WEST
Control Solutions


# DataVU 7 - Operating Manual (Concise)

59486/1

# Menu structure of the paperless recorder


⇨ Chapter 8 "Device Manager"


⇨ Chapter 7 "Memory Manager"


⇨ Chapter 6 "Alarm and Event Lists"


⇨ Chapter 4 "Visualization"


⇨ Chapter 5 "Memory Presentation (History)"

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# Contents

## 1.1 Preface

Please read this manual before commissioning the instrument. Keep the instructions in a place which is accessible to all users at all times.

Please assist us in improving these instructions where necessary.

Your comments will be appreciated.

If any difficulties should arise during commissioning, you are asked not to carry out any manipulations that could endanger your rights under the instrument warranty!

Please contact the nearest subsidiary or the head office in such a case.

When returning modules, assemblies or components, the regulations of EN 61340-5-1 and EN 61340-5-2 “Protection of electronic devices from electrostatic phenomena” must be observed. Use only the appropriate **ESD** packaging for transport.

Please note that we cannot accept any liability for damage caused by ESD.

**ESD** = **E**lectro **S**tatic **D**ischarge

## 1.2 Arrangement of the Documentation

The documentation for this instrument is addressed to equipment manufacturers (OEMs) and users with appropriate technical expertise. It consists of the following parts:

### Instrument documentation in printed form

**59486** **Operating instructions**

The operating instructions are an extract from the operating manual and cover the basic operation of the paperless recorder.

**59488/59490** **Installation instructions**

The installation instructions describe the installation of the recorder and the connection of the supply and signal cables. The instructions also contain a list of the technical data.

59488 Installation instructions for recorder with zinc die-cast panel

59490 Installation instructions for recorder with stainless steel panel

### Instrument documentation in the form of PDF files

The “Instrument documentation in the form of PDF files” is on the CD that is included in the delivery.

**59484** **Operating manual**

It contains information about commissioning, operation and parameterization on the instrument, as well as about the setup program (available as an option).

**59486** **Operating instructions**

The operating instructions are an extract from the operating manual and cover the basic operation of the paperless recorder.

**59494** **Interface description (serial interfaces)**

This provides information on communication (RS 232/RS 485) with supervisory systems.

**Interface description (Ethernet interface)**

This provides information on the connection of a paperless recorder to a company-internal network. This description is integrated into 59494.

**59496** **Interface description (PROFIBUS-DP interface)**

This provides information on the connection of a paperless recorder to a PROFIBUS-DP system.

**59488/59490** **Installation instructions**

The installation instructions describe the installation of the recorder and the connection of the supply and signal cables. The instructions also contain a list of the technical data.

59488 Installation instructions for recorder with zinc die-cast panel

59490 Installation instructions for recorder with stainless steel panel

**59492** **Setup program**

These instructions describe the functions of the setup program. The setup program is available as an accessory.

**DS-DV7-1-EN-1202** **Data sheet**

The data sheet contains general information, the order details and, technical data.

**59498** **PC evaluation software PCA3000**

The operating manual describes the operation and the features of the PC evaluation software.

The PC evaluation software serves to visualize and evaluate process data (measurement data, batch data, messages ...). The process data can be read in via the CompactFlash memory card, or made available through the PCC software.

**59500** **PCA communications software PCC**

The operating manual describes the operation and features of the PCA Communications software.

The PCA Communications software is responsible for the data transfer from the paperless recorder to a PC, or across a network.

## 1.3 Typographical Conventions

### Warning signs

The signs for **Danger** and **Caution** are used in this manual under the following conditions:

**Danger**

This symbol is used when there may be **danger to personnel** if the instructions are ignored or not followed correctly!

**Warning**

This symbol is used when there may be **damage to equipment or data** if the instructions are ignored or not followed correctly!

**Warning**

This symbol is used where special care is required when handling **components liable to damage through electrostatic discharge**.

### Note signs

**Note**

This symbol is used when your **special attention** is drawn to a remark.

**Reference**

This symbol refers to **further information** in other manuals, chapters or sections.

abc[1]

**Footnote**

Footnotes are remarks that **refer to specific points** in the text. Footnotes consist of two parts:

A marker in the text, and the footnote text.

The markers in the text are arranged as continuous superscript numbers.

**Action instruction**

*

This symbol indicates that an **action to be performed** is described.

The individual steps are marked by this asterisk, e.g.

* Rotate control knob

* Press control knob

## Presentation modes

### Screen texts

*Program manager*

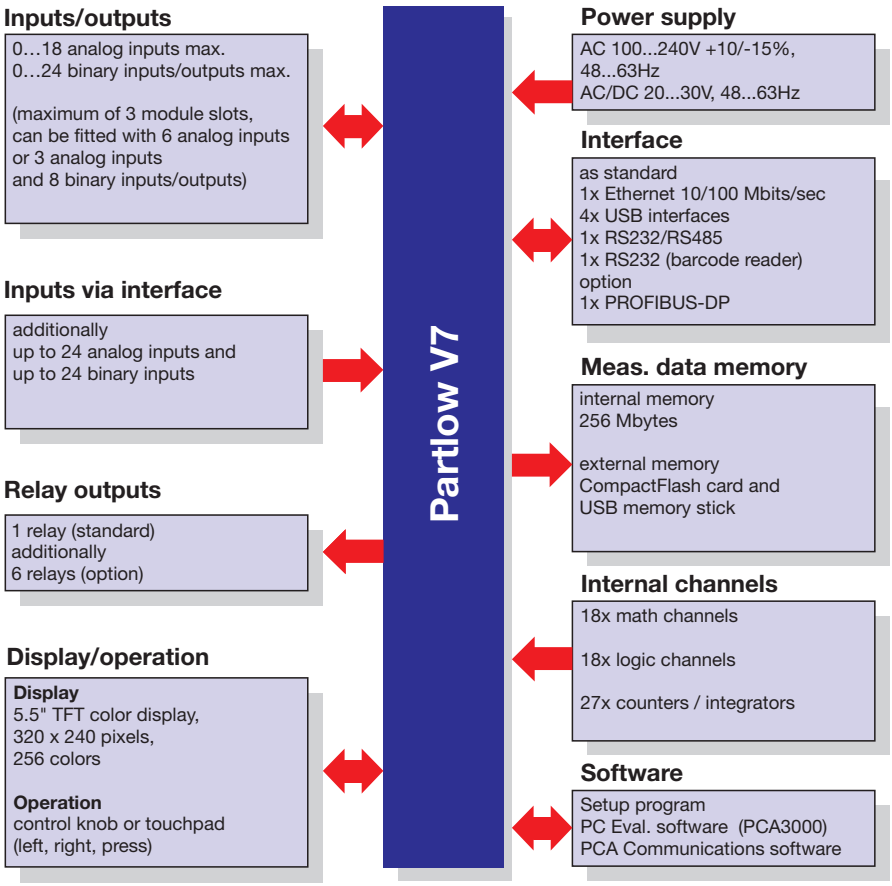
Texts that are displayed in the setup program are indicated by **italic script**.

### Menu items

*Edit ➔ Device data*

Menu items in the setup and instrument software referred to in this operating manual are shown in italics. Menu name, menu item and submenu item are separated from each other by "➔".

# 1 Introduction




The connection diagram is described in the Installation Instructions 59488/59490. When the paperless recorder is delivered, a printed version of the installation instructions is included.

| | |
|---|---|
| 59488 | Installation instructions for recorder with zinc die-cast panel |
| 59490 | Installation instructions for recorder with stainless steel panel |

# 2 Instrument Description

**Device features**

| |  |  |
|---|---|---|
| Front panel | Zinc die-cast with lid | Stainless steel (enclosed) |
| Interfaces locatesd on front panel | 2x USB | None |
| External memory | CF-card located on front panel, maximum 4 GB | None |
| Operation | Control knob | Touchpad |
| Interfaces located on device‘s rear | 2x USB,<br>1x RS232/RS485,<br>1x RS232,<br>1x Ethernet,<br>1x PROFIBUS-DP (option) | 2x USB,<br>1x RS232/RS485,<br>1x RS232,<br>1x Ethernet,<br>1x PROFIBUS-DP (option) |
| Special features | Tested acc. to KTA 3505 | |

## 2.1 Displays and Controls

**Recorder with zinc die-cast panel**

**Power LED (green)**
is on continuously as soon as power is applied.

**TFT color display**
320 x 240 pixels, 256 colors

**Status LED (red)**
is on continuously
if an alarm is present.

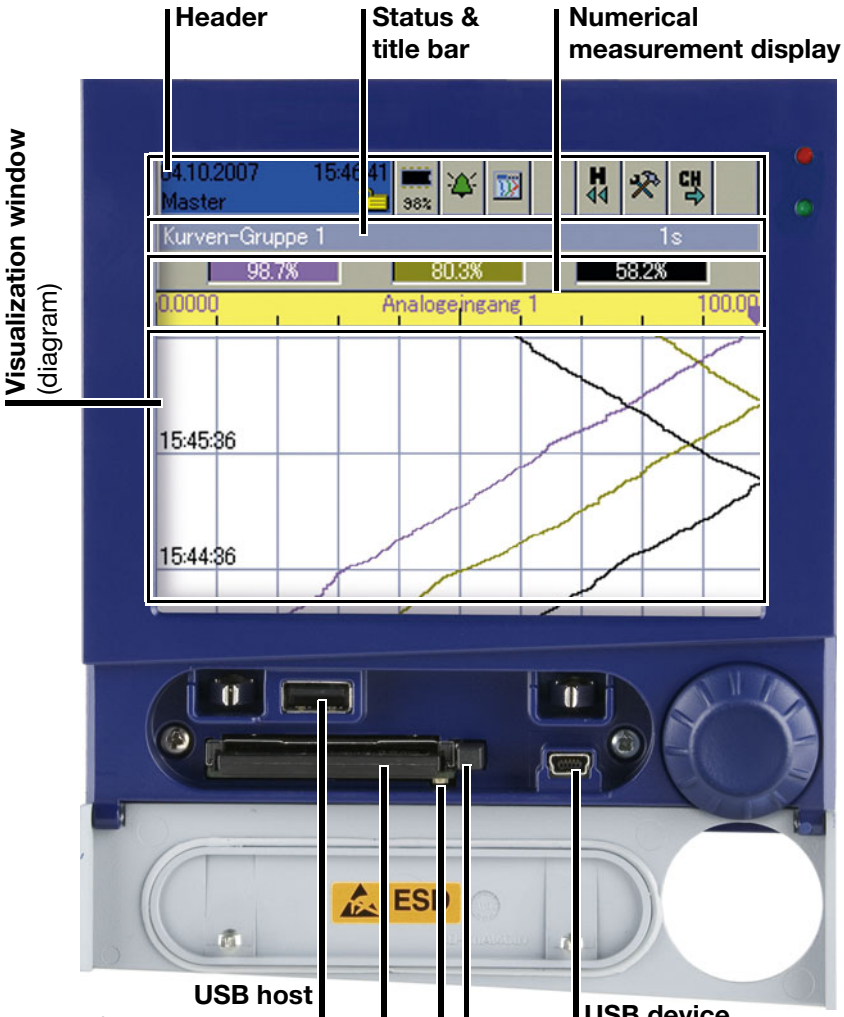

**Cover**
for the CompactFlash® slot[1]
and the setup plug connection

**Control knob**
The control knob is used to configure and operate the paperless recorder. It can be rotated in both clockwise and anti-clockwise directions, and pressed.

1. CompactFlash® is a registered trademark of the SanDisk Corporation.

# 2 Instrument Description

**Recorder with zinc die-cast panel**




**USB host**
for data exchange (measurement data, configuration data, user lists) between the recorder and the PC

**USB device**
for communication with the setup program or PCC

**Ejector for the CompactFlash memory card**

**CompactFlash slot**
for data exchange (measurement data, configuration data, user lists) between the recorder and the PC

**Signal LED**
Light is on during access to the CompactFlash memory card.

The CompactFlash memory card must not be removed during access (signal LED is on).

The USB interfaces are **not** designed for continuous use.

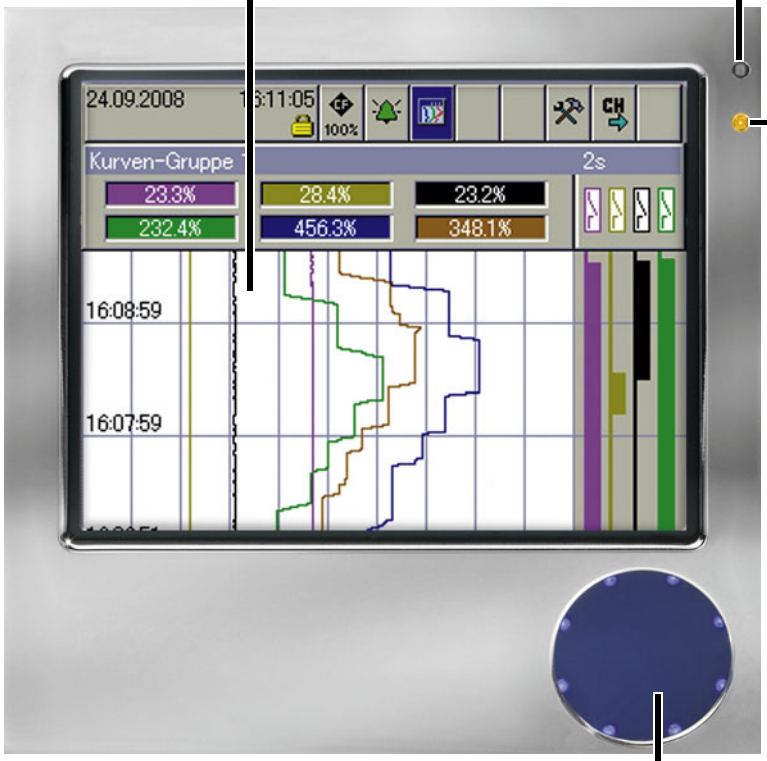
The life of the background illumination can be prolonged by using the parameter “Screen off”.

**Recorder with stainless steel panel**

**Power LED (green)**
is on continuously as soon as power is applied.

**TFT color display**
320 x 240 pixels, 256 colors

**Status LED (red)**
is on continuously
if an alarm is present.




**Touchpad**
The touchpad is used to configure and operate the recorder. A circular motion with a finger at the outer edge has the same effect as the turning of the control knob. Tapping the middle of the touchpad has the same effect as when the control knob is pressed.

All descriptions of the control knob in this operating manual also apply to the touchpad.

For recorders with a stainless steel panel (extra code) the CompactFlash memory card is not available as external memory. The measured data can be saved through one of the interfaces or through a USB flash drive (on the rear side).

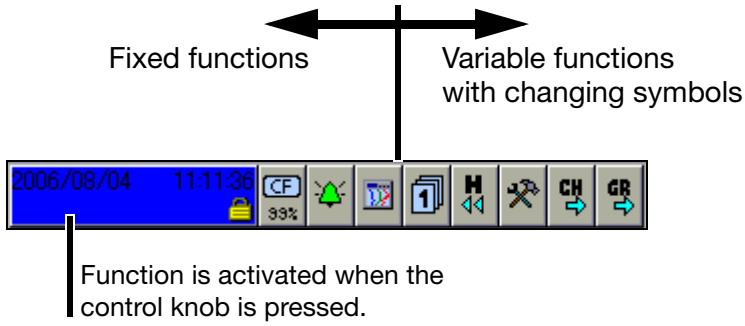
No interfaces at the front panel are available.

The installation instructions from 59490 are to be heeded and complied with.

# 2 Instrument Description

## 3.1 Operating Principle and Graphic Elements

**Header**




The functions of the paperless recorder are selected in the header. The selected function is indicated by a blue background.

**Recorder with control knob**

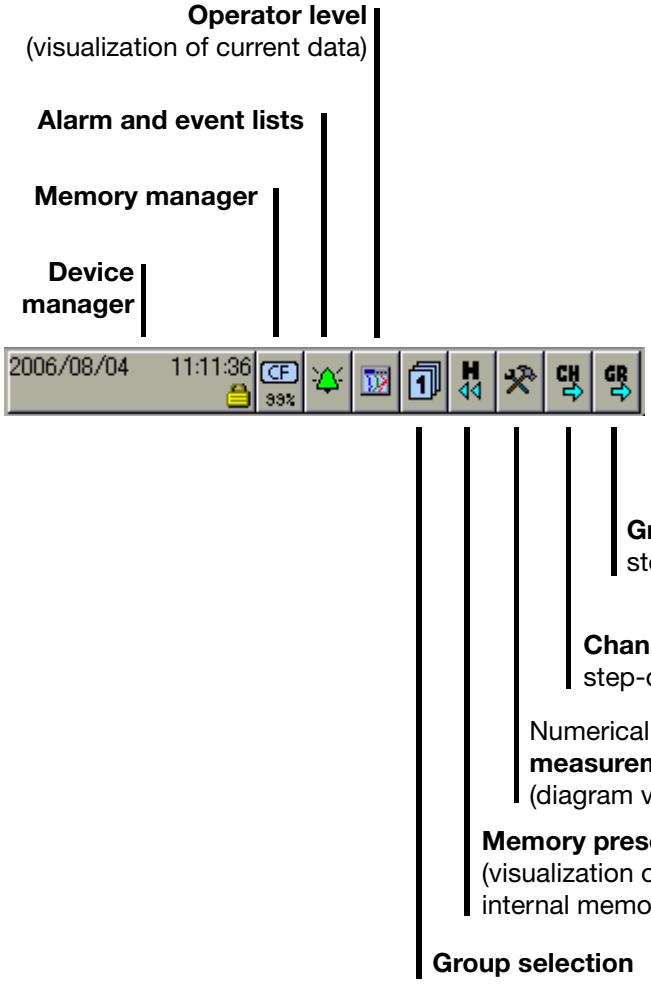
- Function selection by rotating the control knob (to right or left).
- Function is activated by pressing the control knob.

**Recorder with touchpad (stainless steel front panel)**

- Function selection through a circular motion with a finger at the outer edge of the touchpad (when activating the circular motion, two of the eight LEDs in the touchpad are on).
- Function selection by tapping the middle of the touchpad (all LEDs in the touchpad are on).

