

A full lineup of next-generation Temperature Controllers

E5_C Series 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.

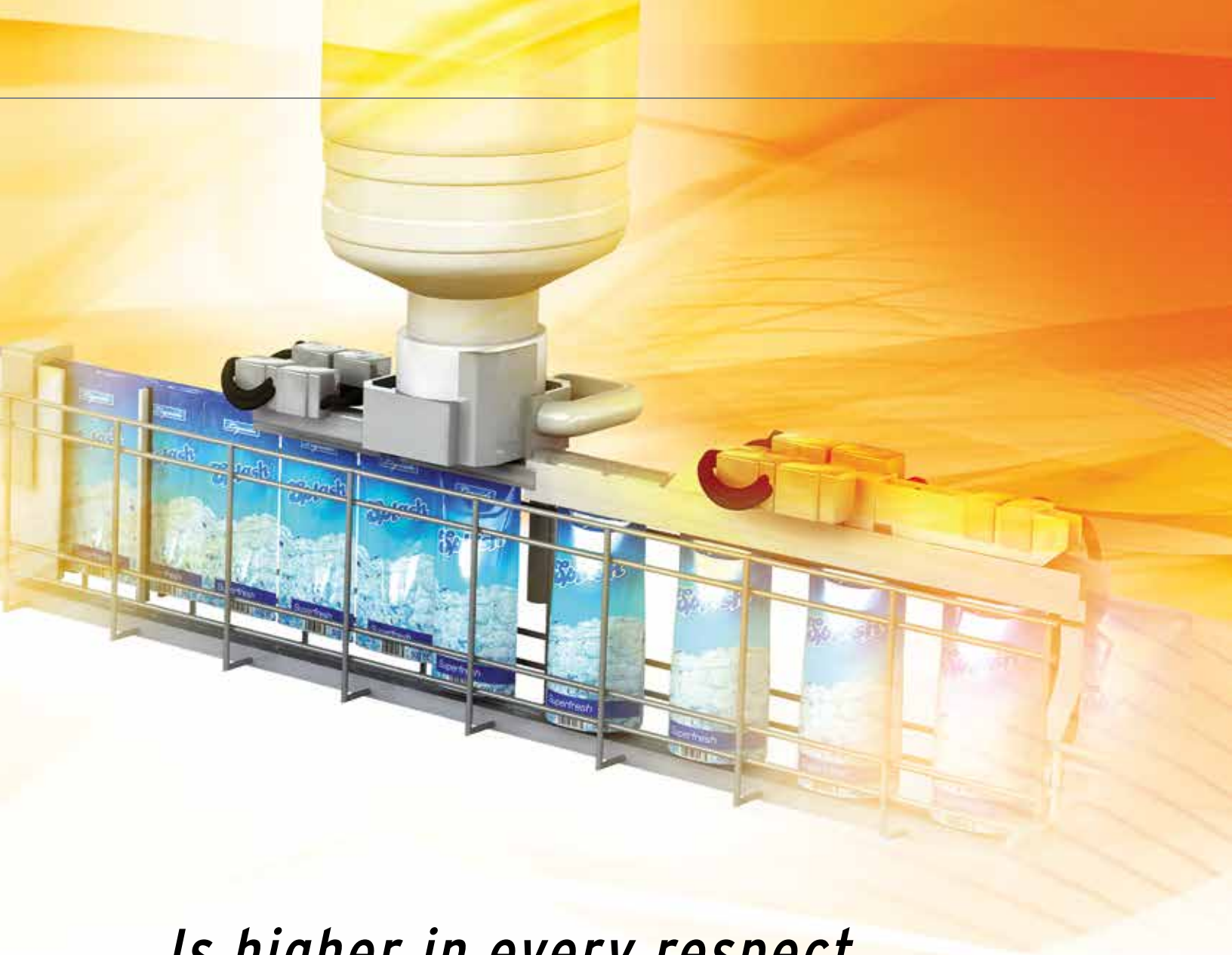
The E5_C series will save you time and effort in set-up and operation, while enabling faster and more accurate monitoring/control of your process. The highly visible display of the new series is easy to read and virtually eliminates the possibility for human error.

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



NEW GENERATION



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.

