OMRON

PRODUCT NEWS

Product Discontinuation Notices

Issue Date
***** **, 2024**

Product Discontinuation	Recommended Replacement
Temperature Controllers	Temperature Controllers
E5AN-HT series **E5EN-HT series** **E5CN-HT series**	**E5AC-T series** **E5EC-T series** **E5CC-T series**

[Final order entry date]

The end of March, 2025

[Date of The Last Shipping]

The end of June, 2025

[Caution on recommended replacement]

- The rated current of the auxiliary output relay will be changed from the discontinued product: 3A to the recommended replacement product: 2A.
- Regarding control output, discontinued products required customers to purchase optional output units separately and combine them to achieve the output specifications, but recommended replacement products are sold with the necessary control output installed at the time of purchase. It becomes. For this reason, please select the model that corresponds to the control output you are currently using from the recommended alternative models. Please note that if you are using some output units, there are no recommended replacements. Please see the list of recommended replacement products for details.
- Analog input scaling will be changed from discontinued product: -19999 to 30000 to recommended replacement product: -1999 to 9999.
- The PID setting range differs between discontinued products and recommended replacement products. For details, please see the "Performance" section of the main text.
- The alarm setting range will be changed from -19999 to 32400 for discontinued products to -1999 to 9999 for recommended replacement products.

[Difference from discontinued product]

Recommended replacement Model	Body Color	Dimen-sions	Wire connection	Mounting Dimensions	Charac-teristics	Operation ratings	Operation methods
E5AC-T series	**	*	**	**	*	**	*
E5EC-T series	**	*	**	**	*	**	*
E5CC-T series	**	*	**	**	*	**	*

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

[Product Discontinuation and recommended replacement]

The (1) "[][]" part of the E5AC-T series and E5EC-T series is the control output specification. Please refer to the following and select the output specification and format.

E5EC-T□□ 4 □ 5 M-□□□ (Example: E5EC-TRX4A5M-000)
(1) (2) (3) (4) (5) (6)

E5AC-T□□ 4 □ 5 M-□□□ (Example: E5AC-TRX4A5M-000)
(1) (2) (3) (4) (5) (6)

Model	(1) Control outputs 1 and 2	(2) No. of auxiliary outputs	(3) Power supply voltage	(4) Terminal type	(5) Input type	(6) Options	Meaning	
E5EC-T							48 × 96 mm Programmable Type	
E5AC-T							96 × 96 mm Programmable Type	
							Control output 1	Control output 2
	RX						Relay output	None
	QX						Voltage output (for driving SSR)	None
✻2	CX						Linear current output	None
	QQ						Voltage output (for driving SSR)	Voltage output (for driving SSR)
	QR						Voltage output (for driving SSR)	Relay output
	RR						Relay output	Relay output
✻2	CC						Linear current output	Linear current output
✻2	CQ						Linear current output	Voltage output (for driving SSR)
	PR						Position-proportional relay output	Position-proportional relay output
		4					4 (auxiliary outputs 1 and 2 with same common and auxiliary outputs 3 and 4 with same common)	
			A				100 to 240 VAC	
			D				24 VAC/DC	
				5			Screw terminal blocks (with cover)	
					M		Universal input	

Option selection conditions ✻1	Control outputs 1 and 2: For RX, QX, QQ, QR, RR, or CQ	Control outputs 1 and 2: For CX or CC	Control outputs 1 and 2: For PR			HB alarm and HS alarm	Communications	Event inputs	Transfer output
	Selectable	Selectable	Selectable		000	---	---	---	---
		Selectable	Selectable		004	---	RS-485	2	---
		Selectable			005	---	---	4	---
	Selectable				008	1	RS-485	2	---
	Selectable				010	1	---	4	---
	Selectable				019	1	---	6	Provided.
		Selectable			021	---	---	6	Provided.
		Selectable	Selectable		022	---	RS-485	4	Provided.

✻1. The options that can be selected depend on the type of control output.
✻2. The linear current output cannot be used as a transfer output.

Product discontinuation	Recommended replacement
E5AN-HTAA2HBM-500 AC100-240 *	E5AC-T□□4A5M-008
E5AN-HTAA2HBMD-500 AC/DC24 *	E5AC-T□□4D5M-008
E5AN-HTAA2HHBFM-500 AC100-240 *	E5AC-T□□4A5M-008 or E5AC-T□□4A5M-019
E5AN-HTAA2HHBFMD-500 AC/DC24 *	E5AC-T□□4D5M-008 or E5AC-T□□4D5M-019
E5AN-HTAA3BFM-500 AC100-240 *	E5AC-T□□4A5M-019
E5AN-HTAA3BFMD-500 AC/DC24 *	E5AC-T□□4D5M-019
E5CN-HTC2M-500 AC100-240	E5CC-TCX3A5M-000
E5CN-HTC2MD-500 AC/DC24	E5CC-TCX3D5M-000
E5CN-HTQ2M-500 AC100-240	E5CC-TQX3A5M-000
E5CN-HTQ2MD-500 AC/DC24	E5CC-TQX3D5M-000
E5CN-HTR2M-500 AC100-240	E5CC-TRX3A5M-000
E5CN-HTR2MD-500 AC/DC24	E5CC-TRX3D5M-000
E5CN-HTV2M-500 AC100-240	No recommended replacement
E5CN-HTV2MD-500 AC/DC24	No recommended replacement
E5EN-HTAA2HBM-500 AC100-240 *	E5EC-T□□4A5M-008
E5EN-HTAA2HBMD-500 AC/DC24 *	E5EC-T□□4D5M-008

Product discontinuation	Recommended replacement
E5EN-HTAA2HHBFM-500 AC100-240 *	E5EC-T□□4A5M-008 or E5EC-T□□4A5M-019
E5EN-HTAA2HHBFMD-500 AC/DC24 *	E5EC-T□□4D5M-008 or E5EC-T□□4D5M-019
E5EN-HTAA3BFM-500 AC100-240 *	E5EC-T□□4A5M-019
E5EN-HTAA3BFMD-500 AC/DC24 *	E5EC-T□□4D5M-019

＊：If you are using E53-V34N or E53-V35N as the output unit, there are no recommended replacements. note that.

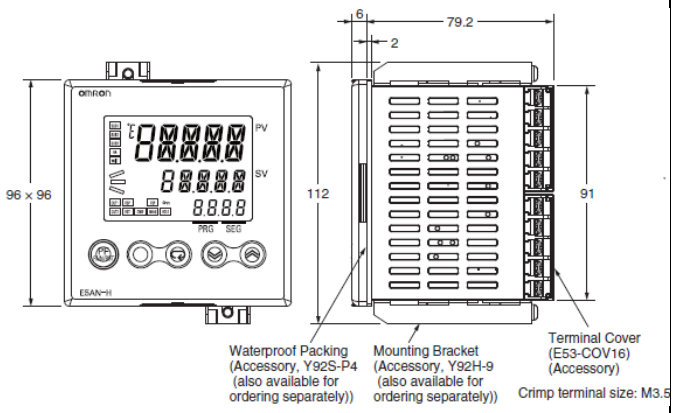
[Body color]

Product discontinuation E5[]N-HT series	Recommendable replacement E5[]C-T series
Case color E5AN-HT Black E5EN-HT Black E5CN-HT Black 	**Case color** E5AC-T Black E5EC-T Black E5CC-T Black

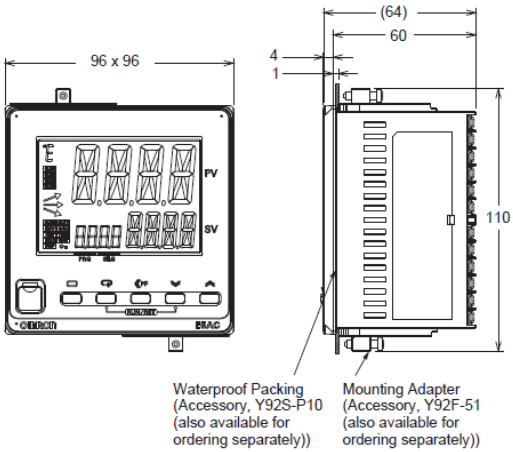
[Dimensions]

