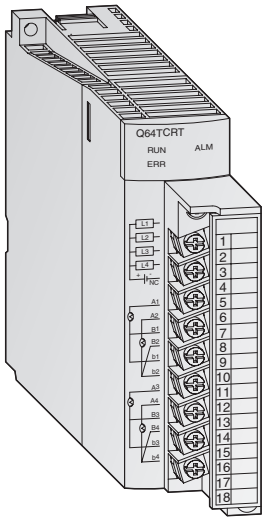
■ Temperature Control Modules



Temperature control modules with PID algorithm

These modules enable PID algorithm temperature control without placing any load on the PLC CPU for the temperature control tasks.

Special features:

- Four temperature input channels
- Auto-tuning function for the 4 PID control circuits
- Temperature control can continue even when the PLC program is stopped
- Transistor output with pulse train to drive the actuator in the control circuit
- The module is provided with a removable terminal block fastened with screws.

Specifications			Q64TCRT	Q64TCRTBW	Q64TCTT	Q64TCTTBW
Control output		type	Transistor	Transistor	Transistor	Transistor
Inputs			4 channels per module	4 channels per module/ broken wire detection	4 channels per module	4 channels per module/ broken wire detection
Supported temperature sensors			Pt100 (-200–+600 °C), JPt100 (-200–+500 °C)		R, K, J, T, S, B, E, N, U, L, P L II, W5Re/W26Re	
Sampling cycle			0.5 s/4 channels	0.5 s/4 channels	0.5 s/4 channels	0.5 s/4 channels
Control output cycle		s	1–100	1–100	1–100	1–100
Input filter			1–100 s (0 s: input filter OFF)	1–100 s (0 s: input filter OFF)	1–100 s (0 s: input filter OFF)	1–100 s (0 s: input filter OFF)
Temperature control method			PID ON/OFF impulse or 2-position control		PID ON/OFF impulse or 2-position control	
PID constant range	PID constant setting		Setting with automatic tuning possible		Setting with automatic tuning possible	
	Proportional band P		0.0–1000 % (0 %: 2-position control)		0.0–1000 % (0 %: 2-position control)	
	Integral time I		1–3600 s	1–3600 s	1–3600 s	1–3600 s
	Differential time D		1–3600 s (0 setting for PID control)	1–3600 s (0 setting for PID control)	1–3600 s (0 setting for PID control)	1–3600 s (0 setting for PID control)
Target value setting range			Within the temperature range of the Pt100 sensor used		Within the temperature range of the thermocouple used	
Dead band setting range			0.1–10.0 %	0.1–10.0 %	0.1–10.0 %	0.1–10.0 %
Transistor output	Output signal (sink)		ON/OFF pulse	ON/OFF pulse	ON/OFF pulse	ON/OFF pulse
	Rated load voltage		10–30 V DC	10–30 V DC	10.2–30 V DC	10.2–30 V DC
	Max. load current		0.1 A/1 point, 0.4 A/common	0.1 A/1 point, 0.4 A/common	0.1 A/1 point, 0.4 A/common	0.1 A/1 point, 0.4 A/common
	Max. rush current		400 mA for 10 ms	400 mA for 10 ms	400 mA for 10 ms	400 mA for 10 ms
	Max. voltage drop when ON		0.1 V DC (TYP) 0.1 A 2.5 V DC (MAX) 0.1 A	0.1 V DC (TYP) 0.1 A 2.5 V DC (MAX) 0.1 A	0.1 V DC (TYP) 0.1 A 2.5 V DC (MAX) 0.1 A	0.1 V DC (TYP) 0.1 A 2.5 V DC (MAX) 0.1 A
	Response time		OFF ⟶ ON: <2 ms ON ⟶ OFF: <2 ms	OFF ⟶ ON: <2 ms ON ⟶ OFF: <2 ms	OFF ⟶ ON: <2 ms ON ⟶ OFF: <2 ms	OFF ⟶ ON: <2 ms ON ⟶ OFF: <2 ms
Insulation method			Transformer	Transformer	Transformer	Transformer
I/O points			16/1 slot	32/2 slots	16/1 slot	32/2 slots
Connection terminals			All modules are fitted with a terminal block with 18 screw terminals.			
Applicable wire size		mm^2	0.3–0.75	0.3–0.75	0.3–0.75	0.3–0.75
Internal power consumption (5 V DC)		mA	550	60	550	640
Weight		kg	0.2	0.3	0.2	0.3
Dimensions (WxHxD)		mm	27.4x98x90	27.4x98x90	27.4x98x90	27.4x98x90
Order information		Art. no.	136386	136387	136388	136389