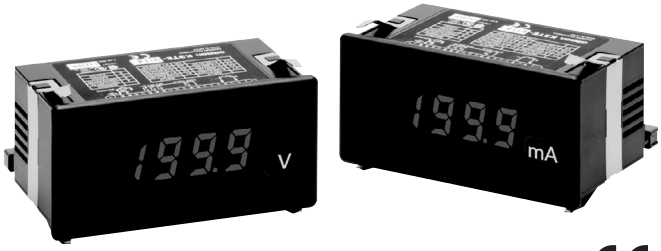
Digital Panel Meter
K3TE

Easy-to-use, Low-cost Digital Panel Meter that Accepts DC Input

- Compact DIN-size (96 x 48 (W x H)) body.
- Mounting thickness of only 3.5 mm required.
- Highly visible display with 14.2-mm-high LEDs.
- Easy-to-mount snap-in construction.
- Conforms to EMC standards EN61010-1 (IEC61010-1).



CE

Model Number Structure

■ Model Number Legend

K3TE - □ □ □ □
1 2 3 4

1, 2. Input Code
- V1: ±199.9 mV
- V2: ±1.999 V
- V3: ±19.99 V
- V4: ±199.9 V
- A1: ±199.9 μA
- A2: ±1.999 mA
- A3: ±19.99 mA
- A4: ±199.9 mA
- A5: ±1.999 A

3. Series No.
- 1: Current series

4. Supply Voltage
- 4: 100 to 120 VAC
- 5: 200 to 240 VAC
- 6: 24 VDC (internally insulated)

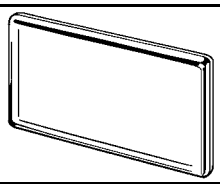
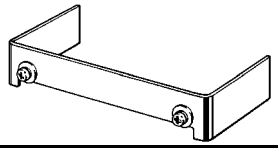
Ordering Information

■ List of Models

Range	Measuring ranges	Supply voltage		
		100 to 120 VAC	200 to 240 VAC	24 VDC (internally insulated)
DC voltage	±199.9 mV	K3TE-V114	K3TE-V115	K3TE-V116
	±1.999 V	K3TE-V214	K3TE-V215	K3TE-V216
	±19.99 V	K3TE-V314	K3TE-V315	K3TE-V316
	±199.9 V	K3TE-V414	K3TE-V415	K3TE-V416
DC current	±199.9 μA	K3TE-A114	K3TE-A115	K3TE-A116
	±1.999 mA	K3TE-A214	K3TE-A215	K3TE-A216
	±19.99 mA	K3TE-A314	K3TE-A315	K3TE-A316
	±199.9 mA	K3TE-A414	K3TE-A415	K3TE-A416
	±1.999 mA	K3TE-A514	K3TE-A515	K3TE-A516

Note: The K3TE-V4□□ does not conform to CE marking standards.

■ Accessories (Order Separately)

Name	Appearance	Model
Water-resistive Soft Front Cover		K32-L49SC
Water-resistive Mounting Bracket		K32-L49MB

Note: Be sure to use the Soft Front Cover and Mounting Bracket as a set.

Specifications

■ Ratings

Supply voltage	100 to 120 VAC; 200 to 240 VAC (50/60 Hz); 24 VDC (internally insulated)
Operating voltage range	−15% to +10% of supply voltage
Power consumption	3 VA (at max. AC load); 1.3 W (at max. DC load) (see note)
Insulation resistance	10 MΩ min. (at 500 VDC) between external terminal and case
Dielectric strength	AC model: 2,000 VAC min. for 1 min between input terminal and power supply DC model: 500 VDC min. for 1 min between input terminal and power supply AC/DC model: 2,000 VAC min. for 1 min between external terminal and case
Noise immunity	AC model: ±1,500 V on power supply terminals in normal or common mode DC model: ±480 V on power supply terminals in normal mode ±1,500 V on power supply terminals in common mode
Vibration resistance	Malfunction: 10 to 55 Hz, 0.5-mm single amplitude for 10 min each in X, Y, and Z directions Destruction: 10 to 55 Hz, 0.75-mm single amplitude for 2 hrs each in X, Y, and Z directions
Shock resistance	Malfunction: 98 m/s^2 for 3 times each in 6 directions Destruction: 294 m/s^2 for 3 times each in 6 directions
Ambient temperature	Operating: −10° to 55°C (with no icing) Storage: −20° to 65°C (with no icing)
Ambient humidity	Operating: 35% to 85% (with no condensation)
Ambient operating atmosphere	No corrosive gas
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 (level 2), 8 kV air discharge (level 3) Immunity RF-interference: EN61000-4-3: 10 V/m (amplitude-modulated, 80 MHz to 1 GHz) (level 3) Immunity Fast Transient Noise: EN61000-4-4: 2 kV (power line) (level 3) Immunity Burst Noise: 1 kV line to line (I/O signal line) Immunity Surge: EN61000-4-5: 1 kV line to line, 2 kV line to ground (power line) Immunity Conducted Disturbance EN61000-4-6: 3 V (0.15 to 80 MHz) (level 2) Immunity Voltage Dip/Interrupting EN61000-4-11: 0.5 cycles, 0, 180°, 100% (rated voltage)
Approved standards	Conforms to EN61326+A1, EN61010-1 (IEC61010-1) Conforms to VDE0106/P100 (finger protection) when the terminal cover is mounted.