Product discontinuation E5[]N-HT series	Recommendable replacement E5[]C-T series

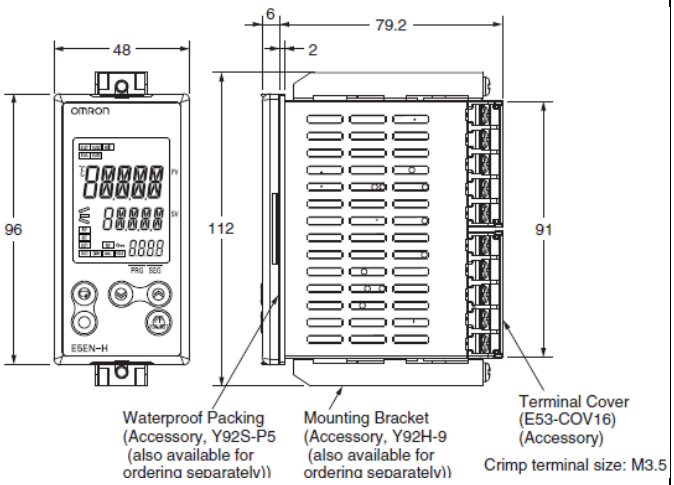
E5AN-HT



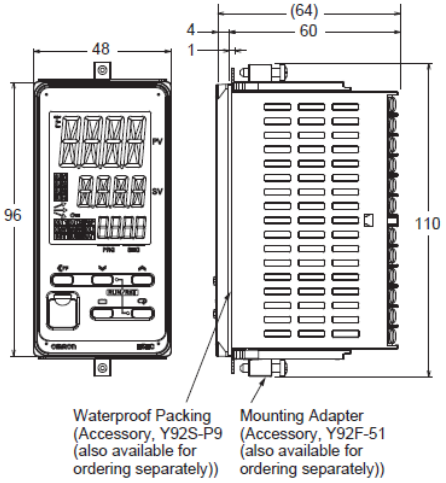
E5AC-T



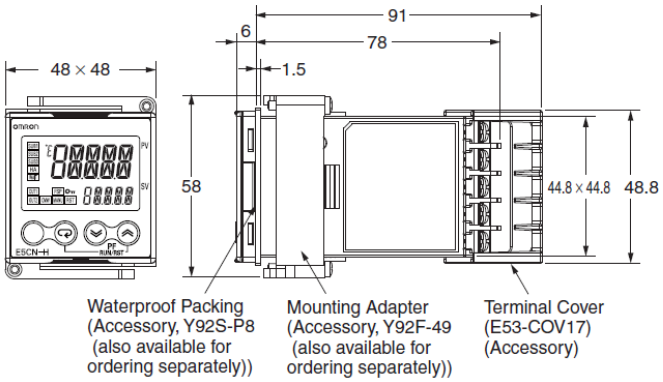
E5EN-HT



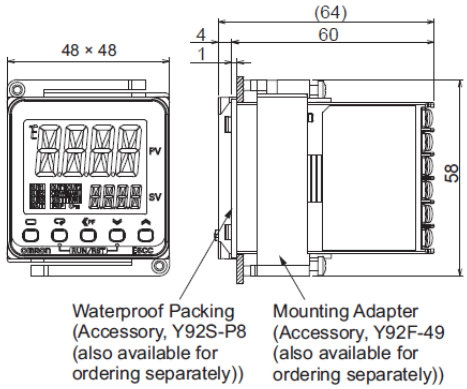
E5EC-T



E5CN-HT



E5CC-T



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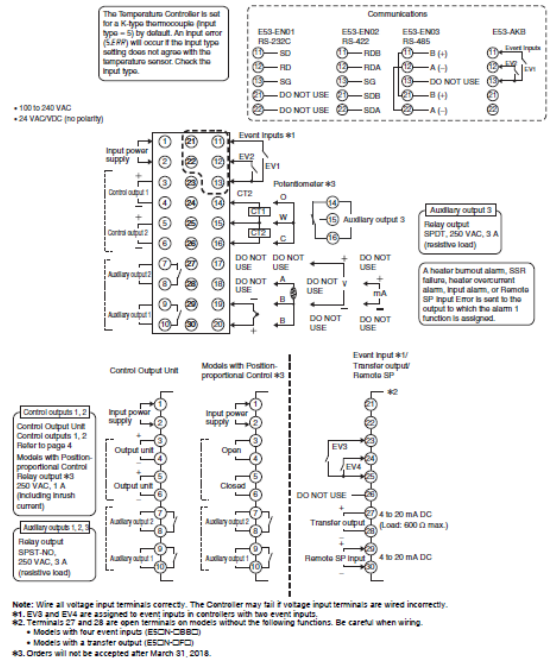
[Terminal arrangement / Wire connection]

Product discontinuation E5EN-H series	Recommendable replacement E5EC series

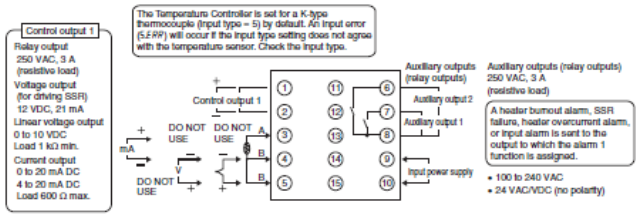
E5AN-HT
E5EN-HT



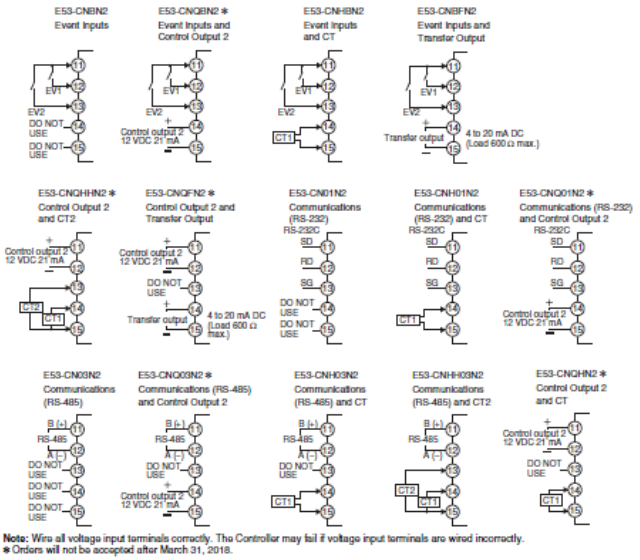
Note: Wire all voltage input terminals correctly. The Controller may fail if voltage input terminals are wired incorrectly.
※1. EV3 and EV4 are assigned to event inputs in controllers with two event inputs.
※2. Terminals 27 and 28 are open terminals on models without the following functions. Be careful when wiring.
- Models with four event inputs (E5CN-C8BC)
- Models with a transfer output (E5CN-CFC)

※3. Orders will not be accepted after March 31, 2018.

