Electrical Equipment Temperature Monitoring Solutions

Catalog

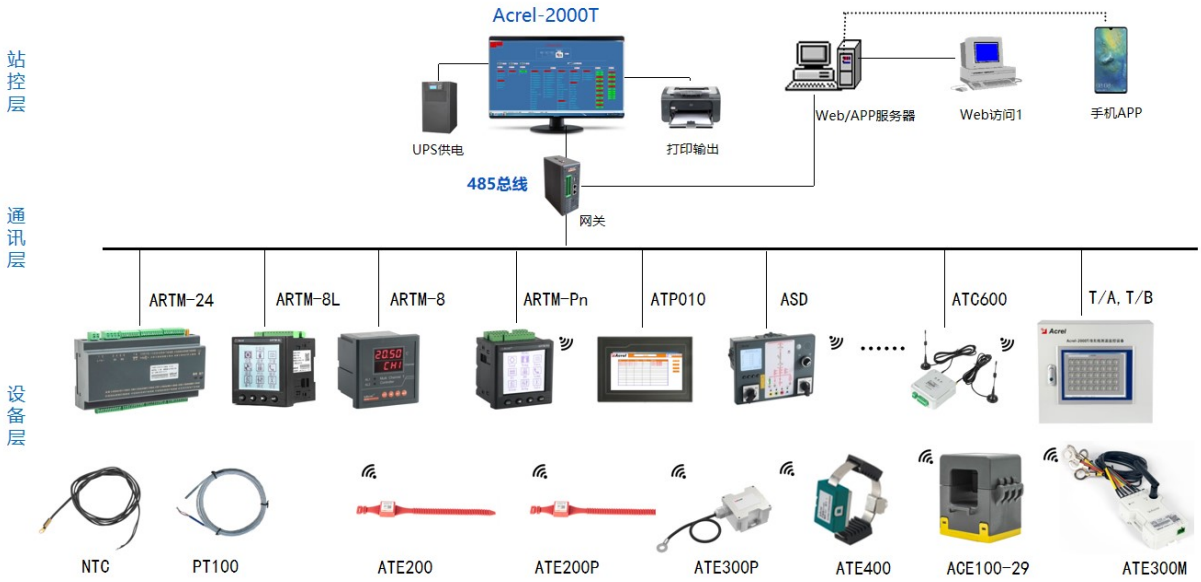
Temperature Measurement Solution

In a power system connected by numerous power generation, transmission, transformation, distribution and consumer equipment, excessive temperature will cause serious accidents such as equipment aging, equipment burnout, power supply interruption, equipment fire and explosion, etc. Long-term temperature monitoring of each electrical node can avoid personal injury and economic losses caused by serious faults.

To this end, our company provides customers with a complete temperature monitoring solution. Accurately monitor the temperature of each electrical node in high and low voltage power systems to ensure safe, stable and reliable operation of the power system.

The main monitoring objects and equipment used are as follows:

	ARTM-8L	ARTM-24	ATC600	ARTM-PN	ASD	AMB
High voltage circuit breaker					■	
High-voltage switchgear busbars and cables					■	
Transformer connector				■		
Transformer internal winding	■					
Low voltage circuit breaker				■		
Low voltage circuit breaker				■		
Low voltage capacitor			■			
Low voltage reactor			■			
Cable trench in power distribution room			■			
Low voltage distribution box			■			
Low voltage array cabinet		■				
Low voltage closed busbar						■
Bus duct shell			■			
Motor terminal box/surface			■			
Inside the motor	■					



1. High voltage circuit breaker temperature monitoring

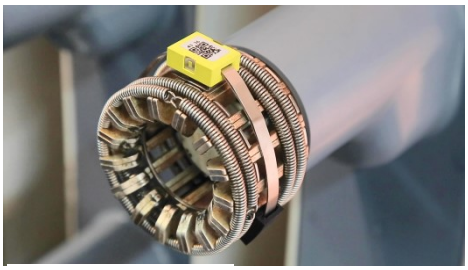
Application scenarios

Due to oxidation and dirt of the contacts, aging of the equipment, and poor contact between the dynamic and static contacts of the high-voltage circuit breaker, the contact connection parts of the circuit breaker are heated. If not detected and dealt with in time, the equipment may easily burn down.

Due to the high voltage level, it is recommended to use a wireless temperature measurement solution. ATE400 is installed at the moving and static contacts of the circuit breaker, and the collected temperature values are transmitted to the ASD500 intelligent control display terminal through the wireless model.

Product solution

Introduction	
Wireless temperature measurement terminal	ASD500, intelligent control wireless temperature measurement integrated device
Temperature sensor	ATE400, passive sensor, starting current ≥5A
Installation	Install the yellow, green and red ATE400 at the moving/static contacts of the circuit breaker according to the A/B/C phase sequence, ensuring 4 layers of alloy sheets



2. Temperature monitoring of high-voltage switchgear busbars and cable joints

Application scenarios

The contact resistance of high-voltage busbars and cable overlaps increases due to aging, looseness, etc. When large currents pass through, heat will be generated, which can easily lead to equipment burnout or sudden power outages and other accidents.

From a safety perspective, it is recommended to use a wireless temperature measurement solution. ATE400 is installed at the busbar and cable overlap, and the collected temperature values are transmitted to the ASD500 intelligent control display through wireless signals.

Product solutions

Introduction	
Wireless temperature measurement terminal	ASD500, intelligent control wireless temperature measurement integrated device
Temperature Sensor	ATE400, passive sensor, starting current ≥5A
installation method	Install the yellow, green and red ATE400 at the busbar/cable overlap according to the A/B/C phase sequence, ensuring 4 layers of alloy sheets

3. Transformer temperature monitoring

3.1 Transformer joint temperature monitoring

Application scenarios

Factors such as loose transformer nuts or small washer areas may cause the contact resistance of the wiring port to be too high, causing the temperature of the transformer's inlet and outlet to be too high, leading to serious accidents.

For safety reasons, it is recommended to use wireless temperature measurement solutions. It is recommended to install ATE400 at the inlet and outlet of the transformer to transmit the collected temperature data to the ARTM-Pn display terminal through wireless signals.

Product solutions

Introduction	
Wireless temperature measurement terminal	ARTM-PN, wireless temperature measurement and collection device
Temperature Sensor	ATE400, passive sensor, starting current ≥5A
Installation method	Install the yellow, green and red ATE400 at the incoming and outgoing lines of the transformer according to the A/B/C phase sequence, ensuring 4 layers of alloy sheets

3.2 Transformer internal temperature monitoring

Application scenarios

Factors such as transformer iron loss, copper loss, short circuit between coil turns, and poor air circulation in the installation site can cause the temperature of the transformer to rise abnormally, resulting in a shortened service life of the transformer. In severe cases, the transformer may even be burned.

From a safety perspective, it is recommended to use a wired temperature measurement solution. It is recommended to embed PT100 in the transformer and connect the PT100 to the ARTM-8L display device for temperature collection and display.

Product solutions

Introduction	
Wired temperature measurement terminal	ARTM-8L, temperature detector
Temperature Sensor	PT100, it is recommended to be embedded inside the transformer.
Installation method	Fix the PT100 at the internal winding, depending on the package

4. Low voltage circuit breaker temperature monitoring

Application scenarios

The contact resistance increases due to aging or loosening of the inlet and outlet connectors of the low-voltage circuit breaker. Heat is generated when the current rises, causing fires and other accidents.

For safety reasons, it is recommended to use a wireless temperature measurement solution. It is recommended to use ATE400 alloy sheets to be fixed on the low-voltage circuit breaker. The collected

temperature data can be wirelessly sent to the ARTM-Pn display device, which can simultaneously monitor the electrical parameters of the circuit.

