

Digital Temperature Controller

E5GC (48 × 24 mm)

Easy Operation and High Performance of the E5□C Series in a Compact 48 × 24-mm Body

- A compact body of 48 × 24 × 90 mm (W × H × D) that is ideal for small equipment, laboratory instruments, and others.
- White PV display with a height of 10.5 mm for high visibility even with the compact body.
- Removable terminal block to simplify maintenance. Select from screw terminal blocks or screwless clamp terminal blocks for the wiring method.
- High-speed sampling at 50 ms.
- Easy connections to a PLC with programless communications.
- Set up the Controller without wiring the power supply by connecting to the computer with a Communications Conversion Cable (sold separately). Setup is easy with the CX-Thermo (sold separately).



* CSA conformance evaluation by UL.



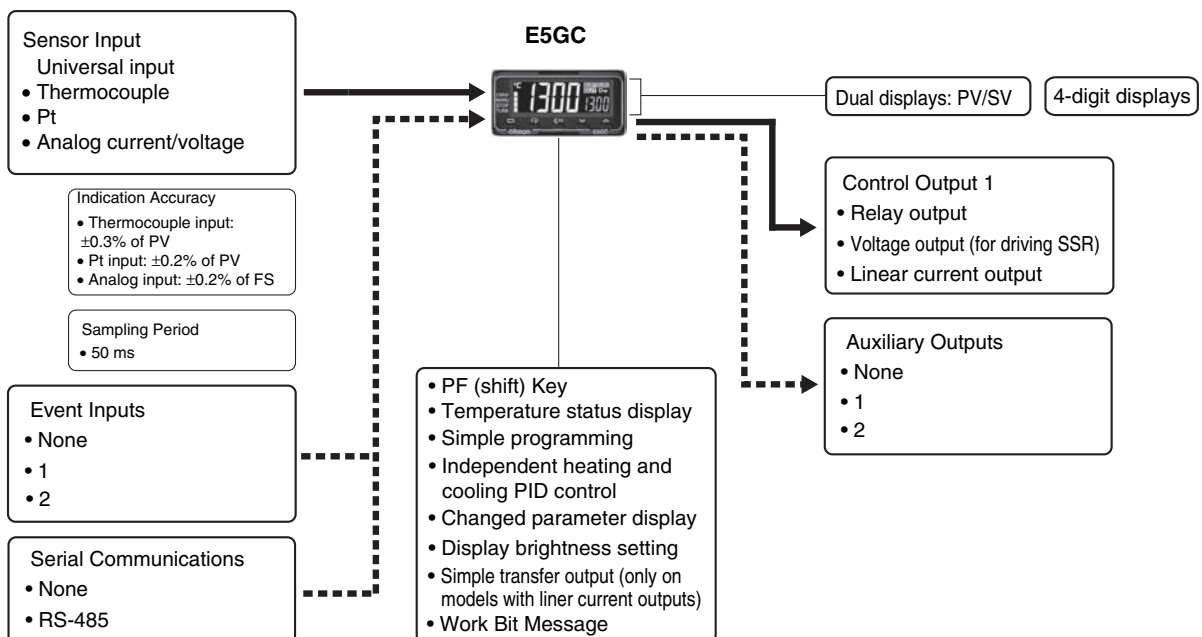
48 × 24 mm Models with Screw Terminal Blocks E5GC-□6

48 × 24 mm Models with Screwless Clamp Terminal Blocks E5GC-□C

Refer to your OMRON website for the most recent information on applicable safety standards.

Refer to Safety Precautions on 122.

Main I/O Functions



This datasheet is provided as a guideline for selecting products. Be sure to refer to the following manuals for application precautions and other information required for operation before attempting to use the product.

E5□C Digital Temperature Controllers User's Manual (Cat. No. H174)

E5□C Digital Temperature Controllers Communications Manual (Cat. No. H175)

Model Number Legend and Standard Models

Model Number Legend

E5GC-□□ □ □ □ M-□□□□ (Example: E5GC-RX1A6M-015)

(1) (2) (3) (4) (5) (6)

Model	(1)	(2)	(3)	(4)	(5)	(6)	Meaning		
	Control outputs 1 and 2	No. of auxiliary outputs	Power supply voltage	Terminal type	Input type	Options			
E5GC							48 × 24 mm		
							Control output 1	Control output 2	
	RX						Relay output	None	
	QX						Voltage output (for driving SSR)	None	
*1	CX						Linear current output	None	
	*2	0					None		
		1					1		
		2					2		
			A				100 to 240 VAC		
			D				24 VAC/DC		
				6			Screw terminal blocks (with cover)		
				C			Screwless clamp terminal blocks *6		
					M		Universal input		
							HB alarm and HS alarm	Communications	Event inputs
						000	---	---	---
						015	---	RS-485	---
					*3	016	---	---	1
					*3, *4	023	1	---	---
					*5	024	---	---	2

*1. The control output can be used as a simple transfer output.

*2. Only option 000 can be selected if an auxiliary output is zero.

*3. Option 016 and 023 can be selected only if two auxiliary outputs are selected.

*4. Option with HB and HS alarms (023) cannot be selected if a linear current output is selected for the control output.

