

Portable Waterproof PH/ORP Meter

CP-401



SECHANG INSTRUMENTS

I. Introduction

1.

2.

CP-401

;
 / ;
 1 ~ 5 pH ;
 pH ;
 가 ;
 pH ;
 3 ;
 & , 200 ;
 가 ;
 RS-232C ;
 가 ;
 ;
 OFF () ;

3.

CP-401 (pH) , (Oxidation Reduction Potential (mV)) , BNC-50 connector 가 pH Chinch connector 가 . Pt-1000 200 RS-232 PC , ,

Caution:

EI-401

4.

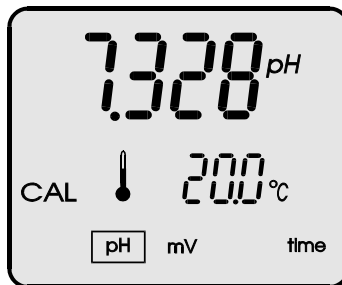
LCD (1) :

- pH
- mV
-



:: pH, mV or time.

()



1.



CAL 가





(. 2)가

ON/OFF,



ON/OFF.



, MODE/P.CAL



(CAL



가




가 .

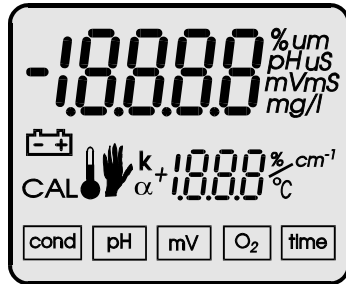
- F - BNC-50 : pH , Redox ,
- T - Chinch :
- RS - RS-232 : PC .
- P - (9V)



. 2.

5.

 _____, ON 가 ON
 , 가



. 3

가 , 가
 HELP 가 ,
 가 ON 1.5
 ,

 (Standard Characteristics):


Shift = 0 pH,

Characteristic slope = 100% for pH electrode;

, 가 . pH
 .

 OFF 가 OFF 가 OFF


6.




- P ;
- pH , ORP , BNC-50 F ;
- Chinch t
- PC EI-401
- CP-4XX-PC RS
-  ON

6.1

가 , 가


가

 →



 → ,   가

6.2

(Resolution)

(resolution) 가  . rE5

(.4)

 or  :


Lo - (low) ;

Hi - (high) .

*pH :

Lo - 0.01 pH;

Hi - 0.001 pH.

→ 가  .

rE5

Lo

pH
mV
time

II. pH

1.

.
 .
 , KCl 5 가
 .
 .
 , Holder
 .
 .
 , 2 가
 .

CAUTION:

, 가 ,

2.

, , ,
 .
 . 2
 .
 .
 , 가 pH
 (6.88 or 7.01)
 pH
 1 5 가
 .
 pH 7.00 pH4.01 2

CP-401 EL1, EL2, EL3 가

NIST

2.2

Table 1.

Point of Calibration	Resolution 0,001	Resolution 0,01
1	1,675	1,68
2	4,002	4,00
3	6,881	6,88
4	9,225	9,22
5	12,627	12,63

가

Table 2.

Calibration point	Range
1	0,800 ~ 2,100
2	3,900 ~ 4,100
3	6,800 ~ 7,100
4	8,900 ~ 9,400
5	11,500 ~ 14,000

2.3

Table3

Temp. °C	Kind of buffer solution				
	1 oxalate	2 phthalate	3 phosphate	4 di-sodium tetraborate	5 calcium hydroxide
0	1.666	4.003	6.984	9.464	13.423
5	1.668	3.999	6.951	9.395	13.207
10	1.670	3.998	6.923	9.332	13.003
15	1.672	3.999	6.900	9.276	12.810
20	1.675	4.002	6.881	9.225	12.627
25	1.679	4.008	6.865	9.180	12.454
30	1.683	4.015	6.853	9.139	12.289
35	1.688	4.024	6.844	9.102	12.133
40	1.694	4.030	6.838	9.063	11.984
45	1.700	4.047	6.834	9.038	11.841
50	1.707	4.060	6.833	9.011	11.705
55	1.715	4.075	6.834	8.985	11.574
60	1.723	4.091	6.836	8.962	11.449

2.4

:

가



pH
0.01 (Resolution)가

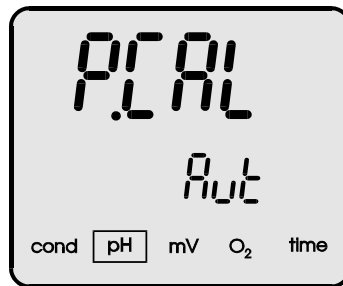




Lo - (low) 0.01 pH;
 Hi - (high) 0.001 pH.

