OMRON
AUTOMATION & SAFETY

E5_C TEMPERATURE CONTROLLER

A Full Lineup of Next-generation Temperature Controllers

» Contribute to machine downsizing

» High-contrast display

» Easy set-up and operation

The new standard in temperature control...

Omron has been an active innovator in temperature control since introducing its first controller in 1967.

Temperature control has taken a giant leap forward with the next generation of Omron controllers—the E5_C series, which set new global standards in the key areas of precision, ease of use and control performance.

The E5_C series will save you time and effort in set-up and operation, while enabling faster and more accurate monitoring/control of your process. The highly visible display of the new series is easy to read and virtually eliminates the possibility for human error.

Key features

- High-contrast, white LCD display is visible from great distances and from any angle
- Easy to set up and operate intuitively via CX-Thermo without power supply
- 50 ms sampling period for fast and precise regulation
- Useful timer and logic operation functions can eliminate the need for a PLC

Is higher in every respect

Clearer LCD display

The high-contrast, white LCD display contributes to the exceptional clarity and readability of the E5_C series. The large display can be read from greater distances and from much wider viewing angles.

Easy set up & operation

Coupled with auto-tuning algorithms which greatly reduce set-up and programming time, Omron's CX-Thermo support software was developed specifically for use with the E5_C series. This enables faster parameter set-up, simplified device adjustment and maintenance.

Unique performance

Although fast sampling speed and high precision are built into this series, Omron's 2-PID control is a key advantage offered over standard controllers. It uses a powerful algorithm, which has a major impact on the control stability, and the quality of your products.

High-contrast display

Clear, bright characters with large display size*1

Large easy-to-read white characters on a black background achieve superior visibility. You can quickly and reliably check the process value (PV) from multiple viewing angles, with natural light or in subdued lighting conditions.

Actual size
E5CC

Character height*1 (White PV)
E5GC : 10.5 mm
E5CC : 15.2 mm
E5EC : 18 mm
E5AC : 25 mm

The display remains easy to read from wide viewing angles.

Compact design saves space

The sleek design of the E5_C controllers (60 mm depth) requires less panel space than standard controllers (78 mm depth), which allows for quick mounting and easy installation, even in restricted conditions.

*2 Excluding E5GC/E5DC/E5CC-U

The IP66 protection rated front cover can withstand humid environments and also be cleaned with non-aggressive liquids.

*3 Excluding E5DC/E5CC-U

Shift key reduces setting required

This time saving feature allows for quick and accurate adjustments when needed. The shift key (‹‹PF) allows you to instantly change set value (SV) values one increment at a time.

Just press the shift key to move the digit.

Easy to connect, set up & operate

USB eliminates the need for a power supply

The power from the USB port can power up the controller when using CX-Thermo software.

USB-Serial Conversion Cable*4

*4 E58-CIFQ2 communication cable can be used with all E5_C models. E58-CIFQ2-E communication cable can be used specifically with E5AC/E5EC/E5DC models which feature a front programming port.

Installation
(CD sold separately)

CX-Thermo software - easy setup

For applications that require different recipes or need multiple controllers programmed, CX-Thermo is designed to save you time and effort. With a few clicks of the mouse, you can download your parameters into any Omron E5_C series controller.

Note: Version 4.61 is required

Easy connection to a PLC with programless communications

Step 1 Wire RS-485 communications

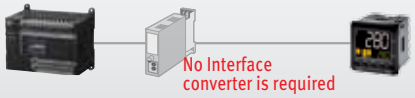
Step 2 Set the communications addresses and the communications types in the temperature controllers.

Step 3 Set the communications settings in the PLC to agree with those in the temperature controllers.

Communications start

Advantages

- The amount of work to set up the system is greatly reduced
- PLC programming and memory are not required for communications
- Communications with multiple temperature controllers are automatically executed by the master temperature controller
- Interface converters are not required, which reduces costs
- Number of connected digital temperature controllers: 32 max



More Convenient Operations

The parameters can be copied from the master temperature controller to slave temperature controllers.

The master temperature controller can share RUN/STOP commands and set points with slave temperature controllers. Slope and offsets can be set for the set point.

Unique performance with simplicity...

And more control functionality

With key features like simplicity in operation, 50ms sampling period and the ability to handle multi-function input and output types—combined with Omron's patented 2-PID control—the E5_C series sets a new standard in fast and precise temperature regulation.

