

MST500 Series Module

The MST500 acquisition module, composed of the host MST530 and the data acquisition module MST500, uses a 24-bit high-precision AD sampling chip with an accuracy of 0.05%. Differential isolation technology makes sampling more stable and accurate. The channel type supports arbitrary switching of thermal resistance signal, thermocouple signal, current signal and voltage signal. The number of channels can be freely combined, simultaneous sampling for 256 channels max.



6 communication modes

Support wireless, wired, a total of 6 communication modes, the real acquisition module for field application; support wifi, Ethernet, 4G, 2G, ZIGBEE, RS485 communications.

0.005%

high sampling accuracy

Restoring the most real data on site is one of the most basic and simple functions of the MST500 acquisition module.

256 channels simultaneous acquisition

With modular design, a single module can support 256 channels of data acquisition, which brings richer scalability and higher field application possibilities.

20 kinds of signal acquisition

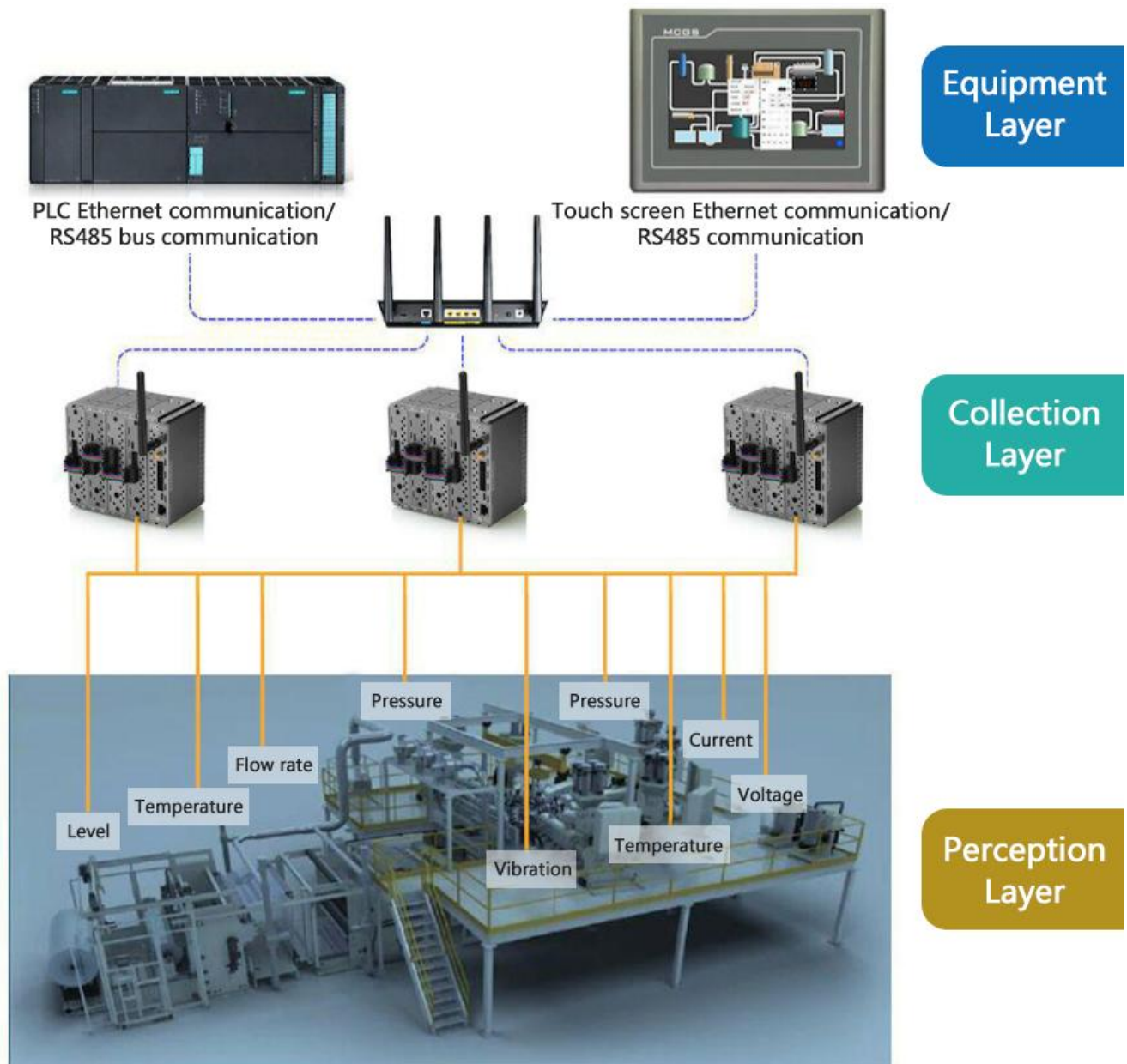
20 kinds of signal acquisition are built in the acquisition card, and one module can solve the sampling of the most of the analog signals on the market.

