


Instruction Manual

Digital Panel Meter Model 3125

I-01697

1. Preface

- Thank you for purchasing our digital panel meter 3125 series.
Before use, read this manual carefully and thoroughly, and keep this manual available for routine reference.
- Please check contents of the package you received as outlined below.
 - (1) Digital panel meter itself and its connector
 - (2) This manual
- Cautions for use
For safety use, please observe the following cautions.

 **CAUTION**

- There is no power on-off switch on the model 3125. It immediately starts to operate after turning the power. The rated data is, however, defines with more than 15 minutes warming-up times.
- When the product is installed in the cabinet, perform the appropriate heat radiation to keep less than 50°C in it.
- Do not install the product in the following conditions.
 - Where it is exposed to direct sunlight, dust, corrosive gases, rain, etc.
 - Where ambient temperature or humidity is high..
 - Where it is exposed to excessive noise or static electricity.
 - Where there is constant vibration or shock

2. Standard Specifications

■ **Model Name** 3125 -□-□-□
 1 2 3

[1] Measuring Input

Model	Measuring	Input resistance	Accuracy*1	Overload
3125-22	99.99 mVrms	1MΩ	±(0.2% of rdg +10digit)	AC 10 V
3125-23	999.9 mVrms	1MΩ	±(0.2% of rdg +10digit)	AC100 V
3125-24	9.999 Vrms	1MΩ	±(0.2% of rdg +10digit)	AC350 V
3125-25	99.99 Vrms	10MΩ	±(0.2% of rdg +10digit)	AC350 V
3125-26	300.0 Vrms	10MΩ	±(0.2% of rdg +10digit)	AC350 V
3125-32	99.99 μArms	1kΩ	±(0.3% of rdg +10digit)	AC 20mA
3125-33	999.9 μArms	100Ω	±(0.3% of rdg +10digit)	AC 50mA
3125-34	9.999 mA Arms	10Ω	±(0.3% of rdg +10digit)	AC150mA
3125-35	99.99 mA Arms	1Ω	±(0.3% of rdg +10digit)	AC500mA
3125-36	999.9 mA Arms	0.1Ω*2	±(0.5% of rdg +10digit)	AC2.1 A
3125-37	2.000 Arms	0.1Ω*2	±(0.5% of rdg +10digit)	AC2.1 A

*1. Accuracy : Defined at 23°C±5°C, 45 to 75%RH.
 Defined with sign wave of input frequency 40Hz to 1kHz.
 Defined ±0.2% F.S. for less than 10% input value.

*2. Input resistance : with 0.1 Ω external resistance.

Temperature coefficient : ±300ppm/°C within the 0 to 50°C temperature range.

Crest factor : 4(-26 by peak 500V, -36 and -37 by peak 3A)

[2] Display Color

No.	Description
Blank	Red LED
G	Green LED

[3] Option

No.	Input
Blank	Nil
A02	Fixed 10 ⁰ digit to 0

General Specifications

- Display : 0~9999 red or green LED (character height 10mm) with zero-suppress function.
 Decimal point : Arbitrary setting (front setting or remote control)
 Over-range indication : Blinking with 130% display. When exceeded 9999, blinking with 0000
- Scaling Function : Full scale display 0~9999. Offset display 0~9999. It is memorized to the EEPROM.
- Resolution : 1/10000
- Sampling Rate : 1time / sec.
- Display Cycle : 1s
- Input Type : Single ended.
- A/D Conversion : $\Delta-\Sigma$ conversion system.
- Rectification : Operation of actual value
- Hold function : Measured data is held.
- Withstanding Voltage : Input terminals - Case : AC500V each for 1 min.
 Power supply terminals - Case : AC500V each for 1 min.
 Power supply terminals - Input terminals : AC500V each for 1min.
- Insulation Resistance : DC500V 100M Ω or more.
- Power supply : DC12~24V
- Power supply allowance : DC9~32V
- Power Consumption : Approx. 60mA at 12VDC. Approx. 45mA at 24VDC.
- Operating Temperature : 0~50°C
- Storage Temperature : -20~70°C
- Weight : Approx. 60g
- Mounting Method : Snap-in type from the panel front.

