

MODEL : PDN-10 _____

User's Manual

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1. Features

We are grateful to you for picking up our product. If you experience problems while using it, you may refer to the user manual or contact the Technical Support Department of the company.

This product is an indicator which amplifies micro voltage of various sensors and displays in digital form. It is normally used for measuring physical volume of loadcell, pressure sensor, LVDT and torque sensor that mostly use strain gauge.

It has the following features.

1-1. Sigma-Delta Conversion System

It has middle-high speed A/D conversion equipment that detects input signal from sensor 100 times per second.

1-2. Calibration System

It has calibration system by real-weight (Standard Test Weight) and Sensor output value.

1-3. Data Back-up and Watch-Dog Function

Default value such as Maximum and Minimum is memorized in Flash Memory. So it does not need to set up the input value again even though the power supply is cut. It has Watch-Dog function for the case of System Failure due to the power change and external noise.

1-4. Standard Built-in Product

1. Body
2. User's Manual
3. Sensor and Communication Connector

2. Cautions

For running this product's functions correctly and safe use, please carefully read and understand the following details before you use this product.

You must not use this product for any other purpose apart from the contents mentioned in this manual. Please do not attempt to try any altering on this product.

2-1. Set-up Caution

- Please avoid any place with water.
- Please locate this product in the place without vibration or impact and humidity with high temperature. For installation, please avoid a direct ray of light and dust. Do not let this product contact with air including ion or salt.
- Please do not use this product in the place with inflammable gas or steam or dust.
- Please use 4-wire shield cable for sensor cable. If you use cable too long, measuring error can be occurred due to the resistance of wiring.

2-2. Caution for use

Please wait until it becomes stable to input idle condition and real-weight load during calibration. If you press Enter Key before it gets stable condition, calibration error might be occurred.

Please do not press any Key during using this product. (Refer to 6. Set up mode and 7. Calibration for function and specification of each key)

3. Specifications.

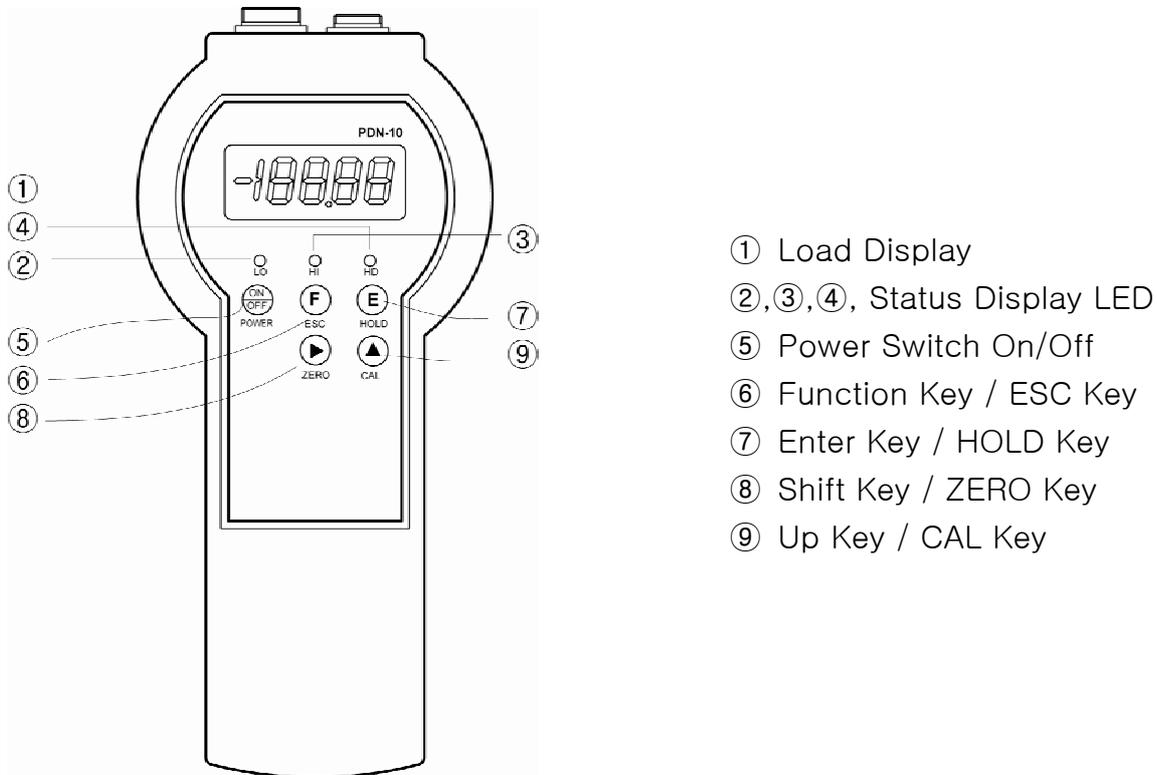
- Available sensor (DC)
 - ① Micor Voltage Output Sensor (mV)
 - ② Strain Gauge Type Sensor (Bridge 350Ω, 120Ω)