7*24 hours anti-high pressure work

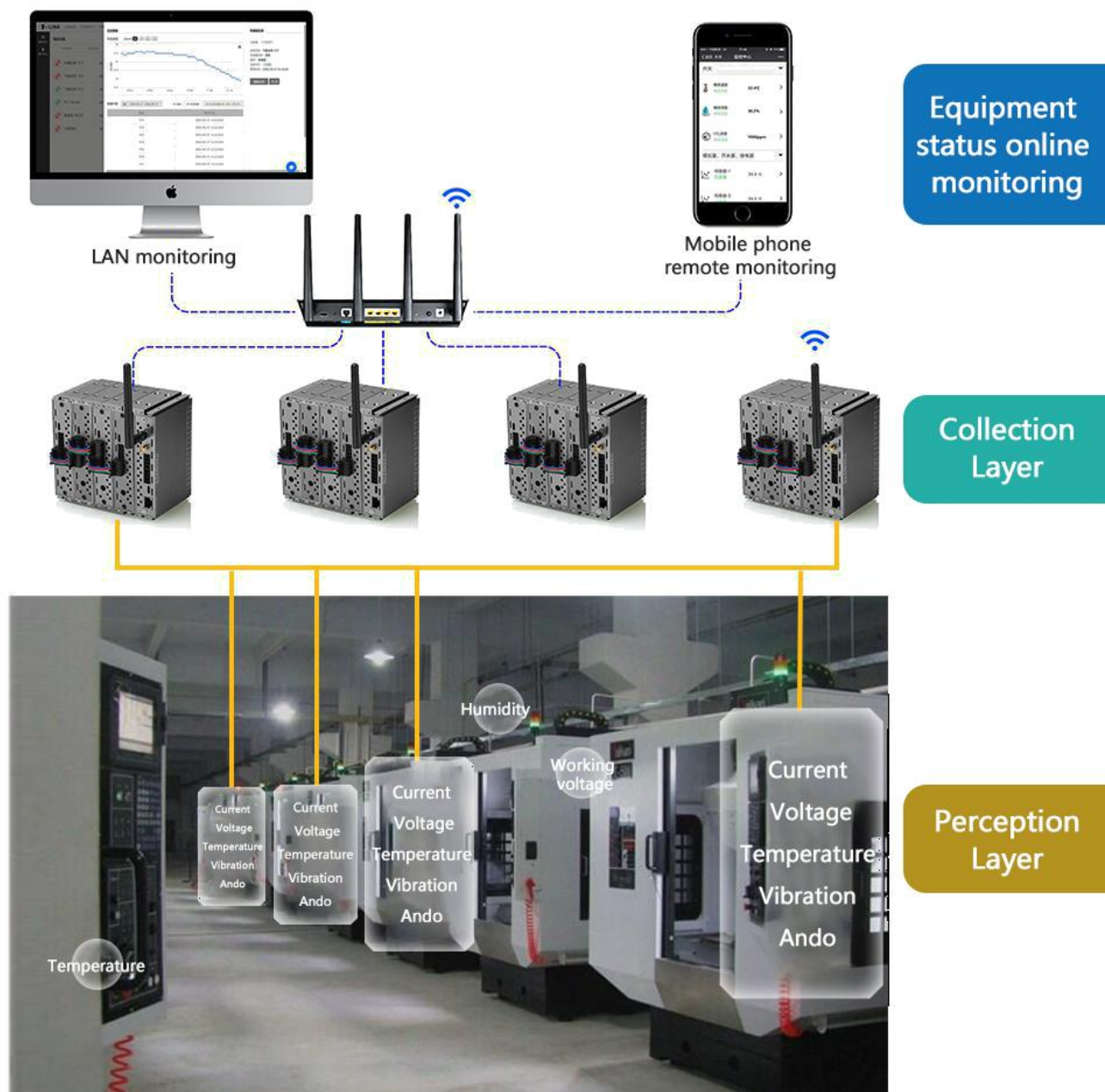
3000V voltage pressure protection between channels and power supply; 400V AC/DC protection between channels; 380V AC/DC live test is no longer a problem; insulation protection is not needed.