Product solutions

Introduction	
Wireless temperature measurement terminal	ARTM-PN, wireless temperature measurement and collection device
Temperature Sensor	ATE400, passive sensor, starting current ≥5A
Installation method	Install the yellow, green and red ATE400 on the low-voltage circuit breaker according to the A/B/C phase sequence, ensuring 4 layers of alloy sheets

5. Temperature monitoring of copper bars and cable joints of low-voltage switch cabinets

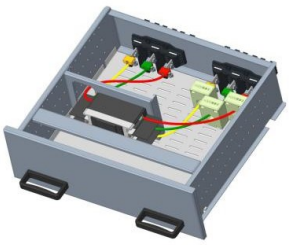
Application scenarios

There is contact resistance at the copper bars and cable joints of the low-voltage switch cabinet. When the current passing through is large, it is easy to heat up， so it should be the main monitoring object.

For safety reasons, it is recommended to use wireless temperature measurement solutions. Install the ATE400 on the busbar connection point and the incoming and outgoing cables of the low-voltage drawer. The transceiver will transmit the collected temperature data to the ARTM-Pn display terminal through wireless signals, which can simultaneously monitor the electrical parameters of the circuit.

Product solutions

Introduction	
Wireless temperature measurement terminal	ARTM-PN, wireless temperature measurement and collection device
Temperature Sensor	ATE400, passive sensor, starting current ≥5A
Installation method	Install the yellow, green and red ATE400 at the busbar connector and the incoming and outgoing cable heads of the low-voltage drawer to ensure 4 layers of alloy sheets



6.Low voltage capacitor temperature monitoring

Application scenarios

As a component of reactive power compensation, low-voltage capacitors are in large quantities. Due to factors such as insufficient withstand voltage of the capacitor and leakage inside the capacitor, the temperature of the capacitor is too high, leading to major accidents such as fires and even explosions.

For safety reasons, it is recommended to use a wireless temperature measurement solution. It is recommended to use the ATE300M wireless temperature measurement sensor. The sensor probe is tied to the capacitor and the collected temperature data is wirelessly sent to the ATC600-M wireless temperature measurement transceiver. It can also be used with ATP. Series touch screen displays temperature locally.

Product solutions

Introduction	
Wireless temperature measurement terminal	ATC600-M wireless temperature measurement transceiver
Temperature Sensor	ATE300M, optional 6-channels temperature probe, the main body is rail/bundled installation
Installation method	Fix the temperature probe of the sensor to the capacitor housing to measure the temperature

7.Low voltage reactor temperature monitoring

Application scenarios

In the power system, low-voltage reactor is the main component that suppresses harmonics and limits short-circuit current. It has the characteristic of generating heat. Insulation materials gradually age under the action of high temperature and strong electric field for a long time, causing reactors to burn out, resulting in serious accidents such as fires and even explosions.

For safety reasons, it is recommended to use a wireless temperature measurement solution. It is recommended to use the ATE300M wireless temperature measurement sensor. The sensor probe is fixed on the surface of the reactor with thermal conductive glue, and the collected temperature data is wirelessly sent to the ATC600-M wireless temperature measurement transceiver. , it can also be used with the ATP series touch screen to display the temperature locally.

Product solutions

Introduction	
Wireless temperature measurement terminal	ATC600-M wireless temperature measurement transceiver
Temperature Sensor	ATE300M, optional 6-way temperature probe, the main body is

	rail/bundled installation
Installation method	Fix the temperature probe of the sensor on the surface of the reactor with thermal conductive glue

8. Low voltage switch cabinet outlet cable temperature and current monitoring

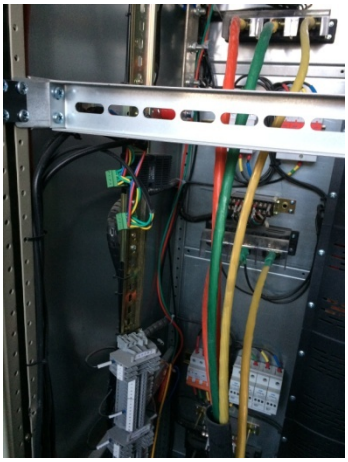
Application scenarios

There is a contact resistance at the outlet cable joint of the low-voltage switch cabinet. When the passing current is large, it is easy to generate heat and should be the main monitoring object.

For safety reasons, it is recommended to use wireless temperature and current comprehensive monitoring. Install the ACE100 on the outlet cable, and transmit the collected temperature and current data to the ATC600-C wireless temperature measurement transceiver through wireless signals. It can also be used with the ATP series touch screen to display the temperature and current locally.

Product solutions

Introduction	
Wireless temperature measurement terminal	ATC600-C wireless temperature measurement transceiver
Temperature Sensor	ACE100-29, battery/induction power dual power supply temperature and current composite sensor
Installation method	Clamp the yellow, green and red ACE100-29 on the outlet cable of the low-voltage switch cabinet



9.Temperature monitoring of cable trenches in power distribution rooms

Application scenarios

Due to the numerous cables in the cable trench, factors such as excessive ambient temperature and excessive current flowing in the power distribution room, it is easy to cause the temperature in the cable trench to be too high, leading to fires.

From a safety perspective, it is recommended to use the ATE300P wireless temperature sensor to monitor the cable temperature and transmit it to the ATC600-C wireless temperature transceiver through wireless signals. It can also be used with the ATP series touch screen to display the temperature locally.

Product solutions

Introduction	
Wireless temperature measurement terminal	ATC600-C, wireless temperature measurement transceiver
Temperature Sensor	ATE300P, active sensor, strap/rail/screw mount
Installation method	Configure the number of sensors according to the number and length of monitored cables

10.Low voltage distribution box temperature monitoring

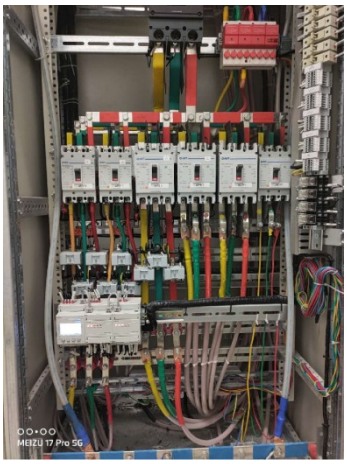
Application scenarios

For low-voltage distribution cabinets, the greater the operating current, the greater the heat generated by the electrical components in the cabinet. Therefore, it is necessary to avoid fires caused by excessive temperatures.

Due to the dense distribution of low-voltage power distribution cabinets, it is recommended to use ATE300M wireless temperature measurement sensors to send the collected temperature data to the ATC600-M wireless temperature measurement transceiver wirelessly. It can also be used with the ATP series touch screen to display the temperature locally.

Product solutions

Introduction	
Wireless temperature measurement terminal	ATC600-M wireless temperature measurement transceiver
Temperature Sensor	ATE300M, optional 6-channels temperature probe, the main body is rail/bundled installation
Installation method	Fix the temperature probe of the sensor at the cable overlap in the low-voltage distribution cabinet



11.Low voltage array cabinet temperature monitoring

Application scenarios

The array cabinet in the data center has a lot of data and the larger the working current, the temperature monitoring inside the cabinet is particularly important. It is recommended to use PT100 or NTC temperature probe for each array cabinet. Connect the probe to the ARTM-24 temperature detector. It can also be used with the ATP series touch screen to display the temperature locally.

Product solutions

Introduction	
Wired temperature measurement terminal	ARTM-24, temperature detector
Temperature Sensor	PT100, please contact the supplier for specific packaging, accuracy, wire system, wire material, and wire length.
	NTC, please contact the supplier for specific packaging, precision, wire system, wire material, and wire length.
Installation method	Fix the PT100/NTC at the cable overlap in the head cabinet. The details will depend on the packaging.