The symbols (for the variable functions) vary according to the function that is currently active.
The following diagram shows the header for normal display when the vertical

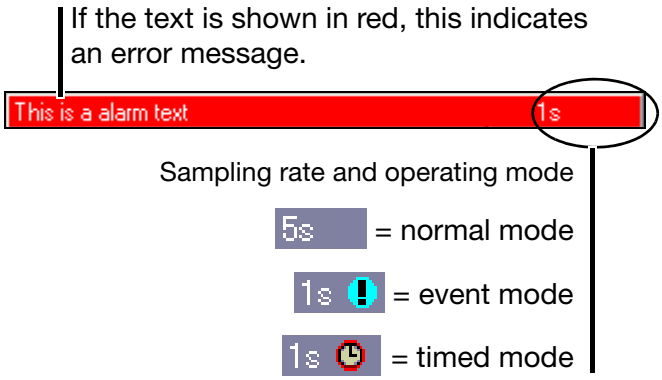
diagram (curve display) has been selected.

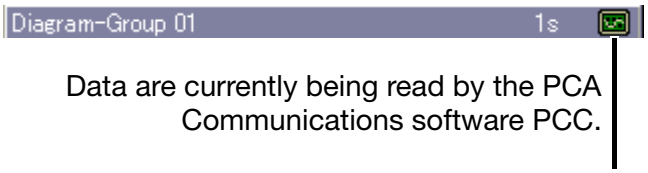


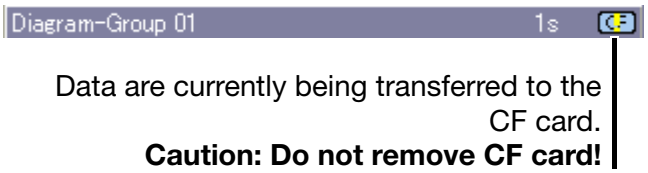

| | |
|---|---|
| Device manager | ⇨ Chapter 8 |
| Memory manager | ⇨ Chapter 7 |
| Alarm and event lists | ⇨ Chapter 6 |
| Operator level (visualization) | ⇨ Chapter 4 |
| Group selection | ⇨ See “Group selection” on Page 31. |
| Memory presentation (History) | ⇨ Chapter 5 |
| Numerical measurement display | ⇨ See “Numerical measurement display (diagram view)” on Page 22.<br>⇨ See “Numerical measurement display” on Page 31. |
| Channel step-on | ⇨ See “Channel step-on” on Page 35. |
| Group step-on | ⇨ See “Group step-on” on Page 35. |

**Status and title bar**

This line (bar) shows alarm and error messages, as well as general information, and information about the active representation mode (e.g. sampling rate). It is automatically blanked out by the system, if necessary.



**Numerical measurement display** (diagram view)

The numerical measurement display is available for the presentation modes:

- Curves,
- history (of the curve presentation) and
- digital diagram

available.

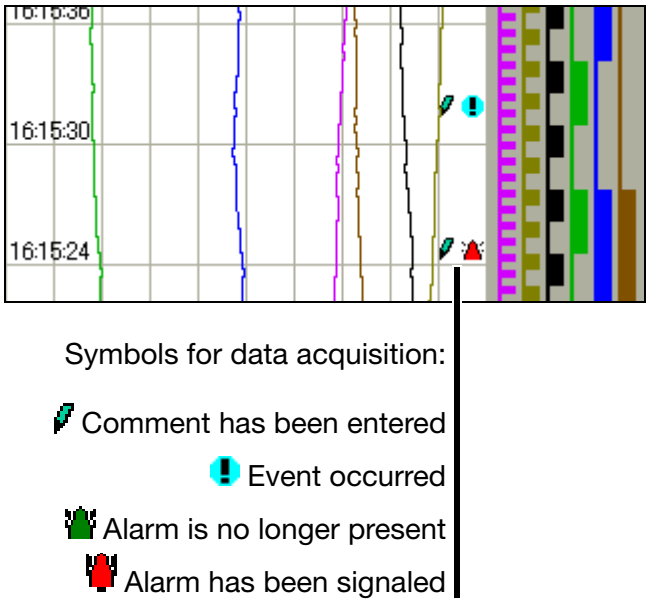
In the **curve presentation**, the numerical display can be switched on or off. This switching on or off also applies to the history presentation.


An alarm for a channel is shown in red (HIGH alarm) or orange (LOW alarm). The colors can be configured in the setup program.

If the numerical measurement display is switched on in the **history (of the curve presentation)**, you can switch between MIN and MAX display. Whether or not MIN and MAX values are both available at the same time, depends on the settings for the group operating mode.


In the **digital presentation**, the diagram header can be switched on and off.

**Visualization window**
(diagram)

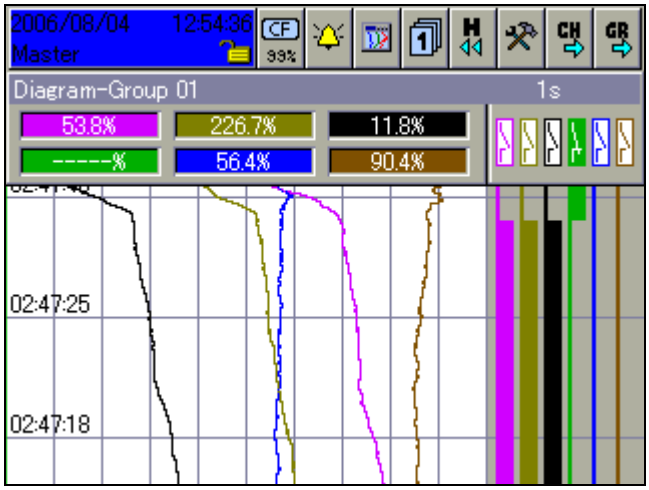



In the visualization window, the measurement data are shown in graphical form. Alarms are indicated by a red or orange color for the curve (can be configured in the setup program).
Communication with the operator (device configuration, checking alarm and event lists etc.) also takes place via the visualization window.

# 3 Operating Principle

## 3.2 Operating Example

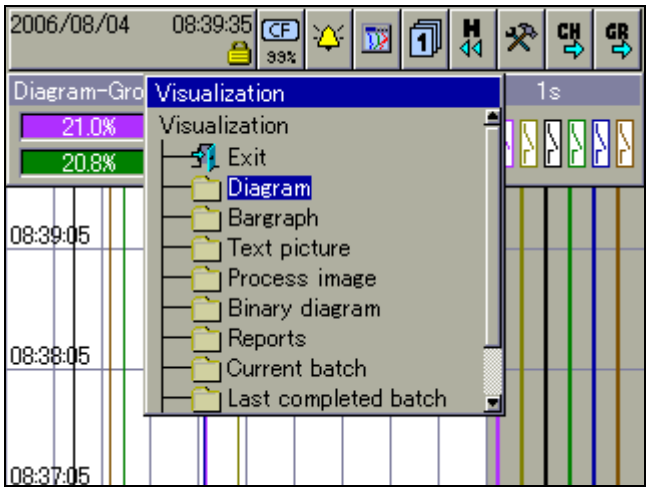
**Start** The normal display is active.



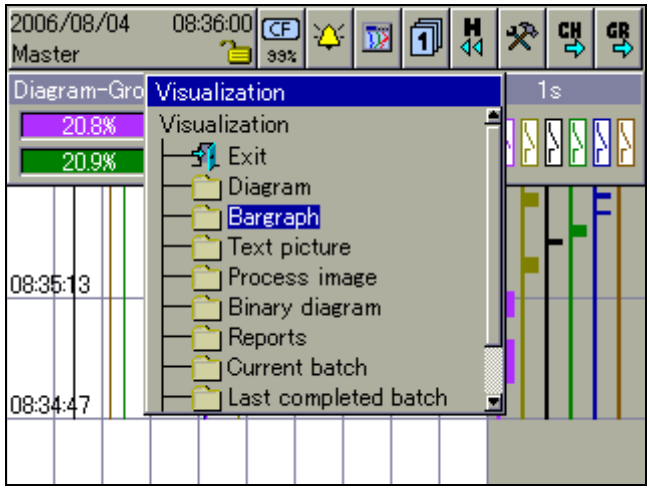

**Operation**

↻ ✱ Select the operator level by rotating the control knob.


⊙ ✱ Activate the operator level by pressing the control knob.

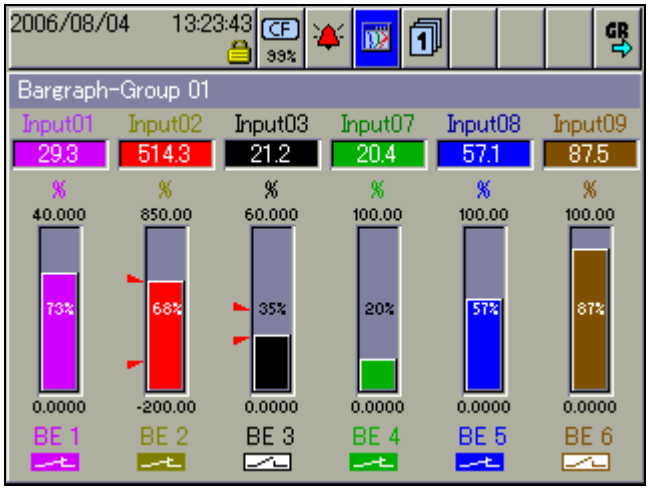


↷ ✱ Select the operator level by rotating the control knob.

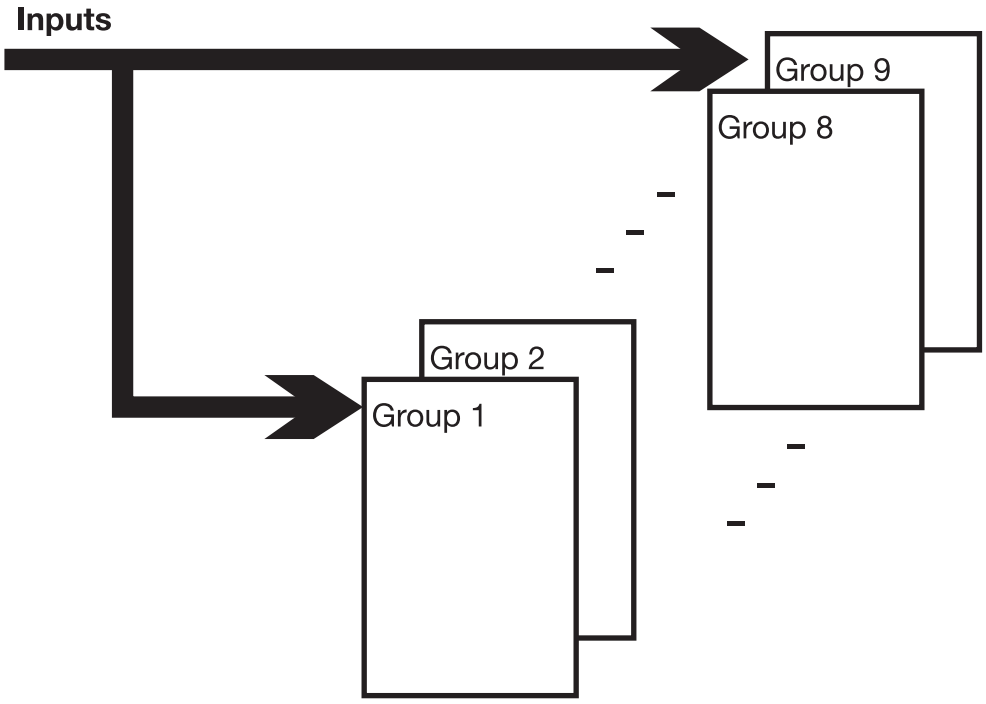



⊙ ✱ Activate the bar graph presentation by pressing the control knob.

**Result** The bar graph presentation starts.



## 3.3 Group and Plant Management (Batches)




Within the recorder, all analog inputs, binary inputs, counters and integrators, are collected together into groups. A maximum of nine groups is available as a total. Each group can consist of a maximum of 6 analog inputs, 6 binary inputs (or outputs), and 4 counters/integrators.

The visualization and storage of the analog inputs and binary inputs (outputs) is always made on a group basis.

If plants (batches) are used, the groups have fixed assignments to the plants (batches).

| Plant number | Group | Plant (batch) |
|---|---|---|
| 0 | 1 … 9 | None |
| 1 | 1 … 9 | 1 |
| 2 | 1 … 3<br>4 … 6<br>7 … 9 | 1<br>2<br>Not assigned |
| 3 | 1 … 3<br>4 … 6<br>7 … 9 | 1<br>2<br>3 |

In order for a batch to be usable, its main group must be active (status = “Display” or “Display, save”) and at least one analog channel in the group must be assigned.

| Batch for plant | Main group |
|---|---|
| 1 | 1 |
| 2 | 4 |
| 3 | 7 |

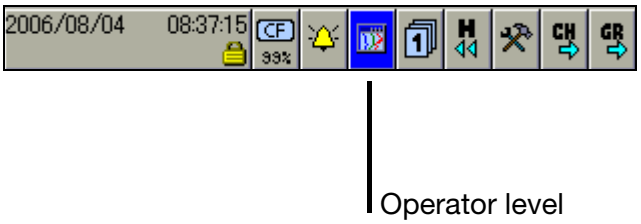
The number of plants is configured through the parameter *Device manager* ➔ *Configuration* ➔ *Batches/plants* ➔ *Gen. plant parameters* ➔ *Number of plants*.

# 3 Operating Principle

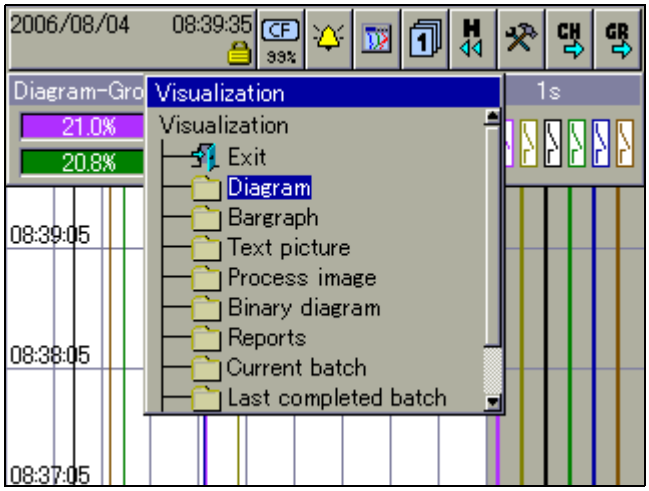
## 4.1 Activating the Operator Level

The type of visualization (curve presentation, bar graph etc.) is selected at the operator level. Note that the appearance of the operator level can be influenced by the configuration.

* Select the operator level by rotating the control knob.
* Activate the operator level by pressing the control knob.




You can alter the visualization after activating the operator level.




The functions in the header line will change, depending on the visualization. The following types of visualization are available:

| | |
|---|---|
| Curves | ⇨ Chapter 4.3 |
| Bar graph | ⇨ Chapter 4.4 |
| Text picture | ⇨ Chapter 4.5 |
| Process image | ⇨ Chapter 4.6 |
| Binary | ⇨ Chapter 4.7 |
| Report | ⇨ Chapter 4.8 |
| Batch | ⇨ Chapter 4.9 |
| Counters/integrators | ⇨ Chapter 4.10 |
| Comment entry | ⇨ Chapter 4.11 |

