OMRON

Temperature Meter | K3MA-L

Highly Visible LCD Display with 2-color (Red and Green) LEDs

■ Wide input range - select from two types of platinum-resistance thermometers and ten types of thermocouples.

■ Front-panel key operation for easy setting.

■ Average processing function suppresses flicker.

■ Temperature input shift and temperature unit selection functions.

■ Easy confirmation of max/min display.

■ Short 80-mm depth (measured from edge of face plate).

■ Finger protective cover (standard equipment) protects against electric shock.

■ Water- and dust-proof NEMA4X (IP66 equivalent) front panel.

■ Recognized to U.S. and Canadian requirements under the Component Recognition Program of UL with CE marking.

$_C$ℜ$_{US}$ C€

Ordering Information

Input type	Supply voltage	Output	Model
Platinum-resistance thermometer or thermocouple	100 to 240 VAC	None	K3MA-L 100-240VAC
		1 relay contact output (SPDT)	K3MA-L-C 100-240VAC
	24 VAC/VDC	None	K3MA-L 24VAC/VDC
		1 relay contact output (SPDT)	K3MA-L-C 24VAC/VDC

Model Number Legend:

K3MA-L-☐ ☐ ☐
  1   2   3

1. **Input Type**
   L: Platinum-resistance thermometer or thermocouple
2. **Output Type**
   None: No output
   C: With relay contact output (SPDT)
3. **Supply Voltage**
   100-240VAC: 100 to 240 VAC
   24VAC/VDC: 24 VAC/VDC

1

Specifications

■ Ratings

	K3MA-L 100-240VAC, K3MA-L-C 100-240VAC	K3MA-L 24VAC/VDC, K3MA-L-C 24VAC/VDC
Supply voltage	100 to 240 VAC	24 VAC (50/60 Hz), 24 VDC
Operating voltage range	85% to 110% of the rated supply voltage	
Power consumption (under maximum load)	6 VA max.	4.5 VA max. (24 VAC) 4.5 W max. (24 VDC)
Insulation resistance	20 MΩ min. (at 500 VDC) between external terminal and case. Insulation provided between inputs, outputs, and power supply.	
Dielectric withstand voltage	2,000 VAC for 1 min between external terminal and case. Insulation provided between inputs, outputs, and power supply.	
Noise immunity	±1,500 V on power supply terminals in normal or common mode. ±1 μs, or 100 ns for square-wave noise with 1 ns.	±480 V on power supply terminals in normal mode. ±1,500 V in common mode. ±1 μs, or 100 ns for square-wave noise with 1 ns.
Vibration resistance	Vibration: 10 to 55 Hz, Acceleration: 50 m/s^2 5 min each in X, Y, and Z directions for 10 sweeps.	
Shock resistance	150 m/s^2 (100 m/s^2 for relay contact outputs) 3 times each on 3 axes, 6 directions.	
Ambient temperature	Operating: −10°C to 55°C (with no condensation or icing) Storage: −25°C to 65°C (with no condensation or icing)	
Ambient humidity	Operating: 25% to 85% (with no condensation)	
Ambient atmosphere	Must be free of corrosive gas.	
Approved safety standards	UL3121, conforms to EN61010-1 (Pollution degree 2/overvoltage category II) Conforms to VDE0106/P100 (finger protection)	

EMC	(EMI) EN61326+A1 Industry
	Emission Enclosure: CISPR 11 Group 1 class A: CISRP16-1/-2
	Emission AC Mains: CISPR 11 Group 1 class A: CISRP16-1/-2
	(EMS) EN61326+A1 Industry
	Immunity ESD: EN61000-4-2: 4-kV contact discharge
	                                                                              8-kV air discharge
	Immunity RF-interference: EN61000-4-3: 10 V/m (amplitude-modulated, 80 MHz to 1 GHz)
	Electrical Fast Transient Noise: EN61000-4-4: 2 kV (power line)
	Immunity Burst Noise: 1 kV line to line (I/O signal line)
	Immunity Surge: EN61000-4-5: 1 kV (power line)
	                                                                              2-kV line to ground (power line)
	Immunity Conducted Disturbance: EN61000-4-6: 3 V (0.15 to 80 MHz)
	Immunity Voltage Dip/Interrupting: EN61000-4-11: 0.5 cycle, 0, 180°, 100% (rated voltage)	

Weight	Approx. 200 g	

Input/Output Ratings

Relay Contact Output

Item	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4, L/R = 7 ms)
Rated load	5 A at 250 VAC, 5 A at 30 VDC	1.5 A at 250 VAC, 1.5 A at 30 VDC
Rated carry current	5 A max. (at COM terminal)	
Max. contact voltage	400 VAC, 150 VDC	
Max. contact current	5 A (at COM terminal)	
Max. switching capacity	2,000 VA, 192 W	375 VA, 36 W
Min. permissible load (P level, reference value)	10 mA at 5 VDC	
Mechanical life	20,000,000 times min. (at a switching frequency of 1,200 time/min)	
Electrical life (at an ambient temperature of 20°C)	100,000 times min. (at a rated load switching frequency of 10 time/min)	

■ Measuring Ranges

Platinum-resistance Thermometer

Input		Pt100			JPt100	
Range	°C	−200 to 850	−199.9 to 500.0	0.0 to 100.0	−199.9 to 500.0	0.0 to 100.0
	°F	−300 to 1500	−199.9 to 900.0	0.0 to 210.0	−199.9 to 900.0	0.0 to 210.0
Parameter		0	1	2	3	4

Thermocouple

Input		K		J		T		E	L	U		N	R	S	B
Range	°C	−200 to 1300	−20.0 to 500.0	−100 to 850	−20.0 to 400.0	−200 to 400	−199.9 to 400.0	0 to 600	−100 to 850	−200 to 400	−199.9 to 400.0	−200 to 1300	0 to 1700	0 to 1700	100 to 1800
	°F	−300 to 2300	0.0 to 900.0	−100 to 1500	0.0 to 750	−300 to 700	−199.9 to 700.0	0 to 1100	−100 to 1500	−300 to 700	−199.9 to 700.0	−300 to 2300	0 to 3000	0 to 3000	300 to 3200
Parameter		5	6	7	8	9	10	11	12	13	14	15	16	17	18