E5CN-HT



Option Units



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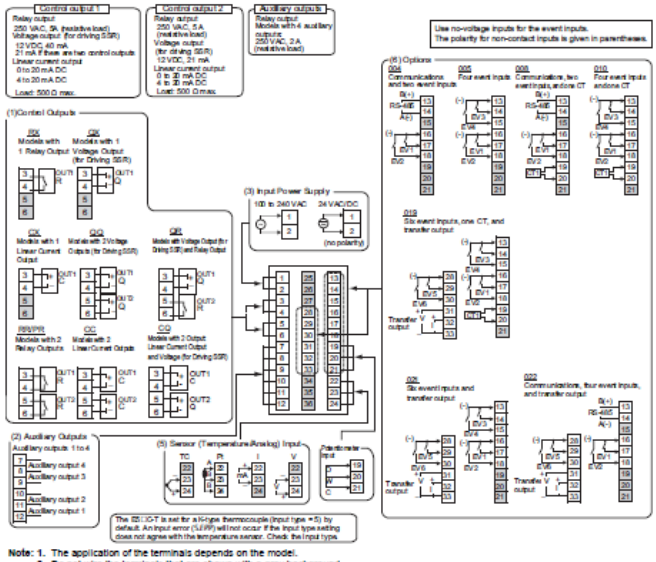
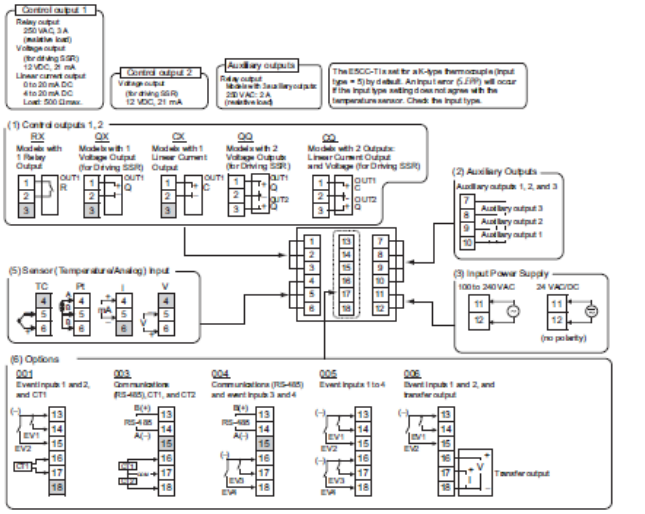
E5AC-T
E5EC-T



Note: 1. The application of the terminals depends on the model.
2. Do not wire the terminals that are shown with a gray background.
3. When complying with EMC standards, the cable that connects the sensor must be 30 m or less. If the cable length exceeds 30 m, compliance with EMC standards will not be possible.
4. Connect M3 crimped terminals.
5. Due to UL Listing requirements, use the E54-CT1L or E54-CT3L Current Transformer with the factory wiring (internal wiring). Use a UL category XOBA or XOBA7 current transformer that is UL Listed for field wiring (external wiring) and not the factory wiring (internal wiring).

E5CC-T



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[Ratings]

<table>
<tr><th colspan="2">Item</th><th>Product discontinuation
E5AN-HT,E5EN-HT series</th><th>Recommendable replacement
E5AC-T ／ E5EC-T series</th></tr>
<tr><td colspan="2">Power supply voltage</td><td>100 to 240 VAC, 50/60 Hz
24 VAC, 50/60 Hz; 24 VDC</td><td>←</td></tr>
<tr><td colspan="2">Operating voltage range</td><td>85% to 110% of rated supply voltage</td><td>←</td></tr>
<tr><td colspan="2">Power consumption</td><td>100 to 240 VAC: 12 VA
24 VAC/VDC: 8.5 VA (24 VAC)/5.5 W (24 VDC)</td><td>E5AC-T：
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
E5EC-T：
8.7 VA max.
at 100 to 240 VAC, and 5.5 VA max.
at 24 VAC or 3.2 W max. at 24 VDC</td></tr>
<tr><td colspan="2">input</td><td>Thermocouple: K, J, T, E, L, U, N, R, S, B, W, or PL II
Platinum resistance thermometer: Pt100 or JPt100
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</td><td>Thermocouple: K, J, T, E, L, U, N, R, S, B, C/W, or PL II
Platinum resistance thermometer: Pt100 or JPt100
Infrared temperature sensor (ES1B): 10 to 70°C, 60 to 120°C, 115 to 165°C, or 140 to 260°C

Analog input
Current input:
4 to 20 mA or 0 to 20 mA
Voltage input:
1 to 5 V, 0 to 5 V, or 0 to 10 V</td></tr>
<tr><td colspan="2">Input impedance</td><td>Current input: 150 Ω max.,
Voltage input: 1 MΩ min.</td><td>←</td></tr>
<tr><td colspan="2">Control method</td><td>ON/OFF control or 2-PID control (with auto-tuning)</td><td>←</td></tr>
<tr><td rowspan="4">Control output</td><td>Relay output</td><td rowspan="4">Output Unit
<table><tr><th>Output unit</th><th>Model</th><th>Specifications</th></tr><tr><td>Relay output</td><td>E53-RN</td><td>SPST-NO, 250 VAC, 5 A (resistive load), electrical life: 100,000 operations</td></tr><tr><td rowspan="4">Voltage output (for driving SSR)</td><td>E53-QN</td><td>12 VDC (PNP), max. load current: 40-mA, with short-circuit protection</td></tr><tr><td>E53-Q3</td><td>24 VDC (NPN), max. load current: 20-mA, with short-circuit protection</td></tr><tr><td>E53-Q4</td><td>24 VDC (PNP), max. load current: 20-mA, with short-circuit protection</td></tr><tr><td rowspan="2">Current output</td><td>E53-C3N</td><td>4 to 20-mA DC, load: 600 Ω max., resolution: approx. 10,000</td></tr><tr><td>E53-C3DN</td><td>0 to 20-mA DC, load: 600 Ω max., resolution: approx. 10,000</td></tr><tr><td rowspan="2">Linear voltage output</td><td>E53-V34N</td><td>0 to 10 VDC, load: 1 kΩ min., resolution: approx. 10,000</td></tr><tr><td>E53-V35N</td><td>0 to 5 VDC, load: 1 kΩ min., resolution: approx. 10,000</td></tr></table></td><td>SPST-NO, 250 VAC, 5 A (resistive load), electrical life: 100,000 operations,
minimum applicable load: 5 V, 10 mA (reference value)</td></tr>
<tr><td>Voltage output (for driving SSR)</td><td>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.)</td></tr>
<tr><td>Current output</td><td>4 to 20 mA DC/0 to 20 mA DC, load: 500 Ω max., resolution: approx. 10,000</td></tr>
<tr><td>Linear voltage output</td><td>—</td></tr>
</table>

Auxiliary output	**Number of outputs**	2 or 3 max.	4
	Output specifications	Relay output: SPST-NO, 250 VAC, 3 A (resistive load), electrical life: 100,000 operations, minimum applicable load: 5 V,10 mA	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 outputs**	2 or 4 (with an E53-AKB)	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	←
Logic operations	**Number of operations**	8 max.	←
	Operations	Logic operation: Any of the following four patterns can be selected. The input status may be inverted. (A and B) or (C and D), (A or C) and (B or D), A or B or C or D, A and B and C and D (A, B, C, and D are four inputs.) Delay: ON delay or OFF delay for the results of the logic operation given above. Setting time: 0 to 9999 s or 0 to 9999 min Output inversion: Possible	←
	Output	One work bit per operation	←
	Work bit assignment	Any of The following can be assigned to up to eight work bits (logic operation results): operation commands (assigned to event inputs) *, auxiliary outputs, or control outputs.	←
Transfer outputs		1 max. (Depends on model. Models with transfer output (F in model number) Current output: 4 to 20 mA DC, Load: 600 Ω max., Resolution at 4 to 20 mA: Approx. 10,000	1 (only on models with a transfer output) Current output: 4 to 20 mA DC, Load: 500 Ω max., Resolution: Approx. 10,000 Linear voltage output: 1 to 5 VDC, load: 1 kΩ min., Resolution: Approx. 10,000
RSP input	**Number of inputs**	1	—
	Signal type	Current input: 4 to 20 mA (input impedance: 150 Ω ±10%)	—
	Analog input scaling	1 max. (Depends on model. Models with transfer output (F in model number) Current output: 4 to 20 mA DC, Load: 600 Ω max., Resolution at 4 to 20 mA: Approx. 10,000	—

