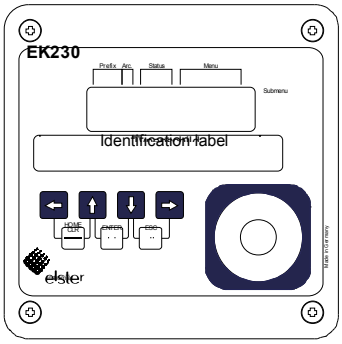

Short-Form Instructions Volume Conversion Device Type EK230

This product is discontinued!

The display is activated on pressing any key and the momentary counter reading Vb (volume at base conditions) is displayed in the menu **User**. All further data associated with the volume at base conditions can be displayed by pressing the key ↓ (see first column "Standard volume" on the inside page of these instructions).

The key → is pressed to display a value in the column, standard volume. Now, the menu **Std. V** (Standard volume) is displayed. Using the keys ↓ and ↑, you can view all the values associated with the volume at base conditions.

To change to a different menu (e.g.: **Press.**), the keys ← or → are pressed until the desired menu name appears in the display. The transitions from one menu to a different one occur at the places identified by arrows (see inside page of the operating instructions).

Entering values

Values in the volume corrector (volume conversion device) which are not subject to the calibration lock or only computed (e.g. flow) or measured (e.g. pressure or temperature) can be changed even without a PC or readout device.
In these short-form instructions all values which are subject to the calibration lock are identified with "C". All values which are determined or measured and therefore can only be read are identified with a "–".

Example of changing a value
(adjustable counter in the menu actual volume (Act.V.)

- The display is activated by pressing any key.

The momentary counter reading **Vb** (volume at base conditions) is indicated in the menu **User** in the display.

			Arc.		Status				Menu							
					o	k	.		U	s	e	r				Submenu
V	b			0	0	0	0	0	1	2	3	4		m	3	

- Changing to the column Actual volume occurs by pressing the key →

The momentary counter reading **V** (actual volume) is indicated in the menu **Act.V.** in the display.

			Arc.		Status				Menu							
					o	k	.		A	c	t	.	V	.		Submenu
V	m			0	0	0	0	0	1	2	3	4		m	3	

- Within the menu, Actual volume, repeated pressing of the key ↓ changes to the value **VmA** (adjustable counter).

			Arc.		Status				Menu							
					o	k	.		A	c	t	.	V	.		Submenu
V	m	A		0	0	0	0	0	2	3	4	5		m	3	

- The entry-mode is activated by pressing ↑ and ↓ keys (ENTER).

The modifiable display location flashes.
The keys ← and → enable skipping to the other places of the displayed value.
These can be changed with the keys ↑ and ↓ and refreshed by pressing the ENTER keys.

			Arc.		Status				Menu							
V	m	A														Submenu
		0	0	0	0	0	2	3	4	5	.	0	0	0	0	

Pressing ↓ and → keys (before pressing ENTER) causes the entry to be cancelled.

To "Energy" ↔

User list		Standard volume		Actual volume		Pressure		
User		**Std. V.**		**Act.V.**		**Press.**		to "Temp." ↔
Vb Volume at base cond. (predecimal places)	C	Vb Volume at base cond. (post-decimal places)	C	Vm Actual volume	C	p Pressure	-	
VmA Adjustable counter	S	Qb Standard flow	-	Qm Actual flow	-	pMin Lower alarm limit	S	
p Pressure	-	VbD Disturbance quantity	S	VmD Disturbance quantity	S	pMax Upper alarm limit	S	
T Temperature	-	VbT Total quantity	-	VmT Total quantity	-	MRL.p Meas. range bottom	S	
Z Imperfect-gas factor	-	VbA Adjustable counter	S	VmA Adjustable counter	S	MRU.p Meas. range top	S	
Zb Imperfect-gas factor in standard state	C	VbME Month-end value	-	VmME Monthe-end value	-	p.F Substitute value	C	
C Conversion factor	-	Time Time for VbME	-	Time Time for VmME	-	pb Press. at base cond.	S	
K.F K subst. value	S					Md.p Pressure mode	S	
VbME Month-end value	-					Typ.p Press. sensor type	S	
Time Time for VbME	-					SNp Serial no. of sensor	S	
VmME Month-end value	-					Eq1p Equ.coefficient 1	S	
Time Time for VmME	-					Eq2p Equ.coefficient 2	S	
Menu Select. display menu						Eq3p Equ.coefficient 3	S	
						p1Adj Adjustment val. 1	S	
						p2Adj Adjustment val. 2	S	
						Prog Accept adjust	S	
						patm Amb. press. fixed val.	S	
						p.Mes Pressure meas.	-	
						p.Abs Absolute pressure	-	

