



ME-84U Centralized On-line Monitoring System

DESCRIPTION	FEATURES	SPECIFICATIONS	SYSTEM CONFIGURATION	SOFTWARE	MODULES / ACCESSORIES
<p>The ME-84U Centralized On-line Monitoring System, with waterproof and dustproof chassis and 19-inch standard chassis, can be used for the long-term monitoring of various physical quantities such as force, stress, vibration, acceleration, speed, temperature, current.</p> <p>By using Ethernet network communication technology, a large-scale testing system with over a thousand channels can be built to monitor large structures for 24 hours.</p> <p>ME-84U can record the operating parameters of the equipment, and will give an alarm in time in case of failure, and collect as much equipment fault information as possible, so as to provide reliable data for understanding accident phenomena, finding the cause of failure and analyzing the damage caused.</p>	<p>Adopts the design of infinite extension to meet the needs of large structure and large number of measuring points</p> <p>Suitable for outdoor harsh environment with the requirements of lightning protection, anti-strong magnetic, vibration resistance, waterproof, dustproof and so on</p> <p>DMA for real-time, high speed, stable data transmission</p> <p>Built-in DSP real-time processing system for on-site data processing</p> <p>Built-in electronic hard disk for storing the measuring data from all channels in real time. After 8 hours (4 hours) of continuous storage, the data before 8 hours (4 hours) will be overwritten. In order to meet the requirements of data storage speed, the maximum sampling frequency is 25.6kHz/channel for simultaneous sampling of 32 channels, and 51.2kHz/channel for simultaneous sampling of 16 channels, and 128kHz/channel for simultaneous sampling of 32 channels</p> <p>Channel card grouping is supported, and users can set different sampling rate for each group of channels according to the test needs</p> <p>System self-check function: the system (including sensor, collector and software) can be automatically detected at startup, timing and any time required by the user</p> <p>The system communication has self-recovery ability after network disconnection, real-time display of network status information, and the system has built-in watchdog protection, which can restore the working state before power outage and network interruption.</p>	<p>Number of slots(single chassis)</p> <p>Standard case 16 card slots</p> <p>Waterproof case 16 card slots</p> <p>Number of channel in card slot 4 channels/card</p> <p>Acquisition card type</p> <p>Dynamic acquisition card/ Static acquisition card (any combination)</p> <p>Dynamic Acquisition Card</p> <p>Sampling rate 1k~128kHz shift</p> <p>8 Channels/one chassis Max. 128kHz / channel</p> <p>16 Channels/one chassis Max. 51.2kHz / channel</p> <p>32 Channels/one chassis Max. 25.6kHz / channel</p> <p>64 Channels/one chassis Max. 12.8kHz / channel</p> <p>Static Acquisition Card</p> <p>Sampling rate 1/2/5/10/20/50/100/200Hz shift</p> <p>A/D Converter 24 bits</p> <p>Built-in DSP System</p> <p>According to customer requirements, real-time analysis and processing of various signals (FFT, statistical information, etc.), and real-time transmission of the results to the control card;</p> <p>Dynamic IEPE Acquisition Card(ME-84U-1)</p> <p>Offset 24V/4mA</p> <p>Gain 1,10,100,1000 (By FOC)</p> <p>Input Protection Input signal greater than $\pm 15V$ (DC or AC peak), input full protection</p> <p>System Accuracy <0.5% F.S</p> <p>System Stability 0.05%/h</p> <p>Linearity 0.1% F.S</p> <p>Distortion $\leq 0.5\%$</p> <p>Analog Double Integration</p> <p>One-time Integration 1Hz ~ 1kHz or 10Hz ~ 10kHz Amplitude error: < 3%</p> <p>Quadratic Integration 1Hz ~ 100Hz or 10Hz ~ 1kHz Amplitude error: < 5%</p> <p>Dynamic Strain Acquisition Card(ME-84U-3)</p> <p>Bridge Voltage 2V, 5V, 10V (By FOC)</p> <p>Range 1000μt, 10000μt, 100000μt (By FOC)</p> <p>Bridge Mode three-wire system quarter bridge, half bridge, full bridge</p> <p>Bridge Resistance for Strain Gauge: Half bridge, full bridge 50Ω ~ 10000Ω</p> <p>Three-wire 1/4 bridge 120Ω or 350Ω (By FOC)</p> <p>Automatic Balance Range $\pm 20000\mu$t</p> <p>Strain Indication Error $\pm (0.5\% \text{red} \pm 3\mu$t)</p> <p>Dynamic Current Acquisition Card(ME-84U-7)</p> <p>Suitable for two wire system or three wire system 4 ~ 20mA sensor</p> <p>Power Supply 24VDC</p> <p>Measuring Range 4~20mA</p> <p>Dynamic Voltage Acquisition Card(ME-84U-14)</p> <p>Supply Voltage of The Sensor 5V, 12V, -24V, $\pm 15V$ (By FOC)</p> <p>Range $\pm 1V, \pm 5V, \pm 10V$ (By FOC)</p> <p>Static Strain Acquisition Card(ME-84U-8)</p> <p>Bridge Supply Voltage 2V, 5V, 10V (By FOC)</p> <p>Measuring Range 1000μt, 10000μt, 100000μt (By FOC)</p> <p>Bridge Mode three-wire system quarter bridge, half bridge, full bridge</p> <p>Bridge Resistance For Strain Gauge: Half bridge, full bridge 50Ω ~ 10000Ω</p> <p>three-wire 1/4 bridge 120Ω or 350Ω (By FOC)</p> <p>Automatic Balance Rrange $\pm 20000\mu$t</p> <p>Strain Indication Error $\pm (0.5\% \text{red} \pm 3\mu$t)</p> <p>Static Voltage Acquisition Card(ME-84U-12)</p> <p>Bridge Supply Voltage 5V, 12V, 24V (By FOC)</p> <p>Measuring Range $\pm 1V, \pm 5V, \pm 10V$ (By FOC)</p> <p>Static Current Acquisition Card(ME-84U-10)</p> <p>Suitable for two wire system or three wire system 4 ~ 20mA sensor</p> <p>Power Supply 24VDC</p> <p>Measuring Range 4~20mA</p> <p>Static Temperature Acquisition Card(ME-84U-11)</p> <p>Applicable Sensor Type PT10, PT100, PT1000</p> <p>Measuring Range -200$^{\circ}$C ~ 850$^{\circ}$C</p> <p>Measuring Accuracy 0.5%$\pm 0.5^{\circ}$C</p> <p>Constant Current Source 1mA$\pm 2\mu$A</p>	<p>SYSTEM CONFIGURATION</p> <p>Figure 1 Single System Block Diagram</p> <p>Figure 2 Multi-system Block Diagram</p>	<p>PHM Monitoring Software:</p> <p>Based on B/S architecture, it realizes the function of local LAN and Internet network equipment management.</p> <p>The software can realize remote monitoring of field equipment running status</p> <p>To enable real-time monitoring and analysis, including user management, data storage, alarm setting, power off self-recovery, fault setting and other functions</p> <p>The algorithm includes correlation analysis, statistical analysis, strain flower calculation, trend analysis and spectrum analysis</p>	<p>ME-84U Host Chassis</p> <ul style="list-style-type: none"> 16 card slots Communicate with upper computer via Ethernet Built-in 32G SSD 220V AC power supply Optional of 19" 3U standard chassis with IP50 rating and waterproof chassis with IP65 rating <p>ME-84U DAQ Card</p> <ul style="list-style-type: none"> 4 input channels Optional input of voltage, IEPE, strain/stress, 4 ~ 20 mA current and charge Up to 128kHz/channel sampling rate Analog quadratic integral DSP real-time signal processing system for analyzing the spectrum and envelope of input signal <p>ME-84U Real-time Order Analysis Card</p> <ul style="list-style-type: none"> 1 Tacho input channel Built-in DSP system for multi-channel order analysis, spectrum analysis and envelope analysis