- Maximum Display
 - 19999 ~ +19999

- Display
 - Load Display : 4 1/2 Digits LCD
 - Status Display LED: Red LED (3)
 - Key Switch : 5

4. Front Panel

4-1. Display Window on Front Panel



4-2. Features of Display Window

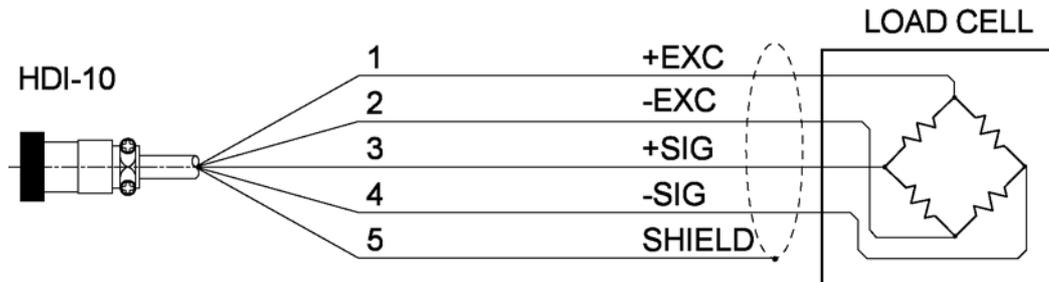
- ① Load Display LCD : Displays Load DATA or Set Point.
 - ② LO Display LED : Lighted when Load data is below Low value..
 - ③ HI Display LED : Lighted when Load date is over High value.
 - ④ HOLD Display LED : Lighted when Load data is in HOLD mode.
 - ⑤  key : Power on/off. (It stays on when power key is pressed for 3 seconds.)
 - ⑥  key : This key should be pressed for 3 seconds to enter Set-up mode. Also it can be used to be out of Set-up mode (or to return to Measuring Mode) as ESC.
 - ⑦  key : It is used to set and save each set-up value as Enter key.
 - ⑧  key : It is used to move action value of the flickered numbers when set up. (Also used for moving decimal point)
- Also, it can be used to set the display value as ZERO regardless of data value. .
 It can also be used as RESET key in HOLD MODE.
- ⑨  key : Key for increasing 1 for action value of each number

chosen.

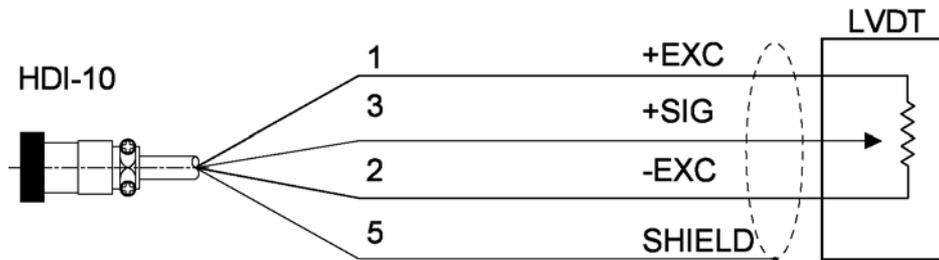
Please press this key for more than 3 seconds to enter Calibration mode.