## 4.2 Overview of Header Lines

**Curve presentation (diagram)**

**Bar graph presentation**

**Text picture presentation**

**Process image presentation**

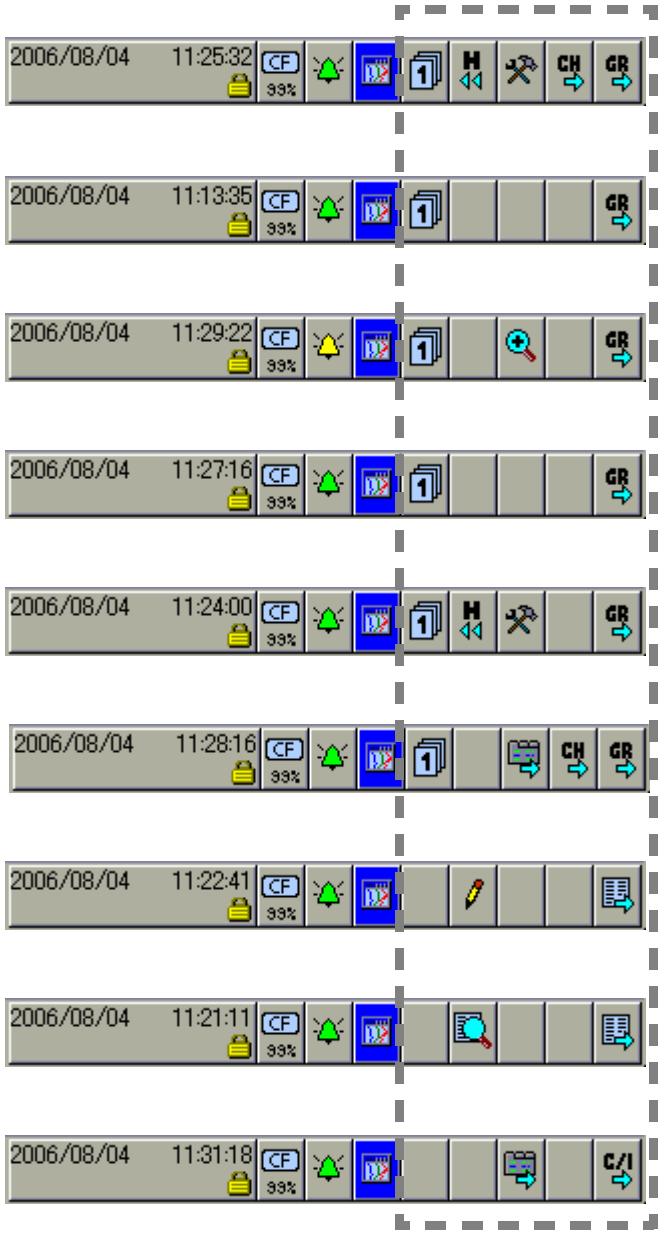
**Digital presentation**

**Reports**

**Batches (current)**

**Batches (completed)**

**Counters and integrators**



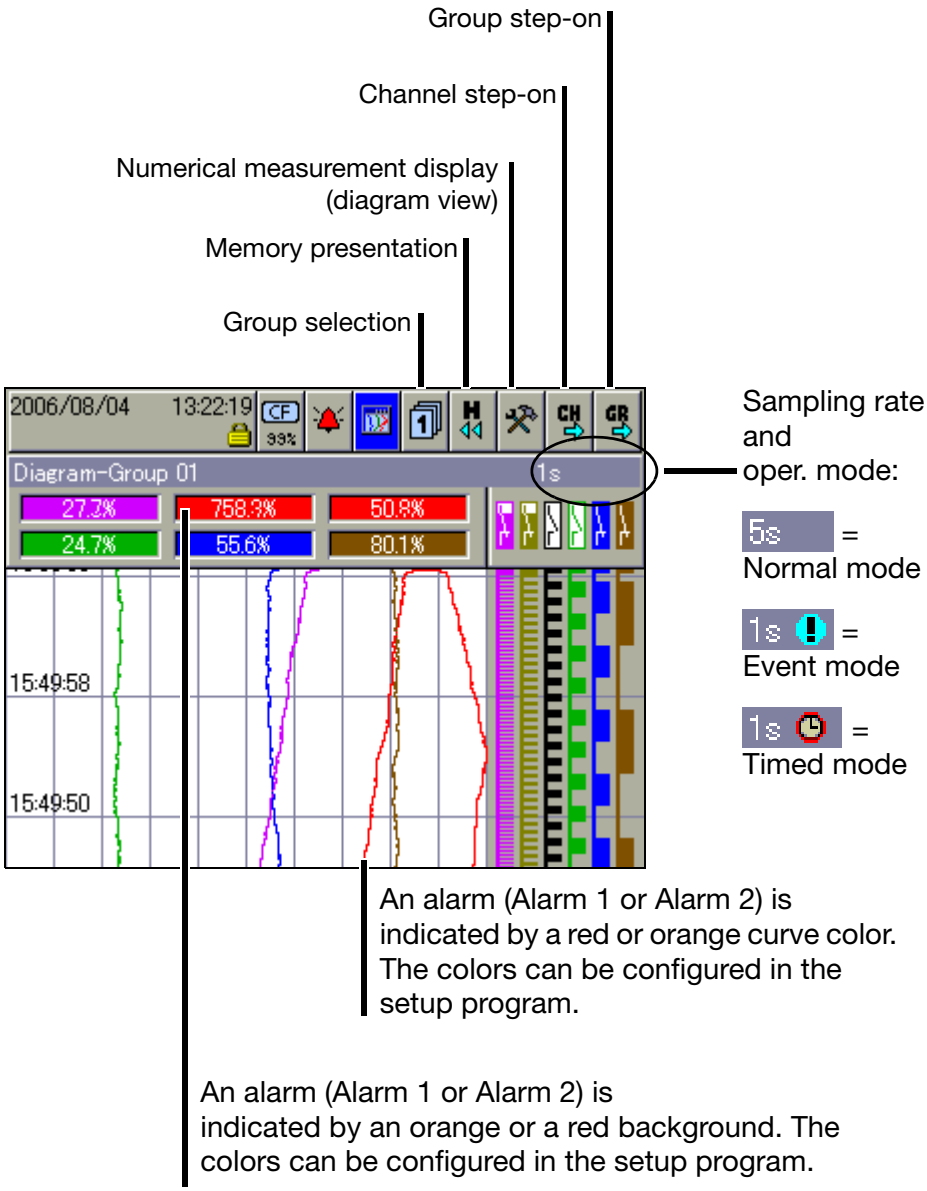

**Comment entry** The comment entry does not have its own header. The current header will remain when this function is activated. The comment that has been entered is placed in the event list.

The first four functions in the header are identical for all visualizations. These are supervisory functions (see “Header” on page 19).

Differences only arise in the last five functions.

## 4.3 Curve Presentation

In this presentation, the individual signal traces run from top to bottom of the display (vertical presentation).




**Group selection** You can use this function to directly select and display any one of the groups.

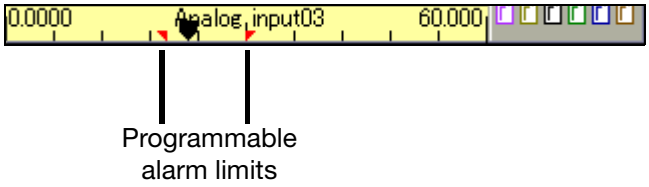
**Memory presentation** This function starts the presentation of the data that are available in the history memory.

⇨ Chapter 5 "Memory Presentation (History)"

**Numerical measurement display** This function is used to switch the numerical measurement display (diagram header) and binary traces on or off, as well as to activate the envelope display.

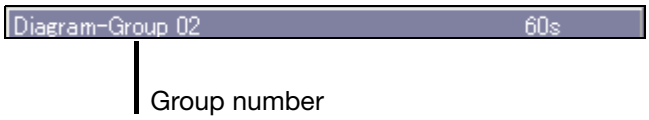
**Channel step-on**

This function activates the scaling display. Repeated activation steps through the scaling for the channels within the group, and then blanks it out again.



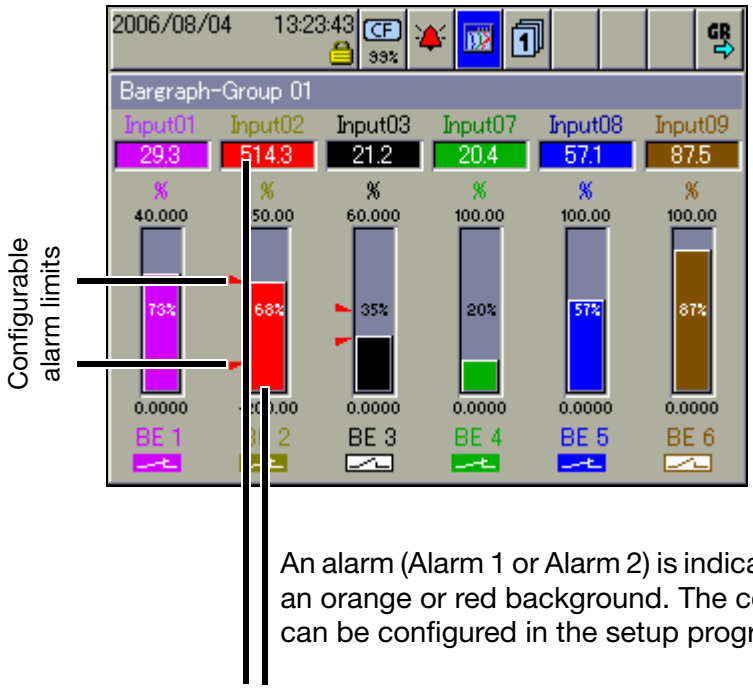

**Group step-on**

Unlike “Group selection”, where any group can be selected, this function is used to select the groups one after another.




## 4.4 Bar Graph Presentation

In this visualization mode, the analog inputs are presented both numerically and in bar graph form. In addition to the analog channels, the digital inputs can also be visualized at the bottom of the display.

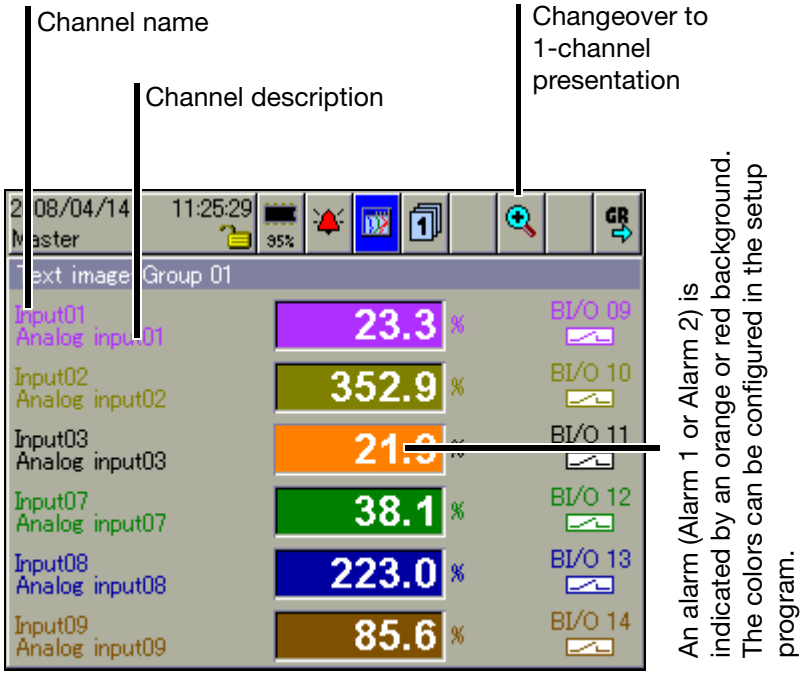



If only digital channels are to be presented, then Chapter 4.7 "Binary diagram presentation" is recommended.

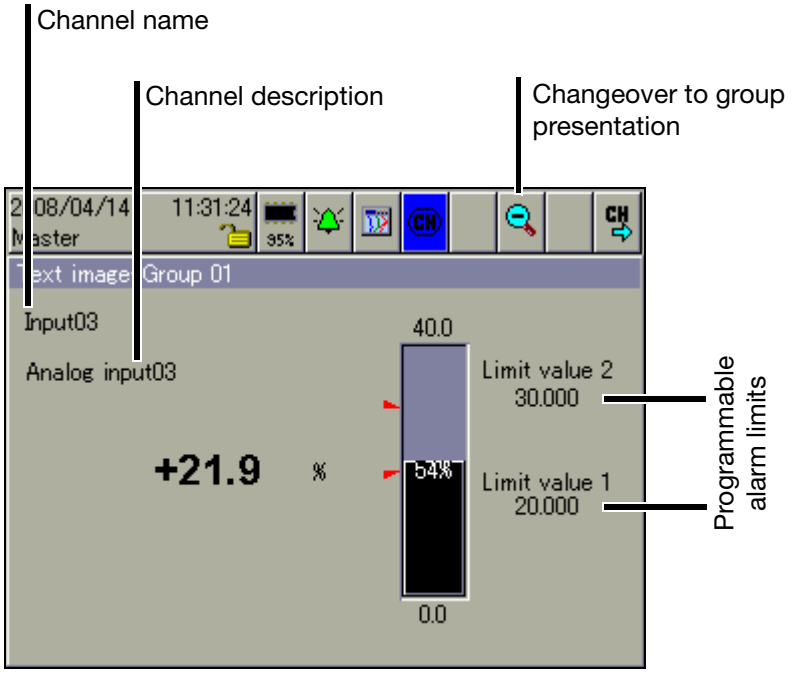
## 4.5 Text Picture Presentation

In the presentation, the analog channels are presented numerically, together with the channel name and the channel description. In addition to the analog channels, the digital inputs can also be visualized at the right-hand edge of the display.

**Group presentation**



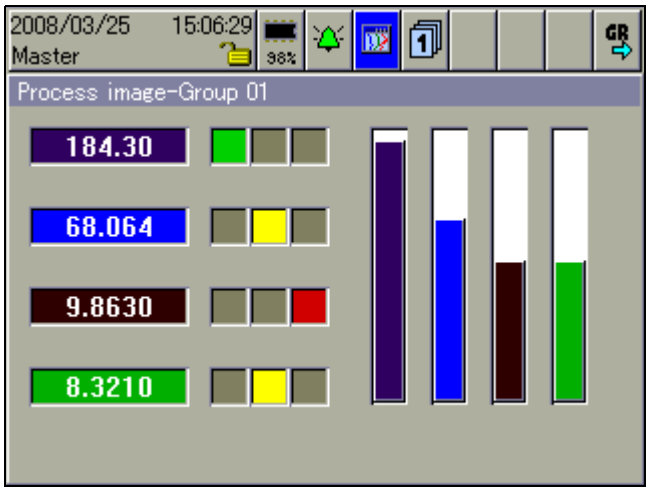

**1-channel presentation**



# 4 Visualization

## 4.6 Process Image Presentation

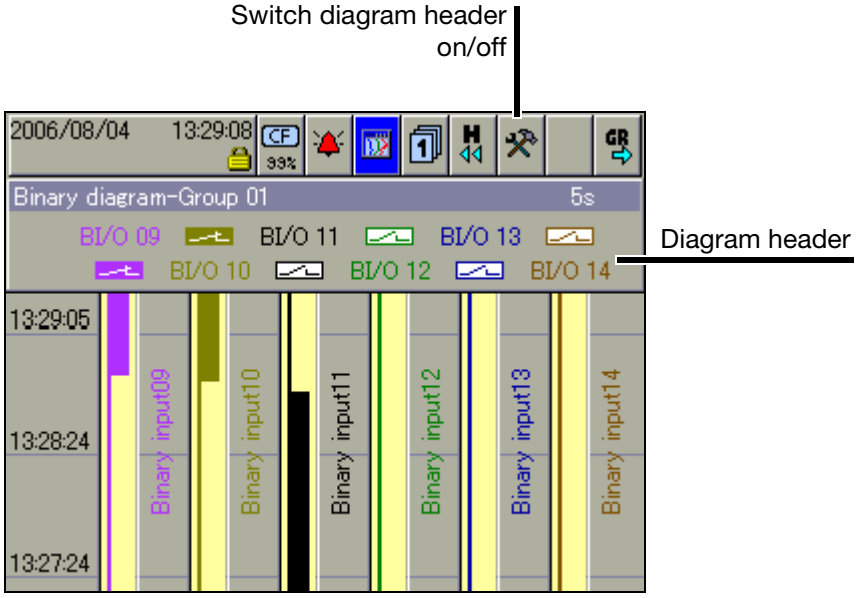
The display shows selected measurement signals and background pictures in a maximum of nine process images. The setup program is used to prepare and configure the images.




Each process image can be freely configured by the user. One background image (316 × 188 pixel) and 25 objects (analog/binary signals, icons, texts, bars) can be used per process image.
Further information can be obtained from the instructions on the setup program (59492).

## 4.7 Binary diagram presentation

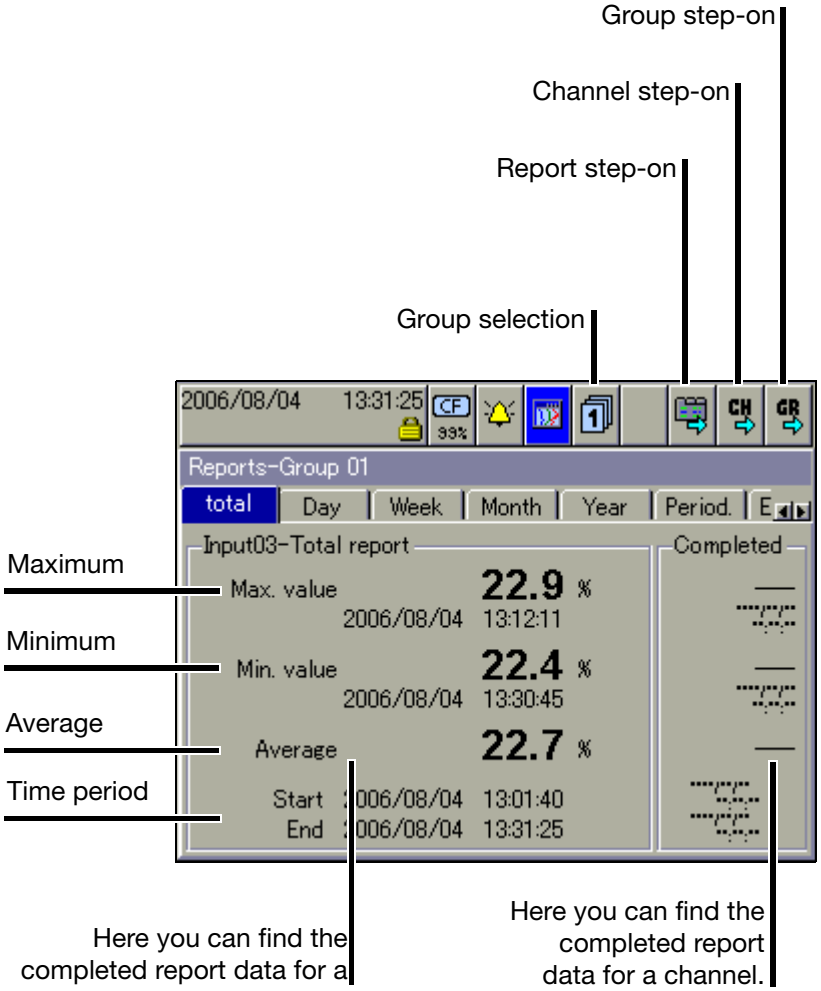
In this presentation, the analog channels are left out and only the binary channels and signals are visualized.



## 4.8 Reports

Each one of the reports covers all the analog channels in a group. Each group has its own configurable report.

The current reports are visualized in the presentation.




**Group selection** You can use this function to directly select any one of the groups and display the report data.

**Report step-on** This function is used to switch between the various types of report for the current channel.

**Channel step-on** This function can be used to switch between the individual channels of the group that is currently active.

**Group step-on** Unlike “Group selection”, where any group can be selected, this function is used to select groups one after another.

# 4 Visualization

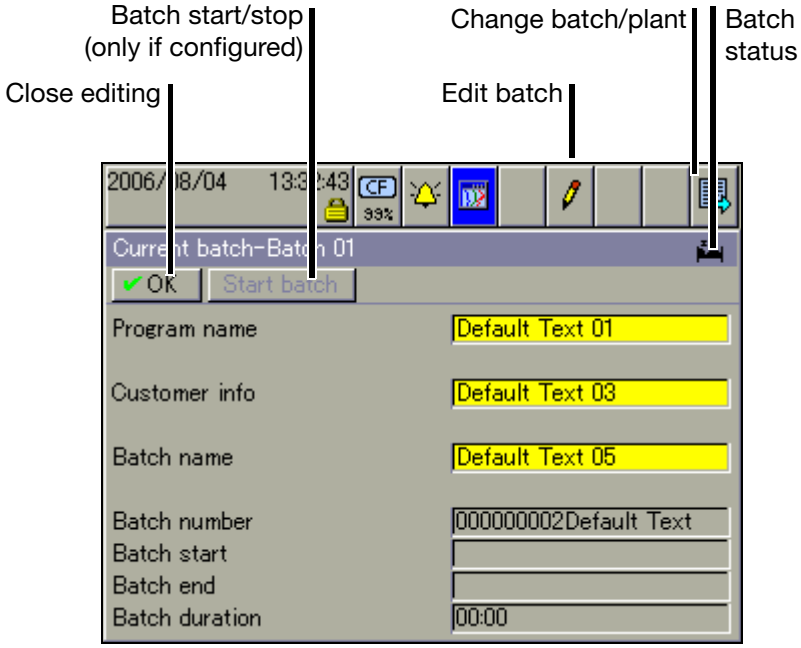
## 4.9 Batches/Plants

When recording batch processes, a distinction is made between the plant and the batch.