가
 (MODE) (EL1, EL2, EL3)
 (Left arrow or Right arrow) 가
 CLR -
 SET -
 bAd -

(MODE) , PCAL (points of calibration)가
 Mode (Left arrow or Right arrow)
 :
 Aut - pH .()
 USE -



. 5

Aut , (FUNCTION)

USE , “ ”

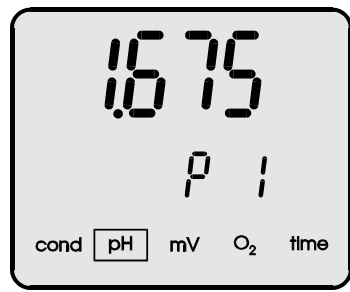
USL () , , CAL

pH

PI (1) (.6) 가

가

Table 2



. 6.

가 CAL

PI가 2

pH (RUL / USL) 가 , MODE FUNCTION pH

가

(EL 1, EL 2, EL 3).

(F & t)(. 2).

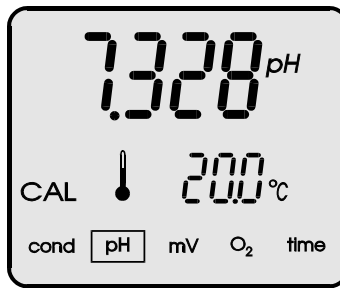
pH 가

FUNCTION

3

2.5

pH :
 CAL 가 CAL(.7) 가
 가
 pH

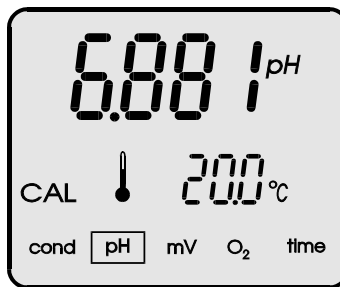


. 7.



Err 가

. (8).



. 8.



b.

2.6

()가 .  
pH . 8.4

Caution:   20 °C

3.

가 . (EL 1,
EL2, EL3)

3.1

가 pH
bAd  가

4.

가

4.1



pH

ON
(pH, mV, etc)




ON

NOTICE:

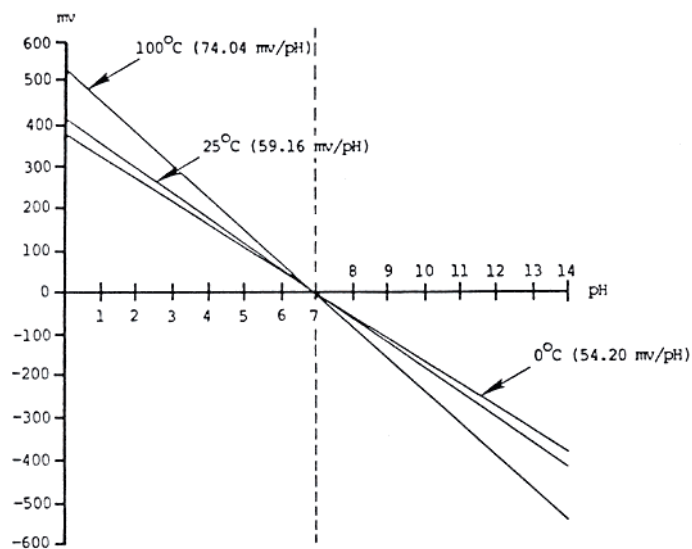
4.2



Caution: 

20

5.



CP-401 K

$k=0.198422 T$

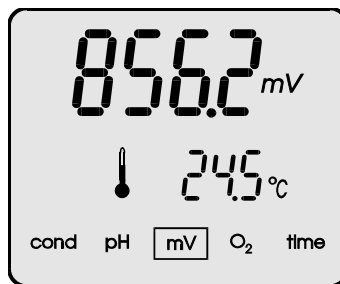
KCl

III. ORP

1.

CP-401
ORP

ORP Meter (Oxidation Reduction Potential)
FUNCTION mV



. 9.

2.

-

- FUNCTION ON

-



-

PT-1000



IV.

1. , ,

 (Time) , OFF ,
.






1.1

/ . , 가
.

1.2

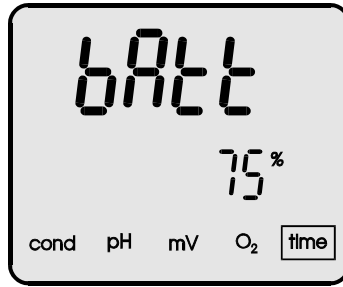
月 日, 年 (Month - Day - Year).
.

