**PRODUCT NEWS**

# Product Discontinuation Notices

OMRON

**Issue Date**
**Month Day, Year**

| Product Discontinuation | | Recommended Replacement |
|---|---|---|
| Digital Temperature Controller | | Digital Temperature Controller |
| **E5CSV series** | → | **E5CB series** |

**[ Final order entry date ]**

The end of March, 2024 (valid only for European market)

**[ Date of The Last Shipping ]**

The end of June, 2024 (valid only for European market)

**[ Caution on recommended replacement ]**

- The universal input “T” must be explicitly replaced by either “TC” (thermocouple) or “P” (Pt100) sensor input from E5CB
- One alarm output is provided from E5CB
- Only black color is available for the case of the recommended replacement product
- E5CB is providing a dual display other than the single one of E5CSV showing PV and SV values
- E5CB has got 11 different alarm modes vs 8 from E5CSV
- Control modes, device settings and TC protection must be set via push buttons on the front panel of E5CB (E5CSV was using DIP Switches)
- The additional conversion cable “E58-CIFQ2” can be used to power-up the E5CB via USB port without a need of connection to a Power Supply (Alarm output relay is not supported)

**[ Difference from discontinued product ]**

| Recommended replacement model | Body color | Dimen-sions | Wire connection | Mounting dimensions | Charac-teristics | Operation ratings | Operation methods |
|---|---|---|---|---|---|---|---|
| E5CB series | ** | * | * | ** | * | * | * |

** : Compatible
* : The change is a little/Almost compatible
-- : Not compatible
- : No corresponding specification

**[ Product Discontinuation and recommended replacement ]**

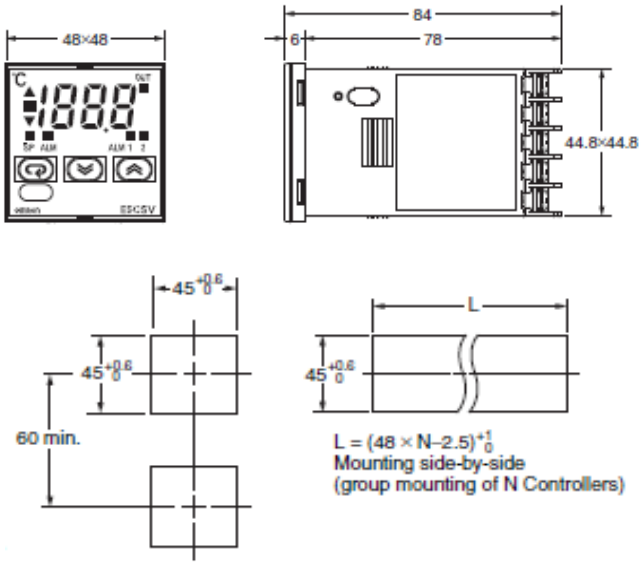
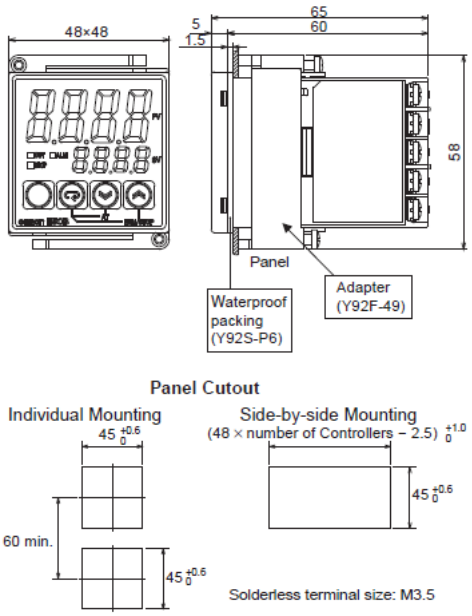
| Product discontinuation | Recommended functional replacement |
|---|---|
| E5CSV-Q1KJ-W 100-240 VAC | E5CB-Q1TC |
| E5CSV-Q1P-W 100-240 VAC | E5CB-Q1P |
| E5CSV-Q1T 100-240 VAC, E5CSV-Q1T-500 100-240 VAC | E5CB-Q1TC / E5CB-Q1P* |
| E5CSV-Q1TD 24 VAC/VDC, E5CSV-Q1TD-500 24 VAC/VDC | E5CB-Q1TCD / E5CB-Q1PD* |
| E5CSV-Q2T 100-240 VAC | E5CB-Q1TC / E5CB-Q1P* |
| E5CSV-Q2TD 24 VAC/VDC | E5CB-Q1TCD / E5CB-Q1PD* |
| E5CSV-QT 100-240 VAC | E5CB-Q1TC / E5CB-Q1P* |
| E5CSV-QTD 24 VAC/VDC | E5CB-Q1TCD / E5CB-Q1PD* |
| E5CSV-R1KJ-W 100-240 VAC | E5CB-R1TC |
| E5CSV-R1KJD-W 24 VAC/VDC | E5CB-Q1TCD |
| E5CSV-R1P-W 100-240 VAC | E5CB-R1P |
| E5CSV-R1T 100-240 VAC, E5CSV-R1T-500 100-240 VAC | E5CB-R1TC / E5CB-R1P* |
| E5CSV-R1TD 24 VAC/VDC, E5CSV-R1TD-500 24 VAC/VDC | E5CB-R1TCD / E5CB-R1PD* |
| E5CSV-R2T 100-240 VAC | E5CB-R1TC / E5CB-R1P* |
| E5CSV-R2TD 24 VAC/VDC | E5CB-R1TCD / E5CB-R1PD* |
| E5CSV-RT 100-240 VAC | E5CB-R1TC / E5CB-R1P* |
| E5CSV-RTD 24 VAC/VDC | E5CB-R1TCD / E5CB-R1PD* |