	Accuracy	(±0.2% of FS) ±1 digit max.	—
	Input sampling period	60ms	—
Setting method		Set digitally using keys on the front panel or by using the RSP input.	Digital setting using front panel keys
Indication method		11-segment digital display and individual indicators (7-segments displays also possible) Character height: E5AN-HT: PV: 15.8 mm, SV: 9.5 mm, MV: 6.8 mm; E5EN-HT: PV: 11.8 mm, SV: 8.1 mm, MV: 5.8 mm Three displays: PV/SV/Program number/Segment number, PV/SV/MV, or PV/SV/Remaining segment time. Number of digits: 5 for PV and SV, 4 for MV	11-segment digital display and individual indicators Character height: E5EC-T: PV: 18.0 mm, SV: 11.0 mm, MV: 7.8 mm E5AC-T: PV: 25.0 mm, SV: 15.0 mm, MV: 9.5 mm Three displays. Contents: PV, SP, program No. and segment No., remaining segment time, or MV (valve opening) Numbers of digits: 4 digits
Ambient operating temperature		−10 to 55°C (with no condensation or icing), for 3-year warranty: −10 to 50°C	←
Ambient operating humidity		25% to 85%	←

Item		**Product discontinuation E5CN-HT series**	**Recommendable replacement E5CC-T series**
Power supply voltage		100 to 240 VAC, 50/60 Hz 24 VAC, 50/60 Hz; 24 VDC	←
Operating voltage range		85% to 110% of rated supply voltage	←
Power consumption		100 to 240 VAC: 8.5 VA (max.) (E5CN-HTR2 at 100 VAC: 3.0 VA) 24 VAC/VDC: 5.5 VA (24 VAC)/3.5 W (24 VDC) (max.) (E5CN-HTR2D at 24 VAC: 2.7 VA)	7.5 VA max. at 100 to 240 VAC, and 4.1 VA max. at 24 VAC or 2.3 W max. at 24 VDC
input		Thermocouple: K, J, T, E, L, U, N, R, S, B, W, or PL II Platinum resistance thermometer: Pt100 or JPt100 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	Thermocouple: K, J, T, E, L, U, N, R, S, B, C/W, or PL II Platinum resistance thermometer: Pt100 or JPt100 Infrared temperature sensor (ES1B): 10 to 70°C, 60 to 120°C, 115 to 165°C, or 140 to 260°C Analog input Current input: 4 to 20 mA or 0 to 20 mA Voltage input: 1 to 5 V, 0 to 5 V, or 0 to 10 V
Input impedance		Current input: 150 Ω max., Voltage input: 1 MΩmin.	←
Control method		ON/OFF control or 2-PID control (with auto-tuning)	←
Control output	**Relay output**	SPST-NO, 250 VAC, 3 A (resistive load), electrical life: 100,000 operations, minimum applicable load: 5 V, 10 mA	←
	Voltage output (for driving SSR)	—	Output voltage: 12 VDC ±20% (PNP), max. load current: 21 mA, with short-circuit protection circuit

	Current output	4 to 20 mA DC/0 to 20 mA DC, load: 600 Ω max., resolution: approx. 10,000	4 to 20 mA DC/0 to 20 mA DC, load: 500 Ω max., resolution: approx. 10,000
	Linear voltage	0 to 10 VDC (load: 1 kΩ min.), Resolution: Approx. 10,000	―
Auxiliary output	**Number of outputs**	2 max.	3
	Output specifications	Relay output: SPST-NO, 250 VAC, 3 A (resistive load), electrical life: 100,000 operations, minimum applicable load: 5 V, 10 mA	SPST-NO relay outputs, 250 VAC, Models with 3 outputs: 2 A (resistive load), Electrical life: 100,000 operations, Minimum applicable load: 10 mA at 5 V (reference value)
Event input	**Number of outputs**	2	2 or 4 (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	←
Logic operations	**Number of operations**	8 max.	←
	Operations	Logic operation: Any of the following four patterns can be selected. The input status may be inverted. (A and B) or (C and D), (A or C) and (B or D), A or B or C or D, A and B and C and D (A, B,C, and D are four inputs.) Delay: ON delay or OFF delay for the results of the logic operation given above. Setting time: 0 to 9999 s or 0 to 9999 min Output inversion: Possible	←
	Output	One work bit per operation	←
	Work bit assignments	Any of the following can be assigned to up to eight work bits (logic operation results): Operation commands(assigned to event inputs) *, auxiliary outputs, or control outputs.	←
Transfer outputs		1 max. Current output: 4 to 20 mA DC, Load: 600 Ω max., Resolution at 4 to 20 mA: Approx. 10,000	1 (only on models with a transfer output) Current output: 4 to 20 mA DC, load: 500 Ω max., resolution: approx. 10,000 Linear voltage output: 1 to 5 VDC, load: 1 kΩ min., resolution: Approx. 10,000
Setting method		Digital setting using front panel keys	Digital setting using front panel keys

indication method	11-segment digital display and individual indicators (7-segments displays also possible) Character height: PV: 11 mm, SV: 6.5 mm	11-segment digital display and individual indicators Character height: PV: 15.2 mm, SV: 7.1 mm
RSP input	Not supported	—
Ambient operating temperature	-10 to 55°C (with no condensation or icing), for 3-year warranty: −10 to 50°C	←
Ambient operating humidity	25% to 85%	←

[Characteristics]

Item	Product discontinuation E5AN-HT ／ E5EN-HT series	Recommendable replacement E5AC-T ／ E5EC-T series
Indication accuracy	Thermocouple: (±0.1% of indicated value or ±1° C, whichever is greater) ±1 digit max. Platinum resistance thermometer: (±0.1% of indicated value or ± 0.5°C, whichever is greater) ±1 digit max. Analog input: ±0.1% FS ±1 digit max. CT input: ±5% FS ±1 digit max. Potentiometer input: ±5% FS ±1 digit max.	Thermocouple: (±0.3% of indication value or ±1°C, whichever is greater) ±1 digit max. 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.
Transfer output accuracy	±0.3% FS max.	←
Influence of temperature	Thermocouple input (R, S, B, W, PL II): (±1% of PV or ±10°C, whichever is greater) ±1 digit max. Other thermocouple input: (±1% of PV or ±4°C, whichever is greater) ±1 digit max. Platinum resistance thermometer: (±1% of PV or ±2°C, whichever is greater) ±1 digit max. Analog input: (±1%FS) ±1 digit max.	Thermocouple input (R, S, B, C/W, PL II): (±1% of indication value or ±10°C, whichever is greater) ±1 digit max. Other thermocouple input: (±1% of indication value or ±4°C, whichever is greater) ±1 digit max. Platinum resistance thermometer: (±1% of indication value or ±2°C, whichever is greater) ±1 digit max. Analog input: ±1%FS ±1 digit max. CT input: ±5% FS ±1 digit max.
Influence of voltage		
Input sampling period	60ms	50ms
Hysteresis	Temperature input: 0.1 to 3240.0°C or °F (in units of 0.1°C or °F) Analog input: 0.01% to 99.99% FS (in units of 0.01% FS)	Temperature input: 0.1 to 999.9°C or °F (in units of 0.1°C or °F) Analog input: 0.01% to 99.99% FS (in units of 0.01% FS)
Proportional band (P)	Temperature input: 0.1 to 3240.0°C or °F (in units of 0.1°C or °F) Analog input: 0.1% to 999.9% FS (in units of 0.1% FS)	Temperature input: 0.1 to 999.9°C or °F (in units of 0.1°C or °F) Analog input: 0.1 to 999.9% FS (in units of 0.1% FS)
Integral time (I)	0.0 to 3240.0 s (in units of 0.1 s)	Standard, heating/cooling, or Position-proportional (Close): 0 to 9999 s (in units of 1 s), 0.0 to 999.9 s (in units of 0.1 s) Position-proportional (Floating): 1 to 9999 s (in units of 1 s), 0.1 to 999.9 s (in units of 0.1 s)