CX-Thermo software - easy setup

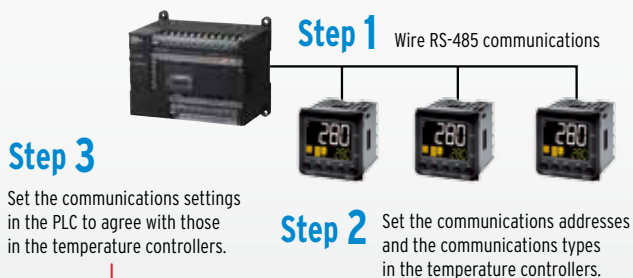
For applications that require different recipes or need multiple controllers programmed, CX-Thermo is designed to save you time and effort. With a few clicks of the mouse, you can download your parameters into any Omron E5_C series controller.

Note: Version 4.61 is required

Installation
(CD sold separately)



Easy connection to a PLC with programless communications



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

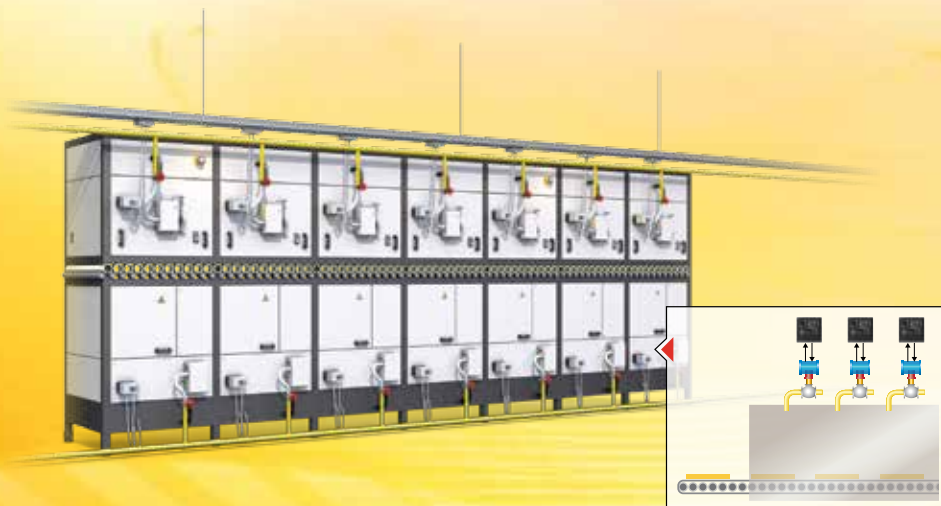
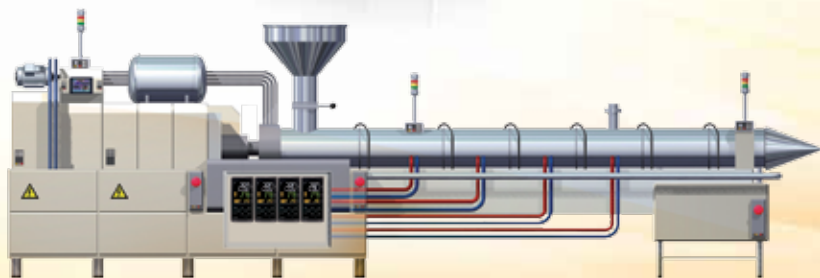
^{*1} Excluding E5GC/E5DC/E5CC-U

^{*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

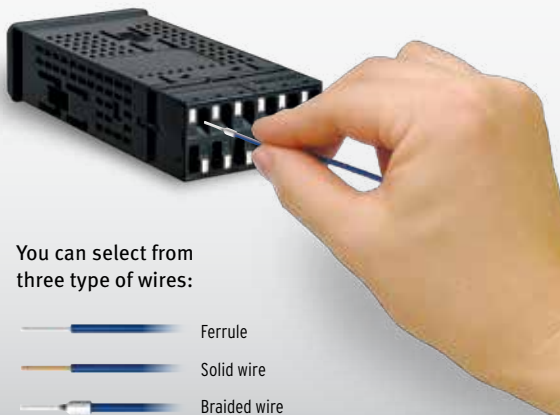
The 48 x 24 mm compact size of the E5GC inherits the highly visible, large white characters from the E5_C series. With dual, side-by-side displays (PV and green set value (SV)), there is no need to switch between displays.

*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.



