

Subminiature DC Digital Display

K3TG

Ultra-compact DIN-size Body With Highly Visible Display

- DIN-size (48 W x 24 H) body
- Requires only a 2 mm mounting thickness
- 10.2 mm high LED display for easy visibility
- 5-VDC power supply for control
- Optional, water-resistant construction for IP51 rating
- Use Edge Connector for quick connection



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

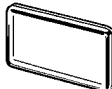
3. Series No.

1: Current series

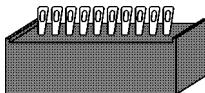
4. Supply Voltage

7: 5 VDC (not internally insulated)

■ ACCESSORIES (ORDER SEPARATELY)

Description	Appearance	Part number
Water-resistive Soft Front Cover		K32-L24SC

■ REPLACEMENT PARTS

Description	Appearance	Part number
Edge Connector		K3TG Connector

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 M Ω 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		\pm 200 V on power supply terminals in normal mode \pm 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; 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
Approvals	UL	File No. E41515
	CSA	File No. LR67027

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

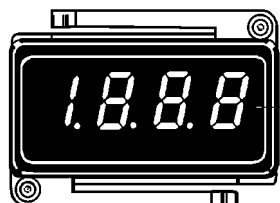
Note: IP51 is maintained when the water-resistive soft cover and bracket are used. IP50 will be, however, maintained without these water-resistive accessories.

MEASURING RANGES

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

Note: The above accuracy is at an ambient temperature of 25° \pm 5°C.

Nomenclature



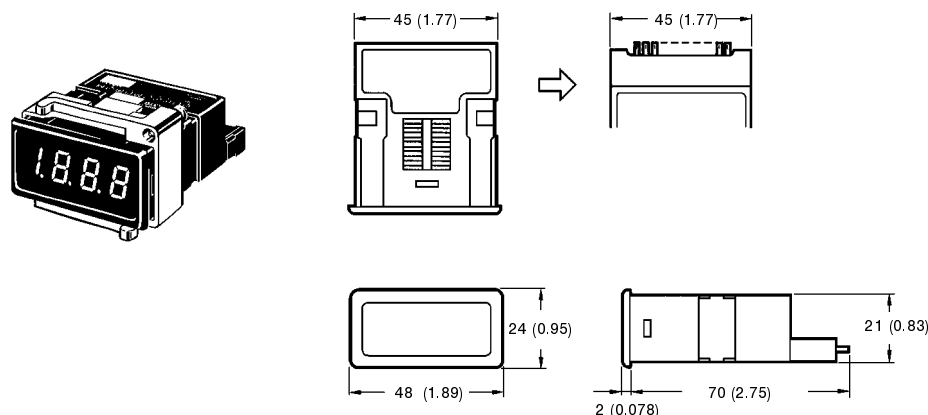
PV display

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

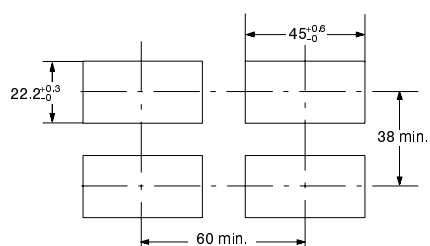
1.9.9.9
10³ 10² 10¹

Dimensions

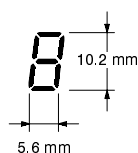
Unit: mm (inch)



Panel Cutouts



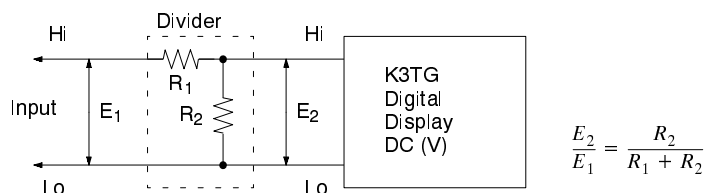
LED Indicator Size



CIRCUIT DIAGRAM

High DC Voltage Measurement

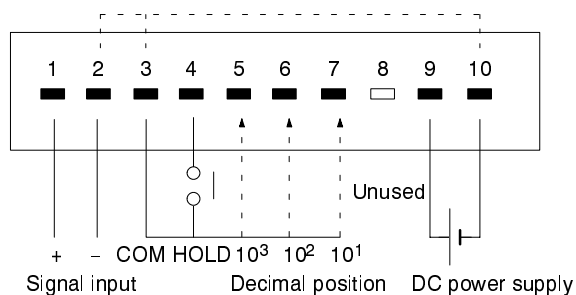
When voltage exceeding the maximum voltage in the standard range is measured (for example: more than 200 V), a divider is connected externally.



Installation

EXTERNAL CONNECTIONS

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



- Note:**
1. Terminals 2 and 3 and 10 are not internally insulated. For external control, 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. The use of an independent power supply is recommended for the K3TG Input Display.
 2. Terminal 8 is not used. Do not use this terminal for transmission of signals.

Precautions

Installation

Location

- Never use the K3TG DC Digital Display in areas where corrosive gas (particularly sulfured or ammonia gas) is generated.
- Do not use the K3TG in a location subject to severe shock or vibration, excessive dust, or excessive moisture.
- Select an installation location where the K3TG 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 K3TG to be installed as perfectly horizontal as possible.

Installation Procedure

1. Insert the K3TG into the panel cut-out.
2. Secure the K3TG 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.

Removal Procedure

1. Loosen the screws and widen the bracket.
2. Always remove the wiring before removing the mounting bracket.

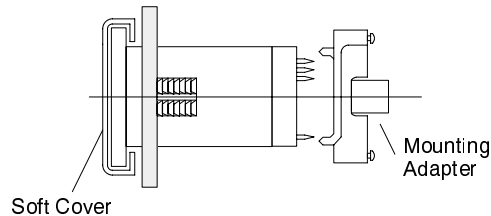
Calibration

- Calibrate the K3TG regularly to 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 (included).

Accessories (sold separately)

Water-resistant Soft Front Cover

To maintain IP51 water-resistant standards, attach the water-resistant soft front cover and mounting bracket correctly before installing the K3TG. To calibrate the K3TG, remove the water-resistant front cover.



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

CONTROL POWER SUPPLY

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

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