Note: 1. An inrush current of approximately 0.5 A will flow at the moment the power is turned on and continued for approximately 2 ms.

2. The K3TE-V4□□ does not conform to CE marking standards.

■ Characteristics

Input signal	DC voltage/current
A/D conversion method	Double integral method
Sampling period	2.5 times/s
Display refresh period	2.5 times/s
Max. displayed digits	3 1/2 digits (±1999)
Display	7-segment red LED
Decimal point display position	By short-circuiting terminals
Sign display	"–" is displayed automatically with a negative input signal
Overflow/underflow display	Overflow: 1□□□ Underflow: – 1□□□
Zero suppression	Not supported.
External control	Process value hold (terminals on rear panel short-circuited)
Degree of protection	Front panel: IEC IP51 (see note) Case: IEC IP20 Terminals: IEC IP00

Note: IP51 is maintained when the water-resistive soft cover and bracket are used. IP50 will be, however, maintained without these water-resistive accessories.

■ Measuring Ranges

Input range	Measuring range	Max. resolution	Input impedance	Accuracy	Max. permissible load
DC voltage	±199.9 mV	100 μV	100 MΩ	±0.1%rdg ±1 digit	±250 V
	±1.999 V	1 mV	100 MΩ	±0.1%rdg ±1 digit	±250 V
	±19.99 V	10 mV	10 MΩ	±0.1%rdg ±1 digit	±250 V
	±199.9 V	100 mV	10 MΩ	±0.1%rdg ±1 digit	±350 V
DC current	±199.9 μA	100 nA	1 kΩ	±0.1%rdg ±1 digit	±10 mA
	±1.999 mA	1 μA	100 Ω	±0.1%rdg ±1 digit	±50 mA
	±19.99 mA	10 μA	10 Ω	±0.1%rdg ±1 digit	±150 mA
	±199.9 mA	100 μA	1 Ω	±0.1%rdg ±1 digit	±500 mA
	±1.999 mA	1 mA	0.1 Ω	±0.3%rdg ±1 digit	±3 A

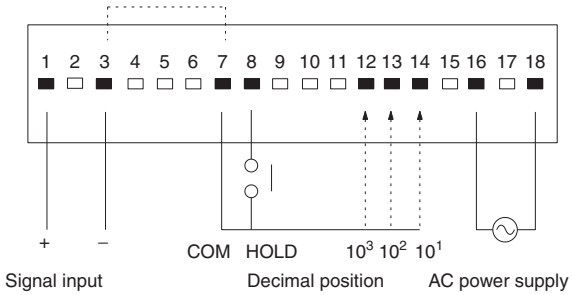
Note: The above accuracy is at an ambient temperature of 23±5°C.

Connections

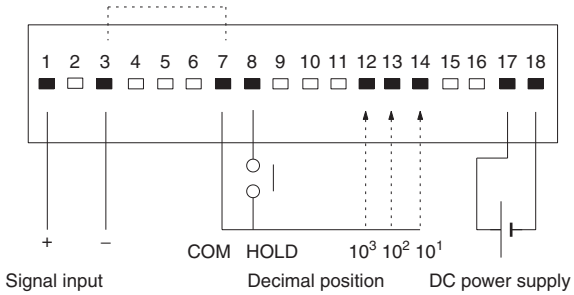
■ External Connections

Connector and connector screws are provided with the model.

AC Power Supply



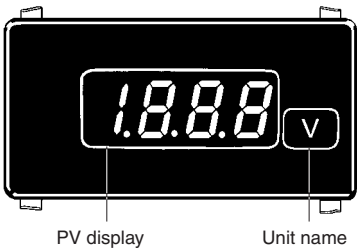
DC Power Supply



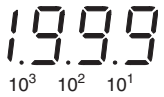
Note: 1. Terminals 3 and 7 of the AC and DC models are not internally insulated. Connect a relay with high contact reliability and insulation (with a minimum load current of 0.3 mA) or a photocoupler with high insulation (with a residual voltage of 1 V max. and a current leakage of 0.1 mA max.) to these terminals for external control.

2. The terminals marked with a white rectangular box are not used. Do not use these terminals for transmission of signals.

Nomenclature

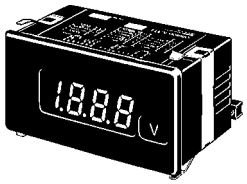


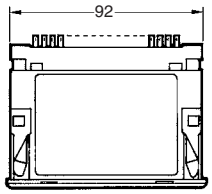
Select the decimal position with terminal 12, 13, or 14 on the rear panel.

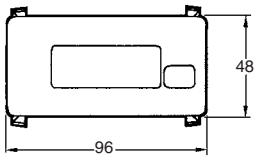


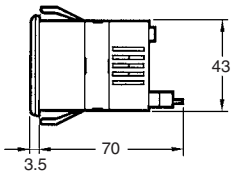
Dimensions

Note: All units are in millimeters unless otherwise indicated.