4-3. Connector Wiring Diagram

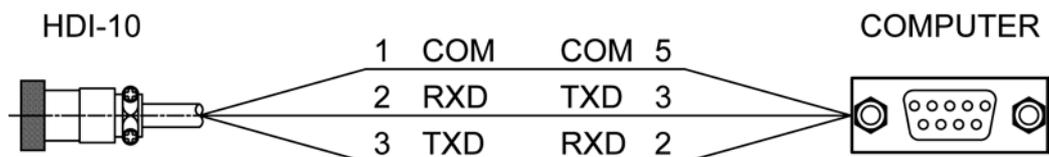
① LOAD CELL (5 pin connector 16Φ)



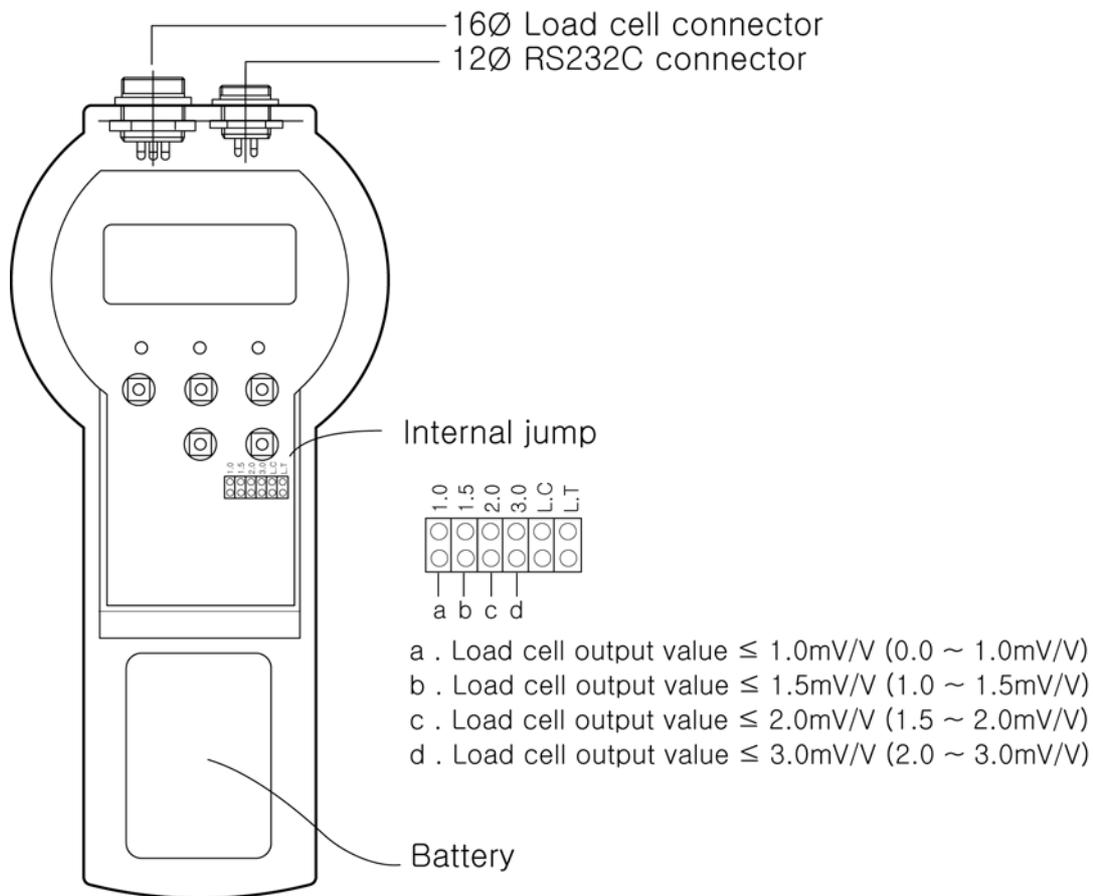
② LVDT



③ Communication (RS232C) (4 pin Connector 12Φ)



4-4. Internal Output Value Calibration

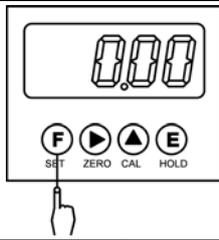


Note

2.0mV/V is set when this product is dispatched from the factory.

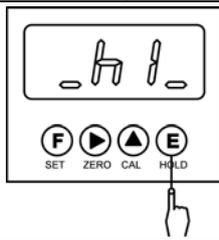
Please check the specification of the load cell and you should change when the output value is under 2.0mV/V.

5. SET UP



Please press **F** KEY for about 3 seconds.

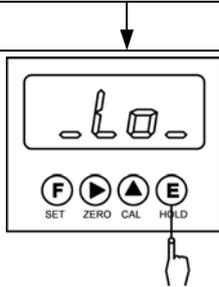
.5Et will be displayed followed by **-hI-**.



