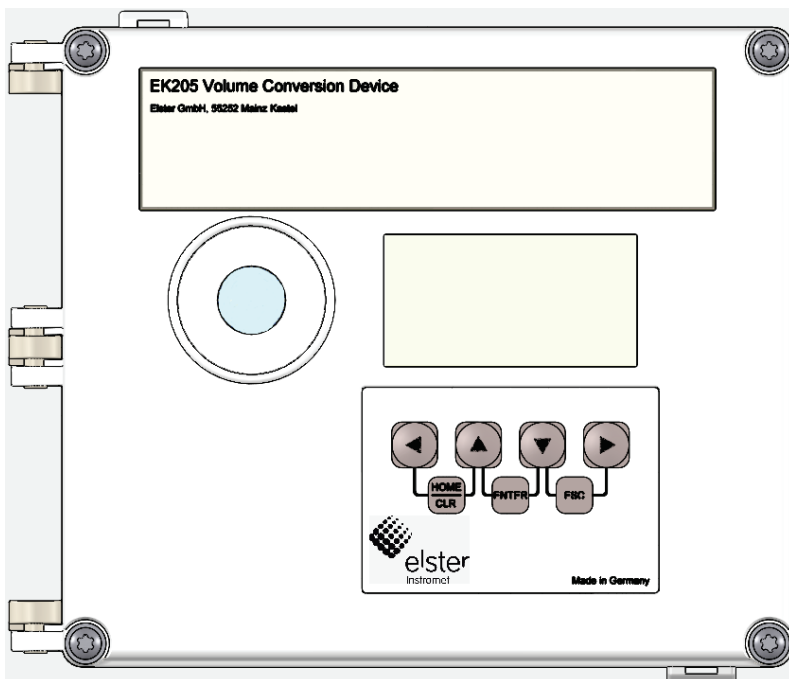


# Quick Reference Guide

## Volume conversion device

### EK205



**Honeywell**

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**Volume Conversion Device EK205**

Operating instructions: 73024092

Version: a

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Website: [www.elster-instromet.com](http://www.elster-instromet.com)

## 1 About this Quick Guide

This quick guide gives you an overview about the navigation and all of the displays available in the Flow Converter EK205. It provides short descriptions of the values displayed in most of the customer displays and aims to serve as a quick reference guide.

This reference is only a complement of the operating manual of the EK205. Refer to the operating manual which specifies all of the safety and handling instructions that apply for the device's area of application.

## 2 Display and Operation

### Operating controls

As an operating element of the EK205, an alphanumeric display and a keyboard on the front side of the device are available.

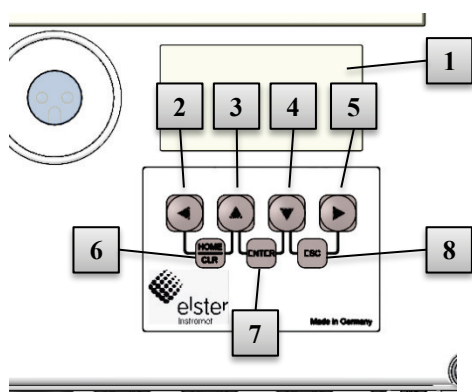


Fig. 1: Front plate of the EK205

- 1 Alphanumeric display
- 2 Arrow key ◀
- 3 Arrow key ▲
- 4 Arrow key ▼
- 5 Arrow key ▶
- 6 HOME/CLR key combination
- 7 ENTER key combination
- 8 ESC key combination

### The alphanumeric display

The display is divided in the following sections and control elements:

