

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.
- Water-resistant (IP51) construction (optional).

Ordering Information

Input Range

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

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

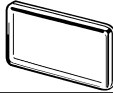
3. Series No.

1: Current series

4. Supply Voltage

7: 5 VDC (not internally insulated)

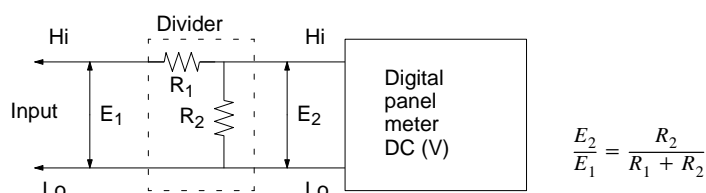
■ Accessories (Order Separately)

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

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.



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 MW min. (at 500 VDC) between external terminal and case
Dielectric withstand voltage	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: 100 m/s ² (approx. 10G) for 3 times each in 6 directions Destruction: 300 m/s ² (approx. 30G) 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 atmosphere	Must be free of corrosive gas

■ 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 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)
Enclosure ratings	Front panel: IEC IP51 (see note) Case: IEC IP20 Terminals: IEC IP00

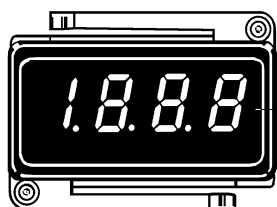
Note: IP51 is maintained when the water-resistant soft cover and bracket are used. IP50 will be, however, maintained without these water-resistant accessories.

■ Measuring Ranges

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

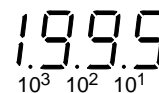
Note: The above accuracy is at an ambient temperature of 25+5% C.

Nomenclature



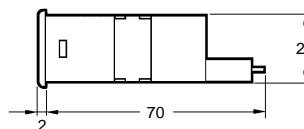
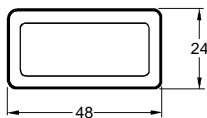
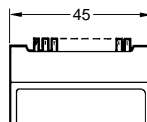
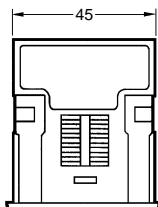
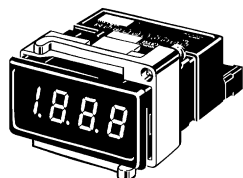
PV display

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

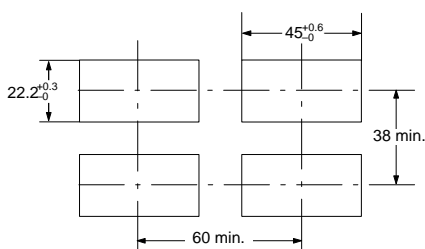


Dimensions

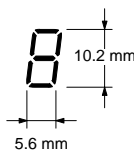
Note: All units are in millimeters unless otherwise indicated.



Panel Cutouts



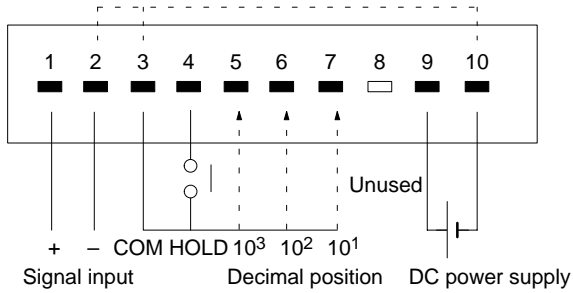
LED Indicator Size



Installation

External Connections

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



- Note:**
- 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.
 - Terminal 8 is not used. Do not use this terminal for transmission of signals.

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, hook the mounting bracket to the Digital Panel Meter securely, and tighten the mounting screws by turning them clockwise with a tightening torque of 4 kgf·cm (0.39 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 sulfured 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 $55\%C$.

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.

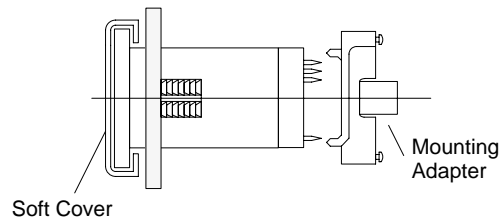
Control Power Supply

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

Accessories (Order Separately)

Water-resistant Soft Front Cover

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



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

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. N74-E1-1 **In the interest of product improvement, specifications are subject to change without notice.**

OMRON Corporation

Supervisory Control Devices Division

29th Fl., Crystal Tower Bldg.

1-2-27, Shiromi, Chuo-ku,

Osaka 540 Japan

Phone: 06-949-6075 Fax: 06-949-6084

Printed in Japan

0592-1M (0592)