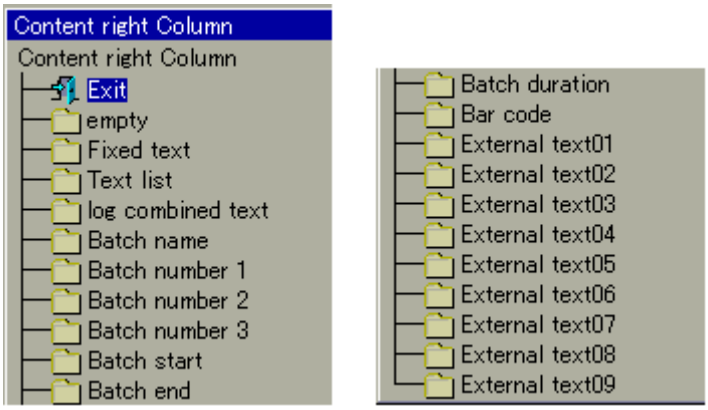
The instrument can combine and record the data from up to 3 plants in batches (batch report). The number of batches for a plant is not limited. The instrument distinguishes between “current batch” and the most recently “completed batch” for a plant. The number of plants that are used and the texts in the batch template can be configured on the instrument or in the setup program.

### 4.9.1 Current Batches

This display shows the current data for the batch(es).




The batch texts on the right-hand side can be entered with one of the following options:



**Edit batch**

This function can be used to edit the batch text fields that are available (configured for this purpose). When the function has been called up, the first editable field in the screen template will be activated.


* Press the control knob to start editing.
* Enter the text (Chapter 9 "Entering text and values").


* Rotate the control knob to select a new field or button, and activate it by pressing the control knob.

**Change batch/ plant**

Switching between the individual batches/plants. Max. 3 plants can be configured.

**Start/stop batch**

Use the parameter *Device manager* ➔ *Configuration* ➔ *Batches/plants* ➔ *Plant X* ➔ *General* ➔ *Batch start* to configure how a batch starts and stops. The following are available:

- Start/stop by a binary signal (control signal)
- Start/stop by a barcode reader, and
- Manual start/stop by control knob.

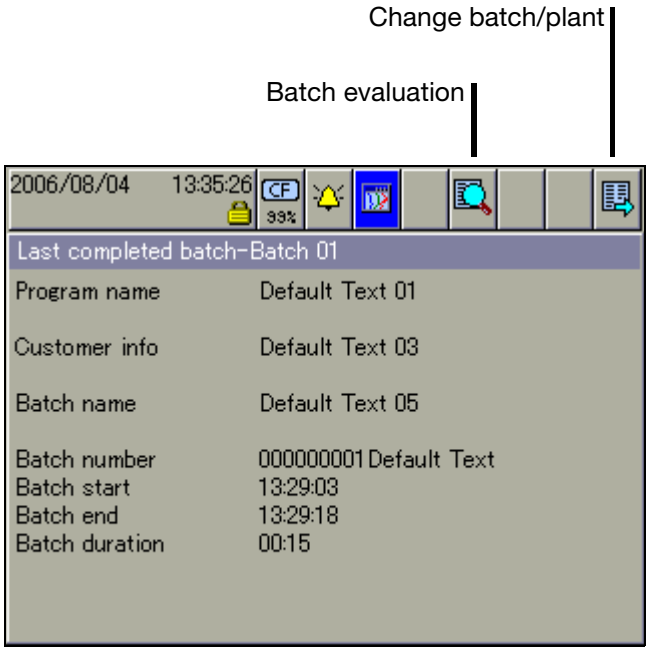
☞ At least 5 seconds must elapse between the stop of a batch (batch end) and the next start (batch start). A new batch cannot be started until this time has elapsed.

**Batch status**

 The batch report that is displayed is active.

 The batch report that is displayed is **not** active.

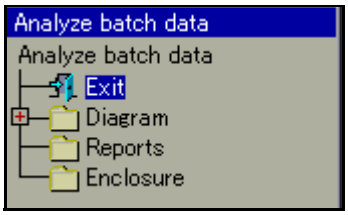
## 4.9.2 Completed Batches




**Batch evaluation**

Completed batches can be evaluated in three different ways:

- Curves (graphical presentation)
- Report (numerical presentation)
- Attachments (e.g. recipes)




✱ Rotate the control knob to select a type of presentation, then press the knob to activate this type.

Activating the door symbol in the header closes the selected presentation, and the batch data will be displayed again.

**Change batch/ plant**

The corresponding batch data will be shown in its own batch visualization, depending on how many plants have been configured.

### 4.9.3 Batch Control with Barcode Reader

If a barcode reader is connected to the interface “RS232 for barcode reader” (connector 2) or “RS232/RS485” (connector 7), then the batch start, batch stop, and input of batch texts in a current batch report, can be controlled by the barcode reader. The bar codes that are used all correspond to the type “Code39”.

**Preconditions**

- The interface must be configured for bar code operation.
  Example:
  *Configuration* ➔ *Interface* ➔ *RS232 for barcode reader* ➔ *General* ➔ *Protocol* = bar code.
- The batch start (= batch stop) must be configured.
  Example for batch start/stop:
  *Configuration* ➔ *Batch/plant* ➔ *Batch (Plant) 1* ➔ *General* ➔ *Batch start* = bar code.
- Every line that is to be set by the bar code must be configured.
  Example for plant 1, line 1 (program name):
  *Configuration* ➔ *Batch/plant* ➔ *Batch (Plant) 1* ➔ *Line 1* ➔ *Content of right column* = bar code.

**Activate batch**

☞ Before entering commands through a barcode reader, the corresponding batch/plant 1 — 3 must be prepared by scanning in “BATCH1 — 3” for the bar code commands, regardless of whether or not they are automatically displayed.

**Show batch report**

If one of the visualizations is active, and nothing is being entered or edited at the moment, then the current batch report can be inserted via the barcode reader. The precondition is that the batch is active and the parameter is set to *Configuration* ➔ *Screen* ➔ *Bar code -> current batch* = Yes.

Activate and display (if required) batch report for batch (plant) 1:


Activate and display (if required) batch report for batch (plant) 2:

Activate and display (if required) batch report for batch (plant) 3:


**Start and stop batch report**

If the batch report is configured for start/stop via barcode reader, then it will be started and stopped as follows.

**Start batch:**

* Scan bar code for “Batch report for batch (plant) 1 — 3”.
* Scan start.


**Stop batch:**

* Scan bar code for “Batch report for batch (plant) 1 — 3”.
* Scan stop.


☞ If a batch report is stopped, then texts that have been activated by a bar code will be reset to the standard text in the currently active batch report depending on the parameter "Delete line".
In the completed batch report, the texts will be saved.

**Activate batch texts**

If a line in a batch report is configured for barcode activation, the activation proceeds as follows.

Activate text:

✱ Scan bar code for “Batch report for batch (plant) 1 — 3”.

Scan text.


The first line of the activated batch report that has been configured for text input via bar code will automatically be filled with the text that corresponds to the bar code. If several line have been configured for barcode activation, then they will be processed one after another, from top to bottom.

**Reset entry**

Execution of the following bar code will reset the activation of the batch texts. The standard texts (parameter *Factory setting*) will be displayed, and the first line will be prepared for input.


**Summary of the bar codes**

All the bar codes that are required are also collected together in Chapter 11.1 "Bar code".

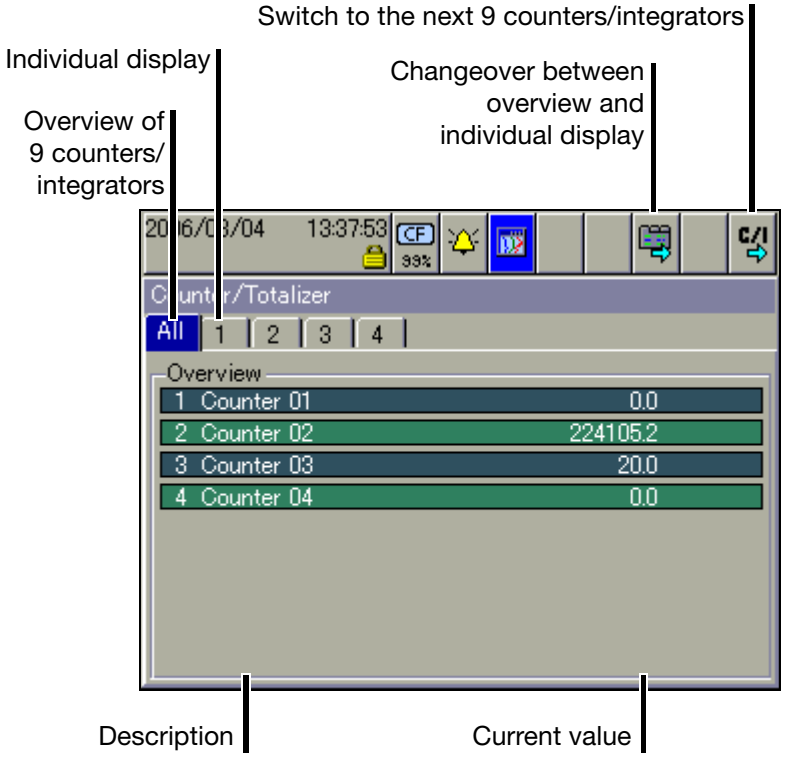
The codes for batch control (BATCH1, BATCH2, BATCH3, START, STOP, RESET) cannot be used for setting batch texts.

# 4 Visualization

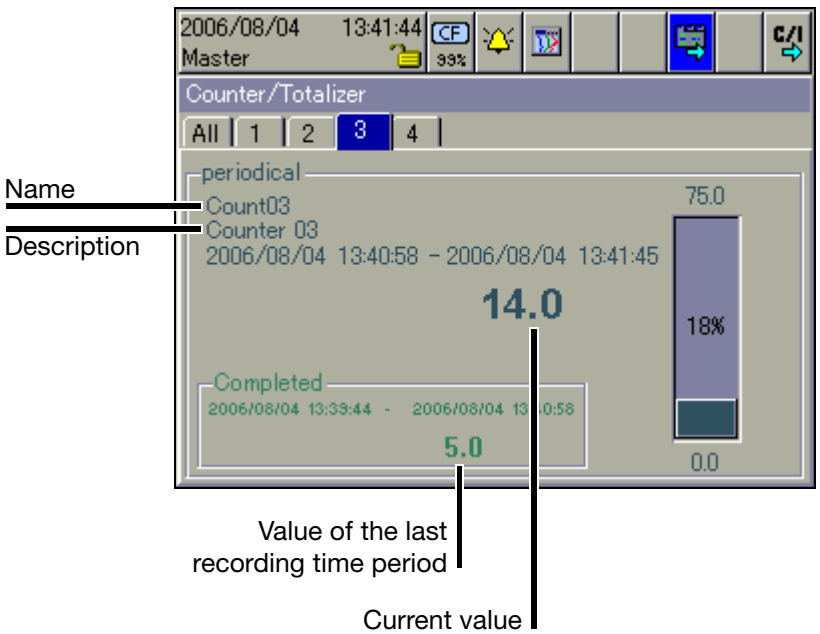
## 4.10 Counters and Integrators

In this presentation, the current states of the counters and integrators (totalizers) are displayed, as well as the operating hours counter. Up to 9 counters and integrators can be shown in one screen template. The functional characteristics (counter, integrator or operating hours counter) are defined in the device configuration.

**Overview presentation**

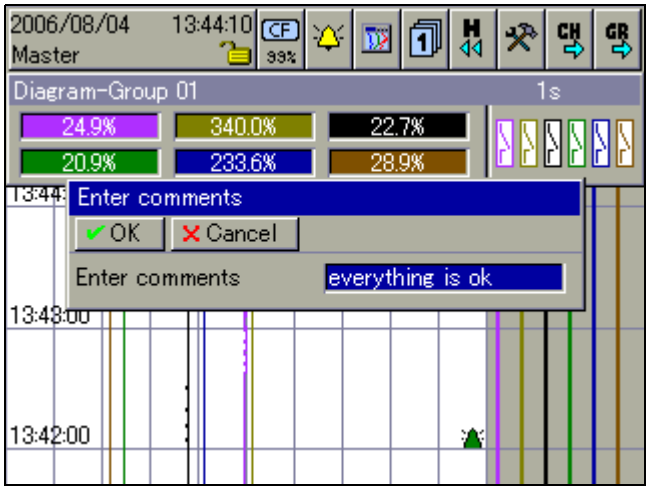



**Individual presentation**



## 4.11 Comment Entry

This function can be used to enter a text (max. length 31 characters) that is entered in the event list when the input is completed.




In curve presentation (in the displayed group), the text entry is marked by a pencil symbol.

⇨ Chapter 6 "Alarm and Event Lists"

⇨ Chapter 4.3 "Curve Presentation"

⇨ Chapter 4.11 "Comment Entry"

The text can now be found in the event list, under the heading “All events”, but also under the corresponding batch.

If batches are used (parameter: *Device manager* ➔ *Configuration* ➔ *Batches/plants* ➔ *Gen. plant parameters* ➔ *Number of plants* is larger than 0), then the groups have a fixed assignment to the batches.

| Plant number | Group | Plant (batch) |
|---|---|---|
| 0 | 1 … 9 | None |
| 1 | 1 … 9 | 1 |
| 2 | 1 … 3<br>4 … 6<br>7 … 9 | 1<br>2<br>Not assigned |
| 3 | 1 … 3<br>4 … 6<br>7 … 9 | 1<br>2<br>3 |

# 4 Visualization

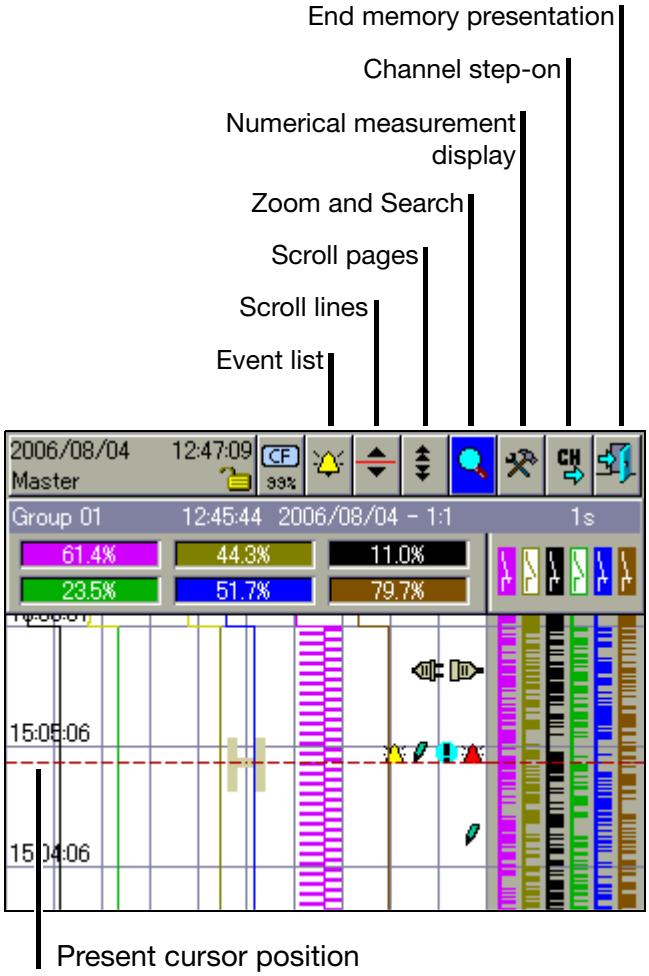
The Memory presentation function can be used to display and check data from the internal main memory (SRAM) of the instrument. The size of the memory for memory presentation can be configured.

The memory presentation can be activated in the visualization modes "Curve presentation" and "Binary presentation", and is also used to display completed batches.

The memory presentation can only be called up if the parameter *Configuration* ➔ *Groups* ➔ *Group x* ➔ *Parameters* ➔ *Status* is set to "Display, save" in the configuration for the group.

**Activate memory presentation (History)**

* In "Curve presentation" or "Digital presentation", rotate and press the "H" symbol to select and activate the History presentation.


A cursor is now shown in the center of the visualization window. The corresponding measurements are shown in the line for "Numerical measurement display". The status and title bar shows the time corresponding to the present cursor position, storage cycle that was used, and the scaling for the presentation.

**Event list**

This function is used to present the event list for the group that is visible. The message that is closest to the cursor is shown in the list.

⇨ Chapter 6 "Alarm and Event Lists"

**Scroll lines**

Rotating the control knob moves the cursor through the visualization window. The data in the “Numerical measurement display” are updated every time there is a shift. If you move right up to the edge of the window, the measurement curve will automatically be shifted and the required data will be presented.

“Scroll lines” can be ended by pressing the control knob.

**Scroll pages**

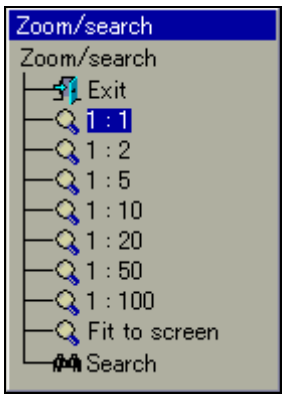
Rotating the control knob moves the cursor an entire screen (=page) at a time. The data in the “Numerical measurement display” are updated every time there is a shift. The system automatically positions the cursor at the end of the page, as required.

“Scroll pages” can be ended by pressing the control knob.

**Zoom and search**

This function affects how many measurements are used to calculate a point in the diagram, and to search for measurements according to date and time.

**Zoom**




The factory setting is “1:1”, which means that every measurement in the History memory will be displayed. “1:2” means that every second measurements is displayed, and so on.

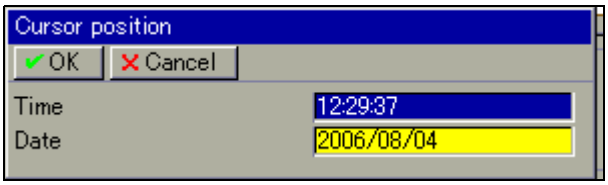
* Select the zoom factor by rotating the control knob.
* Close the dialog window and activate the new zoom factor by pressing the control knob.
* Selecting “Exit” closes the dialog window, and the presentation remains unchanged.

**Fit to screen**

This function is only available for presenting the data for a completed batch. If this function is selected, the zoom factor will automatically be adjusted so that the measurement curve for the completed batch is shown in one window. However, 1:1 presentation should be used for evaluating a batch.

**Search**

If you select “Search”, the dialog window for entering the date will be shown.




✱ Select the date and time, and use OK to close the dialog.

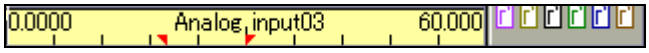
If the date that was entered is in the History memory, the cursor will move to this position and the data will be shown.

