

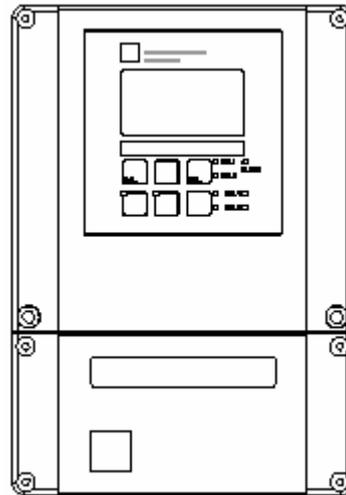
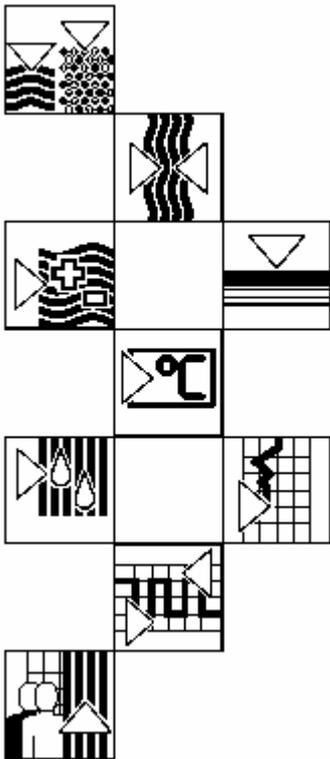
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# Liquisys S

## CPM 223,253

### Transmitter

For pH and ORP



**1**

1.1

**2**

2.1

2.2

2.3

2.4

2.5

**3**

3.1

3.2

3.3

3.4 /

3.5

**4**

4.1

1.

1.1

<b>EH</b>	<b>ENDRESS+HAUSER</b>	<b>CE</b>
<b>LIQUISYS-S</b> pH / Redox		
order code / Best.Nr.: CPM 253-PS1515		
serial no. / Ser.-Nr.: 276944 Codes: /		
measuring range / Messbereich: pH 0 ... 14 +/- 1500 mV		
temperature / Temperatur: -10 ... 125 °C		
output 1 / Ausgang 1: 0/4 ... 20 mA		
output 2 / Ausgang 2: 0/4 ... 20 mA		
mains / Netz: 230 VAC 50 / 50 Hz 7.5 VA		
prot. class / Schutzart: IP 65		
ambient temp. / Umgebungstemperatur: -10 ... +55 °C		
		131085-4B
253-TYP.CDR		

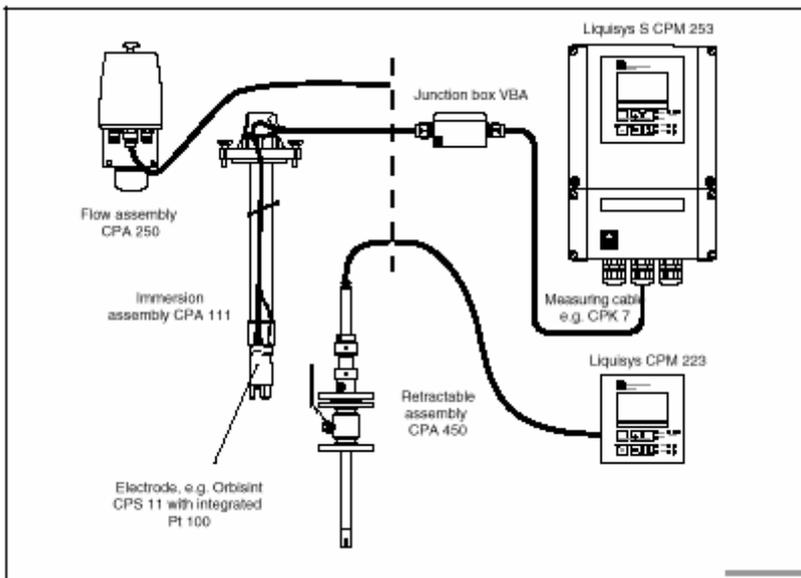
<b>EH</b>	<b>ENDRESS+HAUSER</b>	<b>CE</b>
<b>LIQUISYS-S</b> pH / Redox		
order code / Best.Nr.: CPM 223-PR0110		
serial no. / Ser.-Nr.: 276944 Codes: /		
measuring range / Messbereich: pH 0 ... 14 +/- 1500 mV		
temperature / Temperatur: -10 ... 125 °C		
output 1 / Ausgang 1: 0/4 ... 20 mA		
output 2 / Ausgang 2: 0/4 ... 20 mA		
mains / Netz: 230 VAC 50 / 50 Hz 7.5 VA		
prot. class / Schutzart: IP 54 / IP 66		
ambient temp. / Umgebungstemperatur: -10 ... +55 °C		
		131085-4B
223-TYP.CDR		

Liquisys S CPM 223 / 253	
<b>Version</b>	
PR	pH/redox measurement
PS	pH/redox measurement with additional functions (S version)
<b>Power supply</b>	
0	230 V AC
1	115 V AC
5	100 V AC
8	24 V AC/DC
<b>Measurement output</b>	
0	pH / redox
1	pH / redox and temperature
3	Profibus PA
5	pH / redox with Hart
6	pH / redox, Hart and temperature
<b>Contacts</b>	
05	no additional contacts
10	2 contacts (limits / PID / timer)
15	4 contacts (limits / PID / timer / Chemoclean)
16	4 contacts (limits / PID / timer)
CPM253-	
CPM223-	
complete order code	

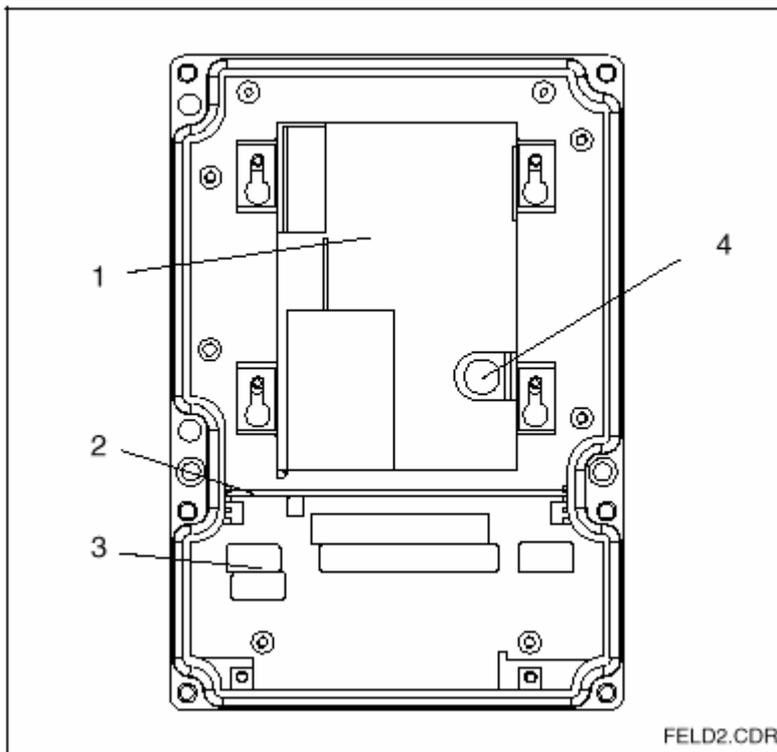
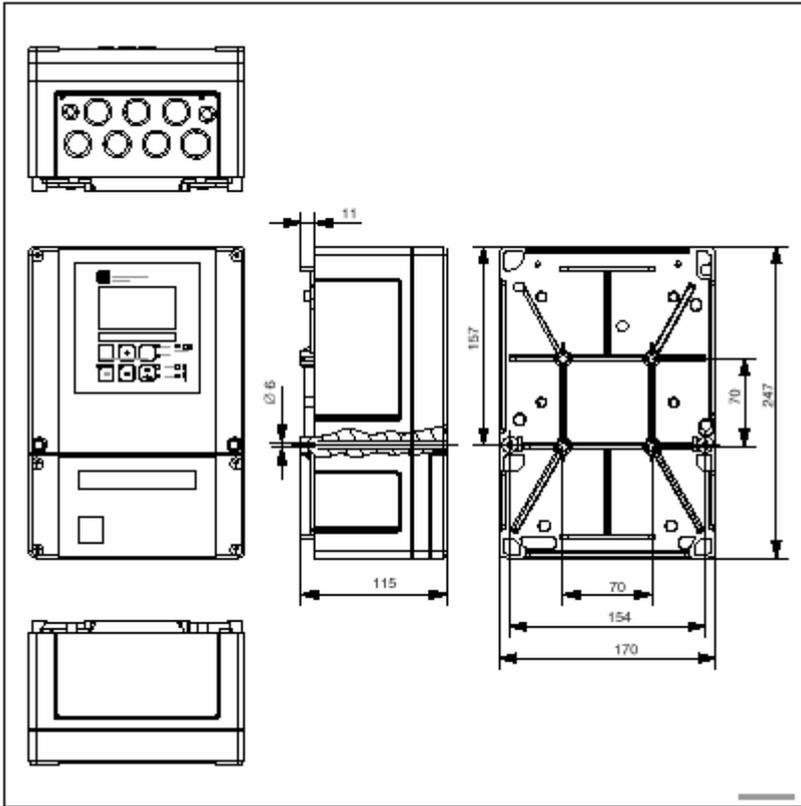
2

