



ARANKA

USER MANUAL

APO 96

pH CONTROLLER

Ver. 1.0



TERMINAL CONNECTION

1	L	POWER 230 LINE
2	N	POWER 230 NEUTRAL
3	E	EARTH
4	-NA-	
5	-NA-	
6	-NA-	
7	NO R2	NORMAL OPEN FOR RELAY 2
8	C R2	COMMON FOR RELAY 2
9	NO R1	NORMAL OPEN FOR RELAY 1
10	C R1	COMMON FOR RELAY 1
11	- 4-20mA CH1	CHANNEL 1 4~20mA OUTPUT POSITIVE
12	+ 4-20mA CH1	CHANNEL 1 4~20mA OUTPUT NEGATIVE
13	RTD[PT-100]	RTD INPUT [W] COMMON
14	RTD[PT-100]	RTD INPUT [W] COMMON
		[SHORT BOTH TERMINAL 13 & 14]
15	RTD[PT-100]	RTD INPUT [R]
16	-NA -	
17	-NA -	
18	-NA -	
19	+ pH	pH SENSOR INPUT POSITIVE [HI]
20	- pH	pH SENSOR INPUT NEGATIVE [LO]
21	-NA -	
22	-NA -	
23	-NA -	
24	-NA -	
25	-NA -	
26	-NA -	
27	-NA -	
28	-NA -	
29	+ RS 485	RS 485 MODBUS RTU +
30	- RS 485	RS 485 MODBUS RTU -



MODBUS RTU ADDRESS

1	40001	PH PRESENT VALUE
2	40002	TEMPERATURE PRESENT VALUE
3	40003	PH SET POINT 1 VALUE
4	40004	PH SET POINT 2 VALUE

DECODING MANNER OF MODBUS RTU

IF YOU GENERATE COMMAND FOR ONLY 40001 THE ANSWER WILL COME WITH ALL 4 NOS VALUE.IT WILL OCCUPY 4 NOS HOLDING RESISTERS COMPULSORY.

Example :

you need To Read only pH The Command is 40001 but for Rest of 40002,40003 40004 you can not use for other readings. for that you have to change id.