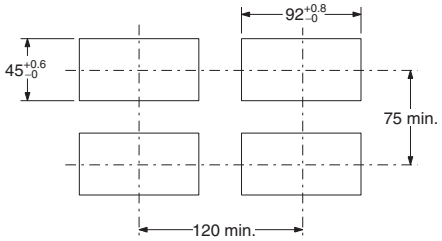






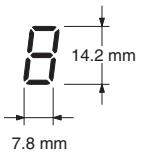


Panel Cutouts



Note: The values above are recommended values. Do not group-mount the meters at intervals less than the recommended ones.

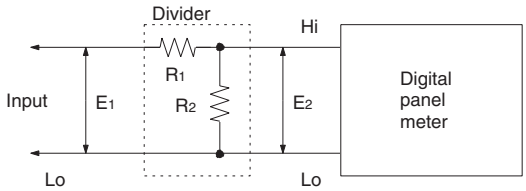
LED Indicator Size



Application Examples

High DC Voltage Measurement

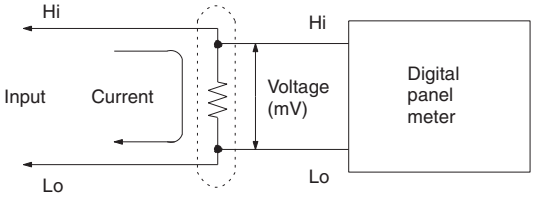
When voltage exceeding the maximum voltage in the standard range is measured (for example: more than 200 V), a divider is connected externally.



$$\frac{E_2}{E_1} = \frac{R_2}{R_1 + R_2}$$

Large DC Current Measurement

When large DC current exceeding 2 A is measured, a shunt is connected externally.



When current range DPM is used, disconnect the internal shunt resistor.

Safety Precautions

Refer to page 17 for common precautions.

Mounting

Recommended panel thickness is 1 to 3.2 mm.

When mounting, insert the Digital Panel Meter in the mounting hole and make sure that the Digital Panel Meter is secured with mounting hooks.

Always attach the Mounting Bracket before wiring the terminals. Also, always remove the wiring before removing the Mounting Bracket.

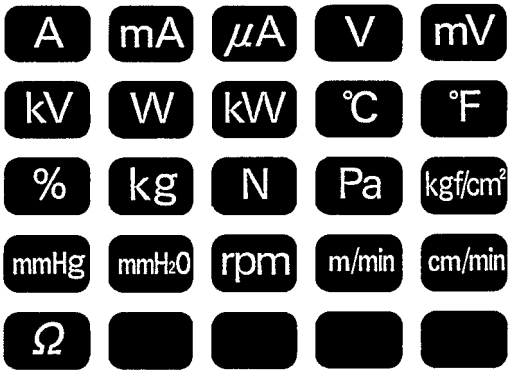
Mount the Digital Panel Meter as horizontally as possible.

Never use the Digital Panel Meter in locations where corrosive gas (particularly sulfide or ammonia gas) is generated.

As much as possible avoid use of the Digital Panel Meter in a location subject to severe shock or vibration, excessive dust, or excessive moisture.

Select a mounting location where the Digital Panel Meter can be used at an ambient operating temperature −10° to 55°C.

No product is shipped with the unit label attached. Select a unit label from the sheet provided, and attach it to the Digital Panel Meter.



Calibration

Calibrate the Digital Panel Meter regularly so that the Digital Panel Meter can maintain processing accuracy.

Use a standard signal generator with an accuracy of 99.99% min. for calibration.

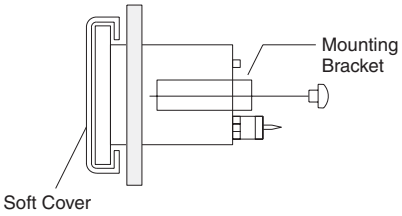
For the precise calibration methods, refer to the Instruction Sheet for the Digital Panel Meter.

After the front panel cover is removed to calibrate the K3TE, be sure not to touch components other than the calibration adjustor. Keep metal objects off the K3TE while calibrating, especially when power is turned on.

Accessories (Order Separately)

Water-resistive Soft Front Cover

Before mounting the Digital Panel Meter to a panel, attach the water-resistive soft front cover and mounting bracket to the Digital Panel Meter properly so that the Digital Panel Meter will maintain IP51 water-resistive standards. Before you calibrate Digital Panel Meters, remove the water-resistive soft front cover. Refer to the operation manual included with the Digital Panel Meter for the calibration procedure.



Note: Be sure to use the Water-resistive Soft Front Cover and mounting bracket together.

Digital Panel Meter
K3TF

Easy-to-use, Low-cost Digital Panel Meter that Accepts AC Input

- Compact DIN-size (96 x 48 (W x H)) body.
- Mounting thickness of only 3.5 mm required.
- Highly visible display with 14.2-mm-high LEDs.
- Detects and displays root-mean-square value of half-wave rectified current.
- Confirms to EMC standards EN61010-1 (IEC61010-1).

