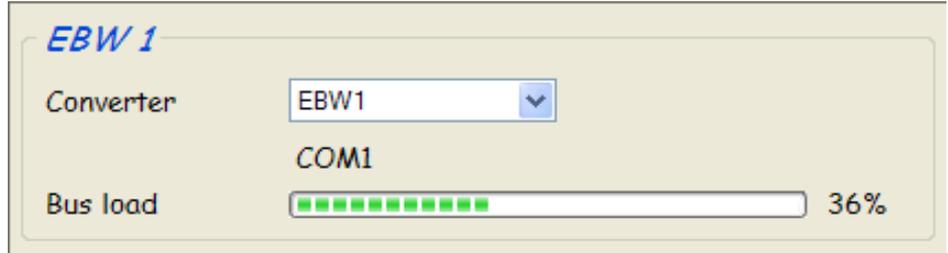
4.2.6 Changing modules properties

The properties and information of the modules can be opened with a single mouse click. The properties of a module will then be shown up in the modules information panel.

Corresponding to the selected module type different panels will be displayed.

4.2.7 Converter

Here you get information about your Bus load. As different EASYBus modules produce a different bus load, there is only a limited count of modules that could be connected to the used converter.



Some converter types could not be

identified so you should select the correct one out of the drag box.

A bus load indicator bar and a percentage value will be shown. Whenever exceeding the maximum bus load supported by the converter the percentage value will be written in red letters. Keep in mind buying a converter that supports a higher module count. There may be errors while communicating with the bus or the converter could be destructed when overloading an EASYBus-Converter.

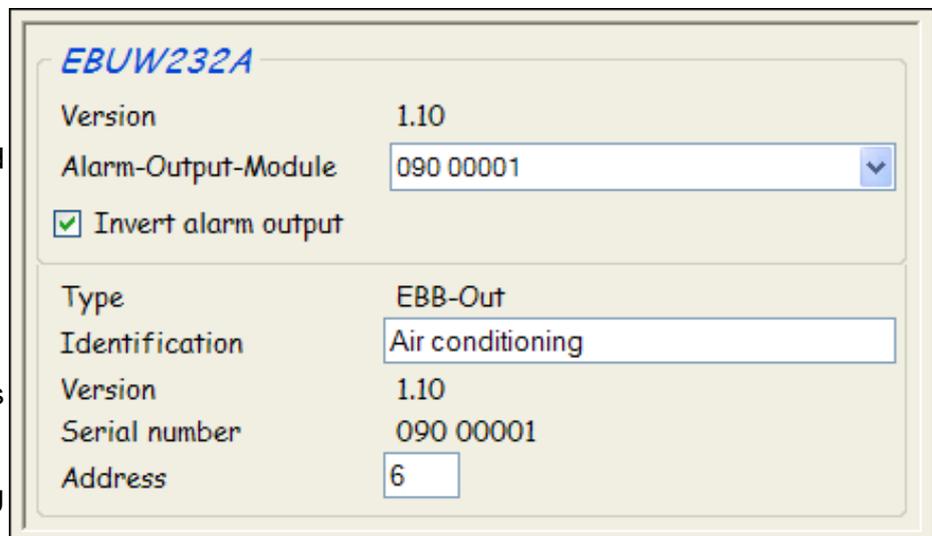
4.2.8 EBUW 232 A

The EBUW 232 A is for remote transmission and for alarm monitoring in a remote system.

The module version and its assigned "Alarm-Output-Module" is displayed. Alarm-Output-Module are the EBB 2 OUT /BP and EBB 4 OUT /BP.

These have 2 or 4 output relays. An EBB 2 OUT /BP has one relay assigned to min-alarm and one to max-alarm. The EBB 4 OUT /BP has another relay that acts when both, min- and max-alarm is present.

The EBUW 232 A will be supervising all modules connected to the bus.



Whenever an alarm condition is present, the corresponding relay will be switched on or off.

To assign an alarm-output-module to the EBUW 232 A simply use the Windows Drag&Drop functionality. Drag the wanted module from the navigation panel and drop it on the "Alarm-Output-Module" selection box. May there already be a module assigned that should be deleted, select delete module from the drag box. This has to be done before any other module can be assigned to the EBUW 232 A.

The panel "Alarm Output Module" shows the assigned module's properties.

4.2.9 EASYBus logger, sensor modules or controllers

Depending on the module type, -version and -properties some settings could be disabled.

4.2.9.1 Panel “Module Information”

Displays the properties module type, identification, version, serial number, address, the physical measuring range and -unit.

4.2.9.2 Panel “Module Setting”

Here the module’s identification, address and some module specific flags can be changed. Changing the module's address is not recommended, as a new system initialisation may result in different addresses. You can use 16 characters including special characters. It’s recommended setting a unique and appropriate identification for every module connected to the bus.