Derivative time (D)		0.0 to 3240.0 s (in units of 0.1 s)	0 to 9999 s (in units of 1 s), 0.0 to 999.9 s (in units of 0.1 s)
Proportional band (P) for cooling		—	Temperature input: 0.1 to 999.9°C or °F (in units of 0.1°C or °F) Analog input: 0.1 to 999.9% FS (in units of 0.1% FS)
Integral time (I) for cooling		—	0 to 9999 s (in units of 1 s), 0.0 to 999.9 s (in units of 0.1 s)
Derivative time (D) for cooling		—	0 to 9999 s (in units of 1 s), 0.0 to 999.9 s (in units of 0.1 s)
Control period		0.5, 1 to 99 s (in units of 1 s)	0.1, 0.2, 0.5, 1 to 99 s (in units of 1 s)
Manual reset value		0.0 to 100.0% (in units of 0.1%)	0.0 to 100.0% (in units of 0.1%)
Alarm setting range		-19999 to 32400 (decimal point position depends on input type)	-1999 to 9999 (decimal point position depends on input type)
Insulation resistance		20 MΩ min. (at 500 VDC)	←
Dielectric strength		2,300 VAC, 50 or 60 Hz for 1 min (between terminals with different charge)	3,000 VAC, 50/60 Hz for 1 min between terminals of different charge
Vibration resistance	**Malfunction**	10 to 55 Hz, 20 m/s2 for 10 min each in X, Y, and Z directions	←
	Destruction	10 to 55 Hz, 0.75-mm single amplitude for 2 hrs each in X, Y, and Z directions	←
Shock resistance	**Malfunction**	100 m/s2, 3 times each in X, Y, and Z directions	←
	Destruction	300 m/s2, 3 times each in X, Y, and Z directions	←
life (Relay output)	**Electrical**	100,000 operations min.	←
Memory protection		Non-volatile memory (number of writes: 1,000,000 times)	←
Weight		E5AN-HT Controller: Approx. 310 g, Mounting Bracket: Approx. 100 g E5EN-HT Controller: Approx. 260 g, Mounting Bracket: Approx. 100 g	E5EC-T Controller: Approx. 210 g, Mounting Adapter: Approx. 4 g x 2 E5AC-T Controller: Approx. 250 g, Mounting Adapter: Approx. 4 g x 2
Degree of protection		Front panel: IP66, Rear case: IP20, Terminals: IP00	←
Standards	**Approved standards**	UL 61010-1, CSA C22.2 No. 1010-1	cULus: UL 61010-1/CSA C22.2 No.61010-1, Korean wireless regulations (Radio law: KC Mark) (Some models only.)
	Conformed standards	EN 61010-1 (IEC 61010-1): Pollution level 2, overcurrent category II	EN 61010-1 (IEC 61010-1), RCM

EMC	EMI: EN 61326 Radiated Interference Electromagnetic Field Strength: EN 55011 Group 1, class A Noise Terminal Voltage: EN 55011 Group 1, class A EMS: EN 61326 ESD Immunity: EN 61000-4-2 Electromagnetic Field Immunity: EN 61000-4-3 Burst Noise Immunity: EN 61000-4-4 Conducted Disturbance Immunity: EN 61000-4-6 Surge Immunity: EN 61000-4-5 Power Frequency Magnetic Field Immunity: EN 61000-4-8 Voltage Dip/Interrupting Immunity: EN 61000-4-11	EMI EN 61326-1 Radiated Interference Electromagnetic Field Strength: EN 55011 Group 1, class A Noise Terminal Voltage: EN 55011 Group 1, class A EMS: EN 61326-1 ESD Immunity: EN 61000-4-2 Electromagnetic Field Immunity: EN 61000-4-3 Burst Noise Immunity: EN 61000-4-4 Conducted Disturbance Immunity: EN 61000-4-6 Surge Immunity: EN 61000-4-5 Voltage Dip/Interrupting Immunity: EN 61000-4-11

Item	Product discontinuation E5CN-HT series	Recommendable replacement E5CC-T series
Indication accuracy	Thermocouple: (±0.1% of indicated value or ±1° C, whichever is greater) ±1 digit max. Platinum resistance thermometer: (±0.1% of indicated value or ±0.5°C, whichever is greater) ±1 digit max. Analog input: ±0.1% 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. 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.
Transfer output accuracy	±0.3% FS max.	←
Influence of temperature	Thermocouple input (R, S, B, W, PLII): (±1% of PV or ±10°C, whichever is greater) ±1 digit max. Other thermocouple input: (±1% of PV or ±4° C, whichever is greater) ±1 digit max. Platinum resistance thermometer: (±1% of PV or ±2° C, whichever is greater) ±1 digit max. Analog input: (±1%FS) ±1 digit max.	Thermocouple input (R, S, B, C/W, PL II): (±1% of indication value or ±10°C, whichever is greater) ±1 digit max. Other thermocouple input: (±1% of indication value or ±4°C, whichever is greater) ±1 digit max. Platinum resistance thermometer: (±1% of indication value or ±2°C, whichever is greater) ±1 digit max. Analog input: ±1%FS ±1 digit max. CT input: ±5% FS ±1 digit max.
Influence of voltage		
Influence of EMS. (at EN 61326-1)		
Input sampling period	60ms	50ms
Hysteresis	0.0 to 3240.0 s (in units of 0.1 s)	Temperature input: 0.1 to 999.9°C or °F (in units of 0.1°C or °F) Analog input: 0.01% to 99.99% FS (in units of 0.01% FS)
Proportional band (P)	Temperature input: 0.1 to 3240.0°C or °F (in units of 0.1 °C or °F) Analog input: 0.1% to 999.9% FS (in units of 0.1% FS)	Temperature input: 0.1 to 999.9°C or °F (in units of 0.1°C or °F) Analog input: 0.1% to 999.9% FS (in units of 0.1% FS)
Integral time (I)	0.0 to 3240.0 s (in units of 0.1 s)	0 to 9999 s (in units of 1 s), 0.0 to 999.9 s (in units of 0.1 s)
Derivative time (D)	0.0 to 3240.0 s (in units of 0.1 s)	0 to 9999 s (in units of 1 s), 0.0 to 999.9 s (in units of 0.1 s)

Proportional band (P) for cooling		—	Temperature input: 0.1 to 999.9°C or °F (in units of 0.1°C or °F) Analog input: 0.1% to 999.9% FS (in units of 0.1% FS)）
Integral time (I) for cooling		—	0 to 9999 s (in units of 1 s), 0.0 to 999.9 s (in units of 0.1 s)
Derivative time (D) for cooling		—	0 to 9999 s (in units of 1 s), 0.0 to 999.9 s (in units of 0.1 s)
Control period		0.5, 1 to 99 s (in units of 1 s)	0.1, 0.2, 0.5, 1 to 99 s (in units of 1 s)
Manual reset value		0.0 to 100.0% (in units of 0.1%)	0.0 to 100.0% (in units of 0.1%)
Alarm setting range		-19999 to 32400 (decimal point position depends on input type)	-1999 to 9999 (decimal point position depends on input type)
Insulation resistance		20 MΩ min. (at 500 VDC)	←
Dielectric strength		2,300 VAC, 50 or 60 Hz for 1 min (between terminals with different charge)	3,000 VAC, 50/60 Hz for 1 min between terminals of different charge
Vibration resistance	**Malfunction**	10 to 55 Hz, 20 m/s2 for 10 min each in X, Y, and Z directions	←
	Destruction	10 to 55 Hz, 0.75-mm single amplitude for 2 hrs each in X, Y, and Z directions	←
Shock resistance	**Malfunction**	100 m/s2, 3 times each in X, Y, and Z directions	←
	Destruction	300 m/s2, 3 times each in X, Y, and Z directions	←
Life (Relay output)	**electrical:**	100,000 operations	←
Memory protection		Non-volatile memory (number of writes: 1,000,000 times)	←
Weight		Controller: Approx. 150 g, Mounting Bracket: Approx. 10 g	Controller: Approx. 120 g, Mounting Adapter: Approx. 10 g
Degree of protection		Front panel: IP66, Rear case: IP20, Terminals: IP00	←
Standards	**Approved standards**	UL 61010-1, CSA C22.2 No. 1010-1	cULus: UL 61010-1/CSA C22.2 No.61010-1, Korean wireless regulations (Radio law: KC Mark) (Some models only.)
	Conformed standards	EN 61010-1 (IEC 61010-1): Pollution level 2, overcurrent category II	EN 61010-1 (IEC 61010-1), RCM
EMC		EMI: EN 61326-1 Radiated Interference Electromagnetic Field Strength: EN 55011 Group 1, class A Noise Terminal Voltage: EN 55011 Group 1, class A EMS: EN 61326-1 ESD Immunity: EN 61000-4-2 Electromagnetic Field Immunity: EN 61000-4-3 Burst Noise Immunity: EN 61000-4-4 Conducted Disturbance Immunity: EN 61000-4-6 Surge Immunity: EN 61000-4-5 Power Frequency Magnetic Field Immunity: EN 61000-4-8 Voltage Dip/Interrupting Immunity: EN 61000-4-11	EMI: EN 61326-1 Radiated Interference Electromagnetic Field Strength: EN 55011 Group 1, class A Noise Terminal Voltage: EN 55011 Group 1, class A EMS: EN 61326-1 ESD Immunity: EN 61000-4-2 Electromagnetic Field Immunity: EN 61000-4-3 Burst Noise Immunity: EN 61000-4-4 Conducted Disturbance Immunity: EN 61000-4-6 Surge Immunity: EN 61000-4-5 Voltage Dip/Interrupting Immunity: EN 61000-4-11

