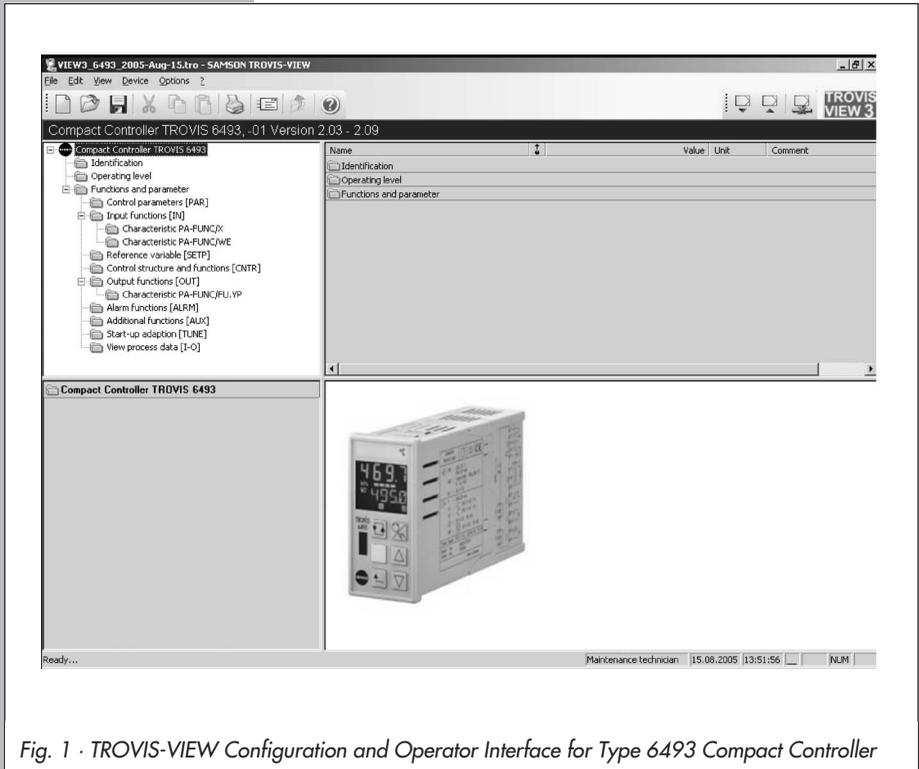


Compact Controller TROVIS 6493 Configuration using TROVIS-VIEW

SAMSON



Mounting and Operating Instructions

EB 6493-2 EN

Edition October 2010

Contents

1	General information	4
1.1	System requirements	4
1.2	Installation	5
2	Infrared interface	6
3	Basic settings	8
3.1	Launch program and adjust basic settings	8
3.2	Addressing	9
4	Operating functions	10
4.1	Modify data	10
4.2	Read data from the controller	11
4.2.1	Read a single data point	11
4.2.2	Read several data points simultaneously	11
4.2.3	Read all data points in a section	11
4.2.4	Read entire data record	11
4.3	Write data to the controller	12
4.3.1	Write a single data point	12
4.3.2	Write several data points	12
4.3.3	Write all data points in a section	12
4.3.4	Write entire data record	13
4.4	Default settings and values	13
5	Communication mode	14
5.1	Online/offline mode	14
5.2	Trend Viewer	15
5.3	Error alarms in TROVIS-VIEW	18
6	Folders	19
6.1	Identification folder	20
6.2	<i>Operating level</i> folder	20
6.3	<i>Functions and parameter</i> folder	22
6.3.1	<i>Control parameters [PAR]</i> folder	22
6.3.2	<i>Input functions [IN]</i> folder	22
6.3.3	<i>Reference variable [SETP]</i> folder	26
6.3.4	<i>Control structure and functions [CNTR]</i> folder	26
6.3.5	<i>Output functions [OUT]</i> folder	26
6.3.6	<i>Alarm functions [ALRM]</i> folder	26
6.3.7	<i>Additional functions [AUX]</i> folder	27
6.3.8	<i>Start-up adaption [TUNE]</i> folder	27

6.3.9	<i>View process data [I-O] folder</i>	28
7	Error alarms of the compact controller	29
8	Documentation	30
8.1	Enter customer data.	30
8.2	Print documentation.	30
9	Help	31

1 General information

These mounting and operating instructions apply to:

- ▶ TROVIS-VIEW: Version 3.20 or higher
- ▶ Device module: Version 3.20 or higher

The instructions describe the configuration and operation of the TROVIS 6493 Compact Controller using the TROVIS-VIEW Configuration and Operator Interface.

Refer to the Mounting and Operating Instructions EB 6493-1 EN for a description of the TROVIS 6493 Compact Controller.

The TROVIS-VIEW software may be used for different SAMSON devices.

TROVIS-VIEW has a modular structure. It is composed of the user interface, the communication server and the device-specific module. The program enables you to switch between the interface languages English, German, French, Spanish, Hungarian and Slovenian even during operation. The software is similar to Windows® Explorer.

Apart from configuration, parameterization and operation, TROVIS-VIEW provides additional features to record the compact controller. These are, for example, editing plant texts, saving and printing various configuration and parameterization data, tabulating analog inputs and outputs as well as binary status reports.

The configuration and operator interface enables you to adjust nearly all settings of the controller. Only the key number, the analog inputs and the analog output have to be set directly at the controller.

All settings adjusted with TROVIS-VIEW are set under the user level *Maintenance technician*. This is the default user level.

The TROVIS-VIEW software with the database module for the TROVIS 6493 Compact Controller is delivered on a CD-ROM (order no. 6661-1031).