Please press **E** KEY.

Please input the maximum value by using **▶** and **▲** KEY.

Please press **E** KEY to save.

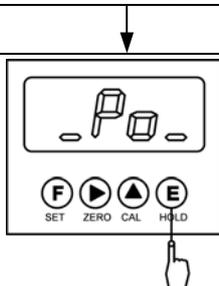


Please press **▲** KEY.

Please press **E** KEY.

Please input the minimum value by using **▶** and **▲** KEY.

Please press **E** KEY to save.

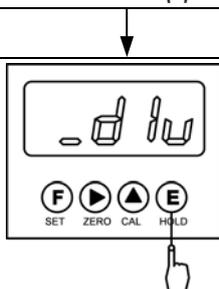


Please press **▲** KEY.

Please press **E** KEY.

Please set the location for decimal point by using **▲** KEY.

Please save **E** KEY to save.

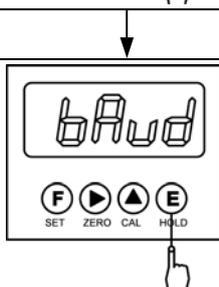


Please press **▲** KEY.

Please press **E** KEY.

Please select the minimum display unit by using **▲** KEY. (Round OFF) (1,2,5,10,20,50,100)

Please press **E** KEY to save.

