

# MicroSmart FC6A PLC PID Module Specifications



## KEY FEATURES

- Configure up to 15 modules
- Maximum 30 PID loops
- 2 analog inputs and 2 relay or 4-20mA Non-contact voltage output for SSR drive

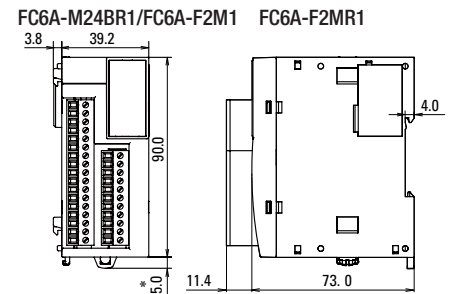
## SPECIFICATIONS

### Input Range

Part Number	FC6A-F2MR1 FC6A-F2M1		
Input	Input Range (Digital Resolution)	Input Value of LSB	
K	-200 to 1,370°C	-328 to 2,498°F	1°C (°F)
	-200.0 to 400.0°C	-328.0 to 752.0°F	0.1°C (°F)
J	-200 to 1,000°C	-328 to 1,832°F	1°C (°F)
R	0 to 1,760°C	32 to 3,200°F	1°C (°F)
S	0 to 1,760°C	32 to 3,200°F	1°C (°F)
B	0 to 1,820°C	32 to 3,308°F	1°C (°F)
E	-200 to 800°C	-328 to 1,472°F	1°C (°F)
T	-200.0 to 400.0°C	-328.0 to 752.0°F	0.1°C (°F)
N	-200 to 1,300°C	-328 to 2,372°F	1°C (°F)
PL-II	0 to 1,390°C	32 to 2,534°F	1°C (°F)
C (W/Re5-26)	0 to 2,315°C	32 to 4,199°F	1°C (°F)
Pt100	-200 to 850°C	-328 to 1,562°F	1°C (°F)
	-200.0 to 850.0°C	-328.0 to 1,562.0°F	0.1°C (°F)
JPt100	-200 to 500°C	-328 to 932°F	1°C (°F)
	-200.0 to 500.0°C	-328.0 to 932.0°F	0.1°C (°F)
DC 4 to 20mA	-2,000 to 10,000 (12,000 increments) <sup>1</sup>		1.333μA
DC 0 to 20mA	-2,000 to 10,000 (12,000 increments) <sup>1</sup>		1.666μA
DC 0 to 1V	-2,000 to 10,000 (12,000 increments) <sup>1</sup>		0.083mA
DC 0 to 5V	-2,000 to 10,000 (12,000 increments) <sup>1</sup>		0.416mA
DC 1 to 5V	-2,000 to 10,000 (12,000 increments) <sup>1</sup>		0.333mA
DC 0 to 10V	-2,000 to 10,000 (12,000 increments) <sup>1</sup>		0.833mA

Note 1: Linear-conversion is possible.

## DIMENSIONS



\* 9.3 mm when the clamp is pulled out.

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## RATINGS

Part Number		FC6A-F2MR1	FC6A-F2M1
Control Mode	Independent PID Control	Possible	
	Heating/Cooling Control	Possible (overwrapping deadband settings available) <sup>1</sup>	
	Difference Input Temperature Control	Possible <sup>1</sup>	
	Cascade Control	Possible <sup>1</sup>	
Input Points		2ch	
Input Type Input Range	Thermocouple	K, J, R, S, B, E, T, N, PL-II, C (W/Re5-26) External resistance: 100Ω maximum	
	Resistance Thermometer	Pt100, JPt100, 3-wire type	
	Current Input	0 to 20 mA DC, 4 to 20 mA DC Input impedance: 50Ω	
	Voltage Input	0 to 1V DC Input impedance: 1MΩ minimum 0 to 5V DC, 1 to 5V DC, 0 to 10V DC Input impedance: 100kΩ minimum	
AD Conversion	Sampling Duration Time	100 ms	
	Sampling Repetition Time	100 ms	
	Total Input System Transfer Time	Sampling time + sampling interval + 1 scan time	
	Type of Input	Differential input	
	Conversion Method	Σ Δ type ADC	
Maximum Error at 25°C	Thermocouple Input	±0.2% of full scale or ±2°C (4°F), whichever is greater However, R, S inputs: 0 to 200°C (0 to 400°F): ±6°C (12°F) B input: 0 to 300°C (0 to 600°F) Accuracy is not guaranteed. K, J, E, T, N inputs: Less than 0°C (32°F): ±0.4% of full scale	
	Resistance Thermometer Input	±0.1% of full scale or ±1°C (2°F), whichever is greater	
	Voltage/Current Inputs	±0.2% of full scale	
Cold Junction Temperature Compensation Accuracy		±1°C at 0 to 55°C	
Temperature Coefficient		±0.005%/°C of full scale	
Noise Resistance	Input Filter	Yes	
	Recommended Cable for Noise Immunity	Twisted pair shielded cable (current/voltage) / Twisted pair cable (temperature input)	
	Cross Talk	None	
Isolation	Between input and power circuit	Transformer-isolated	
	Between input and internal circuit	Photocoupler-isolated	
Output Points		2ch	
Output		Relay output 1NO Rated load 5A 250V AC/30V DC (resistive load) 3A 250V AC (inductive load cos φ=0.4) 3A 30V DC (resistive load VR=7ms) Minimum open/closed load: 10 mA 5V DC (reference value) Electrical life: 100,000 cycles (at the maximum rating of resistive load)	Non-contact voltage output (for SSR drive) 12V DC±15% Maximum 40 mA (short circuit protected)
			Analog current output 4 to 20 mA DC Load resistance: 550Ω maximum Analog output digital resolution: 1,000 LSB input value: 0.016 mA
Noise Resistance	Recommended Cable for Noise Immunity	—	Twisted pair shielded cable
	Cross Talk	—	None
Isolation		Between input and power circuit: Transformer-isolated Between input/output and internal circuits: Photocoupler-isolated Between input circuits: Photocoupler-isolated	
Power Voltage		24V DC (External power), 5V DC (Internal power)	
Allowable Voltage Range		20.4 to 28.8V DC	
Maximum Power Consumption		3.6W	
Internal Power Consumption		65mA (5V DC)	
Weight (approx.)		140g	

Note 1: Dual channel input is required for one loop control.