The familiar functionality of existing Omron temperature controllers is not lost on the highly versatile E5_C series, which is available with input/output combinations to perfectly match the demands of any application.

Extended inputs and outputs

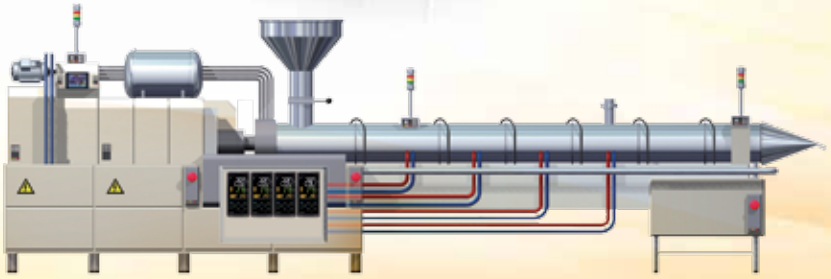
- Remote SP input*1
- Transfer output*1 (voltage 1-5 V output) added
- Event input*2
- Auxiliary output

*1 Excluding E5GC/E5DC/E5CC-U
*2 Excluding E5CC-U

Key features

- Programless communication
- Position-proportional control*3

*3 Only for E5EC/E5AC



Further downsize compact machines with the E5GC

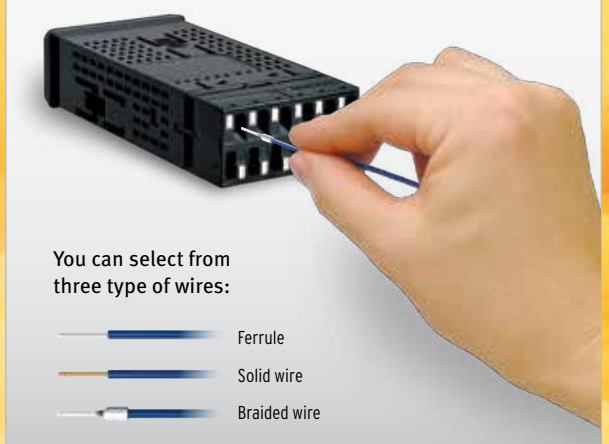
Dual displays with the largest character height in the industry*1

The 48 x 24 mm compact size of the E5GC inherits the highly visible, large white characters from the E5_C series. With dual, side-by-side displays (PV and green set value (SV)), there is no need to switch between displays.

*1 According to OMRON investigation, March 2014

Simplified wiring

In addition to the standard screw terminal blocks, E5GC also offers models with screwless spring clamp terminal blocks for easy wiring.



You can select from three type of wires:

- Ferrule
- Solid wire
- Braided wire

Horizontal & Vertical Group Mounting

With the E5GC, group mounting can be done both horizontally and vertically, which allows more than one controller to be used on smaller machines or panels.*2

*2 The ambient operating temperature must not exceed given below.
Horizontal group mounting: 55°C
Vertical group mounting of two Temperature Controllers: 45°C
Vertical group mounting of three or more Temperature Controllers: 40°C

*3 Use Temperature Controllers with Screwless Clamp Terminal Blocks for vertical group mounting.

Space saving DIN rail mountable E5DC

Requires less space in control panels

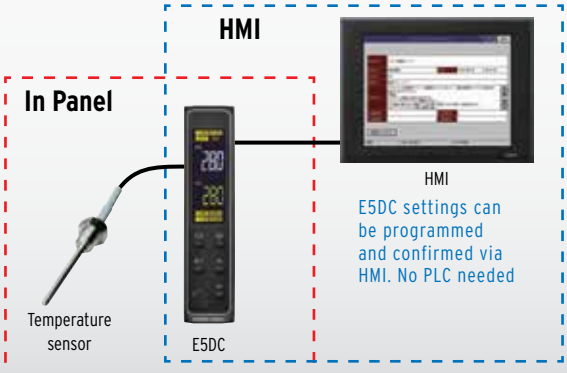
Sporting the same level of performance and operability as other units in the E5_C series, the E5DC features a 22.5 mm width body and DIN-rail mounting capability—making it an ideal option for applications where multi-zone control is needed and communication to a PLC or touchscreen.

Actual size

Removable terminal block for easy mounting and replacement

Hooks must be pressed to remove the E5DC from the terminal block.

