# Manual Switch Type Terminal Box

## Applications

**The Model 4999 Terminal Box allows instrument leads to be grouped in one convenient location, providing a quick and easy means of taking sensor readings. Features include…**

- **Connection of 4, 8, 16 or 32 vibrating wire gauges with their thermistors, or 32 two-conductor sensors (e.g. 32 vibrating wire gauges).**
- **Lightning protection.**


*Model 4999-16VTS Terminal Box.*


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## Operating Principle

The Model 4999 Terminal Box makes it easy to manually connect a Readout (Model GK-404 or GK-405), to a multiplicity of vibrating wire sensors by means of color-coded terminal posts, mounted below the rotary switches on the face panel of the Terminal Box, to which the flying leads (patch cord) of the readout can be clipped. The rotary switch is used to select which "channel" or sensor is being read by the Readout.

The cables from the sensors are passed into the Terminal Box interior through nylon cord grips mounted on the bottom or side of the enclosure. The nylon cord grips provide strain relief to the cables and also have a rubber grommet that tightens onto the cable and seals it from water ingress. It is important that any unused cable entries be sealed off by tightening the unused nylon cord grips onto the white plastic plugs provided for that purpose.

The Terminal Box should be mounted to a flat vertical surface using the holes in the mounting brackets at the top and bottom of the enclosure. For the over-voltage surge protection to be effective the earth ground lug on the outside of the Terminal Box needs to be connected by a thick copper wire to a good earth ground. This can be a copper rod driven into the ground or, metal objects, such as plumbing pipes, or electrical conduits, etc, which are themselves well grounded. Copper earth grounding rods and ground wire straps are available as accessories.

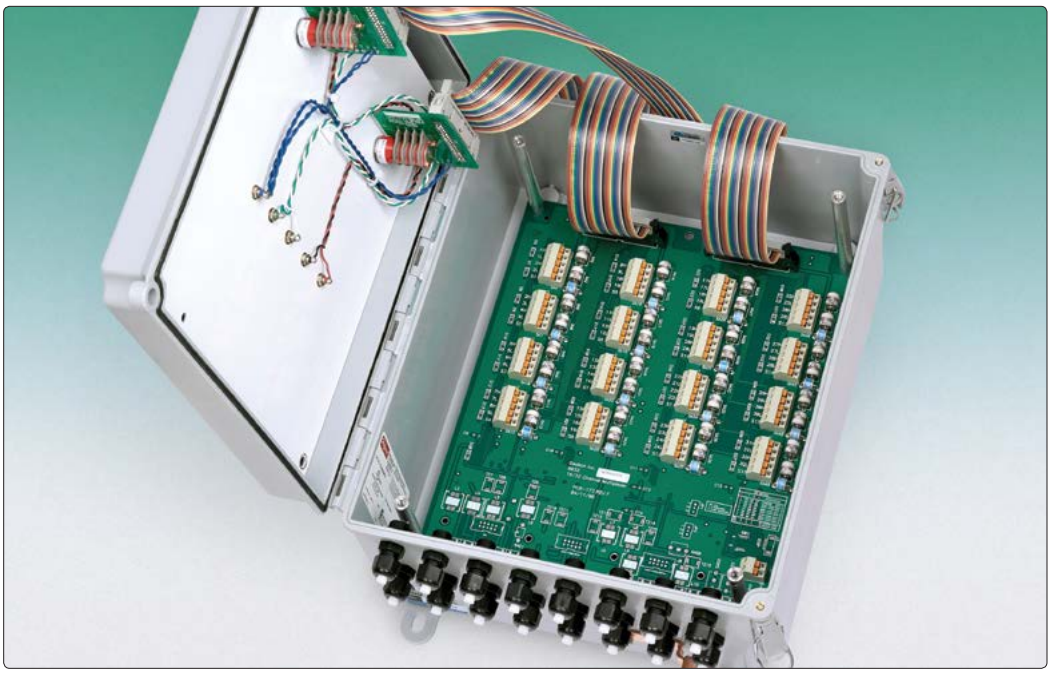
The sensors are protected from over-voltages by means of Gas Discharge Tubes mounted on the terminal boards. An earth ground lug is provided on the outside of the enclosure for connection to an earth ground rod.

The sensor connections are made by passing the cables through the nylon cord grip into the inside of the Terminal Box where they are connected to the appropriate 5-position, spring-loaded terminal block, according to the instructions shown on the wiring diagram inside the Terminal Box cover.

● *Model 4999-16VTS*

● *Model 4999-11-8S*

● *Model 4999-11-4S*



● *Model 4999-16VTS Terminal Box with faceplate removed.*

The Terminal Box is a NEMA 4X style enclosure, environmentally protected (splash proof) by means of a hinged cover that has a seamless "foamed-in-place" gasket that is pressed firmly against the enclosure when the two clamps holding the cover are closed. The Terminal Box itself is made from fiberglass reinforced polyester, which exhibits excellent weatherability and physical properties. The quick-release corner latches provide unobstructed access and include a padlock provision for added security.

## Ordering Information

**Model 4999-11-4S:** up to 4 VW sensors with thermistors.

**Model 4999-11-8S:** up to 8 VW sensors with thermistors.

**Model 4999-16VTS:** up to 16 VW sensors with thermistors.

**Model 4999-32VTS:** up to 32 VW sensors with thermistors.

**Model 4999-32VWS:** up to 32 VW sensors only (without thermistors).

## Technical Specifications

| | |
|---|---|
| Switching Current | 0.25 A typical, 4 A maximum |
| Contact Resistance | 50 mΩ (maximum) |
| Insulation Resistance | > 10,000 MΩ |
| Switch Life | > 25,000 cycles |
| Enclosure | NEMA 4X fiberglass |
| Temperature Range | –20 °C to +80 °C |

| Enclosure Dimensions (L × W × H) | |
|---|---|
| 4999-11-4S | 188 × 198 × 110 mm[1] |
| 4999-11-8S | 290 × 249 × 160 mm[1] |
| 4999-16VTS | 342 × 301 × 160 mm[1] |
| 4999-32VTS, 4999-32VWS | 616 × 514 × 203 mm |

*[1]Does not include mounting brackets.*

| Tripolar Plasma Surge Arrestor | |
|---|---|
| Nominal DC Breakdown Voltage | 230 V |
| Surge Life | 400 (10/1000 ms pulse @ 500 A) |
| Maximum Surge Current | 10 kA per side (8/20 µs pulse) |
| Insulation Resistance | > 10,000 MΩ |
| Operating Temperature | –65 °C to +125 °C |

| Bipolar Plasma Surge Arrestor | |
|---|---|
| Nominal DC Breakdown Voltage | 300 V |
| Surge Life | 1000 (10/1000 µs pulse @ 500 A) |
| Maximum Surge Current | 20 kA (8/20 µs pulse) |
| Insulation Resistance | > 10,000 MΩ |
| Operating Temperature | –65 °C to +125 °C |

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