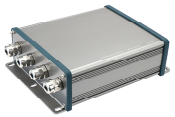
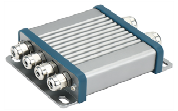


(Master Controller)



(Collector)

ME-82UN Distributed On-line Monitoring System

DESCRIPTION

ME-82UN Distributed On-line Monitoring System has the characteristics of lightweight, compact, reliable communication, long transmission distance, high test accuracy, low noise, small drift, strong environmental adaptability, high maintainability.

ME-82UN is specially designed for engineering testing field, a product for long-term online monitoring.

ME-82UN can be widely used in port machinery, bridge construction, rail transit from construction to operation of the whole stage of condition monitoring.

ME-82UN can complete the monitoring tasks of a series of physical quantities such as strain, stress, displacement, temperature and vibration under severe environment such as frequent thunderstorms, electromagnetic radiation and large temperature difference.

ME-82UN collector adopts a modular design. Each collector is one module. If a module fails, you only need to replace the collector, which greatly improves system maintenance efficiency.

The collector communicates with the controller over the RS485 bus. Multiple controllers support synchronous expansion and can adapt to various online monitoring sites.

FEATURES

It can monitor the operation of large structures such as bridge structure, engineering machinery, port machinery and building structure for 24 hours continuously.

Various types of collectors can be freely combined and matched to complete the strain, vibration, temperature and other physical quantities of the test.

It can use Ethernet or 4G to connect to the upper computer, and can record multi-channel signals for a long time without interruption. All channels work in parallel and synchronously. The maximum continuous sampling rate can reach 100Hz/ channel.

Advanced isolation technology and reasonable grounding, so that the system has a strong anti-interference ability, used in various engineering field detection.

Built-in DSP real-time processing system, real-time data can be processed in real time according to user on-site requirements.

Collector and controller communicate through RS485 bus, supporting series or star connection, the furthest end of the collector up to 300 meters.

Miniaturization and low power consumption design.

It can provide quasi-Modbus /TCP communication protocol;

SPECIFICATIONS

No. of Collector Channels	4 Channels/ 8 Channels
Sampling Rate	10Hz, 20Hz, 50Hz, 100Hz
Frequency Response (+0.5dB~-3dB)	DC ~ 30Hz (20Hz flatness)
A/D Converter	24 bits
System Uncertainty	<0.5% of F.S.
Master Controller	
Each controller can control 8 * RS485 ports, and each RS-485 port can control 8* 4-channel / 8-channel (2* acquisition cards) collectors for low-speed dynamic synchronous measurement.	
Multiple controllers support switch expansion.	
The MODBUS interface is reserved for the primary controller(Option).	
DSP is reserved for processing the collected data characteristic values	
Communication	Ethernet, 4G
Synchronous Mode of Multiple Controllers	NTP Sync.
Communication Mode Between Controller and Collector	RS485
Output Voltage	36V DC
Power Supply	220V AC, 50Hz / DC10~30V
Dimensions	210×150×65mm
Strain Measurement Collector	
Bridge Completion Resistors	120Ω or 350Ω (By FOC)
Bridge Voltage	2V(Custom)
Bridge Configuration	Full, half, three-wire quarter bridge(120Ω or 350Ω)
Input Mode	DIF_DC, GND
Power Consumption	<2W
Full-scale Value	50000με (By FOC)
Noise (Peak-to-Peak)	<1με
Indication Error	±（0.5%red±3με）
Zero Drift	3με/8h
Temp. Drift	<0.1μV/°C
Dimensions	160×160×90mm
Protection	IP65
Current Measurement Collector	
Connection Modes	Three-wire or two-wire
Input Current Range	4 ~ 20mA
Power Supply	24V
Volatge Measurement Collector	
Power Supply	5V, 12V, 24V (By FOC)
Input mode	DIF_DC
Range	±5V(Custom)
Size(mm)	124×100×32

SYSTEM CONFIGURATION

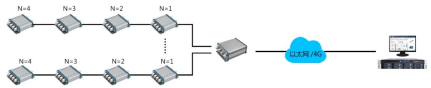


Figure 1 Connection Diagram of Distributed On-line Mornitoring System

SOFTWARE

PHM Monitoring Software:
Based on B/S architecture, it realizes the function of local LAN and Internet network equipment management.
The software can realize remote monitoring of field equipment running status
To enable real-time monitoring and analysis,
Including user management, data storage, alarm setting, power off self-recovery, fault setting and other functions
The algorithm includes correlation analysis, statistical analysis, strain flower calculation, trend analysis and spectrum analysis

Protection	IP65
Temperature Measurement Collector	
Sensor	PT100(option:PT10 or PT1000)
Input Temperature Range	- 50°C ~ 850°C
Constant Current Source	1mA±2μA
Connection Modes	Four-wire
IEPE Acquisition Collector	
Offset	24V/4mA
Input mode	IEPE
Range	±5V(Custom)
Vibrating Wire Collector	
Excitation mode	(400~1.2kHz), (1~3.2kHz), (2~4.5kHz), step size 10Hz;
Input voltage	5V
Measurement parameters	Frequency measurement (frequency pulse), Temperature measurement (resistance)
Measurement range	Frequency: 400~5000Hz; Temperature: -20~+80℃
Accuracy	Frequency: 0.1Hz Temperature: 0.5℃
Resolution	Frequency: 0.02Hz Temperature: 0.5℃
Switching between channels is less than 2 seconds	
Meet the use of sweep-frequency sensors	
Environmental Conditions	
Operating Temperature	- 30°C to 70°C
Operating Humidity	20 ~ 90%RH@40°C
Storage Temperature	- 40°C to 70°C
Storage Humidity	90% RH 24h@50°C
Vibration	Frequency cycle range: 5Hz ~ 55Hz ~ 5Hz Drive amplitude (peak): 0.19mm Sweep frequency: ≤1Oct./min Duration of resonant: 10min Vibration direction: x, y, z