DATALOGGER

We can configure data logging equipment to suit your needs. Our expertise ensures you a tailored solution to read an extensive range of sensors, in a wide range of environments.

Our Vibrating Wire Data Logger Model MICRO-100-SIS has been designed to measure Single Channel and Model MICRO-100-SIS–1 for multiple channels in multiple of 8 up to 280 channels (No of channel can increased as per client requirement).

They logger are factory tested using a logging program written to suit the sensor types to be used on the project in question.

PRODUCT FEATURES

Configure to customer requirements according to sensor, power supply and communication requirements

Can be configure to read almost any geotechnical or structural monitoring sensor

Data kept in simple ASCII file for use with web based interfaces such as Argus, or a spreadsheet

RS232 Communications Interface

IMPORTANT FEATURES:

Commonly used sensors include:

Vibrating wire; Thermocouples, RTDs and thermistor;- Pressure and flow

Precision measurement - Analog resolution to 0.66 microvolt.

Programmable scan rates - From once every few hours to 12 hr or day

Low power consumption - Typically less than 50 mA during measurement.

Internal Data memory - Storage capacity from 20K to 2M data points

Internal real-time clock - Time stamped data.

PC support software - Datalogger programming and communication functions supported by Windows. Windows XP Service Pack 2, Office 2000 Enterprise Edition

Wide operating temperature range - -25°C to +50°C.

Multiple methods of Data retrieval - Storage modules, direct to computer.

Measurement & Control Module:

The MICRO-100-SIS programmable measurement and control module that provides sensor measurement, communication, data reduction, data/program storage and control functions. A battery backed clock assures accurate time keeping. The multi tasking operating system allows simultaneous measurement and communications functions.

Multiplexer:

Multiplexer allow a number of sensors to be measured by a single MICRO-100-SIS. The MICRO-AM416 multiplexer module sequentially multiplexes 16 groups of four lines or 32 groups of two lines at a time. Compatible sensors include vibrating wires, thermistors; Several multiplexers can be controlled by a single MICRO-100-SIS. However, <u>each multiplexer is dedicated to a single type of sensor</u>.

Surge protectors:

The input lines to the multiplexer can be protected against lightning induced high voltage transients using the ESP-216 surge protector card. Each ESP-216 card can protect up to 16 differential channels. Each channel is provided with a three terminal 90 V gas discharge tube (GDT) with the common terminal connected to the protective ground bus.

Signal conditioners for vibrating wire sensors:

A separate signal-conditioning module is provided for vibrating wire transducers. It contains resistors required for completing measurement for most thermistor equipped vibrating wire transducers and provides amplification and signal conditioning for frequency measurement.

Data Storage and Transfer Software:

SISPL Datalogger support software allows telecommunications, programming, and data processing functions. With an appropriate communication link, SISPL provides two-way communication between MICRO-100-SIS Datalogger and IBM compatible computers running Microsoft Windows operating system.

Storage Modules:

Rugged, battery backed RAM storage modules reliably store data over a - 35°C to + 65°C temperature. The Storage Module (96 K or 358 K low resolution data points, respectively) can remain connected to the Datalogger or be carried to the field to retrieve data from the MICRO-100-SIS memory. Eight storage modules can be connected to one MICRO-100-SIS. An interface is used to transfer data or programs between the storage module and IBM-compatible computer.

Direct Datalogger to Computer Interface:

The RS-232 Interface supplies an optically isolated connection between the MICRO-100-SIS and a computer over distances up to 15 m.

Enclosures:

The MICRO-100-SIS is housed in an enclosure that protects it from dust, water, sunlight, or environmental pollutants. Type, size and number of enclosures required depend upon type and number of channels to be monitored and environmental requirements. MICRO-100-SIS (NEMA 4X) rated enclosures are available to cater to various applications.

Power Supplies:

Standard power supply consists of one 12 V, 7 Ah rechargeable lead-acid SMF battery and an in-built battery charger. The battery is float-charged with 220 V AC power or optionally a solar panel.
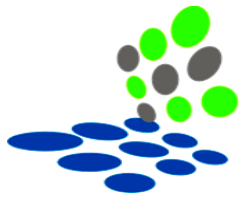
MICRO-100-SIS Control Module Specifications

Analog Inputs: The basic MICRO-100-SIS measurement and control module can be configured through software to provide full scale input voltage ranges from ± 2.5 mV to ± 2500 mV. Measurement resolution is 1 part in 3750 of full scale range. Accuracy of voltage measurement is ± 0.1 % of full scale for all ranges.

DC and AC Excitation output:
3 switched excitations active during measurement, with one output active at a time. Non-active outputs are high impedance.
Range: ± 2.5 V DC

Output current: ± 25 mA
Frequency sweep function: A swept frequency, square wave output between 0 & 2.5 V is provided for vibrating wire transducers. Timing and frequency range are specified by software instruction (factory configured).

Frequency Measurement:
To measure frequency accurately the time period for a specified number of cycles 'n' of the input frequency is measured. It is then divided by 'n' to obtain the average period 'T' of a single cycle. The frequency is then obtained by calculating the inverse of 'T' (i.e. frequency = 1/T).

Input state: high 3.0 V to 5.5 V; low - 0.5 V to 0.8 V
Input resistance: 100 kOhms.

Sensor connections: Any digital I/O port (for asynchronous communication), 12 V power, and ground. Up to ten SDI -12 sensors can be connected to each port**.**

Memory: 128 KB flash and 128 KB SRAM standard.

Peripheral interface:
9 pin D-type connector for keyboard display, storage module, modem, printer, card storage module, and RS-232 adapter. Baud rates selectable at 300, 1200, 9600 and 76,800. ASCII communication protocol is one start bit, one stop bit, eight data bits, and no parity.

Clock accuracy: 1 minute per month.

Power requirement
Voltage: 9.6 to 16 V

Typical current drain: 1 mA quiescent, 13 mA during processing, and 46 mA during analog measurement for MICRO-100-SIS measurement and control module only. Additional modules draw extra current depending on Datalogger configuration.

Power supply: Any 12 V batteries can be connected as a primary source. Several power supply options are available. An internal type MICRO-100-X-B lithium battery with a capacity of 270 mAh is provided for clock and RAM backup.

Peripheral interface: 9 pin D type connector for keyboard display, storage module, modem, printer, card storage module and RS 232 adapter. Baud rates selectable at 300, 1200, 9600 and 76800. ASCII communication protocol is one start bit, one stop bit, 8 data bits (no parity).

Communications between and PC (Optional): Optional software is available which fully support communications between MICRO-100-SIS and PC - connect to the Datalogger directly.

Operating temperature range:
- 25°C to + 50°C.

Factory wired options:
The MICRO-100-SIS is a customized data acquisition system that is specifically configured for each application. Most hardware options are factory wired and generally cannot be changed in the field. The data acquisition system is supplied with a suitable customized program downloaded to the MICRO-100-SIS control module. The sensor setup and calibration parameters can be modified in the field using the MICRO-100-SIS software, if required.

Host PC: The MICRO-100-SIS requires a suitable PC for configuration and downloading programs and retrieval of logged data. The PC has to be provided by the user. A PC with a spare RS-232 serial communications port running Microsoft Windows 98SE/Me/NT4.0/2000 or later operating system is sufficient.