

GST-43-M Seismic Switch

Features

- Two Seismic Switch Setpoints (2mg to Full Scale) with Independent Digital Output
- Internal Tri-axial MEMS Accelerometers
- Industrial 16 Bit 80 MHz CPU
- Automatic Zero Offset
- STA/LTA Earthquake Detected Algorithm Support Real Time Tri-axial And Vector Acceleration Output
- Store Earthquake Time, Maximum Intensity, Vector, Tri-axial Acceleration And Instant Tri-axial Acceleration Of Earthquake
- Support Modbus RTU / TCP, NTP Time Calibration, Up to 3 Hosts Connections Via Modbus TCP



Description

GST-43-M is an advanced technology seismic switch, including tri-axial MEMS accelerometer, a powerful 16 Bit 80 MHz industrial CPU. The MEMS accelerometer acquired vibration signal by 100 Hz sampling rate. The CPU filters this vibration signal with digital low pass filter to minimize non-earthquake signal which is above 20 Hz.

One of the big features of GST-43-M is earthquake detection algorithm. GST-43-M adopts STA/LTA algorithm to detect earthquake. This algorithm is very useful to eliminate none earthquake vibration. Except to traditional earthquake detection algorithm, it's newly numerical computation software, which carries out real time vector calculation faster than ever. With automatic zero drifting compensation and high capacity FIFO buffer, making GST-43-M has stable and high speed STA/LTA calculation. Therefore, GST-43-M can achieve highly reliable earthquake detection.

GST-43-M is not only a seismic switch but also an earthquake intensity indicator. It could real time display maximum intensity according to CWB (Central Weather Bureau, Taiwan) earthquake intensity standard, maximum vector, tri-axial acceleration and instant tri-axial acceleration...etc. User can preset threshold of acceleration for 2 digital outputs individually in order to protect crucial facilities.

The open connectivity of GST-43-M offers Modbus RTU / TCP protocol so it is easy to connect with PC, PLC and HMI (Human Machine Interface). The connection number of host can be up to 3 simultaneously. So it is very easy to connect with broadcast, disaster prevention system. It also provides active connection to server ability which is useful to deploy at environment with no real IP. With NTP (Network Time Protocol) capability which keep GST-43-M internal time within 1 second accuracy.



GST-43-M Specification

GST-43-M is a tri-axial MEMS seismic switch, inclusive of 2 digital outputs for facilities protection. It can display maximum intensity according to CWB earthquake intensity standard, maximum vector, tri-axial acceleration, instant tri-axial acceleration, etc.

GST-43-M Supports both Modbus RTU / TCP which easily connect with PC, PLC and HMI.

Accelerometer

Type: Tri-axial MEMS
 Range: ± 2 g (X Y Axes)
 + 1 g / -3 g (Z Axis)
 Frequency Response: 0~20 Hz
 Shock: 500 g 0.5ms
 3000 g 0.1ms

Digitizer

ADC Resolution: 12 Bit
 Digital Resolution : <0.001 g

Earthquake Gauge

Algorithm: STA/LTA

 STA Setting Range: 0.1~100 second
 LTA Setting Range: 0.1~100 second
 Offset Period: 30~32767 min
 Event Duration Time: 1~200 s

Switch Setpoints

Digital Output Numbers: 2
 Setpoint Range: 2~1960mg
 Contact Type: Open Collector
 Contact Capacity: 0.6 A DC
 Hold-On time: Same as Event Duration Time

Power

Supply Voltage: 10~30 VDC
 Power (12V): 3.5 W

Input / Output

Modbus RTU: RS-232 or RS-485 format
 19200, N, 8, 1
 Modbus TCP: 3 Host Simultaneously

Modbus ID: Default 101 , settable

Modbus function: Function 3 and 16
 Modbus Variables 100~158 , 171~191 include
 Address: Real Time Acceleration,
 Event Information,
 IP Address Setting,
 Server IP Address Setting,
 NTP IP Address Setting, etc

Size

Dimension: 123 * 72 * 33 mm
 Weight: 0.2kg (without Power and Cable)

Environment

Operation Temp.: -10~60
 Storage Temp.: -20~70