1.3

OFF   OFF (Auto-OFF)
Minute
OFF  "1"
OFF " " "1"
가 

1.4

가 , Function
가 . MODE bAtt



. 10.

, SUPP % 100% . bAtt

가 FUNCTION

1.5

, CAL
CAL
가 ← → CAL

2.

2.1

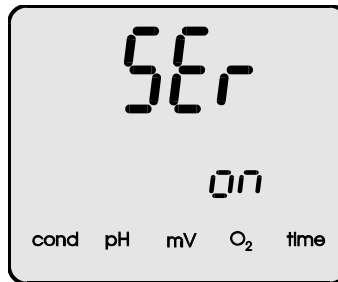
200 (Readout),
EEPROM
EI-401 가

2.2

(Readout mode)

가
 --“
 “n00X”
 가
 “--”

A SEr - (Series) Single results



.11.
 on or off
 on (Series)
 off (Single results)

B Int - (.31).



.12.
 SEr OFF
 1 60 가

C Prt - - yes or no.



on

off

D ALL -



on -

off -

가



2.3

single results

29.6

가

, End가

가

2.4

200

-

-

-

-

-


-



가


가







 가 (series)
 : Part - - no) . (
 가

200

2.5

, 가 가 가
 , 가 가
 ALL ,
 , 가


2.6

:
 - 
 -  
 -  가
 - "----" 가
 가
 가 

3.

가 RS-232 가 Centronics
EI - RS232 .


3.1


ON

(Prt) on



, single or serial

ON

- Single (Ser - off) , 

- Series (Ser - on) , 




, ALL on

Series ,  or 

3.2

ON

, single or serial

가  ,  , 

SEr on ,

SEr off ,

ALL on , , 가

4.

9V , P (.2)
가

5.

pH measurement:

Range	Resolution	Accuracy (± 1 digit)
-2.000 ~ 16.000 pH	0.001 / 0.01 pH	± 0.002 pH

INPUT IMPEDANCE: $10^{12} \Omega$
 TEMPERATURE COMPENSATION: manual/automatic
 RANGE OF COMPENSATION: -5.0 ~ 110.0
 pH ELECTRODE CALIBRATION: automatic, in 1 ~ 5 points

Temperature measurement:

IN RANGE 0 ~ 60
 THERMAL STABILITY OF ZERO: 0.001 pH/

RANGE OF RECOGNITION AND ENTERING OF THE pH BUFFER SOLUTIONS

Calibration point	Range
1	0,800 ~ 2,100
2	3,900 ~ 4,100
3	6,800 ~ 7,100
4	8,900 ~ 9,400
5	11,500 ~ 14,000

AUTOMATIC CHANGE OF THE pH BUFFER VALUE TOGETHER WITH THE TEMPERATURE CHANGE, FOR SAMPLES CONSISTENT WITH NIST

mV measurement:

ranges	resolution	Accuracy (± 1 digit)
-1000 ~ 1000 mV	0.1 mV	± 0.1 mV

INPUT IMPEDANCE: $10^{12} \Omega$

6.

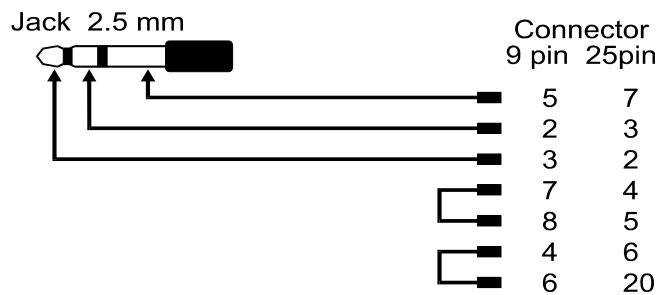
6.1

- Combined pH electrode (glass membrane)
- Temperature probe Pt-1000B
- Plastic container for the meter electrode and temperature probe
- Users manual(,)

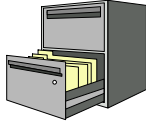
6.2 가

- ORP measuring electrodes (EMC-133)
- Power adapter 9V
- Adapter EI-401 for connecting the printer with Centronics connector
- 4XX-PC cable
- Software for collecting large number of data on the PC
- Temperature probe Pt-1000 1/3B with higher accuracy

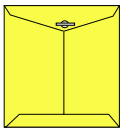
6.2 RS-232C Cable .



Portable Waterproof pH/ORP Meter
CP- 401
PH/ORP



1 : 2004 8 12
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