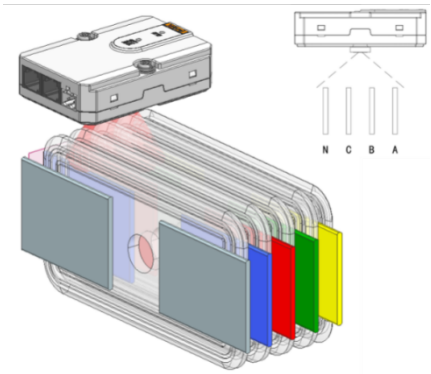
12. Low voltage enclosed busbar temperature monitoring

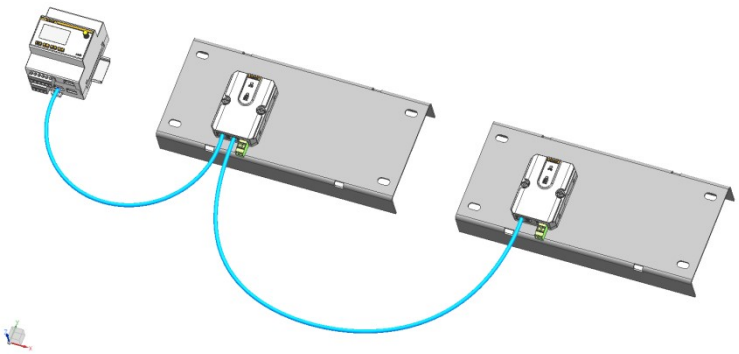
Application scenarios

The connections of dense low-voltage enclosed bus ducts such as industrial power distribution and building power distribution will cause heat and combustion due to unreliable installation contacts, posing safety risks. The temperature and humidity of the bus connections can be monitored online in real time through the AMB bus joint temperature measurement module. Parameters, when abnormal temperature and humidity conditions are found, the monitoring module will alarm locally and in the remote system, promptly notifying daily maintenance personnel to conduct inspections and troubleshooting, ensuring the safety of electricity in the entire electrical system.

Product solutions

Introduction	
Temperature measurement display terminal	ATP007KT/ATP010KT, accepts the data from the data collector and displays it graphically, and can forward the data to the monitoring background
Data collector	AMB310, can connect up to 160 temperature sensors AMB300
Temperature Sensor	AMB300, infrared temperature measurement, non-contact to ensure electrical safety
Installation method	Fix the AMB300 on the bus joint cover





13.Bus duct shell temperature monitoring

Application scenarios

The aluminum enclosed busbar shell is in the alternating magnetic field generated by the busbar, which generates current and causes heat. As the temperature rises, the surrounding insulation materials and equipment will age faster, easily causing fires.

For safety reasons, it is recommended to use a wireless temperature measurement solution. It is recommended to use the ATE300P wireless temperature measurement sensor. The sensor temperature probe is fixed on the surface of the bus duct shell and the collected temperature data is wirelessly sent

to the ATC600-C wireless temperature measurement transceiver. Can be used with ATP series touch screen to display temperature locally.

Product solutions

Introduction	
Wireless temperature measurement terminal	ATC600-C, wireless temperature measurement transceiver
Temperature Sensor	ATE300P, active sensor, strap/rail/screw mount
Installation method	Fix the ATE300P temperature probe on the surface of the bus duct shell or the connecting screw with thermal conductive glue

14. Motor temperature monitoring

14.1 Motor junction box connector and surface temperature monitoring

Application scenarios

Due to factors such as poor joint manufacturing technology and loose crimping of the motor, the contact resistance at the joints is too high, causing the temperature of the motor wiring to be too high, leading to serious accidents such as fires.

For safety reasons, it is recommended to use wireless temperature measurement solutions. It is recommended to use ATE400 installed at the motor junction box wiring or ATE300P probe attached to the surface of the motor to transmit the collected temperature data to the ATC600-C wireless temperature measurement transceiver through wireless signals. It can also be used with the ATP series touch screen to display the temperature locally.

Product solutions

Introduction	
Wireless temperature measurement terminal	ATC600-C, wireless temperature measurement transceiver
Temperature Sensor	ATE300P, active sensor, strap/rail/screw mount
	ATE400, passive sensor, starting current ≥5A
Installation method	Fix the ATE300P probe on the surface of the motor by gluing it
	According to the A/B/C phase sequence, install the yellow, green and red ATE400 at the connection point of the motor junction box, ensuring that there are 4 layers of alloy sheets.



14.2 Motor internal temperature monitoring

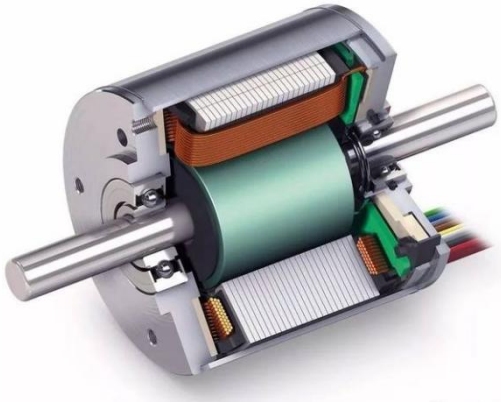
Application scenarios

Due to abnormal vibration of the motor or winding short circuit, turn-to-turn short circuit, phase-to-phase short circuit and other factors, the motor causes internal heating, leading to serious accidents such as motor burnout.

From a safety perspective, it is recommended to use a wired temperature measurement solution. It is recommended to embed PT100 in the motor and connect the PT100 to the ARTM-8L display device for temperature collection and display.

Product solutions

Introduction	
Wired temperature measurement terminal	ARTM-8L, temperature detector
Temperature Sensor	PT100, it is recommended to be embedded inside the motor.
Installation method	Fix the PT100 at the internal winding of the motor, depending on the packaging.



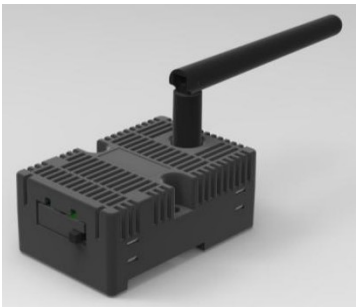

15. Environmental temperature and humidity monitoring

Application scenarios

The environment temperature and humitiry in high and low voltage power distribution cabinets and power distribution rooms have an important impact on the reliable and continuous operation of the entire power distribution system. The AHE100 wireless temperature and humidity sensor is recommended to collect and wirelessly upload temperature and humidity,to achieve Comprehensive monitoring and control of distribution cabinets and the entire distribution room.

Product solutions

Introduction	
Wireless temperature measurement terminal	ATC600-C, wireless temperature measurement transceiver
Wireless temperature and humidity sensor	AHE100, active wireless temperature and humidity sensor
Installation method	Install the AHE100 on the rail or screws on the wall of the high and low voltage distribution cabinet or distribution room.



Product description

1. Temperature sensor

1.1 Wireless temperature sensor

The ATE series wireless temperature sensor is a temperature acquisition sensor that is directly fixed and installed on the heating part. It transmits temperature data to the receiving unit wirelessly.

Product type

Name	Application	Installation size
 ATE200	Circuit breaker contact arms, static contacts, cable joints, busbars, etc.	35*35*17mm，L=330mm (length*width*height, strap)
 ATE200P	Circuit breaker contact arms, static contacts, cable joints, busbars, etc.	35*35*17mm，L=330mm (length*width*height, strap)
 ATE300P	Motor surface, busduct shell .etc.	70*65*45.5mm，L=2m (length*width*height, probe wire length)

 ATE400	Circuit breaker moving contacts, static contacts, busbars, cables, etc.	25.82*20.42*12.8mm (length*width*height)
 ATE300M	Low-voltage copper bars, cables, capacitors, reactance, etc.	35mm din-rail
 ACE100-29	Low voltage cable with diameter 6~29mm	67.7*57.4*69.8mm (length*width*height)