CE

Model Number Structure

■ Model Number Legend

K3TF - □ □ □ □
1 2 3 4

1, 2. Input Code
V5: 0 to 199.9 mV
V6: 0 to 1.999 V
V7: 0 to 19.99 V
V8: 0 to 199.9 V
V9: 0 to 400 V
A6: 0 to 1.999 mA
A7: 0 to 19.99 mA
A8: 0 to 199.9 mA
A9: 0 to 1.999 A

3. Series No.
1: Current series

4. Supply Voltage
4: 100 to 120 VAC
5: 200 to 240 VAC

Ordering Information

■ List of Models

Models with Line Monitor

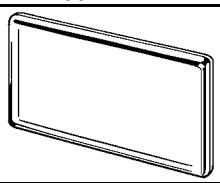
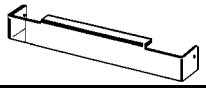
Range	Measuring ranges	Supply voltage	
		100 to 120 VAC	200 to 240 VAC
AC voltage	**0 to 199.9 V**	K3TF-V814	K3TF-V815
	0 to 400 V	K3TF-V914	K3TF-V915

Models with Signal Monitor

Range	Measuring ranges	Supply voltage	
		100 to 120 VAC	200 to 240 VAC
AC voltage	0 to 199.9 mV	K3TF-V514	K3TF-V515
	0 to 1.999 V	K3TF-V614	K3TF-V615
	0 to 19.99 V	K3TF-V714	K3TF-V715
AC current	0 to 1.999 mA	K3TF-A614	K3TF-A615
	0 to 19.99 mA	K3TF-A714	K3TF-A715
	0 to 199.9 mA	K3TF-A814	K3TF-A815
	0 to 1.999 A	K3TF-A914	K3TF-A915

Note: The K3TF-V8□□ and K3TF-V9□□ do not conform to CE marking standards.

■ Accessories (Order Separately)

Name	Appearance	Model
Water-resistive Soft Front Cover		K32-L49SC
Terminal Cover		K32-L49TC

Note: 1. Use the Mounting Bracket included with the K3TF for mounting.

2. The Terminal Cover is used for finger protection. It has no relation to water resistance.

Specifications

■ Ratings

Supply voltage	100 to 120 VAC (50/60 Hz); 200 to 240 VAC (50/60 Hz)
Operating voltage range	−15% to +10% of supply voltage
Power consumption	4 VA (at max. load)
Insulation resistance	10 MΩ min. (at 500 VDC) between external terminal and case
Dielectric strength	2,000 VAC min. for 1 min between input terminal and power supply 2,000 VAC min. for 1 min between external terminal and case
Noise immunity	±1,500 V on power supply terminals in normal or common mode
Vibration resistance	Malfunction: 10 to 55 Hz, 0.5-mm single amplitude for 10 min each in X, Y, and Z directions Destruction: 10 to 55 Hz, 0.75-mm single amplitude for 2 hrs each in X, Y, and Z directions
Shock resistance	Malfunction: 98 m/s^2 for 3 times each in 6 directions Destruction: 294 m/s^2 for 3 times each in 6 directions
Ambient temperature	Operating: −10° to 55°C (with no icing) Storage: −20° to 65°C (with no icing)
Ambient humidity	Operating: 35% to 85% (with no condensation)
Ambient operating atmosphere	No corrosive gas
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 (level 2), 8 kV air discharge (level 3) Immunity RF-interference: EN61000-4-3: 10 V/m (amplitude-modulated, 80 MHz to 1 GHz) (level 3) Immunity Fast Transient Noise: EN61000-4-4: 2 kV (power line) (level 3) Immunity Burst Noise: 1 kV line to line (I/O signal line) Immunity Surge: EN61000-4-5: 1 kV line to line, 2 kV line to ground (power line) Immunity Conducted Disturbance EN61000-4-6: 3 V (0.15 to 80 MHz) (level 2) Immunity Voltage Dip/Interrupting EN61000-4-11: 0.5 cycles, 0, 180°, 100% (rated voltage)
Approved standard	Conforms to EN61326+A1, EN61010-1 (IEC61010-1) Conforms to VDE0106/P100 (finger protection) when the terminal cover is mounted.

Note: The K3TF-V8□□ and K3TF-V9□□ do not conform to CE marking standards.

■ Characteristics

Input signal	AC voltage/current
A/D conversion method	Double integral method
Root-mean-square value indication	Root-mean-square value of half-wave rectified current detected
Sampling period	2.5 times/s
Display refresh period	2.5 times/s
Max. displayed digits	3 1/2 digits (1999)
Display	7-segment red LED
Decimal point display position	Selected with slide switch (see note 1)
Overflow display	Overflow: /□□□
Zero suppression	Not supported.
External control	Process value hold (terminals on rear panel short-circuited)
Degree of protection	Front panel: IEC IP51 (see note 2) Case: IEC IP20 Terminals: IEC IP00

Note: 1. Only for models with signal monitor.

2. IP51 is maintained when the water-resistive soft cover and bracket are used. IP50 will be, however, maintained without these water-resistive accessories.