Versatility in programming– E5DC directly via HMI



Global availability; and support

The local support you need to operate globally

Whether you are looking to take your existing products into new industrial sectors or expand into entirely new geographical markets, Omron can help. We aim to offer the same level of support globally, without compromising local needs.

Our smart communications network and seamless global support enables us to provide you with technical support wherever you sell your machines. All Omron components comply with major international standards to ensure seamless integration.

Facts and figures

- More than 35,400 employees
- Almost 200 locations
- Presence in every continent
- Knowledge-sharing through our global infrastructure
- Nearby R&D facilities synchronized to local needs
- Local factories to ensure quick turn-around
- Global pricing and support

E5GC Model list (Models 0, 1 or 2 auxiliary outputs)

Output	Terminal type	Option No.*	Order code AC100-240V	Order code AC/DC24V
Out 1: Relay	Screw terminals (with cover)		E5GC-RX0A6M-000	E5GC-RX0D6M-000
			E5GC-RX1A6M-000	E5GC-RX1D6M-000
			E5GC-RX2A6M-000	E5GC-RX2D6M-000
		015	E5GC-RX1A6M-015	E5GC-RX1D6M-015
			E5GC-RX2A6M-015	E5GC-RX2D6M-015
		016	E5GC-RX2A6M-016	E5GC-RX2D6M-016
		023	E5GC-RX2A6M-023	E5GC-RX2D6M-023
		024	E5GC-RX1A6M-024	E5GC-RX1D6M-024
	Screwless Clamp Terminal		E5GC-RX0ACM-000	E5GC-RX0DCM-000
			E5GC-RX1ACM-000	E5GC-RX1DCM-000
			E5GC-RX2ACM-000	E5GC-RX2DCM-000
		015	E5GC-RX1ACM-015	E5GC-RX1DCM-015
			E5GC-RX2ACM-015	E5GC-RX2DCM-015
		016	E5GC-RX2ACM-016	E5GC-RX2DCM-016
		023	E5GC-RX2ACM-023	E5GC-RX2DCM-023
		024	E5GC-RX1ACM-024	E5GC-RX1DCM-024
Out 1: Voltage (pulse)	Screw terminals (with cover)		E5GC-QX0A6M-000	E5GC-QX0D6M-000
			E5GC-QX1A6M-000	E5GC-QX1D6M-000
			E5GC-QX2A6M-000	E5GC-QX2D6M-000
		015	E5GC-QX1A6M-015	E5GC-QX1D6M-015
			E5GC-QX2A6M-015	E5GC-QX2D6M-015
		016	E5GC-QX2A6M-016	E5GC-QX2D6M-016
		023	E5GC-QX2A6M-023	E5GC-QX2D6M-023
		024	E5GC-QX1A6M-024	E5GC-QX1D6M-024
	Screwless Clamp Terminal		E5GC-QX0ACM-000	E5GC-QX0DCM-000
			E5GC-QX1ACM-000	E5GC-QX1DCM-000
			E5GC-QX2ACM-000	E5GC-QX2DCM-000
		015	E5GC-QX1ACM-015	E5GC-QX1DCM-015
			E5GC-QX2ACM-015	E5GC-QX2DCM-015
		016	E5GC-QX2ACM-016	E5GC-QX2DCM-016
		023	E5GC-QX2ACM-023	E5GC-QX2DCM-023
		024	E5GC-QX1ACM-024	E5GC-QX1DCM-024
Out 1: Liner current	Screw terminals (with cover)		E5GC-CX0A6M-000	E5GC-CX0D6M-000
			E5GC-CX1A6M-000	E5GC-CX1D6M-000
			E5GC-CX2A6M-000	E5GC-CX2D6M-000
		015	E5GC-CX1A6M-015	E5GC-CX1D6M-015
			E5GC-CX2A6M-015	E5GC-CX2D6M-015
		016	E5GC-CX2A6M-016	E5GC-CX2D6M-016
		024	E5GC-CX1A6M-024	E5GC-CX1D6M-024
	Screwless Clamp Terminal		E5GC-CX0ACM-000	E5GC-CX0DCM-000
			E5GC-CX1ACM-000	E5GC-CX1DCM-000
			E5GC-CX2ACM-000	E5GC-CX2DCM-000
		015	E5GC-CX1ACM-015	E5GC-CX1DCM-015
			E5GC-CX2ACM-015	E5GC-CX2DCM-015
		016	E5GC-CX2ACM-016	E5GC-CX2DCM-016
		024	E5GC-CX1ACM-024	E5GC-CX1DCM-024