Technical Parameters

Parameter Type	Model&Specification			
	ATE300P	ATE200	ATE200P	ATE400
Wireless frequency	470MHz/433MHz			
Communication distance	Open space 500m	Open space 150m/470Mhz (433MHz, distance 50 meters)		
Sampling frequency	25s			15s
Transmission frequency	25s-5min			15s
Installation method	rail/roller strip fixing	Strap fixed		Alloy sheet fixed
Power supply	Battery			CT induction takes power, starting current ≥5A
Work span	≥5 years (25℃)			≥10 years
Temperature range	-50℃~300℃	-50℃~125℃	-50℃~150℃	-50℃~125℃
Accuracy	±1℃		±0.5℃	±1℃
Sensor probe	PT100	Alloy base		
Application scope	Electrical connectors in high and low voltage cabinets, etc.			
Operating temperature	-40℃~85℃			
Relative humidity	≤95%			
Atmospheric pressure	86kPa~106kPa			

Parameter Type	Model&Specification	
	ACE100-29	ATE300M
Power supply	Inductive power taking (2.5A start) Battery powered (replaceable battery)	AC/DC 85V～265V
Wireless frequency	470MHz	433～510MHz
Communication distance	Open space 150m	Open space 1000m
Collection frequency	10s～30s (induction power collection) 3min (battery powered)	1s～240s
Installation method	Open type installed on cable connector with diameter 6~29mm	Rail type/tie type fixation
Work span	Battery life 3 years (25℃) Replaceable battery (model CR2450)	≥10 years
Temperature measurement range	-50℃～125℃	-40℃～140℃
Temperature measurement accuracy	±1℃	±1℃
Temperature probe	Metal cover (digital temperature sensor)	Split NTC, 1~6 channels optional
Split NTC, 1~6 channels optional	AC 1～400A	None
Current accuracy	±1%FS	None
Operating temperature	-30℃～85℃	-40℃～85℃
Structure size	67.7*57.4*69.8mm (length*width*height)	35mm din-rail

1.2 Wired temperature sensor

Wired temperature sensors are installed at the contacts of low-voltage cabinets or at the temperature of transformer windings and motor windings to collect temperature and transmit it through wired methods.

Product number

Name	Application	Installation size
 PT100	Low-voltage contact temperature measurement or transformer and motor winding temperature measurement	Depends on packaging
 NTC	Low-voltage contact temperature measurement or transformer and motor winding temperature measurement	Depends on packaging

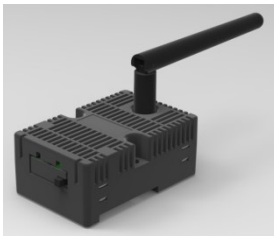
Technical Parameters

Parameter Type	Model&Specification	
	PT100	NTC
Specifications and models	TPS01TP100-2000	NTC-B150B/YTφ12-V01-2M NTC-B150B/YTφ12-V01-4M NTC-B150B/YTφ8-V01-2M NTC-B150B/YTφ8-V01-4M
Temperature measurement range	-50℃～200℃	-40℃～140℃
Temperature measurement accuracy	±1℃	
Application scope	Low voltage contact temperature measurement or transformer, motor winding	
Installation method	Please contact the supplier for specific packaging, precision, wire system, wire material, and wire length.	

1.3 Wireless temperature and humidity sensor

The AHE100 wireless temperature and humidity sensor is mainly used to detect the temperature and humidity inside medium and high-voltage switch cabinets, terminal boxes, ring main units, box transformers and other equipment as well as in the distribution room environment. The module adopts a special shell with good ventilation effect and exquisite appearance, which can effectively protect the internal components and extend the service life.

Product model

Name	Application	Installation
 AHE100	The environment inside medium and high voltage switch cabinets, terminal boxes, ring main units, box-type transformers and other equipment and in power distribution rooms	Using din-rail (DIN35mm) installation method

Technical Parameters

Technical Parameters		Model&Specification
Measuring range	Temperature	-30℃~85℃
	Humidity	0~100%RH
Accuracy	Temperature	±1℃
	Humidity	±3%RH
Collection frequency		25S
Transmission frequency		5Min (report in advance if the temperature changes ≥2℃ or the humidity changes ≥5%RH within 5Min)
Transmission distance		500m (open space)
Battery span		3 years (under 25℃ environment), replaceable (model CR2450)
Installation method		Din-rail

2. Temperature measurement receiver

The ATC series transceiver is a temperature transceiver with a RS485 serial communication interface. It can simultaneously receive data transmitted by the ATE series wireless temperature sensors and upload the collected data to the monitoring center through the RS485 main bus.

Product model

Name	Parameter description	Installation method
 ATC600	90*90*38mm (length*width*height); AC/DC 85~265V power supply; ATC600 has 3 working modes: terminal (-C), relay (-Z), terminal (-M), which can be customized according to the project selection configuration. One channel RS485 uplink interface and Modbus protocol.	35mm din-rail installation

Technical Parameters

Parameter Type	Model&Specification		
	ATC600-C	ATC600-Z	ATC600-M
Function	Receiver	Repeater (signal amplifier)	Receiver
Matched sensor	ATE200/200P; ATE400;AHE100;ACE100; ATE300P	ATE200/200P;ATE400	ATE300M
Power supply	AC/DC100~265V；DC12~48V		
Consumption	≤2W		

Temperature measuring points	240 points	——	1440 points (240 sensors)
Resolution	0.1℃	——	0.1℃
Temperature measurement range	-50℃~+125℃	——	-40℃~+140℃
Temperature measurement accuracy	±1℃	——	±1℃
Wireless frequency	470Mhz	470Mhz	433Mhz~510Mhz
Wireless distance	The receiving sensor is 150m (open space); the receiving repeater is 1km (open space)	Receiving sensor 150m (open space), relay forwarding distance 1km (open space)	Receive sensor 1km (open space)
Communication port	RS485		
Baud rate (bps)	2400、4800、9600、19200		
Protocol	MODBUS-RTU	——	MODBUS-RTU
Relay output	2 passive outlets, capacity 5A/AC250V, 5A/DC30V		
Working environment	Temperature: -20 ℃ ~ +55 ℃; relative humidity ≤95%		

3. ARTM-PN wireless temperature measurement device

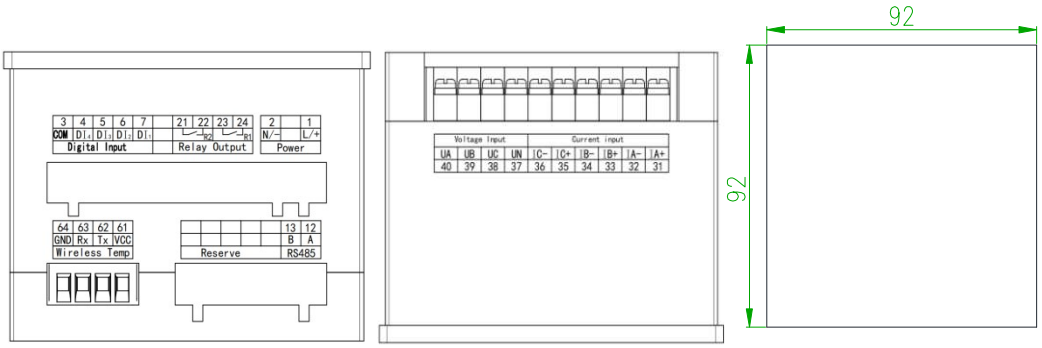
Product description

ARTM-Pn wireless temperature measurement device can be installed separately in high-voltage cabinets and low-voltage drawer cabinets. Each device can receive data from 60 sensors. The sensor models are optional ATE100M, ATE200, ATE200P, and ATE400. The device is equipped with full electrical parameter measurement, 2 relay outputs, and supports high temperature alarm and ultra-high temperature alarm signal output. The device also has 1 RS485 serial communication interface, which can upload the collected temperature data to the monitoring center.