■ Measuring Ranges

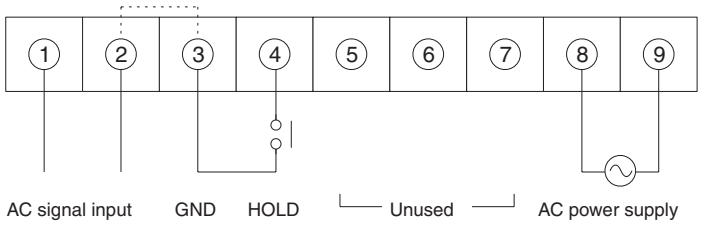
Monitor	Input range	Measuring range	Max. resolution	Input impedance	Accuracy	Max. permissible load
Line monitor	AC voltage	0 to 199.9 V	100 mV	10 MΩ	±0.3%rdg ±1 digit (see note 1)	500 V
		0 to 400 V	1 V	10 MΩ	±0.3%rdg ±1 digit	500 V
Signal monitor	AC voltage	0 to 199.9 mV	100 μV	10 MΩ	±0.3%rdg ±1 digit	250 V
		0 to 1.999 V	1 mV	10 MΩ	±0.3%rdg ±1 digit	250 V
		0 to 19.99 V	10 mV	1 MΩ	±0.3%rdg ±1 digit	250 V
	AC current	0 to 1.999 mA	1 μA	100 Ω	±0.5%rdg ±1 digit	50 mA
		0 to 19.99 mA	10 μA	10 Ω	±0.5%rdg ±1 digit	150 mA
		0 to 199.9 mA	100 μA	1 Ω	±0.5%rdg ±1 digit	500 mA
		0 to 1.999 A	1 mA	0.1 Ω	±0.5%rdg ±1 digit	3 A

Note: 1. With 100% input. ±0.3% FS±1 digit when the input is less than 35% FS.

2. The above accuracy is at an input frequency range of 40 Hz to 1 kHz and an ambient temperature of 23±5°C.

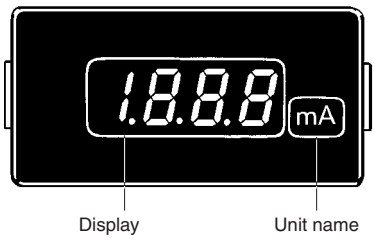
Connections

■ External Connections



Note: Terminals 2 and 3 of the models are not internally insulated. Connect a relay with high contact reliability and insulation (with a minimum load current of 0.3 mA) or a photocoupler with high insulation (with a residual voltage of 1 V max. and a current leakage of 0.1 mA max.) to these terminals for external control.

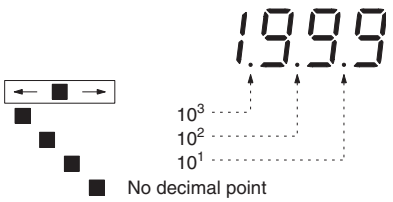
Nomenclature



Select the decimal position with the slide switch under the cover on the front panel (signal monitor only).

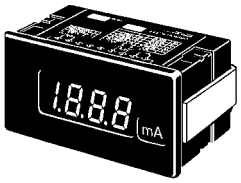
Remove the front panel by using a flat-blade screwdriver or your fingernail in the two notches at the bottom.

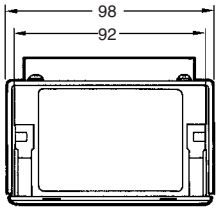
Note: The decimal position cannot be changed for the K3TF-V81□ or K3TF-V91□.

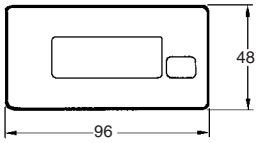


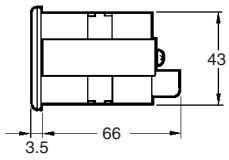
Dimensions

Note: All units are in millimeters unless otherwise indicated.



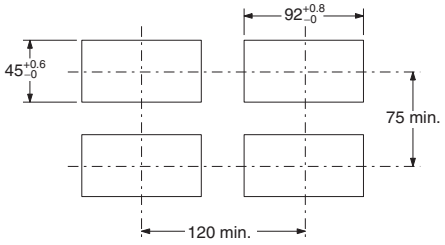






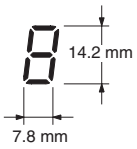
The K3TF uses M3.5 terminals.

Panel Cutouts



Note: The values above are recommended values. Do not group-mount the meters at intervals less than the recommended ones.

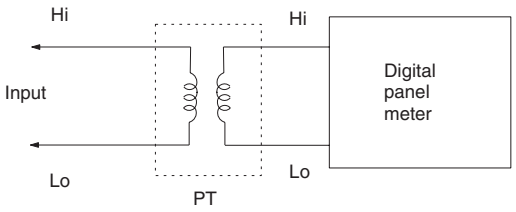
LED Indicator Size



Application Examples

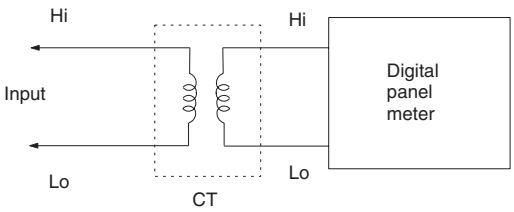
High AC Voltage Measurement

When voltage exceeding the maximum voltage in the standard range is measured (for example: more than 400 V), a divider or potential transformer (PT) is connected externally.



Large AC Current Measurement

When AC current exceeding 2 A is measured, a current transformer (CT) is connected externally.

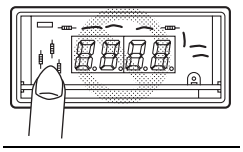


Safety Precautions

Refer to page 17 for common precautions.