Should remote enquiry be used later you can easily identify the module by an identification of e.g. “Depot 1 Temp”. See chapter 0 „

<i>Module Information</i>			
Type	EASYLOG 40IMP		
Identification	Pump1 rpm		
Version	6.2		
Serial number	032 00568		
Address	7		
Measuring range from	0	...	+9999
Display Value	0,00 rpm		

<i>Module Settings</i>		<i>Pulse logger settings</i>	
Identification	<input type="text" value="Pump1 rpm"/>		
Address	<input type="text" value="7"/>		
<input checked="" type="checkbox"/>	Do not stop logger with data sets stored		
<input checked="" type="checkbox"/>	Extended range		
<input type="checkbox"/>	Prevent error 1		
<input type="checkbox"/>	Prevent error 2		

<i>Display Settings</i>			
Measuring			
Unit	<input type="text" value="rpm"/>		
Decimal point position	<input type="text" value="##.##"/>		
Display range from	<input type="text" value="-19.97"/>	...	<input type="text" value="99.97"/> rpm

<i>Alarm Settings</i>			
Min alarm at	<input type="text" value="-19.97"/>	rpm	
Max alarm at	<input type="text" value="99.97"/>	rpm	
Delay	<input type="text" value="7"/>	min	

Flags“ on page Seite 18.

Some data loggers have an additional check-box “Do not stop logger with data sets stored”. When this box is checked, a running logger could not be stopped accidentally. Some module properties could not be changed though.

4.2.9.3 Panel “Display Settings”

Depending on module type and properties the display measuring, -unit, -decimal point position and the min- and max-display value can be changed.

All settings apply to the modules display. Min- and max-display value will scale to the physical measuring range. No property here will change anything of the physical module’s properties, as measuring range or measuring unit.

4.2.9.4 Panel “Alarm Settings”

Here the alarm conditions can be programmed, the value is depending on the min- and max-display values. Some devices feature alarm-switching-outputs that will be triggered when exceeding the min- or max-alarm-value.

When setting Alarm delay, the alarm will be delayed for the entered count of minutes. When an alarm condition appears for e.g. 1 minute, but the alarm delay is set to 10 minutes, no alarm-condition will remain nor the alarm-output will be triggered.

4.2.9.5 Logger module hints

Some module settings can't be changed while the logger is storing data sets or has data sets stored. This may be e.g. the unit. After deleting the logger memory settings can be changed.

To store your data sets use an appropriate software like GSOFT40k. After deleting the data sets they are lost and can't be restored!

Stopping the logger and deleting the stored data sets can be done with this software. You have to clear the flag “Do not stop logger with data sets stored“ before the logger can be stopped.

4.2.10 EBB Out

The EBB Out is an universal switching-module, e.g. the EBB 2 Out and EBB 4 Out. The option /BP stands for “Bus Powered”. Modules with /BP do not need an extra supply voltage, as they are supplied via the bus, thus these modules are not suitable for fast switching operations!

The module can be configured as “Alarm-Module” or as “Switching-Module”.

As “Switching-Module” the relays can be switched independently from each other. When configured as “Alarm-Module” the relay outputs are coded. Refer to your EBB Out manual for more information.

The buttons “Toggle” can be used changing the relay state. The LED displays the actual state. Use the buttons “Toggle” for testing the equipment connected to the relay outputs of the module.

Module Information

Type	EBB 4 OUT
Identification	<input type="text" value="Air conditioning"/>
Version	1.10
Serial number	090 00001
Address	<input type="text" value="11"/>
	<input type="text" value="Switching-module"/>

Switching output

Number	Actual state	Toggle
1	● Off	<input type="button" value="Toggle"/>
2	● On	<input type="button" value="Toggle"/>
3	● Off	<input type="button" value="Toggle"/>
4	● On	<input type="button" value="Toggle"/>

4.2.11 EB 3000

This universal EASYBus module has a large number of settings. The EB 3000 features 4 switching outputs and one alarm output. You can assign connected EASYBus modules to the outputs. There are 2 special channels, called Virtual Channels, that could calculate mathematical functions over any connected module. These Virtual Channels can also be assigned to the EB 3000's outputs.

The modules to be supervised by the EB 3000 have to be connected directly to it. The EB 3000 itself is then connected to the bus system, it 'branches' the bus. There could be up to 20 modules connected to an EB 3000, but you must not exceed the maximum bus load!

A single click on a tab will read in the corresponding settings once. A double click will refresh the settings.