Technical Parameters

Item		Specification
Rated input	Wiring method	3P3L 或 3P4L 3P3L or 3P4L
	Voltage	100V
	Current	5A
	Frequency	50Hz
Accuracy	Current,Voltage	0.5 class
	Active power	0.5 class
	Reactive power	0.5 class
	Power	0.5 class
Auxiliary power		AC85~265V，DC100~300V
Consumption		8W
Communication	Protocol Pro	Modbus-RTU
	Baud rate(bps)	2400、4800、9600、19200
Environment requirements	Working temperature	-10℃~55℃
	Relative humidity	≤95%
	Atmospheric pressure	86kPa~106kPa
Mean time between failures		≥50000 h

Terminals



4. Intelligent control device

4.1 ASD320-PN control device

Product description

ASD320-Pn wireless temperature measurement device integrates comprehensive measurement and control of switch cabinets and wireless temperature measurement of contacts inside the switch cabinet. It has primary circuit dynamic simulation diagram, spring energy storage indication, high-voltage live display and self-test/lockout, power verification phase, Automatic temperature and humidity control and display (with forced heating), heating circuit failure alarm, power outage alarm, remote/local knob, opening and closing knob, energy storage knob, human body induction, voice error prevention prompt, cabinet lighting control, circuit breaker It has functions such as statistics on the opening and closing times of the device, pre-opening and pre-closing flash indication, opening and closing circuit integrity indication, opening and closing circuit voltage measurement, RS485 serial communication interface, and can be used with a wireless temperature measurement module to monitor the temperature of high-voltage electrical contacts.

Technical Parameters

Working power supply: AC85-265V or DC100-300V

Status input requirements: Passive dry contact input (the status display device has its own internal power supply)

Temperature and humidity measurement and control accuracy: temperature ≤ 1℃; relative humidity ≤ 3%

Wireless temperature measurement: Can be used with ATE series wireless temperature sensors, temperature measurement range -50℃～125℃

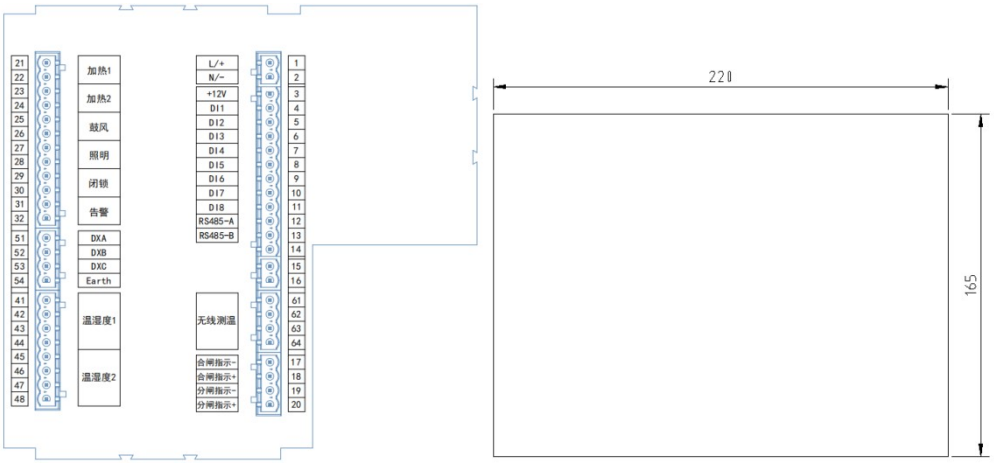
Heating and alarm output capacity: AC220V/5A

Requirements for live display: Short-circuit current from the secondary side of the charged sensor to ground under rated voltage > 200uA

(10kV system, sensor capacitance ≥100pF; 35kV system, sensor capacitance ≥35pF; 6kV system, sensor capacitance ≥180pF)

Communication: RS485 serial communication interface, Modbus-RTU protocol

Terminals



4.2 ASD300-PN control device

Product description

ASD300 switch cabinet comprehensive measurement and control device, with primary circuit dynamic simulation diagram, spring energy storage indication, high-voltage live display and self-test/lockout, electric phase verification, automatic temperature and humidity control and display (with forced heating), heating circuit fault alarm, Power failure alarm, remote/local knob, opening and closing knob, energy storage knob, human body sensor, voice error prevention prompt, cabinet lighting control, circuit breaker opening and closing number statistics, pre-opening and pre-closing flash indication, opening and closing circuit It has functions such as intact indication, opening and closing circuit voltage measurement, RS485 serial communication interface, etc. It also integrates full electrical parameter measurement functions, and can be equipped with an optional wireless temperature measurement module to monitor the temperature of high-voltage electrical contacts, achieving integrated measurement and control.

Technical Parameters

Working power supply: AC85-265V or DC100-300V

Status input requirements: Passive dry contact input (the status display device has its own internal power supply)

Temperature and humidity measurement and control accuracy: temperature ≤ 1℃; relative humidity ≤ 3%

Electrical parameter measurement accuracy: current, voltage, power, active electricity level 0.5

Wireless temperature measurement: Can be used with ATE series wireless temperature sensors, temperature measurement range -50℃～125℃

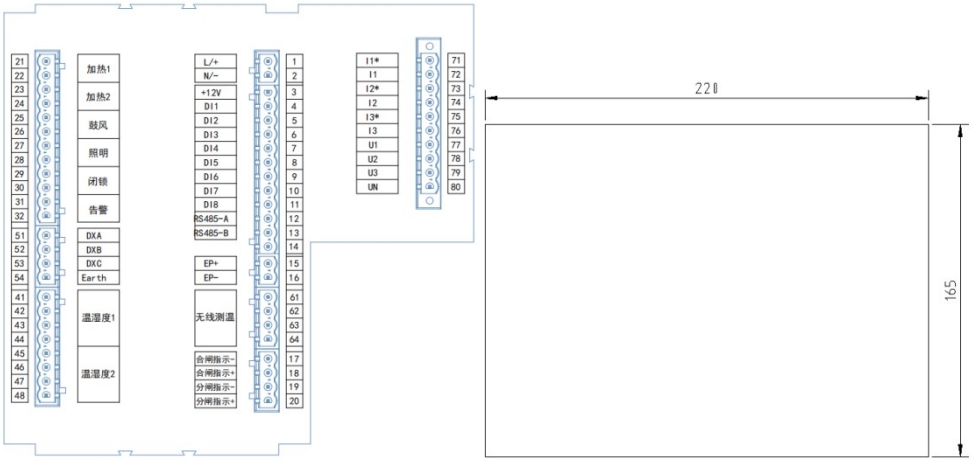
Heating and alarm output capacity: AC220V/5A

Charged display requirements: Short-circuit current from the secondary side of the charged sensor to ground under rated voltage >200uA

(10kV system, sensor capacitance ≥100pF; 35kV system, sensor capacitance ≥35pF; 6kV system, sensor capacitance ≥180pF)

Communication: RS485 serial communication interface, Modbus-RTU protocol

Terminals



4.3 ASD500-PN control device

Product description

ASD500 switch cabinet comprehensive measurement and control device, with LCD screen display of primary circuit dynamic simulation diagram, spring energy storage indication, high-voltage live display and self-test/lockout, electric phase verification, 3-way automatic temperature and humidity control and display (with forced heating), Heating circuit fault alarm, power outage alarm, remote/local knob, opening and closing knob, energy storage knob, human body sensor, voice error prevention prompt, cabinet lighting control, circuit breaker opening and closing number statistics, pre-opening and pre-closing flash indication , opening and closing circuit integrity indication, opening and closing circuit voltage measurement, pulse output, 4~20mA output, RS485 serial communication interface, Ethernet interface, USB interface, GPS timing and other functions, and also integrates full electrical parameter measurement function , and can be equipped with an optional wireless temperature measurement module to monitor the temperature of high-voltage electrical contacts, achieving integrated measurement and control.