Various Applications of MST500-A Module and Data Acquisition Site

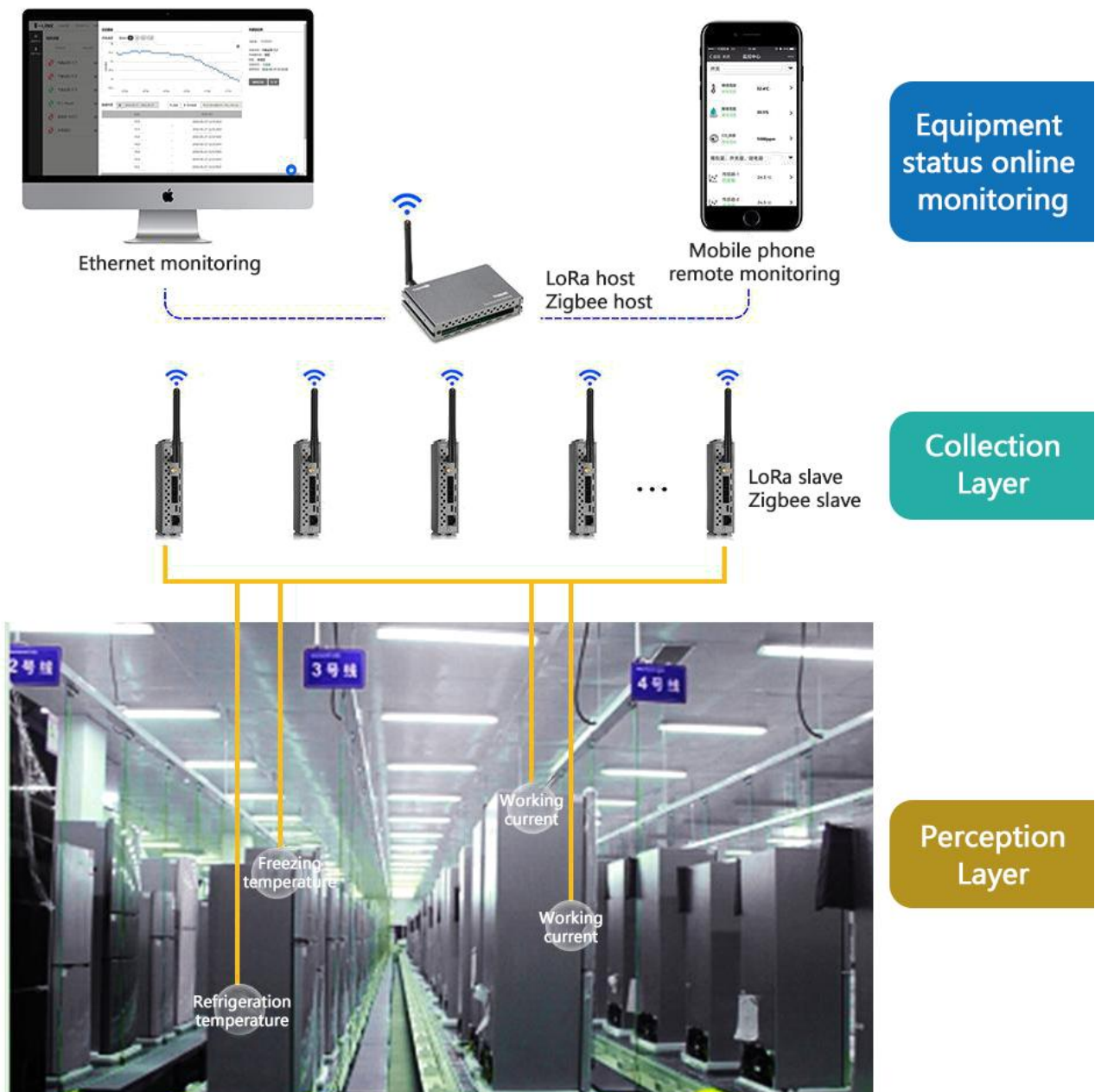
1. Monitoring of PLC, Touch Screen and Other Secondary Instruments