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

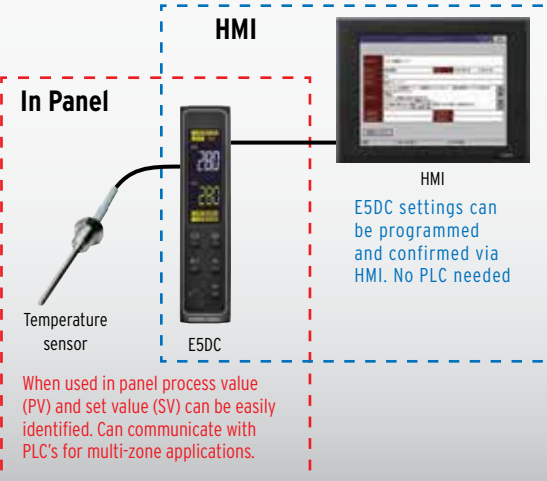


Removable terminal block for easy mounting and replacement



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)	015	E5GC-RX0A6M-000	E5GC-RX0D6M-000
			E5GC-RX1A6M-000	E5GC-RX1D6M-000
			E5GC-RX2A6M-000	E5GC-RX2D6M-000
			E5GC-RX1A6M-015	E5GC-RX1D6M-015
			E5GC-RX2A6M-015	E5GC-RX2D6M-015
			E5GC-RX2A6M-016	E5GC-RX2D6M-016
	Screwless Clamp Terminal	015	E5GC-RX2A6M-023	E5GC-RX2D6M-023
			E5GC-RX1A6M-024	E5GC-RX1D6M-024
			E5GC-RX0ACM-000	E5GC-RX0DCM-000
			E5GC-RX1ACM-000	E5GC-RX1DCM-000
			E5GC-RX2ACM-000	E5GC-RX2DCM-000
			E5GC-RX1ACM-015	E5GC-RX1DCM-015
Out 1: Voltage (pulse)	Screw terminals (with cover)	015	E5GC-RX2ACM-015	E5GC-RX2DCM-015
			E5GC-RX2ACM-016	E5GC-RX2DCM-016
			E5GC-RX2ACM-023	E5GC-RX2DCM-023
			E5GC-RX1ACM-024	E5GC-RX1DCM-024
	Screwless Clamp Terminal	015	E5GC-QX0A6M-000	E5GC-QX0D6M-000
			E5GC-QX1A6M-000	E5GC-QX1D6M-000
			E5GC-QX2A6M-000	E5GC-QX2D6M-000
			E5GC-QX1A6M-015	E5GC-QX1D6M-015
			E5GC-QX2A6M-015	E5GC-QX2D6M-015
			E5GC-QX2A6M-016	E5GC-QX2D6M-016
Out 1: Liner current	Screw terminals (with cover)	015	E5GC-QX2A6M-023	E5GC-QX2D6M-023
			E5GC-QX1A6M-024	E5GC-QX1D6M-024
	Screwless Clamp Terminal	015	E5GC-QX0ACM-000	E5GC-QX0DCM-000
			E5GC-QX1ACM-000	E5GC-QX1DCM-000
			E5GC-QX2ACM-000	E5GC-QX2DCM-000
			E5GC-QX1ACM-015	E5GC-QX1DCM-015
Out 1: Liner current	Screw terminals (with cover)	015	E5GC-QX2ACM-015	E5GC-QX2DCM-015
			E5GC-QX2ACM-016	E5GC-QX2DCM-016
			E5GC-QX2ACM-023	E5GC-QX2DCM-023
			E5GC-QX1ACM-024	E5GC-QX1DCM-024
	Screwless Clamp Terminal	015	E5GC-CX0A6M-000	E5GC-CX0D6M-000
			E5GC-CX1A6M-000	E5GC-CX1D6M-000
			E5GC-CX2A6M-000	E5GC-CX2D6M-000
			E5GC-CX1A6M-015	E5GC-CX1D6M-015
			E5GC-CX2A6M-015	E5GC-CX2D6M-015
			E5GC-CX2A6M-016	E5GC-CX2D6M-016
Out 1: Liner current	Screw terminals (with cover)	015	E5GC-CX1A6M-024	E5GC-CX1D6M-024
	Screwless Clamp Terminal	015	E5GC-CX0ACM-000	E5GC-CX0DCM-000
			E5GC-CX1ACM-000	E5GC-CX1DCM-000
			E5GC-CX2ACM-000	E5GC-CX2DCM-000
			E5GC-CX1ACM-015	E5GC-CX1DCM-015
			E5GC-CX2ACM-015	E5GC-CX2DCM-015
Out 1: Liner current	Screw terminals (with cover)	015	E5GC-CX2ACM-016	E5GC-CX2DCM-016
	Screwless Clamp Terminal	015	E5GC-CX2ACM-023	E5GC-CX2DCM-023
			E5GC-CX1ACM-024	E5GC-CX1DCM-024
	Screwless Clamp Terminal	015	E5GC-CX0ACM-000	E5GC-CX0DCM-000
			E5GC-CX1ACM-000	E5GC-CX1DCM-000
			E5GC-CX2ACM-000	E5GC-CX2DCM-000
Out 1: Liner current	Screw terminals (with cover)	015	E5GC-CX1ACM-015	E5GC-CX1DCM-015
	Screwless Clamp Terminal	015	E5GC-CX2ACM-015	E5GC-CX2DCM-015
			E5GC-CX2ACM-016	E5GC-CX2DCM-016
			E5GC-CX2ACM-023	E5GC-CX2DCM-023
			E5GC-CX1ACM-024	E5GC-CX1DCM-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	001	E5CC-RX3A5M-000	E5CC-RX3D5M-000
	003	E5CC-RX3A5M-001	E5CC-RX3D5M-001
	005	E5CC-RX3A5M-003	E5CC-RX3D5M-003
	006	E5CC-RX3A5M-005	E5CC-RX3D5M-005
	007	E5CC-RX3A5M-006	E5CC-RX3D5M-006