[Program Control]

Item		Product discontinuation E5[]N-HT series	Recommendable replacement E5[]C-T series
Number of programs (patterns)		8	←
Number of segments (steps)		32	←
Segment setting method		Time setting (Segment set with set point and time.) Gradient setting (Segment type with set point, gradient, and time.)	←
Segment times		0 h 0 min to 99 h 59 min 0 min 0 s to 99 min 59 s	←
Alarm setting		Set separately for each program.	←
Reset operation		Select either stopping control or fixed SP operation.	←
Startup operation		Select continuing, resetting, manual operation, or run mode.	←
PID sets	**Number of sets**	8	←
	Setting method	Set separately for each program (automatic PID group selection also supported).）	←
Alarm SP function		Select from ramp SP and target SP.	←
Program status control	**Segment operation**	Advance, hold	Advance, segment jump, hold, and wait
	Program operation	Program repetitions and program links	←
Wait operation	**Wait method**	Waiting at segment ends	←
	Wait width setting	Same wait width setting for all programs	←
Time signals	**Number of outputs**	2	←
	Number of ON/OFF Operations	1 each per output	←
	Setting method	Set separately for each program.	←
Program status output		Program end output (pulse width can be set), run output, stage output	←
Program startup operation	**PV start**	Select from segment 1 set point, slope-priority PV start	←
	Standby	0 h 0 min to 99 h 59 min 0 day 0 h to 99 day 23h	←
Operation end operation		Select from resetting, continuing control at final set point, and fixed SP control.	←
Program SP shift		Same program SP shift for all programs	←

[Operating characteristics]

Product discontinuation
E5AN-HT,E5EN-HT series

Input Ranges

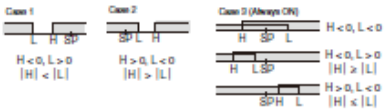
Input type	Platinum resistance thermometer						Thermocouple																Analog input				
Name	Pt100				JPt100		K			J			T			E	L	U		N	R	S	B	W	PL II	4 to 20 mA	0 to 20 mA	1 to 5 V	0 to 5 V	0 to 10 V
Temperature range (°C)	850.0 / -200.0	500.0 / -199.9	100.0 / 0.0	200.00 / -50.00	500.0 / -199.9	100.0 / 0.0	1300.0 / -200.0	500.0 / -20.0	200.00 / -50.00	850.0 / -100.0	400.0 / -20.0	200.00 / -50.00	400.0 / -200.0	400.0 / -199.9	200.00 / -50.00	600.0 / -200.0	850.0 / -100.0	400.0 / -200.0	400.0 / -199.9	1300.0 / -200.0	1700.0 / 0.0	1700.0 / 0.0	1800.0 / 100.0	2300.0 / 0.0	1300.0 / 0.0	Usable in the following ranges by scaling: –19999 to 32400, –1999.9 to 3240.0, –199.99 to 324.00, or –19.999 to 32.400				
Setting number	0	1	2	24	3	4	5	6	21	7	8	22	9	10	23	11	12	13	14	15	16	17	18	19	20	25	26	27	28	29

Alarm Outputs

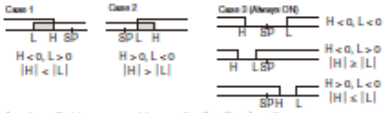
Set value	Alarm type	Alarm output operation: When alarm value X is positive	Alarm output operation: When alarm value X is negative	Description of function
0	Alarm function OFF	Output OFF		No alarm
1	Upper- and lower-limit ✻1		✻2	Set the deviation in the set point by setting the alarm upper limit (H) and alarm lower limit (L).
2	Upper-limit			Set the upward deviation in the set point by setting the alarm value (X).
3	Lower-limit			Set the downward deviation in the set point by setting the alarm value (X).
4	Upper- and lower-limit range ✻1		✻3	Set the deviation in the set point by setting the alarm upper limit (H) and alarm lower limit (L).
5	Upper- and lower-limit with standby sequence ✻1	✻5	✻4	A standby sequence is added to the upper- and lower-limit alarm (1). ✻7
6	Upper-limit with standby sequence			A standby sequence is added to the upper-limit alarm (2). ✻7
7	Lower-limit with standby sequence			A standby sequence is added to the lower-limit alarm (3). ✻7
8	Absolute-value upper-limit			The alarm will turn ON if the process value is larger than the alarm value (X) regardless of the set point.
9	Absolute-value lower-limit			The alarm will turn ON if the process value is smaller than the alarm value (X) regardless of the set point.
10	Absolute-value upper-limit with standby sequence			A standby sequence is added to the absolute-value upper-limit alarm (8). ✻7
11	Absolute-value lower-limit with standby sequence			A standby sequence is added to the absolute-value lower-limit alarm (9). ✻7
12	LBA (alarm 1 type only)	---		✻8
13	PV change rate alarm	---		✻9
14	RSP absolute value upper limit ✻6			The alarm turns ON when the remote SP (RSP) is larger than the alarm value (X). This alarm functions in both Local SP and Remote SP Modes.
15	RSP absolute value lower limit ✻6			The alarm turns ON when the remote SP (RSP) is smaller than the alarm value (X). This alarm functions in both Local SP and Remote SP Modes.

✻1. With set values 1, 4 and 5, the upper and lower limit values can be set independently for each alarm type, and are expressed as "L" and "H."

✻2. Set value: 1, Upper- and lower-limit alarm



✻3. Set value: 4, Upper- and lower-limit range



✻4. Set value: 5, Upper- and lower-limit with standby sequence
For Upper- and Lower-Limit Alarm Described Above
- Case 1 and 2
  Always OFF when the upper-limit and lower-limit hysteresis overlaps.
- Case 3: Always OFF

✻5. Set value: 5, Upper- and lower-limit with standby sequence
Always OFF when the upper-limit and lower-limit hysteresis overlaps.

✻6. Displayed when there is a remote SP input.

✻7. Refer to the *E5CN-HT/E5AN-HT/E5EN-HT Digital Controllers User's Manual* (Cat. No. H169) for information on the operation of the standby sequence.

✻8. Refer to the *E5CN-HT/E5AN-HT/E5EN-HT Digital Controllers User's Manual* (Cat. No. H169) for information on the loop burnout alarm (LBA).

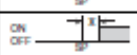
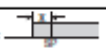
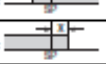
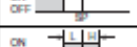
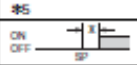
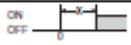
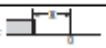
✻9. Refer to the *E5CN-HT/E5AN-HT/E5EN-HT Digital Controllers User's Manual* (Cat. No. H169) for information on the PV change rate alarm.