2.1

- Liquisys S CPM252
- 가 pH redox
- 
- pH (e.g. CPK7)
- 
- VBA VBM



2.2



Inside of housing of  
Liquisys S CPM 253:

- 1 Removable electronics box
- 2 Partition plate
- 3 Terminal blocks
- 4 Fuse

2.3

2.3.1

가 가 :

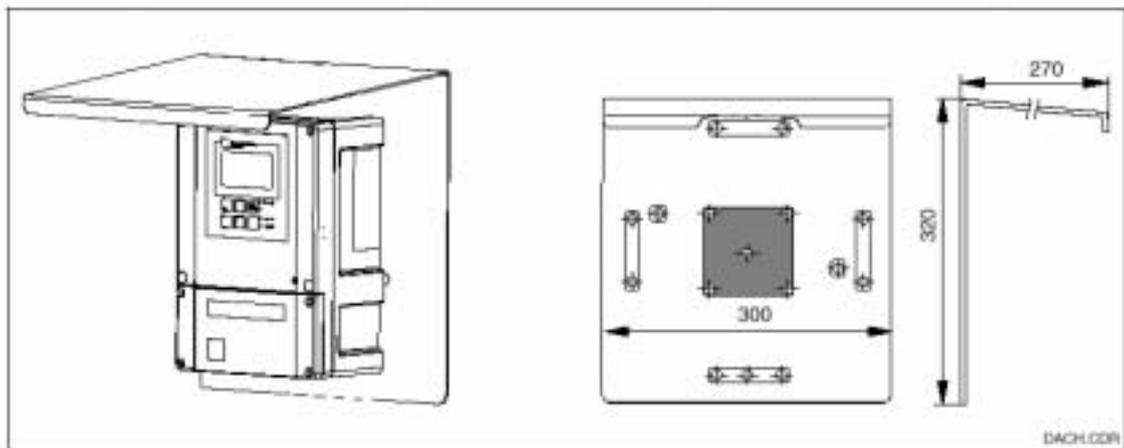
- 
- 
- 

CYY101

**CYY101**

: 1.4301(SS 304)

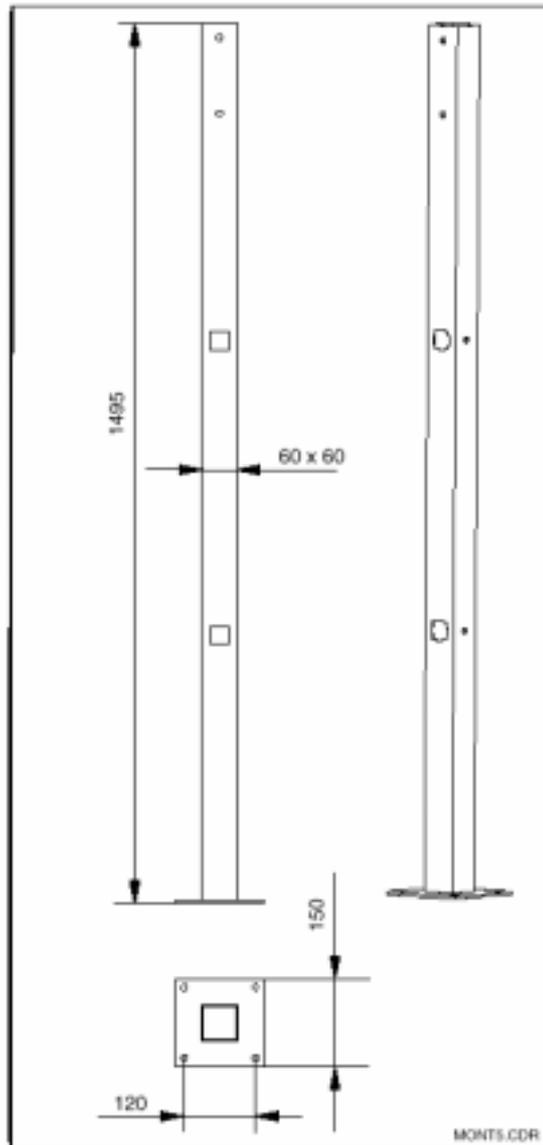
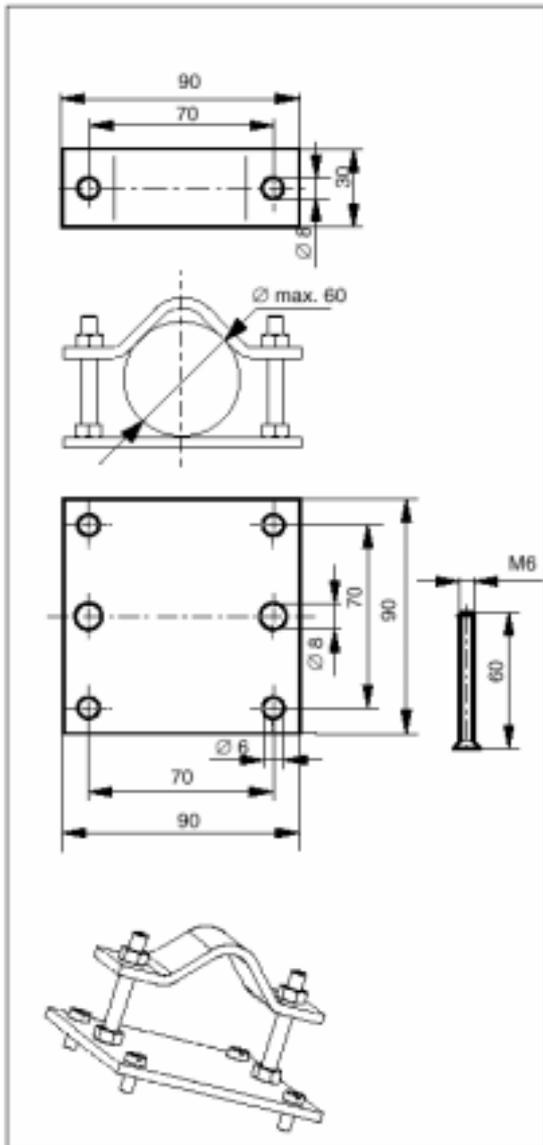
No: CYY101-A