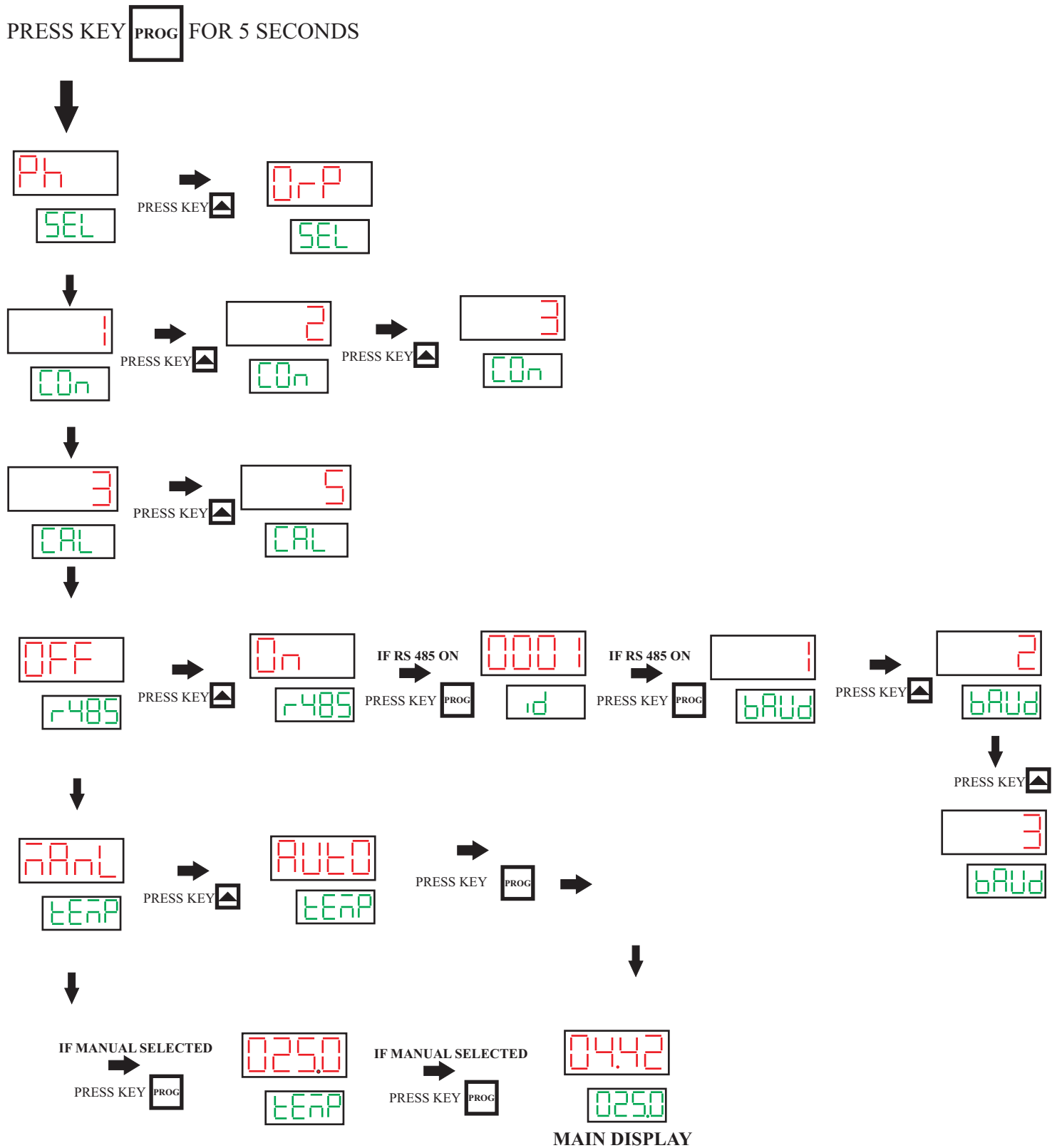
SPECIFICATIONS

POWER	: 90~260VAC , 50HZ
RANGE	: 0~14pH
RESOLUTION	: 0~0.01pH
ACCURACY	: $\pm$ 0.2 pH
DIGITAL OUTPUT	: 5A, 1CO, RELAY
DISPLAY	: SEGMENT LED
BODY	: ABS
OUTER DIMENSIONS	: 96x96x85mm
CUTOUT DIMENSIONS	: 92x92mm

KEY FUNCTION

	TO SET pH CONTROLLING VALUE
	TO ENTER MENU
	TO INCREASE VALUE & IT WILL SCROLL 0 TO 9
	TO SHIFT DIGIT
	FOR START CALIBRATION
	TO SAVE DATA IN CALIBRATION MENU& SET POINT

pH MENU FUNCTIONS FLOW CHART



pH MENU FUNCTIONS DISCTRIPTION

Ph

TO SET AS PH CONTROLLER

SEL

OrP

TO SET AS ORP CONTROLLER

SEL

1

Con 1 : THE pH CONTROLLER WILL WORK AS INDICATOR OR SINGLE RELAY OUTPUT CONTROLLING FUNCTION

Con

NOTE : THIS CONDITION DEPEND ON MODEL SELECTED

2

Con 2 : THE pH CONTROLLER WILL WORK AS DUAL RELAY OUTPUT CONTROLLING FUNCTION

Con

3

Con 3 : THE pH CONTROLLER WILL WORK AS DUAL RELAY OUTPUT WITH WATCH DOG CONTROLLING FUNCTION FOR DOSING APPLICATION.

Con

3

FOR 3 STAGE CALIBRATION 7.00, 4.00 OR 9.20 pH.