Module Information

Type	EB 3000		
Identification	<input type="text" value="Control Unit 1"/>		
Version	1.7		
Serial number	058 00044		
Node address	<input type="text" value="1"/>	Bus load 33%	

Supervision
Switching output
Alarm Settings
Virtual channel
EB 3000 device settings

	Assigned module		Timeout [s]	Aux. display	Display time [s]	LED	Main display
1	012 03871 - Storage temp.	▼	10,0	St	4,0	1	19,3
2	032 00207 - Storage airsup.	▼	8,0	SA	4,0	3	0,000
3	052 05457 - Office temp.	▼	8,0	ot	4,0	5	22,3
4	052 05458 - Office humidity	▼	8,0	oH	4,0	7	42,3
5	062 00964 - Storage pressure	▼	8,0	SP	4,0	15	0,005
6	Drag to assign module to channel	▼					
7	Drag to assign module to channel	▼					
8	Drag to assign module to channel	▼					
9	Drag to assign module to channel	▼					
10	Drag to assign module to channel	▼					
11	Drag to assign module to channel	▼					
12	Drag to assign module to channel	▼					
13	Drag to assign module to channel	▼					
14	Drag to assign module to channel	▼					
15	Drag to assign module to channel	▼					
16	Drag to assign module to channel	▼					
17	Drag to assign module to channel	▼					
18	Drag to assign module to channel	▼					
19	Drag to assign module to channel	▼					
20	Drag to assign module to channel	▼					
VC	Virtual channel 1						
VC	Virtual channel 2						

v1	4,0	12	0
v2	2,0	10	0

4.2.11.1 Panel “Module Information”

Displays module type, identification, version, serial number, address and the actual bus load. The modules identification and address is changeable.

4.2.11.1.1 Tab “Supervision”

Here the modules to be supervised can be assigned. Simply drag the desired module from the “Navigation” panel and drop it in “Assigned module” combo box. It is possible to assign the same module to more than one channel, when you want to switch the relay outputs on different display values.

Timeout

Update time for the channel. Whenever a channel will not respond to the enquiry after the selected time, a timeout error will occur. The check is only performed with the Flag “Timeout check“ set in the “EB 3000 device settings” tab.

Aux Display

When a channel is shown in the EB 3000’s main-display the two selected characters will show up in the small display aside it. You can only use characters that could be displayed by a 7-segment-display, other characters won’t be accepted.

Display Time

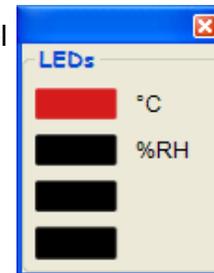
The time the corresponding module's display value is shown in the display of the EB 3000. For this feature, the flag “Cyclic display” in the “EB 3000 device settings” tab has to be selected.

LED

When showing the channel, the selected LEDs aside the main display will show up. You can select single LEDs or LED combinations for each channel individually.

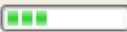
Main Display

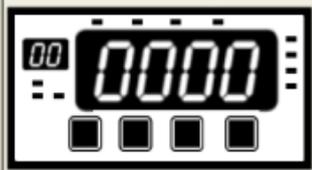
This is the module’s display value connected to the corresponding channel. Clicking on the label will refresh all display values of the connected modules.



4.2.11.1.2 Tab "Switching Output"

Module Information

Type EB 3000
 Identification Control Unit 1
 Version 1,7
 Serial number 058 00044
 Node address 1 Bus load  33%



Supervision **Switching output** Alarm Settings Virtual channel EB 3000 device settings

Assigned module		Channel	Turn on point	Turn off point	Delay	Function
1	012 03871 - Storage temp.	1 (012 03871)	60,0	-25,0	0,0	0
2	032 00207 - Storage airsup.	2 (032 00207)	9,1	0,0	0,0	0
3	052 05457 - Office temp.	3 (052 05457)	60,1	-1,2	0,0	0
4	052 05458 - Office humidity	4 (052 05458)	24,0	-0,1	0,0	0
5	062 00964 - Storage pressure					
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
VC	Virtual channel 1					
VC	Virtual channel 2					

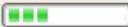
Here channels can be assigned to the 4 switching outputs. Turn on and turn off point will be the trigger value for the relay switching output. Whenever the modules display value will exceed these values, the output will be switched after the selected delay time. Use the Windows Drag&Drop feature to assign a channel to an output. Drag the label from "Assigned module" and drop it in the "Channel" combo box at the right side.

