

Temperature Controllers

Please refer to FAQ on P.3771.

Temperature Controllers Guide

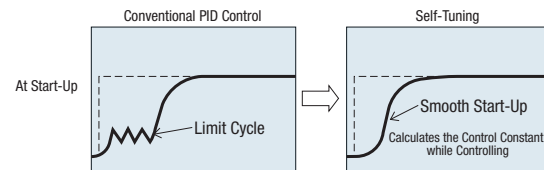
Misumi's Temperature Controllers can operate up to 20A in 100/200V on single phase or up to 30A in 200V on three-phase.

Features

Various types of temperature sensors and various types of input ranges can be set, therefore precise temperature control is possible. Also the control value has some fluctuations due to interference, the regulator can tune automatically and converge (stabilize) the fluctuation of control value because it has specific self-tuning function.

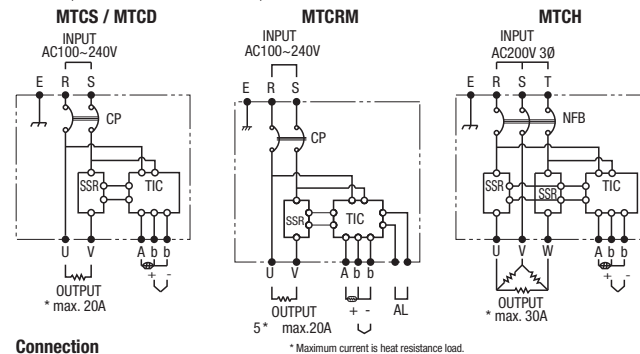
Moreover, when thermocouple or temperature measurement resistance burns out, protection circuit may work and prevent over-heating.

Difference Between Conventional PID Control & Self-Tuning



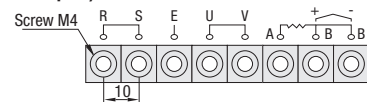
Specification	Control	Rating	Input Type
Control	PID Control (With Self-tuning Function)		Thermocouple (K / J / R / T / N / S / B)
Rating	MTCS / MTCRM	AC100V~240V 10 *20A	Temperature Measuring Resistor (Pt100Ω, JPt100Ω2)
	MTCD	AC100V~240V 10 *20A x 2 Circuits	* Switchable depending on the panel setting
	MTCH	AC200V 30 *30A	* Thermocouple at the time of shipment (K)
			Conditions of Operating Temperature 0~30°C (No condensation)
			Over Current Cut-off Breaker Switch

Circuit (MTCD has two identical circuits)

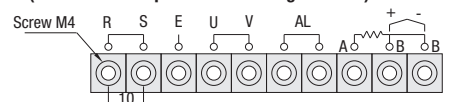


Connection

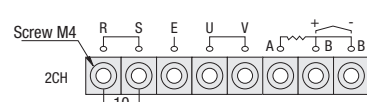
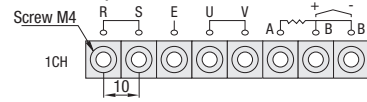
MTCS (Universal - Compact)



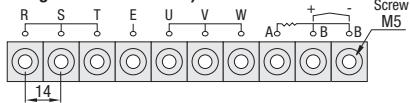
MTCRM (Universal - Compact with Alarming Function)



MTCD (Universal - Two-Series)



MTCH (Universal - High Electrical Current)



Connection with Sensors

- Thermocouple
 - + - Red
 - - White or Black
 - Temperature Measuring Resistor
 - A - Red
 - B - Black or White
 - b - White or Black
- (B and b have a choice between black and white.)

