

### Low-cost, Easy-to-use Display

- 1/8-DIN-size (96 W x 48 H) body
- Mounting thickness of only 3.5 mm required
- Highly visible display with LEDs 14.2-mm high
- Easy-to-mount snap-in construction
- Water-resistant, IP51 construction (optional)
- Use edge connector for quick connection



### Ordering Information

#### Input Range

Range	Measuring ranges	Supply voltage			
		100 to 120 VAC	200 to 240 VAC	24 VDC (internally insulated)	24 VAC
DC voltage	±199.9 mV	K3TE-V114	K3TE-V115	K3TE-V116	K3TE-V118
	±1.999 V	K3TE-V214	K3TE-V215	K3TE-V216	K3TE-V218
	±19.99 V	K3TE-V314	K3TE-V315	K3TE-V316	K3TE-V318
	±199.9 V	K3TE-V414	K3TE-V415	K3TE-V416	K3TE-V418
DC current	±199.9 µA	K3TE-A114	K3TE-A115	K3TE-A116	K3TE-A118
	±1.999 mA	K3TE-A214	K3TE-A215	K3TE-A216	K3TE-A218
	±19.99 mA	K3TE-A314	K3TE-A315	K3TE-A316	K3TE-A318
	±199.9 mA	K3TE-A414	K3TE-A415	K3TE-A416	K3TE-A418

Models with a measurement range of ±1.999 A are available on request. For details, contact your OMRON representative.

#### 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

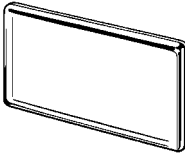
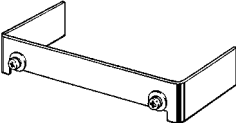
#### 3. Series No.

1: Current series

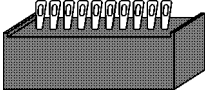
#### 4. Supply Voltage

4: 100 to 120 VAC  
 5: 200 to 240 VAC  
 6: 24 VDC (internally insulated)  
 8: 24 VAC (24-VAC type is available by request)

## ■ ACCESSORIES (ORDER SEPARATELY)

Description	Appearance	Part number
Water-resistant soft front cover		<b>K32-L49SC</b>
Water-resistant mounting bracket		<b>K32-L49MB</b>

## ■ REPLACEMENT PARTS

Description	Appearance	Part number
Edge Connector		<b>K3TE Connector</b>

## Specifications

### ■ RATINGS

Supply voltage	24 VAC; 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 M $\Omega$ 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	$\pm$ 1,500 V on power supply terminals in normal or common mode
	DC model	$\pm$ 480 V on power supply terminals in normal mode; $\pm$ 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	100 m/s <sup>2</sup> (approx. 10G) for 3 times each in 6 directions
	Destruction	300 m/s <sup>2</sup> (approx. 30G) for 3 times each in 6 directions
Ambient temperature	Operating	-10° to 55°C; 14° to 131°F (with no icing)
	Storage	-20° to 65°C; -4° to 149°F (with no icing)
Ambient humidity	Operating	35% to 85% (with no condensation)
Ambient atmosphere	Must be free of corrosive gas	
Enclosure ratings	Front panel	IEC IP51 (see note)
	Case	IEC IP20
	Terminals	IEC IP00
Approvals	UL	File No. E41515
	CSA	File No. LR67027

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

## ■ CHARACTERISTICS

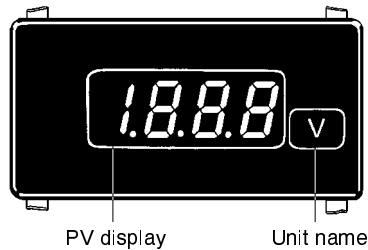
Input signal		DC voltage/current
A/D conversion method		Double integral method
Sampling period		2.5 times/s
Display refresh period		2.5 times/s
Max. displayed digits		3 1/2 digits ( $\pm 1999$ )
Display		7-segment LED
Decimal point display position		By short-circuiting terminals
Sign display		"-" is displayed automatically with a negative input signal
Overflow/underflow display	Overflow	1□□□
	Underflow	-1□□□
External control		Process value hold (terminals on rear panel short-circuited)