***Option No.:**

015
Communication

016
Event Input 1

023
Heater Burnout SSR defect detection

024
Event Input 2

E5CC model list (all models 3 auxiliary outputs)

Output	Option No.*	Order code AC100-240V	Order code AC/DC24V
Out 1: Relay **Out 2:** non		E5CC-RX3A5M-000	E5CC-RX3D5M-000
	001	E5CC-RX3A5M-001	E5CC-RX3D5M-001
	003	E5CC-RX3A5M-003	E5CC-RX3D5M-003
	005	E5CC-RX3A5M-005	E5CC-RX3D5M-005
	006	E5CC-RX3A5M-006	E5CC-RX3D5M-006
	007	E5CC-RX3A5M-007	E5CC-RX3D5M-007
Out 1: Voltage (pulse) **Out 2:** non		E5CC-QX3A5M-000	E5CC-QX3D5M-000
	001	E5CC-QX3A5M-001	E5CC-QX3D5M-001
	003	E5CC-QX3A5M-003	E5CC-QX3D5M-003
	005	E5CC-QX3A5M-005	E5CC-QX3D5M-005
	006	E5CC-QX3A5M-006	E5CC-QX3D5M-006
	007	E5CC-QX3A5M-007	E5CC-QX3D5M-007
Out 1: Voltage (pulse) **Out 2:** Voltage (pulse)		E5CC-QQ3A5M-000	E5CC-QQ3D5M-000
	001	E5CC-QQ3A5M-001	E5CC-QQ3D5M-001
	003	E5CC-QQ3A5M-003	E5CC-QQ3D5M-003
	005	E5CC-QQ3A5M-005	E5CC-QQ3D5M-005
	006	E5CC-QQ3A5M-006	E5CC-QQ3D5M-006
	007	E5CC-QQ3A5M-007	E5CC-QQ3D5M-007
Out 1: Linear current **Out 2:** non		E5CC-CX3A5M-000	E5CC-CX3D5M-000
	004	E5CC-CX3A5M-004	E5CC-CX3D5M-004
	005	E5CC-CX3A5M-005	E5CC-CX3D5M-005
	006	E5CC-CX3A5M-006	E5CC-CX3D5M-006
	007	E5CC-CX3A5M-007	E5CC-CX3D5M-007
Out 1: Linear current **Out 2:** Voltage (pulse)		E5CC-CQ3A5M-000	E5CC-CQ3D5M-000
	001	E5CC-CQ3A5M-001	E5CC-CQ3D5M-001
	003	E5CC-CQ3A5M-003	E5CC-CQ3D5M-003
	005	E5CC-CQ3A5M-005	E5CC-CQ3D5M-005
	006	E5CC-CQ3A5M-006	E5CC-CQ3D5M-006
	007	E5CC-CQ3A5M-007	E5CC-CQ3D5M-007

As well as these models, other models are available on request. Please contact the local sales office for special requests.

* Option No.:

001
Event Input 2, Heater Burnout SSR defect detection

003
Communication 3-phase heater alarm

004
Event Input 2, Communication

005
Event Input 4

006
Event Input 2, Transfer output

007
Event Input 2, Remote SP

E5EC/E5AC model list (all models 4 auxiliary outputs)