CAL

5

FOR 5 STAGE CALIBRATION 7.00, 4.00 OR 9.20, 1.09 OR 12.00 pH.

CAL

OFF

TO DISABLE RS 485 COMMUNICATION

r485

NOTE : IS RS 485 MODEL HAS SELECTED

On

TO ENABLE RS 485 COMMUNICATION

r485

NOTE : IS RS 485 MODEL HAS SELECTED

0001

INSTRUMENT ID FOR RS 485

id

NOTE : IS RS 485 MODEL HAS SELECTED

pH MENU FUNCTIONS DISCTRIPTION



INSTRUMENT BAUD RATE 9600 FOR RS 485



NOTE : IS RS 485 MODEL HAS SELECTED



INSTRUMENT BAUD RATE 14400 FOR RS 485



NOTE : IS RS 485 MODEL HAS SELECTED



INSTRUMENT BAUD RATE 19200 FOR RS 485



NOTE : IS RS 485 MODEL HAS SELECTED



TO SELECT MANUAL TEMPERATURE COMPENSATION



TO FEED MANUAL TEMPERATURE COMPENSATION VALUE
IF MANUAL TEMPERATURE COMPENSATION SELECTED



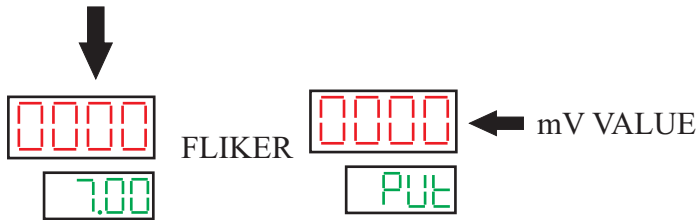
TO SELECT AUTO [FROM SENSOR] TEMPERATURE COMPENSATION





pH 3 STAGE CALIBRATION FUNCTION

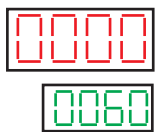
PRESS KEY



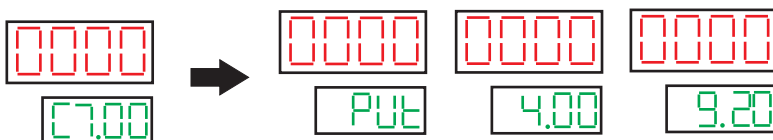
PUT pH SENSOR IN 7.00pH
STANDARD BUFFER SOLUTION

PRESS KEY

60 SECOND COUNT DOWN TIMER START



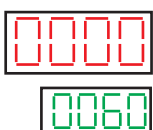
AFTER COMPLETION OF COUNT DOWN TIMER



C7.00 MEANS CALIBRATION FOR
7.00 pH IS OK AND DONE NOW PUT
4.00 OR 9.20 pH STANDARD BUFFER
SOLUTION

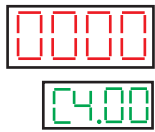
PRESS KEY

60 SECOND COUNT DOWN TIMER START



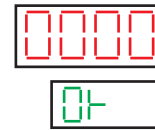


pH 3 STAGE CALIBRATION FUNCTION



C4.00 / C9.20 MEANS CALIBRATION FOR
4.00 / 9.20 pH IS OK

NOTE : 4.00 OR 9.20 pH WILL BE SELECTED
AUTOMATICALLY BY CONTROLLER AS PER
pH SENSOR KEEP IN STANDARD SOLUTION
NO NEED TO SELECT MANUAL.



