

## Chapter 3 Expansion unit specification

### 2.5.4 TP03-4TM Specification

Item		Specification	
		J-type	K-type
Temperature range		0°C~700°C	0°C~1200°C
Digital output		0000~4000	0000~4000
Resolution		2.5 mV	
Accuracy		±0.5% FSR (0°C~1200°C)	
Sensor type		Thermocouple J-type /K-type	
Transmit speed		1scan time/ 4 Channel	
Terminal block	TC0+~TC3+	Thermistor (J,K type) signal input+ terminal	
	TC0~-TC3-	Thermistor (J,K type) signal input- terminal	
	24V	24VDCPower	input terminal(+)
	0V	24VDCPower	input terminal(-)
Power indicator		PWR:+24 V Power LED(Green) LNK: Link LED(Green)	
internal power		5VDC:Max current 50mA	
External power		24VDC±20% (Consumption current: Max 100 mA)	
Accessory		Installation manual, Expansion cable(TP03-304EC : 6cm, 26pin)	

The outline figure shows the physical layout of the TP03-4TM expansion unit. At the top, there are terminal blocks labeled +24V, TC0+, TC0-, TC1+, and TC1-. Below these are two green LEDs labeled PWR and LNK. At the bottom, there are more terminal blocks labeled TC2+, TC2-, TC3+, and TC3-. The unit is shown in a perspective view with a front panel and a rear panel.

Outline figure

Principle figure

The principle figure is a block diagram of the internal circuitry. It shows three external devices (J, K type thermocouples) connected to the unit via shielded twisted wires. The first device is connected to TC0+ and TC0-. The second device is connected to TC3+ and TC3-. The third device is connected to the 24V and 0V power lines. The TC0+ and TC0- signals are amplified by an op-amp and then sent to the A/D Converter. The TC3+ and TC3- signals are also amplified by an op-amp and sent to the A/D Converter. The 24V power line is connected to a voltage regulator, which provides a 5VDC supply to the A/D Converter and the Register. The A/D Converter outputs a digital signal to the Register. The Register is connected to the basic unit via photo coupling.