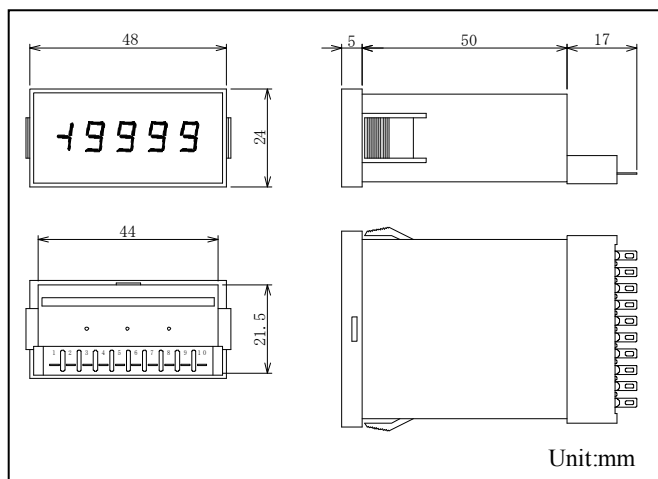




**General Specifications**

|                        |  |
|------------------------|--|
| Display                | : 0~19999 red or green LED (character height 8mm) with zero-suppress function.           |
| Scaling Function       | : Full scale display -19999~+19999 Offset display -19999~+19999                          |
| Offset Fixing Function | : Function to fix a display reading of input less than offset value to the offset value. |
| Hold Function          | : Measured data is held (Not isolated from input).                                       |
| Decimal Point          | : Programmable by the connector (Not isolated from input).                               |
| Over-range indication  | : Blinking with 130% display. When exceeded 19999, blinking with 0000.                   |
| Resolution             | : 1/20000  |
| Display Cycle          | : 400ms  |
| Input Type             | : Single ended, floating input.  |
| A/D Conversion         | : $\Delta\Sigma$ conversion system.  |
| Noise Rejection        | : Normal mode (NMR) - 50dB or more.  |
| Insulation Resistance  | : Input terminals - Case : DC500V 100M $\Omega$ or more.                                 |
|                        | Power supply terminals - Case : DC500V 100M $\Omega$ or more.                            |
|                        | Power supply terminals - Input terminals : DC500V 100M $\Omega$ or more.                 |
| Withstanding Voltage   | : Input terminals - Case : AC1500V each for 1 min.                                       |
|                        | Power supply terminals - Case : AC1500V each for 1 min.                                  |
|                        | Power supply terminals - Input terminals : AC500V each for 1min.                         |
| Power Supply           | : DC4.75~32V   |
| Power Consumption      | : Approx. 100mA at 5V. Approx. 50mA at 12V. Approx. 35mA at 24VDC.                       |
| Operating Temperature  | : 0~50°C   |
| Storage Temperature    | : -20~70°C   |
| Mounting Method        | : Snap-in type from the panel front.   |
| Weight                 | : Approx. 45g  |

**Dimensions**



**Mounting**

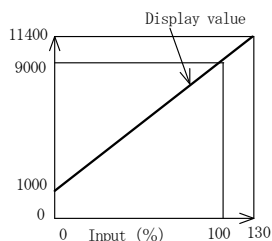
Remove the connector at the rear side of the case, then insert from the panel front.  
 Panel cut dimension is  $45^{+0.5}_0 \times 22.2^{+0.3}_0$  mm.  
 Panel thickness should be 1 to 5 mm.

**Scaling**

Full scale value and Offset value are programmable within the range from -19999 to +19999. Refer to "Parameter Setting."

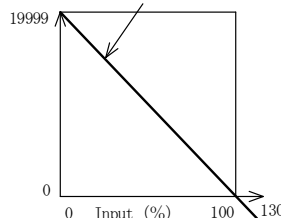
Example.1) From elevation (over 0%) to suppression (below 100%) From 100% to 0%

Full scale value: 9000  
 Offset value: 1000



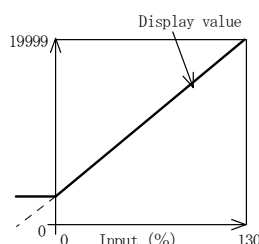
Example.2) From 100% to 0%

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 "Setting method".