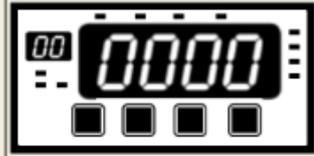
The following functions are supported:

- 0 – Default value in case of an error: Switching output is turned off
- 1 – Default value in case of an error: Switching output is turned on

4.2.11.1.3 Tab "Alarm Settings"

Module Information

Type EB 3000
Identification
Version 1.7
Serial number 058 00044
Node address Bus load  33%



Supervision *Switching output* ***Alarm Settings*** *Virtual channel* *EB 3000 device settings*

	<i>Assigned module</i>	<i>Min alarm</i>	<i>Max alarm</i>	<i>Delay</i>
1	012 03871 - Storage temp.	-25,0	60,0	0
2	032 00207 - Storage airsup.	0,045	9,130	0
3	052 05457 - Office temp.	-1,2	60,1	0
4	052 05458 - Office humidity	-0,1	24,0	5
5	062 00964 - Storage pressure	0,015	0,333	1
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

This will show the alarm settings of the connected modules. The properties can be changed, if the module is supporting this.

4.2.11.1.4 Tab "Virtual Channels"

Depending on the software version and scope different mathematical functions can be assigned to the channels.

Module Information

Type	EB 3000		
Identification	<input type="text" value="Control Unit 1"/>		
Version	1.7		
Serial number	058 00044		
Node address	<input type="text" value="1"/>	Bus load 33%	

Supervision | Switching output | Alarm Settings | **Virtual channel** | EB 3000 device settings

Virtual channel 1

Virtual channel function

Calculates: Rel. moisture = f(temperature of dew point, temperature). Values in each case in °C with 0.1K resolution

CHx for dew point

CHy for temperature

Virtual channel 2

Virtual channel function

calculates: (CHx + OFFSETx)*SCALEx - (CHy + OFFSETy)*SCALEy for VC2. The decimalpoint of the result will be entered by DP-Position

CHx

OFFSETx

SCALEx

CHy

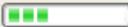
OFFSETy

SCALEy

DP-Position

4.2.11.1.5 Tab “EB 3000 device settings”

Module Information

Type EB 3000
Identification Control Unit 1
Version 1.7
Serial number 058 00044
Node address 1 Bus load  33%



Supervision Switching output Alarm Settings Virtual channel **EB 3000 device settings**

Function	Description
<input type="checkbox"/> Cyclic Display	<i>Cyclic Display:</i> Reads the actual display value from each module and displays it in the main display
<input checked="" type="checkbox"/> Acknowledge alarm	<i>Hold alarm:</i> Each alarm has to be acknowledged.
<input type="checkbox"/> Timeout check	<i>Timeout check:</i> It's recommended deactivating this check, when having heavy bus traffic.

Here some flags are shown and can be changed, See chapter 4.3 Flags on page 18 for additional information.

4.3 Flags

Some modules feature flags for handling special properties.

Flag „Do not stop logger with data sets stored“

A logger can't be stopped, when this flag is set.

Flag „Extended range“

The measuring range will be extended when this flag is set.

Flag „Prevent error 1“

The error message “error 1” is not shown. The module will display the maximum measuring value.

Flag „Prevent error 2“

The error message “error 2” is not shown. The module will display the minimum measuring value.

Flag „Cyclic display“

The device will cyclically change it's display value between the existing channels, if this flag is set.

Flag „Acknowledge alarm“

All alarm messages will be shown as long as they are acknowledged, if this flag is set. On an EB 3000 you have to press button 4 for more than one second to clear the alarm-state and its assigned relay. After doing so the relay will switch to its non-alarm state.

Flag „Timeout check“

The EB 3000 will check the responding time of the modules connected, when this flag is set. It should be cleared when expecting heavy bus traffic.

4.4 Virtual Functions

The following virtual functions are standard scope of delivery for the EB 3000:

4.4.1 Scale channel x, scale channel y, calculate difference

An arbitrary channel $Ch_x - O_x$ is multiplied by an arbitrary factor F_x .

An arbitrary channel $Ch_y - O_y$ is multiplied by an arbitrary factor F_y .

The display value (on that can be controlled also) will be calculated as follows: $Ch_x - O_x * F_x - Ch_y - O_y * F_y$.

The decimal point position can be set arbitrary

4.4.2 Min-, Max, or Min-/Max – monitoring

Shows how many of the channels from Ch_x to Ch_y have an alarm-condition. With this function the constitution of alarm can be selected. 0 = min-/max-alarm, 1 = max-alarm, 2 = min-alarm.

4.4.3 Calculate the relative humidity

Calculates the relative humidity = $f(\text{temperature of dew point, temperature})$.

Symbol Module or display value

	Temperature
	Humidity
	Pressure, air-pressure (relative, absolute, difference)
	CO
	Oxygen concentration (solved in fluids)
	Oxygen concentration (gaseous)
	Conductibility
	pH
	Pulse (electrical pulse), pulse counter
	Voltage, current, rpm, power, frequency
	Resistance
	Distance, route
	Weight
	Flow
	° common
	% common
	Temperature-humidity logger like EASYLOG 40 RFT
	Climate logger like EASYLOG 80CL
	Switching module (EBB OUT)
	None of the above listed units or unknown module type.