■ Characteristics

Indication accuracy (at 23±5°C) (See note.)	Thermocouple: (±0.5% of indication value or ±1°C, whichever greater) ±1 digit max. Platinum-resistance thermometer: (±0.5% of indication value or ±1°C, whichever greater) ±1 digit max.
Input	Thermocouple: K, J, T, E, L, U, N, R, S, B Platinum-resistance thermometer: JPt100, Pt100
Measurement method	Double integral method
Sampling period	500 ms
Display refresh period	Sampling period (sampling times multiplied by number of averaging times if average processing is selected.)
Max. displayed digits	4 digits (−1999 to 9999)
Display	7-segment digital display, Character height: 14.2 mm
Polarity display	"−" is displayed automatically with a negative input signal.
Zero display	Leading zeros are not displayed.
Input shift	Input shift equivalent to the setting value supported for all points within the sensor measurement range.
Hold function	Max hold (maximum value), Min hold (minimum value)
Hysteresis setting	Programmable with front-panel key inputs (0001 to 9999).
Other functions	Display color change (green (red), green, red (green), red) Average processing (simple average OFF/2/4/8 operations) Setting change lockout Parameter initialization
Output	Relay contact (SPDT)
Delay in comparative outputs	1 s max.
Enclosure ratings	Front panel: NEMA4X for indoor use (equivalent to IP66) Rear case: IEC standard IP20 Terminals: IEC standard IP00 + finger protection (VDE0106/100)
Memory protection	Non-volatile memory (EEPROM) (possible to rewrite 100,000 times)

Note: The indication accuracy of the K thermocouple at a temperature of −200 to 1300°C is ±2°C ±1 digit maximum.
The indication accuracy of the T and N thermocouples at a temperature of −100°C or less is ±2°C ±1 digit maximum.
The indicator accuracy of the U and L thermocouples at any temperature is ±2°C ±1 digit maximum.
The indication accuracy of the B thermocouple at a temperature of 400°C or less is unrestricted.
The indication accuracy of the R and S thermocouples at a temperature of 200°C or less is ±3°C ±1 digit maximum.

Nomenclature
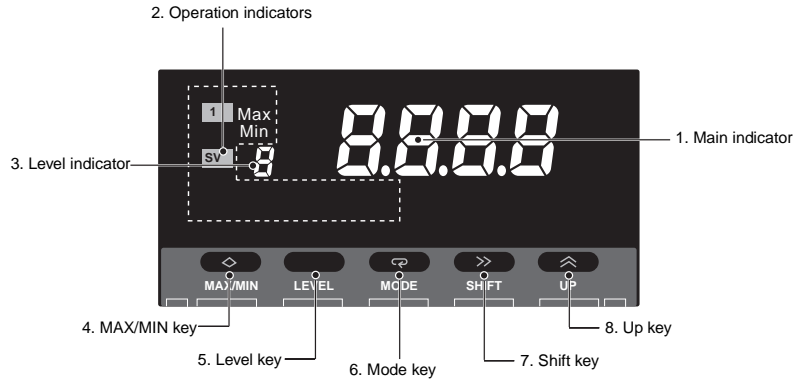
Name		Functions
1. Main indicator		Displays current values, parameters, and set values.
2. Operation indicators	1	Lit when output 1 is ON.
	SV	Lit when a set value is being displayed or changed.
	Max	Lit when the main indicator is showing the MAX value.
	Min	Lit when the main indicator is showing the MIN value.
3. Level indicator		Displays the current level that the K3MA-L is in. (See below for details.)
4. MAX/MIN Key		Used to display the MAX and MIN values when a measurement value is being displayed.
5. Level Key		Used to change the level.
6. Mode Key		Used to allow the main indicator to indicate parameters sequentially.
7. Shift Key		Used to enable a set value to be changed. When changing a set value, this key is used to move along the digits.
8. Up Key		Used to change a set value. Used to set or clear a forced-zero function when a measurement value is being displayed.

Level indicator	Level
P	Protect
Not lit	Operation
A	Adjustment
S	Initial setting
F	Advanced-function setting

Operation

■ Main Functions

Input Types and Ranges

Parameter	Setting	Input type	Meaning			
_in-t	0	Platinum-resistance thermometer	Pt100	−200 to 850°C	−300 to 1500°F	
	1			−199.9 to 500.0°C	−1999 to 900.0°F	
	2			0.0 to 100.0°C	0.0 to 210.0°F	
	3		JPt100	−199.9 to 500.0°C	−199.9 to 900.0°F	
	4			0.0 to 100.0°C	0.0 to 210.0°F	
	5	Thermocouple	K	−200 to 1300°C	−300 to 2300°F	
	6			−20.0 to 500.0°C	0.0 to 900.0°F	
	7		J	−100 to 850°C	−100 to 1500°F	
	8			−20.0 to 400.0°C	0.0 to 750.0°F	
	9		T	−200 to 400°C	−300 to 700°F	
	10			−199.9 to 400.0°C	−199.9 to 700.0°F	
	11		E	0 to 600°C	0 to 1100°F	
	12		L	−100 to 850°C	−100 to 1500°F	
	13		U	−200 to 400°C	−300 to 700°F	
	14			−199.9 to 400.0°C	−199.9 to 700.0°F	
	15		N	−200 to 1300°C	−300 to 2300°F	
	16		R	0 to 1700°C	0 to 3000°F	
	17		S	0 to 1700°C	0 to 3000°F	
	18		B	100 to 1800°C	300 to 3200°F	

Note: The initial value is "5: thermocouple K (−200 to 1300°C/−300 to 2300°F)."

Temperature Unit Selection

Either centigrade (°C) or fahrenheit (°F) can be selected as the temperature unit.

Parameter	Setting	Meaning
d-U	C	Display in °C.
	F	Display in °F.

### OUT Types (Comparative Output Models Only)

OUT 1 can be set to operate in one of the three following modes in accordance with the compared values:

• Upper limit (High Acting):
The output is turned ON when the measurement value is greater than its set value.

• Lower limit (Low Acting):
The output is turned ON when the measurement value is less than its set value.