**Numerical measurement display**

This function decides whether the MAX or MIN values are shown in the “Numerical measurement display”. Min or Max values arise when more measurements are recorded than are displayed. This will be the case if “Min/Max recording” is activated in a group operating mode.

**Channel step-on**

This function activates the scaling display. Repeatedly activating the function steps through the scaling for the channels within the group, and then blanks it out again.




**Close memory presentation**

This function starts the presentation of the data that are available in the internal main memory of the instrument.

# 5 Memory Presentation (History)

The alarm and event lists can be called up in two ways:

- A call from one of the visualization modes, e.g. curve presentation (diagram)
  (Chapter 4.2 "Overview of Header Lines")

and

- A call from the memory presentation
  (Chapter 5 "Memory Presentation (History)").

**Alarm lists**

Alarm lists contain only the alarms and errors that are currently present.

The alarm list will not be updated as long as the window is open. Remedy: Close once, and open again. This will update the alarms.

**Event lists**

Events list contain all the events that have occurred, including all alarms and errors.

A maximum of 150 entries can be fitted into the two lists. The lists will be deleted if a reconfiguration takes place.

The following description assumes that three batches are being used. The number of batches may vary, because it can be configured by the user.

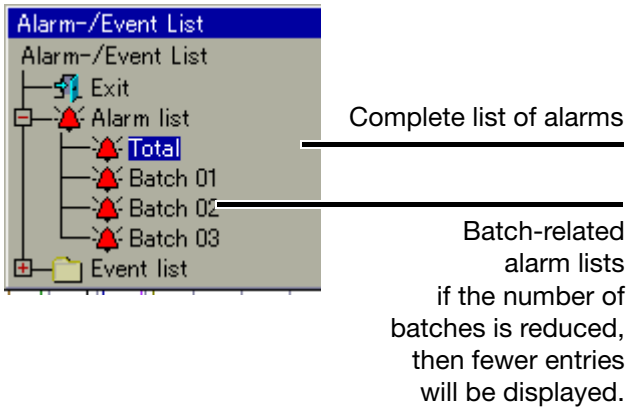
# 6 Alarm and Event Lists

## 6.1 Call from One of the Visualization Modes

* In the header line, rotate and press the control knob to select and activate the bell symbol.


* Select the required list.

**Activate alarm list**

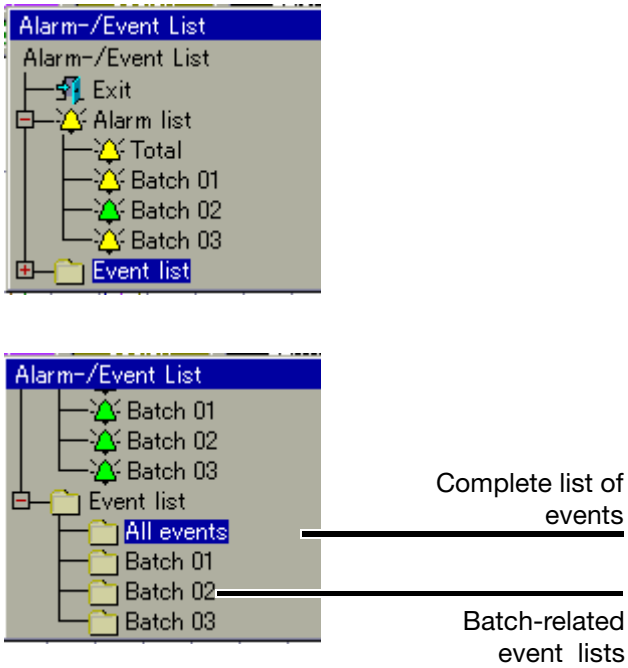



* Rotate the control knob to select a list, then press the knob to activate the list.

**Activate event list**

First, the directory tree for the event lists must be “unfolded”.

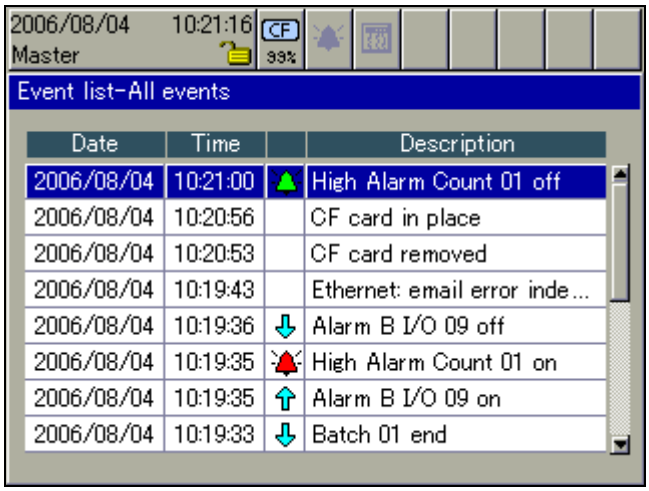
* Rotate the control knob to select an event list, then press the knob to activate the list.



* Rotate the control knob to select a list, then press the knob to activate the list.

**Example**

In the example, you can see a complete event list.




**Close list**

* Close the event list by pressing the control knob.

The visualization that was active before the list was called up will now be displayed again.

# 6 Alarm and Event Lists

## 6.2 Call from the Memory Presentation

* In the header line, rotate and press the the control knob to select and activate the bell symbol.


Only the event list for the active group will be shown in the memory presentation. The message that is closest to the cursor is shown in the list.

**Close list**

* Close the event list by pressing the control knob.

The memory presentation that was active before the list was called up will now be displayed again.

## 6.3 Symbols

| | |
|---|---|
|  | Power on (instrument has been switched on) |
|  | Power off (instrument has been switched off) |
|  | Error |
|  | Alarm disappears (alarm is no longer present) |
|  | Alarm occurs (an alarm is present) |
|  | Comment |
|  | Event occurs (e.g. binary input has been closed) |
|  | Event disappears (e.g. binary input has been opened) |
| (no symbol) | Other messages |

The memory manager contains functions for data exchange between the paperless recorder and CF memory cards or USB memory sticks.


**Symbols**

The symbol for the Memory manager (menu: Memory manager) in the header can be shown in different ways.


This shows the available memory of the CompactFlash memory card that has been inserted.


Shows the available memory of the USB memory stick.

If no CF card or no USB memory card has been inserted, then one of the following symbols will be shown, depending on the type of data read-out that was configured.


This shows the available internal memory for reading out data via the CompactFlash memory card.


This shows the available internal memory for reading out data via the interface.

**Activation for CF cards**

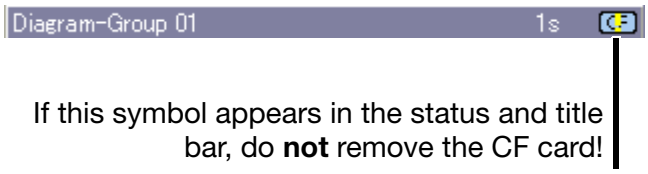
Access to the memory manager menu via the header is only possible if a CF card is inserted in the device.

If one of the visualization modes, (see Chapter 4 - e.g. Curve Presentation), is active when a CF card is inserted in the instrument, then the menu appears automatically.

If not all functions are available, then you must log in to the device first, in order to obtain the required access rights.

⇨ Chapter 8.2 "Log-in and Log-out"

The CF card must not be removed while a data transfer to or from the card is in progress.



# 7 Memory Manager

**Activation for USB stick**

Access to the Memory manager menu via the header is **not** possible with a USB memory stick.

If one of the visualization modes (Chapter 4 - e.g. Curve Presentation) is active when a USB memory stick is inserted, the menu automatically appears and remains active until the memory stick is removed again.

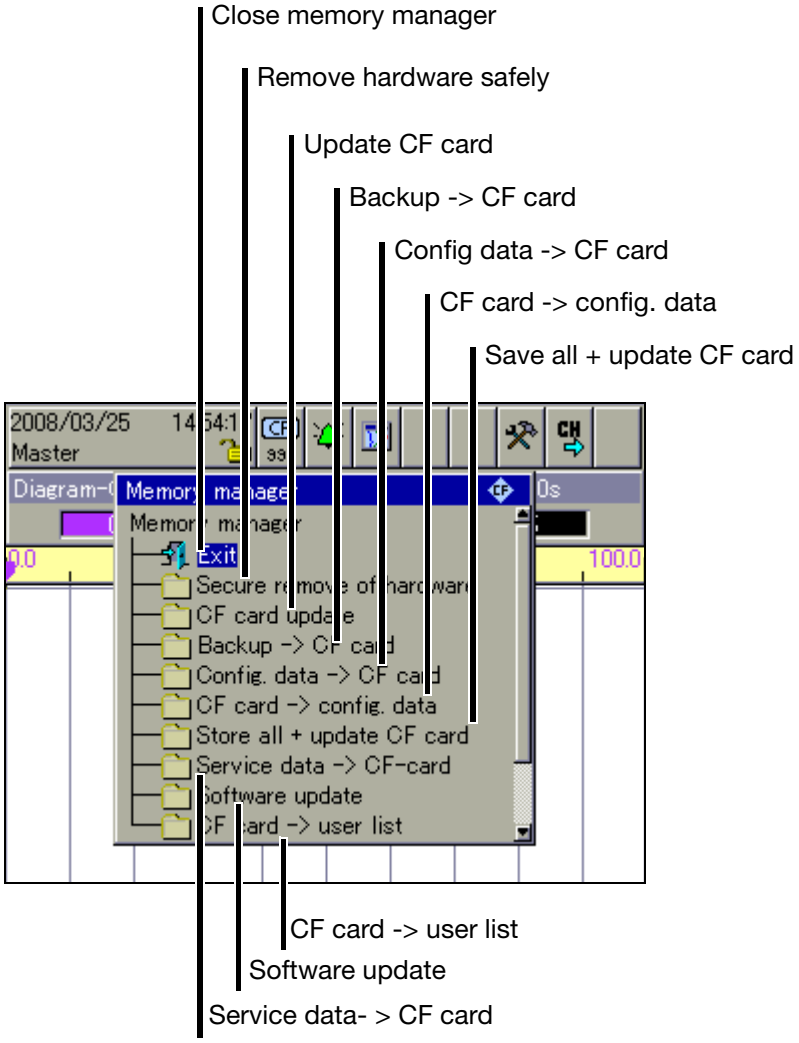
If not all functions are available, then you must log in to the device first, in order to obtain the required access rights.

⇨ Chapter 8.2 "Log-in and Log-out"

The USB memory card must not be removed while a data transfer to or from the stick is in progress.

**Start via menu**

* Activate the memory manager by rotating and pressing the control knob (CF card must be inserted).



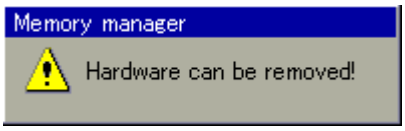
The functions of the memory manager are the same for CF cards and USB memory sticks. For USB sticks, the menu entries have "USB stick" instead of "CF card".

**Close memory manager (Exit)**

Close the memory manager and reactivate the previous visualization.

**Safely removing hardware**

The function should always be called before removing a CF card or a USB stick. This is the only way to ensure that files are properly stored on the data storage medium.
When the message "Hardware can be removed now" appears, the data storage medium can be removed.




**Update CF card**

Measurement data not yet saved to a CF card (a USB stick) are written to the data storage medium.

**Backup -> CF card**

All measurement data in the memory (also those which have already been fetched) are written to the data storage medium.

**Config data -> CF card**

The configuration data and the user list (for password management) are written to the data storage medium.

**CF card -> config. data**

Configuration data are read into the device from the data storage medium.

This will give the recorder a new configuration.

Subsequently, the data recording will be started again.

**Save all + update CF card**

All current reports will be concluded and written to the data storage medium, together with the measurement data that have not yet been saved. The present counter and integrator states will also be saved.

**Service data -> CF card**

Special data are saved to the CF card. The function may only be carried out if the user has been asked to do so by a service engineer from the instrument manufacturer.

**Software update**

This function serves for reading in a new device software (firmware). To do this, a special CF card is required. Only a service engineer from the instrument manufacturer may perform the update.

**CF card -> user list**

The user list is read in from the data storage medium and activated in the paperless recorder.

# 7 Memory Manager

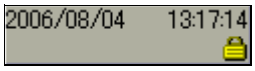
**General information**

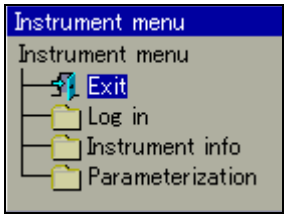
The function *CF card update* reads out data that have not yet been read out. After read-out, data are not marked as read in the recorder but are not deleted.
Function *Backup* ➔ *CF card* reads all data from internal memory, including what had already been read. After read-out, the data are marked as read in the recorder. The function *Backup* ➔ *CF card* is therefore ideal for test and service work.

Only one data storage medium can ever be inserted at a time, either a CF memory card or a USB memory stick. Paperless recorders without extra code Stainless steel are equipped with two USB host interfaces (one on the front and one on the back). In this case also, only one can be used at a time, **never** both together.

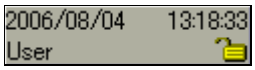
The functions of the Device manager vary, depending on whether a user is logged in or not.

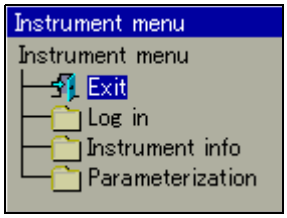
**No user logged in**



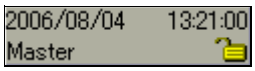



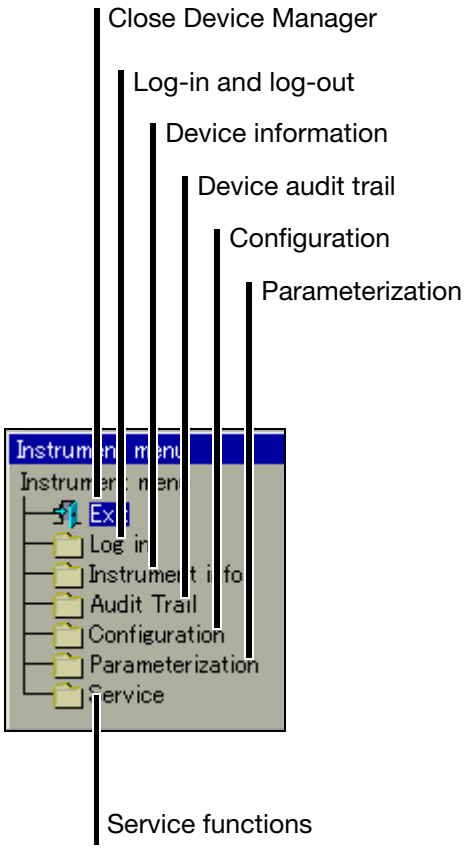

**"User" logged in**




**User "Master" logged in**




☞ The differences between "No user logged in" and "User logged in" only become visible in the submenu "Parameterization".

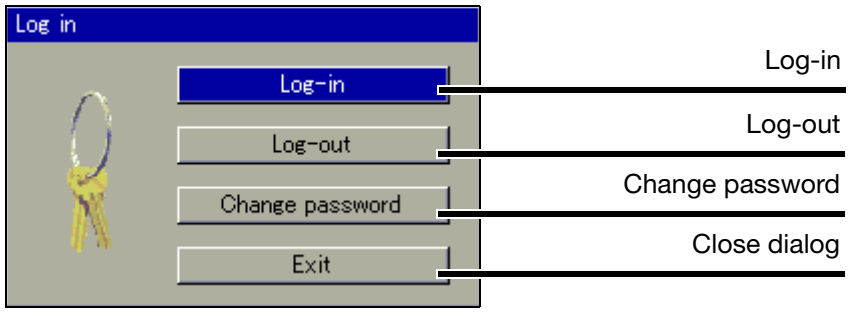
# 8 Device Manager

## 8.1 Close Device Manager

Close the device manager and reactivate the previous visualization.

## 8.2 Log-in and Log-out

* *Select the Device manager* in the header, by rotating the control knob.
* *Activate the Device manager* by pressing the control knob.
* In the *Device manager* activate the function *Log in*.




**Default users**

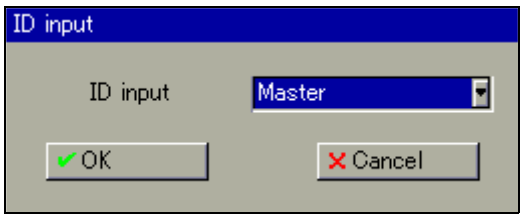
The paperless recorder is delivered ex-factory with an internal user list which contains two users.

1. User: Master password: 9200
2. User: User password: 0

The setup program can be used to alter the two user names and their passwords and access rights, and transfer this information to the device.

**Log-in**

* In the menu *Device manager* ➔ *Log-in*, activate the function *Log-in*.

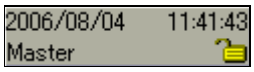



* Select the user. The user name can be changed by rotating the control knob.

* Select “OK” with the control knob, and press the control knob.


* Enter the password by rotating and pressing the control knob, and finish the entry with “OK”.

You are now logged in to the system.