PRESS KEY



MAIN DISPLAY

3 STAGE CALIBRATION ERROR FUNCTION



ERROR1 FOR CALIBRATION ERROR IN 7.00 pH



ERROR2 FOR CALIBRATION ERROR IN 4.00 pH



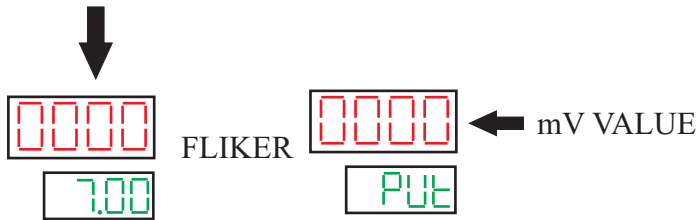
ERROR3 FOR CALIBRATION ERROR IN 9.20 pH

**NOTE: IF ERROR OCCURS PRESS  KEY TO COME IN MAIN
DISPLAY AND CHECK SENSOR OR STANDARD SOLUTION.
START RE CALIBRATE**



pH 5 STAGE CALIBRATION FUNCTION

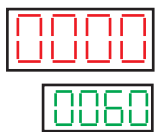
PRESS KEY



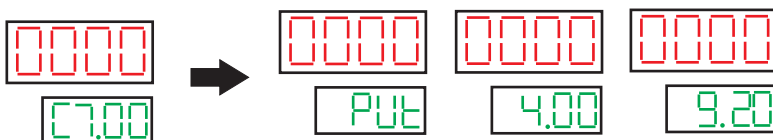
PUT pH SENSOR IN 7.00pH
STANDARD BUFFER SOLUTION

PRESS KEY

60 SECOND COUNT DOWN TIMER START



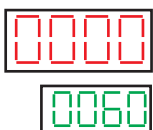
AFTER COMPLETION OF COUNT DOWN TIMER



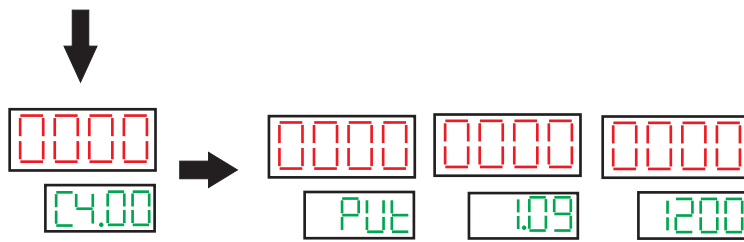
C7.00 MEANS CALIBRATION FOR
7.00 pH IS OK AND DONE NOW PUT
4.00 OR 9.20 pH STANDARD BUFFER
SOLUTION

PRESS KEY

60 SECOND COUNT DOWN TIMER START

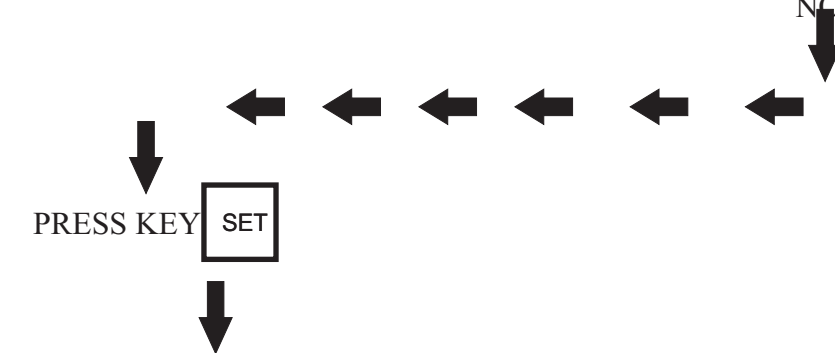


pH 5 STAGE CALIBRATION FUNCTION

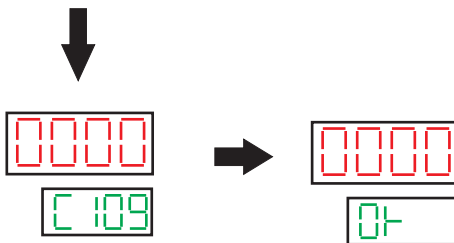
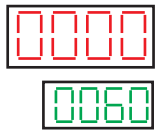