• Upper and lower limits (Outside Band Acting):
An upper limit (H set value) and lower limit (L set value) can be set independently.
The output is turned ON when the measurement value is greater than the upper-limit set value or less than the lower-limit set value.

Parameter	Setting	Meaning
oUt 1.t	Hi	Upper limit: Alarm operates at upper limit.
	Lo	Lower limit: Alarm operates at lower limit.
	Hi-Lo	Upper and lower limits: Alarm operates at upper and lower limits.

Upper Limit (High Acting)
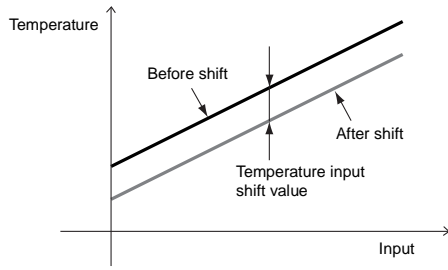

Lower Limit (Low Acting)

Upper and Lower Limits (Outside Band Acting)

5
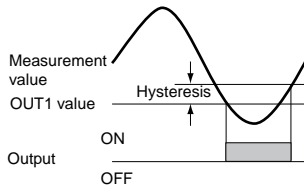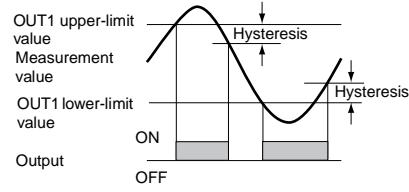
Temperature Input Shift

Input shift equivalent to the setting value supported for all points within the sensor measurement range.

Parameter	Setting
InS	*- 1999* to *9999*

Parameter Initialization

This function returns all of the parameters to their initial values.

Parameter	Setting	Meaning
InIt	*oFF*	---
	on	Initializes all parameters.

Use this to reset the K3MA-L after returning it to its factory-set condition.

Average Processing

Average processing stabilizes displayed values to minimize flicker by averaging the fluctuating input signals. Average processing can be performed for the measurement values in either of four steps (OFF, 2 times, 4 times, or 8 times).
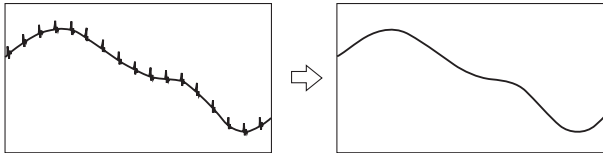
This is useful for ignoring rapid fluctuations, e.g., eliminating spike noise.

Hysteresis (Comparative Output Models Only)

The hysteresis of comparative outputs can be set to prevent chattering in the output when the measurement value fluctuates finely near the OUT value.

Upper limit (high acting)
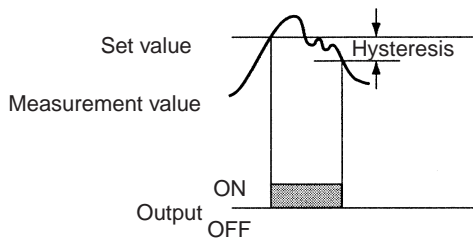
Changing the Display Color

The color of the value displayed can be set to either red or green. For comparative output models, the display color can be set to change from green to red, or from red to green, according to the status of the comparison criterion.
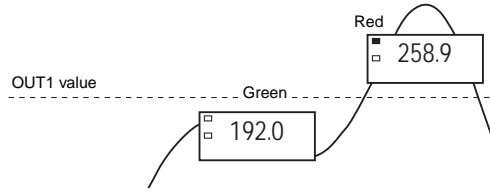

Display Auto-return Time

This function automatically returns the display to the operation level's current value if no keys are pressed for a preset time (called the display auto-return time).

Move-to-Protect-Level Time

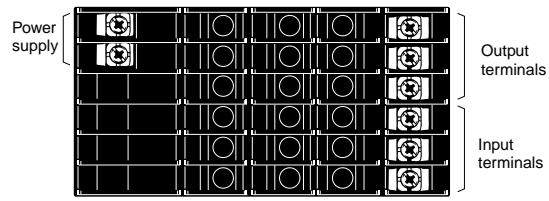The time required to shift to the protect level can be set as desired.

MAX/MIN Display

The maximum and minimum measurement (display) values from the time the power is turned ON until the current time can be stored and displayed. This is useful, for example, when measuring the maximum value.
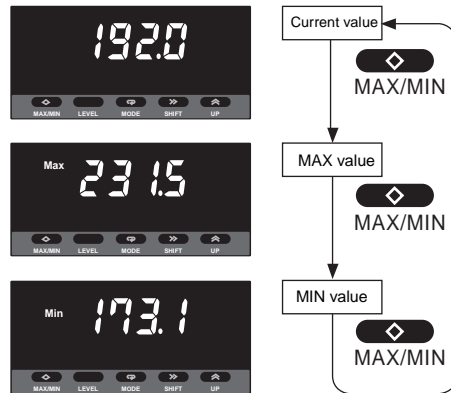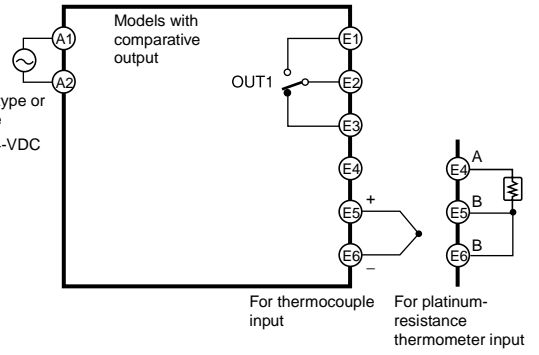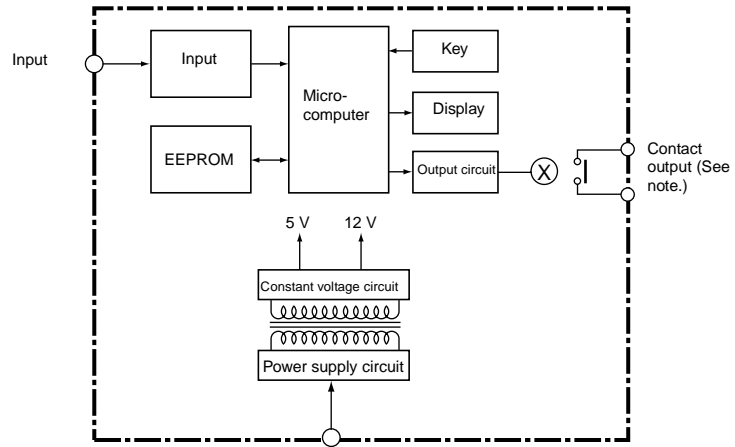
■ External Connections