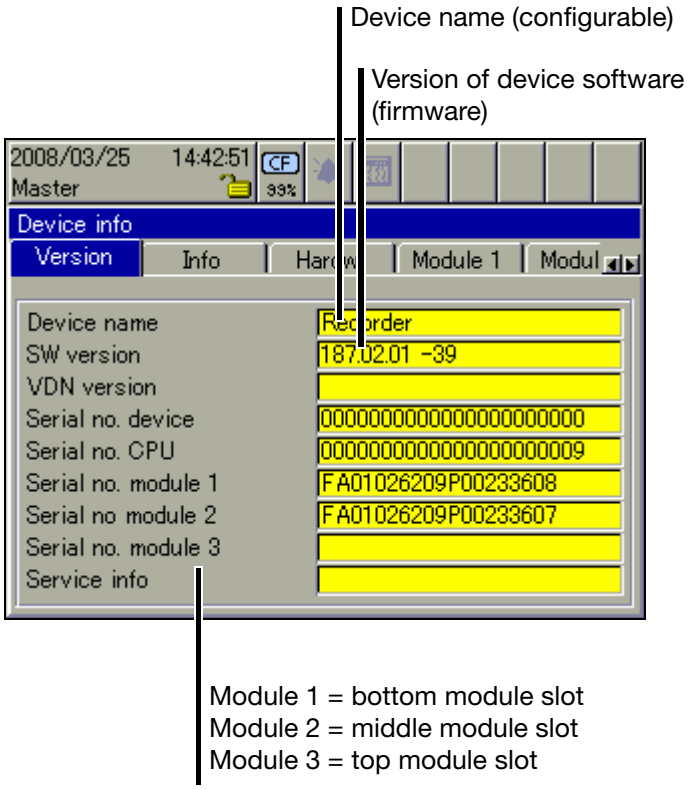
# 8 Device Manager

## 8.3 Device information

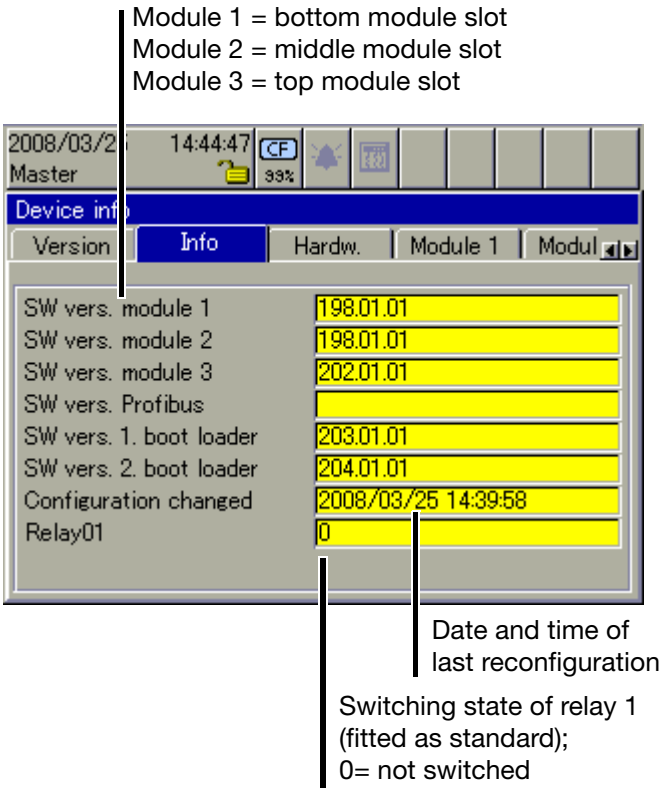
This function provides you with information on the hardware and software components of the instrument. The momentary values of all the internal and external inputs can also be checked.

The control knob can be rotated to display every single table. The function is terminated by pressing the control knob.

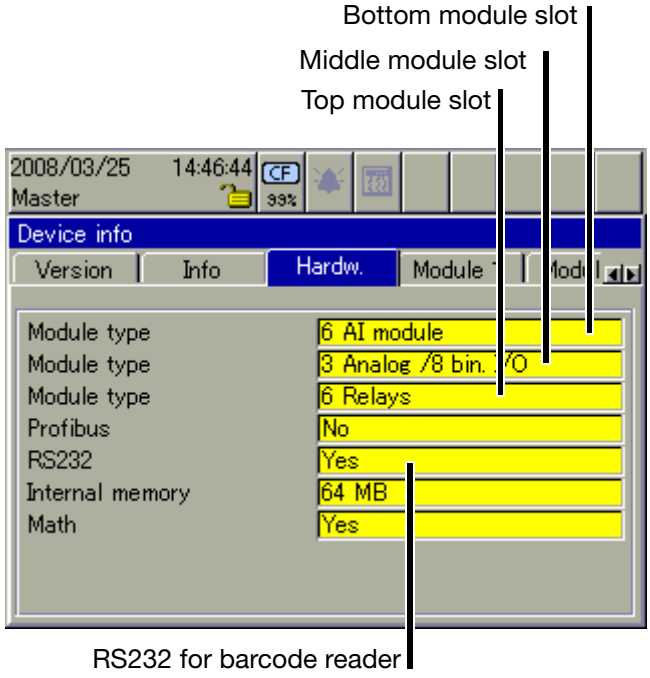
**Version**



### Info

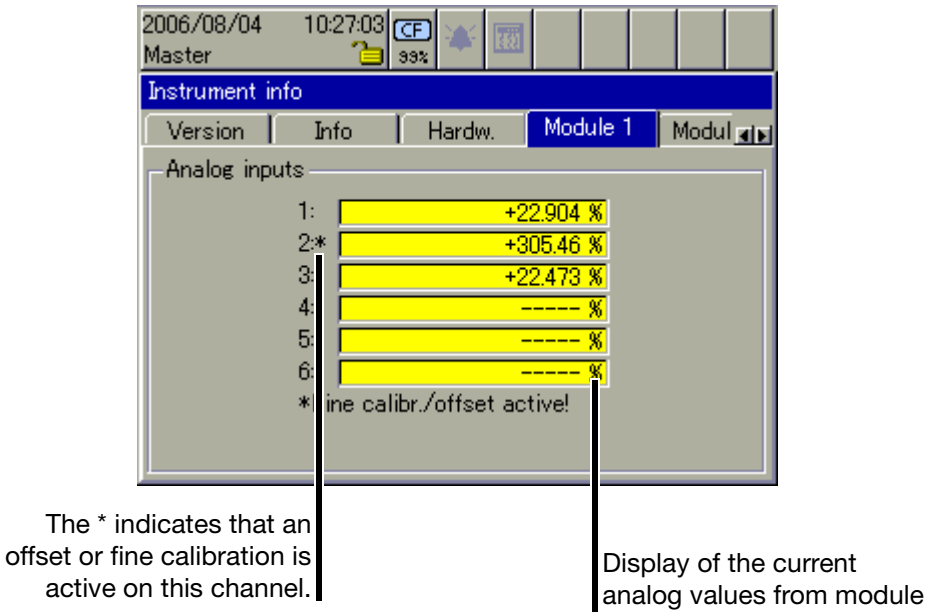



### Hardware



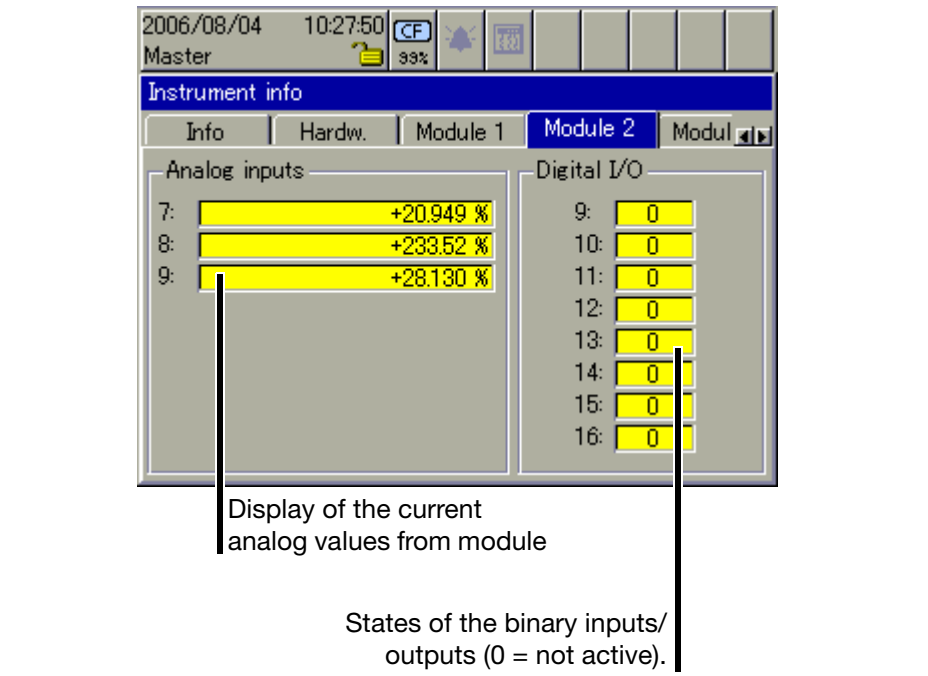
**Module 1**

The picture below shows a module that has been fitted with 6 analog inputs. Depending on the hardware level, the picture may look different. Module 1 is in the bottom module slot.



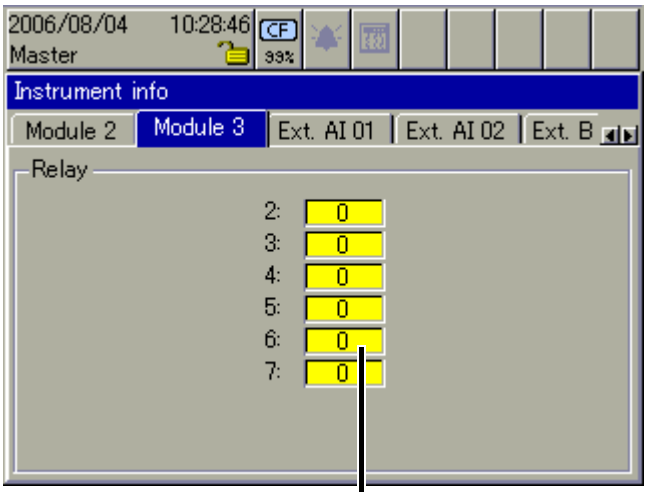

**Module 2**

The picture below shows a module that has been fitted with 3 analog inputs and 8 binary inputs/outputs. Depending on the hardware level, the picture may look different. Module 2 is in the middle slot.



**Module 3**

The picture below shows a module that has been fitted with a relay card (6 relays). Depending on the hardware level, the picture may look different. Module 3 is in the top slot.




**Ext. analog input (AE) 1 — 2**

The two windows show the current external analog inputs. External analog inputs are read into the recorder via one of the interfaces (e.g. through the Modbus Master function).

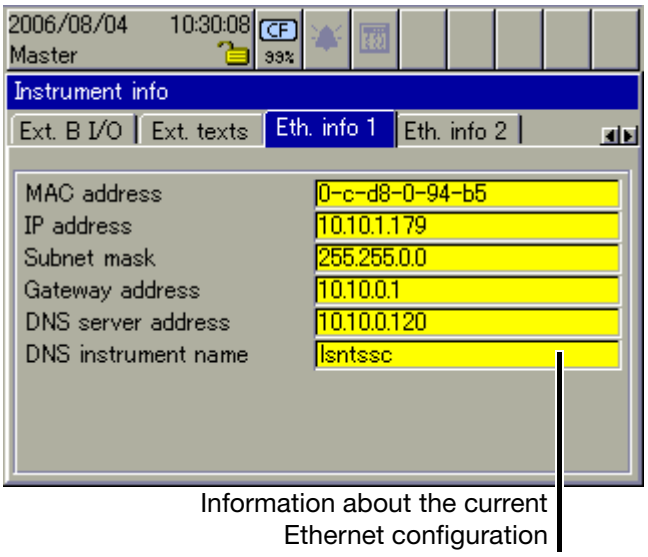
**Ext. binary input (BE)**

The window shows the current external binary inputs. External binary inputs are read into the recorder via one of the interfaces (e.g. through the Modbus Master function). Unlike the internal binary inputs/outputs, external binary outputs are not available.

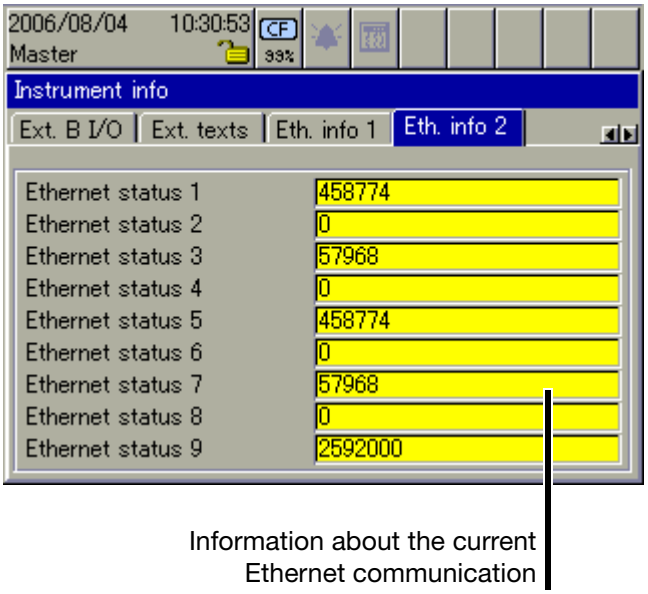
**Ext. texts**

The window shows the current external texts, which can be integrated into the batch reports as label or information text. External texts are read into the recorder via one of the interfaces (e.g. through the Modbus Master function).

### Eth. info 1




### Eth. info 2




| Parameter | Description |
|---|---|
| Ethernet status 1 | Received Ethernet packets |
| Ethernet status 2 | Received Ethernet packets with errors |
| Ethernet status 3 | Transmitted Ethernet packets |
| Ethernet status 4 | Transmitted Ethernet packets with errors |

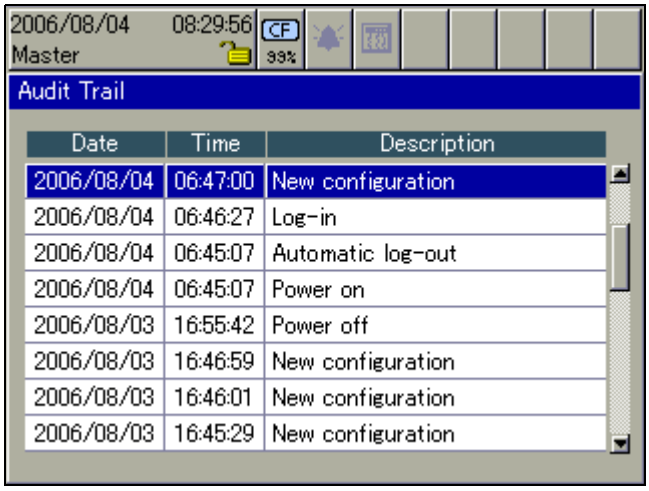
| Parameter | Description |
|---|---|
| Ethernet status 5 | Received TCP packets |
| Ethernet status 6 | Received TCP packets with errors |
| Ethernet status 7 | Transmitted TCP packets |
| Ethernet status 8 | Transmitted TCP packets with errors |
| Ethernet status 9 | Received Lease time, in seconds |

**USB info** Information appears in the window via the USB interfaces. This information is only of interest for servicing.

**Interface** Information about the serial interfaces and PROFIBUS DP interface appears in the window. The user can see the set interface parameters without having to go to the configuration. Parameters are also visible if there are no users logged in on the instrument.

## 8.4 Device Audit Trail

The audit trail contains a log of all user actions on the recorder.




The function is terminated by pressing the control knob.

## 8.5 Configuration

This function can be used to alter the configuration of the recorder.

⇨ See 59484

An alteration of the configuration results in the current recording being closed down and the new data being recorded in a separate time frame from the “old” data. It is not possible to present the data before reconfiguration and the data after reconfiguration as a single entity. The instrument works with a new configuration.

## 8.6 Parameterization

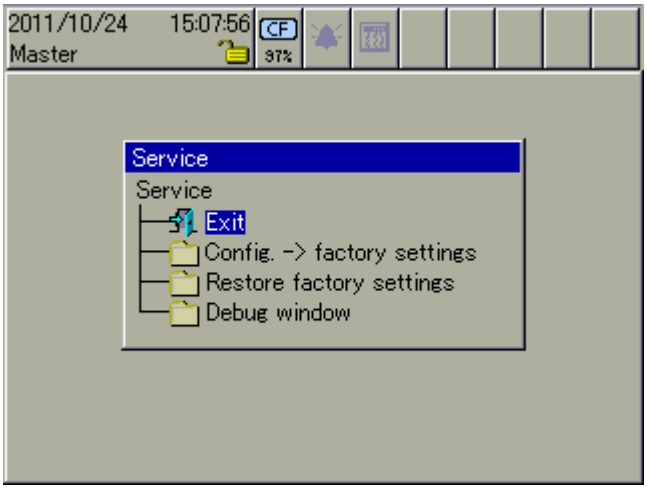
For parameterization, some functions will not be available if no user is logged in, or the user who is logged in does not have the access rights for these functions.

Only the setting of individual current batch numbers is enabled in the factory (default) setting.

⇨ See 59484

## 8.7 Service

The “Service” functions will also not be available if no user is logged in, or the user who is logged in does not possess access rights for these functions.




**Config. -> factory settings** The current configuration can be saved within the device as the new factory setting.

**Restore factory settings** The factory setting, e.g. created by “Set->curr. settings as default”, is called up and the instrument is reset.

**Debug window** Only a service engineer from the instrument manufacturer may use this function.

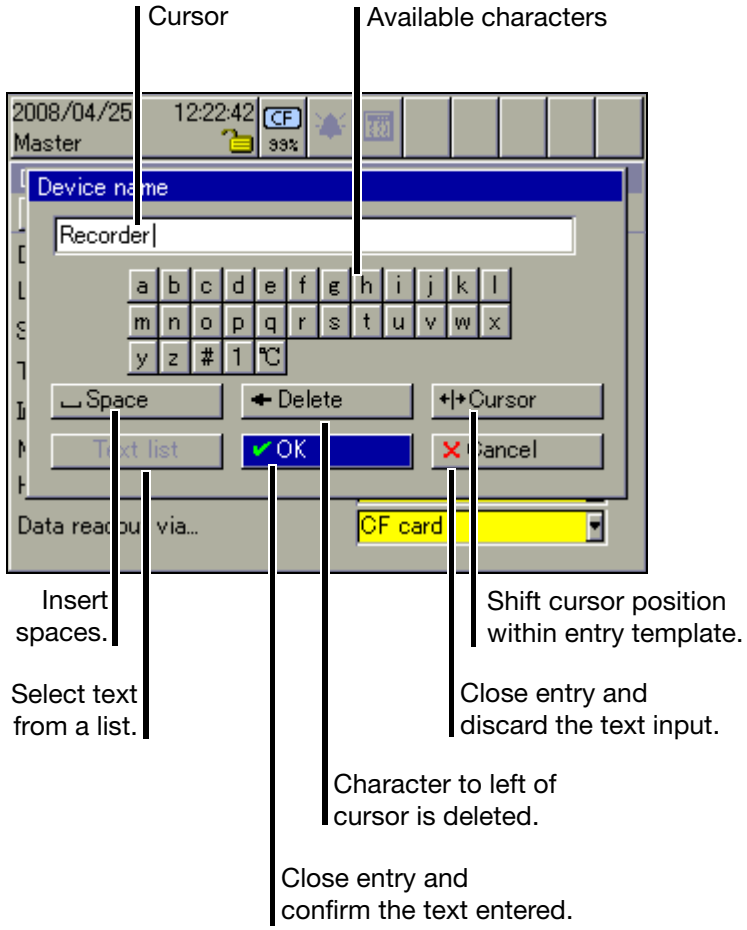
# 8 Device Manager

## 9.1 Text entry

### 9.1.1 Entering characters

If a Text entry field is selected, and then activated by pressing the control knob, then a text can be entered or altered.