*Note:
E5CB has got no universal input like the “T” models of E5CSV requiring a dedicated controller model selection (either t/c or Pt100)

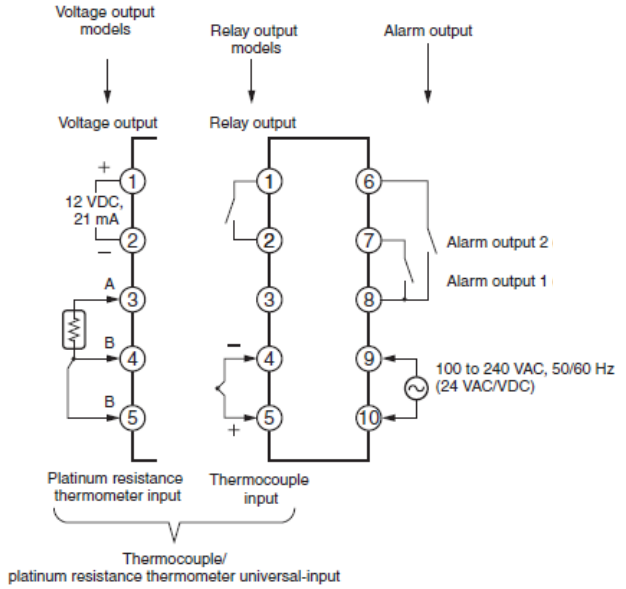
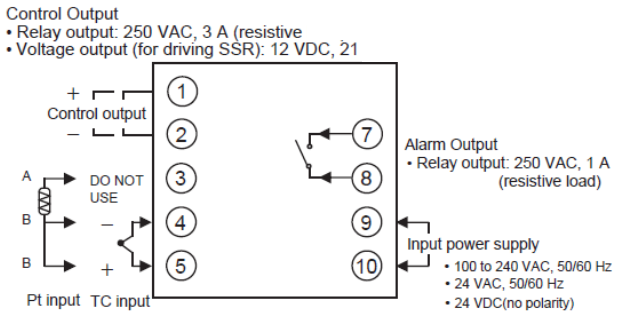
## [ Body color ]

| Product discontinuation<br>E5CSV series | Recommended replacement<br>E5CB series |
|---|---|
| Case color<br>Light gray, Black<br>  | Case color<br>Black<br>  |

## [ Dimensions ]

| Product discontinuation<br>E5CSV series | Recommended replacement<br>E5CB series |
|---|---|
|  |  |

## [ Terminal layout / Wire connection ]

| Product discontinuation<br>E5CSV series | Recommended replacement<br>E5CB series |
|---|---|
|  |  |