Terminal Arrangement

| Terminal No.	Name	Description
(A1) - (A2)	Operation power	Connects the operation power supply.
(E4) - (E6) - (E5)	Thermocouple or platinum-resistance thermometer input	Connects the thermocouple or platinum-resistance thermometer input.
(E1) , (E2) - (E3)	Outputs	Outputs the relay outputs.

■ Block Diagram

Note: Relay output models only.

■ Levels

"Level" refers to a grouping of parameters. The following table lists the operations that are possible in each of the levels, and the diagram tells how to move between levels. There are some parameters that are not displayed for certain models.

Level name	Function	Measurement
Protect	Setting lockouts.	Continue
Operation	Displaying current values, and setting OUT 1 value.	Continue
Adjustment	Setting communications writing control.	Continue
Initial setting	Making initial settings of input type, output operating action, and other parameters.	Stopped
Advanced-function setting	Setting average processing, display color settings, and other advanced function parameters.	Stopped
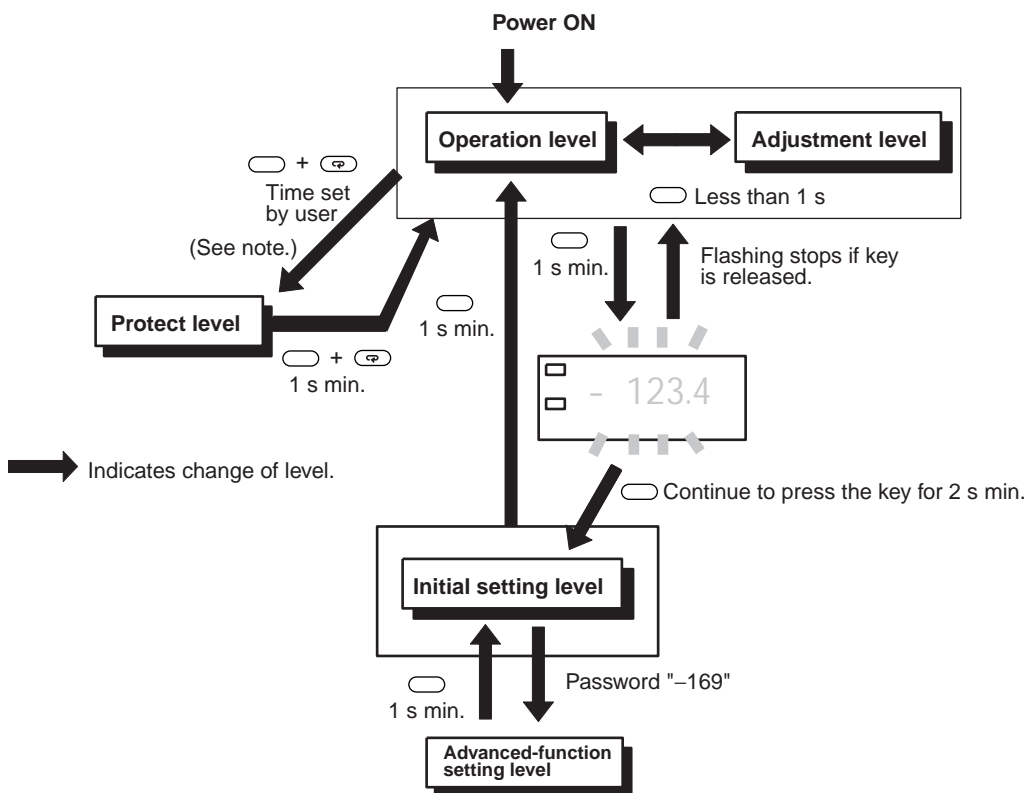
Note: The move-to-protect-level time can be set in the advanced-function setting level.

■ Parameters

Note: 1. Some parameters are not displayed for certain models.

2. The K3MA-L will stop measurement if the level is changed to the initial setting level or the advanced-function setting level.