The cursor (position marker) is at the end of the current setting. The active key or function that will be performed when the control knob is pressed is shown in blue.




**Available characters**

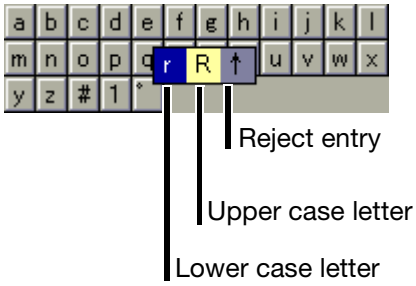
The characters that are shown as available are just an example. They can be adjusted to suit your needs through the setup program.

# 9 Entering text and values

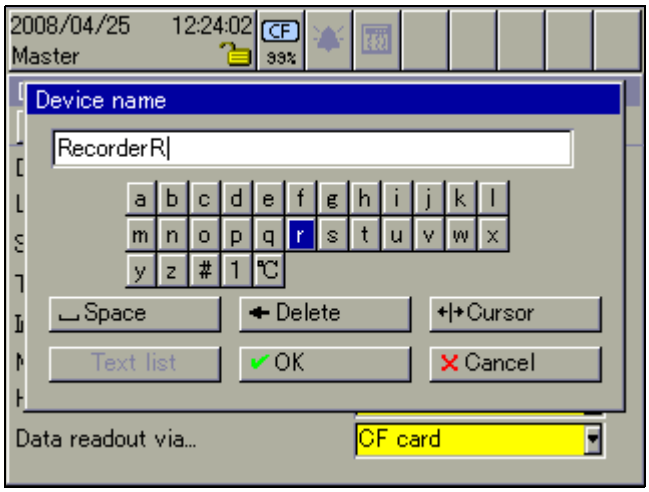
**Character entry**

* Move the cursor onto the required character, and press the control knob.

Another selection window will open.




* Rotate the control knob to select upper case (capital) or lower case (small) letters, or reject an entry, and activate/confirm the choice by pressing the control knob.




**Entering special characters**

Special characters are entered as text.

* Select the # symbol and press the control knob.

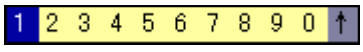
All the special characters that can be selected will now be shown.


Here too the selection and confirmation of the characters are made by rotating and pressing the control knob.

**Number entry**

* Select number “1”, and press the control knob.

All the numbers that can be selected will now be shown.

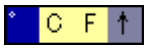



The selection and confirmation of the numbers are made by rotating and pressing the control knob.

**Select temperature unit**

* Select “ ” and press the control knob.

All the temperature units that can be selected will now be shown. For better legibility, the degree sign (°) and the unit of measure (C or F) are separated, and must be individually selected.




The selection and confirmation of the symbol is made by rotating and pressing the control knob.

### 9.1.2 Insert spaces

* Select the space button ( Space ) and press the control knob.

The space character will be inserted to the right of the cursor.

### 9.1.3 Delete character

* Select the delete button ( Delete ) and press the control knob.

The character to the left of the cursor will be deleted.

### 9.1.4 Move cursor

* Select the cursor positioning button ( Cursor ) and press the control knob.

The cursor can now be moved. To end shifting, press the control knob again.

### 9.1.5 Enter text from text list

The last 20 texts that were entered (confirmed by OK) will be stored in the recorder, in an internal text list. This function can be used to call up the list and select a text for current application.

* Call text list ( Text list ).

The selection and confirmation of the required text are made by rotating and pressing the control knob.

### 9.1.6 Finish entry

* Select the “OK” button ( OK ) and press the control knob.

Character entry will now be ended. The text that was entered is accepted, and the dialog window is closed.

### 9.1.7 Reject entry

✱ Select the “Cancel” button ( 

) and press the control knob.

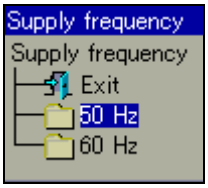
Character entry will now be ended. The text that was entered is **not** accepted, and the dialog window is closed. The previously active setting is retained.

## 9.2 Entry via selection field

If a selection field is selected, and then activated by pressing the control knob, then the text (value) can be entered from a previously defined list.


The cursor (position marker) is on the current setting.

✱ Make the selection by rotating and pressing the control knob.



## 9.3 Entering values

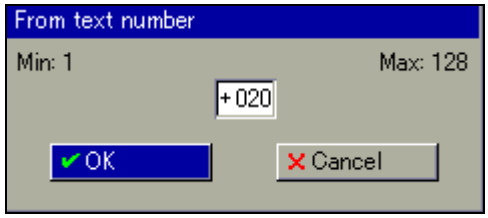
### 9.3.1 Whole numbers (integers)

There are two possibilities for entering integer numbers:

- selection by altering the individual digits of a number, or
- selection by incrementing and decrementing.

**Digit-by-digit entry of an integer**

For this entry, each digit of the number (units, tens, ...) and the sign are selected with the control knob.




**Example**

* Select “2” (the tens digit) by rotating the control knob (+020).
* Press the control knob.

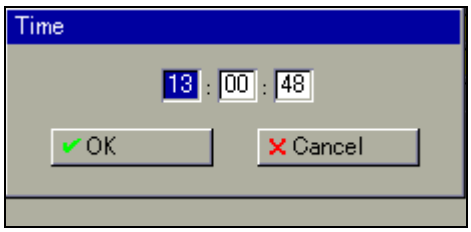
The tens digit is now shown in red, to indicate that this digit can now be altered (+020).

* Rotate the control knob to alter the tens digits, and then confirm the entry by pressing the control knob.

The tens digit has now been altered, and is shown in blue again (+030).

**Selection by incrementing and decrementing**

For this entry, the complete number is reduced by 1 (decremented) or increased by 1 (incremented) with the control knob.




**Example**

* Select the hour by rotating the control knob (13).
* Press the control knob.

The number is now shown in red, to indicate that it can now be altered (13).

* Rotate the control knob to alter the number, and then confirm the entry by pressing the control knob.

The number has now been altered, and is shown in blue again (14).

## 9.3.2 Real numbers (floating point)

To enter real numbers (with a decimal point), each digit of the number (units, tens, etc.), the decimal point position, and the sign are selected with the control knob.

**Sequence**

- Position the cursor.
- Enter the number or define the decimal point position.

For number entry, the number is inserted at the right of the cursor.

**Cursor positioning**

✱ Select “Cursor” and press the control knob.

The real number is indicated by a blue background.

✱ Rotate the control knob to move the cursor to the required position, and then press the control knob.

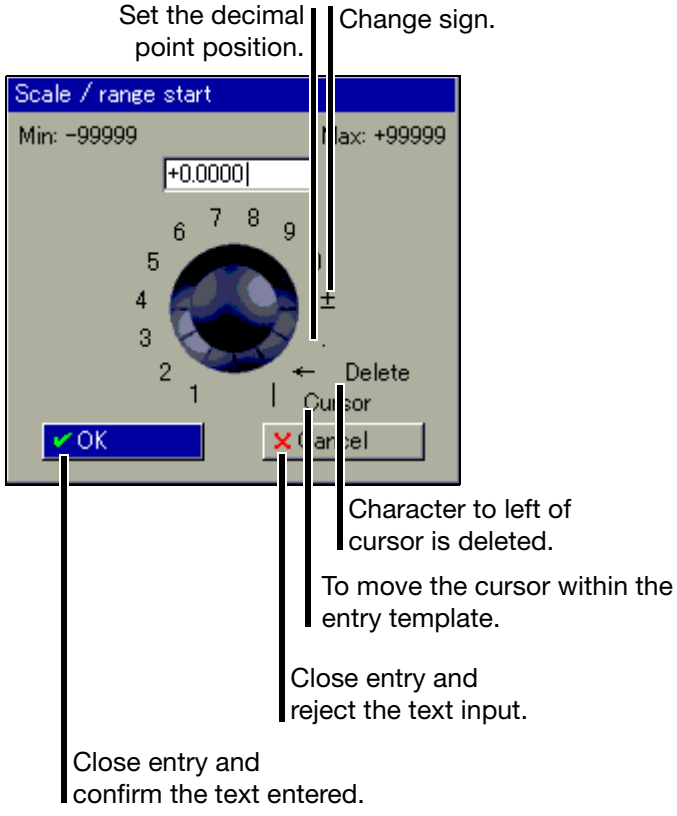
When a number is entered, it is inserted at the right of the cursor. When deleting, the digit to the left of the cursor is deleted.

**Character deletion**

✱ Position the cursor.

✱ Select “Delete” and press the control knob.

The character to the left of the cursor will be deleted.



## 10.1 General

The web server is integrated in the paperless recorder as a standard feature. Four different modes of presentation are available:

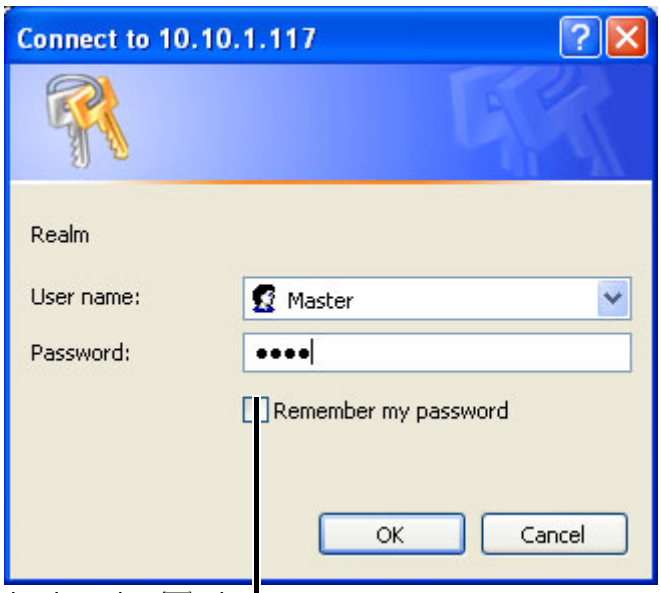
- „Online Visualization (All Visualizations Except Batches)“
- „Three freely programmable HTML pages“
- „Online Visualization of Current Batch Reports“
- „4-Way View“

The web server can be accessed on the PC side with Microsoft® Internet Explorer by entering the IP address (e. g. http://10.10.90.45). DNS names can be assigned on the device. Therefore a device can also be accessed using the DNS names. For visualizing graphics, an SVG Viewer (from Adobe®, forinstance) must be installed on the PC in addition to Internet Explorer.

Up to 4 PCs (clients) can have access to the device via the Ethernet interface.

**Log-in**

A password query has been activated in the factory. The user can switch it to inactive with the PC setup program.

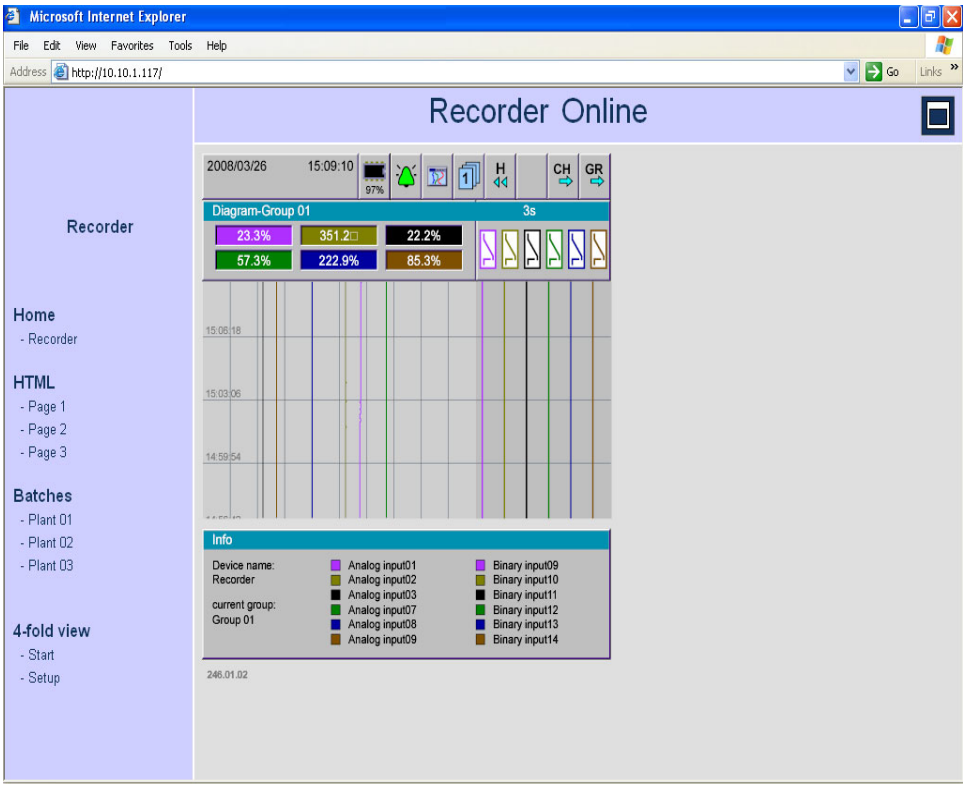



If the option is active (☑), the entry template will automatically be filled in the next time the web browser is restarted. The user only needs to confirm with OK.

Factory setting:
User = Master
Password = 9200

When entering the user name and password, distinctions of upper- and lower-case letters must be observed.

## Home page



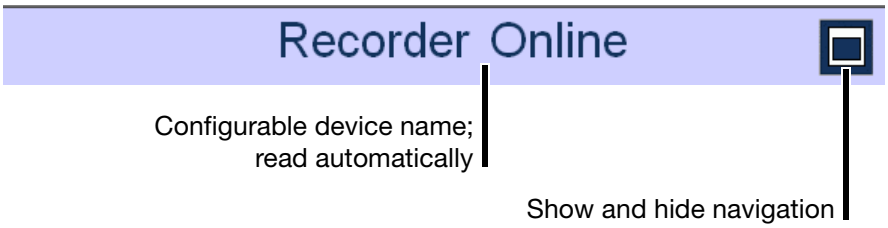

Online visualization automatically comes up as the home page if the web server is started by the browser or, if it has already been activated, the user (left) clicks the "Recorder" link.

## Areas

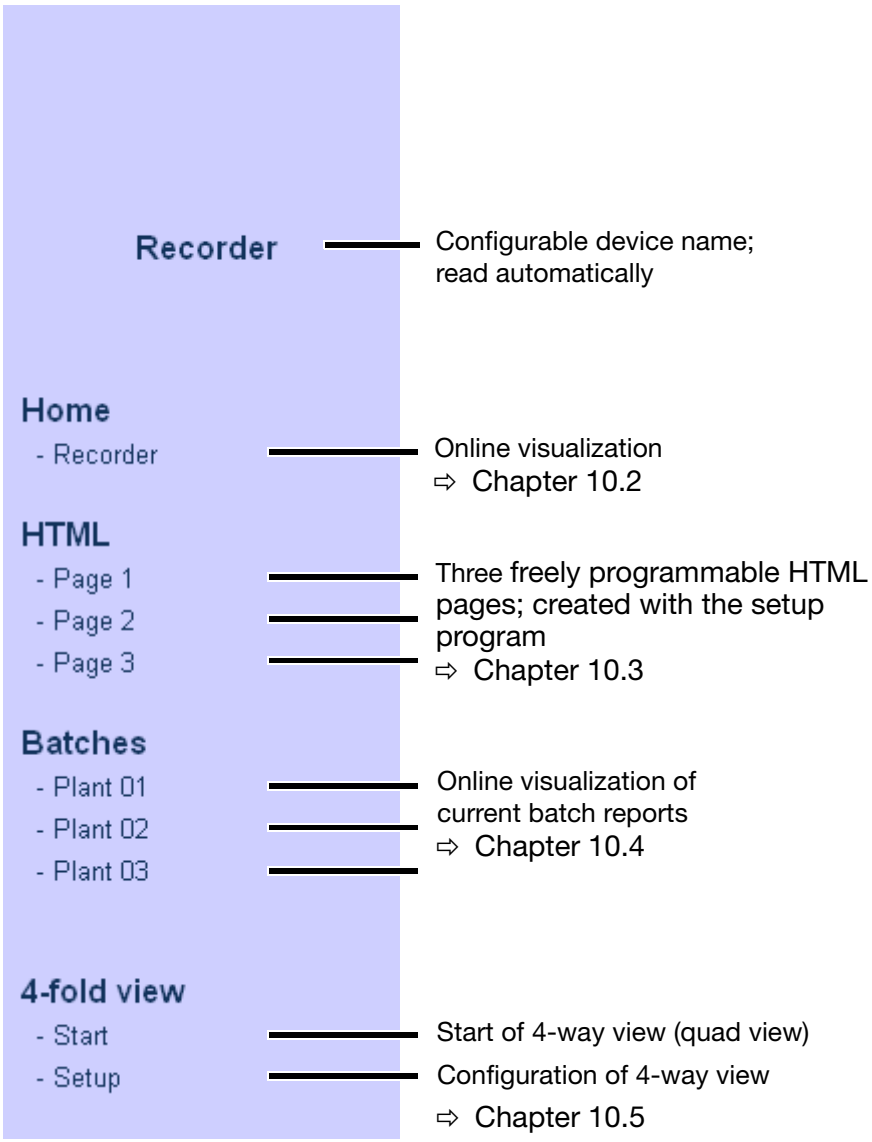
The web server's display is divided into three areas:

- Header
- Navigation
- Visualization area

## Header



**Navigation**



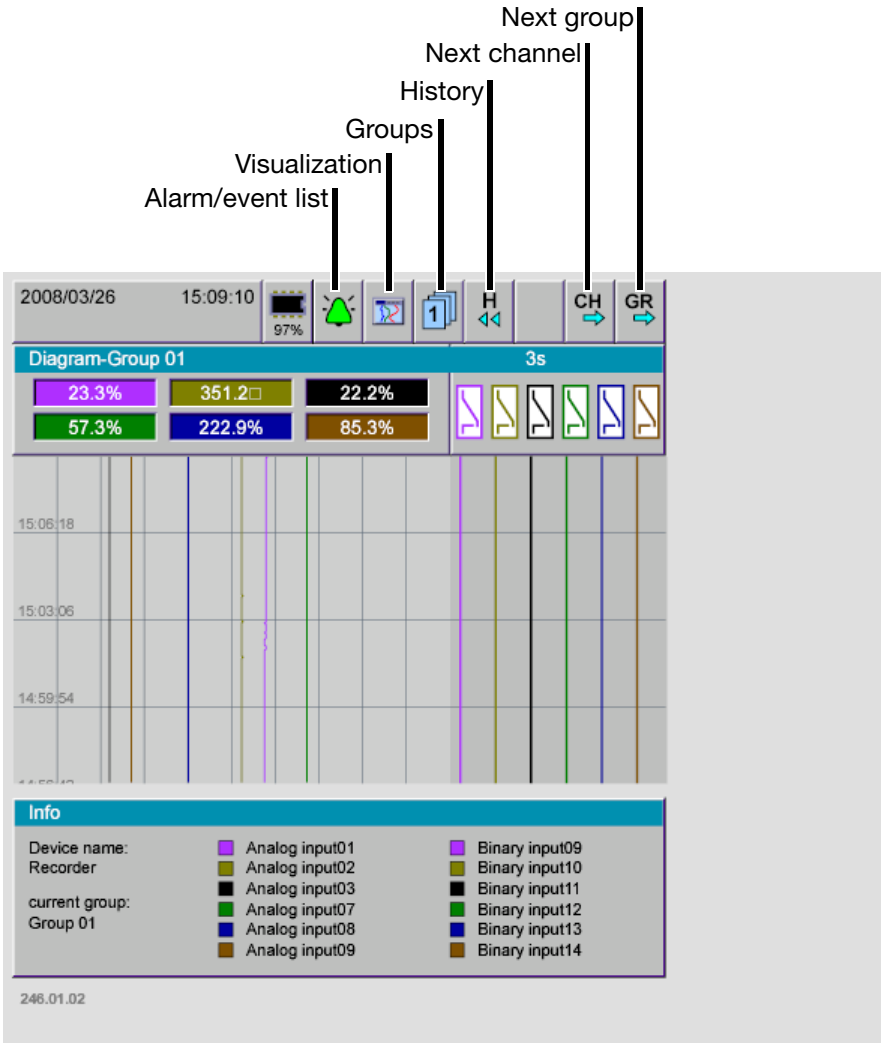

Individual pages can be brought up by clicking (left mouse button).

