## Digital Large Display Meter Model 4012 （Analog input）

Please take care that this instruction manual is certainly delivered to the person in charge of operating it．For safety and proper use of this product，please observe the following caution and also read the instruction manuals to follow before the initial operation．


| CAUTION |
| :--- |
|  |
| Do not install the product in the following conditions． |
| $\bullet$ Where it is exposed to direct sunlight． |
| $\bullet$ Where ambient temperature or humidity is high． |
| $\bullet$ Where it is exposed to excessive noise or static electricity． |
| $\bullet$ Where there is constant vibration or shock． |

## －Check at Delivery

－When the product is delivered to you，please check that its specifications conform to your requirement and that there is no damage in transit．This product is carefully inspected before delivery from factory under our strict quality control program，but if you find any defect or inconvenience，please inform us of the model name，serial number etc．of the product．

## －Cautions for Use

－No power on－off switch is provided on the model 4012 so it immediately starts to work when connected to the power source．
The rated data of this instrument is，however，defined with the pre－heating for 15 minutes or more．
－When the product is installed in the cabinet，perform the appropriate heat radiation to keep less than $50^{\circ} \mathrm{C}$ in it．

## Standard Specifications

## －Model Name

4012 －
$-\square-\square-\square-\square-\square-\square$

1 2 | $\square$ |
| :--- | :--- | :--- | :--- | :--- | :--- |

【1】 Input signal

| Model | Measuring Range | Input Resistance | Accuracy ※ | Overload |
| :---: | :---: | :---: | :---: | :---: |
| $4012-03$ | $\pm 1.9999 \mathrm{~V}$ | $1 \mathrm{M} \Omega$ | $\pm(0.1 \%$ of rdg +2 digit $)$ | $\mathrm{DC} \pm 250 \mathrm{~V}$ |
| $4012-04$ | $\pm 19.999 \mathrm{~V}$ | $1 \mathrm{M} \Omega$ | $\pm(0.1 \%$ of rdg +2 digit $)$ | $\mathrm{DC} \pm 250 \mathrm{~V}$ |
| $4012-05$ | $\pm 199.99 \mathrm{~V}$ | $10 \mathrm{M} \Omega$ | $\pm(0.1 \%$ of rdg +2 digit $)$ | $\mathrm{DC} \pm 500 \mathrm{~V}$ |
| $4012-09$ | $\mathrm{DC} 1 \sim 5 \mathrm{~V}$ | $1 \mathrm{M} \Omega$ | $\pm(0.1 \%$ of rdg +5 digit $)$ | $\mathrm{DC} \pm 250 \mathrm{~V}$ |
| $4012-\mathrm{V} 1$ | $\mathrm{DC} 0 \sim 1 \mathrm{~V}$ | $1 \mathrm{M} \Omega$ | $\pm(0.1 \%$ of rdg +2 digit $)$ | $\mathrm{DC} \pm 250 \mathrm{~V}$ |
| $4012-\mathrm{V} 2$ | $\mathrm{DC} 0 \sim 5 \mathrm{~V}$ | $1 \mathrm{M} \Omega$ | $\pm(0.1 \%$ of rdg +2 digit $)$ | $\mathrm{DC} \pm 250 \mathrm{~V}$ |
| $4012-\mathrm{V} 3$ | $\mathrm{DC} 0 \sim 10 \mathrm{~V}$ | $1 \mathrm{M} \Omega$ | $\pm(0.1 \%$ of rdg＋2digit $)$ | $\mathrm{DC} \pm 250 \mathrm{~V}$ |
| $4012-19$ | $\mathrm{DC} 4 \sim 20 \mathrm{~mA}$ | $13 \Omega$ | $\pm(0.1 \%$ of rdg +5 digit $)$ | $\mathrm{DC} \pm 150 \mathrm{~mA}$ |
| $4012-\mathrm{A} 1$ | $\mathrm{DC} 0 \sim 1 \mathrm{~mA}$ | $200 \Omega$ | $\pm(0.1 \%$ of rdg +2 digit $)$ | $\mathrm{DC} \pm 50 \mathrm{~mA}$ |

※ Accuracy：Defined at $23^{\circ} \mathrm{C} \pm 5^{\circ} \mathrm{C}, 45$ to $75 \% \mathrm{RH}$
Temperature coefficient：$\quad \pm 200 \mathrm{ppm} /{ }^{\circ} \mathrm{C}$ within the 0 to $50^{\circ} \mathrm{C}$ temperature range．

## 【2】Power Supply

| No． | Power |
| :---: | :---: |
| 3 | AC $100 \sim 120 \mathrm{~V}$ |
| 5 | AC $200 \sim 240 \mathrm{~V}$ |
| 9 | DC 24 V |

## 【5】Display

| No． | Color |
| :---: | :--- |
| （Blank） | Red LED |
| G | Green LED |

【3】Sensor power supply

| No． | Power voltage | Output current |
| :---: | :--- | :---: |
| （Blank） | No sensor power supply |  |
| 3 | $12 \mathrm{~V} \pm 5 \%$ | 150 mA |
| 5 | $24 \mathrm{~V} \pm 5 \%$ | 100 mA |