Operating Instructions Chapter 3.1

Chap. 3.2

Chap. 3.3

Chap. 3.4

Access rights

The EK230 differentiates between 4 access parties. Each party has a lock and a corresponding combination code:

C Calibration lock
M Manufacturer's lock
S Supplier's lock
K Customer's lock

- Values which are measured or computed by the volume corrector, but can only be layed and are identified with a dash.

Entry errors

Entry errors are displayed if incorrect entries are made by the operator via the keypad. After the entry key is released, the display skips back to the original state.

Example:

					Status				Menu						
					o	k	.		I	n	p	u	t	s	
C	P	.	I	1		-	-	-	-	5	-	-	-		

----x---- the possible error codes correspond to the following table.

Code	Description	Code	Description
1	The archive is empty	8	Entry not possible due to special setting
2	The archive value cannot be read.	11	The entry of the calorific value *Ho.b* in the energy list is not permitted. Please change *Ho.b* in the Volume corrector list
4	Parameter cannot be changed (constant)	12	The entry of this source (address) is not permitted.
5	No authorisation for changing the value	13	Clock has to be set to its starting value
6	Invalid value.	14	Gas analysis parameters for AGA-NX-19 do not match
7	Incorrect combination	20	Value for the application-specific display is not defined

Temperature | Conversion | Archive | Status

to "Press-ure"	Temp.			Conv.			Archiv			Status		to "System"
↔	T Temperature	-	↔	C Conversion factor	-	↔	ArMP Meas. per. archive	-	↔	S.Reg Status register	-	↔
	Tmin Lower alarm limit	S		K inv. compr. ratio factor	-		ArDay Day archive	S		Stat Momentary register	-	
	Tmax Upper alarm limit	S		pbX Pressure at base conditions for gas analysis input	S		Mper Meas. period	S		Clr Clear S.Reg	S	
	MRL.T Meas. Range bottom	S		TbX Temp. at base conditions for gas analysis input	S		FrMP Freeze ArMP	S		Logb. Logbook	-	
	MRU.T Meas. Range top	S		Ho.b Calorific value	C		Chap. 3.7			AudTr Audit Trail	-	
	T.F Substitute value	C		CO2 Carbon dioxide cont.	S					Chap. 3.8		
	Tb Temp. at base cond.	S		H2 / N2 (accord. to Md.K)	S							
	Md.T Temperature mode	S		Rhob / dr (accord. to Md.K)	S							
	Typ.T Temp. sensor type	S		K.F K substitute value	S							
	SNT Serial no. of sensor	S		Md.K K Mode	C							
	Eq1T Equ. Coefficient 1	S		Chap. 3.6								
	Eq2T Equ. Coefficient 2	S										
	Eq3T Equ. Coefficient 3	S										
	T1Adj Adjustment value 1	S										
	T2Adj Adjustment value 2	S										
	Prog Accept adjust	S										
	T.Mes Temp. meas.	-										

Chap. 3.5

important status/error messages

Output in the first line of the display

- **A** Alarm
- **W** Warning
- **B** Remaining battery service life reached
- **P** Calibration lock open
- **o** On-line operation (data transmission)

A flashing device status signals a currently prevailing message, a steady device status shows a message no longer prevailing, but which is still located in the status register. The status register **"S.Reg"** documents all alarms and warnings since the last "clear".