## [ Ratings ]

| Item | | Product discontinuation<br>E5CSV series | Recommended replacement<br>E5CB series |
|---|---|---|---|
| **Supply voltage** | | 100 to 240 VAC, 50/60 Hz<br>24 VAC, 50/60 Hz; 24 VDC | Same as on the left |
| **Operating voltage range** | | 85% to 110% of rated supply voltage | Same as on the left |
| **Power consumption** | | 100 to 240 VAC: 5 VA<br>24 VAC: 3 VA, 24 VDC: 2 W | 3.5 VA max. at 100 to 240 VAC<br>3.5 VA max. at 24 VAC<br>2.5 W max. at 24 VDC |
| **Sensor input** | | Thermocouple: K, J, L<br>Platinum resistance thermometer: Pt100, JPt100<br>Universal-input (thermocouple/platinum resistance thermometer): K, J, L, T, U, N, R, Pt100, JPt100 | Thermocouple: K, J, T, R or S<br>Pt100 |
| **Input impedance** | | N/A | N/A |
| **Control output** | **Relay output** | SPST-NO, 250 VAC, 3A (resistive load) | Same as on the left |
| | **Voltage output (for driving the SSR)** | 12 VDC, 21 mA | 12 VDC +25%/-15%, 21mA, with short-circuit protection |
| | **Linear current output** | N/A | N/A |
| **Alarm output (auxiliary output)** | **Relay output** | SPST-NO, 250 VAC, 1A (resistive load) | SPST-NO, 250 VAC, 3 A (resistive load), min. 5V, 10 mA |

| | | |
|---|---|---|
| **Event input** | N/A | N/A |
| **Transfer output** | N/A | N/A |
| **Control method** | ON/OFF or 2-PID | Same as on the left |
| **Setting method** | Digital setting using front panel keys | Same as on the left |
| **Remote SP input** | N/A | N/A |
| **Indication method** | 7-segment digital display (character height: 13.5 mm) and deviation indicators | 7-segment digital display and individual indicators<br>Character height:<br>PV: 16.2 mm |
| **Multi SP** | N/A | Up to eight set points (SP0 to SP7) can be saved and selected using the event inputs, key operations, or serial communications. |
| **Ambient operating temperature** | −10 to 55°C<br>With 3-year guarantee: −10 to 50°C | Same as on the left |
| **Ambient operating humidity** | 25% to 85% | Same as on the left |

## [ Characteristics ]

| Item | Product discontinuation E5CSV series | Recommended replacement E5CB series |
|---|---|---|
| **Indication accuracy** | Thermocouple:<br>(±0.5% of indication value or ±1°C, whichever is greater) ±1 digit max.<br>U, L: ±2°C ±1 digit max.<br>R: ±3°C ±1 digit max. at 200°C or less<br><br>Platinum resistance thermometer:<br>(±0.5% of indication value Indication accuracy or ±1°C, whichever is greater) ±1 digit max.<br>Input set values 0, 1, 2, 3:<br>0.5% FS ±1 digit max. | Thermocouple: (See note 1.)<br>(±0.5% of indicated value or ±1° C, whichever is greater) ±1 digit max.<br>R and S thermocouple inputs: (±1% of PV or ±10° C, whichever is greater) ±1 digit max.<br>K, J, and T thermocouple inputs: (±1% of PV or ±4° C, whichever is greater) ±1 digit max.<br><br>Platinum resistance thermometer:<br>(±0.5% of indicated value or ±1° C, whichever is greater) ±1 digit max. |
| **Transfer output accuracy** | N/A | N/A |
| **Simple transfer output accuracy** | N/A | N/A |
| **Remote SP Input Type** | N/A | N/A |
| **Influence of temperature** | R thermocouple inputs:<br>(±1% of PV or ±10°C, whichever is greater) ±1 digit max.<br>Other thermocouple inputs:<br>(±1% of PV or ±4°C, whichever is greater) ±1 digit max.<br>Platinum resistance thermometer inputs: (±1% of PV or ±2°C, whichever is greater) ±1 digit max. | R and S thermocouple inputs: (±1% of PV or ±10° C, whichever is greater) ±1 digit max.<br>K, J, and T thermocouple inputs: (±1% of PV or ±4° C, whichever is greater) ±1 digit max.<br>Platinum resistance thermometer inputs: (±1% of PV or ±2° C, whichever is greater) ±1 digit max. |
| **Influence of voltage** | | |
| **Influence of EMS. (at EN 61326-1)** | | |