	007	E5CC-RX3A5M-007	E5CC-RX3D5M-007
Out 1: Voltage (pulse) Out 2: non	001	E5CC-QX3A5M-000	E5CC-QX3D5M-000
	003	E5CC-QX3A5M-001	E5CC-QX3D5M-001
	005	E5CC-QX3A5M-003	E5CC-QX3D5M-003
	006	E5CC-QX3A5M-005	E5CC-QX3D5M-005
	007	E5CC-QX3A5M-006	E5CC-QX3D5M-006
	007	E5CC-QX3A5M-007	E5CC-QX3D5M-007
Out 1: Voltage (pulse) Out 2: Voltage (pulse)	001	E5CC-QQ3A5M-000	E5CC-QQ3D5M-000
	003	E5CC-QQ3A5M-001	E5CC-QQ3D5M-001
	005	E5CC-QQ3A5M-003	E5CC-QQ3D5M-003
	006	E5CC-QQ3A5M-005	E5CC-QQ3D5M-005
	007	E5CC-QQ3A5M-006	E5CC-QQ3D5M-006
	007	E5CC-QQ3A5M-007	E5CC-QQ3D5M-007
Out 1: Linear current Out 2: non	004	E5CC-CX3A5M-000	E5CC-CX3D5M-000
	005	E5CC-CX3A5M-004	E5CC-CX3D5M-004
	006	E5CC-CX3A5M-005	E5CC-CX3D5M-005
	007	E5CC-CX3A5M-006	E5CC-CX3D5M-006
	007	E5CC-CX3A5M-007	E5CC-CX3D5M-007
Out 1: Linear current Out 2: Voltage (pulse)	001	E5CC-CQ3A5M-000	E5CC-CQ3D5M-000
	003	E5CC-CQ3A5M-001	E5CC-CQ3D5M-001
	005	E5CC-CQ3A5M-003	E5CC-CQ3D5M-003
	006	E5CC-CQ3A5M-005	E5CC-CQ3D5M-005
	007	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	009	E5_C-RX4A5M-000	E5_C-RX4D5M-000
	010	E5_C-RX4A5M-009	E5_C-RX4D5M-009
	011	E5_C-RX4A5M-010	E5_C-RX4D5M-010
Out 1: Voltage (pulse) Out 2: non	009	E5_C-QX4A5M-000	E5_C-QX4D5M-000
	010	E5_C-QX4A5M-009	E5_C-QX4D5M-009
	011	E5_C-QX4A5M-010	E5_C-QX4D5M-010
Out 1: Relay Out 2: Relay	009	E5_C-RR4A5M-000	E5_C-RR4D5M-000
	010	E5_C-RR4A5M-009	E5_C-RR4D5M-009
	011	E5_C-RR4A5M-010	E5_C-RR4D5M-010
Out 1: Voltage (pulse) Out 2: Voltage (pulse)	009	E5_C-QQ4A5M-000	E5_C-QQ4D5M-000
	010	E5_C-QQ4A5M-009	E5_C-QQ4D5M-009
	011	E5_C-QQ4A5M-010	E5_C-QQ4D5M-010
Out 1: Voltage (pulse) Out 2: Relay	009	E5_C-QR4A5M-000	E5_C-QR4D5M-000
	010	E5_C-QR4A5M-009	E5_C-QR4D5M-009
	011	E5_C-QR4A5M-010	E5_C-QR4D5M-010
Out 1: Linear current Out 2: non	004	E5_C-CX4A5M-000	E5_C-CX4D5M-000
	005	E5_C-CX4A5M-004	E5_C-CX4D5M-004
	013	E5_C-CX4A5M-005	E5_C-CX4D5M-005
	014	E5_C-CX4A5M-013	E5_C-CX4D5M-013
Out 1: Linear current Out 2: Linear current	004	E5_C-CC4A5M-000	E5_C-CC4D5M-000
	005	E5_C-CC4A5M-004	E5_C-CC4D5M-004
	013	E5_C-CC4A5M-005	E5_C-CC4D5M-005
	014	E5_C-CC4A5M-013	E5_C-CC4D5M-013
Out 1: Linear current Out 2: Voltage (pulse)	009	E5_C-CQ4A5M-000	E5_C-CQ4D5M-000
	010	E5_C-CQ4A5M-009	E5_C-CQ4D5M-009
	011	E5_C-CQ4A5M-010	E5_C-CQ4D5M-010
	011	E5_C-CQ4A5M-011	E5_C-CQ4D5M-011
Out 1: Relay* Out 2: Relay*	004	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
Out 1: Relay		E5DC-RX2ASM-000	E5DC-RX2DSM-000
	002	E5DC-RX2ASM-002	E5DC-RX2DSM-002
	015	E5DC-RX0ASM-015* ²	E5DC-RX0DSM-015* ²
	017	E5DC-RX2ASM-017	E5DC-RX2DSM-017
Out 1: Voltage (pulse)		E5DC-QX2ASM-000	E5DC-QX2DSM-000
	002	E5DC-QX2ASM-002	E5DC-QX2DSM-002
	015	E5DC-QX0ASM-015* ²	E5DC-QX0DSM-015* ²
	017	E5DC-QX2ASM-017	E5DC-QX2DSM-017
Out 1: Liner current		E5DC-CX2ASM-000	E5DC-CX2DSM-000
	015	E5DC-CX0ASM-015* ²	E5DC-CX0DSM-015* ²
	015	E5DC-CX2ASM-015	E5DC-CX2DSM-015
	016	E5DC-CX2ASM-016	E5DC-CX2DSM-016