3. If the input range is changed, some parameters are set to default values. Therefore, set the input range first.

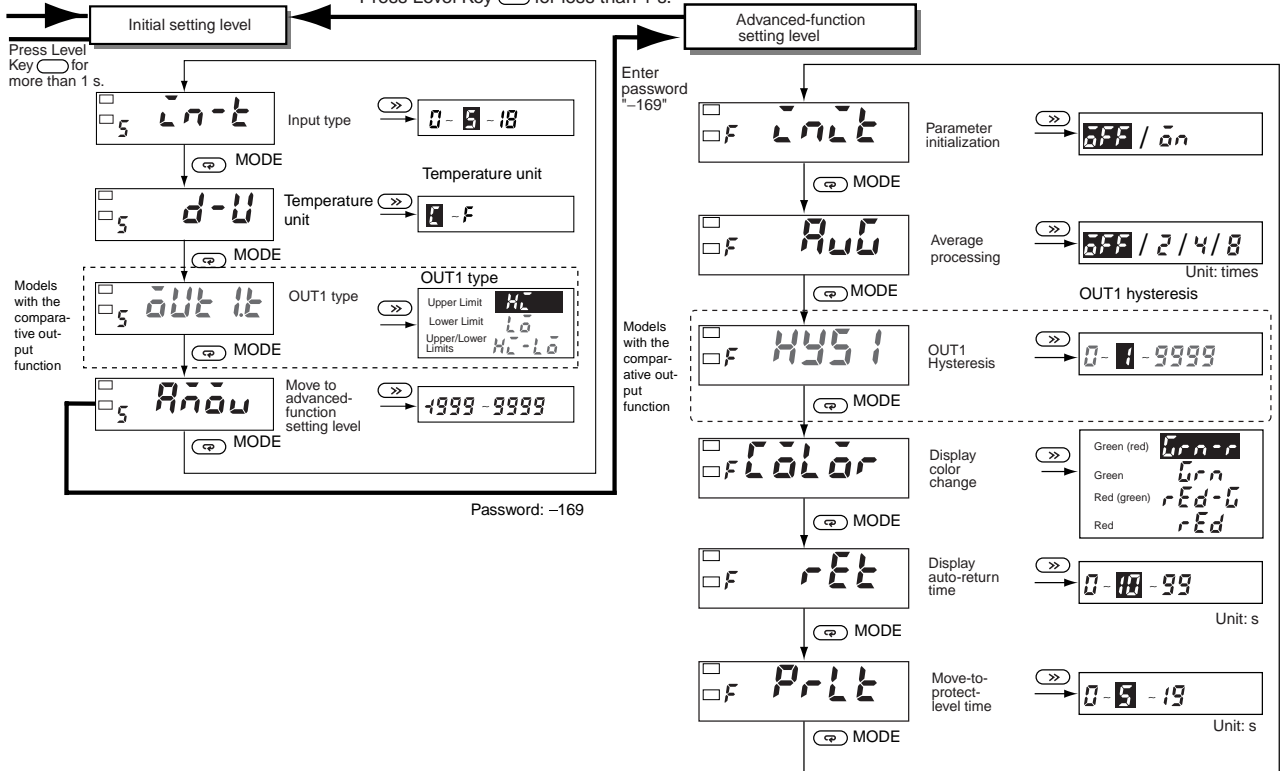4. Settings displayed in reversed colors are initial settings.
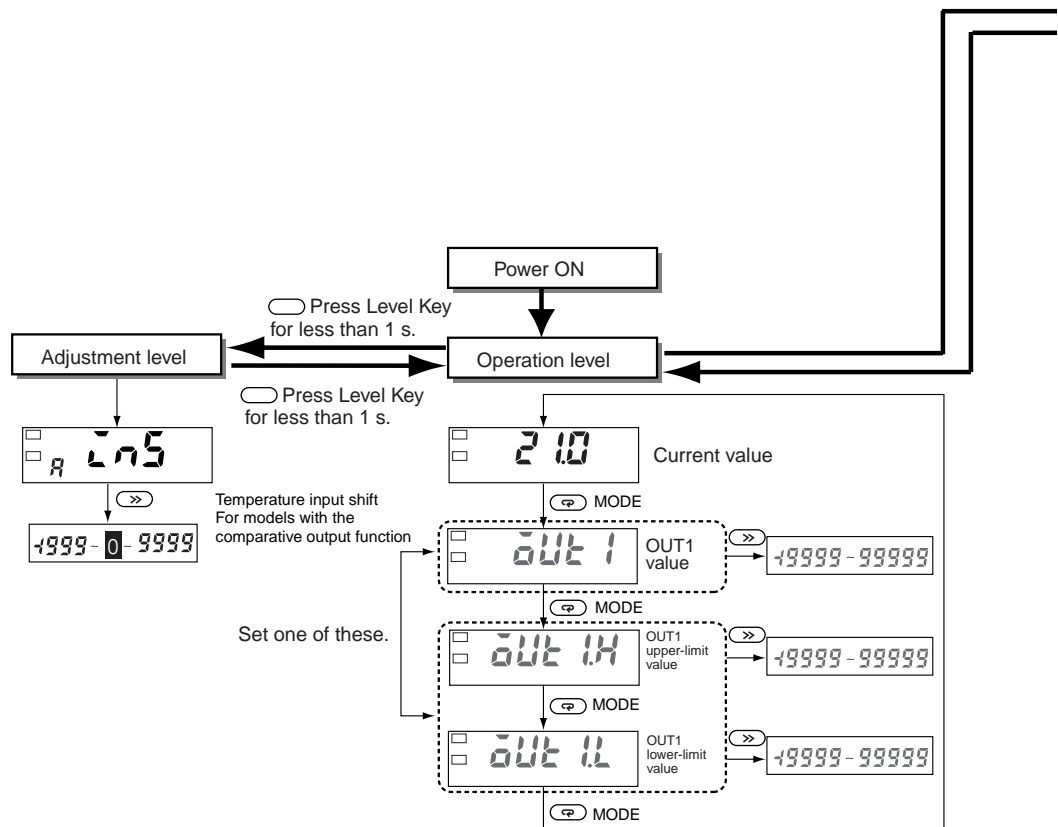
Press Level Key ⊂⊃ for more than 3 s.

Press Level Key ⊂⊃ for less than 1 s.

| Initial setting level | Advanced-function setting level |

Press Level Key ⊂⊃ for more than 1 s.

Enter password "–169"

☐☐s `ɪn-t` Input type ≫ `0- 5 -18`

MODE

☐☐s `d-U` Temperature unit ≫ Temperature unit `C -F`

MODE

Models with the comparative output function

☐☐s `oUt 1.t` OUT1 type ≫ OUT1 type
Upper Limit `Hɪ`
Lower Limit `Lo`
Upper/Lower Limits `Hɪ-Lo`

MODE

☐☐s `Amov` Move to advanced-function setting level ≫ `-1999 - 9999`

MODE

Password: –169

Models with the comparative output function

☐☐F `ɪnɪt` Parameter initialization ≫ `oFF / on`

MODE

☐☐F `AvG` Average processing ≫ `oFF / 2 / 4 / 8`
Unit: times

OUT1 hysteresis

☐☐F `HYS1` OUT1 Hysteresis ≫ `0- 1 -9999`

MODE

☐☐F `CoLor` Display color change ≫
Green (red) `Grn-r`
Green `Grn`
Red (green) `rEd-G`
Red `rEd`

