模組化PID溫度控制器

CM2/4

Multi-channel modular type temperature controller

Multi-channel modular type PID temperature controller CM Series realizes 4-channel(100ms)/2-channel(50ms) high-speed controlling with superior sampling cycle. Side connector connection makes less wiring work and close mounting possible up to 31 units,124 channels without additional power&communication wires for expansion modules. PC parameter setting and monitoring is possible via RS485 communication or dedicated USB cable. In addition, more reliable controlling can be realized thru various convenient functions.

- Multi-channel(4-channel/2-channel) simultaneous controlling possible
- High-speed sampling cycle(100ms/50ms)
- No communication and power supply for expansion modules required by using side connectors：Max.31 units(124 channels/62 channels)
- Input channel isolated design(Dielectric strength, 1,000VAC)
- Multi input / Multi range
- Heating/Cooling simultaneous controlling
- PC parameter setting via USB cable and RS485 communication (Modbus RTU)
  ：DAQMaster-PC loader program supported
  ：Dedicated USB cable-no separate power supply or connections required
- Easy maintenance via connector type connection
  ：Sensor input connector , control output connector , power/communication connector

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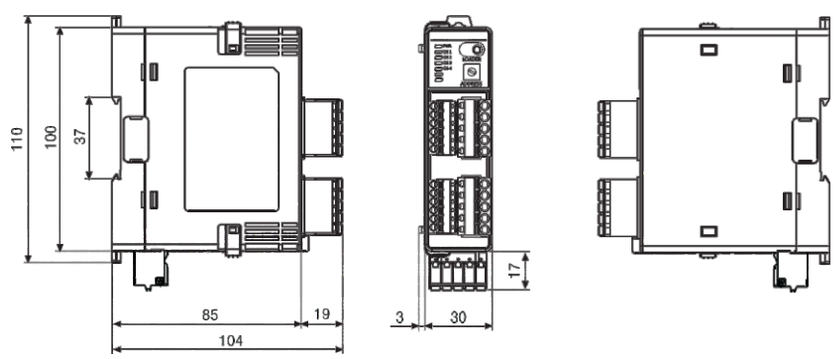
Order Code Table

CM 4 — N 2 R B

Module type	B		Basic module
	E		Expansion module
Control output	2 Channel	R	Relay output
		C	Current or SSR output selectable
	4 Channel	R	Relay output
		S	SSR drive output
Power supply	2		24VDC
Sub output	2 Channel	2	Alarm1+Alarm2 Relay output
		4	Alarm1+Alarm2+Alarm3+Alarm4 Relay output
	4 Channel	N	None(※No sub output)
Channel	2		2 Channel
	4		4 Channel
Item	CM		Multi-channel modular temperature controller

※Make sure to purchase both expansion module and basic module together since power supply/ communication terminals are provided with basic modules only.

Dimension：



Series		CM2-22RB	CM2-42RB	CM2-22RE	CM2-42RE	CM2-22CB	CM2-42CB	CM2-22CE	CM2-42CE	CM4-N2RB	CM4-N2RE	CM4-N2SB	CM4-N2SE
Channel		2 Channel (Each channel insulated-Dielectric strength 1,000 VAC)								4 Channel (Each channel insulated-Dielectric strength 1,000 VAC)			
Power Supply		24VDC											
Allowable voltage range		90 to 110% of rated voltage											
Power consumption		Max. 5W (At maximum load)											
Indicating type		Non-indicating type Parameter setting & monitoring with external devices (PC or PLC)											
Input type	RTD	DPt100Ω, JPt100Ω 3 wire (Allowable line resistance : Max. 5Ω)											
	Thermocouples	K, J, E, T, L, N, U, R, S, B, C, G, PLII(13types)											
Indicating accuracy	RTD / Thermocouples (★1)	(Bigger one either PV ±0.5% or ±1℃) ±1 Digit Max.											
	CT input	(±5% F/S) ±1 Digit Max.								—			
	Current output	(±1.5% F/S) ±1 Digit Max.								—			
Influence of Temperature (★2)	RTD / Thermocouples	(Bigger one either PV ±0.5% or ±2℃) ±1 Digit Max. (In case of thermocouple input, it is ±5℃ at -100℃ below.) • Thermocouples L, U, C, G, R, S, B : (Bigger one either PV ±0.5% or ±5℃) ±1 Digit Max.											
Control output	Relay	250VAC 3A 1a				—				250VAC 3A 1a		—	
	SSR	—				12VDC ±3V 30mA Max.				—		22VDC ±3V 30mA Max.	
	Current	—				DC 4-20mA or DC 0-20mA selectable (Load 500Ω Max.)				—			
Sub output	Relay	250VAC 3A 1a								—			
Communication output		RS485 Communication output (Modbus RTU)											
Event input	Outflow current	Approx. 0.5mA								—			
	Contact	ON : Max. 1kΩ, OFF : Min. 100kΩ								—			
	Non-contact	ON : Max. 1.5V residual voltage, OFF : Max. 0.1mA leakage current								—			
CT input		0.0-50.0A (Primary current meaurement range) ※CT ratio = 1/1000, internal resistance:Max. 80Ω, capacity:Min. 0.3VA								—			
Control method	Heating, cooling / Heating&cooling	ON/OFF control mode, P, PI, PD, PID control mode											
Hysteresis		1 to 100℃/℉ (0.1 to 100℃/℉) variable								1 to 100 Digit			
Proportional band (P)		0.1 to 999.9℃											
Integral time (I)		0 to 9999 sec.											
Derivative time (D)		0 to 9999 sec.											
Control period (T)		0.1 to 120.0 sec. (Only relay and SSR output type)											
Manual reset value		0.0 to 100.0%											
Sampling period		50ms (2 channel synchronous sampling)								100ms (4 channel synchronous sampling)			
Dielectric strength		1000VAC 50/60Hz for 1 min. (between power source terminal and input terminal)											
Vibration resistance		0.75mm amplitude at frequency of 5 to 55Hz (for 1 min.) in each X, Y, Z direction for 2 hours											
Relay life cycle	Mechanical	Min. 10,000,000 times											
	Electrical	Min. 100,000 times (250 VAC 3A resistance load)											
Insulation resistance		100MΩ (at 500VDC megger)											
Noise resistance		Square shaped noise by noise simulator (pulse width 1㎲) ±0.5kV											
Ambient temperature		-10 to 50℃ (at non-freezing status)											
Storage temperature		-20 to 60℃ (at non-freezing status)											
Ambient humidity		35 to 85%RH											
Accessory		Expansion connector											
		Power / communication connector [※Basic module only]											
Insulation type (★3)		⧈											
Approval		CE cULus											
Unit weight		Approx. 144g	Approx. 152g	Approx. 135g	Approx. 143g	Approx. 139g	Approx. 148g	Approx. 130g	Approx. 139g	Approx. 174g	Approx. 166g	Approx. 160g	Approx. 152g

※(★1) In case of thermocouple K, T, N, J, E at -100℃ below and L,U, Platinel Ⅱ, it is ±2℃±1Digit Max.
In case of thermocouple B, indicating accuracy cannot be ensured under 400℃.
In case of thermocouple R, S at 200℃ below and thermocouple C, G, it is 3℃±1Digit Max.

※(★2) Applied when used out of range 23±5℃.

※(★3) "⧈" Mark indicates that equipment protected throughout by double insulation or reinforced insulation.