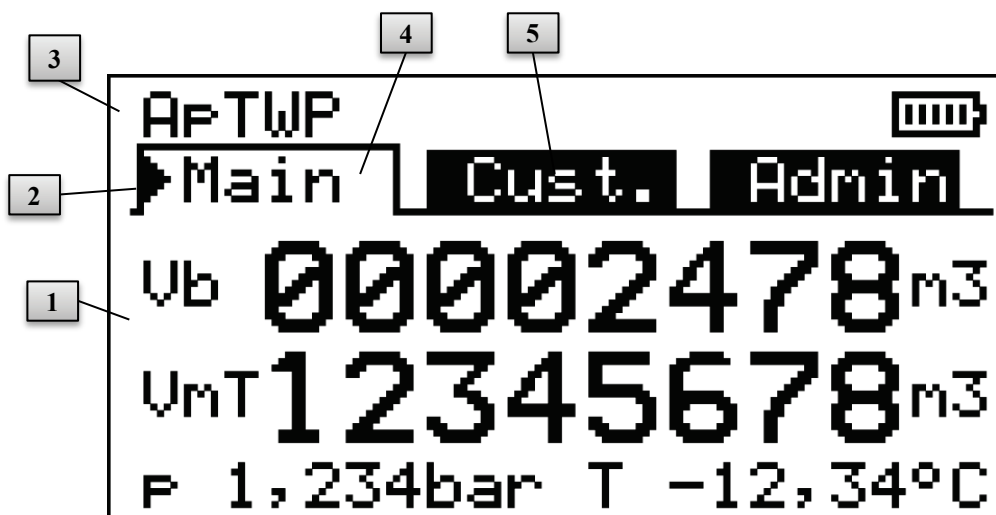


Fig 2: Structure of the display

- 1 data field  
each tab displays context specific data like hyperlinks, counters, measurements, messages etc.
- 2 current cursor position
- 3 status bar informs about the current state of the device and the battery level
- 4 active tab ( $\triangleq$  selected display)
- 5 inactive tab ( $\triangleq$  optional displays)

## Functions of the keys

The keys have the following functions:

Key	Function
▶	<ul style="list-style-type: none"> <li>■ jump to the right to another data list</li> <li>■ jump to the second part of a value displayed in two parts</li> <li>■ open the relevant submenu</li> </ul>
▼	<ul style="list-style-type: none"> <li>■ jump down within a data list</li> </ul>
◀	<ul style="list-style-type: none"> <li>■ jump to the left to another data list</li> <li>■ leave a submenu and jump to its start value (one menu level higher)</li> </ul>
▲	<ul style="list-style-type: none"> <li>■ jump up within a data list</li> </ul>
▲ + ▼	<ul style="list-style-type: none"> <li>■ By pressing the two keys at the same time, you can execute the ENTER function regardless of the relevant data class and thereby... <ul style="list-style-type: none"> <li>● activate the input mode.</li> <li>● open the relevant submenu.</li> <li>● update the relevant measurement value.</li> </ul> </li> </ul>
▼ + ▶	<ul style="list-style-type: none"> <li>■ By pressing the two keys at the same time, you can execute the ESC function regardless of the relevant data class and thereby... <ul style="list-style-type: none"> <li>● leave a submenu and jump to its start value (one menu level higher).</li> <li>● cancel an input (the input mode).</li> </ul> </li> </ul>
◀ + ▲	<ul style="list-style-type: none"> <li>■ By pressing the two keys at the same time, you can execute the HOME/CLR function and thereby <ul style="list-style-type: none"> <li>● display the Main tab.</li> <li>● initiate a value in the input mode (reset to its start value).</li> </ul> </li> </ul>
▲ + ▶	<ul style="list-style-type: none"> <li>■ By pressing the two keys at the same time, via the context menu displayed, you can... <ul style="list-style-type: none"> <li>● display the Main tab.</li> <li>● freeze the current display.</li> <li>● delete the status tab.</li> </ul> </li> </ul>
◀ + ▶	<ul style="list-style-type: none"> <li>■ Display address of the current value.</li> </ul>

## The Status bar and its symbols

The status bar is displayed in the first row.






Fig. 3: Status bar

The symbols have the following meaning:

Symbol	Meaning
<b>A P T W P</b>	At the top left edge of the display, individual letters are displayed as symbols for the following messages:
<b>ok.</b>	no special messages
<b>A</b>	alarm – collective message "any alarm"
<b>p</b>	pressure alarm – The gas pressure cannot be measured.
<b>T</b>	temperature alarm – the gas temperature cannot be measured
<b>W</b>	warning – collective message "any warning"
<b>B</b>	battery warning – The battery is nearly empty.
<b>L<sup>1</sup></b>	certification data log – The certification data log is full.
<b>P</b>	calibration lock (programming mode) – The calibration lock is open.
<b>o</b>	online – data transmission is ongoing

If one of these letters flashes, the condition thereby indicated is still in place (active). If a letter is displayed consistently, the indicated status is no longer in place, but needs to be confirmed.