■ Connector arrangement

Connector type: CR23A-10SA-4E

|          |       |    |        |      |               |     |     |     |                      |    |
|----------|-------|----|--------|------|---------------|-----|-----|-----|----------------------|----|
| Terminal | Hi    | Lo | COM    | HOLD | DP1           | DP2 | DP3 | DP4 | -                    | +  |
|          | 1     | 2  | 3      | 4    | 5             | 6   | 7   | 8   | 9                    | 10 |
| Function | Input |    | Common | Hold | Decimal point |     |     |     | Power<br>DC 4.75~32V |    |

● Input terminals (Input Hi, Lo)

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"  $I_n \leq -1\text{mA}$ , "L" = 0~0.8V, "H" = 3.5~5V

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 (10<sup>1</sup>dig.~10<sup>4</sup>dig.)

Decimal point is programmable. Connect and short-circuit the desired decimal point terminal and the common terminal.

Active "L",  $I_n \leq -1\text{mA}$ , "L" = 0~0.8V, "H" = 3.5~5V

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 (+,-)

Use within the range from DC 4.75 to 32V.

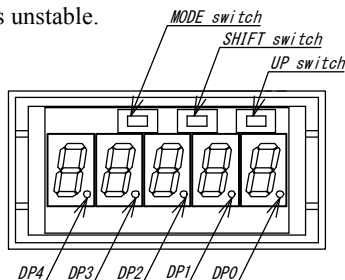
■ Option (Specify when ordering)

Display cycle can be set to 1 second.

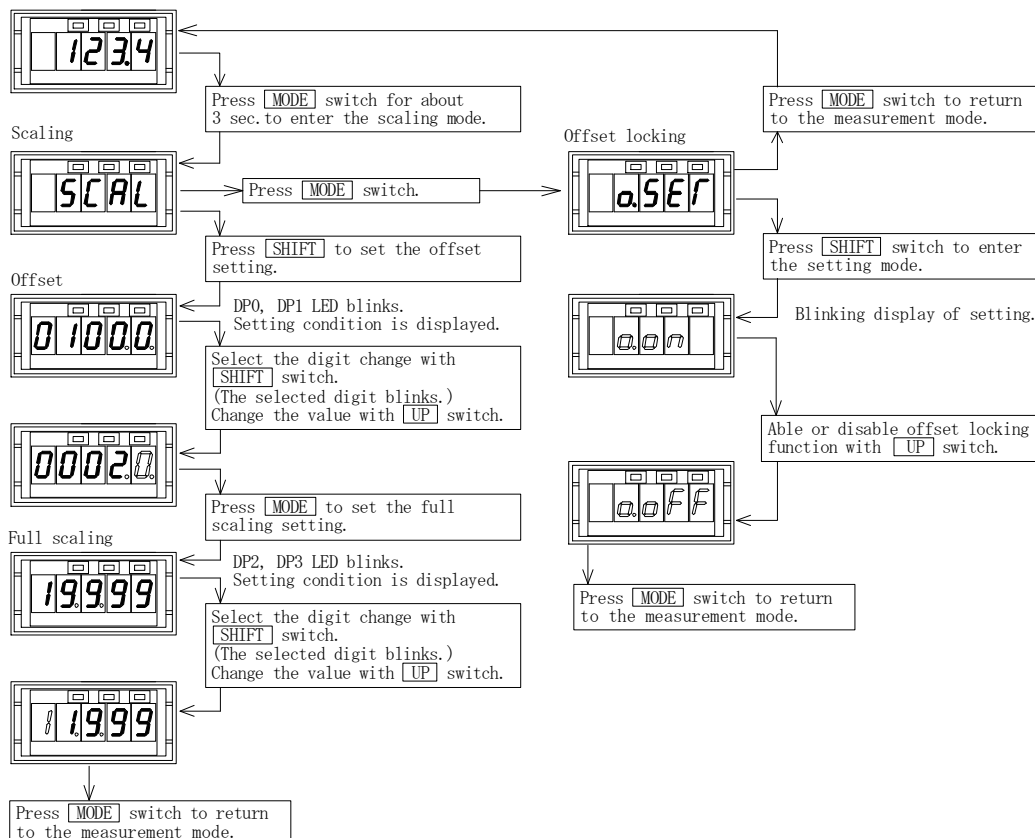
10<sup>0</sup>dig-can be set to 0 if input value is unstable.