1.1 System requirements

Hardware (minimum):

- ▶ PC with Pentium II processor or equivalent (300 MHz or higher), 500 MHz recommended
- ▶ Serial interface or USB/RS-232 adapter
- ▶ Minimum 96 MB RAM, 192 MB RAM recommended
- ▶ Minimum 150 MB free disk space, additionally approx. 15 to 20 MB for the device-specific module
- ▶ SVGA graphics card (min. 800 x 600)
- ▶ CD-ROM drive

Software:

- ▶ Operating systems: Windows® 2000 (min. SP2), Windows® XP, Windows® Vista, Windows® 7
- ▶ Microsoft® .NET Framework Version 2.0 or higher (installation program included on the CD-ROM)
- ▶ Internet browser: Microsoft® Internet Explorer version 6.0 or higher

Accessories:

- ▶ Infrared adapter RS-232 (order no. 8864-0900)
- ▶ Bracket for infrared adapter (order no. 1400-9769)
- ▶ USB 1.1 serial adapter (order no. 8812-2001)

1.2 Installation

1. Run setup.exe to install the program.
-

Installing the program from the downloaded ZIP file:

Download and unzip the ZIP file on your system before starting the installation.

Installing the program from a CD-ROM:

Once inserted, the CD-ROM starts the installation program automatically, depending on the configuration of the operating system. You do not need to run the setup.exe.

2. Follow the on-screen prompts and instructions of the installation program.

2 Infrared interface

Communication between the PC and the compact controller is established via the infrared (IR) interface integrated in the controller. The IR interface can be accessed via the controller's front panel. It is located to the left of the yellow enter key.

An infrared adapter (with COM port DB9, order no. 8864-0900) is required to transfer data between the PC's serial RS-232 interface and the controller's integrated IR interface.

Connecting the infrared adapter

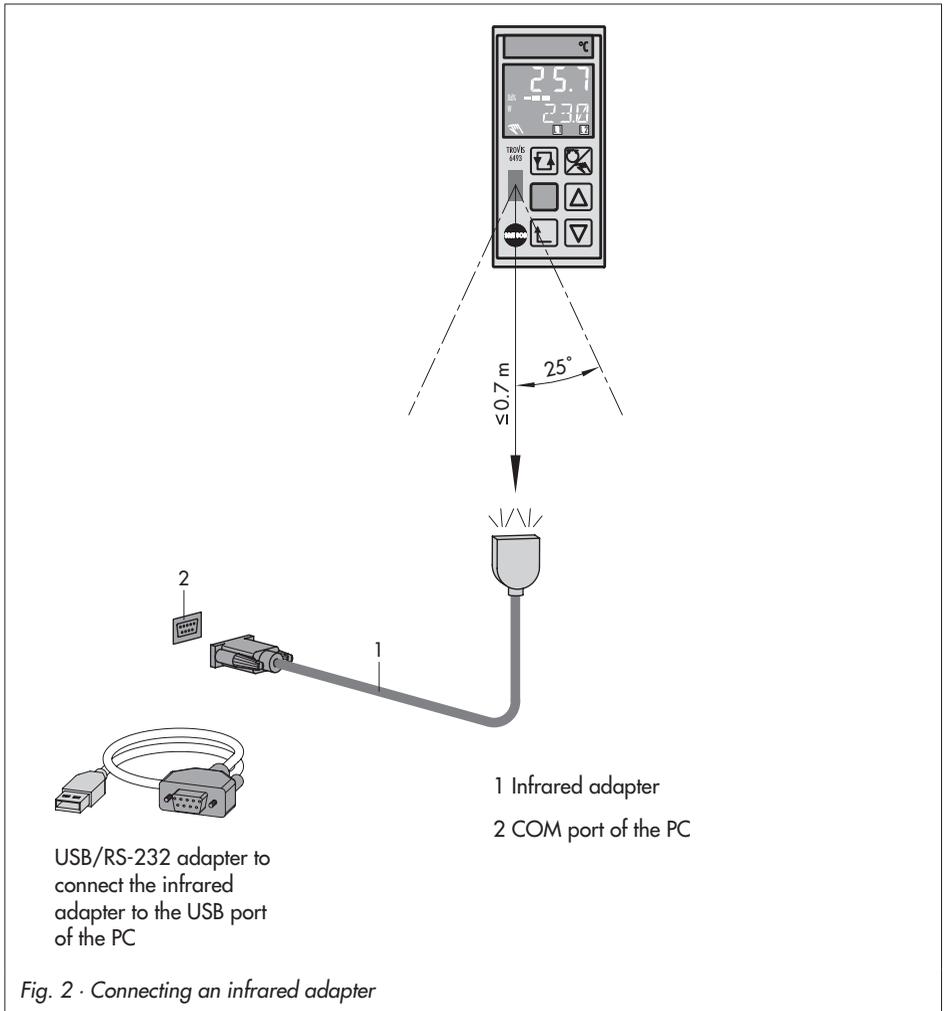
1. Insert the infrared adapter into a free COM port of the PC.
2. Switch on PC.
A device driver does not need to be installed to use it with TROVIS-VIEW.
In case a driver is installed, deactivate the IR device in the Windows Control Panel or assign it to another COM port.
3. Start TROVIS-VIEW with the device module.
4. Set the COM port under *Options > Communication > Port settings*.

Note!

If the PC does not have a serial interface, a USB/RS-232 adapter (Fig. 2) can be used with Windows 98, ME, 2000, or XP operating systems. TV-SK 6352 contains further details.

To secure stable communication between the PC and the compact controller, observe the following points:

- ▶ The IR adapter is aligned directly with the IR interface of the controller.
- ▶ The maximum distance of 0.7 m between the PC and the controller is not exceeded.
- ▶ The IR interfaces faces each other and that the angle to the left and right or to the top and bottom does not exceed 25°.
- ▶ The transmission path is not blocked by any obstacles.



3 Basic settings

3.1 Launch program and adjust basic settings

Depending on the version of the compact controller with IR interface, the analog input IN2 is either a resistance thermometer or potentiometer input (6493-01) or an mA input (6493-02). On starting TROVIS-VIEW software, the controller version appears:

Controller version 6493-01, firmware versions 2.03 - 2.09:

- ▶ Analog input IN1: 0(4)...20 mA, 0(2)...10 V
- ▶ Analog input IN2: Pt 100, Pt 1000, Ni 100, Ni 1000, 0...1000 Ω

Controller version 6493-02, firmware versions 3.03 - 3.09:

- ▶ Analog input IN1: 0(4)...20 mA, 0(2)...10 V
- ▶ Analog input IN2: 0(4)...20 mA

Note!