DIO Card(ME-84U-16)

Number of Channels 4 channels DI/card
4 channels DO/card

The DI contact type can be wet contact or dry contact.

Max. output voltage of power output channel 24V/1A

DO supports the selection of two signal output conditions: manual and channel trigger

Static Thermocouple Card(ME-84U-21)

Thermocouple Type S, K, B, E, J, T, etc

Measuring Range according to the type of thermocouple and indexing table

Static Magnetolectric Acquisition Card(ME-84U-17)

Range ±5V

Input Mode SIN-DC

Excitation Voltage 1.5V

Excitation Frequency 1Hz, 10Hz

Support magnetolectric speed sensor in situ self-calibration function; (With the DT2D001A sensor)

Tachometer(ME-84U-13)

Number of Channels 2 channels/card

Power Supply DCSV, DC-24V 50mA

Measuring Range 30 ~30000RPM

Order Card(ME-84U-4)

Number of Channels

Built-in DSP system for real-time multi-channel order analysis of output signals of a specified group of data acquisition system

Spectrum analysis and envelope analysis can be carried out on the output signals of this group of data acquisition system

Vibration Temperature Card(ME-84U-20)

Can work with DT18S1/DT1A902/DT903/DT904E vibration temperature sensor

Power Supply 24V/4mA

Range ±5V

Input Mode IEPE

Number of Channels 4 channels/card
(2-channel IEPE+ 2-channel voltage/temperature, differential input mode)

Instrument Protection

IP54 (waterproof case)

IP50 (standard 19" 3U case)

Built-in Storage Capacity

32G

Power supply

220VAC /50Hz

Dimensions

490*370*220 (Waterproof chassis)

482*350*146 (19" 3U chassis)

Environmental Conditions

Operating Temperature 0°C to 40°C

Operating Humidity 20 ~ 90%RH@40°C

Storage Temperature - 40°C to 60°C

Storage Humidity 90%RH24h@50°C

Frequency cycle range: 5Hz ~ 55Hz ~ 5Hz

Drive amplitude (peak): 0.19mm

Sweep frequency: <=100./min

Duration of resonant: 10min

Vibration direction: x, y, z