MODE

☐☐F `rEt` Display auto-return time ≫ `0- 10 -99`
Unit: s

MODE

☐☐F `PrLt` Move-to-protect-level time ≫ `0- 5 -19`
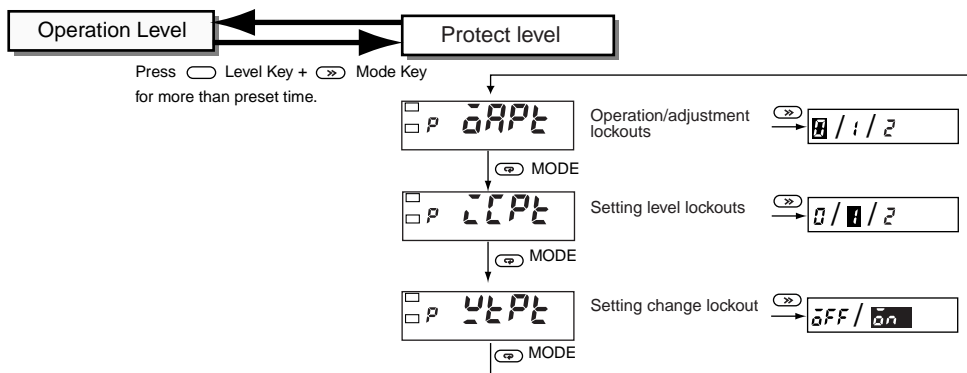Unit: s

MODE

Settings displayed in reversed colors are initial settings.

Press 🔲 Level Key + 🔲 Mode Key for more than 1 s.

| Operation Level | ←———————→ | Protect level |

Press 🔲 Level Key + 🔲 Mode Key
for more than preset time.

☐P `ōAPt` Operation/adjustment lockouts »→ `0`/`1`/`2`

⊡ MODE

☐P `CCPt` Setting level lockouts »→ `0`/`1`/`2`

⊡ MODE

☐P `YtPt` Setting change lockout »→ `ōFF`/`ōn`

⊡ MODE

Operation/Adjustment Lockouts

Restricts key operations for operation level and adjustment level.

| Param-eter | Setting | Operation level | | Moving to adjustment level |
		Process value display	Set value display	
`ōAPt`	`0`	Allowed	Allowed	Allowed
	`1`	Allowed	Allowed	Prohibited
	`2`	Allowed	Prohibited	Prohibited

• Initial setting is 0.
• This cannot be displayed on models not equipped with the comparative output function.

Setting Level Lockouts

Restricts shifting to initial setting level or advanced-function setting level.

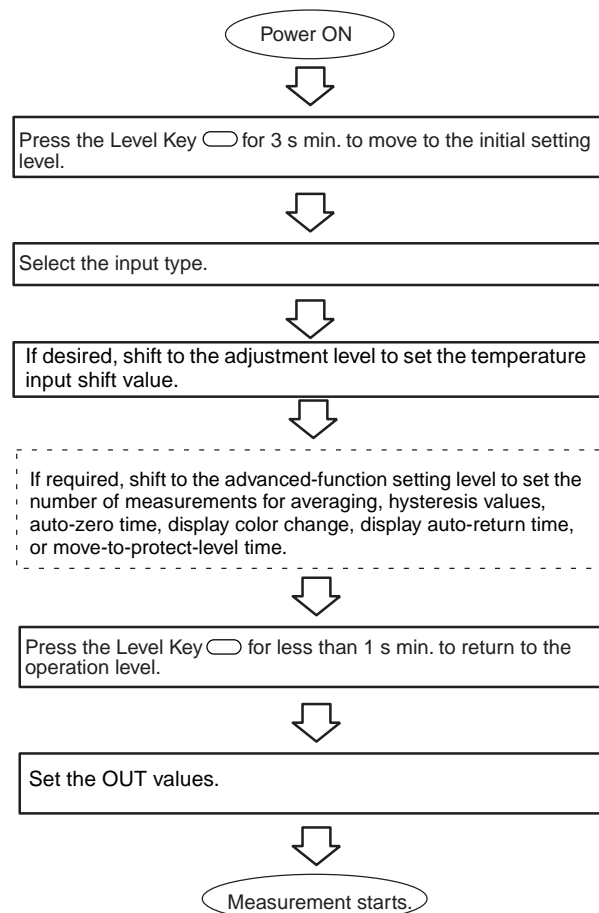| Parameter	Setting	Shift to initial setting level	Shift to advanced-function setting level
`CCPt`	`0`	Allowed	Allowed
	`1`	Allowed	Prohibited
	`2`	Prohibited	Prohibited

Setting Change Lockout

Restricts setting changes by key operation. When this lockout is set, it is no longer possible to shift to a setting change mode.

Parameter	Setting	Setting change by key operation
`YtPt`	`ōFF`	Allowed
	`ōn`	Prohibited

However, all protect level parameters can still be changed.

■ Initial Settings

(Power ON)

⬇

Press the Level Key 🔲 for 3 s min. to move to the initial setting level.

⬇

Select the input type.

⬇

If desired, shift to the adjustment level to set the temperature input shift value.

⬇

If required, shift to the advanced-function setting level to set the number of measurements for averaging, hysteresis values, auto-zero time, display color change, display auto-return time, or move-to-protect-level time.

⬇

Press the Level Key 🔲 for less than 1 s min. to return to the operation level.

⬇

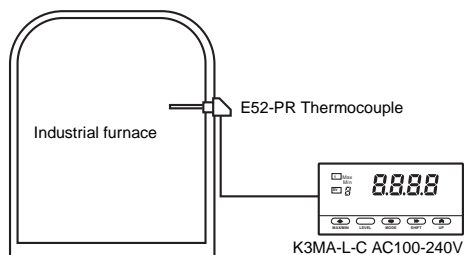Set the OUT values.

⬇

(Measurement starts.)

■ Setting Example

Initial Settings

The settings for the following example are shown here.

Example: Monitoring the temperature of an industrial furnace

Industrial furnace

E52-PR Thermocouple

K3MA-L-C AC100-240V

Here, the temperature inside the furnace is to be displayed in centigrade (°C).
Temperature sensor: E52-PR Thermocouple, Measurement range: 0 to 1,400°C.

1. Set the K3MA-L input type to the thermocouple R input range.
   Parameter: $\mathit{in\text{-}t}$ (input type), Setting value: $\mathit{l5}$

2. Select centigrade (°C) as the temperature unit.
   Parameter: $\mathit{d\text{-}U}$ (temperature unit), Setting value: C

If you are using a comparative output model, make the setting as desired.