Technical Parameters

Working power supply: AC85-265V or DC100-300V

Status input requirements: Passive dry contact input (the status display device has its own internal power supply)

Temperature and humidity measurement and control accuracy: temperature ≤ 1℃; relative humidity ≤ 3%

Electrical parameter measurement accuracy: current, voltage, power, active electricity level 0.5

Wireless temperature measurement: Can be used with ATE series wireless temperature sensors, temperature measurement range -50℃～125℃

Heating and alarm output capacity: AC220V/5A

Charged display requirements: Short-circuit current from the secondary side of the charged sensor to ground under rated voltage >200uA

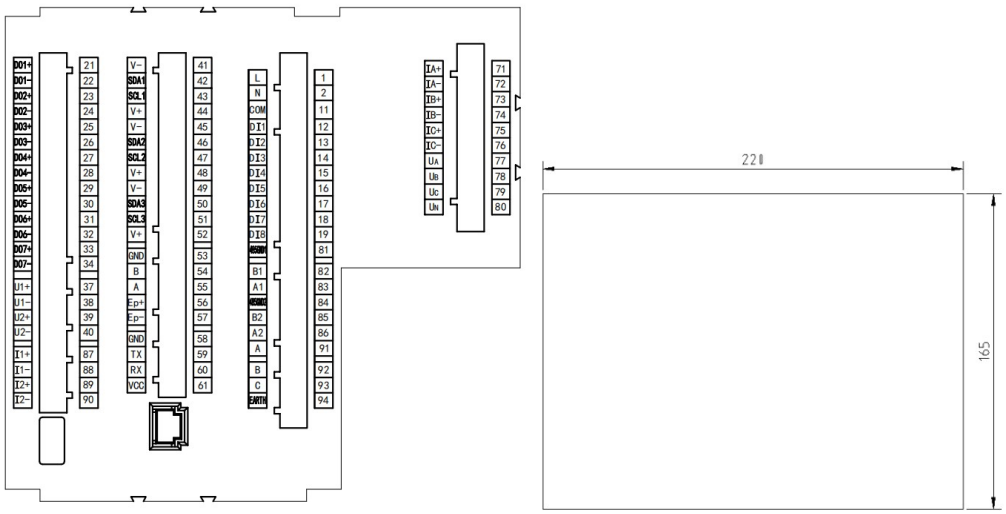
(10kV system, sensor capacitance ≥100pF; 35kV system, sensor capacitance ≥35pF; 6kV system, sensor capacitance ≥180pF)

Communication: 2-way RS485 serial communication interface, Modbus-RTU protocol; 1-way Ethernet interface, Modbus-TCP protocol;

1-channel USB, you can directly upgrade the device program through a USB flash drive; 1-channel GPS time synchronization, supports IRIG-B time synchronization method.

It has 2 channels of 4~20mA DC analog transmission output, and the transmission amount can be customized.

Terminals



5.ATP series wireless temperature measurement centralized collection touch screen

Product description

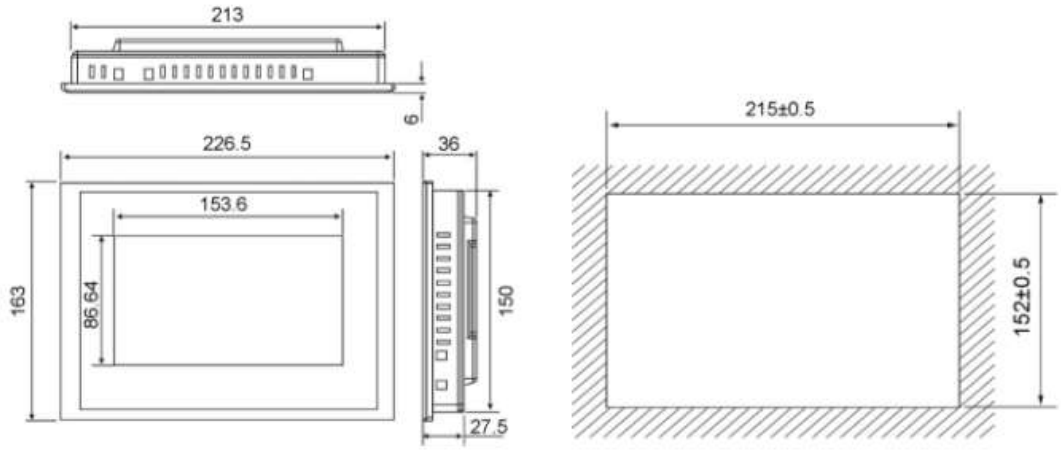
Wireless temperature measurement centralized collection touch screen ATP007/ATP010 can be embedded in high-voltage cabinets and low-voltage drawer cabinets. Each touch screen can receive data from 240 sensors and can be used with ATE200, ATE200P, ATE400, ATE300M, ATE300P,

AHE100, ACE100 and other sensors. For use with. The touch screen has one channel RS485 serial communication and one optional Ethernet port, which can upload the collected temperature data to the monitoring center.

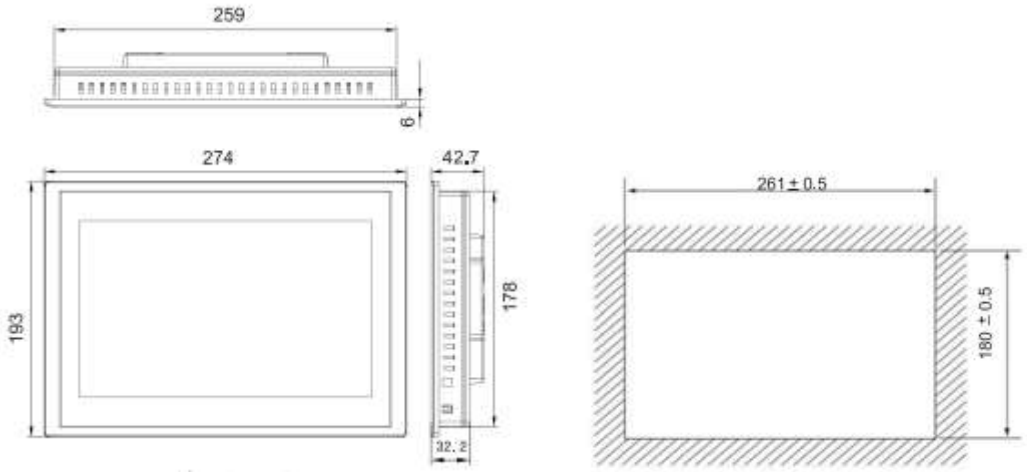
Technical Parameters

Item		Specification
Touch screen model		ATP007,ATP010
Touch screen/transceiver operating power supply		DC 24V（±10%），15W
Number of temperature measuring points		240 点 240 points
Temperature measurement range		-50℃~125℃
Temperature accuracy		±1℃
Sensor battery span		≥5 years
Communication	Port	RS485/Ethernet MODBUS-RTU
	Protocol	MODBUS-RTU/ MODBUS-TCP 2400、4800、9600、19200
Environmental requirements	Operating temperature	-10℃~55℃
	Relative humidity	≤95%
	Altitude	≤3000m