Output	Option No.*	Order code AC100-240V	Order code AC/DC24V
Out 1: Relay **Out 2:** non		E5_C-RX4A5M-000	E5_C-RX4D5M-000
	009	E5_C-RX4A5M-009	E5_C-RX4D5M-009
	010	E5_C-RX4A5M-010	E5_C-RX4D5M-010
	011	E5_C-RX4A5M-011	E5_C-RX4D5M-011
Out 1: Voltage (pulse) **Out 2:** non		E5_C-QX4A5M-000	E5_C-QX4D5M-000
	009	E5_C-QX4A5M-009	E5_C-QX4D5M-009
	010	E5_C-QX4A5M-010	E5_C-QX4D5M-010
	011	E5_C-QX4A5M-011	E5_C-QX4D5M-011
Out 1: Relay **Out 2:** Relay		E5_C-RR4A5M-000	E5_C-RR4D5M-000
	009	E5_C-RR4A5M-009	E5_C-RR4D5M-009
	010	E5_C-RR4A5M-010	E5_C-RR4D5M-010
	011	E5_C-RR4A5M-011	E5_C-RR4D5M-011
Out 1: Voltage (pulse) **Out 2:** Voltage (pulse)		E5_C-QQ4A5M-000	E5_C-QQ4D5M-000
	009	E5_C-QQ4A5M-009	E5_C-QQ4D5M-009
	010	E5_C-QQ4A5M-010	E5_C-QQ4D5M-010
	011	E5_C-QQ4A5M-011	E5_C-QQ4D5M-011
Out 1: Voltage (pulse) **Out 2:** Relay		E5_C-QR4A5M-000	E5_C-QR4D5M-000
	009	E5_C-QR4A5M-009	E5_C-QR4D5M-009
	010	E5_C-QR4A5M-010	E5_C-QR4D5M-010
	011	E5_C-QR4A5M-011	E5_C-QR4D5M-011
Out 1: Linear current **Out 2:** non		E5_C-CX4A5M-000	E5_C-CX4D5M-000
	004	E5_C-CX4A5M-004	E5_C-CX4D5M-004
	005	E5_C-CX4A5M-005	E5_C-CX4D5M-005
	013	E5_C-CX4A5M-013	E5_C-CX4D5M-013
	014	E5_C-CX4A5M-014	E5_C-CX4D5M-014
Out 1: Linear current **Out 2:** Linear current		E5_C-CC4A5M-000	E5_C-CC4D5M-000
	004	E5_C-CC4A5M-004	E5_C-CC4D5M-004
	005	E5_C-CC4A5M-005	E5_C-CC4D5M-005
	013	E5_C-CC4A5M-013	E5_C-CC4D5M-013
	014	E5_C-CC4A5M-014	E5_C-CC4D5M-014
Out 1: Linear current **Out 2:** Voltage (pulse)		E5_C-CQ4A5M-000	E5_C-CQ4D5M-000
	009	E5_C-CQ4A5M-009	E5_C-CQ4D5M-009
	010	E5_C-CQ4A5M-010	E5_C-CQ4D5M-010
	011	E5_C-CQ4A5M-011	E5_C-CQ4D5M-011
Out 1: Relay* **Out 2:** Relay*		E5_C-PR4A5M-000	E5_C-PR4D5M-000
	004	E5_C-PR4A5M-004	E5_C-PR4D5M-004
	014	E5_C-PR4A5M-014	E5_C-PR4D5M-014

* Position proportional control model

*Option No.:

004
Event Input 2, Communication

005
Event Input 4

009
Event Input 2, Communication 3-phase heater alarm

010
Event Input 4, Heater Burnout SSR defect detection

011
Event Input 6, Remote SP, Heater Burnout SSR defect detection, Transfer output

013
Event Input 6, Remote SP, Transfer output

014
Event Input 4, Communication Remote SP, Transfer output

E5CC-U model list (models 0, 1 or 2 auxiliary outputs)

Output	Order code AC100-240V	Order code AC/DC24V
Out 1: Relay	E5CC-RW0AUM-000	E5CC-RW0DUM-000
	E5CC-RW1AUM-000	E5CC-RW1DUM-000
	E5CC-RW2AUM-000	E5CC-RW2DUM-000
Out 1: Voltage (pulse)	E5CC-QX0AUM-000	E5CC-QX0DUM-000
	E5CC-QX1AUM-000	E5CC-QX1DUM-000
	E5CC-QX2AUM-000	E5CC-QX2DUM-000
Out 1: current	E5CC-CX0AUM-000	E5CC-CX0DUM-000
	E5CC-CX1AUM-000	E5CC-CX1DUM-000
	E5CC-CX2AUM-000	E5CC-CX2DUM-000

E5DC model list (models 0 or 2 auxiliary outputs)