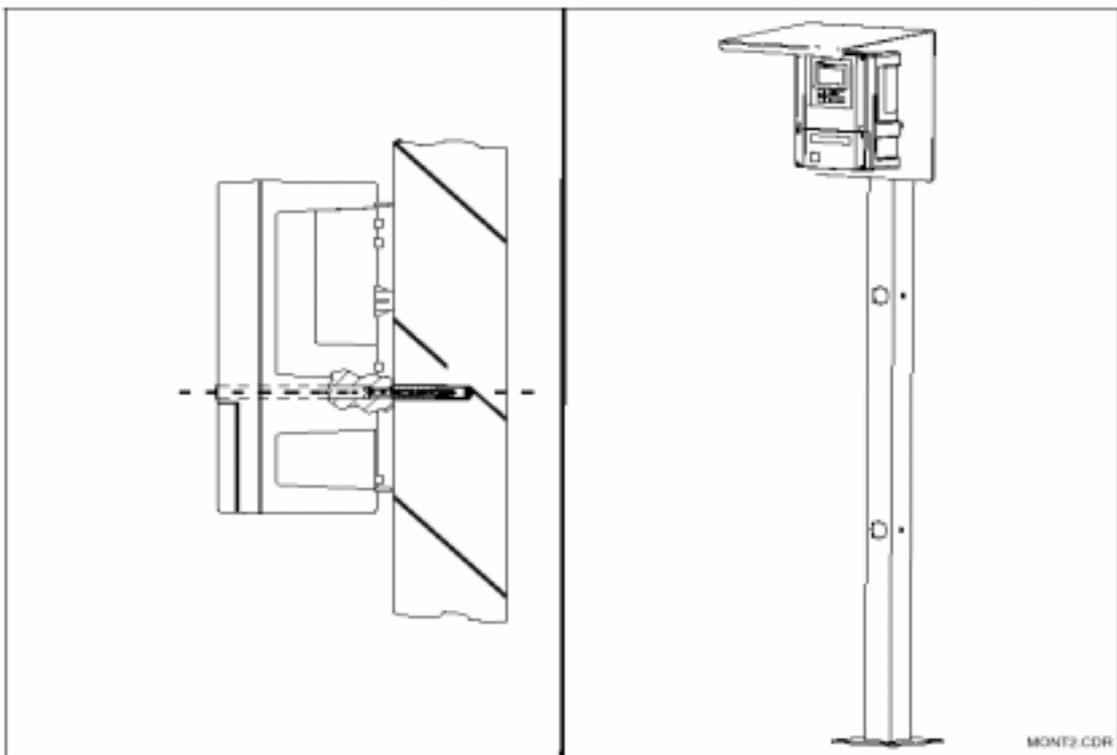
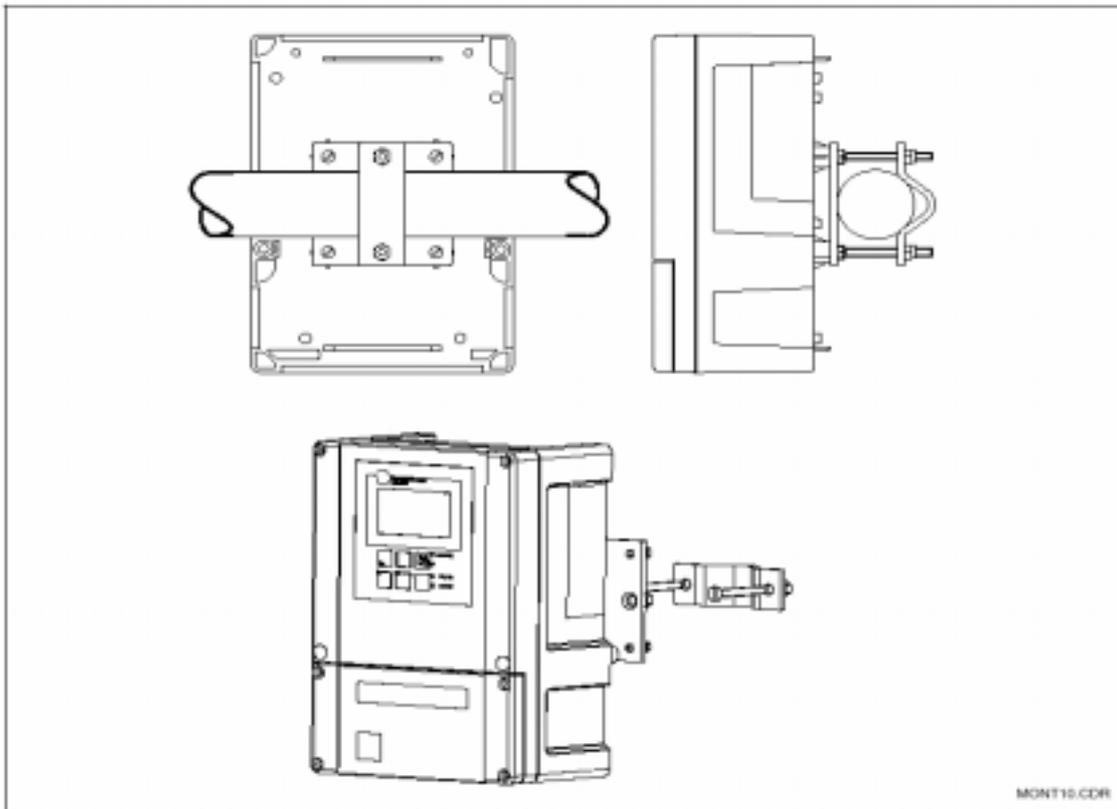
**CYY102**