The firmware version is indicated in the compact controller in the main group I-O under CIN. For firmware versions 2.03 or 3.03 and higher, the compact controller can be configured and parameterized via the integrated IR interface.

Example:

- ▶ Model no.: 6493-01XX.XX → Use TROVIS-VIEW 6493-01
- ▶ Model no.: 6493-02XX.XX → Use TROVIS-VIEW 6493-02

How to proceed:

1. Launch the device-specific version of TROVIS-VIEW.
The user interface with menu bars and folders is displayed:



2. If desired, change the interface language (English, German, French, Spanish, Hungarian, Slovenian) under *Options > Language*.
3. Under *Options > Communication > Port settings*, open the window to assign the infrared adapter to a free serial port (COM 1 to COM 4) of the PC.

3.2 Addressing

If there is only one compact controller with IR interface in the send/receive range of the IR adapter, data can be uploaded from the controller or downloaded to it directly. Addressing is not required.

If there are several devices with IR interfaces at the same point of installation, devices must be addressed via their serial number because only one device may communicate with the PC at one time.

Note!

The IR adapter must be connected to the PC and aligned to the IR interface of the compact controller (-> section 2).

How to proceed:

1. From the *Device* menu select *Addressing*.
The addressing window is opened.
2. Select *"There are several devices of the same type reachable in the infrared region"*.
3. The serial number of the compact controller is read automatically when *Automatic detection* option is selected. On selecting *Enter serial number manually* option, the serial number is indicated in the display of any connected controller in the response range. The serial number of the controller to be addressed must be entered manually.

Note!

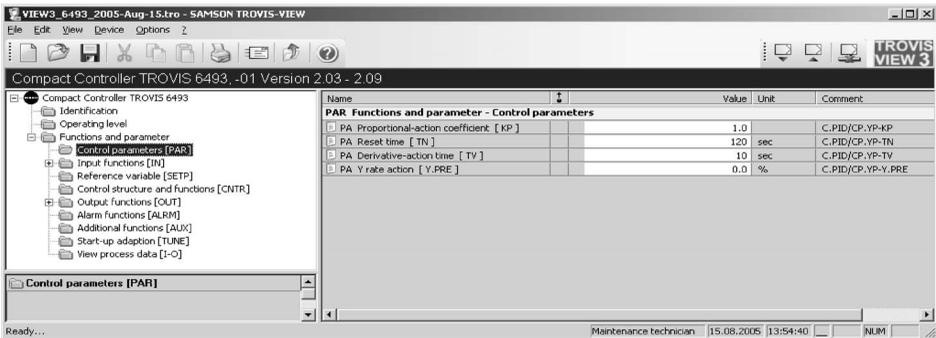
The serial number is displayed on the compact controller in the main group I-O under S-No. It is also indicated on the nameplate.

After addressing is successfully completed, the serial number appears in the info bar. If you want to configure another controller, the addressing procedure must be repeated.

4 Operating functions

Data can be uploaded from the compact controller or downloaded to it in offline mode. There is a distinction between the reading and writing of a single data point, a data section and the entire data record of the controller.

In the following sections, it is explained how to modify, read and write data taking the parameters in the folder *Functions and parameter > Control parameters [PAR]* as an example.



4.1 Modify data

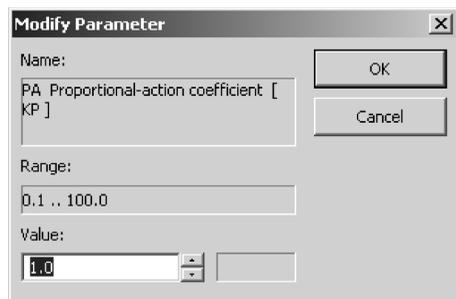
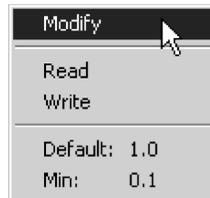
Example: Modify control parameter KP

1. Activate the *PA Proportional-action coefficient [KP]* field by double-clicking it.

Or:

Click on the *PA Proportional-action coefficient [KP]* field with the right mouse button to open the context-sensitive menu displayed below.

2. From the context-sensitive menu select *Modify*. The pop-up window is opened.
3. Adjust parameter [KP] within the permissible range.
4. Confirm new value by clicking *OK*. Set value is adopted.



4.2 Read data from the controller

NOTE:

The IR adapter must be connected to the PC and aligned to the IR interface of the compact controller (-> section 2).

4.2.1 Read a single data point

Example: Read control parameter KP

1. Right-click the *PA Proportional-action coefficient [KP]* field.
2. From the context-sensitive menu select *Read*.
The controller's current KP value is uploaded.

4.2.2 Read several data points simultaneously

Example: Read control parameters KP and TN

1. Select the fields *PA Proportional-action coefficient [KP]* and *PA Reset time [TN]* with the Ctrl key pressed down.
2. Press right mouse button.
3. From the context-sensitive menu select *Read selected data*.
The current values for KP and TN are uploaded.

4.2.3 Read all data points in a section

Example: Read all data in the *Control parameter* folder.

1. Right-click the *Control parameter [PAR]* folder.
2. From the context-sensitive menu select *Read*.
The values for KP, TN, TV and Y.PRE are read.

4.2.4 Read entire data record

- ▶ Select *Device > Upload from Device* or click on the  icon in the devicebar. The entire data record is read.

4.3 Write data to the controller

NOTE:

The IR adapter must be connected to the PC and aligned to the IR interface of the compact controller (-> section 2).

When configuration data (CO) are transmitted, the controller switches to manual operation automatically. When parameters (PA) are transferred, the controller remains in the last mode of operation.

4.3.1 Write a single data point

Example: Transfer control parameter KP to the controller.

1. Right-click the *PA Proportional-action coefficient [KP]* field.
2. From the context-sensitive menu select *Write*.
The new KP value is transferred to the controller.

4.3.2 Write several data points

Example: Transfer control parameters KP and TN to the controller.