2. WiFi+Ethernet LAN (Internet of Things)



3. ZIGBEE/LORA Wireless Decentralized Data Monitoring



Successful Cases

HUAWEI electric cabinet temperature rise online monitoring

Foxconn production line online monitoring

DOMETIC Group Refrigerator & Air Conditioner Automatic Test System

Model Description

Product Model #	Model Description	Remarks
MST500-A	Universal version	Standard RS485, TYPE-C port
MST500-Z	Zigbee wireless communication	
MST500-L	LORA wireless communication	

Specifications

Communication port features:	Data sampling port features:
(1) RS-485 port RS-485 (2-wire) dual-port parallel Communication parameters: 9600bps 8,N,1 The max communication distance: 1.2 km Communication protocols: Advantech protocol, Modbus RTU protocol Device address range: 1~255 Surge and electrostatic (4000V) protection for RS-485 communication lines	Number of channels: 8 differential AD level: 24-bit high-precision dedicated IC Sampling mode: Turning type of independent sampling Sampling objects: refer to the following table 1 Sampling accuracy: refer to the following table 1 Sampling rate: 8HZ Channel isolation voltage: 400V AC/DC
(2) USB port (standard metal shell) Standard TPYE-C port, used for communication, parameter configuration and equipment Communication parameters: 9600bps8,N,1 Communication protocols: Advantech protocol, Modbus RTU protocol	Isolation voltage from power supply: 1500V DC Fault and overvoltage protection: Maximum withstand voltage ±15V Input impedance: more than 2M (voltage type) less than 50Ω (current type) Temperature drift: ±25PPM/℃ Annual drift: ±100ppm/Y Electrostatic protection: 2000V
Power supply features:	Environmental features:
Power supply: DC 8V~28Vdc (terminal), +5V (USB) Power consumption: 0.15W Power supply reverse protection, wrong connection protection	Working environment: -20℃～70℃ 0～95%RH without condensation Storage environment: -25℃～85℃ 0～90%RH without condensation
Mechanical features:	
Shell color: dark gray/tarnish color Dimension: 90*63*25mm/121.7*80*25.6mm Shell installation method: built-in/national standard C45 rail installation Protection level: IP40 Fire-protection rating: UL94	