Precautions for Safe Use

The front panel cover is removed when setting the decimal point position or performing calibration. Do not, however, touch any parts other than the slide switches or adjustment knob or come close to any metal parts.



Precautions for Correct Use

Mounting

Recommended panel thickness is 1 to 3.2 mm.

Mount the Digital Panel Meter by attaching the mounting bracket supplied as an accessory from the rear of the Digital Panel Meter, hook the mounting bracket to the Digital Panel Meter securely, and tighten the mounting screws by turning them clockwise with a tightening torque of 5 kgf·cm (0.49 N·m). For dismounting, loosen the screws and widen the hooks.

Always attach the Mounting Bracket before wiring the terminals. Also, always remove the wiring before removing the Mounting Bracket.

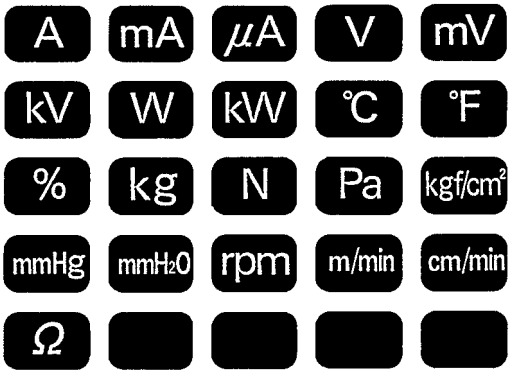
Mount the Digital Panel Meter as horizontally as possible.

Never use the Digital Panel Meter in locations where corrosive gas (particularly sulfide or ammonia gas) is generated.

As much as possible avoid use of the Digital Panel Meter in a location subject to severe shock or vibration, excessive dust, or excessive moisture.

Select a mounting location where the Digital Panel Meter can be used at an ambient operating temperature −10° to 55°C.

No product is shipped with the unit label attached. Select a unit label from the sheet provided, and attach it to the Digital Panel Meter.



Calibration

Calibrate the Digital Panel Meter regularly so that the Digital Panel Meter can maintain processing accuracy.

Use a standard signal generator with an accuracy of 99.99% min. for calibration.

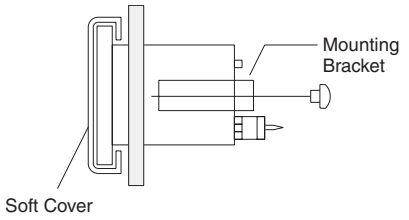
For the precise calibration methods, refer to the Instruction Sheet for the Digital Panel Meter.

After the front panel cover is removed to calibrate the K3TF or set the decimal position, do not touch components other than the slide switch and calibration adjustor. Keep metal objects off the K3TF after the cover is removed, especially when power is turned on.

Accessories (Order Separately)

Water-resistive Soft Front Cover

Before mounting the Digital Panel Meter to a panel, attach the water-resistive soft front cover and mounting bracket to the Digital Panel Meter properly so that the Digital Panel Meter will maintain IP51 water-resistive standards. Before you calibrate Digital Panel Meters, remove the water-resistive soft front cover. Refer to the operation manual included with the Digital Panel Meter for the calibration procedure.

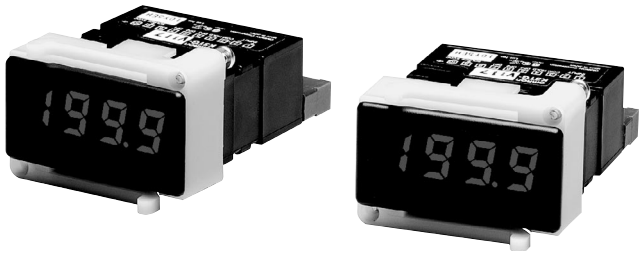


Note: Be sure to use the Water-resistive Soft Front Cover and mounting bracket together.

Digital Panel Meter
K3TG

Subminiature Digital Panel Meter that Accepts DC Input

- Ultra-compact DIN-size (48 x 24 (W x H)) body.
- Mounting thickness of only 2 mm required.
- Highly visible display with 10.2-mm-high LEDs.
- 5-VDC power supply for control.



Model Number Structure

■ Model Number Legend

K3TG - □ □ □ □
1 2 3 4

1, 2. Input Code
V1: ±199.9 mV
V2: ±1.999 V
V3: ±19.99 V
V4: ±199.9 V

3. Series No.
1: Current series

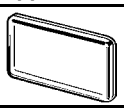
4. Supply Voltage
7: 5 VDC (not internally insulated)

Ordering Information

■ List of Models

Range	Measuring ranges	Supply voltage
		5 VDC (not internally insulated)
DC voltage	±199.9 mV	K3TG-V117
	±1.999 V	K3TG-V217
	±19.99 V	K3TG-V317
	±199.9 V	K3TG-V417

■ Accessories (Order Separately)