( . Ø 60mm);  
 :  
 : VA;  
 No.: 50086842

: 1.4301(SS 304);  
 No.: CYY102-A



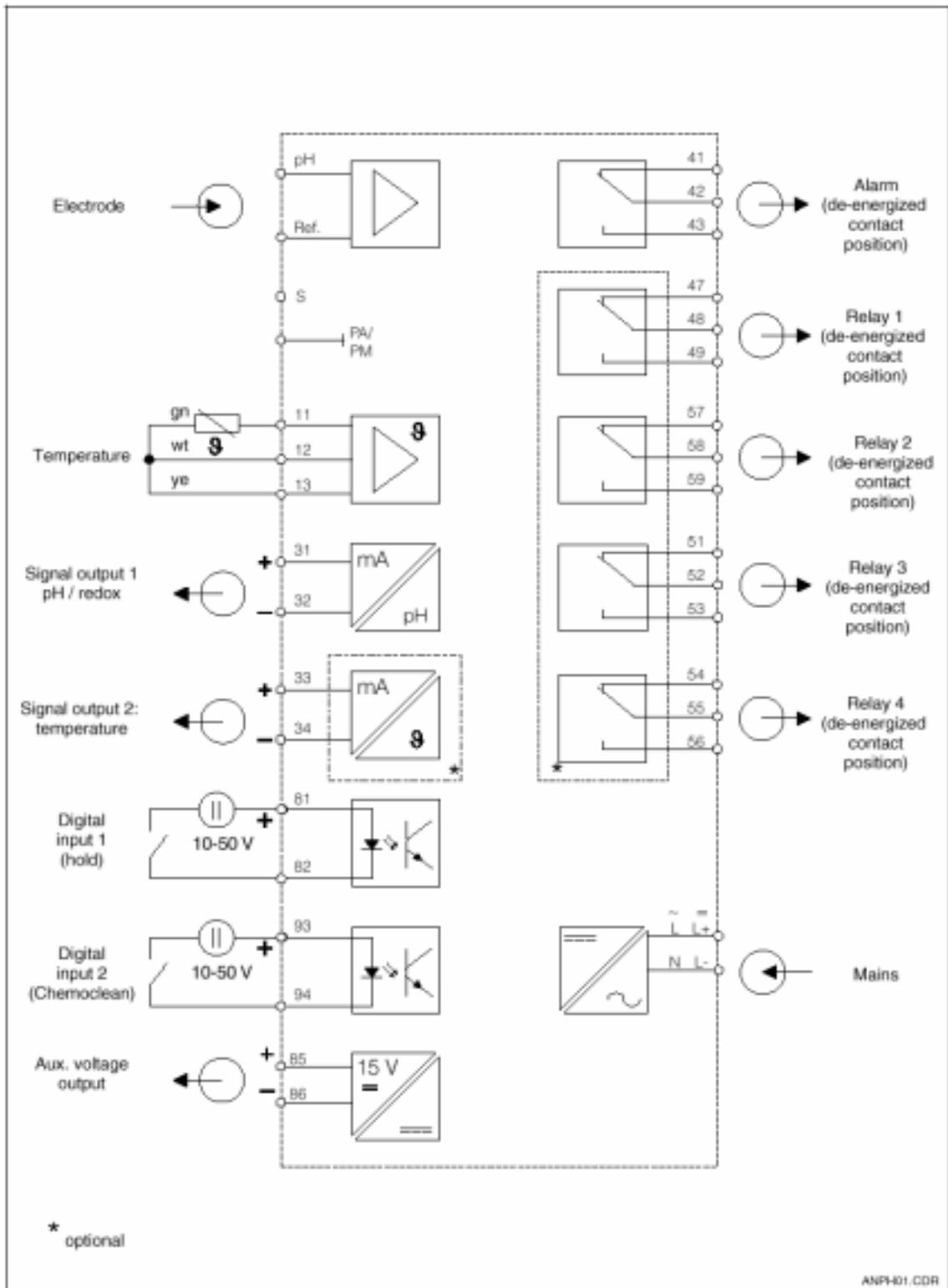
2.3.2



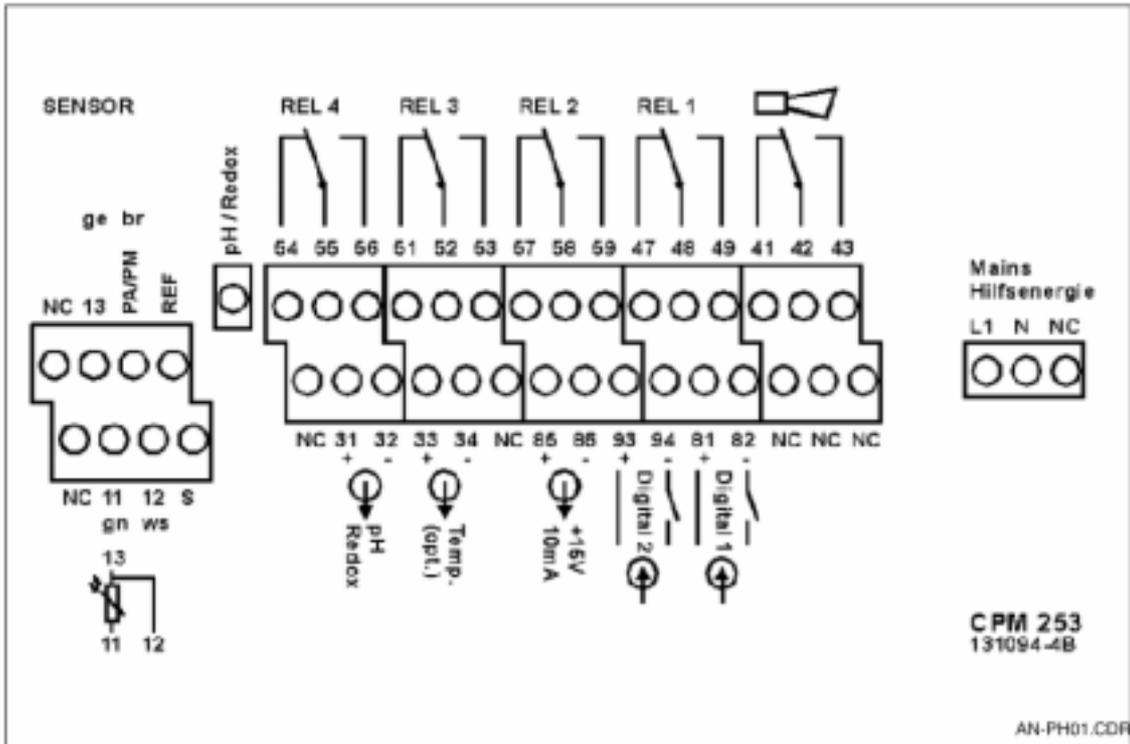
2.4

3.10

3.13 3.19



3.10, 3.11, 3.12

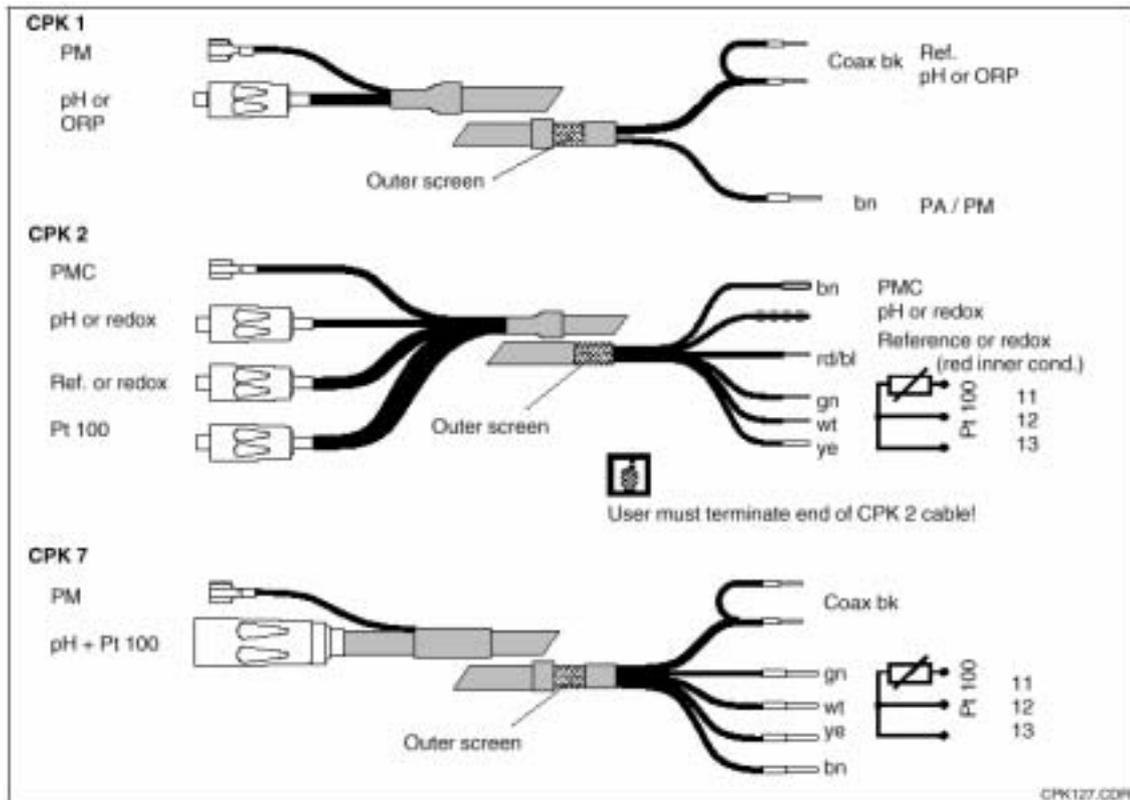


2.5

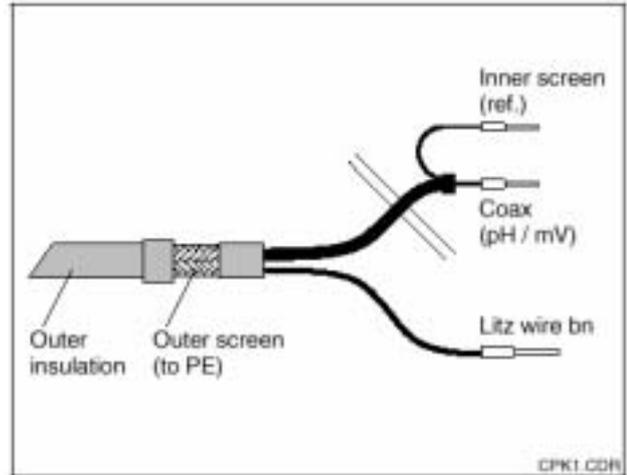
VBM

CMK

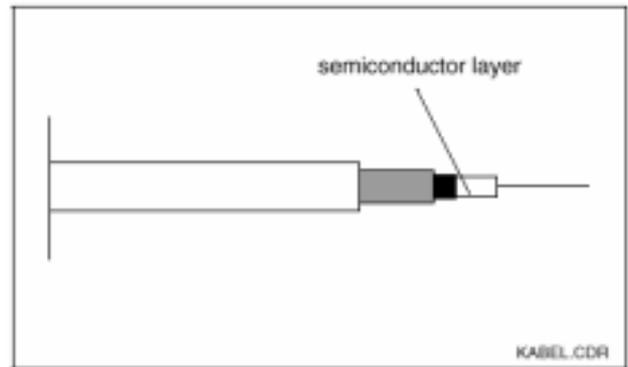
PH / redox		
Pt 100	CPK 1	VBA/VBM box + CYK71
Pt 100	CPK 7	VBA/VBM box + CYK71
pH	CPM 2	VBA/VBM box + PMK
PH / redox	.50m CYK 71	