<b>Frz.</b>	display frozen The values displayed are "frozen" (not up to date). To display the current values press any key. You trigger the freezing function by pressing the ▲ + ► key combination.
	external power supply If this symbol appears, the EK205 is being supplied power from an external unit connected to the terminals.
	signal strength of the radio network for the external modem (connected to the terminals) – only displayed if an external modem is connected and active
	charging status of the device battery

### 3 Display Tabs and Data Displayed

#### Overview about the Tabs: Main, Cust. Admin, Serv. Ctrl.

The display is divided into the following five tabs, whereby **Admin** and **Serv.** mainly share the same submenus:

<sup>1</sup> If a calibration logbook is available in the device.

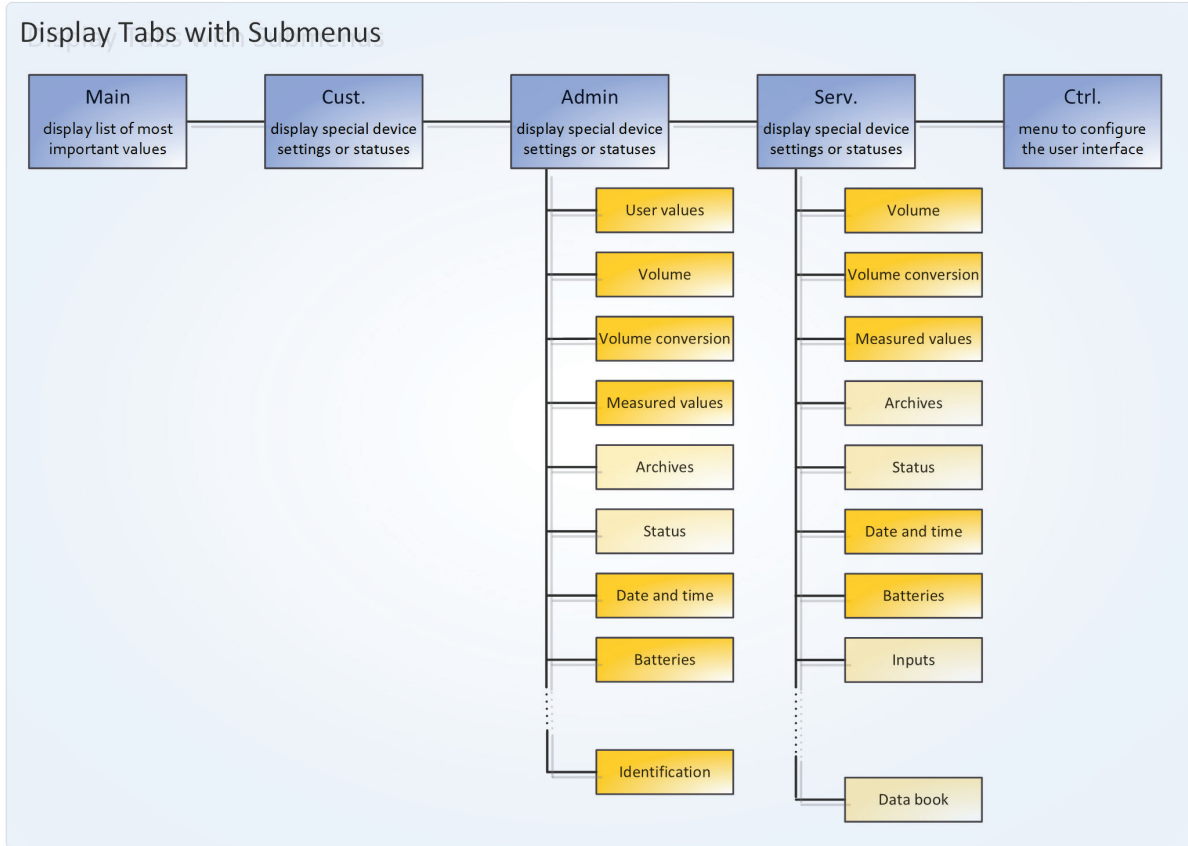


Fig 4: Display tabs with submenus

**Tabs “Main”, “Cust.” and “Ctrl.” – in Detail**

Main		Cust.		Ctrl.	
<b>Vb</b>	volume at base conditions	<b>Time</b>	date and time	<b>St.AL</b>	administrator lock: status/close