1. Select the fields *PA Proportional-action coefficient [KP]* and *PA Reset time [TN]* with the Ctrl key pressed down.
2. Press right mouse button.
3. From the context-sensitive menu select *Write selected data*.
The current values for KP and TN are transmitted to the controller.

4.3.3 Write all data points in a section

Example: Transfer all data in the *Control parameter* folder to the controller.

1. Right-click the *Control parameter [PAR]* folder.
2. From the context-sensitive menu select *Write*.
The values for KP, TN, TV and Y.PRE are transmitted to the controller.

4.3.4 Write entire data record

- ▶ Select *Device > Download to Device* or click on the  icon in the devicebar. The entire data record is transferred to the controller.

4.4 Default settings and values

Default settings

By selecting *Edit > Load Factory Defaults*, the current configuration of TROVIS-VIEW is overwritten and reset to the default values. Plant texts already edited under *Edit > Customer Data* are not overwritten.

With TROVIS-VIEW, the compact controller can be reset to the default values using the field *CO Resetting to factory default* in the *Additional functions [AUX]* folder (see section 6.3.7).

Default values

A single data point may be set to its default value.

Example: Set control parameter KP to its default value.

1. Right-click the *PA Proportional-action coefficient [KP]* field.
The default value 1.0 is displayed in the context-sensitive menu.
2. Select *Default*.
The control parameter KP is set to its default value of 1.0.

5 Communication mode

5.1 Online/offline mode

Online mode

In online mode, there is a connection between the controller and the PC to enable communication. Current configuration and operating data are uploaded from the controller and displayed in the appropriate folder in TROVIS-VIEW. Settings adjusted in TROVIS-VIEW are downloaded to the controller immediately.

- ▶ Select *Device > Online* or click the  icon in the devicebar. Online mode is started. While in online mode, the  icon blinks in the status bar. The TROVIS-VIEW symbol in the top right corner is animated.

Exit online mode:

- ▶ Re-select *Device > Online*. The connection between the controller and the PC is terminated.

Offline mode

In offline mode, there is no connection between the controller and the PC. The connection is established by the operator when transferring data to or from the controller.

If a connection has been established, *CONN* appears on the controller's display. In operating level, *CONN* and the values for the parameters *W*, *W2*, *WE*, *Y* or *Xd* (refer to EB 6493-1 EN, flap, legend no. 2) are displayed in alternating sequence.

5.2 Trend Viewer

The Trend Viewer function allows the analog input and output variables and binary status alarms to be presented in graphs. Apart from the representing the data in graphs, the plotted data are also saved in a file.

1. Activate the Trend Viewer function by selecting *View > Trend Viewer*.
2. If required, add new data points by dragging and dropping them:
Left-click the required data point in the *View process data [I-0]* folder.

Keep the mouse key pressed and drag the data point to the Trend Viewer window and drop it into the window.

3. If required, you can change the graph:

Double-click the Trend Viewer to open the graph. Alternatively, right-click on the graph and select *Edit* in the pop-up menu.

You can change the graph name, range of values and the time axis setting.

Double-click the *Name* window or right-click on the window to change the color of individual graphs.

Check the box to activate or deactivate graphs or individual data points.

	Name	Value	Unit
<input checked="" type="checkbox"/>	Anzeige von Prozessd...		
<input checked="" type="checkbox"/>	Analog input [IN2]		°C
<input checked="" type="checkbox"/>	Analog input [IN1]		°C
<input checked="" type="checkbox"/>	PA Internal reference...		°C

4. Establish communication by selecting *Device > Online*.
The selected data points are represented in the Trend Viewer as lines in a graph.

Note!

We recommend to select the *TROVIS 6493 Compact Controller* folder while the online mode is active to ensure that the least possible number of data points must be uploaded, which results in the fastest possible scan rate being set.

Trend Viewer example

The screenshot displays the Trend Viewer software interface for a Compact Controller TROVIS 6493. The main window is titled "VIEW3_6493_2005-Aug-16.tro - SAMSON TROVIS-VIEW". The interface is divided into several sections:

- Left Panel:** A tree view showing the system hierarchy, including "Identification", "Operating level", "Functions and parameter", "Control parameters [PAR]", "Input functions [IN]", "Reference variable [SETP]", "Control structure and functions [CNTR]", "Output functions [OUT]", "Alarm Functions [ALRM]", "Additional Functions [AUX]", "Start-up adaption [TLINE]", and "View process data [FO]".
- Top Panel:** A table titled "I-O Functions and parameter - View process data" with columns for Name, Value, Unit, and Comment. It lists various analog and binary values and outputs.
- Bottom Left Panel:** A graph titled "Anzeige von Prozessdaten [I-O]" showing temperature trends in degrees Celsius over time (0 to 120 seconds). The y-axis ranges from -10.0 to 120.0. The graph shows several curves representing different process variables.
- Bottom Right Panel:** A table titled "Anzeige von Prozessdaten [I-O]" with columns for Name, Value, and Unit. It lists the selected variables for the graph.

Name	Value	Unit	Comment
Analog values			
Analog input [IN1]	27.3	°C	
Analog input [IN2]	50.1	°C	
Controlled variable before function generati...	50.0	°C	
Reference variable before function generati...	27.3	°C	
WE before feedforward control [FE_CO]	27.3	°C	
Act. internal reference variable (comp.) [SP...	50.0	°C	
YPID after limitation [YPID]	19.6	%	
Analog output [YOUT]	19.6	%	
Binary values			
Binary input [BI1]	on		
Binary output [BO1]	off		
Binary output [BO2]	off		
Binary output error	off		

Name	Value	Unit
<input checked="" type="checkbox"/> Anzeige von Prozessdaten [I-O]		
<input checked="" type="checkbox"/> Analog input [IN2]	50.1	°C
<input checked="" type="checkbox"/> Act. internal reference variable (comp.) [...	50.0	°C
<input checked="" type="checkbox"/> Analog output [YOUT]	19.6	%

Save plotted data

1. Right-click the Trend Viewer window to open the context-sensitive menu.
2. Select *Logging save as*.
3. Select the target folder in the directory into which you want to save the data.
The text file is saved after starting the online mode as a log file automatically with the date and module number (e.g. 2005.9.1-6493.log) and can be edited as required.