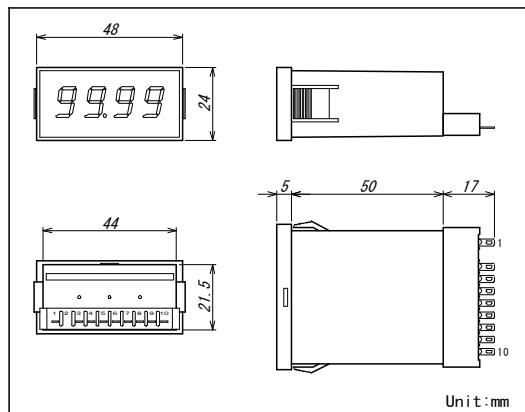
Standard Function

- Decimal point : Selectable by the front panel key
- Hold function : Measured data is held when being active of the hold input.
 (Isolated from input, but not isolated from the power)
- Cut-off function : This function can be set to 0 when inputting less than 0.1% to the rated input.
- Fine adjustment of display : Available fine adjustment of display by the key operation.
- Average calculation : 4 sampling datum can average.

Optional Function

10⁰dig. can be set to 0 if input value is unstable. It is programmable by the front panel key and is memorized to the EEPROM.

Dimensions



Mounting

Remove the connector at the rear side of the case, Then insert from the panel front.
 Panel cut dimension is $45^{+0.5}_0 \times 22.2^{+0.3}_0$ mm.
 Panel thickness should be 1 to 5 mm.

Connector Arrangement

Terminal	INHi	NC	INLo	NC	NC	NC	HOLD	COM	-	+
	1	2	3	4	5	6	7	8	9	10
Function	Input						Hold	Common	Power	

Input terminals (IN Hi, IN Lo)

Pay attention to the polarity when wiring. Connect input of higher electric potential to Hi. Inout and power line shall lay separately. Otherwise, display may be unstable.

Hold (HOLD)

Display can be held by connecting the HOLD terminal and the COM terminal.

Active "L"

"L" = 0~3.8V "H" = 9.6~12V (at DC 12V supply)

"L" = 0~7.7V "H" = 20.3 ~24V (at DC 24V supply)

● **Common (COM)**

For HOLD terminal. HOLD and COM are insulated to the input, but not to the power supply.

● **NC**

NC is not connected. Do not use for junction purpose.

● **Power supply(+, -)**

Use within the range from DC 9 to 32V.

⚠ CAUTION
● Do not use the product with the voltage out of the rated range as it may cause breakage of the products.

■ **Maintenance**

Store the instrument within the rated storage temperature (-20~70°C). When the front panel or the case is cleaned, use soft cloth dipped with cleaner liquid. Do not use organic solvent like benzene or paint thinner as they may deform or discolor the case.

■ **Calibration**

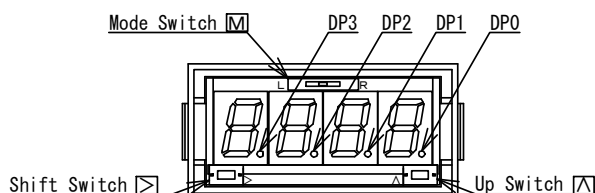
In order to maintain long term accuracy, periodical calibration at an interval of about one year is recommended.

For calibration, refer to the page 5 adjustment function.

Also, make a calibration in the ambient condition of 23°C±5°C, 75%RH or less.

■ **Parameter Setting**

● **Internal layout from the front panel**



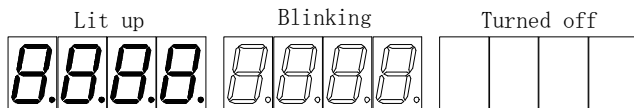
● **Function of each switch**

Mode Switch **M** : Switches to setting mode from the measuring mode and memories.

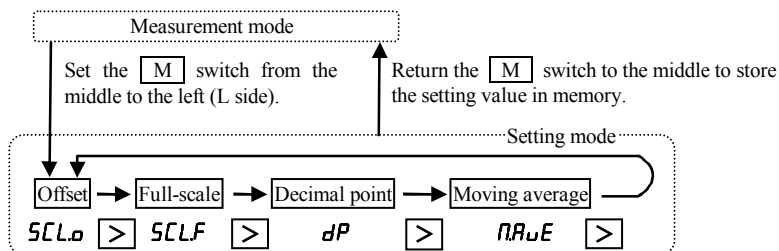
Shift Switch **>** : Shifts setting value during the parameter setting.

Up Switch **Δ** : Changes setting value and items.