*¹Option 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 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	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)
	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 (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)	48x48x76.8	96x22.5x85

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.

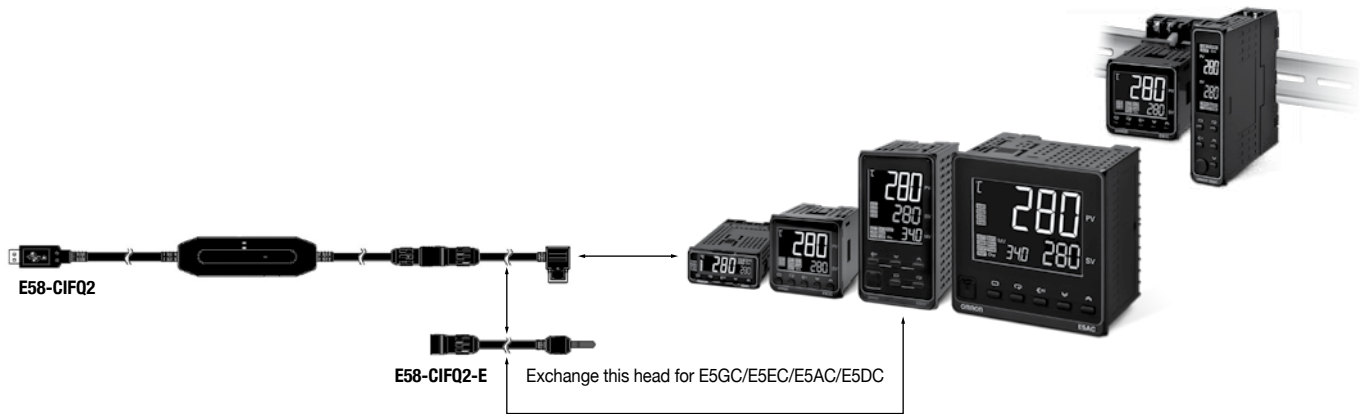
*2. Only two set points are selectable for event inputs.

E5_C General purpose temperature controllers

OMRON

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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