<b>VmT</b>	total volume at measurement conditions	<b>Vb</b>	volume at base conditions	<b>Cod.A</b>	enter/change administrator key
<b>p</b>	pressure	<b>VmT</b>	total volume at measurement conditions	<b>St.PL</b>	calibration lock: Status/close
<b>T</b>	temperature	<b>p</b>	pressure	<b>Menu</b>	selection of the display menu
		<b>T</b>	temperature	<b>Main</b>	content of the Main tab
		<b>K</b>	compressibility ratio factor		
		<b>C</b>	conversion factor		
		<b>SReg</b>	status register (total)		
		<b>VbMP↑</b>	maximum measurement period counter Vb in the current month		
		<b>VbDy↑</b>	maximum daily counter Vb in the current month		
		<b>Qb</b>	flow rate at base conditions		
		<b>Qm</b>	flow rate at measurement conditions (actual)		

### Tab “Admin” – Overview

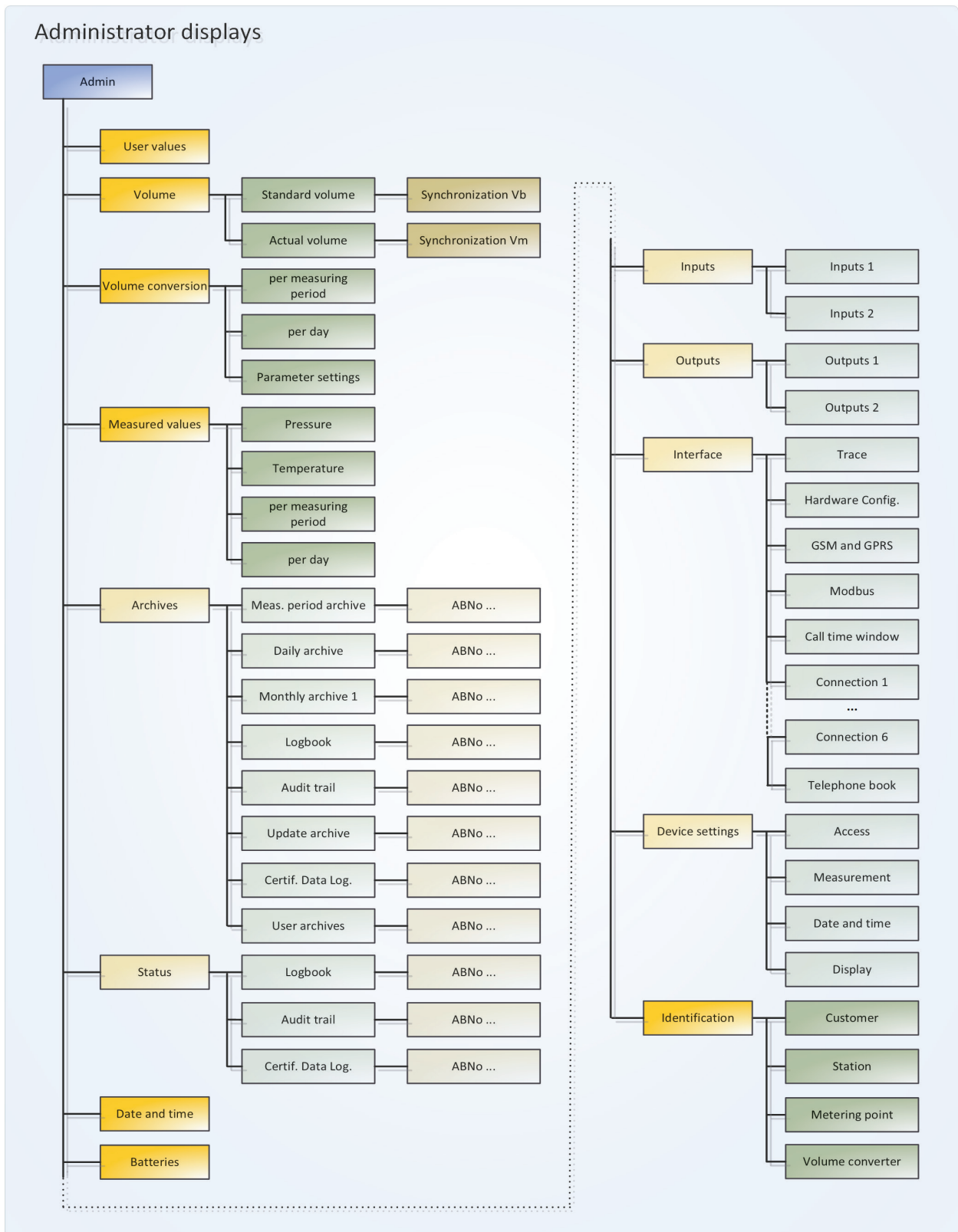


Fig 5: Admin tab with submenus <sup>2</sup>

<sup>2</sup> The highlighted displays are described in the section **Tab Admin – in Detail** of this quick guide, all other displays in the EK205 operating manual.