The table below contains a selection of some data point with their ID number. The ID number is important for the processing and analysis of the plotted log file.

ID	Name of the data point
3	Analog input [IN1]
4	Analog input [IN2]
20	Analog output [YOUT]
21	Binary output [BO1]
22	Binary output [BO2]
23	Fault alarm output [BO3]
24	Binary input [BI1]
330	Controlled variable X before function generation [CO.VA]
331	Reference variable WE before function generation [WE.VA]
332	WE before feedforward control [FE.CO]
334	Act. external reference variable (comp.) [SP.CO]
335	YPID after limitation [YPID]
336	External reference variable after function generation [WE]
337	Continuous output after function generation [Y]
338	Error [XD]
339	Actual value of controlled variable X (comp.) [X]

Refer to the online help in TROVIS-VIEW for further information.

5.3 Error alarms in TROVIS-VIEW

Error alarm	Possible cause	Remedy
<i>Device not responding!</i>	The interface is not correctly assigned.	From <i>Options</i> menu select <i>Communication</i> . Click the <i>Settings</i> button and assign a free serial COM port of the PC to the interface. Repeat previous action.
	The IR adapter is not aligned to the controller's IR interface or the maximum permissible distance between adapter and interface is exceeded.	Re-align IR adapter (-> section 2) and repeat the previous action.
	Transmission path between IR connections is blocked or one of the connections is obstructed.	Remove obstacle or blockage and repeat the previous action.
	The IR adapter is not connected to the PC.	Connect IR interface to the PC and repeat the previous action.
<i>The COM port could not be opened!</i>	The selected interface is already used by a different program, for example.	From <i>Options</i> menu select <i>Communication</i> . Click <i>Settings</i> button and assign a free serial COM port of the PC to the interface.
	The serial COM port of the computer is not assigned correctly.	
Note! A complete data set from the device does not exist ! Carry out action anyway?	The controller has not been read.	End current TROVIS-VIEW application and start the correct TROVIS-VIEW application.
	Just the data in opened folders are updated in online mode and not the entire data set.	In this case, the TROVIS-VIEW application must be started.
<i>Version incompatibility!</i> -01 Version: 2.03 - 2.09 Module valid for: -02 Version: 3.03 - 3.09 Operation is aborted!	The TROVIS-VIEW application you have launched is not identical with the controller version used. TROVIS 6493-01 Controller uses firmware version 2.XX. TROVIS 6493-02 Controller uses firmware version 3.XX.	Exit current TROVIS-VIEW application and run appropriate version corresponding to the compact controller used. In this case, run TROVIS-VIEW 6493-01.

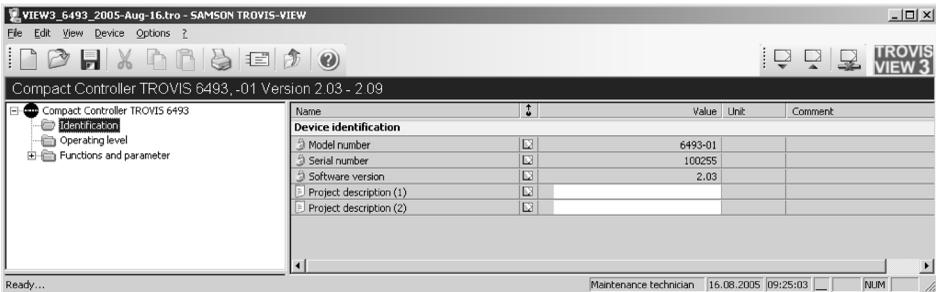
6 Folders

By clicking a folder in the left window, rows and fields for entering and displaying data appear on the right. The properties of these data are represented by icons:

Icon	Meaning
	Data point cannot be modified
	Data point can be modified
	Data point can be executed
	Data point is user-defined
	Error marking
	Value over the maximum limit
	Value over the minimum limit
	Communication to the compact controller is interrupted or there is a write protection error
Data source:	
	Value has been modified manually
	Value has been uploaded from the compact controller. In online mode, ^x in the icon indicates a value has been updated.
	Value originates from a stored file
	Value has been changed by the software

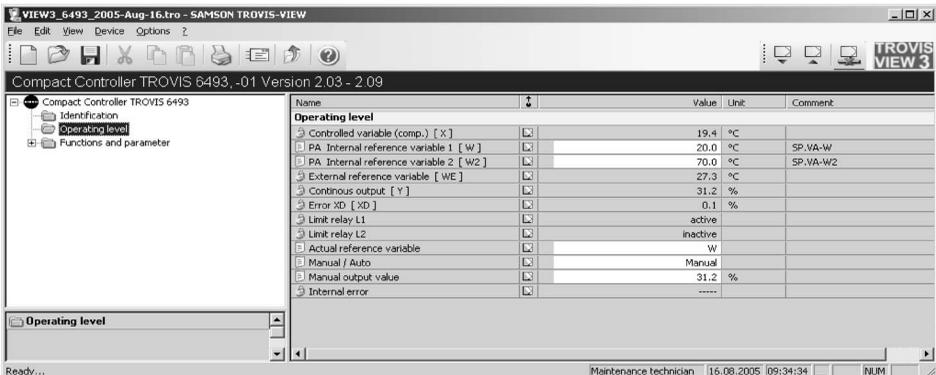
6.1 Identification folder

The *Identification* folder contains device-specific data read from the TROVIS 6493 Compact Controller and transferred to the user interface. The *Project description (1)* and *Project description (2)* fields enable you to mark a controller by entering short texts comprising a maximum of 30 characters per field (a...z, A...Z, 0...9, -). These texts can be saved on the controller. Edited texts are only displayed on the TROVIS-VIEW Configuration and Operator Interface and printed together with the documentation.



6.2 Operating level folder

The *Operating level* folder contains all parameters and modes of operation also displayed in the compact controller's operating level. If an online connection has been established, current operating data are read from the controller and displayed here. In the *Operating level* folder, the values of the internal reference variable and the manual output value are set. In addition, you may change between reference variables and manual/automatic operation.