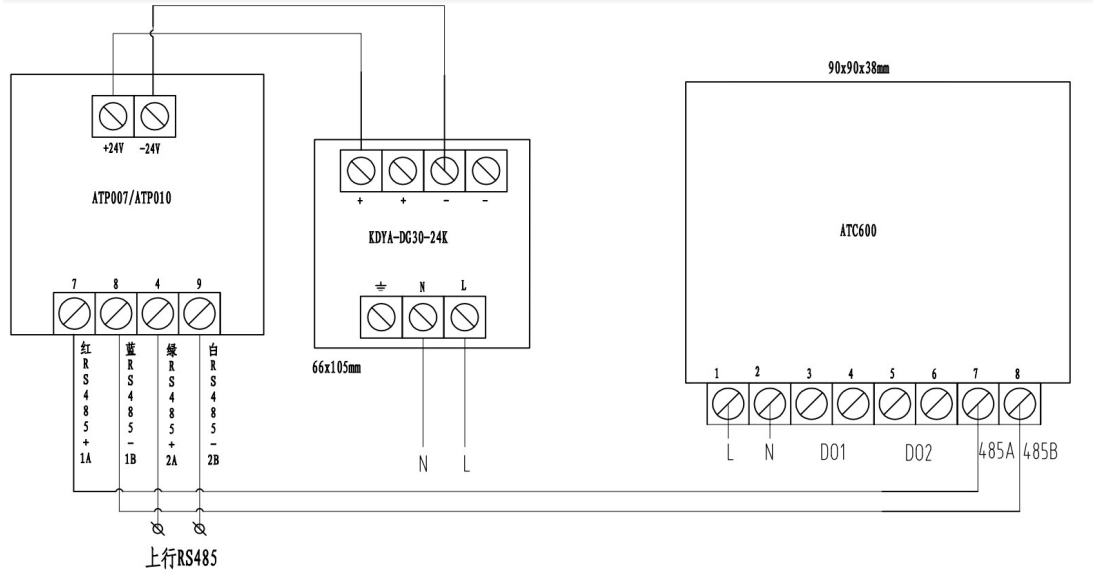
Terminals



ATP007 touch screen appearance and installation diagram



ATP010 touch screen appearance and installation diagram



6. ARTM-8L temperature inspection instrument

Product description

ARTM-8L temperature inspection instrument is suitable for multi-channel temperature measurement and control. It can be connected to NTC, PT100/PT1000, thermocouple sensors, 0~5V input, and is suitable for contacts in high and low voltage switch cabinets, transformer windings, motor windings and It is very suitable for temperature measurement in other thermal power plants, hydropower stations and other occasions.

Technical Parameters

Working power supply: AC85~265V/DC100-300V

Installation method: embedded installation

Communication interface: Standard 1-channel RS485 interface (Modbus-RTU protocol)

Input signal: NTC: R25=10.00kΩ; B25/50=3380K;

NTC: R25=50.00kΩ; B25/50=4150K;

NTC: R25=100.00kΩ; B25/50=3950K;

NTC: R25=30.00kΩ; B25/50=3950K;

PT100/PT1000: three-wire system;

Thermocouple supports K, T, J, E, N types;

0~5V.

Temperature measurement range: NTC: -40℃～140℃;

PT100: Maximum support -200℃～850℃, the actual range depends on PT100;

PT1000: Maximum support -200℃～850℃, the actual range depends on PT1000;

Thermocouple: Maximum support is -200℃~1372℃, the actual range depends on the thermocouple model.

Measurement accuracy: NTC: ±1℃;

PT100/PT1000: -200℃~200℃, ±1℃; +200℃~850℃, ±1%;

Thermocouple: 1%;

0~5V: 0.5%.

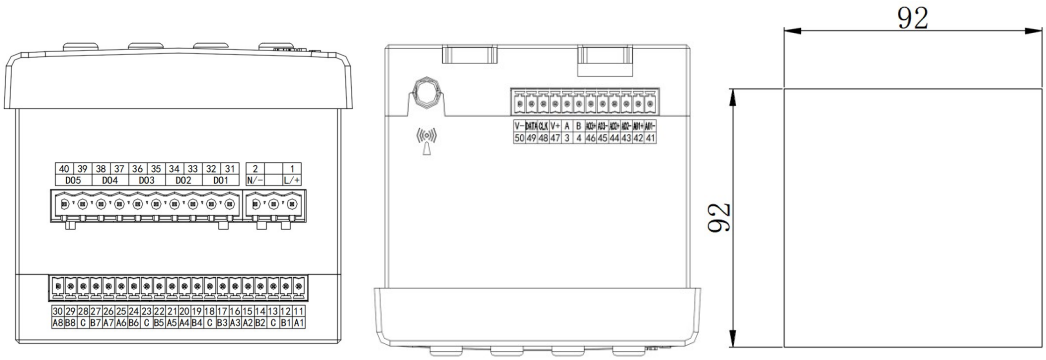
Alarm output: 5 channels are normally open, corresponding to the low alarm value and high alarm value of each channel respectively.

Output capacity: AC 250V/ 5A, DC 30V/ 5A

Temperature and humidity input: optional 1 channel, temperature accuracy ±1℃, humidity accuracy ±3%

Transmission output: 3 channels, 4~20mA

Terminals



7. ARTM-8 temperature inspection instrument

Product description

ARTM8 temperature inspection instrument is suitable for one or more channels of temperature measurement and control. It can be connected to 8 channels of PT100 temperature signals. It is suitable for contacts in high and low voltage switch cabinets, transformer windings, motor windings and other thermal power plants, hydropower stations and other occasions. Very suitable for temperature measurement.

Technical Parameters

Working power supply: AC/DC 220V, AC/DC 110V adaptive

Installation method: embedded installation

Communication interface: Standard 1-Channel RS 485 interface (Modbus-RTU protocol)

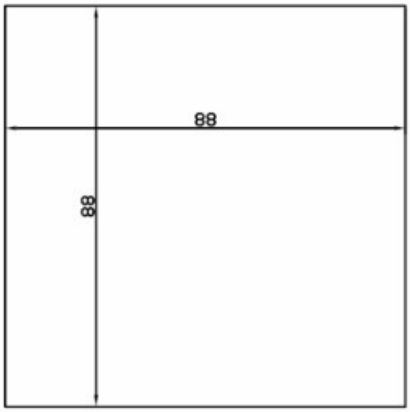
Temperature measurement range: -200℃～600℃

Contact temperature measurement accuracy: 0.5 level

Alarm output: 2 channels are normally open, corresponding to the low alarm value and high alarm value of each channel respectively.

Output capacity: AC 250V/ 5A, DC 30V/ 5A

Terminals



8. ARTM-24 temperature inspection instrument

Product description

ARTM-24 temperature inspection instrument is suitable for one or more channels of temperature measurement and control. It can be connected to 24 channels of PT100/NTC temperature signals. It is suitable for contacts in high and low voltage switch cabinets, transformer windings, motor windings and other thermal power plants. It is very suitable for temperature measurement in hospitals, hydropower stations and other places.

Technical Parameters

Working power supply: AC85~265V/DC100-350V, DC12~30V

Input signal: NTC: R25=10.00kΩ; B25/50=3380K;

NTC: R25=50.00kΩ; B25/50=4150K;

NTC: R25=100.00kΩ; B25/50=3950K;

PT100/PT1000: three-wire system;

Thermocouple supports K, T, J, E, N types;

Temperature measurement range: NTC: -40℃～140℃;

PT100: Maximum support -200℃～850℃, the actual range depends on PT100;

PT1000: Maximum support -200℃～850℃, the actual range depends on PT1000;

Thermocouple: Maximum support is -200℃~1372℃, the actual range depends on the thermocouple model.

Measurement accuracy: NTC: ±1℃;

PT100/PT1000: -200℃~200℃, ±1℃; +200℃~850℃, ±1%;

Thermocouple: 1%;

Installation method: guide rail installation

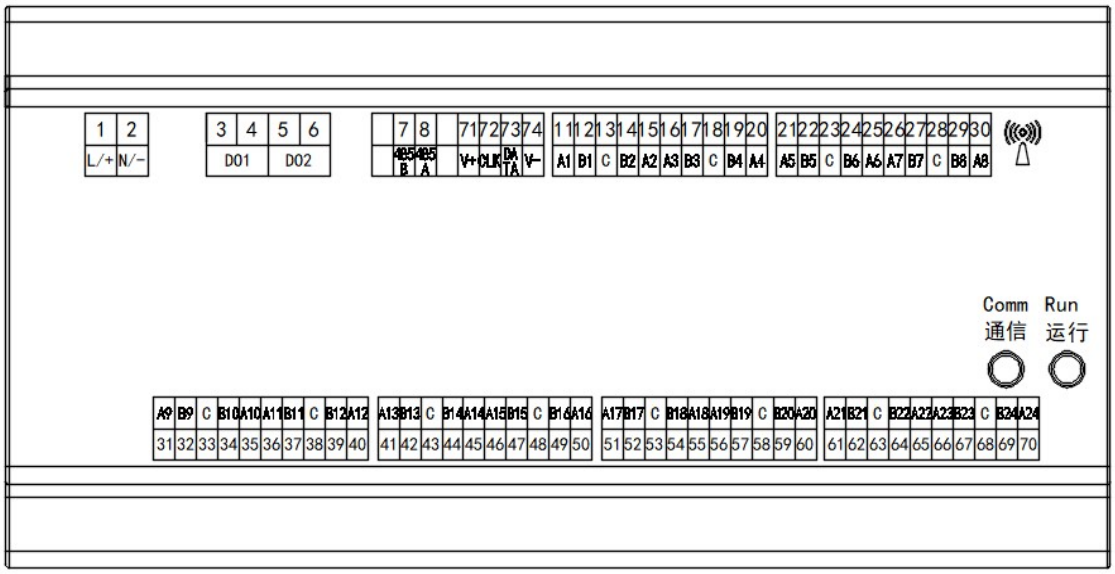
Communication interface: Standard 1-Channel RS485 interface (Modbus-RTU protocol)

Temperature and humidity input: 1 channel; temperature accuracy: ±1℃; humidity accuracy: ±3%

Alarm output: 2 channels are normally open, corresponding to the low alarm value and high alarm value of each channel respectively.