C4.00 / C9.20 MEANS CALIBRATION FOR
4.00 /9,20 pH IS OK NOW PUT 1.09 OR 12.00
pH STANDARD BUFFER SOLUTION

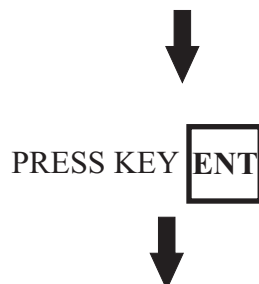
NOTE : 1.09 OR 12.00 pH WILL BE SELECTED
AUTOMATICALLY BY CONTROLLER AS PER
pH SENSOR KEEP IN STANDARD SOLUTION
NO NEED TO SELECT MANUAL.



60 SECOND COUNT DOWN TIMER START



C1.09 / C12.00 MEANS CALIBRATION FOR
1.09 / 12.00 pH IS OK



MAIN DISPLAY



pH 5 STAGE CALIBRATION ERROR FUNCTION

ERROR1 FOR CALIBRATION ERROR IN 7.00 pH

ERROR2 FOR CALIBRATION ERROR IN 4.00 pH

ERROR3 FOR CALIBRATION ERROR IN 9.20 pH

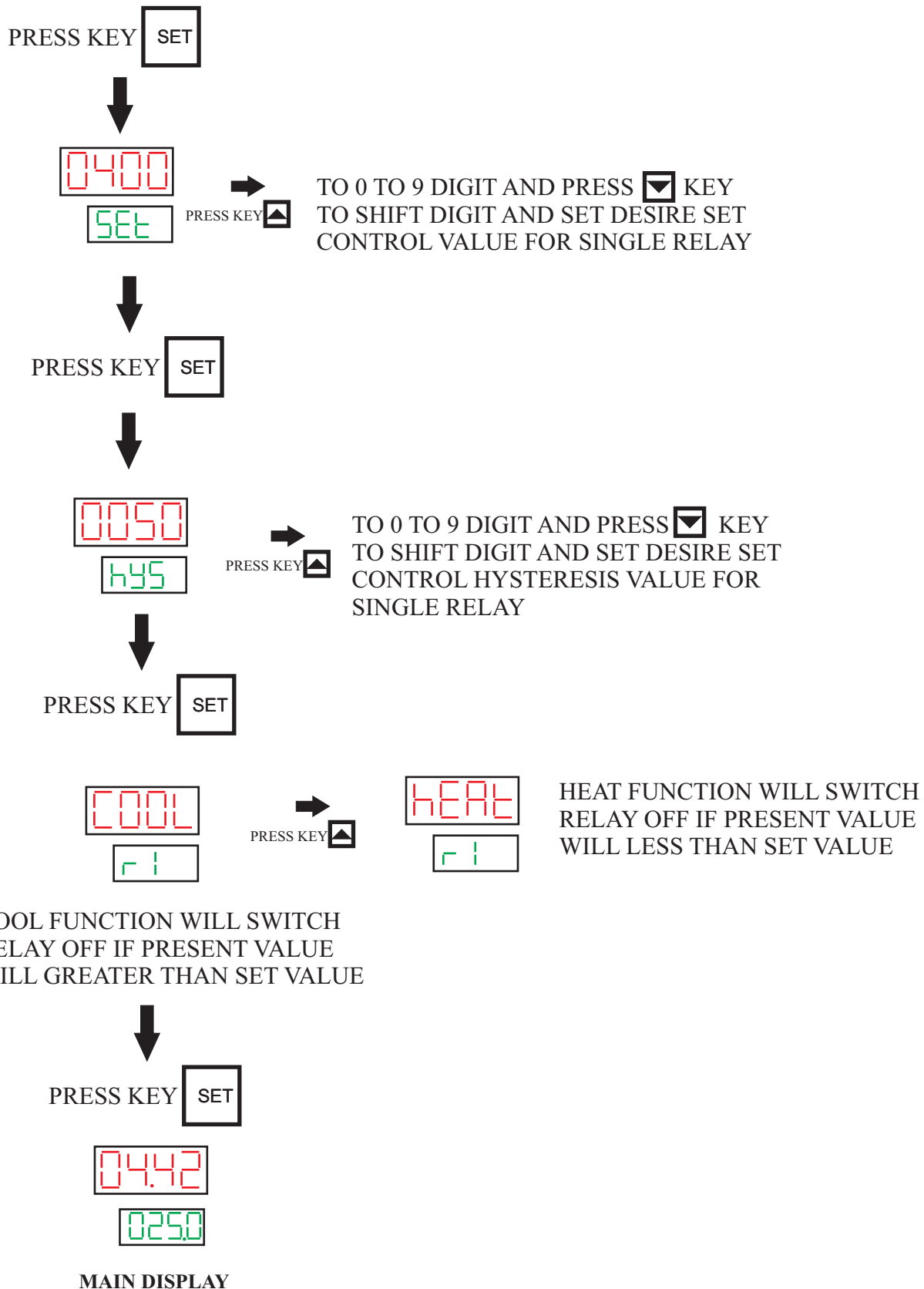
ERROR4 FOR CALIBRATION ERROR IN 1.09 pH

ERROR5 FOR CALIBRATION ERROR IN 12.00 pH

NOTE: IF ERROR OCCURS PRESS  KEY TO COME IN MAIN DISPLAY AND CHECK SENSOR OR STANDARD SOLUTION. START RE CALIBRATE

SET POINT FUNCTION

pH SET POINT FUNCTION FOR CON 1





pH SET POINT FUNCTION FOR CON 2

PRESS KEY

0700
SEt 1

TO 0 TO 9 DIGIT AND PRESS KEY
TO SHIFT DIGIT AND SET DESIRE SET
CONTROL VALUE FOR FIRST RELAY

PRESS KEY

0000
hYSt

TO 0 TO 9 DIGIT AND PRESS KEY
TO SHIFT DIGIT AND SET DESIRE SET