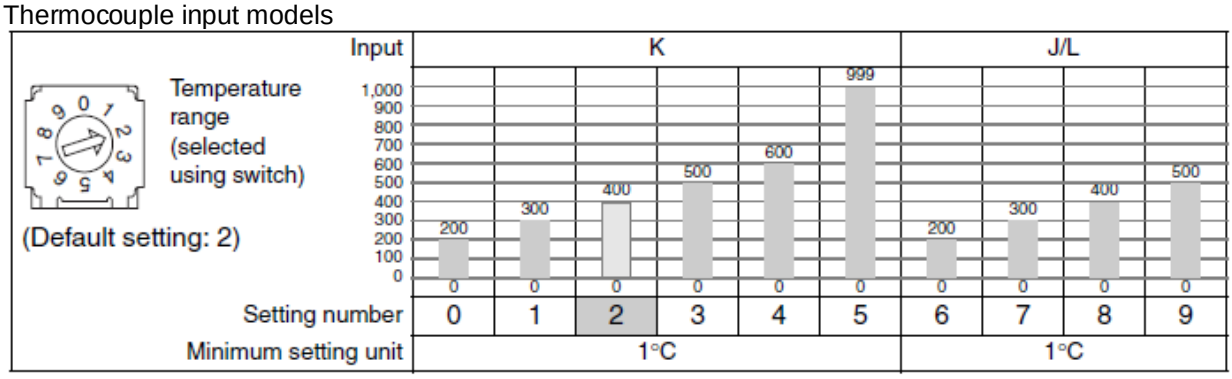
| | | |
|---|---|---|
| **Hysteresis** | 0.2% FS<br>(0.1% FS for universal-input (thermocouple/platinum resistance thermometer) models)<br>(for ON/OFF control) | 0.1 to 999.9 (in units of 0.1) °C/°F |
| **Sampling period time** | 500 ms | 250 ms |
| **Proportional band (P)** | 1 to 999°C (automatic adjustment using auto-tuning/self-tuning) | 0.1 to 999.9 (in units of 0.1) °C/°F |
| **Integral time (I)** | 1 to 1999 s (automatic adjustment using auto-tuning/self-tuning) | 0 to 3999 s (in units of 1 s) |
| **Derivative time (D)** | 1 to 1999 s (automatic adjustment using auto-tuning/self-tuning) | 0 to 3999 s (in units of 1 s) |
| **Proportional band (P) for cooling** | N/A | N/A |
| **Integral time (I) for cooling** | N/A | N/A |
| **Derivative time (D) for cooling** | N/A | N/A |
| **Control period** | 2/20 s | 2/20 s |
| **Manual reset value** | N/A | N/A |