Name	Appearance	Model
Water-resistive Soft Front Cover		K32-L24SC

Specifications

■ Ratings

Supply voltage	5 VDC (not internally insulated)
Operating voltage range	–5% to +5% of supply voltage
Power consumption	0.3 W (at max. DC load)
Insulation resistance	10 MΩ min. (at 500 VDC) between external terminal and case
Dielectric strength	2,000 VAC min. for 1 min between external terminal and case
Noise immunity	±200 V on power supply terminals in normal mode ±500 V on power supply terminals in common mode
Vibration resistance	Malfunction: 10 to 55 Hz, 0.5-mm single amplitude for 10 min each in X, Y, and Z directions Destruction: 10 to 55 Hz, 0.75-mm single amplitude for 2 hrs each in X, Y, and Z directions
Shock resistance	Malfunction: 98 m/s^2 for 3 times each in 6 directions Destruction: 294 m/s^2 for 3 times each in 6 directions
Ambient temperature	Operating: –10° to 55°C (with no icing) Storage: –20° to 65°C (with no icing)
Ambient humidity	Operating: 35% to 85% (with no condensation)
Ambient operating atmosphere	No corrosive gas
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 (level 2), 8 kV air discharge (level 3) Immunity RF-interference: EN61000-4-3: 10 V/m (amplitude-modulated, 80 MHz to 1 GHz) (level 3) Immunity Fast Transient Noise: EN61000-4-4: 2 kV (power line) (level 3) Immunity Burst Noise: 1 kV line to line (I/O signal line) Immunity Surge: EN61000-4-5: 1 kV line to line, 2 kV line to ground (power line) Immunity Conducted Disturbance EN61000-4-6: 3 V (0.15 to 80 MHz) (level 2) Immunity Voltage Dip/Interrupting EN61000-4-11: 0.5 cycles, 0, 180°, 100% (rated voltage)

■ Characteristics

Input signal	DC voltage
A/D conversion method	Double integral method
Sampling period	2.5 times/s
Display refresh period	2.5 times/s
Max. displayed digits	3 1/2 digits (+1999)
Display	7-segment red LED
Decimal point display position	By short-circuiting terminals
Sign display	"–" is displayed automatically with a negative input signal.
Overflow/underflow display	Overflow: 1□□□ Underflow: – 1□□□
Zero suppression	Not supported.
External control	Process value hold (terminals on rear panel short-circuited)
Degree of protection	Front panel: IEC IP51 (see note) Case: IEC IP20 Terminals: IEC IP00

Note: IP51 is maintained when the water-resistive soft cover and bracket are used. IP50 will be, however, maintained without these water-resistive accessories.

■ Measuring Ranges

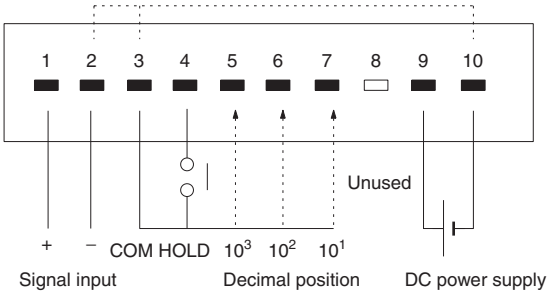
Input range	Measuring range	Max. resolution	Input impedance	Accuracy	Max. permissible load
DC voltage	±199.9 mV	100 μV	100 MΩ	±0.1%rdg ±1 digit	±250 V
	±1.999 V	1 mV	100 MΩ	±0.1%rdg ±1 digit	±250 V
	±19.99 V	10 mV	10 MΩ	±0.1%rdg ±1 digit	±250 V
	±199.9 V	100 mV	10 MΩ	±0.1%rdg ±1 digit	±350 V

Note: The above accuracy is at an ambient temperature of 23±5°C.

Connections

■ External Connections

External Connection (Connector and connector screws are provided with the model.)



Conformance to EN/IEC Standards

To ensure conformance to EN/IEC standards in machinery that incorporates the K3TG, ensure that input signal lines are less than 30 m.

Note: 1. Terminals 2 and 3 and 10 are not internally insulated. Connect a relay with high contact reliability and insulation (with a minimum load current of 0.3 mA) or a photocoupler with high insulation (with a residual voltage of 1 V max. and a current leakage of 0.1 mA max.) to these terminals for external control. The use of an independent power supply is recommended for the Digital Panel Meter.

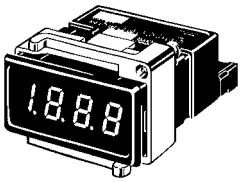
2. Terminal 8 is not used. Do not use this terminal for transmission of signals.

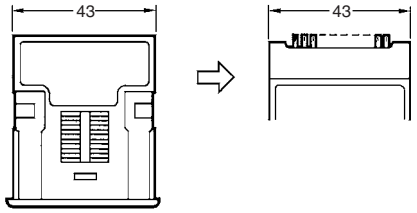
Nomenclature

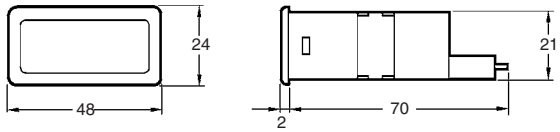
Select the decimal position with terminal 5, 6, or 7 on the rear panel.

Dimensions

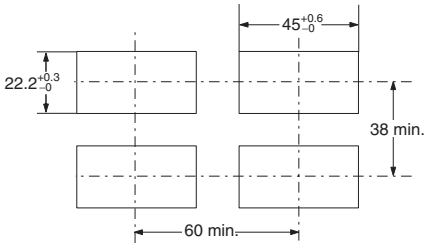
Note: All units are in millimeters unless otherwise indicated.