## ■ MEASURING RANGES

Input range	Measuring range	Max. resolution	Input impedance	Accuracy	Max. permissible load
DC voltage	$\pm 199.9$ mV	100 $\mu$ V	100 M $\Omega$	$\pm 0.1\%$ rdg $\pm 1$ digit	$\pm 250$ V
	$\pm 1.999$ V	1 mV	100 M $\Omega$	$\pm 0.1\%$ rdg $\pm 1$ digit	$\pm 250$ V
	$\pm 19.99$ V	10 mV	10 M $\Omega$	$\pm 0.1\%$ rdg $\pm 1$ digit	$\pm 250$ V
	$\pm 199.9$ V	100 mV	10 M $\Omega$	$\pm 0.1\%$ rdg $\pm 1$ digit	$\pm 350$ V
DC current	$\pm 199.9$ $\mu$ A	100 nA	1 k $\Omega$	$\pm 0.1\%$ rdg $\pm 1$ digit	$\pm 10$ mA
	$\pm 1.999$ mA	1 $\mu$ A	100 $\Omega$	$\pm 0.1\%$ rdg $\pm 1$ digit	$\pm 50$ mA
	$\pm 19.99$ mA	10 $\mu$ A	10 $\Omega$	$\pm 0.1\%$ rdg $\pm 1$ digit	$\pm 150$ mA
	$\pm 199.9$ mA	100 $\mu$ A	1 $\Omega$	$\pm 0.1\%$ rdg $\pm 1$ digit	$\pm 500$ mA

**Note:** The above accuracy is at an ambient temperature of  $25^\circ \pm 5^\circ \text{C}$ .

## Nomenclature

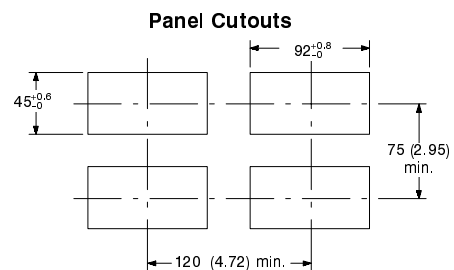
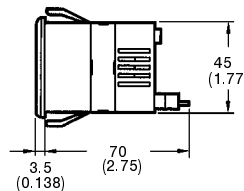
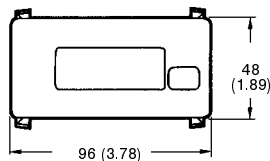
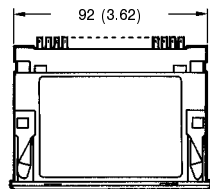
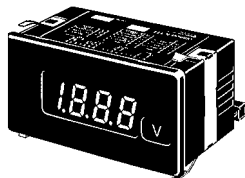


Select the decimal position with terminal 12, 13, or 14 on the rear panel.

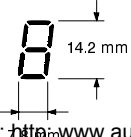
19.99  
10<sup>3</sup> 10<sup>2</sup> 10<sup>1</sup>

## Dimensions

Unit: mm (inch)