【4】Mounting

| No． | Type |
| :---: | :--- |
| 51 | Wall－mount |
| 52 | Hanging－mount |
| 53 | Sticking－mount |

【6】Option

| No． | Function |
| :---: | :--- |
| （Blank） | N／A |
| A01 | Display sampling 1 second |
| A02 | Fixed $10^{0}$ digit to 0 |
| A03 | Display sampling 1 second，Fixed $10^{0}$ digit to 0 |

## ■General Specifications



## ■Optional specifications

- Display sampling change Enable to fix 1 second
- $10^{0}$ digit to 0

Enable to fix to 0

## ■Mounting

- Wall-mount (model code-51)

Cut the case bottom or side to pull out lead wires.


- Hanging-mount (model code-52)

Fix lifting brackets to the ceiling by screws.
Fixing points should be locating 40 mm away from the wall to keep maintenance space.


- Sticking-mount (model code-53)

Use coaching bond or appropriate sealant to keep IP65 protection.


## $\triangle$ CAUTION

- Hanger hole of the mounting panel should be upright position as shown in the drawing.


## ■Scaling

Full scale value and Offset value are programmable within the range from -19999 to +19999 .
Refer to "Parameter Setting."
E.g. 1 From elevation (over 0\%) to suppression (below 100\%)

Full scale value: 9000
Offset value: 1000

E.g. 2 From $100 \%$ to $0 \%$

Full scale value: 0
Offset value: 19999


## ■Offset fixing

Display can be fixed to the offset value when the input value is lower than the offset value.
Refer to "Parameter Setting."


## Terminal Arrangement

| Terminal | INHi | INLo | COM | HOLD | DP1 | DP2 | DP3 | Dp4 | P2(+) | P1(-) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Function | + | - | Common | Hold | $10^{1} \mathrm{dig}$ | $10^{2}$ dig | $10^{3} \mathrm{dig}$ | $10^{4} \mathrm{dig}$ | Power |  |
|  | Input |  |  |  | Decimal point |  |  |  |  |  |

(Option)

| $*$ | Terminal | +V | 0 V | NC |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |  |
| Function | Sensor power supply | - | - | - | - | - | - | - | - |  |  |

Terminal screws: M3
Fastening torque: $\quad 0.46 \sim 0.62 \mathrm{~N} \cdot \mathrm{~m}$
Crimp terminal: As shown on the right.


## - Input terminals (INHi, INLo)

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

## - Hold (HOLD)

Display can be held by connecting the Hold terminal and the Common terminal.
Active "L" In $\leqq-1 \mathrm{~mA}$, "L" $=0 \sim 0.8 \mathrm{~V}$, "H" $=3.5 \sim 5 \mathrm{~V}$
Hold terminal is not isolated to the input. Use a photo-coupler or switch to insulate. It is essential when using the input floating. When using plural numbers of the product, the hold terminal should be insulated at each instruments.

## - Decimal point (DP1~DP4)

Decimal point is programmable. Connect and short-circuit the desired decimal point terminal and the common terminal.
Active "L", In $\leqq-1 \mathrm{~mA}$, "L" $=0 \sim 0.8 \mathrm{~V}, " H "=3.5 \sim 5 \mathrm{~V}$
Those terminals are not isolated to the input. Use a photo-coupler or switch to insulate. It is essential when using the input floating.

## - Common (COM)

For Hold and Decimal point terminals.

- Power Supply (P1(-), P2(+))

The power source voltage to be supplied to the instrument is specified on the terminal plate at delivery from factory.
O AC power source (3)....... Use the instrument within the range AC85~132V.
O AC power source (5)....... Use the instrument within the range AC170~250V.
O DC power source (9)....... Use the instrument within the range DC20~30V.
Connect +24 of DC power source to $\mathrm{P} 2(+)$, and 0 V side to $\mathrm{P} 1(-)$.

## $\triangle$ CAUTION

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


## Each function

- Location of terminals and switches

Removing the mounting panel comes terminals and switches into view.


- Decimal point position

- Operation Procedure diagram (Scaling mode and offset setting)



## ■Maintenance

Store the instrument within the rated storage temperature $\left(-20 \sim 70^{\circ} \mathrm{C}\right)$. 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.
Make a calibration of the instrument with the ZERO and MAX volumes inside the front mask. Also, make a calibration in the ambient condition of $23^{\circ} \mathrm{C} \pm 5^{\circ} \mathrm{C}, 75 \% \mathrm{RH}$ or less.


Use UP switch to increase value. Push and hold to continuously change.
Use SHIFT switch to decrease value. Push and hold to continuously change.

## -Dimensions

- Wall-mount


Unit:mm

- Hanging-mount


Unit:mm

- Sticking-mount


Unit:mm

| Contact Information |
| :--- | :--- |
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