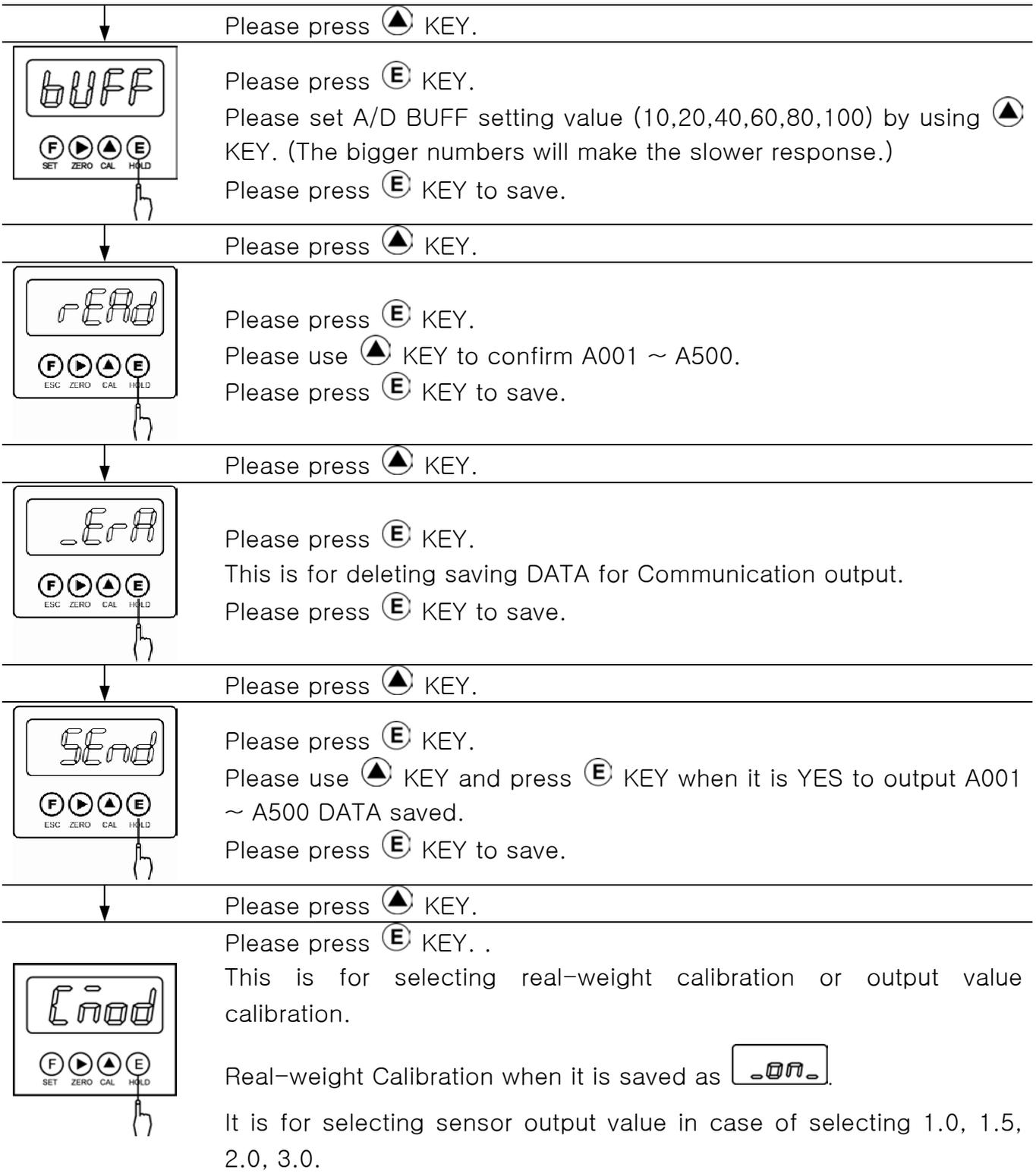


Please press **▲** KEY.

Please press **E** KEY.

Please set RS232C Communication BAUD RATE (4800, 9600, 19200, 38400) by using **▲** KEY.

Please press **E** KEY to save.



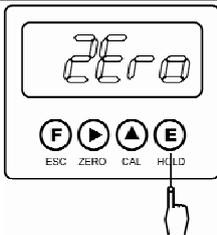
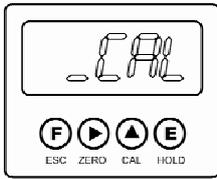
6. Real-Weight Calibration

Please select  in SET UP Mode and then press **E** KEY to set as .

Please press **E** KEY to save and then press **F** KEY to return to Measuring Mode. 

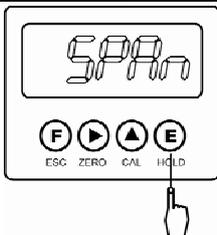
Please make POWER  On while  KEY is being pressed.

(Please press  KEY until  is displayed on display window.)



Please press **E** KEY.

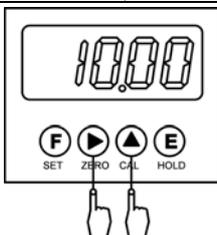
The point that is the standard to indicate weight is called as Zero Point. The adjustment is made when there is no weight applied on the loadcell.



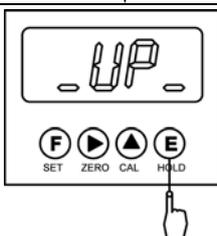
Please press  KEY.

SPN is to make the linearity to have the consistent actual weight value and the indication value from "0", the basis for indicating the weight, to maximum weight.

Please press **E** KEY.

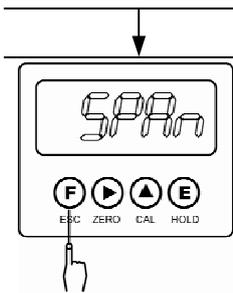


Please input the prepared weight by using  and  KEY.
Example) When the weight is 10.00kg.



Please press **E** KEY.

Please prepare when  is displayed.

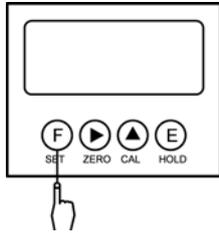


Please press **E** KEY to save.

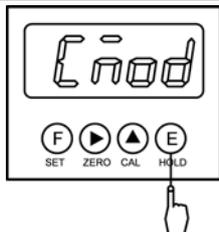
Please press **F** KEY to return to measuring Mode.

※ If the weight indication value does not match to the weight, please repeat SPN.

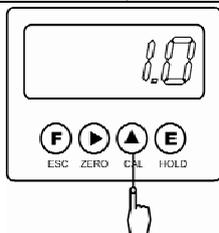
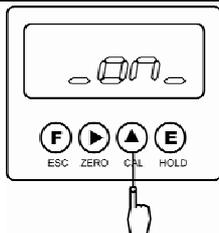
7. Load Cell Output Value Calibration



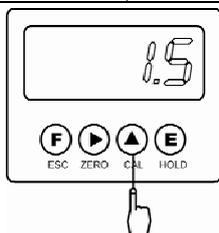
Please press **F** KEY for about 3 seconds.