CONTROL HYSTERESIS VALUE FOR
FIRST RELAY

PRESS KEY

COOL
r 1

PRESS KEY

HEAT
r 1

HEAT FUNCTION WILL SWITCH
FIRST RELAY OFF IF PRESENT VALUE
WILL LESS THAN SET VALUE

COOL FUNCTION WILL SWITCH
FIRST RELAY OFF IF PRESENT VALUE
WILL GREATER THAN SET VALUE

PRESS KEY

0800
SEt 2

TO 0 TO 9 DIGIT AND PRESS KEY
TO SHIFT DIGIT AND SET DESIRE SET
CONTROL VALUE FOR SECOND RELAY



pH SET POINT FUNCTION FOR CON 2

PRESS KEY 






PRESS KEY 

TO 0 TO 9 DIGIT AND PRESS  KEY
TO SHIFT DIGIT AND SET DESIRE SET
CONTROL HYSTERESIS VALUE FOR
FIRST RELAY



PRESS KEY 




PRESS KEY 




HEAT FUNCTION WILL SWITCH
SECOND RELAY OFF IF PRESENT VALUE
WILL LESS THAN SET VALUE

COOL FUNCTION WILL SWITCH
SECOND RELAY OFF IF PRESENT VALUE
WILL GREATER THAN SET VALUE



PRESS KEY 




MAIN DISPLAY



pH SET POINT FUNCTION FOR CON 3

PRESS KEY SET

0700
Set

PRESS KEY

TO 0 TO 9 DIGIT AND PRESS KEY
TO SHIFT DIGIT AND SET DESIRE SET
CONTROL VALUE FOR FIRST RELAY

PRESS KEY SET

0000
Set

PRESS KEY

TO 0 TO 9 DIGIT AND PRESS KEY
TO SHIFT DIGIT AND SET DESIRE SET
TIME IN SECOND FOR DOSING OFF AND
MONITOR pH VALUE FOR FIRST RELAY