## Tab Admin – in Detail

In the following tables only the displays and submenus are described in detail which are highlighted in figure 5. The tabs **Admin** and **Serv.** only vary in some submenus.

### Admin ...

#### Admin – User values

<b>Time</b>	curr. date and time
	total volume...
<b>VbT</b>	... at base conditions
<b>VmT</b>	... at measurement conditions
<b>p</b>	pressure
<b>T</b>	temperature
<b>K</b>	compressibility ratio factor
<b>C</b>	conversion factor
<b>VbMP↑</b>	maximum measurement period counter Vb in the current month
<b>VbDy↑</b>	maximum daily counter Vb in the current month

#### Admin – Volume

<b>Standard volume</b>	submenu
<b>→</b>	<b>Admin – Volume – Standard volume</b>
	volume at base conditions...
<b>Vb</b>	... undisturbed
<b>VbD</b>	... disturbed
<b>VbT</b>	... total (disturbed + undisturbed)
<b>VbA</b>	... adjustable (disturbed + undisturbed)
<b>Qb</b>	flow rate at base conditions
<b>VbLW</b>	lower warning limit <b>Vb</b>
<b>VbUW</b>	upper warning limit <b>Vb</b>
<b>ScMVb</b>	source for monitoring <b>Vb</b>
<b>MdMVb</b>	mode monitoring <b>Vb</b>
<b>Synchroniza- tion Vb →</b>	submenu
	<b>... – Volume – Standard volume – Synchronization Vb</b>
<b>VbA</b>	adjustable volume at base conditions
<b>Vb</b>	volume at base conditions
<b>Store</b>	adopt values
<b>Time</b>	current date and time
<b>TimeX</b>	time stamp of the alignment
	volume at measurement conditions...
<b>Vb_o</b>	... old value
<b>Vb_n</b>	... new value
<b>Clear</b>	reset volume within base conditions



**Admin ...****Actual volume** → submenu**Admin – Volume – Actual volume**

	volume at measurement conditions...
<b>Vm</b>	... undisturbed
<b>VmD</b>	... disturbed
<b>VmT</b>	... total (disturbed + undisturbed)
<b>VmA</b>	... adjustable (disturbed + undisturbed)
<b>Qm</b>	flow rate at measurement conditions
<b>VmLW</b>	lower warning limit <b>Vm</b>
<b>VmUW</b>	upper warning limit <b>Vm</b>
<b>ScMvm</b>	source for monitoring <b>Vm</b>
<b>MdMvm</b>	mode monitoring <b>Vm</b>
<b>Md.I1</b>	mode for input 1
<b>cp.I1</b>	pulse constant for input 1

**Synchronization Vm** → submenu**... – Volume – Actual volume – Synchronization Vm**

<b>VmA</b>	adjustable volume at measurement conditions
<b>Vm</b>	volume at measurement conditions
<b>Store</b>	adopt values
<b>Time</b>	current date and time
<b>TimeX</b>	time stamp of the alignment
	volume at measurement conditions...
<b>Vm_o</b>	... old value
<b>Vm_n</b>	... new value
<b>Clear</b>	reset volume within measurement conditions

**Admin – Volume conversion**

<b>C</b>	conversion factor
<b>K</b>	compressibility ratio factor
<b>z</b>	compressibility factor
<b>Zb</b>	compressibility factor at base conditions
<b>p</b>	pressure
<b>T</b>	temperature
	flow rate ...
<b>Qm</b>	... at measurement conditions
<b>Qb</b>	... at base conditions

**per measuring period** → submenu**Admin – Volume conversion – per measuring period**

<b>K.MPcØ</b>	mean value K of current meas. period
<b>K.MPØ</b>	mean value K of last meas. period
<b>C.MPcØ</b>	mean value C of current meas. period

