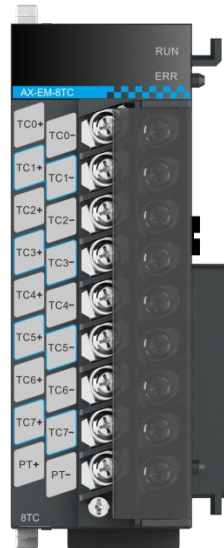


the binding can increase noise, surge, and induction impact. When using shielded cables, use single-point grounding for the shield layer.

5.4.6 AX-EM-4PT temperature module

The wiring terminals of AX-EM-4PTC temperature module are shown in the following figure. This module supports measuring by using RTDs and TCs. When using RTDs for measuring, the 2-, 3-, and 4-wire systems are supported, and the internal 5V power supply is used for powering, without the need of connection to an external power supply.



The terminal wiring is as follows:

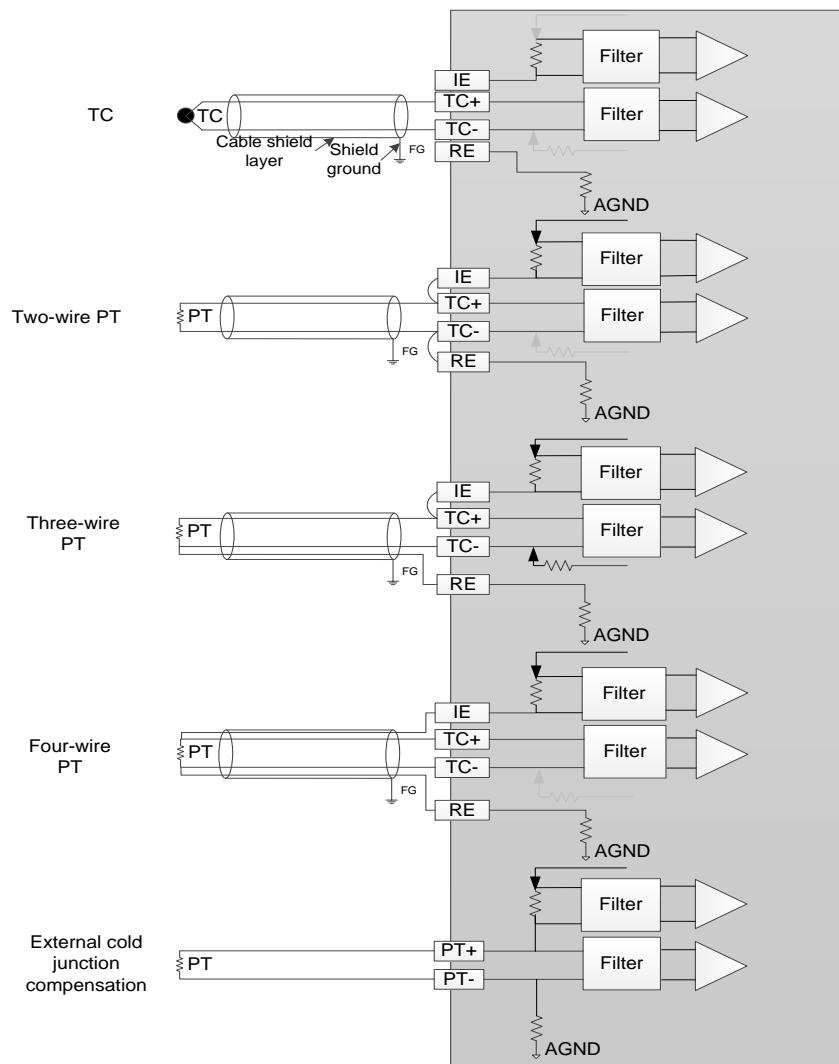


Figure 5.19 Terminal wiring

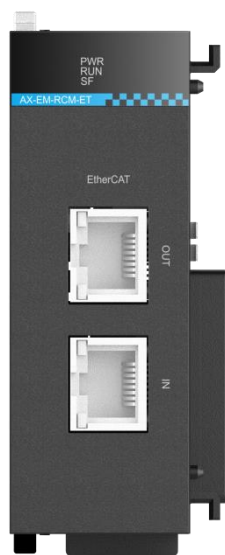
Note:

- When the PT resistor uses the two-wire system, connect IE to TC+ in short circuit mode and connect TC- to RE also in short circuit mode. In this situation, the cable resistance has an impact on the measuring accuracy.
- When the PT resistor uses the three-wire system, connect IE to TC+ in short circuit mode. In this situation, the cable resistance impact on the measuring accuracy is reduced to the minimum. (You are recommended to use the cable of which the three conductors have the same small resistance. Resistance inconsistency in the three conductors has an impact on the measuring accuracy.)
- When the PT resistor uses the four-wire system, the cable resistance almost has no impact on the measuring accuracy. This is the ideal wiring method.
- If the TC is used as the sensor, when a distance exists between the cold junction compensation and the TC end, the measured temperature is abnormal if no compensation conductor is used.
- If the TC is used as the sensor and internal cold junction compensation is configured, no external cold junction compensation resistor is needed. In this situation, the measuring accuracy may be affected since the module may have thermal accumulation. When multiple modules are connected to form a system, try to place the temperature module at the end of the rail to keep away from the CPU module.

- When the external cold junction compensation resistor is PT1000, shorten the PT resistor lead as much as possible, and place the PT resistor near user terminals.
- The module needs to be installed on a properly-grounded metal bracket, and the metal dome at the module bottom must be in good contact with the bracket.
- Do not bind the sensor cable together with the AC cable, main circuit cable, or high-voltage cable. Otherwise, the binding can increase noise, surge, and induction impact. When using shielded cables, use single-point grounding for the shield layer.

5.4.7 AX-EM-RCM-ET EtherCAT communication module

The wiring terminals of AX-EM-RCM-ET communication module are shown in the following figure. This module implements remote communication with the CPU module by using the EtherCAT protocol. In addition, the CPU module as the master node supports the expansion of up to 125 EtherCAT slave nodes. They use network cables as the transmission medium.



Note:

- When connecting the network cable, hold the crystal head of the cable and insert it into the RJ45 interface of the communication module until it makes a click sound. When removing the installed network cable, press the tail mechanism of the crystal head and pull out it from the module horizontally.
- Use shielded twisted-pair cables of category 5 or higher, plastic injection molded and iron shelled. The network cables in AX series options are recommended.

Option	Model	Specifications
Shielded cable for communication	AX-L3-20	Shielded cable for communication, L=2m; AX-L3-20; RoHS
Shielded cable for communication	AX-L3-50	Shielded cable for communication, L=5m; AX-L3-50; RoHS

If you make the communication cables by yourself, the signal pins of the cables are distributed as follows:

Pin	Signal	Signal direction	Signal description
1	TD+	Output	Data transmission +
2	TD-	Output	Data transmission -