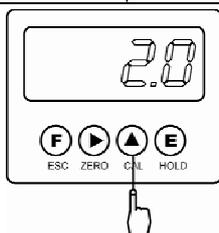
Please press **E** KEY.



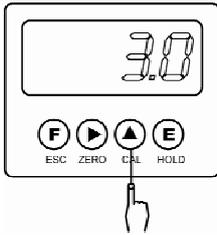
It should be chosen when Load cell output value is under 1.0mV/V.
Please press **E** KEY to save.



It should be chosen when Load cell output value is under 1.5mV/V.
Please press **E** KEY to save.

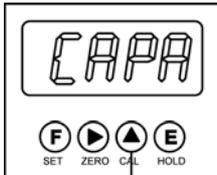


It should be chosen when Load cell output value is under 2.0mV/V.
Please press **E** KEY to save.



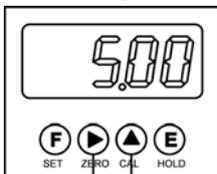
It should be chosen when Load cell output value is under 3.0mV/V.
Please press **E** KEY to save.

After Power is off, please get the Power ON while **▲** KEY is being pressed.



Please get the POWER on while **▲** KEY is being pressed.

(Please press **▲** KEY until **CAPA** is displayed.)

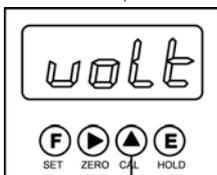


Please press **E** KEY.

Please set the load cell capacity by using **▶** and **▲** KEY.
Example) When the load cell capacity is 5.00kg.

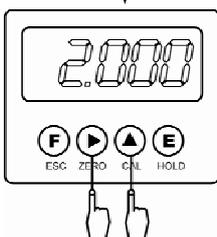
Please press **E** KEY to save.

Please press **▲** KEY.



Please input Load cell output value.

(Please refer to Rated output from Load cell test record.)



Please press **E** KEY.

Please set output value by using **▶** and **▲** KEY.
Example) When output value is under 2.000mV/V.

Please press **E** KEY to save.

Please press **F** KEY.

Please return to measuring mode to measure.

Please put load for check.

참고

For calibration order, please set Hardware Gain first. (Refer to Page 7)

Please refer to Rated output from the test record of Load cell and remove the case cover (6 volts) and then move the jumper socket to the nearest one among 1.0, 1.5, 2.0, 3.0. Do assembling for case and then select real-weight or load cell output value in set up mode to carry out calibration.

8. Measuring DATA Saving and Transmitting.

1) DATA Saving

It is used to save the measured DATA.

The value displayed on LCD window will be saved.

Please press  KEY to display  on the display window and then the address to be saved will be displayed as in .

Please press  KEY to save DATA in the displayed address.

Please press  KEY to save and escape.

You can save from # A001 to A500.

2) DATA Transmitting.

It is used to transmit the saved DATA to PC.

Please select  in Set up mode.

Please press  KEY to transmit the saved DATA.

(DATA from A001 to A500 will be transmitted.)

3) Saved DATA Search and Delete

Please press  KEY for about 3 seconds to enter SET MODE..

- DATA Search

Please press  KEY to have  on display window.

Please press  KEY to display the address as in  form.

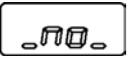
You can select address by using  and  KEY.

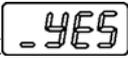
Please press  KEY in the selected address to display the saved DATA.

Please press  KEY to escape from DATA search Mode.

- DATA Delete

Please press  KEY to have  on display window.

Please press  KEY to have  on display window.

Please press  KEY to select .

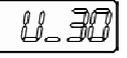
Please press  KEY to delete DATA.

(※ Note: All the saved DATA will be deleted.)

9. Setting KEY LOCK

You can prevent any user's unexpected use by setting up KEY LOCK. You have to start the following procedure when the power is Off.

Press  Function key continuously to get POWER ON

 ->  ->  ->  will be displayed.

Please press  Up key to select key Lock (On) and (OFF).

Please press  ENT key to save the setting.

When key Lock is set up as (On), only setting for Maximum and Minimum and Zero Key will be operated.

10. RS232C Serial Interface

Data format (code : ASCII)

41	30	30	31	2C	2B	30	31	32	33	2E	34	0D	0A
A	0	0	1	,	+	0	1	2	3	.	4	CR	LF