| | | | |
|---|---|---|---|
| **Alarm output range** | | Absolute-value alarm: Same as the control range<br>Other: 0 to input setting range full scale (°C or °F)<br>Alarm hysteresis: 0.2°C or °F (fixed) | −1999 to 9999 (decimal point position depends on input type) |
| **Insulation resistance** | | 20 MΩ min. (at 500 VDC) | Same as in the left cell |
| **Dielectric strength** | | 2,000 VAC, 50/60 Hz for 1 min (between current-carrying terminals of different polarity) | 2,800 VAC, 50 or 60 Hz for 1 min (between terminals with different charge) |
| **Vibration resistance** | **Malfunction** | 10 to 55 Hz, 20 m/s$^2$ for 10 min each in X, Y, and Z directions | Same as in the left cell |
| | **Destruction** | 10 to 55 Hz, 0.75-mm single amplitude for 2 hrs each in X, Y, and Z directions | 10 to 55 Hz, 20 m/s$^2$ for 2 hrs each in X, Y, and Z directions |
| **Shock resistance** | **Malfunction** | 100 m/s$^2$ min., 3 times each in six directions | 200 m/s$^2$, 3 times each in X, Y, and Z directions |
| | **Destruction** | 300 m/s$^2$ min., 3 times each in six directions | 300 m/s$^2$, 3 times each in X, Y, and Z directions |
| **Life expectancy (relay output)** | **Electrical** | 100,000 operations min. | Same as in the left cell |
| **Memory protection** | | EEPROM (non-volatile memory) (number of writes: 1,000,000) | Non-volatile memory (number of writes: 100,000 times) |
| **Weight** | | Approx. 120 g (Controller only) | Controller: Approx. 100 g, Mounting Bracket: Approx. 10 g |
| **Degree of protection** | | Front panel: IP66; Rear case: IP20; Terminals: IP00 | Same as in the left cell |
| **Standards** | **Approved standards** | UL 61010-1 (listing)<br>CSA C22.2 No.1010-1 | UL 61010-1, CSA C22.2 No. 1010-1 |
| | **Conformed standards** | EN61326-1,<br>EN 61010-1 (IEC 61010-1) | EN61326-1,<br>EN 61010-1 (IEC 61010-1) |
| **EMC** | | EMI Radiated: EN 55011 Group 1 Class A<br>EMI Conducted: EN 55011 Group 1 Class A<br>ESD Immunity: EN 61000-4-2<br>Radiated Electromagnetic Field Immunity: EN 61000-4-3<br>Conducted Disturbance Immunity: EN 61000-4-6<br>Noise Immunity (First Transient Burst Noise): EN 61000-4-4<br>Surge Immunity: EN 61000-4-5<br>Voltage Dip/Interrupting Immunity: EN 61000-4-11 | Same as in the left cell |

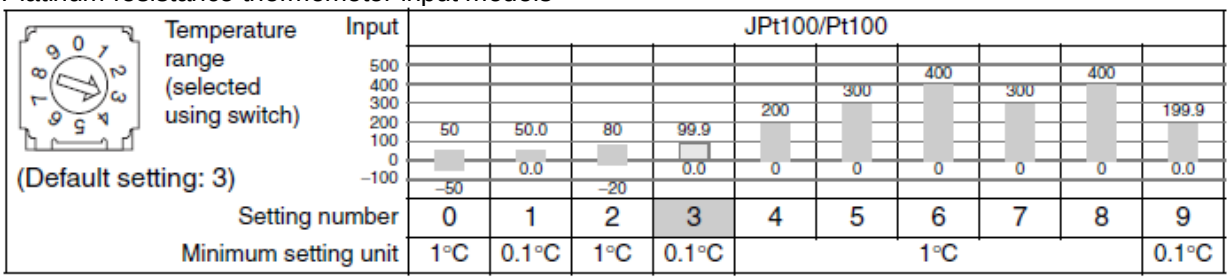
## [ Operation characteristics ]

**Product discontinuation**
**E5CSV series**

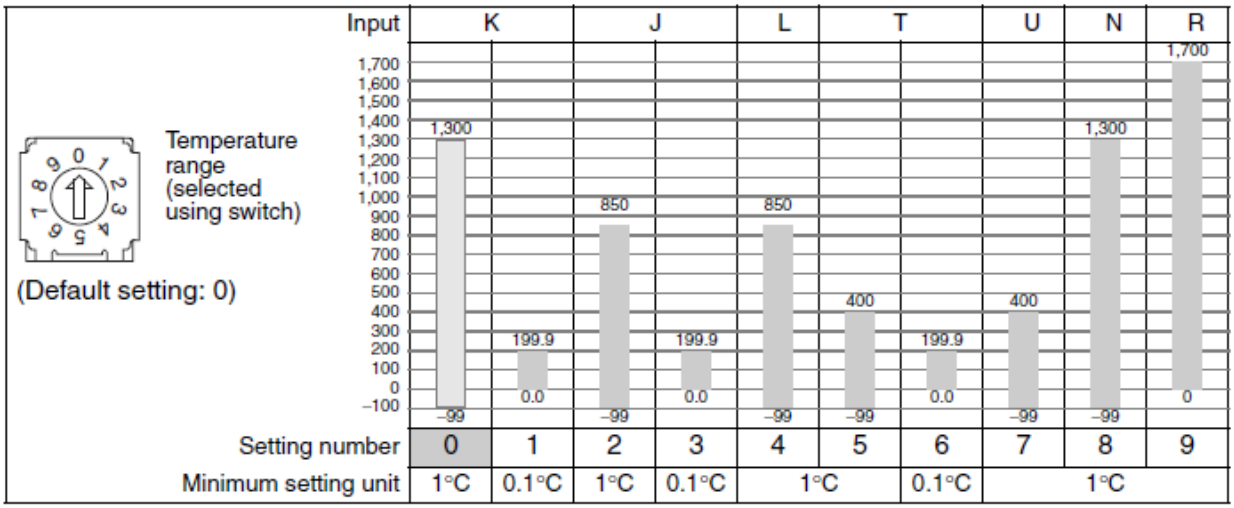
Temperature range
Thermocouple input models

