



## GT-MUX 16/32 Channel Multiplexer



### Advantages

- Proven Performance
- Repeatable Tracking
- Extended Installation Life
- Computerized Testing
- Reliable Control Cable
- 16 ch/ 32 ch Switchable
- Removable Terminal Block
- Complete Solutions

The GT-MUX Multiplexer increases the number of sensors that can be measured by a CR1000 datalogger. It can sequentially multiplexes 16 groups of four lines (a total of 64 lines) through four common (COM) terminals. A manual switch setting allows it to multiplex 32 groups of two lines (also a total of 64 lines) through two COM terminals. Compatible sensors include thermistors, potentiometers, load cells, strain gages, vibrating wires, water content reflectometers, and gypsum soil moisture blocks. The GT-MUX not only increases system channel capacity, it also reduces the cost of cable for individual sensors on long wire runs. The maximum distance between the datalogger and the GT-MUX is determined by the sensors used, the datalogger's scan rate, and the cable used in the application

### Maximum Number of Sensor Connections

The maximum number of sensors multiplexed through one GT-MUX depends on the type(s) of sensors measured. For example, assuming identical sensors, the GT-MUX can be multiplexed: Datalogger programs written for the GT-1000 datalogger will work with the GT-MUX Multiplexer. GeoAuto-1000 software version 1.0 or higher supports simple programs and generates wiring diagrams for GT-MUX applications. Mixing sensor types may require special considerations. Contact our technical supports for assistance.

### Datalogger Connections

When used in 4 x 16 mode, a four-conductor cable (with shield) connects the measurement/excitation channels of the datalogger with the COM terminals of the multiplexer. When used in 2 x 32 mode, a two-conductor cable (with shield) is required. Geotech Science Co., Ltd. offers the cable that supports use in either modes.

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A four-conductor cable (with shield) supplies power and control signals from the datalogger to the GT10-16. The GT10-16 requires one datalogger control port for enable (reset terminal), and a second control port to advance through the channels (clock terminal). Either the datalogger's power supply or a separate 12V supply is used to power the multiplexer. Geotech Science Co., Ltd. offers the cable to connect the GT10-16 to the datalogger's power terminals and control ports.

### Measurement Channel

The GT-MUX can be manually configured to multiplex channels in 16 groups (four lines at a time) or 32 groups (two lines at a time).

- Up to 32 vibrating wire sensors (16 with temperature) in conjunction with a GT1000 data logger and Vibrating Wire Sensor Interface Module
- Up to 32 single-ended or differential sensors that require two wires (e.g., thermistors, half bridges)
- Up to 16 single-ended or differential sensors that require four wires (e.g., full bridges, four-wire half bridges)
- Up to 48 half-bridge measurements (assumes common excitation and completion resistors at the datalogger)

### Measurement Channel

Several GT-MUX may be connected to the same datalogger depending on the number of control ports and analog inputs available. For example, some customers have connected 6 multiplexers to one datalogger. This assumes adequate analog inputs, plus eight control ports, two for clock lines and six for enable lines, are available.

### Environmental Enclosures

The GT-MUX operates in most field conditions but requires a non-condensing environment. A weather-resistant enclosure equipped with desiccant is required for field use.