

# Digital Temperature Controllers

E5□C Series

The Leading Temperature Controllers in the Control Panel Evolution



- Greater downsizing and higher performance in control panels and other equipment
- Greater efficiency from designing to assembly and operation
- Innovating control panel and equipment usability

# New Value For Control Panels

Control Panels: The Heart of Manufacturing Sites.

Evolution in control panels results in large evolution in production facilities.

And if control panel design, control panel manufacturing processes, and human interaction with them are innovated, control panel manufacturing becomes simpler and takes a leap forward.

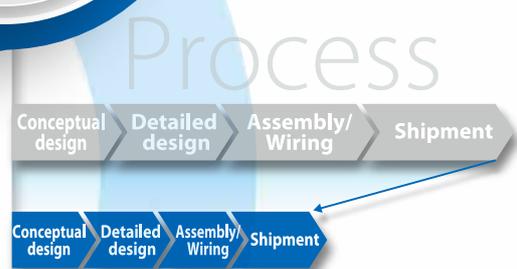
OMRON will continue to achieve a control panel evolution and process innovation through many undertakings starting with the shared Value Design for Panel <sup>\*1</sup> concept for the specifications of products used in control panels.

## \*1 Value Design for Panel



Our shared Value Design for Panel (herein after referred to as "Value Design") concept for the specifications of products used in control panels will create new value to our customer's control panels.

Combining multiple products that share the Value Design concept will further increase the value provided to control panels.



Panels

People



# The Leading Temperature Controllers in the Control Panel Evolution



## Greater downsizing and higher performance in control panels and other equipment

- A wide range of lineup to handle various control panel/equipment sizes.
- Advanced control performance to help increase equipment speed and yield.

## Greater efficiency from designing to assembly and operations

- Saves your work in each process from designing to operation of control panels and other equipment.

## Innovating control panel and equipment usability

- Wide viewing angle and high-contrast LCD for high visibility.
- Reduces the workload of entering set values on-site.

Certified for main safety standards.



(E5□C/-U)

(E5CC-B, E5EC-B)

\*CSA conformance evaluation by UL.

# A wide range of lineup to handle various control panel/equipment sizes

## Save Space with a Compact Body That's Only 60 mm in Depth

A short body that's 77% of our previous model has been achieved. This makes the Controller applicable in tight spaces with limited depth.



E5CC  
E5EC  
E5AC

\*In comparison with the E5CN.

## Help Reduce Panel Space

Even with the 48 × 24 size, OMRON has achieved a PV display character height of over 10 mm and dual displays for the present value and set point. This enables compact panels that are easy to read.



E5GC

## Equal Operability as On-panel Controllers Plus Space-saving Layouts inside Control Panels

The unified operability of the E5□C Series in a DIN Track-mounting Controller that is 22.5 mm wide. You can achieve space-saving layouts in control panels.



E5DC

## Push-In Plus Terminal Blocks Enables Horizontal Group Mounting Easily

With Push-In Plus terminal blocks, wiring is performed from the back, which facilitates using horizontal group mounting, to achieve compact panel surfaces.



E5CC-B  
E5EC-B

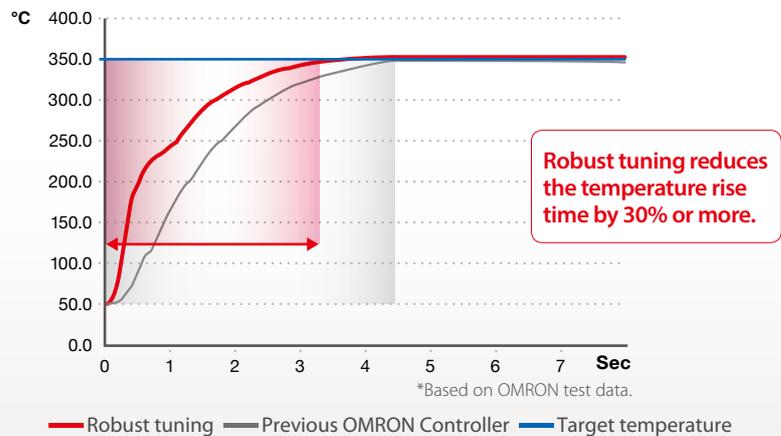
# Advanced control performance to help increase equipment speed and yield

## High-speed Control to Maximize Equipment Performance

Performing autotuning (robust tuning) once achieves high-speed control to reach 350°C in approx. 3 seconds.\* You get stable control without overshooting.