**Admin ...**

	<b>C.MPØ</b>	mean value C of last meas. period
	<b>Mper</b>	measurement period
<b>per day →</b>		submenu
	<b>Admin – Volume conversion – per day</b>	
	<b>K.DycØ</b>	mean value K of current day
	<b>K.DyØ</b>	mean value K of last day
	<b>C.DycØ</b>	mean value C of current day
	<b>C.DyØ</b>	mean value C of last day
	<b>DayB</b>	day boundary
<b>Parameter settings →</b>		submenu
	<b>Admin – Volume conversion – Parameter settings</b>	
	<b>Md.K</b>	compressibility calculation method: <fixed value   S-GERG-88   AGA-NX19   AGA-8 GC1   AGA-8 GC1, AGA-NX19-HW   AGA-8 DC92>
	<b>K.F</b>	inverted compressibility ratio factor, substitute value
	<b>pbX</b>	pressure at base conditions for gas analysis input
	<b>TbX</b>	temperature at base conditions for gas analysis input
	<b>Ho.b</b>	calorific value
	<b>CO2</b>	carbon dioxide
	<b>H2</b>	hydrogen
	<b>Rhob</b>	density at base conditions

**Admin – Measured values**

<b>Pressure →</b>		submenu
	<b>Admin – Measured values – Pressure</b>	
	<b>p</b>	pressure pressure ...
	<b>p.Mes</b>	... measurement
	<b>p.Abs</b>	... absolute measurement
	<b>pMin</b>	... lower alarm limit
	<b>pMax</b>	... upper alarm limit
	<b>p.LW</b>	... lower warning limit
	<b>p.UW</b>	... upper warning limit
	<b>Md.p</b>	... mode
	<b>p.F</b>	... substitute value
	<b>p.atm</b>	ambient pressure (constant)
	<b>pb</b>	pressure at base conditions
	<b>SNp</b>	serial number of pressure sensor
	<b>Typ.p</b>	type of pressure sensor pressure measurement range ...
	<b>MRL.p</b>	... lower limit

**Admin ...**

	<b>MRU.p</b>	... upper limit
<b>Temperature</b> →	submenu	
	<b>Admin – Measured values – Temperature</b>	
	<b>T</b>	temperature temperature ...
	<b>T.Mes</b>	... measurement
	<b>TMin</b>	... lower alarm limit
	<b>TMax</b>	... upper alarm limit
	<b>T.LW</b>	... lower warning limit
	<b>T.UW</b>	... upper warning limit
	<b>Md.T</b>	... mode
	<b>T.F</b>	... substitute value
	<b>Tb</b>	... at base conditions
	<b>SNT</b>	serial number of temperature sensor
	<b>Typ.T</b>	type of temperature sensor temperature measurement range ...
	<b>MRL.T</b>	... lower limit
	<b>MRU.T</b>	... upper limit

**Admin – Date and time**

<b>Time</b>	current time
<b>MdTim</b>	daylight saving time on/off
<b>TimeZ</b>	time zone
<b>Adj.T</b>	clock adjustment factor
<b>Mper</b>	measurement period
<b>DayB</b>	day boundary

**Admin – Batteries**

<b>Bat.R</b>	remaining battery service life (derived from <b>BatRC</b> )
<b>Save</b>	save all data
<b>Bat.C</b>	battery capacity
<b>BatRC</b>	remaining battery life
<b>Bat.W</b>	warning limit for the remaining service life of the device battery

**Admin – Identification**

<b>Customer</b> →	submenu
	<b>Admin – Identification – Customer</b>
	<b>CuNo</b> customer number
	<b>Cust.</b> customer name

**Admin ...****Station →**

submenu

**Admin – Identification – Station****St.No** station number**StNam** station name**Metering point →**

submenu

**Admin – Identification – Metering point****MPtNo** metering point number**MetPt** metering point name**ID** metering point identification number**Volume Converter →**

submenu

**Admin – Identification – Volume Converter****Model** EK205**SNo** serial number of device**Vc-Id** identification number applying for all manufacturers**Year** year of construction**Apprv** approval**CE** date of declaration of conformity**Manuf** manufacturer**Vers** version number of device software**Chk** checksum of device software**HW-V.** hardware version**Typ.p** type of pressure sensor**SNp** serial number of pressure sensor

pressure measurement range ...

**MRL.p** ... lower limit**MRU.p** ... upper limit**Typ.T** type of temperature sensor

temperature measurement range ...

**MRL.T** ... lower limit**MRU.T** ... upper limit