Output capacity: AC 250V/ 5A, DC 30V/ 5A

Terminals



9. AMB300 low-voltage bus duct infrared temperature measurement device

Product description

AMB300 infrared temperature measurement solution is a non-contact infrared temperature measurement device. This product can solve the problem of safe and accurate temperature measurement of bus ducts, upload the temperature data of each phase in the connector to the background in real time, implement monitoring and early warning information, and prompt managers to pay attention to alarm points or take necessary preventive measures. The device is mainly used in online temperature monitoring systems of densely insulated bus connectors in various fields.

Technical Parameters

Working power supply: AMB310 collector power supply

Function: Measure busbar temperature and humidity

Installation method: cover installation

Protection level: IP51

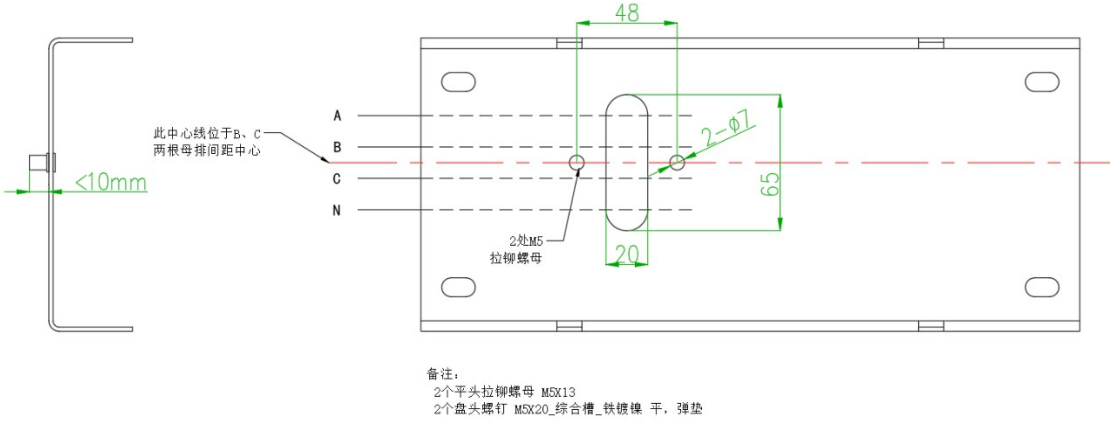
Communication interface: RJ45/Powerbus protocol

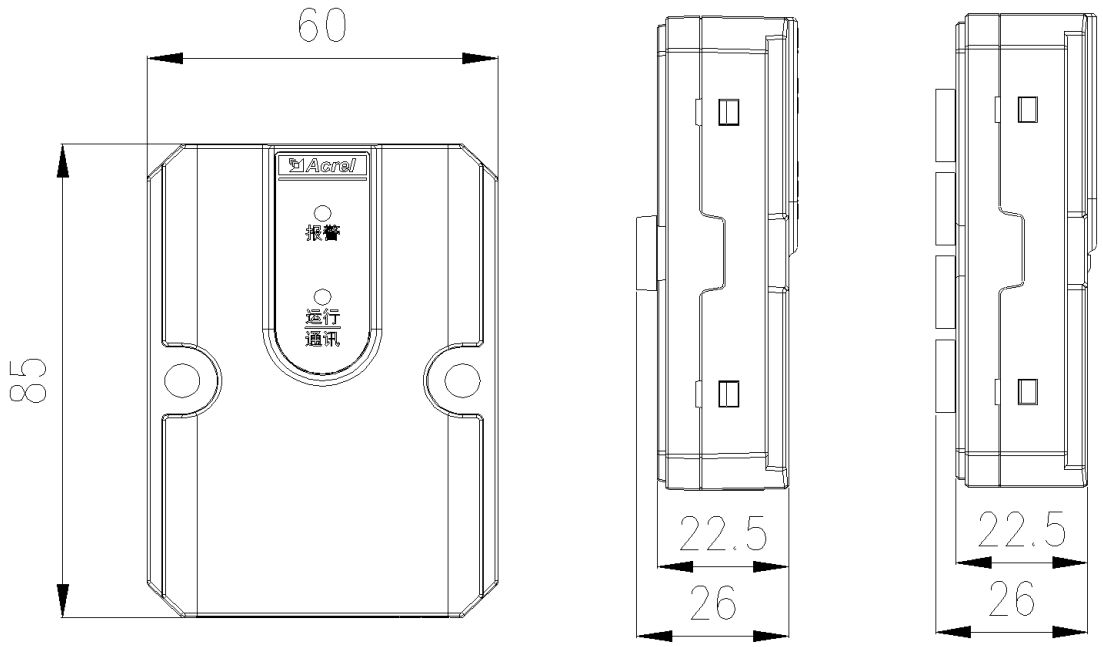
Temperature measurement range: Temperature: -10℃～150℃; Humidity: 20%RH-90%RH

Measurement accuracy: Temperature: ±3℃ Humidity: ±5%RH

Shape and installation dimensions

Unit：mm




60
85
Acrel
报警
运行
通讯
22.5
26
22.5
26

Temperature measurement system

Overview

The Acrel-2000T wireless temperature measurement and monitoring system communicates directly with the equipment at the bay level through the RS-485 bus or Ethernet. The system design complies with international standards IEC 60870-5-103, IEC 60870-5-104, Modbus RTU, Modbus TCP, etc. Transmission protocol, security, reliability and openness have been improved. The system has remote signaling, telemetry, remote control, remote adjustment, remote setting, event alarm, curve, bar graph, report form and user management functions. It can monitor the equipment operating status of the wireless temperature measurement system, achieve rapid alarm response, and prevent serious failures.

System parameters

Hardware: 4G memory, 500G hard disk, Ethernet port.

Monitor: 21 inches, resolution 1280*1024.

Operating system: Windows 7 64-bit Simplified Chinese Ultimate Edition.

Database system: Microsoft SQL Server 2008 R2.

Communication protocol: IEC 60870-5-103, IEC 60870-5-104, Modbus RTU, Modbus TCP and other international standard communication protocols

System function

Real-time monitoring: visually display the temperature data of each temperature measurement node and related faults, alarms and other information in the form of a power distribution diagram

Temperature query: temperature history curve, temperature real-time curve, real-time data query

Operation report: Query the operating temperature report of each loop equipment

Real-time alarm: temperature absolute value alarm, phase temperature difference alarm, temperature rise alarm, temperature sudden change alarm

Alarm method: pop-up event alarm window, real-time voice alarm, SMS alarm

Historical event query: Store and manage all alarm event records to facilitate users to query statistics and accident analysis

User rights management: In order to ensure the safe and stable operation of the system, user rights management functions are set up.

Fixed value setting: used to modify high temperature fixed value and over temperature fixed value

Optional Web platform/APP server