PRESS KEY SET

0000
Set

PRESS KEY

TO 0 TO 9 DIGIT AND PRESS KEY
TO SHIFT DIGIT AND SET DESIRE SET
TIME IN SECOND FOR DOSING ON
FOR FIRST RELAY

PRESS KEY SET

COOL
r

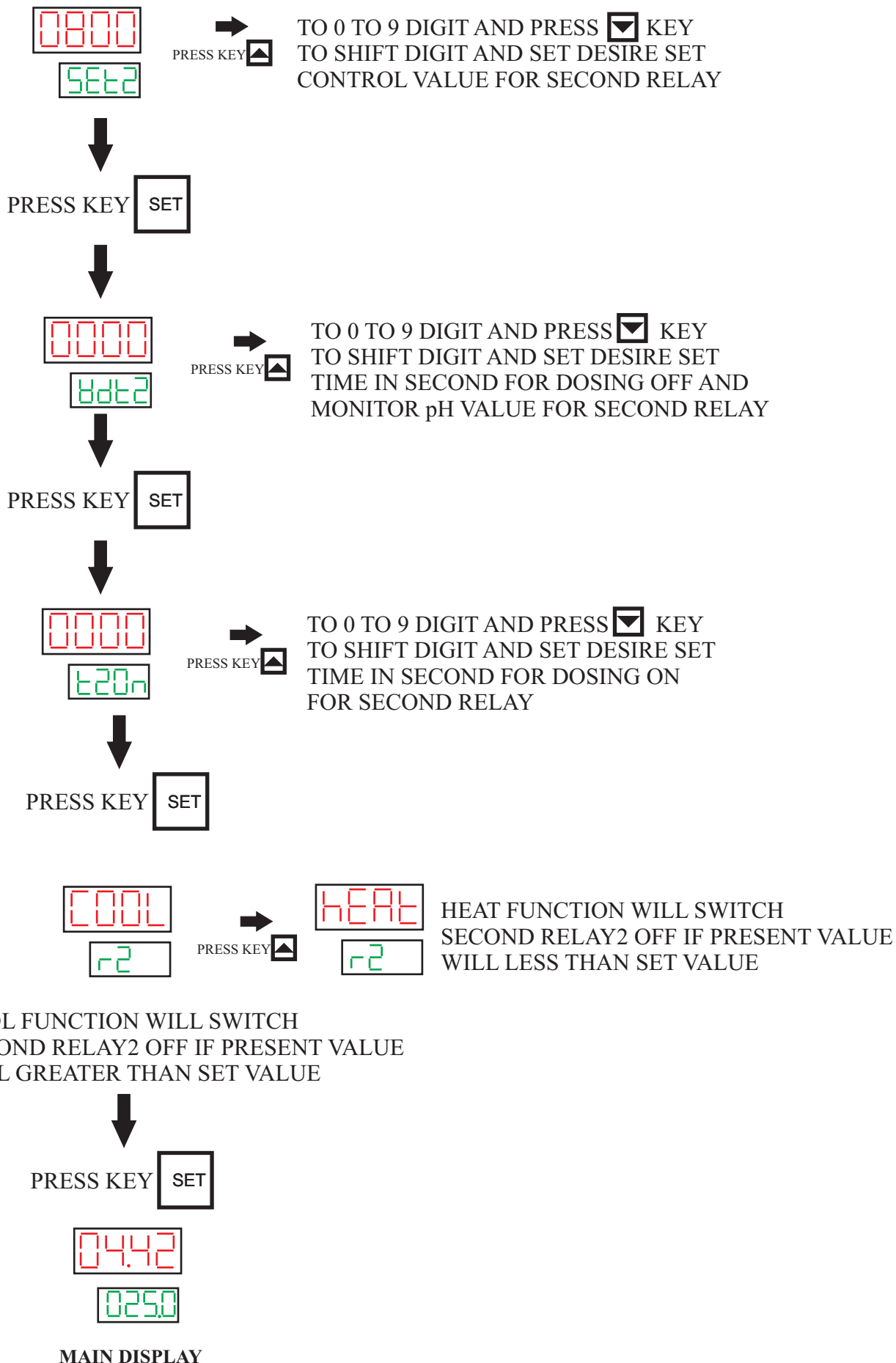
PRESS KEY

HEAT
rHEAT FUNCTION WILL SWITCH
FIRST RELAY OFF IF PRESENT VALUE
WILL LESS THAN SET VALUECOOL FUNCTION WILL SWITCH
FIRST RELAY OFF IF PRESENT VALUE
WILL GREATER THAN SET VALUE

PRESS KEY SET



pH SET POINT FUNCTION FOR CON 3



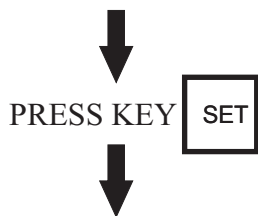


pH DISPLAY OFFSET FUNCTION

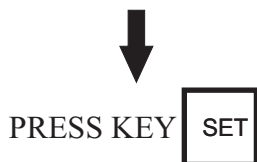
PRESS KEY  +  FOR 5 SECOND