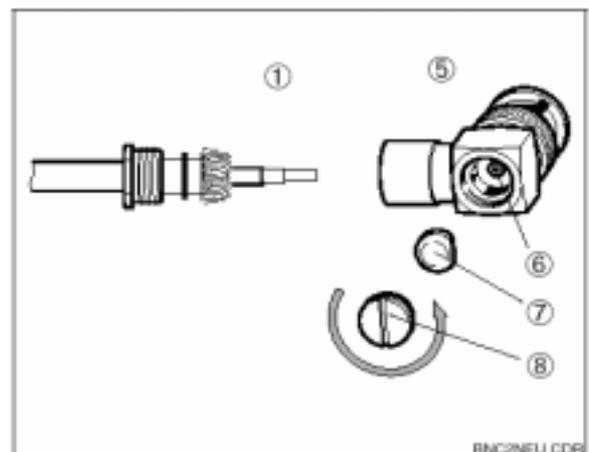
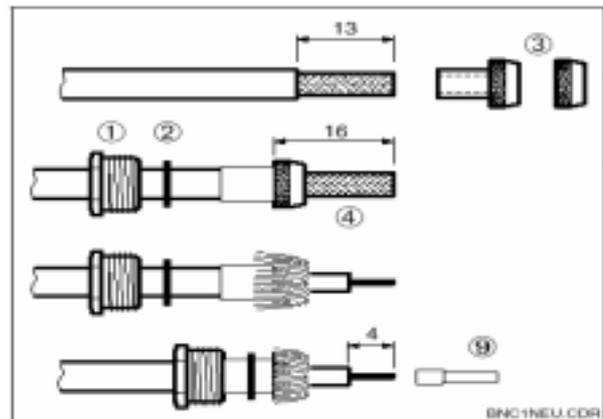
BNC  
 CPM332  
 1.  
 2.  
 (13mm),  
 3.2mm  
 :  
 5mm 가  
 3. ( )



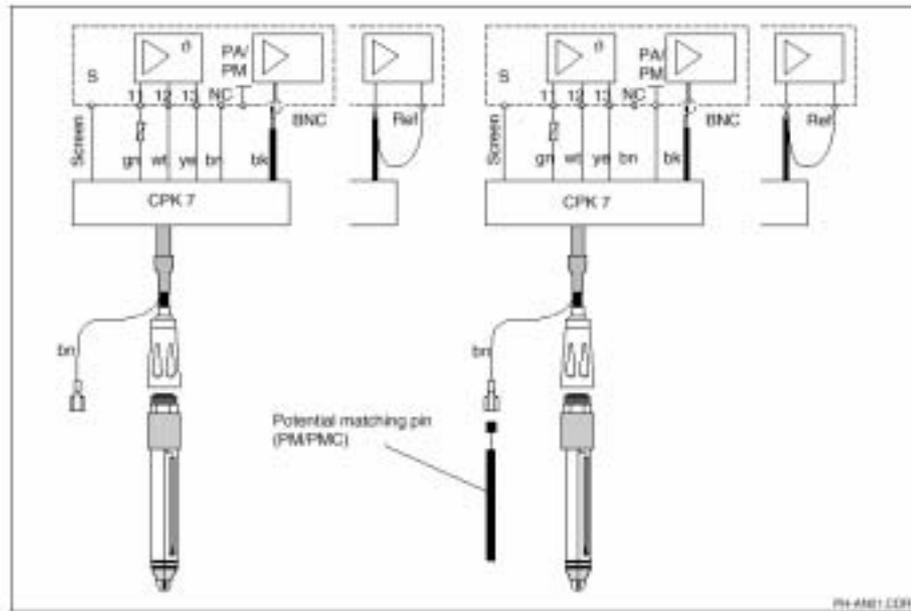
4.  
 ( )  
 5. (4mm).  
 ( )



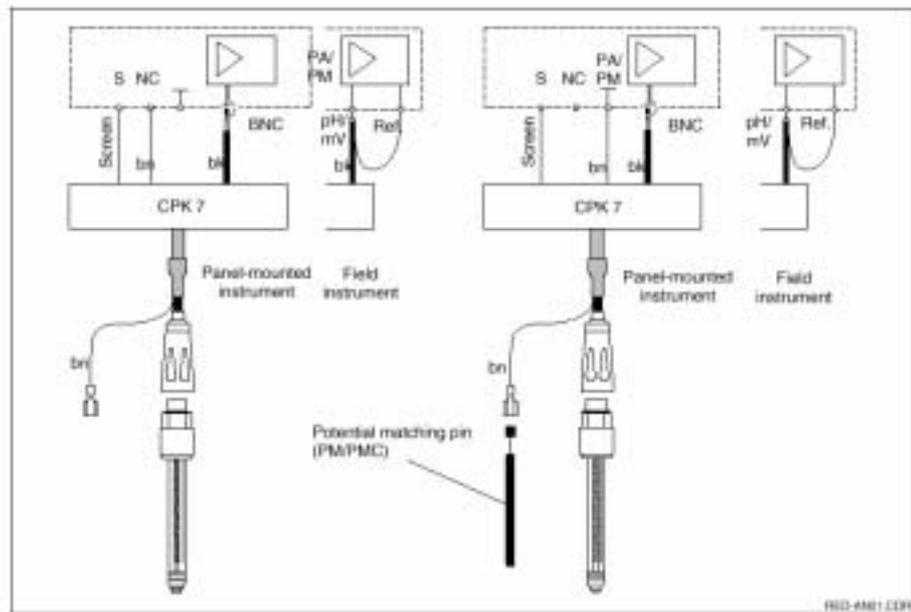
6. BNC ( )  
 ( )  
 ( )  
 ( )  
 ( )  
 ( )



pH electrode connection to Liquisys S CPM 223 / 253  
 Left: Asymmetrical (without PMC)  
 Right: Symmetrical (with PMC)

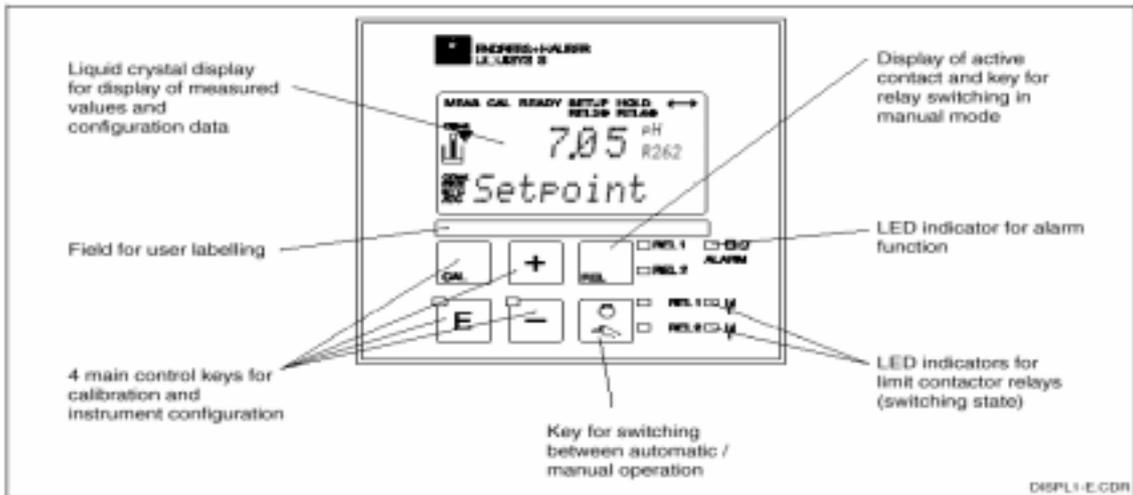


ORP electrode connection to Liquisys S CPM 223 / 253  
 Left: Asymmetrical (without PMC)  
 Right: Symmetrical (with PMC)