Example of the display of a temperature sensor

- Change to the column **Status** by repeated pressing of the key → .
- The **"1"** on the right in the display, indicates a temperature alarm.
- Press "ENTER" to recall Status information as short text

Display indication is:

	Status								Menu							
					A				S	t	a	t	u	s	→	
S	.	R	e	g											1	

	Status								Menu							
					A				S	R	.	6			←	
#	1			T		A	l	a	r	m		L	i	m	.	

to "Status" ↔

System	
System	
Time Date and time	S
MdTim Daylight sav. y/n	S
MCyc Meas. cycle time	C
Ocyc Operating cycle time	S
Disp D. switch-off time	S
Aut.V D. changeover tm.	C
Ta.Rg Ambient temp.	C
Vers Software version	-
Chk Softw. checksum	-

Chap. 3.9

↔

Service	
Serv.	
Bat.R Remain. bat. life	-
Bat.C Battery capacity	S
St.SL Supplier lock	S
Cod.S Supplier code	S
St.CL Customer lock	K
Cod.C Customer code	K
St.PL Calibration lock	K
Adj.T Adjustment factor	C
Save Save all data	S
Clr.A Clear meas. archive	C
Clr.V Clear counter	C
Clr.X Initialise device	C
Bin.T Temp. raw value	-
Bin.p Pressure raw value	-
Addr Addr. user display	S
UsD2 User display	S
WRp Repair counter W	S
VbRp Repair Counter Vb	S
VmRp Repai counter V	S
Rep. Repair Mode	C
ArCal Frozen values	S
Frz Freeze	S
- Display test	-

Chap. 3.10

↔

Inputs	
Inputs	
cp.I1 cp va. Input 1	C
cp.I2 cp val. Input 2	S
Md.I2 Mode for Input 2	S
St.I2 Status on Input 2	-
MdMI2 Mode monitor. E2	S
SC.I2 Source mon. E2	S
L1.I2 Limit 1 for E2	S
L2.I2 Limit 2 for E2	S
SpI2 Stat. pointer E2	S
St.I3 Status on Input 3	-
MdMI3 Mode mon. E3	S
SC.I3 Source mon. E3	S
L1.I3 Limit 1 for E3	S
SpI3 Stat. pointer mon. E3	S
SNM Serial no. of meter	S

Chap. 3.11

↔

Outputs	
Outp.	
Md.O1 Mode for Output 1	S
SC.O1 Source Output 1	S
cp.O1 cp value Output 1	S
SpO1 Status pointer A1	S
Md.O2 Mode for Output 2	S
SC.O2 Source Output 2	S
cp.O2 cp value Output 2	S
SpO2 Status pointer A2	S
Md.O3 Mode for Output 3	S
SC.O3 Source Output 3	S
cp.O3 cp value Output 3	S
SpO3 Status pointer A3	S
Md.O4 Mode for Output 4	S
SC.O4 Source Output 4	S
cp.O4 cp value Output 4	S
SpO4 Status pointer A4	S

Chap. 3.12

to "SIO" ↔

Clr
Clear S.Reg

Clear status register

Warnings (W) and/or alarms (A) which are no longer prevailing, i.e. only displayed for information, but no longer flashing, are cleared in the menu "Status" – **"Clr"** by pressing the – ↑ **+**↓ keys (ENTER) . To the right in the display a "**0**" flashes. By pressing the ↑ key the value is set to **"1"**. Pressing the – ↑ **+**↓ keys (ENTER) again clears the status register and **ok** appears in the display. Alarm or warning statuses still prevailing are then again indicated with the letter A and/or W flashing in the display.

to "Outputs"

Interfaces

Ser.IO	
↔ Md.S2 Mode Interface 2	S
DF.S2 Data format Interf. 2	S
Bd.S2 Baud rate interf. 2	S
Num.T Ring tones bef. answer	S
M.INI initialise modem	S
Csync Remote clock setting	C
GSM.N GSM network	-
GSM.L Reception level	-
Bd.S1 Baud rate interf. 1	S
CW1.S Call window 1 Start	S
CW1.E Call window 1 end	S
CW2.S/M.Cw1 (accord. to setting)	S
CW2.E/M.onl (accord. to setting)	S

Chap. 3.13

Energy

Energy	
↔ W Energy	S
P Power	-
WD W disturbance	S
WT W total	-
WA W adjustable	S
Ho.b Calorific value	S
W.ME W month end	-
Time Time of W.ME	-

Chap. 3.14