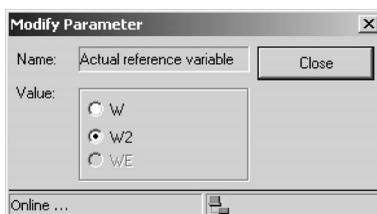
Reference variable changeover

Reference variables may be changed under the following conditions:

- ▶ The reference variables to be changed are activated in the controller (main group SETP), e.g. W = ON and W2 = ON.
- ▶ If a reference variable changeover via the binary input BI1 is configured, the binary inputs must be deactivated during the changeover with TROVIS-VIEW.
- ▶ The IR adapter is connected and aligned to the IR interface of the compact controller (see section 2).

Example: changing the reference variables W/W2:

1. Double-click *Actual reference variable* to activate the data point.
An online connection is established to the controller. The current reference variable (set point) is read.
2. Select desired reference variable and click *Close*.
The reference variable is changed.



Switching between manual and automatic operation

To change from manual to automatic operation, set data point *Manual / Auto* to "Auto" and transfer the new settings to the controller.

Note!

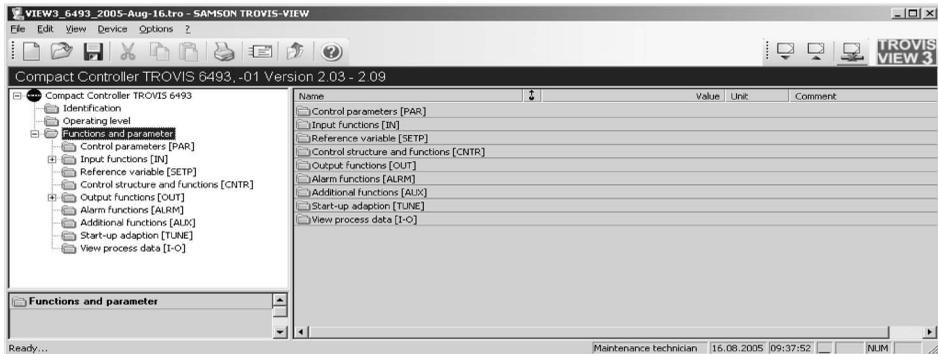
Either transfer the data point Manual / Auto or the Operating level folder to the controller. The device does not switch to automatic operation if the entire data record is transferred to the controller.

Internal error

The data point *Internal error* indicates an error message issued by the compact controller (-> section 7). Select this data point to read the error messages and display them in TROVIS-VIEW.

6.3 Functions and parameter folder

The *Functions and parameter* folder and its subfolders contain all functions of the compact controller's operating level. The subfolders correspond to the main groups in the controller. Inside the folders, functions and parameters are arranged in rows. Functions are indicated by the prefix "CO" (configuration), parameters by the prefix "PA" (parameter). Parameters are listed in the rows below the function they belong to.



6.3.1 Control parameters [PAR] folder

The *Control parameters [PAR]* folder corresponds to the main group PAR of the controller. In this folder, the control parameters KP, TN, TV and Y.PRE are set.

6.3.2 Input functions [IN] folder

The *Input functions [IN]* folder corresponds to the main group IN of the controller. In this folder, all functions of the two analog inputs IN1 and IN2 are determined. The following settings can be made:

- ▶ Determine type of input signal and measuring range
- ▶ Assign analog inputs to the controlled variable X or to the external reference variable WE
- ▶ Configure measuring range monitoring
- ▶ Filtering
- ▶ Root extraction
- ▶ Function generation

Assign units

Under *Unit*, you may assign units to the controlled variable X, the internal reference variables W/W2 and the external reference variable WE for documentation.

The following units are available:

- ▶ °C, degC, degF, K (°C is the default unit)
- ▶ bar, mbar, psi
- ▶ kg/s, kg/min, kg/h
- ▶ l/s, l/min, l/h
- ▶ m
- ▶ %

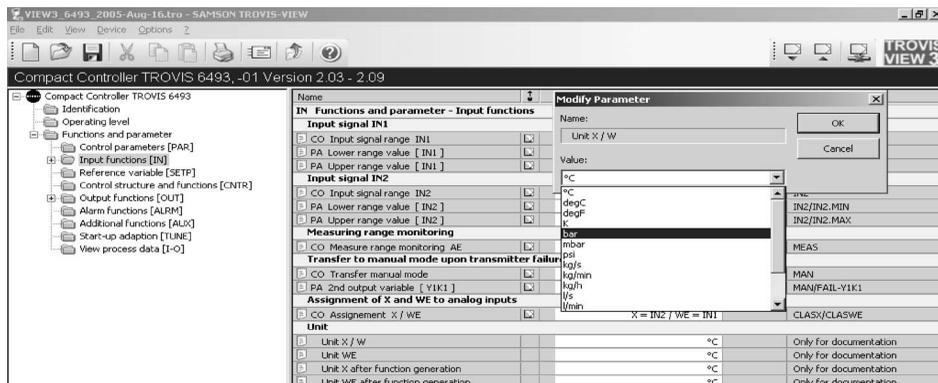
Option *<special>* allows you to determine an additional, user-defined unit comprising a maximum of 10 characters (a...z, A...Z, 0...9, -).

Note!

The units exist for documentation purposes and are just saved in the TROVIS-VIEW file and not in the controller itself.

Example: Set unit of controlled variable X and reference variable W to “bar”.

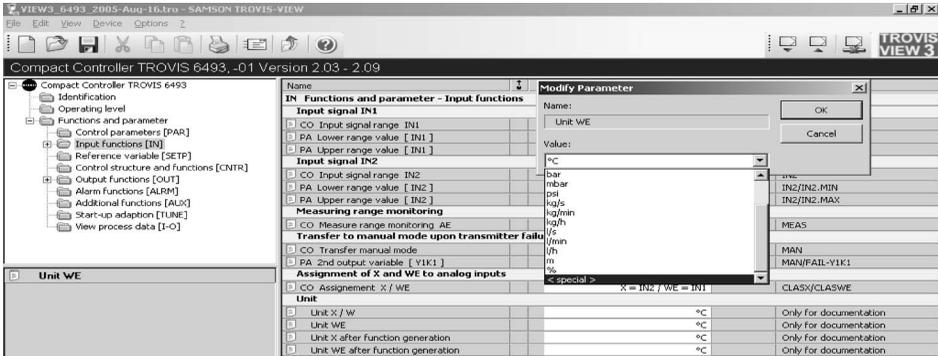
1. Double-click data point *Unit X / W*.
2. In the pop-up window select value “bar”.