Product discontinuation
E5CN-HT series

Input Ranges

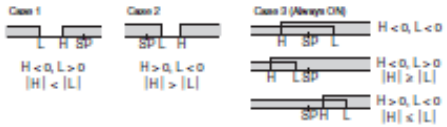
Input type	Platinum resistance thermometer						Thermocouple																Analog input				
Name	Pt100				JPt100		K			J			T			E	L	U		N	R	S	B	W	PL II	4 to 20 mA	0 to 20 mA	1 to 5 V	0 to 5 V	0 to 10 V
Temperature range (°C)	850.0 / -200.0	500.0 / -199.9	100.0 / 0.0	200.0 / -50.0	500.0 / -199.9	100.0 / 0.0	1300.0 / -200.0	500.0 / -20.0	200.0 / -50.0	850.0 / -100.0	400.0 / -20.0	200.0 / -50.0	400.0 / -200.0	400.0 / -199.9	200.0 / -50.0	600.0 / -200.0	850.0 / -100.0	400.0 / -200.0	400.0 / -199.9	1300.0 / -200.0	1700.0 / 0.0	1700.0 / 0.0	1800.0 / 100.0	2300.0 / 0.0	1300.0 / 0.0	Usable in the following ranges by scaling: −19999 to 32400, −1999.9 to 3240.0, −199.99 to 324.00, or −19.999 to 32.400				
Setting number	0	1	2	24	3	4	5	6	21	7	8	22	9	10	23	11	12	13	14	15	16	17	18	19	20	25	26	27	28	29

Alarm Outputs

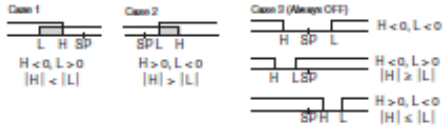
Set value	Alarm type	Alarm output operation: When alarm value X is positive	Alarm output operation: When alarm value X is negative	Description of function
0	Alarm function OFF	Output OFF		No alarm
1 ✻1	Upper- and lower-limit		✻2	Set the deviation in the set point by setting the alarm upper limit (H) and alarm lower limit (L).
2	Upper-limit			Set the upward deviation in the set point by setting the alarm value (X).
3	Lower-limit			Set the downward deviation in the set point by setting the alarm value (X).
4 ✻1	Upper- and lower-limit range		✻3	Set the deviation in the set point by setting the alarm upper limit (H) and alarm lower limit (L).
5 ✻1	Upper- and lower-limit with standby sequence	✻5	✻4	A standby sequence is added to the upper- and lower-limit alarm (1). ✻6
6	Upper-limit with standby sequence			A standby sequence is added to the upper-limit alarm (2). ✻6
7	Lower-limit with standby sequence			A standby sequence is added to the lower-limit alarm (3). ✻6
8	Absolute-value upper-limit			The alarm will turn ON if the process value is larger than the alarm value (X) regardless of the set point.
9	Absolute-value lower-limit			The alarm will turn ON if the process value is smaller than the alarm value (X) regardless of the set point.
10	Absolute-value upper-limit with standby sequence			A standby sequence is added to the absolute-value upper-limit alarm (8). ✻6
11	Absolute-value lower-limit with standby sequence			A standby sequence is added to the absolute-value lower-limit alarm (9). ✻6
12	LBA (alarm 1 type only)	---		✻7
13	PV change rate alarm	---		✻8

✻1. With set values 1, 4 and 5, the upper and lower limit values can be set independently for each alarm type, and are expressed as "L" and "H."

✻2. Set value: 1, Upper- and lower-limit alarm



✻3. Set value: 4, Upper- and lower-limit range



✻4. Set value: 5, Upper- and lower-limit with standby sequence
For Upper- and Lower-Limit Alarm Described Above

- Case 1 and 2
  Always OFF when the upper-limit and lower-limit hysteresis overlaps.
- Case 3: Always OFF

✻5. Set value: 5, Upper- and lower-limit with standby sequence
Always OFF when the upper-limit and lower-limit hysteresis overlaps.

✻6. Refer to the *E5CN-HT/E5AN-HT/E5EN-HT Digital Controllers User's Manual* (Cat. No. H169) for information on the operation of the standby sequence.

✻7. Refer to the *E5CN-HT/E5AN-HT/E5EN-HT Digital Controllers User's Manual* (Cat. No. H169) for information on the loop burnout alarm (LBA).

✻8. Refer to the *E5CN-HT/E5AN-HT/E5EN-HT Digital Controllers User's Manual* (Cat. No. H169) for information on the PV change rate alarm.

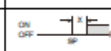
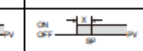
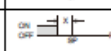
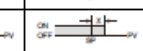
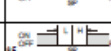
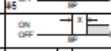
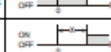
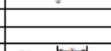
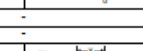
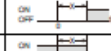
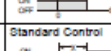
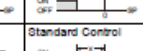
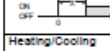
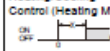
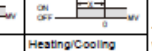
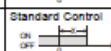
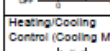
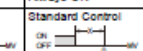
Recommendable replacement
E5[]C-T series

Input Ranges

Sensor type	Platinum resistance thermometer					Thermocouple													Infrared temperature sensor			
Sensor specification	Pt100			JPt100		K		J		T		E	L	U		N	R	S	B	C/W	PLII	10 to 70°C	60 to 120°C	115 to 165°C	140 to 260°C
Set value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Temperature range (°C)	850	500.0	100.0	500.0	100.0	1300	500.0	850	400.0	400	400.0	600	850	400	400.0	1300	1700	1700	1800	2300	1300	90	120	165	260
	0.0				0.0		-20.0	-100	-20.0				-100				0	0	100	0	0	0	0	0	0
	-200	-199.9		199.9		-200				-200	-199.9	-200		-200	-199.9	-200									

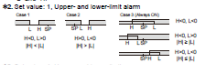
Input type	Current		Voltage		
Input specification	4 to 20 mA	0 to 20 mA	1 to 5 V	0 to 5 V	0 to 10 V
Setting range	Usable in the following ranges by scaling: -1999 to 9999, -199.9 to 999.9, -19.99 to 99.99 or -1.999 to 9.999				
Set value	25	26	27	28	29

Alarm Outputs

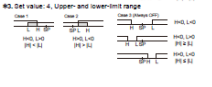
Set value	Alarm type	Alarm output operation: When alarm value X is positive	Alarm output operation: When alarm value X is negative	Description of function
0	Alarm function OFF	Output OFF		No alarm
1	Upper- and lower-limit ✻1		✻2	Set the upward deviation in the set point for the alarm upper limit (H) and the lower deviation in the set point for the alarm lower limit (L). The alarm is ON when the PV is outside this deviation range.
2 (default)	Upper-limit			Set the upward deviation in the set point by setting the alarm value (X). The alarm is ON when the PV is higher than the SP by the deviation or more.
3	Lower-limit			Set the downward deviation in the set point by setting the alarm value (X). The alarm is ON when the PV is lower than the SP by the deviation or more.
4	Upper- and lower-limit range ✻1		✻3	Set the upward deviation in the set point for the alarm upper limit (H) and the lower deviation in the set point for the alarm lower limit (L). The alarm is ON when the PV is inside this deviation range.
5	Upper- and lower-limit with standby sequence ✻1	 ✻5	✻4	A standby sequence is added to the upper- and lower-limit alarm (1). ✻6
6	Upper-limit with standby sequence			A standby sequence is added to the upper-limit alarm (2). ✻6
7	Lower-limit with standby sequence			A standby sequence is added to the lower-limit alarm (3). ✻6
8	Absolute-value upper-limit			The alarm will turn ON if the process value is larger than the alarm value (X) regardless of the set point.
9	Absolute-value lower-limit			The alarm will turn ON if the process value is smaller than the alarm value (X) regardless of the set point.
10	Absolute-value upper-limit with standby sequence			A standby sequence is added to the absolute-value upper-limit alarm (8). ✻6
11	Absolute-value lower-limit with standby sequence			A standby sequence is added to the absolute-value lower-limit alarm (9). ✻6
12	LBA (alarm 1 type only)	-		✻7
13	PV change rate alarm	-		✻8
14	SP absolute-value upper-limit alarm			This alarm type turns ON the alarm when the set point (SP) is higher than the alarm value (X).
15	SP absolute-value lower-limit alarm			This alarm type turns ON the alarm when the set point (SP) is lower than the alarm value (X).
16	MV absolute-value upper-limit alarm ✻9	Standard Control  Heating/Cooling Control (Heating MV) 	Standard Control  Heating/Cooling Control (Heating MV) Always ON	This alarm type turns ON the alarm when the manipulated variable (MV) is higher than the alarm value (X).
17	MV absolute-value lower-limit alarm ✻9	Standard Control  Heating/Cooling Control (Cooling MV) 	Standard Control  Heating/Cooling Control (Cooling MV) Always ON	This alarm type turns ON the alarm when the manipulated variable (MV) is lower than the alarm value (X).