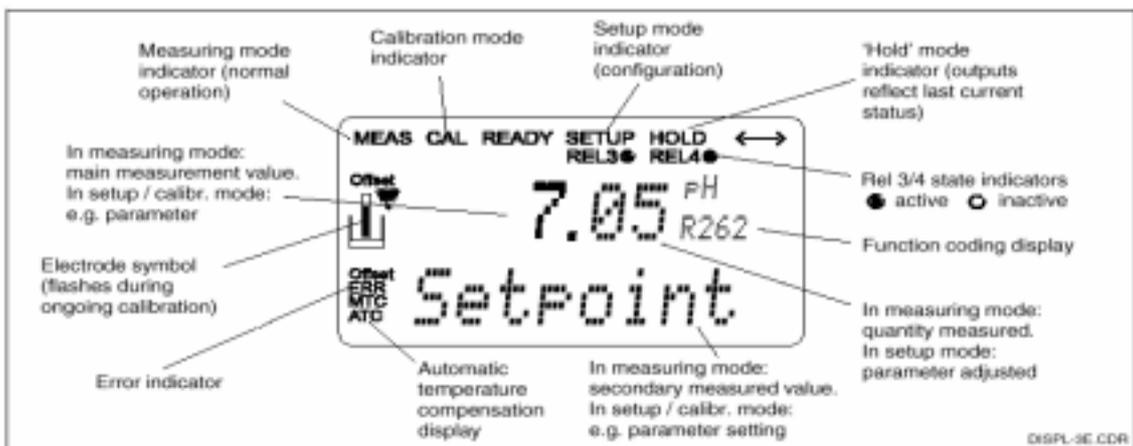
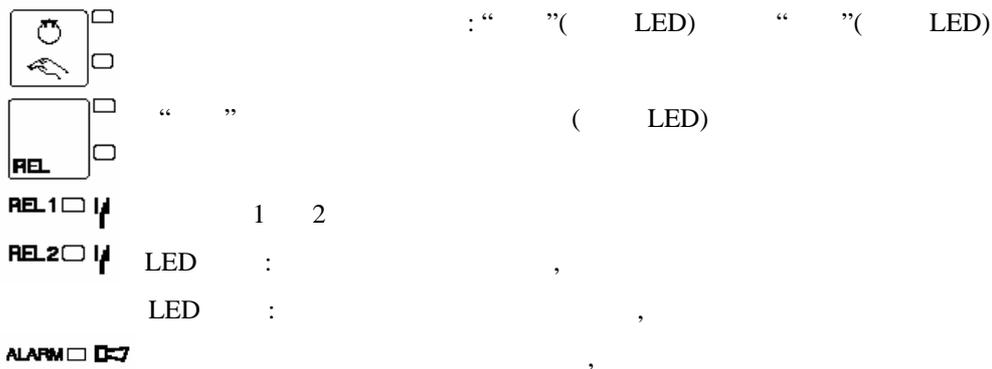
### 3.

#### 3.1



#### 3.2

##### LED



3.3

 **CAL**  
CAL , . CAL

 **ENTER**  
ENTER .:  
-  
-  
- .(CAL )

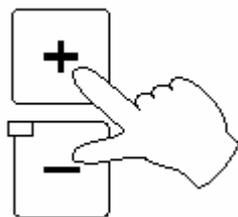
 **PLUS**

 **MINUS**  
PLUS / MINUS 가 .  
- ;  
-  
- , PLUS  
- MINUS

 **REL**  
REL

 **AUTO**

Escape



PLUS MINUS . PLUS MINUS

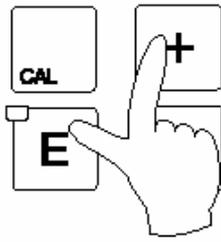
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**Locking the hardware**

HART

Profibus

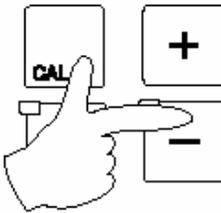
가



PLUS ENTER

9999

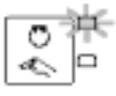
**Unlocking the hardware**



CAL MINUS

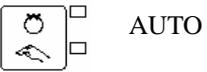
0

3.4 /



REL

REL



AUTO



ENTER

22



, REL



. PLUS

MINUS



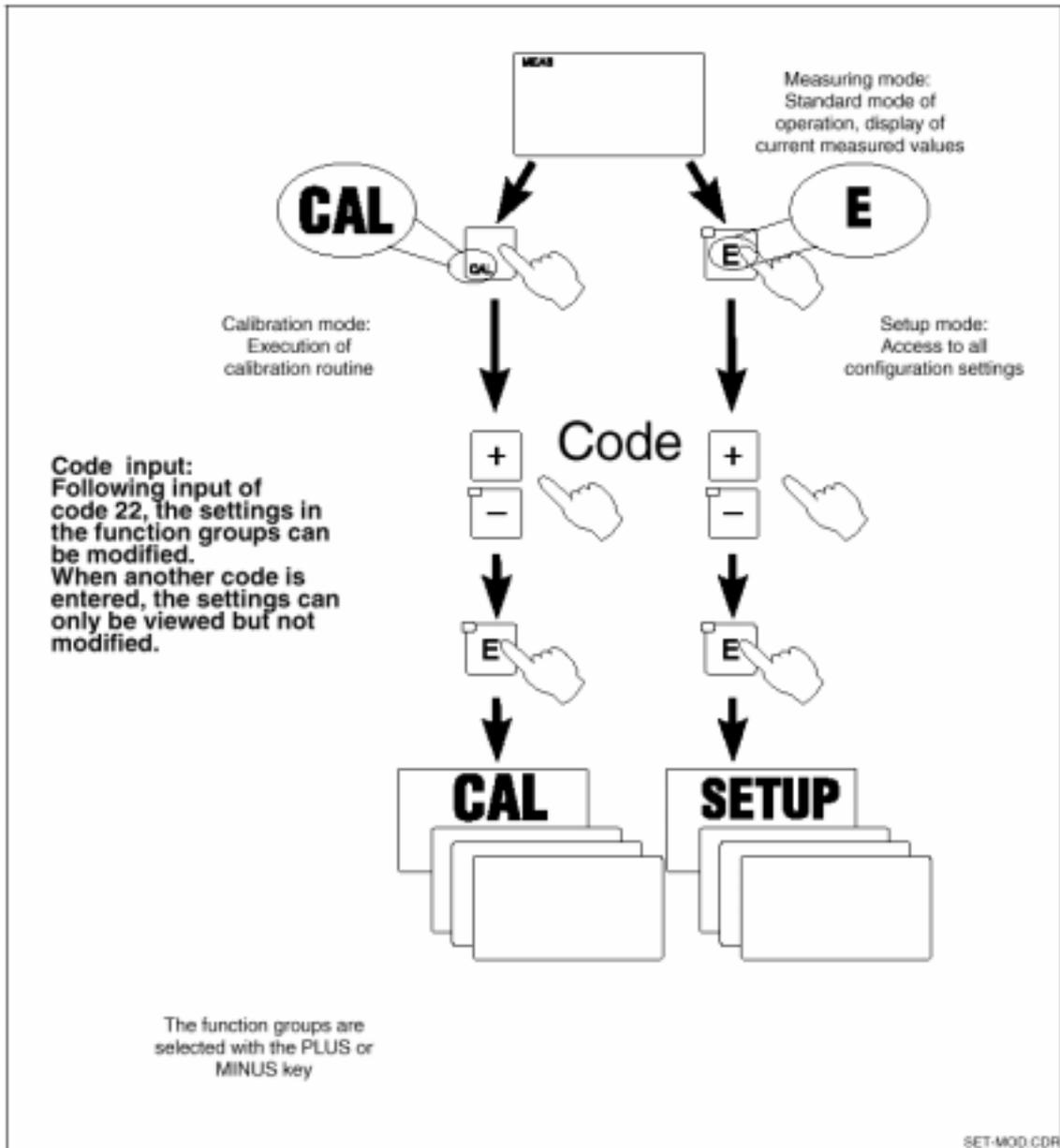
가

AUTO

:

- “22”
- 가
- 
- 
- 가
- E102

3.5



PLUS MINUS

. ENTER

. PLUS MINUS

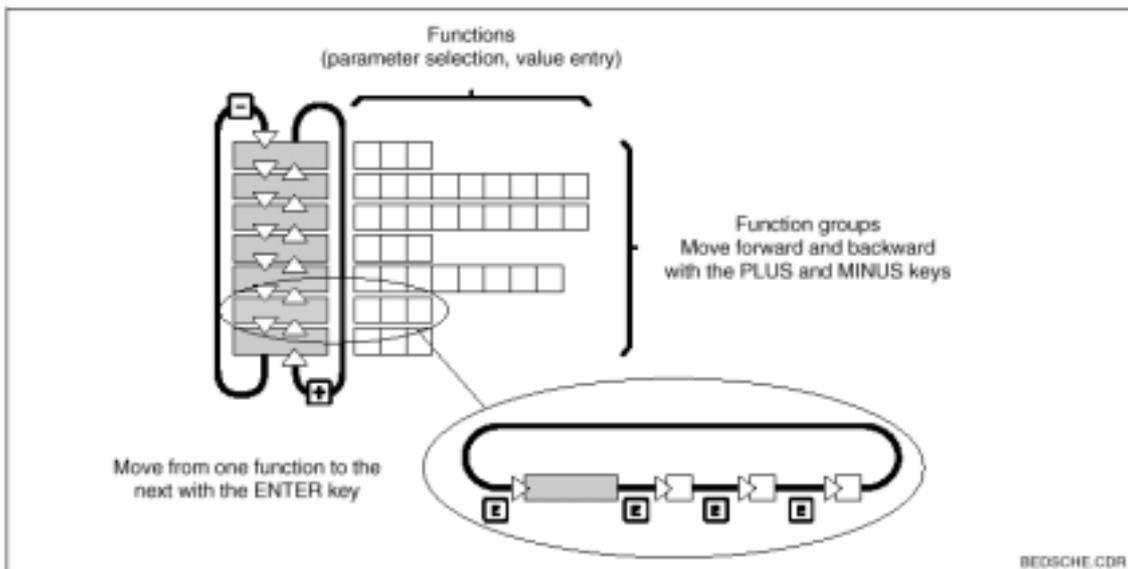
ENTER

PLUS MINUS

:

•

ENTER



: "freeze"

"frozen"

"HOLD"

- 
- 
- 

'0'

### 3.6

- : .
- 22:

### 3.7

가 .

PLUS :

- PLUS
- PLUS
- PLUS
- PLUS

Na

MINUS :

- MINUS
- MINUS

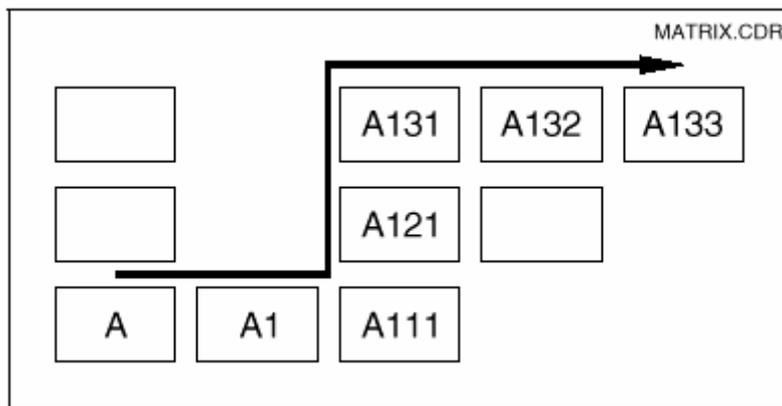
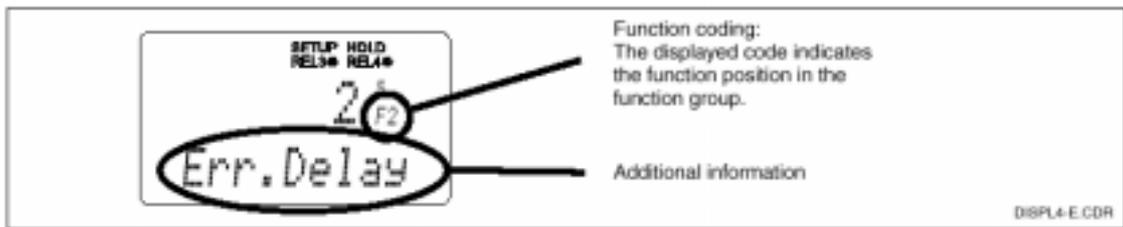
.(10 ) 가

: F( ) .

4

가-

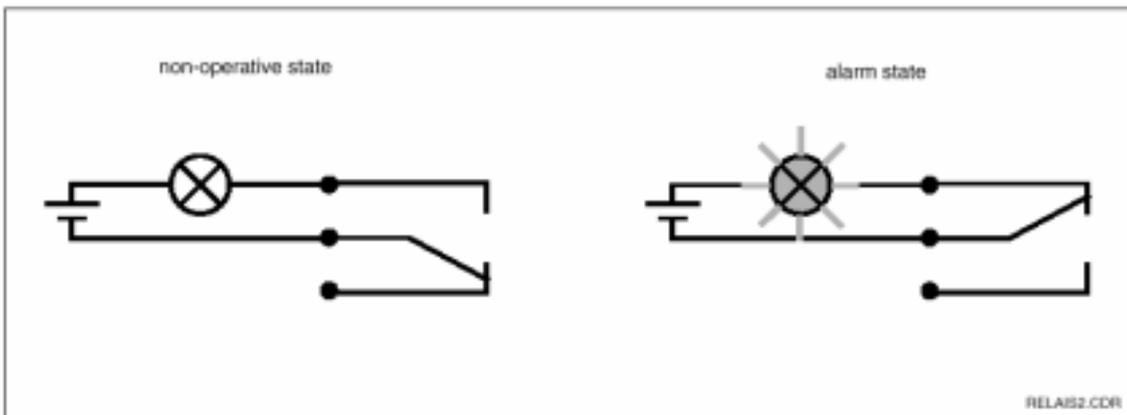
가



	PH, redox, redox, ( )
	( )
	25.0
	(ATC on)
1 Limit 1	PH 16(redox: -1500mV or 0%)
2 Limit 1	PH 16(redox: +1500mV or 100%)
<b>Hold</b>	
1 / 3	PH ,
2 / 4	PH ,
1 2	4 ... 20 mA
1: 4mA	PH 2

<b>1: 20mA</b>	PH 12
<b>2: 4mA</b>	0.0
<b>2: 20mA</b>	100.0

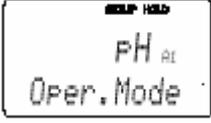
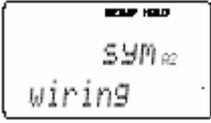
, , , .  
 , 가 , 가 .



4.1

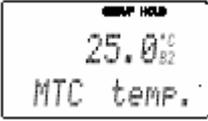
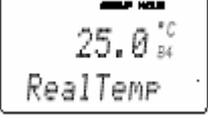
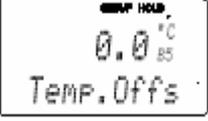
4.2

4.2.1 1

A		SETUP 1			SETUP 1
A1			PH ORP(mV) ORP(%)		
A2			Sym = Asym =		
A3			1 1 ... 60		가 1
A4			Glas = glass Antim = antimony		pH 7

4.2.2 2

B		SETUP 2			SETUP 2
B1	( )		PH: 1ATC MTC ORP: Off On		B1 = ATC , B3 B1 = MTC , B2

	B2		25.0 -20.0 ... 150.0		A1=PH and B1=MTC 가 . 가 .
	B3	( )	ATC MTC		B3 = ATC , B5 B3 = MTC , B4 .
	B4		25.0 -20.0 ... 150.0		: pH 7 .
	B5		0.0 -5.0 ... 5.0		B1 = ATC.