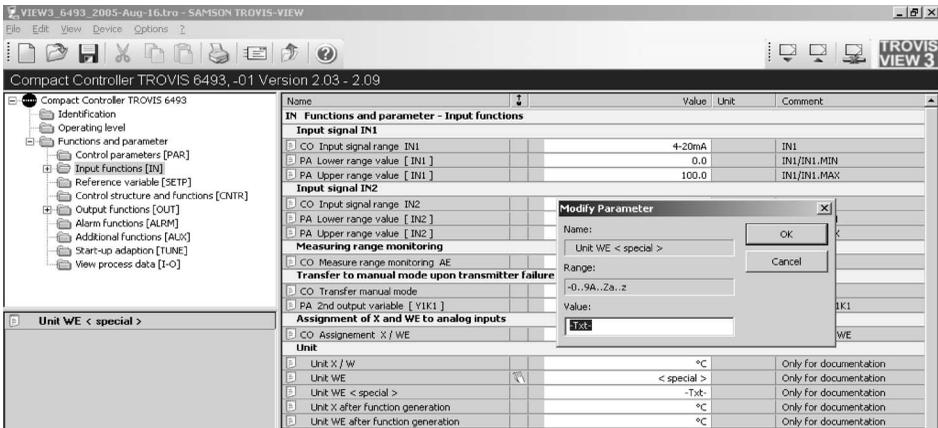
3. Confirm selection by clicking *OK*.
The new unit is adopted.

Example: User-define unit for reference variable WE.

1. Double-click the *Unit WE* field.
2. In the pop-up window select "<special>".



3. Confirm selection by clicking **OK**.
A new row *Unit WE <special>* is created.
4. Double-click the *Unit WE <special>* field in the input functions list.
5. Enter desired unit in the pop-up window and confirm selection by clicking **OK**.
The new unit is adopted.



Function generation of the input variables

Under *Function generation*, the input signals X and WE are rearranged in a table for further processing (function generation).

- ▶ In the *Characteristic PA-FUNC/X* folder, the parameters required for the function generation of the input signal X are entered.
- ▶ In the *Characteristic PA-FUNC/WE* folder, the parameters required for the function generation of the input signal WE are entered.

The ratio between the input signal E (X or W), of which the function is to be generated, and the desired new output signal E' (X' or W') is defined by 7 points. The pairs of values are identified as physical variables by the parameters K1.X to K7.X representing the input signal E and by the parameters K1.Y to K7.Y representing the output signal E'.

The parameters MIN and MAX determine the measuring range of the output signal E'. After the required parameters have been entered, the ratio between input signal E and output signal E' is displayed in a graph below the table.

The screenshot shows the SAMSON TROVIS VIEW software interface. The main window displays a table titled "Characteristic function generation of WE" with columns for Name, Value, Unit, and Comment. Below the table is a graph showing the relationship between the input signal E [°C] on the x-axis and the output signal E' [°C] on the y-axis. The graph shows a linear relationship between the two signals.

Name	Value	Unit	Comment
PA Output signal lower range value [MIN]	0.0	°C	FUNC/WE-MIN
PA Output signal upper range value [MAX]	100.0	°C	FUNC/WE-MAX
PA Input value point 1 [K1.X]	0.0	°C	FUNC/WE-K1.X
PA Output value point 1 [K1.Y]	14.0	°C	FUNC/WE-K1.Y
PA Input value point 2 [K2.X]	14.0	°C	FUNC/WE-K2.X
PA Output value point 2 [K2.Y]	28.0	°C	FUNC/WE-K2.Y
PA Input value point 3 [K3.X]	28.0	°C	FUNC/WE-K3.X
PA Output value point 3 [K3.Y]	42.0	°C	FUNC/WE-K3.Y
PA Input value point 4 [K4.X]	42.0	°C	FUNC/WE-K4.X
PA Output value point 4 [K4.Y]	56.0	°C	FUNC/WE-K4.Y
PA Input value point 5 [K5.X]	56.0	°C	FUNC/WE-K5.X
PA Output value point 5 [K5.Y]	70.0	°C	FUNC/WE-K5.Y
PA Input value point 6 [K6.X]	70.0	°C	FUNC/WE-K6.X
PA Output value point 6 [K6.Y]	84.0	°C	FUNC/WE-K6.Y
PA Input value point 7 [K7.X]	84.0	°C	FUNC/WE-K7.X
PA Output value point 7 [K7.Y]	98.0	°C	FUNC/WE-K7.Y

The graph shows a linear relationship between the input signal E [°C] on the x-axis and the output signal E' [°C] on the y-axis. The x-axis ranges from 0.0 to 100.0, and the y-axis ranges from 0.0 to 100.0. The line starts at (0, 14) and ends at (100, 98).

6.3.3 Reference variable [SETP] folder

The *Reference variable [SETP]* folder corresponds to the main group SETP of the compact controller.

In this folder, the reference variable(s), reference variable changeover and reference variable ramps are set. In addition, it is possible to assign an input signal to the position feedback of an actuator or to the feedforward control.

6.3.4 Control structure and functions [CNTR] folder

The *Control structure and functions [CNTR]* folder corresponds to the main group CNTR of the compact controller. In this folder, the dynamic behavior of the control output and the associated functions are set. These include the operating direction of the calculated signal, the error and the feedforward control of the controlled variable.

6.3.5 Output functions [OUT] folder

The *Output functions [OUT]* folder corresponds to the main group OUT of the compact controller. In this folder, the controller's output functions are set. You may determine whether the controller is to work with a continuous-action or a switching output. In addition, the two-step and three-step output are configured here.