Output	Option No.*1	Order code AC100-240V	Order code AC/DC24V
		E5DC-RX2ASM-000	E5DC-RX2DSM-000
Out 1: Relay	002	E5DC-RX2ASM-002	E5DC-RX2DSM-002
	015	E5DC-RX0ASM-015*2	E5DC-RX0DSM-015*2
	017	E5DC-RX2ASM-017	E5DC-RX2DSM-017
		E5DC-QX2ASM-000	E5DC-QX2DSM-000
Out 1: Voltage (pulse)	002	E5DC-QX2ASM-002	E5DC-QX2DSM-002
	015	E5DC-QX0ASM-015*2	E5DC-QX0DSM-015*2
	017	E5DC-QX2ASM-017	E5DC-QX2DSM-017
		E5DC-CX2ASM-000	E5DC-CX2DSM-000
Out 1: Liner current	015	E5DC-CX0ASM-015*2	E5DC-CX0DSM-015*2
	015	E5DC-CX2ASM-015	E5DC-CX2DSM-015
	016	E5DC-CX2ASM-016	E5DC-CX2DSM-016

***1 Option No.:**

002
Communication, Heater Burnout SSR defect detection

015
Communication

016
Event Input 1

017
Event Input 1 , Heater Burnout SSR defect detection

***2 Auxiliary outputs are not possible for these models.**

High performance & simplicity

The next generation E5_C temperature controller is setting a new global standard in terms of precision and user-friendly design. Best control performance, easy set-up and outstanding visibility of the white IP66 LCD display have been integrated into a space-saving housing with only 60 mm* of depth. * Excluding E5GC

- Fast and precise regulation: 50ms sampling loop period time
- Easy to set up, and operate intuitively via CX-Thermo without power supply
- Best contrast display using white LCD technology which is visible from a far distance and from any angle
- Useful alarm and diagnosis functions for secure operation

Specifications

		E5GC	E5CC	E5EC	E5AC
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		5.9VA max. at 100 to 240 VAC, and 3.2VA max. at 24 VAC or 1.8W max. at 24 VDC	Models with option selection of 000: 5.2 VA max. at 100 to 240 VAC, and 3.1 VA max. at 24 VAC or1.6 W max. at 24 VDC All other models: 6.5 VA max. at 100 to 240 VAC, and 4.1 VA max. at 24 VAC or 2.3 W max. at 24 VDC	Models with option selection of 000: 6.6 VA max. at 100 to 240 VAC, and 4.1 VA max. at 24 VAC or 2.3 W max. at 24 VDC All other models: 8.3 VA max. at 100 to 240 VAC, and 5.5 VA max. at 24 VAC or 3.2 W max. at 24 VDC	Models with option selection of 000: 7.0 VA max. at 100 to 240 VAC, and 4.2 VA max. at 24 VAC or 2.4 W max. at 24 VDC All other models: 9.0 VA max. at 100 to 240 VAC, and 5.6 VA max. at 24 VAC or 3.4 W max. at 24 VDC
Sensor input		– Temperature input Thermocouple: K, J, T, E, L, U, N, R, S, B, 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/THB.)			
Control method		ON/OFF control or 2-PID control (with auto-tuning)			
Indication accuracy (at the ambient temperature of 23°C)		Thermocouple: (±0.3% of indication value or ±1°C, whichever is greater) ±1 digit max.*1 Platinum resistance thermometer: (±0.2% of indication value or ±0.8°C, whichever is greater) ±1 digit max. Analog input: ±0.2% FS ±1 digit max. CT input: ±5% FS ±1 digit max.		Thermocouple: (±0.3% of indication value or ±1°C, whichever is greater) ±1 digit max.*1 Platinum resistance thermometer: (±0.2% of indication value or ±0.8°C, whichever is greater) ±1 digit max. Analog input: ±0.2% FS ±1 digit max. CT input: ±5% FS ±1 digit max. Potentiometer input: ±5% FS ±1 digit max.	
Auto-Tuning		Yes, 40%/100% MV output limit selection. When using Heat/Cool: Independent Heat & cool PID can be set by Auto-tuning.			
Self-Tuning		Yes			
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)	SPST-NO, 250 VAC, 3 A (resistive load), electrical life; 100,000 operations, minimum applicable load: 5 V, 10 mA (reference value)	SPST-NO, 250 VAC, 5 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		Output voltage: 12 VDC ±20% (PNP), max. load current: 40 mA, with short-circuit protection circuit (The maximum load current is 21 mA for models with two control outputs.)	
	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)	3	4	
	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)	SPST-NO relay outputs, 250 VAC, Models with 1 or 2 outputs: 3 A (resistive load), or Models with 3 outputs: 2 A (resistive load), Electrical life: 100,000 operations, Minimum applicable load: 10 mA at 5 V (reference value)	SPST-NO. relay outputs, 250 VAC, Models with 4 outputs: 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)	2 or 4 (depends on model)	2, 4 or 6 (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 display and individual indicators			
Multi SP		Up to eight set points (SP0 to SP7) can be saved and selected using the event inputs, key operations, or serial communications.*2	Up to eight set points (SP0 to SP7) can be saved and selected using the event inputs, key operations, or serial communications.		
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*3			
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)			
Degree of protection		Front panel: IP66, Rear case: IP20, Terminals: IP00			
Input sampling period		50 ms			
Size in mm (HxWxD)		24×48×90 (Models with Screw Terminal Blocks)/ 24×48×93(Models with Screwless Clamp Terminal Blocks)	48×48×64	48×96×64	96×96×64