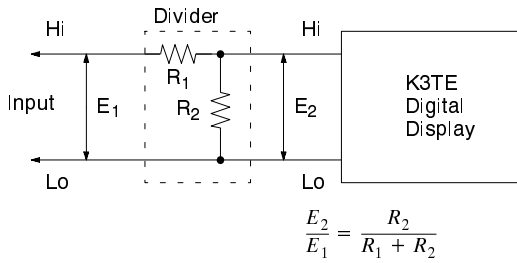
### LED Indicator Size



**■ CIRCUIT DIAGRAM**

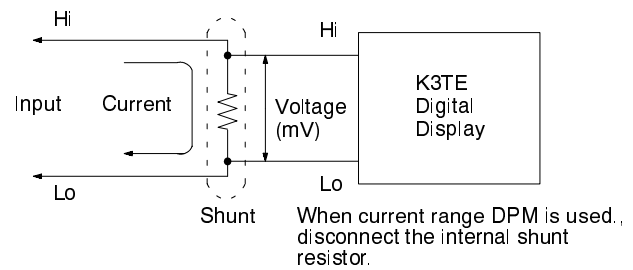
**High DC Voltage Measurement**

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



**Large DC Current Measurement**

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

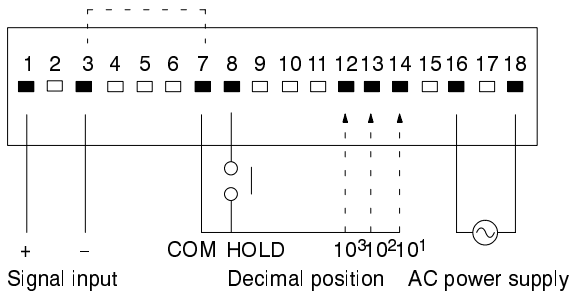


**Installation**

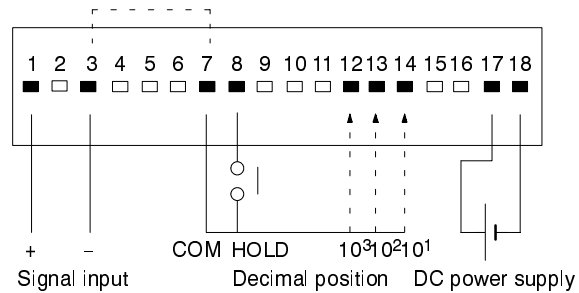
**■ EXTERNAL CONNECTIONS**

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.

**Precautions**

**Installation**

**Location**

- Never use the K3TE DC Digital Display in areas where corrosive gas (particularly sulfured or ammonia gas) is generated.
- Do not use the K3TE in a location subject to severe shock or vibration, excessive dust, or excessive moisture.
- Select a mounting location where the K3TE can be used at an ambient operating temperature -10° to 55°C (14° to 131°F).
- Verify that panel thickness is 1 to 3.2 mm (0.04 to 0.13 in).
- Verify that the panel area and cut-out opening will allow the K3TE to be installed as perfectly horizontal as possible.

**Installation Procedure**

1. Insert the K3TE into the panel cut-out.
2. Secure the K3TE with the mounting bracket, fastening the mounting screws with a tightening torque of 5 kgf/cm

(0.49 N/m). Always attach the mounting bracket before wiring.

3. Then, wire the terminals.

**Attach the Unit Label**

Select a unit label from the sheet provided and attach it to the K3TE. (No product is shipped with the unit label attached.)



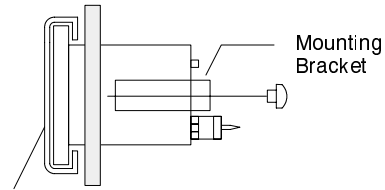
### Calibration

- Calibrate the K3TE Digital Display regularly to maintain processing accuracy.
- Use a standard signal generator with an accuracy of 99.99% min. for calibration.
- To calibrate, remove the front panel cover and do not touch components other than the calibration adjustor.
- Keep metal objects off the K3TE, especially when power is turned on.
- For the precise calibration method, refer to the K3TE Instruction Sheet (included).

### Accessories – Order Separately

#### Water-resistant Soft Front Cover

To maintain IP51 water-resistant standards, correctly attach the water-resistant soft front cover and mounting bracket to it before installing the K3TE. (To calibrate, remove the water-resistant soft front cover).



Soft Cover

**Note:** Be sure to use the Water-resistant Soft Front Cover and mounting bracket together in order to maintain IP51 water-resistant standards.

# OMRON

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### Authorized Distributor:

#### ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.