TO 0 TO 9 DIGIT AND PRESS  KEY
TO SHIFT DIGIT OR CHANGE SIGN OF
MINUS OR PLUS AND SET DESIRE
OFFSET FOR DISPLAY VALUE FOR pH



TO 0 TO 9 DIGIT AND PRESS  KEY
TO SHIFT DIGIT OR CHANGE SIGN OF
MINUS OR PLUS AND SET DESIRE
OFFSET FOR DISPLAY VALUE FOR
TEMPERATURE



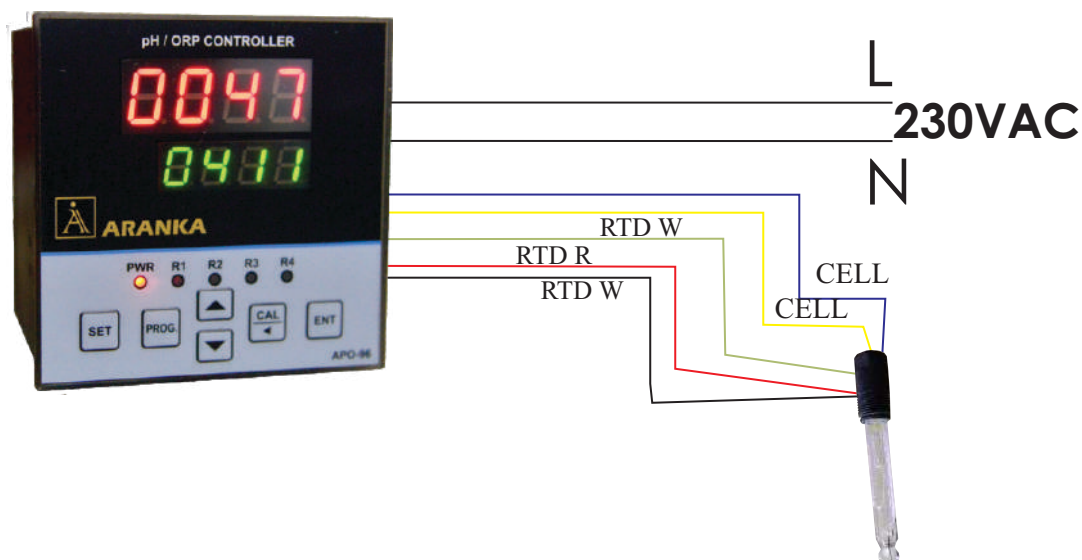
MAIN DISPLAY



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Solution
with **Perfection**

WIRING DIAGRAM



SR NO: _____



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ARANKA INSTRUMENTS LLP

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