● **Indications**



● **Procedure diagram**

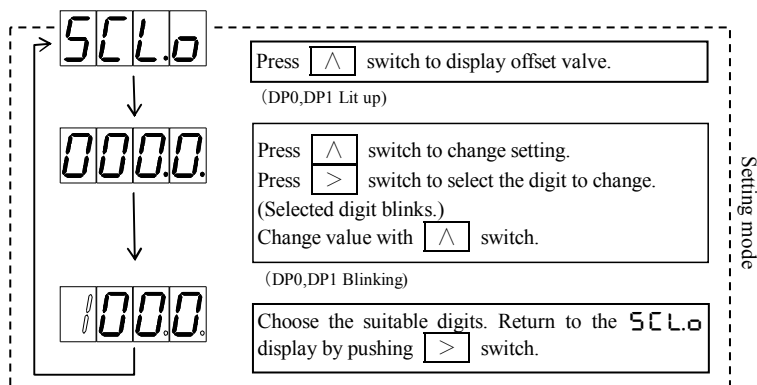


When returning from setting mode to measuring mode, the setting is memorized in the EEPROM. Display is then turned off once.

● **Setting mode**

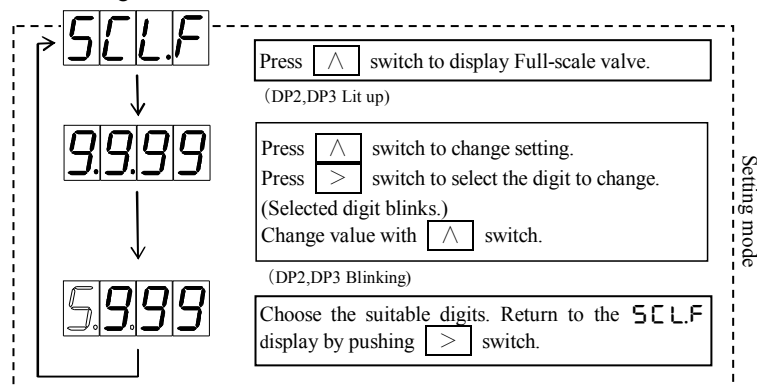
- **Offset**

Offset is programmable within the range from 0 to 9999.



- **Full-scale**

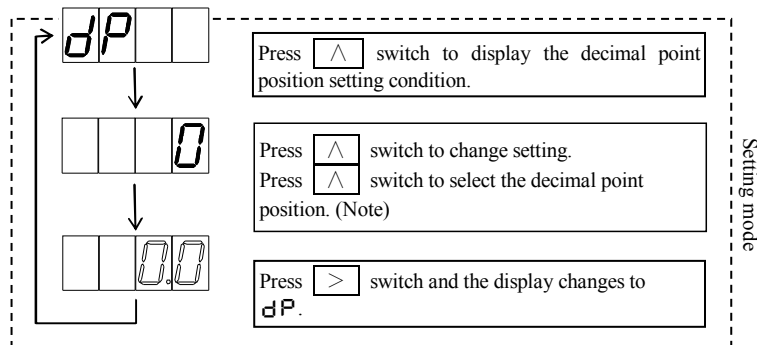
Full-scale is programmable within the range from 0 to 9999.



- **Decimal point**

Decimal point is programmable.

Note: 0 No digit
 0.0 Dp 1
 0.00 Dp 2
 0.000 Dp 3

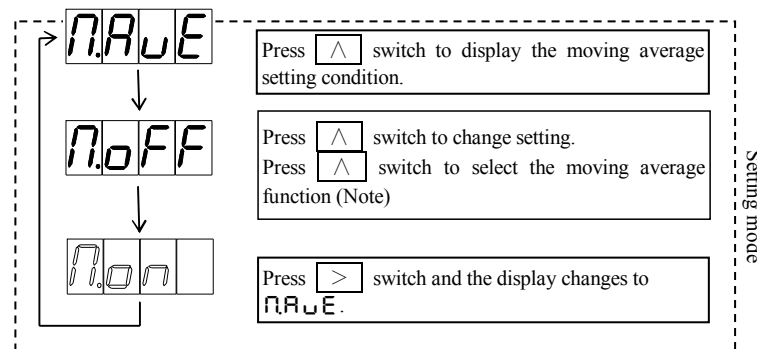


Increment key : No digit → dp1 → dp2 → dp3 → No digit (in order)

- **Moving average**

Disable or enable the moving average.