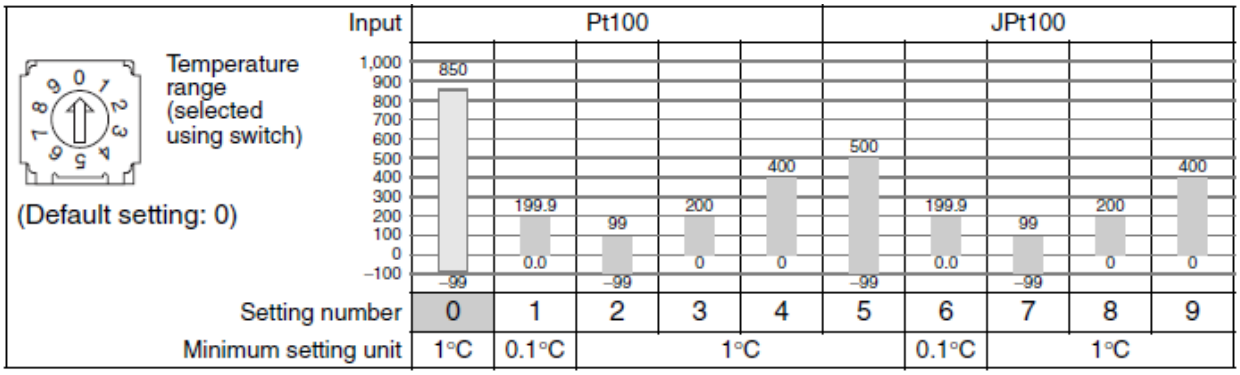



Platinum resistance thermometer input models



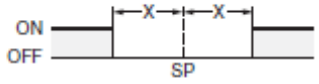
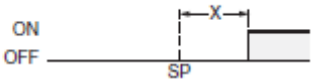
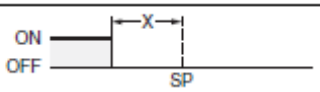
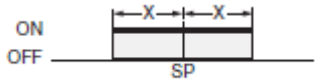
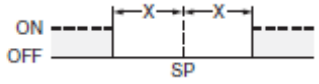
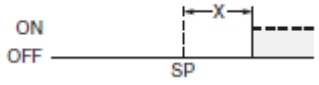
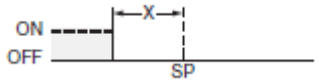
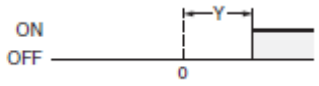

Universal-input (thermocouple/platinum resistance thermometer) models



E5CSV Alarm modes

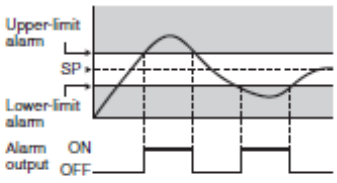
Select the number of the alarm mode switch when changing the alarm mode. (The default is 2).

| Set value | Alarm type | Alarm output operation |
|---|---|---|
| 0, 9 | Alarm function OFF | OFF |
| 1 | Upper- and lower-limit |   |
| 2 | Upper-limit |   |
| 3 | Lower-limit |   |
| 4 | Upper- and lower-limit range |   |
| 5 | Upper- and lower-limit with standby sequence (See note 2.) |   |
| 6 | Upper-limit with standby sequence (See note 2.) |   |
| 7 | Lower-limit with standby sequence (See note 2.) |   |
| 8 | Absolute-value upper-limit |   |

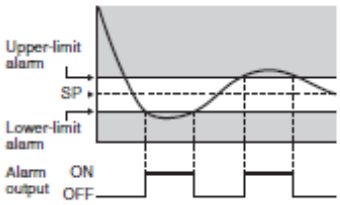
**Note: 1.** No alarm. The alarm value (alarm operation display) will not be displayed when the setting is 0 or 9 even if the selection key is pressed.
Alarm Setting Range
X: 0 to FS (full scale); Y: Within temperature range
The value of X is the deviation setting for the SP (set point).