4.2

. 가 가 가 :

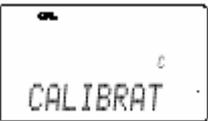
- PH
- mV % redox

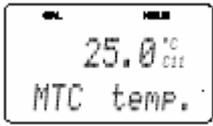
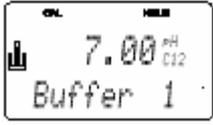
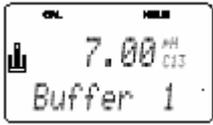
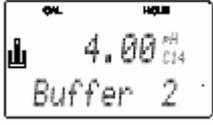
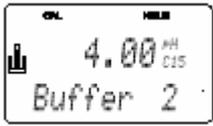
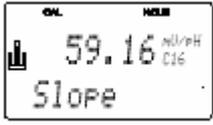
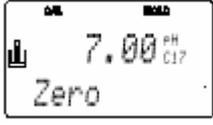
:

65.00 mV/pH > slope > 38.00 mV/pH  
pH 9.00 > zero > pH 5.00

Antimony :

65.00 mV/pH > slope > 25.00 mV/pH  
pH 3.00 > zero > pH -1.00

C(1)	:	PH		A1 = Ph	

	C11		25.0 -20.0 ... 150.0		B1 = MTC
	C12	PH	PH 0.00...14.00		가
1.		:	ATC : CAL		
2.		:	CAL		
44 가		:	0.05 10		
	C13				10 +- pH 0.05
	C14	pH	pH 0.00 ... 14.00		pH 1
2:		1			
	C15				10 +- pH 0.05
	C16				
	C17	0	: pH 7.00 pH 5.00 ... 9.00 Antimony: pH 1.00 PH -1.00 ... 3.00		

	C18		O.k. E xxx		C18 = E xxx , no or new. new, C yes/no, “ ”
	C19	?	<b>Yes</b> No new		C18 = E xxx , no or new. new, C yes/no, “ ”

5 /

5.1

.

/

-  
-  
-

가

5.2

:

.

:

5.3

	가		,
가 가	- - - - - Lyquisys (PA/PM)	7	PH/mV HCl 3%, pH HCl 3%, ;
가	- - - -	KCl	KCl(CPY 4-x)
가 가 /	- - - - -		COS4 : = COS4

가 /	- - - - - - "S"	가 .	60 ; : = COS4 "S" "S"
,	- ( )	.	EMC : 가 ,
	- - -	( )	:
	- - - / /	,	,
	- 가	LSR1-2 LSR1-4	
/	- - "Manual/Off" - - "Hold"	"Auto" "Manual/On"  "Autom. Hold" "Hold"  "hold"	, REL R2xx S2 S4
/	- - "Manual/On" - - "Hold"	"Auto" "Manual/Off"  ,  ,	, REL and AUTO R2xx
	- -		mA 0-20 mA DC
	-		O2

			EMC :
	- - ( >500 )	0-20mA 4-20mA?	O211 0-20mA DC mA
	- 가 - 가 - Profibus PA	가 : LSCH-x1 . PA 가	LSCH-x2
	- (LSR1-x) LSR1-2	LSR1-4 E+H 가	LSR1-4
S	- S 가 (가 E+H S )	- S : E+H . - LSCH/LSCP :	
HART 가	- HART 가 - DD - HART - HART 가 - < 230 - HART (e.g. FXA 191)가 - - -	: HART=-xxx5xx and - xxx6xx	LSCH-H1/-H2
Profibus PA 가	- PA 가 - SW - Commuwin2: - DD/DLL - DPV-1 -	: PA=-xxx3xx PA 9V 가 .	LSCP

	( )		
	- )		
	- Bus		
	- )		
	- Bus		

5.4

			Fact	User	Fact	User	Fact	User
E001	EEPROM		Yes		No		—	—
E002	, (EEPROM ) 가		Yes		No		—	—
E007	가		Yes		No		—	—
E032			Yes		No		—	—
E044	( )		Yes		No		no	
E057			Yes		no		no	
E059			Yes		No		no	
E061			Yes		No		no	
E063	1		Yes		No		no	
E064	1		Yes		No		no	
E065	2		Yes		No		no	
E066	2		Yes		no		no	
E067	1 ,		Yes		No		no	
E068	2 ,		Yes		No		no	
E069	3 ,	( )	Yes		no		no	
E070	4 ,		Yes		No		no	
E080	1 0/4mA and 20mA	1	no		No		—	—
E081	2 0/4mA and 20mA	2	no		No		—	—

<b>E082</b>		가	Yes		No		no	
<b>E083</b>			Yes		no		no	
<b>E100</b>			No		No		—	—
<b>E101</b>		가	No		No		—	—
<b>E102</b>			No		No			
<b>E106</b>			No		no		—	—
<b>E116</b>			No		no		—	—
<b>E152</b>		,	Yes		No		No	
<b>E154</b>		,	Yes		No		No	
<b>E155</b>			Yes		No		No	
<b>E156</b>			yes		No		No	
<b>E157</b>			yes		no		No	

## 6

- VBM

:

: IP 65

: 50003987

- CMK

-

: 50005374

- COS4

- : 51500385

- : 51500963

- 4-

: 51500321

## 7

	Endress+Hauser
	Liquisys S COM252

	,
--	---

	0 ... 20 mg/l      0 ... 200 % SAT
	0 ... 50
( )	0 ... 1200 hPa
	0 ... 4000 m
	0 ... 4.0%

	0 ... 3000 nA
	75 ... 140%
( 20 , 1013mbar)	290nA
	50m

	NTC, 30k at 25
	-10 ... +60

1 2

	10 ... 50 V
	. 10mA

	0/4 ... 20mA, ; 2.4/22mA
	Max. 500
	700 digits/mA
	2 ... 20mg/l or 20 ... 200% SAT
	Max. 350 Vrms/500 V DC
( )	acc. To EN 61000-4-5:1995

( )

	0/4 ... 20mA,
	Max. 500
	700 digits/mA
	2 ... 20mg/l or 20 ... 200% SAT
	Max. 350 Vrms/500 V DC
( )	acc. To EN 61000-4-5:1995

	15 V ±0.6 V
--	-------------

	Max. 10mA
( - )	
(cos =1)	Max. 2A
(cos =0.4)	Max. 2A
	. 250 V AC, 30V DC
(cos =1)	Max. 1250 VA AC, 150 W DC
(cos =0.4)	Max. 500 VA AC, 90 W DE

	0 ... 20 mg/l or 0 ... 200 % sat
/	0 ... 7200 s

( 가 )	/
	PID
Kp	0.01 ... 20.00
Tn	0.0 ... 999.9 min
Tv	0.0 ... 999.9 min
	0.5 ... 999.9 s
	60 ... 180 min <sup>-1</sup>

( 가 )	/
	0 ... 20.00 mg/l or 0 ... 200.0 % SAT
	2 ... 2000 s
	0 ... 2000 min
	0 ... 2000 min

COS4

	0.01 mg/l or 0.1 SAT
	Max. 0.5%
	Max. 0.2%
,	Max. 0.75%

	0.1
	. 1.0%
,	. 1.25%

( )	-10 ... +55
( )	-20 ... +60
	-25 ... +65
( )	10 ... 95%, -
-	IP 54(front), IP30(hausing)
	IP 65
	acc. To EN 61326:1998

	. 165mm
(H × W × D)	204 × 155 × 215 mm
	, 2.3kg
	LC , 2 , 5 9 digits, with status indicators

-	
	, UV-
	ABS PC Fr

	100 / 115 / 230 V AC +10 / -15%, 48...62Hz 24V AC/DC +20 / -15%
	Max. 7.5 VA
	Fine-wire fuse, medium time-lag, 250 V / 3.15 A