Note: Non Enable
 NoFF Disable

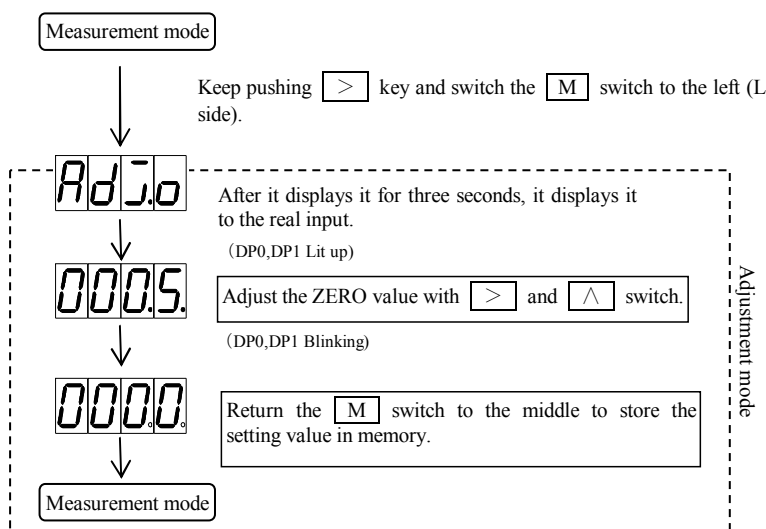


Increment key : Enable → Disable → Enable (in order)

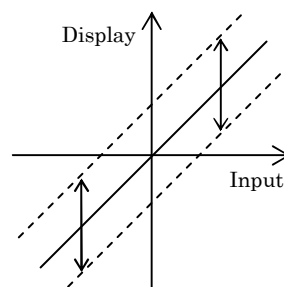
● Adjustment function

- Zero adjustment

Fine adjustment for the displayed ZERO value of calibration data is possible with real input.



Display line vertically moves.



\rightarrow switch counts down.
 \leftarrow switch counts up.

Adjustment is memorized to the EEPROM when switching to the measuring mode. (Display blinks).

Keep on pushing the key if adjustment differential is narrow.

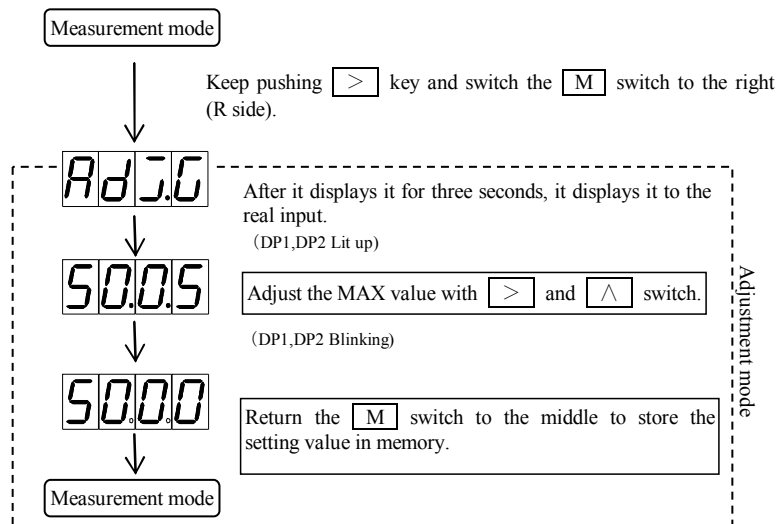
10^0 digit fixing and cut-off functions are disabled.

(Display changes to minus for AC input).

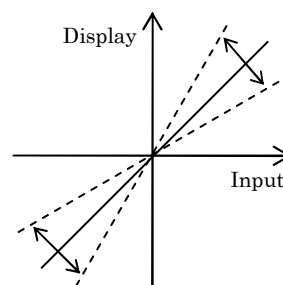
- MAX adjustment

Fine adjustment for the displayed MAX value of calibration data is possible with real input.

Shift key decreases and increment key increases values.



Inclination of display line changes.



\rightarrow switch counts down.
 \leftarrow switch counts up.

Adjustment is memorized to the EEPROM when switching to the measuring mode. (Display blinks).

Keep on pushing the key if adjustment differential is narrow.

10^0 digit fixing and cut-off functions are disabled.

Contact Information	
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