**Visualization area**

The visualization area shows current data for the paperless recorder. The most recent data are read from the device automatically every 3 seconds.

## 10.2 Online Visualization (All Visualizations Except Batches)

Data that are displayed correspond to the configured groups of the recorder.



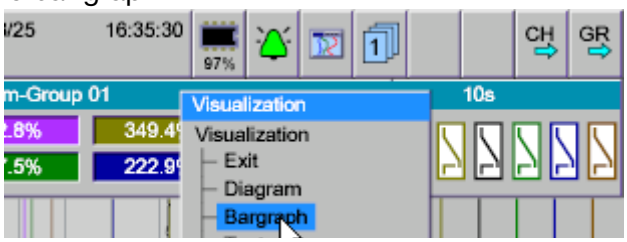

The sample screen shows the web server's home page. This page can be used to represent channels in the same manner as on the recorder's screen. (Left) click to bring up the available menus of the recorder.

**Example**

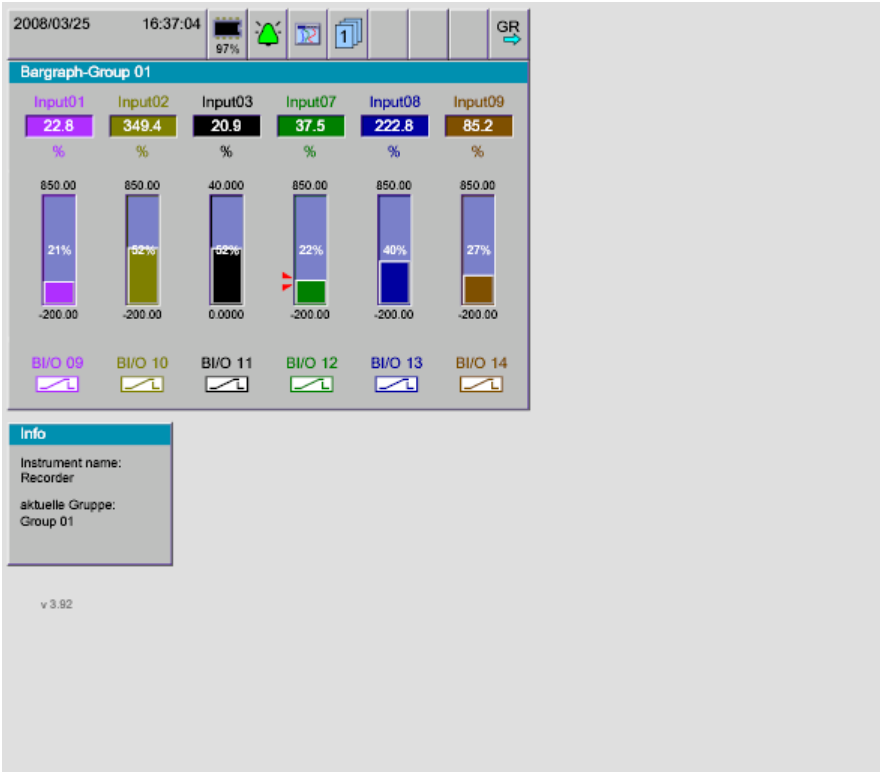
**Switching to bar graph presentation**

* (Left) click the Visualization menu.

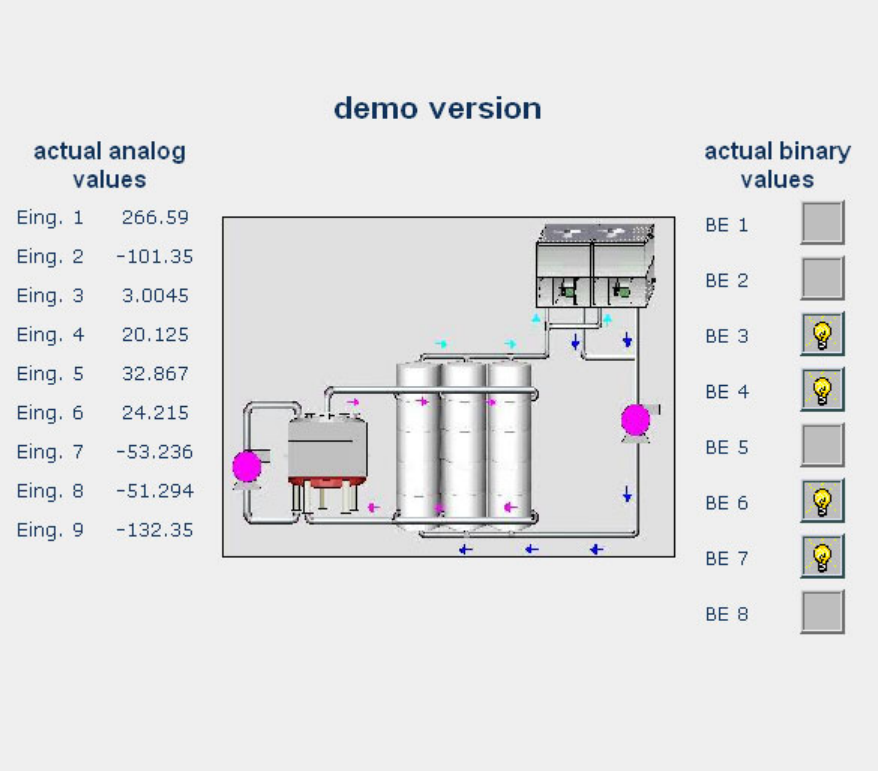

* (Left) click the bar graph.




Result: The bar graph visualization type is activated.



## 10.3 Three freely programmable HTML pages

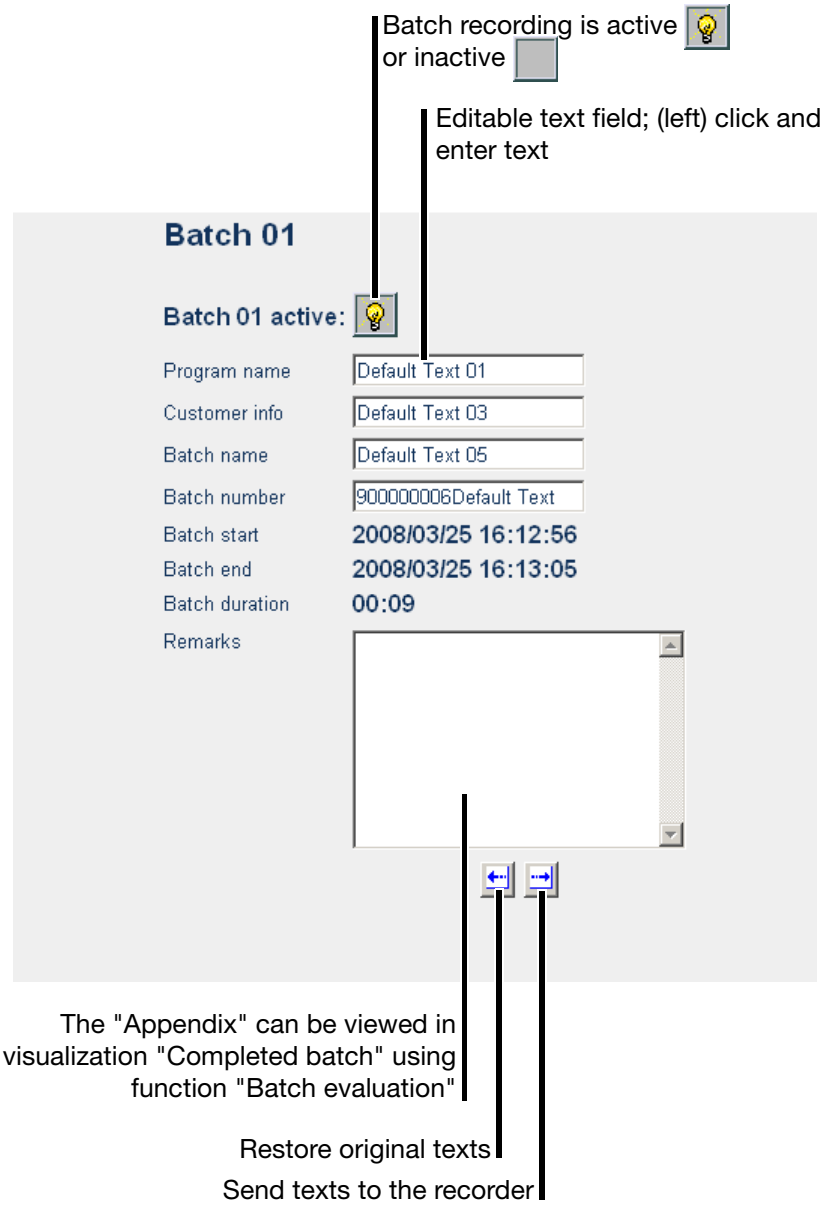



The sample screen shows one of three freely programmable HTML pages. These pages can be created and modified with the setup program.

☞ Further information can be obtained from the instructions on the setup program (59492).

## 10.4 Online Visualization of Current Batch Reports

When batch pages of a plant are called up, the current data from the recorder is read and displayed.




The plant pages (batch pages) only match the pages in the recorder if the factory setting of the instrument has been retained. If plant data have been changed in the recorder, HTML pages must be updated to reflect the changes.

## 10.5 4-Way View

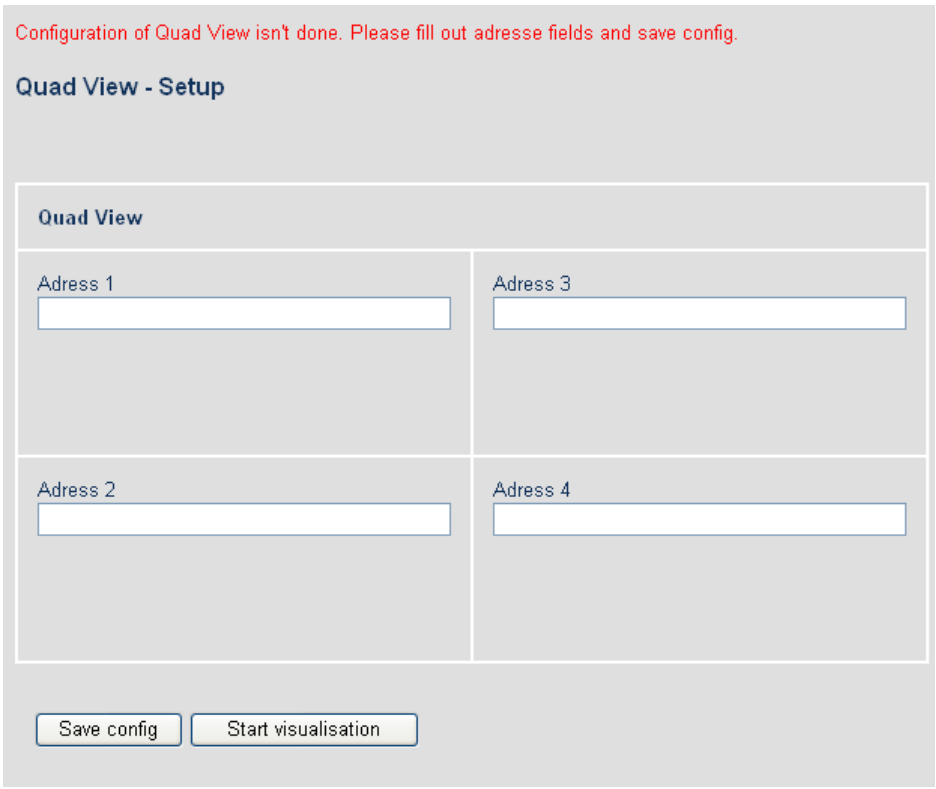
Visualization for up to four devices is possible with 4-way view. The visualizations may involve one device or up to four different ones. Different visualizations can be activated for each display (for example two views of a device, curve presentation and bar graph display).

Before 4-way view can be used, the function must be configured.

* (Left) click "Setup".


**Setup**

The setup window appears, where all IP addresses in use can be configured.




If all or some fields are empty, they have not been configured for 4-way view yet.

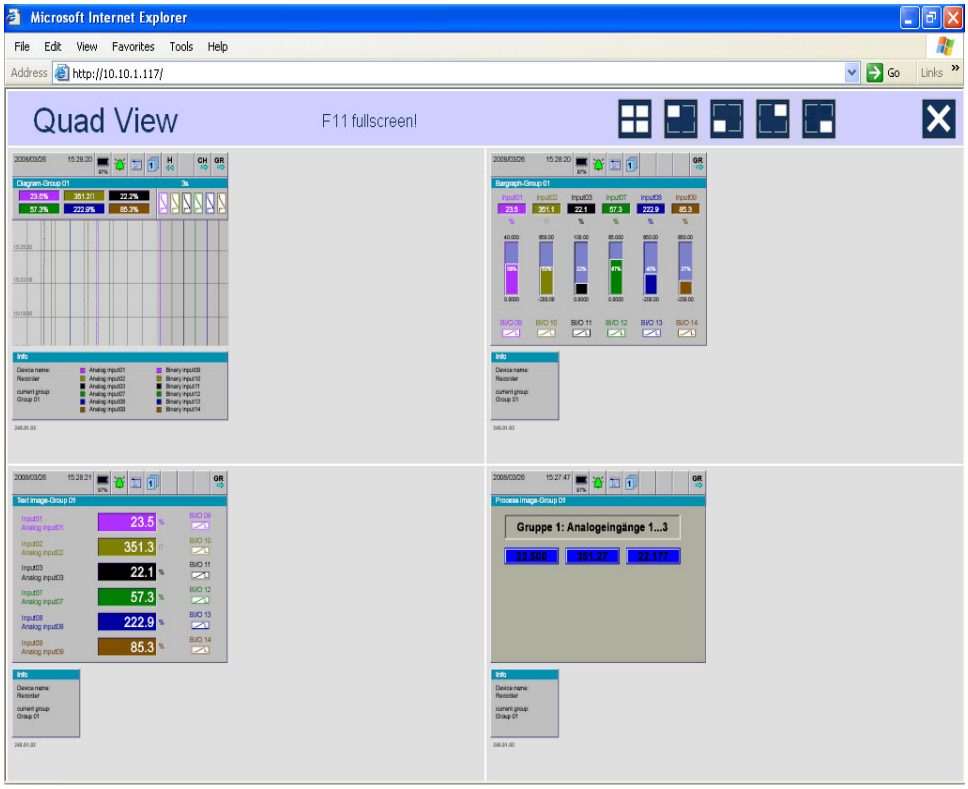
* Complete the configuration and click "Save config".

Result: IP addresses (or DNS names) that have been entered are saved as cookies in the PC and remain intact until cookies are deleted (forexample by the PC browser).


✱ Click "Start" or "Start visualization".



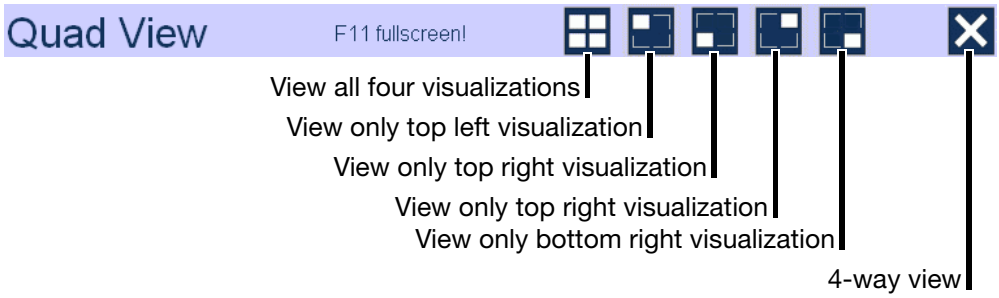
Result: 4-way view starts.




In the example shown here, two different recorders are accessed (recorder 1 top left and top right, recorder 2 bottom left and bottom right). Two different visualizations are shown for each recorder.

Switching between the four visualizations works as shown in Chapter 10.2 "Online Visualization (All Visualizations Except Batches)".

Unlike a normal online visualization, the header contains modified buttons.



## 11.1 Bar code

### 11.1.1 Batch control

**Plant 1**


**Plant 2**


**Plant 3**


**Start**


**Stop**


**Reset entry**

# 11 Appendix

## 11.1.2 Batch texts

**Product name**

SUPER PRODUCT


NORMAL PRODUCT


TOOTHED DISK 34


AXIS ROD 45


**Product numbers**

645736


012876

345435


**Job numbers**

A83737


A4555455


A455445


**Personnel number**

4576


7665

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