■ Application Examples

Monitoring the temperature of an industrial furnace


Industrial furnace

K3MA-L
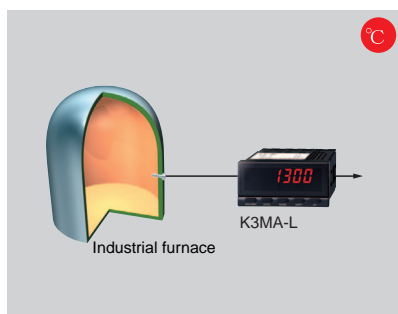
- Monitoring the temperature of an industrial furnace/sintering furnace.
- Monitoring/alarm function for disinfecting equipment.

Sending a temperature alarm for molding equipment

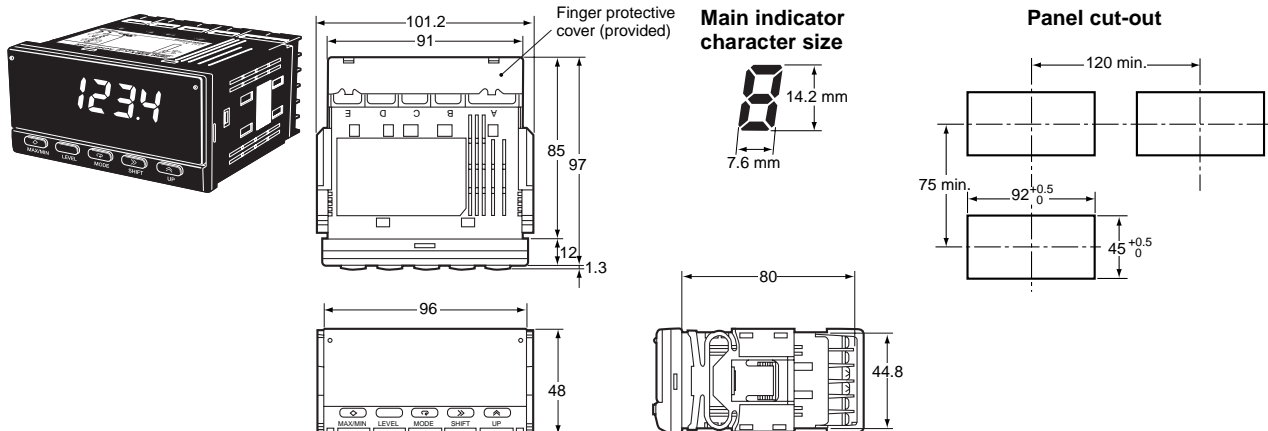PID control

E5EN

K3MA-L

Alarm output
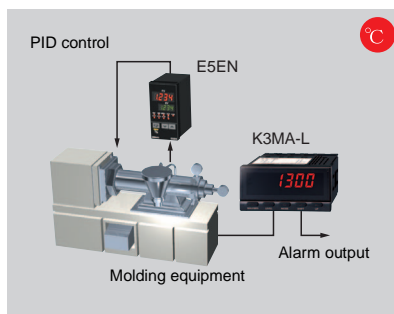
Molding equipment

- Monitoring (failsafe checking) abnormal temperatures in molding equipment.
- Monitoring the liquid temperature for cleaning devices.

Monitoring the bearing temperature for a generator motor

Generator motor

K3MA-L

Alarm output
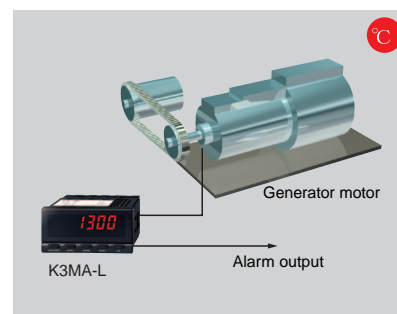
- Monitoring temperature rises in electric power generating facilities.
- Inspecting temperatures in machines and devices.

13

Dimensions

101.2
91
Finger protective cover (provided)

85
97
12
1.3

96
48

Main indicator character size

14.2 mm
7.6 mm

80
44.8

Panel cut-out

120 min.
75 min.
$92^{+0.5}_{0}$
$45^{+0.5}_{0}$

Optional Parts (Order Separately)
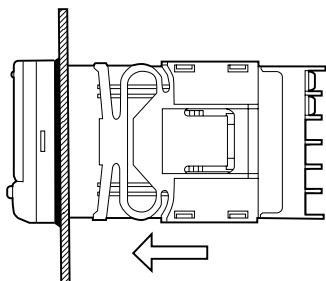
Name	Shape	Model
Splash-proof Soft Cover		K32-49SC
Hard Cover		K32-49HC

Installation

1. Insert the K3MA-L into the panel cut-out hole.
2. For a waterproof installation, insert the rubber gasket onto the body of the K3MA-L.
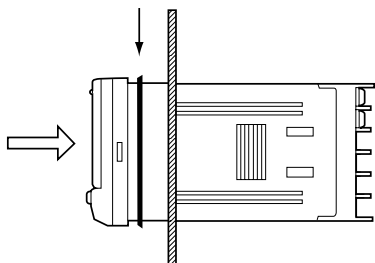
3. Fit the adaptor into the grooves on the left and right sides of the rear case, then push it until it contacts the panel to secure the K3MA-L.
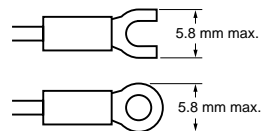

■ **Wiring Precautions**

- Use crimp terminals.
- Tighten the terminal screws to a torque of approximately 0.5 N·m.
- To avoid the influence of noise, route signal lines and power lines separately.
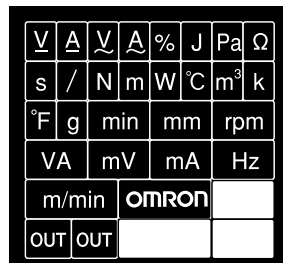
■ **Wiring**

- Use the following M3 crimp terminals.

5.8 mm max.

5.8 mm max.

■ **Unit Markings (Provided)**

- The unit markings are not attached to the K3MA-L. Select the desired markings from the provided sheet.