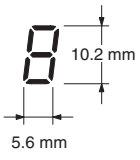




Panel Cutouts



LED Indicator Size

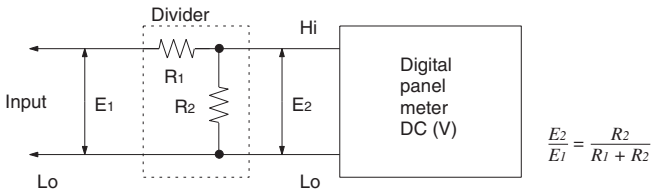


Note: The values above are recommended values. Do not group-mount the meters at intervals less than the recommended ones.

Application Examples

High DC Voltage Measurement

When voltage exceeding the maximum voltage in the standard range is measured (for example: more than 200 V), a divider is connected externally.



$$\frac{E_2}{E_1} = \frac{R_2}{R_1 + R_2}$$

Safety Precautions

■ Precautions for Correct Use

Refer to page 17 for common precautions.

Mounting

Recommended panel thickness is 1 to 3.2 mm.

Mount the Digital Panel Meter by attaching the mounting bracket supplied as an accessory from the rear of the Digital Panel Meter and hooking the mounting bracket to the Digital Panel Meter securely.

Tighten the mounting screws by turning them clockwise with a tightening torque of 4 kgf·cm (0.39 N·m).

To dismount the Digital Panel Meter, loosen the screws and widen the hooks.

Mount the Digital Panel Meter as horizontally as possible.

Calibration

Calibrate the Digital Panel Meter regularly so that the Digital Panel Meter can maintain processing accuracy.

Use a standard signal generator with an accuracy of 99.99% min. for calibration.

For the precise calibration methods, refer to the Instruction Sheet for the Digital Panel Meter.

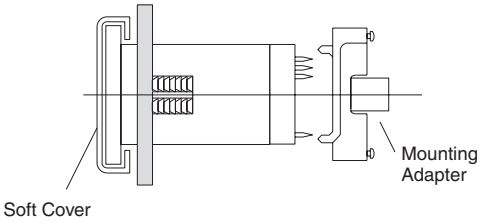
Control Power Supply

Use a control power supply with a ripple rate of 10% max.

Accessories (Order Separately)

Water-resistive Soft Front Cover

Before mounting the Digital Panel Meter to a panel, attach the water-resistive soft front cover and mounting bracket to the Digital Panel Meter properly so that the Digital Panel Meter will maintain IP51 water-resistive standards.



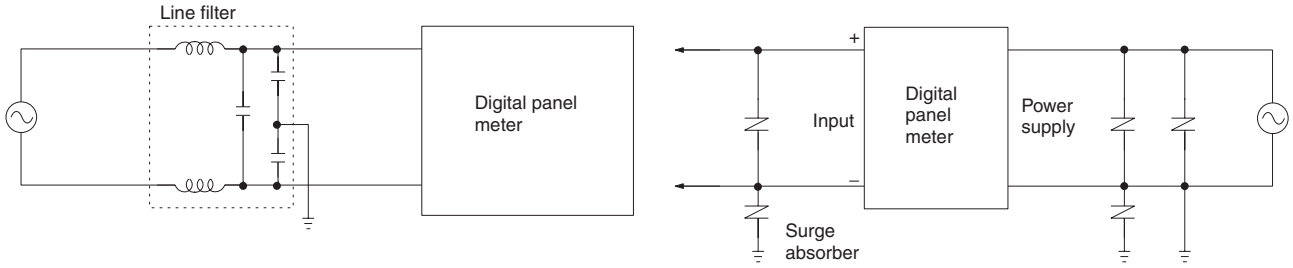
Note: Be sure to use the Water-resistive Soft Front Cover and mounting bracket together.

Common Precautions

Counter-measures Against Noise

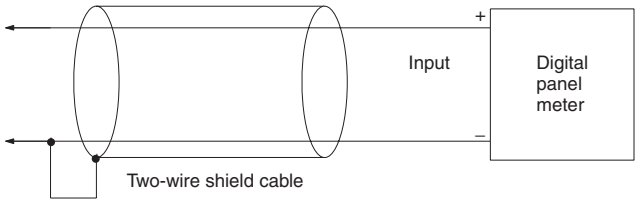
Power Supply

Although all possible counter-measures against noise have been taken on the digital panel meter, the Digital Panel Meter cannot resist excess noise. If a power relay, magnetic switch, or high-frequency device is connected to the power supply line or if there is a high-voltage spark or abnormal voltage generation due to lightning, connect a noise absorption circuit such as a line filter, noise-cut transformer, or varistor to the Digital Panel Meter.



Induced Noise

If induced noise is a problem, shield the Digital Panel Meter with a metal cover and ground the metal cover. To reduce induced noise on the input lines, use a two-wire shielded cable, and connect the shield wire to the negative terminal at a point on the signal source.



Warranty and Application Considerations

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

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IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.

Know and observe all prohibitions of use applicable to this product.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons. Consult with your OMRON representative at any time to confirm actual specifications of purchased product.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

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

Cat. No. N074-E1-03 **In the interest of product improvement, specifications are subject to change without notice.**

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