*5. Option 024 can be selected only if one auxiliary output is selected.

*6. The specifications are different for Temperature Controllers with Push-In Plus terminal blocks. Refer to *Precautions when Wiring* on page 131.

Heating and Cooling Control

Using Heating and Cooling Control

(1) Control Output Assignment

An auxiliary output is used as the cooling control output.

(2) Control

If PID control is used, you can set PID control separately for heating and cooling.

This allows you to handle control systems with different heating and cooling response characteristics.

Optional Products (Order Separately)

USB-Serial Conversion Cable

Model
E58-CIFQ2

Communications Conversion Cable

Model
E58-CIFQ2-E

Note: Always use this product together with the E58-CIFQ2. This Cable is used to connect to the bottom-panel Setup Tool port.

Current Transformers (CTs)

Hole diameter	Model
5.8 mm	E54-CT1
5.8 mm	E54-CT1L*
12.0 mm	E54-CT3
12.0 mm	E54-CT3L*

* Lead wires are included with these CTs. If UL certification is required, use these CTs.

Mounting Adapter

Model
Y92F-53 (2pcs)

Note: This Mounting Adapter is provided with the Digital Temperature Controller.

Waterproof Packing

Model
Y92S-P12

Note: This Waterproof Packing is provided with the Digital Temperature Controller.

Draw-out Jig

Model
Y92F-55

CX-Thermo Support Software

Model
EST2-2C-MV4

Note: CX-Thermo version 4.62 or higher is required for the E5GC. For the system requirements for the CX-Thermo, refer to information on the EST2-2C-MV4 on the OMRON website (www.ia.omron.com).

Terminal Covers (for E5GC-□6)

Model
E53-COV27

Note: This Terminal Covers is provided with the Digital Temperature Controller.

Specifications

Ratings

Power supply voltage	A in model number: 100 to 240 VAC, 50/60 Hz D in model number: 24 VAC, 50/60 Hz; 24 VDC	
Operating voltage range	85 to 110% of rated supply voltage	
Power consumption	5.9 VA max. at 100 to 240 VAC, and 3.2 VA max. at 24 VAC or 1.8 W max. at 24 VDC	
Sensor input	Temperature input Thermocouple: K, J, T, E, L, U, N, R, S, B, C/W, or PL II Platinum resistance thermometer: Pt100 or JPt100 Infrared temperature sensor (ES1B): 10 to 70°C, 60 to 120°C, 115 to 165°C, or 140 to 260°C Analog input Current input: 4 to 20 mA or 0 to 20 mA Voltage input: 1 to 5 V, 0 to 5 V, or 0 to 10 V	
Input impedance	Current input: 150 Ω max., Voltage input: 1 MΩ min. (Use a 1:1 connection when connecting the ES2-HB-N/THB-N.)	
Control method	ON/OFF control or 2-PID control (with auto-tuning)	
Control output	Relay output	SPST-NO, 250 VAC, 2 A (resistive load), electrical life: 100,000 operations, minimum applicable load: 5 V, 10 mA (reference value)
	Voltage output (for driving SSR)	Output voltage 12 VDC ±20% (PNP), max. Load current: 21 mA, with short-circuit protection circuit
	Linear current output	4 to 20 mA DC/0 to 20 mA DC, load: 500 Ω max., resolution: Approx. 10,000
Auxiliary output	Number of outputs	1 or 2 (depends on model)
	Output specifications	SPST-NO relay outputs, 250 VAC, 2 A (resistive load), Electrical life: 100,000 operations, Minimum applicable load: 10 mA at 5 V (reference value)
Event input	Number of inputs	1 or 2 (depends on model)
	External contact input specifications	Contact input ON: 1 kΩ max., OFF: 100 kΩ min.
		Non-contact input ON: Residual voltage 1.5 V max.; OFF: Leakage current 0.1 mA max. Current flow: approx. 7 mA per contact
Setting method	Digital setting using front panel keys	
Indication method	11-segment digital displays and individual indicators Character height: PV: 10.5 mm, SV: 5.0 mm	
Multi SP	Up to eight set points (SP0 to SP7) can be saved and selected using the event inputs, key operations, or serial communications. *	
Bank switching	None	
Other functions	Manual output, heating/cooling control, loop burnout alarm, SP ramp, other alarm functions, heater burnout (HB) alarm (including SSR failure (HS) alarm), 40% AT, 100% AT, MV limiter, input digital filter, self tuning, robust tuning, PV input shift, run/stop, protection functions, extraction of square root, MV change rate limit, logic operations, temperature status display, simple programming, moving average of input value, display brightness setting, simple transfer output, and work bit message	
Ambient operating temperature	-10 to 55°C (with no condensation or icing), For 3-year warranty: -10 to 50°C with standard mounting (with no condensation or icing)	
Ambient operating humidity	25 to 85%	
Storage temperature	-25 to 65°C (with no condensation or icing)	
Altitude	2,000 m max.	
Recommended fuse	T2A, 250 VAC, time-lag, low-breaking capacity	
Installation environment	Overvoltage category II, Pollution Degree 2 (EN/IEC/UL 61010-1)	

* There are up to four event inputs.