V	A	V̰	Ā	%	J	Pa	Ω
s	/	N	m	W	℃	m³	k
°F	g	min		mm		rpm	
VA		mV		mA		Hz	
m/min		OMRON					
OUT	OUT						

Note: For scales and gauges, use the unit markings that are specified by the relevant laws or regulations.

Precautions

⚠ **Caution**

Do not touch the terminals while the power is being supplied. Doing so may result in electric shock.

⚠ **Caution**

Do not disassemble the product or touch the internal components of the product while the power is being supplied. Doing so may result in electric shock.

⚠ **Caution**

Do not allow pieces of metal or wire clippings to enter the product. Doing so may result in electric shock, fire, or malfunction.

⚠ **Caution**

Perform correct settings for the product according to the control application. Failure to do so may cause unexpected operation, resulting in damage to the product or injury.

⚠ **Caution**

Take safety measures, such as installing a separate monitoring system, to ensure safety even if the product fails. Product failure may prevent comparative outputs from being generated, resulting in serious accidents.

Observe the following precautions to ensure safety.

1. Maintain the power supply voltage within the range specified in the specifications.

2. Maintain the load within the ratings specified in the specifications.

3. Check each terminal for correct number and polarity before connecting it. Incorrect or reverse connections may damage or burn out internal components in the product.

4. Tighten the terminal screws securely. The recommended tightening torque is 0.43 to 0.58 N·m. Loose screws may cause fire or malfunction.

5. Do not connect anything to unused terminals.

6. Provide a switch or circuit breaker so that operators can easily turn OFF the power supply when necessary. Also provide appropriate indications of such devices.

7. Do not attempt to disassemble, repair, or modify the product.

8. Do not use the product where flammable or combustible gases are present.

Application

General Precautions

1. Do not use the product in the following locations:
   - Locations subject to direct radiant heat from heating equipment.
   - Locations subject to exposure to water, oil, or chemicals.
   - Locations subject to direct sunlight.
   - Locations subject to dust or corrosive gases (particularly, sulfuric gas or ammonia gas).
   - Locations subject to severe changes in temperature.
   - Locations subject to icing or condensation.
   - Locations subject to shock or vibration.

2. Do not block heat dissipation around the product, i.e., provide sufficient space for heat dissipation.

3. Ensure that the rated voltage is reached within two seconds after the power is turned ON.

4. Conduct aging for 15 minutes min. after power is turned ON for correct measurement.

5. Do not touch the slit sections or terminals while the power is being supplied to prevent the product from being affected by static electricity.

6. Do not lay heavy objects on the product during use or storage. Doing so may deform or deteriorate the product.

7. Do not use paint thinner for cleaning. Use commercially available alcohol.

Mounting

- Mount the product to a panel that is 1 to 8 mm thick.
- Install the product in a horizontal position.
- Use crimp terminals that match screw sizes.

Noise Prevention

- Install the product as far as possible from devices that generate strong, high-frequency fields (such as high-frequency welders or sewing machines) or surges.
- Install surge absorbers or noise filters on nearby devices that generate noise (particularly motors, transformers, solenoids, magnet coils, and other devices that have a high inductance component). Do not connect a surge absorber to the temperature sensor input section of the K3MA-L.
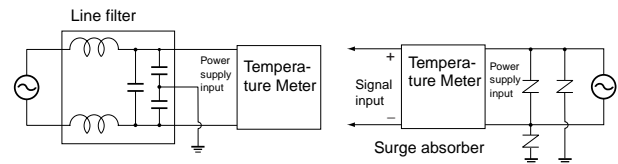
- To prevent inductive noise, separate the terminal block wiring for the product from high-voltage or high-current power lines. Do not route the wiring for the product in parallel with or tie it in a bundle with power lines.
  Take the following countermeasures against inductive noise in input lines.

  Temperature Inputs
  Separate the lead wire that connects the product with a temperature sensor from the load line to prevent the product from being affected by inductive noise.

- When using a noise filter for the power supply, check for the voltage and current and install it as close as possible to the Temperature Meter.

- Do not install the product near radios, television sets, or wireless devices. Doing so may cause reception interference.

Increasing Service Life

- Do not use the product in locations where the temperature or humidity exceeds the ratings or where condensation may occur. When installing the product in a panel, be sure that the temperature around the product (not the temperature around the panel) does not exceed the ratings. The product service life depends on the ambient temperature. The higher the ambient temperature, the shorter the service life. To extend the product service life, lower the temperature inside the Temperature Meter.

- Use and store the product within the temperature and humidity ranges given in the specifications. When gang-mounting Temperature Meters or arranging them vertically, heat generated by the Temperature Meters will cause the internal temperature to rise, reducing the service life. In such cases, consider forced cooling methods, such as using a fan to circulate air around the Temperature Meters. Do not, however, allow only the terminals to be cooled. Doing so will increase measurement error.

- The life of the output relays are greatly affected by the switching capacity and switching conditions. Use these relays within their rated load and electrical life. The contacts may fuse or burn if they are used past their electrical life.

■ Troubleshooting

When an error occurs, error details will be displayed on the main indicator. Confirm the error from the main indicator and take the appropriate countermeasures.

Level display	Main indicator	Error contents	Countermeasures
Not lit	_E 111_	RAM memory error	Repair is necessary. Consult your OMRON sales representative.
_S_	_E 111_	EEPROM memory error	When this error is displayed, press the Level Key for 3 seconds, and the settings will be restored to the factory settings. If the error cannot be recovered, repair is necessary. Consult your OMRON sales representative.
Not lit	Flashes _S.Err_	Input error	Confirm that the temperature sensor is correctly connected, and that there are no broken signal lines to the temperature sensor. If the condition does not return to normal, repair is necessary. Consult your OMRON sales representative.
Not lit	Flashes _9999_	The measurement value after temperature input correction exceeds 9999.	The temperature input correction value may be inappropriate. Use the adjustment level to review the temperature input correction value.
Not lit	Flashes _-1999_	The measurement value after temperature input correction is lower than -1999.	The temperature input correction value may be inappropriate. Use the adjustment level to review the temperature input correction value.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.