	Input type	Measurable range (Indicating range)	Measurement accuracy (reference error, absolute error)	Advantech protocol and resolution	Modbus protocol data bit
Measuring range	0-10V	-0.5V to +11.000V	0.001% F.S $\pm 0.0001V$	+01.000 1digit	0.01%
	0-5V	-0.5V to +5.500V	0.02% F.S $\pm 0.0001V$	+01.000 1digit	0.01%
	$\pm 20mV$	-21mV to +21mV	0.0025% F.S $\pm 0.001mV$	+10.000 1digit	0.1%
	$\pm 100mV$	-110.0mV to +110.0mV	0.0005% F.S $\pm 0.001mV$	+099.00 1digit	0.1%
	4-20mA	+3mA to +21.00mA	0.005% F.S $\pm 0.001mA$	+01.000 1digit	0.1%
	K	-60°C to +1372°C	0.05% F.S $\pm 0.5^{\circ}C$	+1000.0 1digit	1%
	J	-200°C to +1200°C	0.05% F.S $\pm 0.5^{\circ}C$	+1000.0 1digit	1%
	E	-200°C to +1000°C	0.05% F.S $\pm 0.5^{\circ}C$	+0999.0 1digit	1%
	T	-200°C to +400°C	0.1% F.S $\pm 0.5^{\circ}C$	+0300.0 1digit	1%
	N	-200°C to +1300°C	0.05% F.S $\pm 0.5^{\circ}C$	+0300.0 1digit	1%
	W	+1500°C to +2315°C	0.2% F.S $\pm 1.1^{\circ}C$	+1000.0 1digit	1%
		0°C to +1500°C	0.1% F.S $\pm 1^{\circ}C$		
	R	+300°C to +1768°C	0.1% F.S $\pm 0.8^{\circ}C$	+1000.0 1digit	1%
		0°C to +300°C	0.5% F.S $\pm 1.6^{\circ}C$		
	S	+300°C to +1768°C	0.1% F.S $\pm 0.9^{\circ}C$	+1000.0 1digit	1%
		0°C to +300°C	0.5% F.S $\pm 1.6^{\circ}C$		
	B	+600°C to +1820°C	0.1% F.S $\pm 1.0^{\circ}C$	+1000.0 1digit	1%
		+400°C to +600°C	1% F.S $\pm 1.7^{\circ}C$		
	Pt100	-200°C to +660°C	0.05% F.S $\pm 0.3^{\circ}C$	+0300.0 1digit	1%
	Cu50	-50°C to +150°C	0.2% F.S $\pm 0.3^{\circ}C$	+0100.0 1digit	1%
	PT1000	-200°C to +300°C	0.1% F.S $\pm 0.3^{\circ}C$	+0100.0 1digit	1%
Preheat time	Over 30 minutes				
Environmental adaptability	Ambient temperature	-20°C to +70°C			
	Ambient humidity	0 to 95%RH (no condensation)			

Register List

MST500 Register Address Occupied:

Parameter Category	Register Address		Register Name	Contents	Operation
	hexadecimal	decimal			
Measured values	00-1FFH	0-511	DataValue[0] - DataValue[511]	Receive external data value, a total of 256 channels (The number MST500 can be connected is $256/8 = 32$; the number H401 can be connected is $256/(2 \times \text{the number of channels of the single device})$)	Read only

Device type	Device Address	Register Address Occupied	Total Number Connectable
MST500	1	0-15	
	2	16-31	
	...		
	32	496-511	32

MST500 Calculation formula of register: 01

Reg_add = device_add * 16 + 2 * ch_id;

Reg_add: register address;

ch_id: Channel no. of device Starting from 0-7 for channels of each MST500

2.6 Meaning of Indicator Lights

Light color	Green	Constant red	Flashing violet	Flashing red	Flashing yellow	Flashing sky-blue
Status	Normal	The wireless communication module fails to start, the wireless communication module is abnormal	Abnormal GPRS network or WIFI connection	The wireless connection to the server, or the network port function socket connection fails	SIM card is abnormal	Wireless network signal is too poor
Solutions	None	If the device reset has no wireless transmission function, go to the configuration tool to turn off the wireless device; for other cases, contact the after-sales of the original factory.	Check if the WIFI account configuration is wrong, or GPRS SIM card is still in credit or it has expired.	Check if the network configuration is wrong, if there is no error, check if the WIFI network is interrupted or if the host computer is connected or if the network is normal.	Wipe the SIM contact surface and insert it into the SIM slot of the device.	Check if the antenna connection is firm; still not working, change the device placement position.

Product Dimension