Application Example  
Flip Chip Bonder



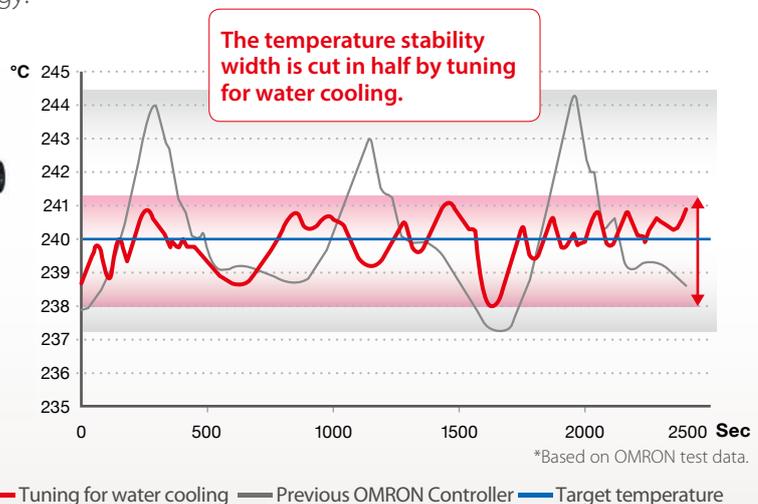
**Robust tuning (RT)** : Used with heaters whose temperature increases quickly to automatically set the optimum PID constants.

## Stable Control to Help Increase Yield

Stable control is achieved even for hard-to-control water-cooled extruders with tuning for water cooling. Stable control also means that you'll save energy.



Application Example  
Water-cooled Extruder



**Tuning for water cooling** : Uses a tuning algorithm designed for water cooling, which is different from normal cooling methods, to automatically set the optimum PID constants for water cooling.

# Greater efficiency from designing to assembly and operation

**Design**

### Programless Communications Eliminates the Time to Create Communications Program with the PLC.

- In addition to communications with PLCs, you can share target temperatures and copy parameter settings with other E5□C series Controllers.

**Assembly and Wiring**

### Push-In Plus Terminal Blocks for Easy Wiring

Just Insert Wires: No Tools Required  
Now you can use Push-In Plus terminal blocks to reduce the time and work involved in wiring.

Greatly Reduce Wiring Work with Push-In Plus Terminal Blocks

**Easy to Insert**  
OMRON's Push-In Plus terminal blocks are as easy as inserting to an earphone jack. They help reduce the work load and improve wiring quality.

**Held Firmly in Place**  
Even though less insertion force is required, the wires are held firmly in place. The advanced mechanism design technology and manufacturing technology produced a spring that ensures better workability and reliability.

IEC standard (cable diameter)	Push-In Plus terminal block	Screw terminal block
20 N min. (AWG20,0.5 mm <sup>2</sup> )	<b>125 N</b>	112 N

**No Retightening Required**  
Tightening screws is necessary for screw terminal blocks, but with Push-In Plus terminal blocks, there is no need for retightening.

**Temperature Sensors**  
Temperature Sensors with Ferrules are also available to help reduce the time and work involved in wiring.

\*Information for Push-In Plus and screw terminal blocks is based on OMRON's actual measurement value data.

**Setup, Adjustment, and Operation**

### CX-Thermo Special Setup Software (Sold Separately) Effectively Reduces Work from Setup to Adjustment and Operation.

You can perform the following operations with the CX-Thermo.

