

## FX<sub>2</sub>N SERIES

### BETTER SUITED TO USER NEEDS

#### Product Introduction

The FX<sub>2</sub>N-2LC is a special block capable of two channel temperature inputs and 2 transistor (open collector) output points with PI control (2 position control and PI control capability). Output of input temperatures is controlled by thermocouple or platinum temperature-resistant sensors. Data reading and writing are possible when connected to FX<sub>2</sub>N or FX<sub>2</sub>NC Series sequencers.

#### Features

##### ■ One Block Controls Temperature of 2 Loops

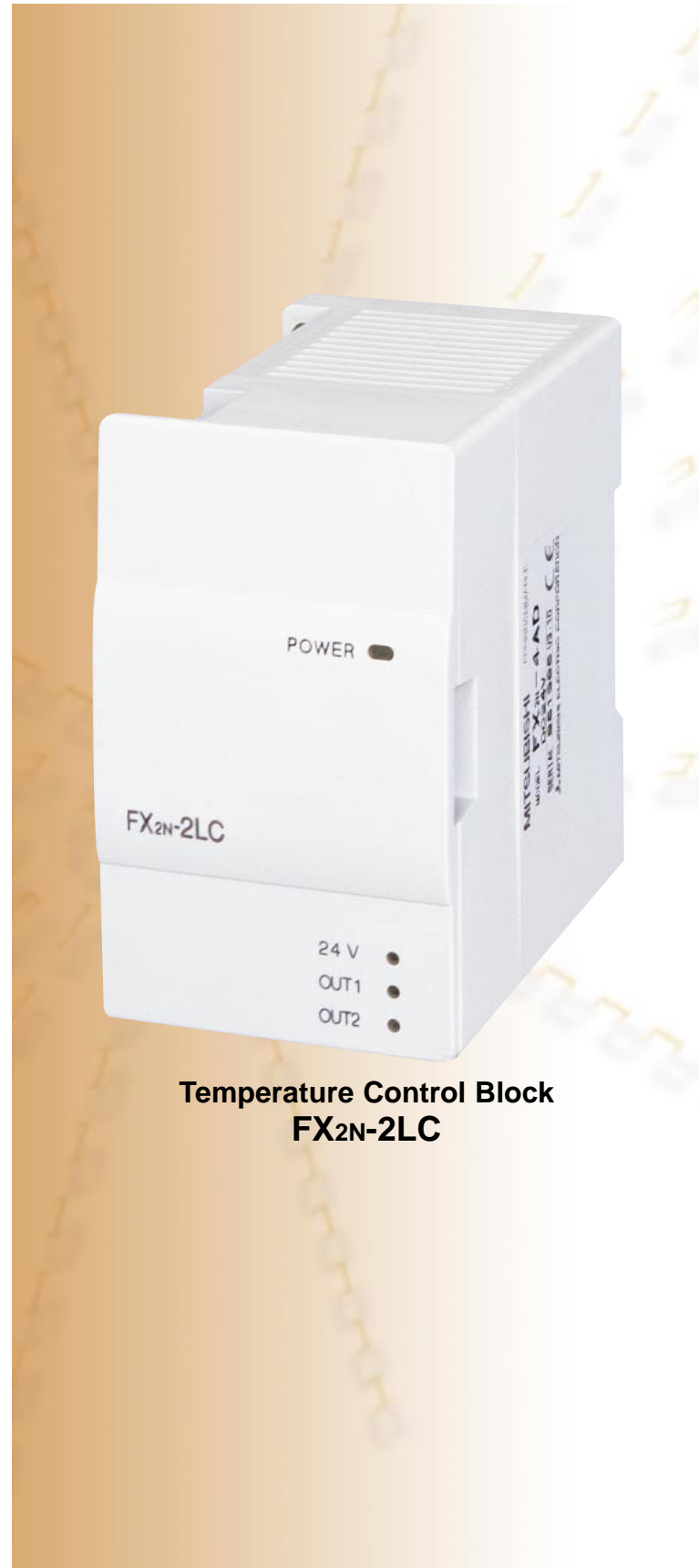
Two input channels and two output points enables the temperature control of two loops simultaneously. Thermocouple or platinum temperature-resistant sensors can be mixed for both channels, enabling application to various types of temperature control. (Insulation between channels provided.)

##### ■ Selection of Most Suitable Control System

PID control (auto-tuning function incorporated) enables execution of two-position and PI control. Auto-tuning includes bias setup function. Since the auto-tuning value compensates for fluctuation in the bias value set for the temperature, output suiting the original setup value is provided, thus it can be used for adverse machinery that overshoots values during auto-tuning.