**2.** Standby Sequence Function (The standby sequence operates when the power is turned ON.)

**Rising Temperature**



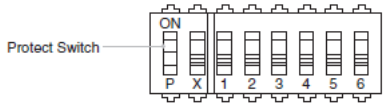

**Dropping Temperature**




Note: Please refer to the instruction or datasheet for alarm settings

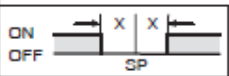
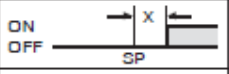
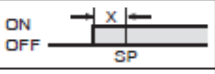
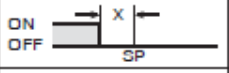
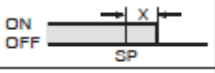
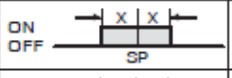
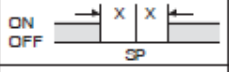
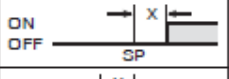
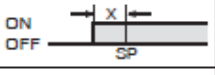
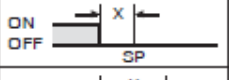
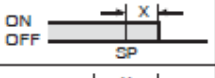
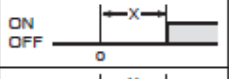
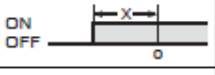
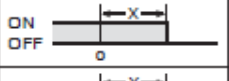
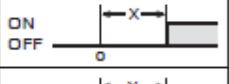
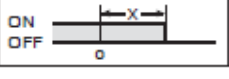
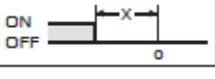
**Protection settings**

**Protect Switch**




When the protect switch is ON, Up Key and Down Key operations are prohibited to prevent setting mistakes.

E5CB Alarm modes

| Setting | Alarm type | Positive alarm value (X) | Negative alarm value (X) | Deviation/absolute value alarm |
|---|---|---|---|---|
| 0 | No alarm | Output OFF | | |
| 1 | Deviation upper/lower limit |  | Always ON | Deviation alarm |
| 2 | Deviation upper limit |  |  | Deviation alarm |
| 3 | Deviation lower limit |  |  | Deviation alarm |
| 4 | Deviation upper/lower range |  | Always OFF | Deviation alarm |
| 5 | Deviation upper/lower limit standby sequence ON |  | Always OFF | Deviation alarm |
| 6 | Deviation upper limit standby sequence |  |  | Deviation alarm |
| 7 | Deviation lower limit standby sequence ON |  |  | Deviation alarm |
| 8 | Absolute value upper limit |  |  | Absolute value alarm |
| 9 | Absolute value lower limit |  |  | Absolute value alarm |
| 10 | Absolute value upper limit standby sequence ON |  |  | Absolute value alarm |
| 11 | Absolute value lower limit standby sequence ON |  |  | Absolute value alarm |
| 12 | Do not set. | | | |

The default alarm type is 2.

## ● Protection

• Operation/Adjustment Protection

| Level | | Setting | | | |
|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 |
| Operation Level | Process value | ○ | ○ | ○ | ○ |
| | PV/SP | ◎ | ◎ | ◎ | ○ |
| | Others (Alarm Value) | ◎ | ◎ | × | × |
| Adjustment Level | | ◎ | × | × | × |

Default: 0

◎: Can be displayed and changed.

○: Can only be displayed.

×: Display or changing to another level is not possible.

• Initial Setting Protection

| Level | Setting | | |
|---|---|---|---|
| | 0 | 1 | 2 |
| Initial Setting Level | Do not set. | ◎ | × |

Default: 1

◎: Can be displayed and changed.