- Setting and saving parameters
- Logging, browsing, and exporting data
- Printing parameter lists, and more

\*USB-Serial Conversion Cable (Sold Separately)

Also, power is supplied through the Bus Power, so you do not have to wire the power supply to set parameters.

# Innovating control panel and equipment usability

## Easy Display Confirmation On-site.

Big white characters on a black background achieve superior visibility. Operator movement distances are minimized to help increase work efficiency.



High-contrast displays enable easier confirmation regardless of ambient lighting conditions.



A wide viewing angle was achieved with the LCDs to enable easy confirmation of the PV.

## Reduces the workload of entering set values on-site.

Functions are provided to reduce work in operating and changing settings for the Controllers.

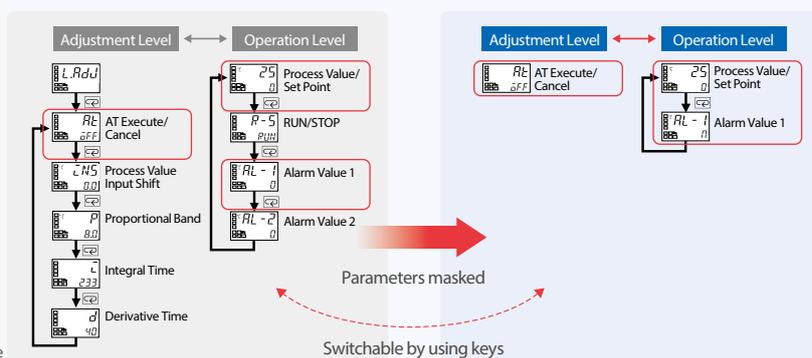
Just press the shift key (<<PF) to move the digit. This simplifies numeric entry at worksite.



Just press the shift key to move the digit.

## CX-Thermo Functions

Use parameter masks to display only the required parameters. The time required to change settings, such as for changeovers, is greatly reduced.



# Product Lineup

Size	48 × 24 mm	48 × 48 mm			48 × 96 mm		96 × 96 mm	DIN 22.5-mm width
Model	E5GC	E5CC	E5CC-B	E5CC-U	E5EC	E5EC-B	E5AC	E5DC
Terminal type	Screw terminal block Screw-less clamp terminal block	Screw terminal block	Push-In Plus terminal block	Plug-in models	Screw terminal block	Push-In Plus terminal block	Screw terminal block	Screw terminal block
Appearance			 			 		

Refer to the E5□C Series Datasheet (Cat. No. H177) for details.

## Products That Create New Value in Control Panels



Switch Mode Power Supplies  
S8VK-S



Uninterruptible Power Supply (UPS)  
S8BA



Power Monitors  
KM-N2



Digital Temperature Controllers  
E5CC-B/E5EC-B



Measuring and Monitoring Relays  
K8DT



Solid-state Timers  
H3DT



Solid-state Timers  
H3Y-□-B/H3YN-B



Solid-state Timers  
H3RN-□-B



Liquid Leakage Sensor Amplifiers  
K7L-□□B



Sockets for MY series,  
H3Y-□-B and H3YN-B  
PYF-PU-□



Sockets for G2R-S,  
H3RN-□-B and K7L-□□B  
P2RF-PU



Slim I/O Relays  
G2RV-SR



Slim I/O Relays  
G3RV-SR



I/O Relay Terminals  
G70V



Solid State Relays for Heaters  
G3PJ



DIN Track Terminal Blocks  
XW5T

Panel Assist Web

[www.ia.omron.com/solution/panel/](http://www.ia.omron.com/solution/panel/)



Proposal for Innovation of Control Panel Building  
Cat. No. Y218

Before you place an order, please read and understand "Agreement for Using the Product" available on Omron's latest "Best control devices Omron", "General Brochure" or Omron's website.

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