Connection with Alarm Operation

- (MTCRM Only)
- AL - For alarm

Connection with Power Supply

- Single-Phase 100V/200V
 - R - Power Connection
 - S - Power Connection
 - E - Grounding Connection
 - U - Heater Connection
 - V - Heater Connection
- Three-Phase 200V
 - R - Power Connection
 - S - Power Connection
 - T - Power Connection
 - E - Grounding Connection
 - U - Heater Connection
 - V - Heater Connection
 - W - Heater Connection

Contact for Repairs

MISUMI Corporation, Fluid Control Business Division, Fluid Control Business Team
TEL:03-3647-7300 FAX:03-3647-7481

Precautions for Safety

- Although this product is designed and manufactured with safety in mind, safety cannot be guaranteed for everything about it.
- For example, when the SSR (load switch) incorporated in the product is damaged, the incidents, i.e. temperature increase, can be caused in spite of being controlled by TIC (temperature controller). To ensure safety in such a case when the temperature exceeds a preset level, consideration that a safety circuit may be provided to cut off primary power of this product is necessary.
- The closer the current of the product approaches to the maximum rating level, the higher its temperature becomes. This can affect other equipment or shorten the service life, etc. (Expected service life can be doubled by a temperature drop of 10°C according to Arrhenius' Law.)
- Be sure to keep sufficient allowance, considering each rating and safety in mind. Wire connection should be conducted by someone with expertise.
- Electrical power plug and cord are not included. Select them according to the capacity of the heater you use.
- Safety precautions are particularly required in the following cases.**
 - Use under operating conditions not specified in the instruction manual.
 - Use in nuclear power systems, trains, motor vehicles, combustion and medical equipment.
 - Use that may seriously affect human life or property and that particularly requires safety considerations.
 - MTCRM (Universal-Compact with Alarming Function)
 - MTCD (Universal-Dual Outputs)
 - MTCH (Universal-High Electrical Current)

Temperature Controllers

Universal (Compact with Alarming Function / Two-Series / High Electrical Current)

Temperature Controllers - Universal (Compact)
Temperature Controllers - Universal (Compact with Alarming Function)

Temperature Controllers - Universal (Dual Outputs)

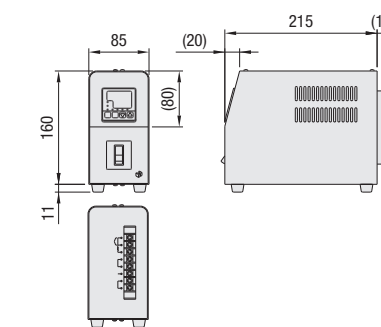
RoHS 10

Temperature Controllers - Universal (High Electrical Current)

RoHS 10

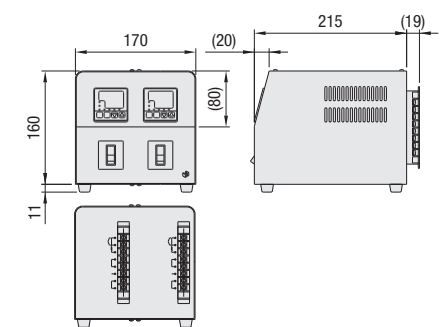
Universal - Compact

- MTCS Single Phase, AC100V~240V, 20A Max.
- Universal - Compact with Alarming Function
- MTCRM Single Phase, AC100V~240V, 20A Max.



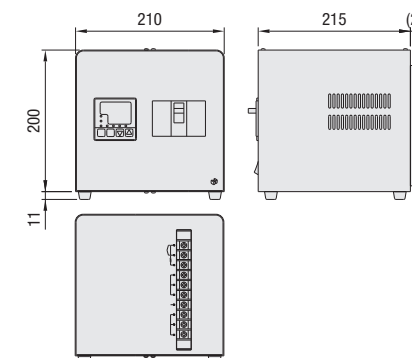
Universal - Dual Outputs

- MTCD Single Phase, AC100V~240V, 20Ax2 Max.



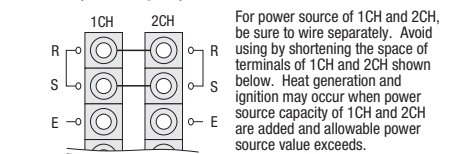
Universal-High Electrical Current

- MTCH Three-Phase, AC200V, 30A Max.



Part Number	Input Type
MTCS	Swivel
MTCRM	
MTCD	
MTCH	

MTCD (Dual Outputs)



- Be sure to avoid the wiring shown above.
- Power cord supplied by user.

Part Number Example: MTCH

Types of Sensors

Thermocouples (K, J, R, T, N, S, B) and Pt100Ω, JPt100Ω sensors can be used for the universal type.
* Thermocouple K is used before shipping.

Methods of Changing Sensor Types