Function generation of the manipulated variable

Under *Function generation*, the manipulated variable is rearranged in a table for further processing (function generation).

In the *Characteristic PA-FUNC/FU.YP* folder, the parameters required for the function generation of the manipulated variable are entered. Functions are generated of the manipulated variable as well as the input variables X and WE. The pairs of values are to be indicated in per cent. The parameters MIN and MAX are fixed (-10 % and 110 %). After the required parameters have been entered, the ratio between input signal E and output signal E' is displayed in a diagram below the table.

6.3.6 Alarm functions [ALRM] folder

The *Alarm functions [ALRM]* folder corresponds to the main group ALRM of the compact controller. In this folder, the functions of the limit relays L1 and L2 are set.

6.3.7 Additional functions [AUX] folder

The *Additional functions [AUX]* folder corresponds to the main group AUX of the compact controller.

In this folder, the restart conditions after a power failure, the operator key lock, the contrast settings of the display, the supply frequency and the number of decimal places for variables directly related to the analog inputs are set. The settings for the functions, parameters and calibrating values can be reset to factory defaults.

Example:

Resetting all functions, parameters and the key number to factory defaults

NOTE:

The IR adapter must be connected to the PC and aligned to the IR interface of the compact controller (-> section 2).

1. Double-click the *CO Resetting to factory defaults* field.
2. In the pop-up window select "all the functions, parameters and the key number".
3. Confirm selection by clicking *OK*.
4. Right-click the *CO Resetting to factory defaults* field and select *Execute* from the context-sensitive menu. The controller's settings are reset to factory defaults.

6.3.8 Start-up adaption [TUNE] folder

The *Start-up adaption [TUNE]* folder corresponds to the main group TUNE of the controller. In this folder, you may pre-set a start-up adaption to self-determine the control parameters KP, TN and TV. In addition, the start-up adaption can be launched and canceled here.

Note!

For the prerequisites of an adaption refer to the *Mounting and operating instructions EB 6493-1 EN*, section 3.8.

Launch adaption

1. Open folder *Operating level*.
2. Set manual operation:
Set field *Manual / Auto* to "Manual" and transfer settings to the controller.

3. Define reference variable and transfer settings to the controller.
4. In manual operation, adjust the controlled variable and the reference variable so that they match.
5. Open *Start-up adaption [TUNE]* folder.
6. Under *PA Value of step response [Y.JMP]* define the step response and transfer settings to the controller.
7. Set field *CO Start-up adaption* to "start".
8. Right-click field *CO Start-up adaption* and select *Execute* from the context-sensitive menu to launch adaption

Exit or cancel adaption

1. Open folder *Start-up adaption [TUNE]*.
 2. Set field *CO Start-up adaption* to "off".
 3. Right-click the *CO Start-up adaption* field and select *Execute* from the context-sensitive menu to exit adaption.
-

Note!

In online mode, the adaption progress is displayed under Adaptation status.

Internal error

Errors may occur during adaption. Error messages issued by the controller are reported under *Internal error* (→ section 7). By selecting this data point, the controller's error messages are displayed in TROVIS-VIEW.

6.3.9 View process data [I-O] folder

In the *View process data [I-O]* folder, the analog and binary input and output variables as well as the controller's internal variables are displayed.

Differences between this folder and the main group I-O of the controller:

- ▶ In the main group I-O under ADJ, zero and span of the analog inputs and of the analog output can be adjusted. This adjustment cannot be performed in TROVIS-VIEW.
- ▶ In the main group I-O, the firmware version is displayed under CIN and the serial number under S-No. In TROVIS-VIEW, these data are displayed in the *Operating level* folder.

7 Error alarms of the compact controller

Error alarms can be read from the controller's error memory and displayed using TROVIS-VIEW. Internal errors of the controller are displayed as well as the errors that occurred during start-up adaption (→ EB 6493-1 EN, section 3.8.1 and Appendix A).

Error messages are reported in the folders *Operating level* and *Start-up adaption [TUNE]* under the data point *Internal error*.

If an error alarm (ERR) has been issued by the controller and is being read, TROVIS-VIEW creates the temporary subfolder *Error messages* in the folders *Operating level* and *Start-up adaption [TUNE]* listing all reported error alarms.

By double-clicking the data point *Reset all internal errors* in the *Error messages* folder, the error alarms in the controller are reset. Resetting is performed via an online transfer to the controller.

8 Documentation

8.1 Enter customer data

By selecting *Edit > Customer Data*, the pop-up window for entering customer data is opened:

Enter the project name, the location and projector as well as a description of the plant in the appropriate fields. Customer data are saved together with the controller configuration. They are not transmitted to the controller.

Customer Data [X]

Created on: 16.08.2005, 11:05 (DD.MM.YYYY, HH:mm)

Last change: 16.08.2005, 11:05 (DD.MM.YYYY, HH:mm)

Project name:

Location:

Author:

Description:

OK Cancel

8.2 Print documentation

From the *File* menu, select *Printing options...* to choose the parts of the documentation you wish to print together with the current record. Select the desired parts by activating the respective check boxes.

By selecting *File > Print...* or by clicking the associated icon in the toolbar, the Windows default printer window is opened. You may now print the documentation.

By selecting *File > Print preview*, a preview of the documentation is displayed. Click the *Print* button to open the Windows default printer window and print the documentation.

9 Help

The help menu *?* contains the mounting and operating instructions in PDF format.

The Adobe Acrobat Reader is required to display documents in PDF format (installation program included on the CD-ROM).

Select *Help* to open the online help for the TROVIS-VIEW Configuration and Operator Interface.

The current versions of the TROVIS-VIEW Configuration and Operator Interface and the device-specific module are displayed under *Info*.



SAMSON AG · MESS- UND REGELTECHNIK
Weismüllerstraße 3 · 60314 Frankfurt am Main · Germany
Phone: +49 69 4009-0 · Fax: +49 69 4009-1507
Internet: <http://www.samson.de>

EB 6493-2 EN

2011-03