Note: *1. The indication accuracy of K thermocouples in the -200 to 1,300°C range, T and N thermocouples at a temperature of -100°C max., and U and L thermocouples at any temperatures is ±2°C ±1 digit max. The indication accuracy of the B thermocouple at a temperature of 400°C max. is not specified. The indication accuracy of B thermocouples at a temperature of 400 to 800°C is ±3°C max. The indication accuracy of the R and S thermocouples at a temperature of 200°C max. is ±3°C ±1 digit max. The indication accuracy of W thermocouples is (±0.3% of PV or ±3°C, whichever is greater) ±1 digit max. The indication accuracy of PL II thermocouples is (±0.3% of PV or ±2°C, whichever is greater) ±1 digit max.

*2. Only four set points are selectable for event inputs.

*3. Simple transfer output, and work bit message are only for E5GC.

High performance & DIN-track mounting

The next generation E5_C temperature controller is setting a new global standard in terms of precision and user-friendly design. Best control performance, easy set-up and outstanding visibility of the white LCD display have been integrated into a space-saving housing.

- Fast and precise regulation: 50ms sampling loop period time
- Easy to set up, and operate intuitively via CX-Thermo without power supply
- Removable terminal block for easy mounting and replacement.*
- Useful alarm and diagnosis functions for secure operation