×: Display or changing to another level is not possible.

• Operation Control Key Protection

| Operation Control | Setting | | | | |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 |
| AT Execute/Cancel (↔+↓) | ○ | × | ○ | × | △ |
| RUN/STOP (↔+↑) | ○ | ○ | × | × | △ |

Default: 0

○: Operation control keys are enabled but operation control using parameters is disabled.

△: Operation control keys are disabled but operation control using parameters is enabled.

×: Operation control keys and operation control using parameters are disabled.

Note: Please refer to the instruction or datasheet for alarm and protection settings

## [ Display ]

### Product discontinuation
### E5CSV series

**Deviation indicators**

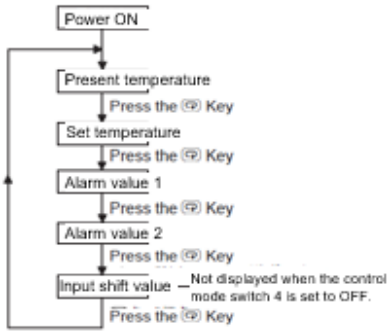
△ lights when the present temperature is higher than the set temperature and
▽ lights when lower than the set temperature.
▫ lights in green when the difference is within ±1% FS. (±0.25% FS for thermocouple / platinum resistance thermometer (universal input) models)
Flashes while self-tuning or auto-tuning is being performed.

**Mode indicators**

SP lights while the set temperature is being displayed. ALM lights while the alarm value 1 is being displayed and flashes while the alarm value 2 is being displayed.

**Mode Key**

After the power is turned ON, the parameter is changed each time this Key is pressed (in the order shown below).





**Temperature display**

The parameter is changed each time the Key is pressed.

**Output indicator**

Lights when the control output function is ON.

**Alarm indicators**

ALM1: Lights when the alarm 1 function is ON.
ALM2: Lights when the alarm 2 function is ON.

**Up Key**

Each press of this key increments the set temperature / alarm value. Holding this key down speeds up the incrementation.
When the protect switch is ON, press this Key while holding down the Lock Release Key.

**Down Key**

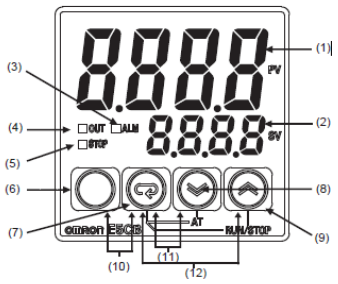
Each press of this key decrements the set temperature / alarm value. Holding this key down speeds up the decrementation.
When the protect switch is ON, press this Key while holding down the Lock Release Key.

**Lock Release Key**

When the protect switch is ON, the set value can be changed by pressing the Up and Down Keys while holding down this Key.

### Recommended replacement
### E5CB series

**E5CB**




| | | | |
|---|---|---|---|
| (1) Display No. 1 | Displays the process value (PV) or parameter. | (10) + | Press these keys for at least 3 seconds in Operation Level or Adjustment Level to go to Protect Level.<br>Press these keys for at least 1 second in Protect Level to return to Operation Level. |
| (2) Display No. 2 | Displays the set point (SP) or parameter setting. | | |
| (3) ALM | Lit while the alarm is ON. Not lit while the alarm is OFF. | | |
| (4) OUT | Lit while the control output is ON.<br>Not lit while the control output is OFF. | (11) + | Press these keys for at least 2 seconds to start or stop autotuning.*1 |
| (5) STOP | Not lit during operation. Lit while operation is stopped. | (12) + | Press these keys for at least 2 seconds to start or stop operation.*2 |
| (6) | Level Key: Changes the setting level. | | |
| (7) | Mode Key: Changes the parameter within the setting level. | *1: These keys are disabled when starting and stopping autotuning has been disabled with operation control key protection. | |
| (8) | Down Key: Reduces the setting. | *2: These keys are disabled when starting and stopping operation has been disabled with operation control key protection. | |
| (9) | Up Key: Increases the setting. | | |

Specifications and prices in this product news are as of the issue date and are subject to change without notice.
Only main changes in specifications are described in this document. Please be sure to read the relevant catalogs, datasheets, product specifications, instructions, and manuals for precautions and necessary information when using products.