■ Parameter Setting

● Component identification



● Setting method (Scaling, Offset locking)



**■Maintenance**

Store the instrument within the specified storage temperature (-20~70°C).

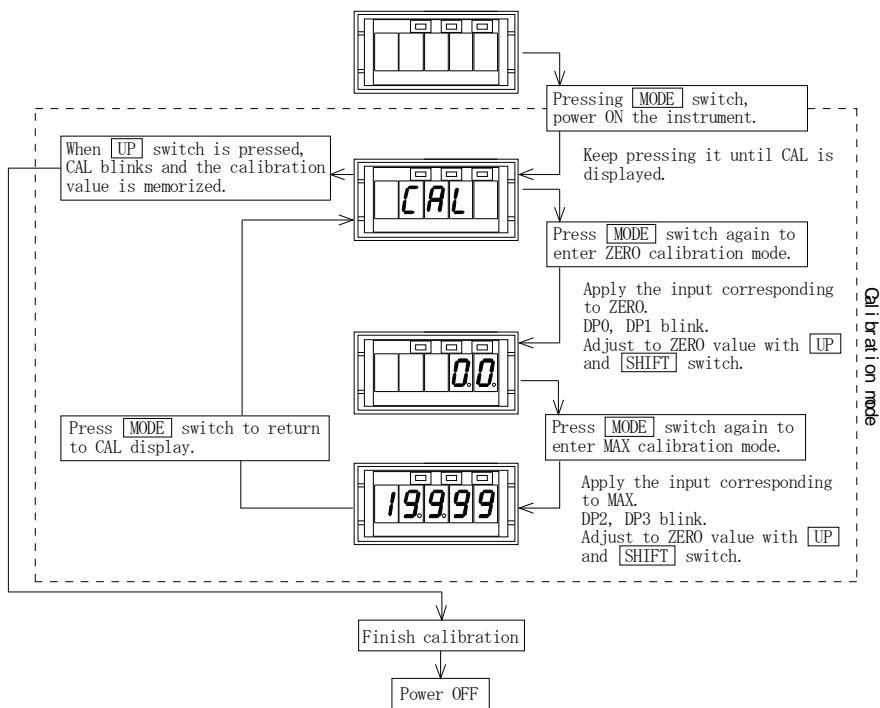
When the front panel or the case becomes dirty, wipe it with soft cloth.

For heavy dirt, wipe it lightly with the soft cloth wetted with the neutral cleaner thinned by water, and finish the cleaning with dry cloth. 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°C±5°C, 75%RH or less.



UP switch to increase calibration value. Keep pressing to continuously increase.  
 SHIFT switch to decrease calibration value. Keep pressing to continuously decrease.

**■Warranty**

The manufacturer warrants to the original retail customer its digital panel meter to be free of defects in material and workmanship for use under normal care and will repair or replace any meter at no charge to the customer during the one (1) year warranty period from the original factory shipment.

| Contact Information |  |
|---------------------|--|
| Name                | : Tsuruga Electric Corporation                                       |
| Address             | : 1-3-23 Minami-Sumiyoshi, Sumiyoshi-ku, Osaka-shi<br>558-0041 Japan |