* Only for E5DC

Specifications

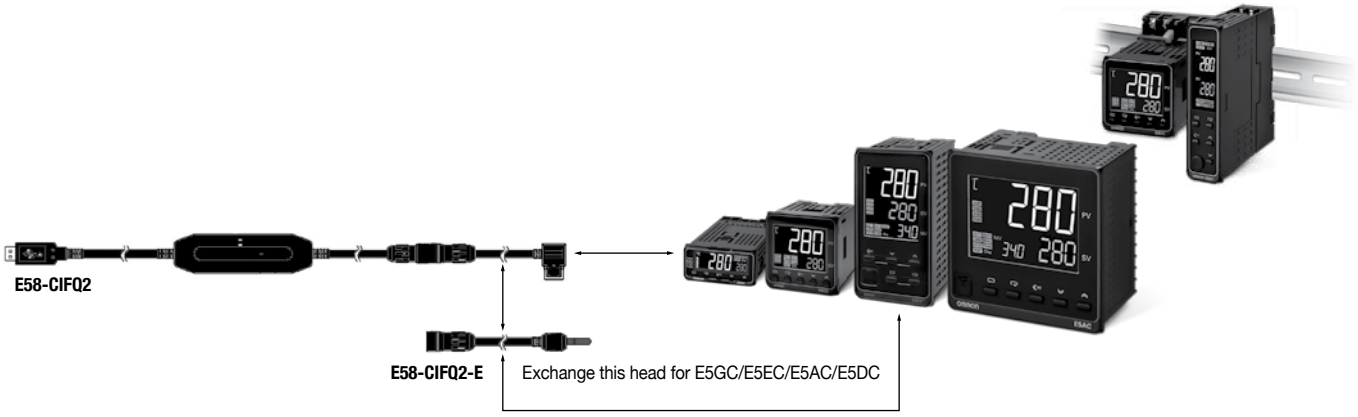
		E5CC-U	E5DC
Power supply voltage		A in model number: 100 to 240 VAC, 50/60 Hz D in model number: 24 VAC, 50/60 Hz; 24 VDC	
Operating voltage range		85% to 110% of rated supply voltage	
Power consumption		Models with option selection of 000: 5.2 VA max. at 100 to 240 VAC and 3.1 VA max. at 24 VAC or 1.6 W max. at 24 VDC All other models: 6.5 VA max. at 100 to 240 VAC, and 4.1 VA max. at 24 VAC or 2.3 W max. at 24 VDC	4.9 VA max. at 100 to 240 VAC, and 2.8 VA max. at 24 VDC or 1.5 W max. at 24 VDC
Sensor input		–Temperature input Thermocouple: K, J, T, E, L, U, N, R, S, B, 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, 0 to 10 V,or 0 to 50 mV (The 0 to 50 mV range applies to the E5CC-U only for those manufactured in May 2014 or later.)	
Input impedance		Current input: 150 Ω max., Voltage input: 1 MΩ min. (Use a 1: 1 connection when connecting the ES2-HB/THB.)	
Control method		ON/OFF control or 2-PID control (with auto-tuning)	
Indication accuracy (at the ambient temperature of 23°C) (When mounted individually for E5DC)		Thermocouple: (±1% of indication value or ±2°C, whichever is greater) ±1 digit max.*1 Platinum resistance thermometer: (±0.2% of indication value or ±0.8°C, whichever is greater) ±1 digit max. Analog input: ±0.2% FS ±1 digit max.	Thermocouple: (±0.3% of indication value or ±1°C, whichever is greater) ±1 digit max.*1 Platinum resistance thermometer: (±0.2% of indication value or ±0.8°C, whichever is greater) ±1 digit max. Analog input: ±0.2% FS ±1 digit max. CT input: ±5% FS ±1 digit max.
Auto-Tuning		Yes, 40%/100% MV output limit selection. When using Heat/Cool: Independent Heat & cool PID can be set by Auto-tuning.	
Self-Tuning		Yes	
Control output	**Relay output**	SPDT, 250 VAC, 3 A (resistive load), electrical life: 100,000 operations, minimum applicable load: 5 V, 10 mA (reference value)	SPST-NO, 250 VAC, 3 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)	2 (depends on model)
	Output specifications	SPST-NO relay outputs, 250 VAC, Models with 1 or 2 outputs: 3 A (resistive load), or Models with 3 outputs: 2 A (resistive load), Electrical life: 100,000 operations, Minimum applicable load: 10 mA at 5 V (reference value)	SPST-NO relay outputs, 250 VAC, 2 A (resistive load), Electrical life: 100,000 operations, Minimum applicable load: 10mA at 5V (reference value)
Event input	**Number of inputs**	-	1 (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 display and individual indicators	
Multi SP		Up to eight set points (SP0 to SP7) can be saved and selected using the event inputs, key operations, or serial communications.	Up to eight set points (SP0 to SP7) can be saved and selected using the event inputs, key operations, or serial communications.*2
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, and display brightness setting	
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)	
Degree of protection		Front panel: IP50, Rear case: IP20, Terminals: IP00	Main unit: IP20, Terminal unit: IP00
Input sampling period		50 ms	
Size in mm (HxWxD)		48×48×76.8	96×22.5×85

Note: *1. The indication accuracy of K thermocouples in the -200 to 1,300°C range, T and N thermocouples at a temperature of -100°C max., and U and L thermocouples at any temperatures is ±2°C ±1 digit max. The indication accuracy of the B thermocouple at a temperature of 400°C max. is not specified. The indication accuracy of B thermocouples at a temperature of 400 to 800°C is ±3°C max. The indication accuracy of the R and S thermocouples at a temperature of 200°C max. is ±3°C ±1 digit max. The indication accuracy of W thermocouples is (±0.3% of PV or ±3°C, whichever is greater) ±1 digit max. The indication accuracy of PL II thermocouples is (±0.3% of PV or ±2°C, whichever is greater) ±1 digit max.

*2. Only two set points are selectable for event inputs.

USB communication cable E58-CIFQ2

	E5GC	E5CC	E5EC	E5AC	E5CC-U	E5DC
E58-CIFQ2	■	■	■	■	■	■
E58-CIFQ2-E	■	–	■	■	–	■



E5GC/E5CC/E5EC/E5AC/E5CC-U/E5DC optional tools

Option	Order code
USB based configuration cable	E58-CIFQ2, E58-CIFQ2-E (for E5GC/E5EC/E5AC/E5DC)
PC based configuration and tuning software	EST2-2C-MV4

Refer to the *E5□C/E5□C-T Digital Temperature Controllers Datasheet* (Cat. No. H177) for details.

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