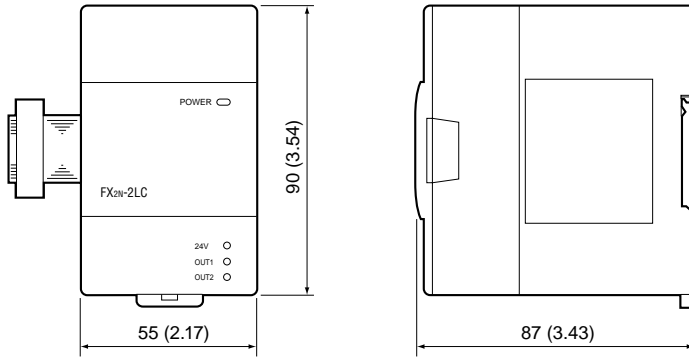
##### ■ Disconnect Detection

A current detector (CT) is incorporated to detect heater disconnection.



Temperature Control Block  
FX<sub>2</sub>N-2LC

# External Dimensions



Color: Munsell 0.08GY/7.64/0.81  
Unit: mm (inch)  
Weight: 0.3kg

## Specifications (General specifications are the same as the sequencer main body)

### Power Supply

Item	Specifications
Interface drive	24VDC $-15/+10\%$ supplied from external source
CPU drive	Supplied from 5VDC sequencer main body via extension cable

### Temperature Input

Item	Specifications
Input points	2
Input types	Thermocouple: K, J, R, S, E, T, B, N, PLII, WRe5-26, U, L Temperature-resistant sensor: Pt100, JPt100
Input limitations	Refer to input range table
Measurement accuracy	$\pm 0.7\%$ (input span) *1
Reference point temperature compensation error	within $\pm 1^\circ\text{C}$ ; however, temperature sensor value is: within $\pm 2.0^\circ\text{C}$ at $-100^\circ\text{C}$ to $-150^\circ\text{C}$ and within $\pm 3.0^\circ\text{C}$ at $-150^\circ\text{C}$ to $-200^\circ\text{C}$
Analysis	$0.1^\circ\text{C}$ ( $^\circ\text{F}$ ) or $1^\circ\text{C}$ ( $^\circ\text{F}$ )
Sampling cycle	0.5 sec.
Influential external resistance	Approx. $0.35\mu\text{V}/\Omega$
Input impedance	More than $1\text{M}\Omega$
Sensor current	Approx. $0.3\text{mA}$ (at time of inputting temperature-resistant sensor)
Input conductor resistance allowance	Less than $10\Omega$ (at time of inputting temperature-resistant sensor)

### Current Detection (CT) Input

Item	Specifications
Input points	2
Current detector	CTL-12-S36-8 or CTL-6-P-H, manufactured by U.R.D. Co., Ltd.
Input current	CTL-12: 0.0-100.0A CTL-6: 0.0-30.0A
Measurement accuracy	The larger of $\pm 5\%$ or $\pm 2\text{A}$ of input value (excluding accuracy of current detector)
Sampling cycle	1 sec.

### Control Movement

Item	Specifications
Control system	PID control (PI control also possible) or 2-position control
Control operation cycle	0.5 sec.
Other functions	Overshoot proof, Auto-tuning

### Control Output

Item	Specifications
Output points	2
Output system	Open collector
Voltage (rated)	5-24VDC
Voltage (max.)	30VDC
Current (max.)	100mA
Current leakage (OFF)	Less than $0.1\text{mA}$
Voltage undercurrent (ON max.)	2.5V (max.) 100mA; 1.0V (typical) 100mA

### Input Range

Sensor type	K	J	R	S	E	T	B
Input limitations	-200.0-200.0°C -100.0-400.0°C -100-1,300°C -100-800°F -100-2,400°F	-200.0-200.0°C -100.0-400.0°C -100.0-800.0°C -100-1,200°C -100-1,600°F -100-2,100°F	0-1,700°C 0-3,200°F	0-1,700°C 0-3,200°F	-200.0-200.0°C 0-1,000°C 0-1,800°F	-200.0-200.0°C -200.0-400.0°C 0.0-400.0°C -300.0-400.0°F -300.0-700.0°F 0.0-700.0°F	0-1,800°C 0-3,000°F *1

Sensor type	N	PLII	WRe5-26	U	L	JPt100	Pt100
Input limitations	0-1,300°C 0-2,300°F	0-1,200°C 0-2,300°F *1	0-2,300°C 0-3,000°F *1	-200.0-600.0°C -300.0-700.0°F	0.0-900.0°C 0-1,600°F	-50.0-150.0°C -200.0-500.0°C -300.0-300.0°F -300-900°F	-50.0-150.0°C -200.0-600.0°C -300.0-300.0°F -300-1,100°F

\*1 When using B, 0-399°C (0-799°F) is not within the extent of guaranteed accuracy.  
When using PLII, 0-32°F is not within the extent of guaranteed accuracy.  
When using WRe5-26, 0-32°F is not within the extent of guaranteed accuracy.

### Safety Warning

To ensure proper use of the products listed in this catalog, please be sure to read the instruction manual prior to use.

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