

Temperature Control Modules

Temperature Controller modules are specialized modules that are intended for closed loop control of temperature in process control applications. They accept either thermocouple or RTD input devices. The modules incorporate programmable PID algorithms to allow the modules to maintain set temperatures independently of the CPU programs. The modules also provide outputs that operate under control of the PID algorithms to maintain control of heaters.

Item		R60TCTR2T2	R60TCRT4	R60TCTR2T2BW	R60TCRT4BW	
Stocked Item		S	S	S	S	
Certification		UL • cUL • CE				
Control Output		Transistor output				
Number of Temperature Input Points		4 channels/module				
Applicable Thermocouple/Platinum Resistance Thermometer		R, K, J, T, S, B, E, N, U, L, PLII, W5Re/W26Re	Pt100, JPt100	R, K, J, T, S, B, E, N, U, L, PLII, W5Re/W26Re	Pt100, JPt100	
Accuracy	Indication Accuracy	Ambient Temperature: 25±5°C	Full scale x (±0.3%)			
		Ambient Temperature: 0 to 55°C	Full scale x (±0.7%)			
	Cold Junction Temperature Compensation Accuracy (Ambient Temperature: 0 to 55°C)	Temperature Process Value: -100°C or Higher	Within ±1.0°C	-	Within ±1.0°C	-
		Temperature Process Value: -150 to -100°C	Within ±2.0°C		Within ±2.0°C	
Temperature Process Value: -200 to -150°C		Within ±3.0°C	Within ±3.0°C			
Sampling Cycle		Switchable between 250ms/4 channels and 500ms/4 channels				
Control Output Cycle		0.5 to 100.0s				
Input Impedance		1MΩ				
Input Filter		0 to 100s (0: Input filter OFF)				
Sensor Correction Value Setting		When the R mode is used (-full scale of input range) to full scale of input range) When the Q compatible function is used -50.00 to 50.00%				
Operation at a Sensor Input Disconnection		Upscale processing				
Temperature Control Method		PID ON/OFF pulse or two position control				
PID Constants Range	PID Constants Setting		Setting by auto tuning is available			
	Proportional Band (P)		When the R mode is used 0 (0.0) to full scale of input range (depending on the decimal point position) (0: two-position control) When the Q compatible function is used 0.0 to 1000.0% (0: Two-position control)			
	Integral Time (I)		0 to 3600s (Set 0 for P control and PD control)			
	Derivative Time (D)		0 to 3600s (Set 0 for P control and PI control)			
Set Value Setting Range		Within the temperature range set in the thermocouple/platinum resistance thermometer to be used				
Dead Band Setting Range		When the R mode is used 0 (0.0) to full scale of input range (depending on the decimal point position) When the Q compatible function is used 0.1 to 10.0%				
Transistor Output	Output Signal		ON/OFF pulse			
	Rated Load Voltage		10 to 30VDC			
	Maximum Load Current		0.1A/point, 0.4A/common			
	Maximum Inrush Current		0.4A, 10ms			
	Leakage Current at OFF		0.1mA or lower			
	Maximum Voltage Drop at ON		1.0VDC (TYP) 0.1A, 2.5VDC (MAX) 0.1A			
	Response Time		OFF-ON: 2 ms or less, ON-OFF: 2 ms or less			
Heater Disconnection Detection Specifications	Current Sensor		-			
	Input Accuracy		Full Scale x (±1.0%)			
	Number of Alert Delay		3 to 255 times			
Number of Occupied I/O Points		16 Points		32 Points		
External Connection System		18-point terminal block		18-point terminal block x2		
Applicable Solderless Terminal		R1.25-3 (The solderless terminal with an insulation sleeve cannot be used)				
Internal Current Consumption		0.28A		0.31A		
Weight (kg)		0.22		0.34		
Base Unit Slots Occupied		1 slot		2 slots		