✻1. With set values 1, 4 and 5, the upper and lower limit values can be set independently for each alarm type, and are expressed as "L" and "+L".

✻2. Set value: 1, Upper- and lower-limit alarm



✻3. Set value: 4, Upper- and lower-limit range



✻4. Set value: 5, Upper- and lower-limit with standby sequence
- For Upper- and Lower-Limit Alarm Described Above *2
- Case 1 and 2
  Always OFF when the upper-limit and lower-limit hysteresis overlaps.
- Case 3: Always OFF

✻5. Set value: 5, Upper- and lower-limit with standby sequence
Always OFF when the upper-limit and lower-limit hysteresis overlaps.

✻6. Refer to the *E5CD-T Digital Temperature Controllers Programmable Type User's Manual* (Cat. No. H185) for information on the operation of the standby sequence.

✻7. Refer to the *E5CD-T Digital Temperature Controllers Programmable Type User's Manual* (Cat. No. H185) for information on the loop burnout alarm (LBA).

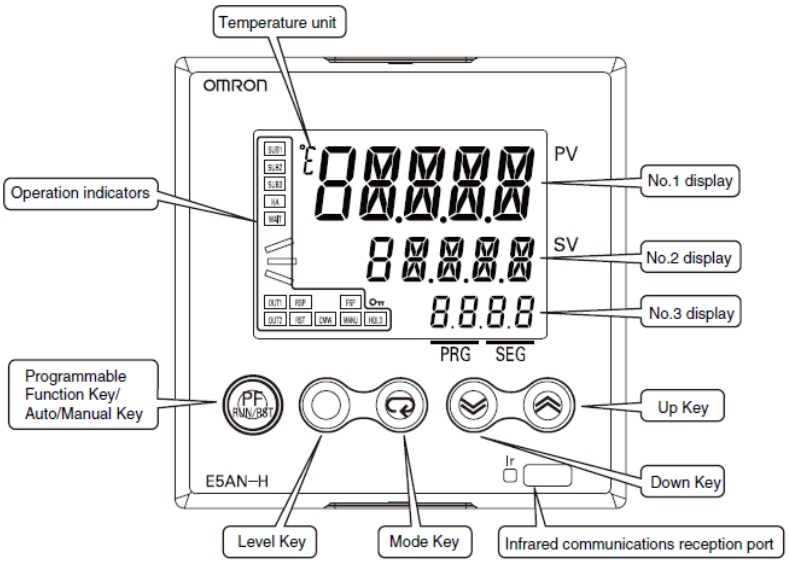
✻8. Refer to the *E5CD-T Digital Temperature Controllers Programmable Type User's Manual* (Cat. No. H185) for information on the PV change rate alarm.

✻9. When heating/cooling control is performed, the MV absolute upper limit alarm functions only for the heating operation and the MV absolute lower limit alarm functions only for the cooling operation.

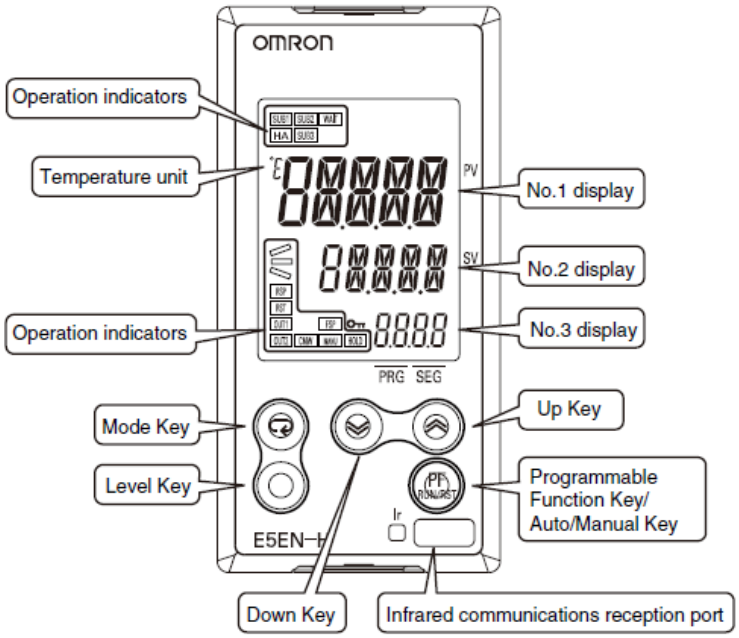
[Operation methods]

Product discontinuation
E5[]C-T series

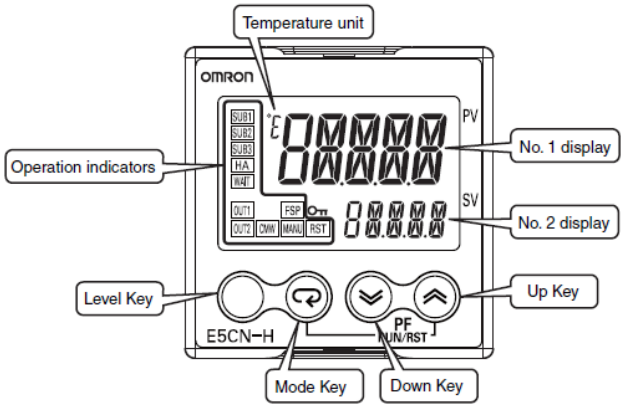
E5AC-T series



E5EN-HT series

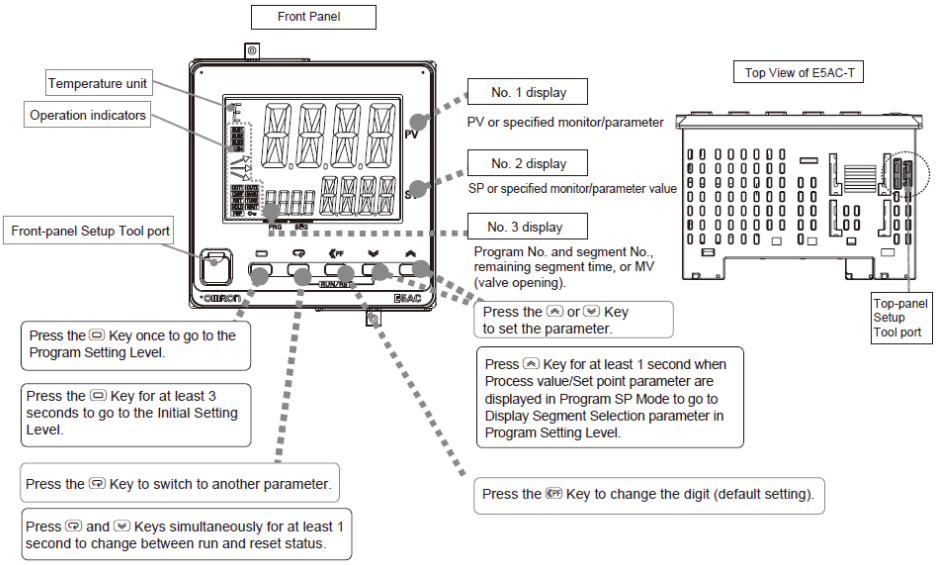


E5CN-HT series

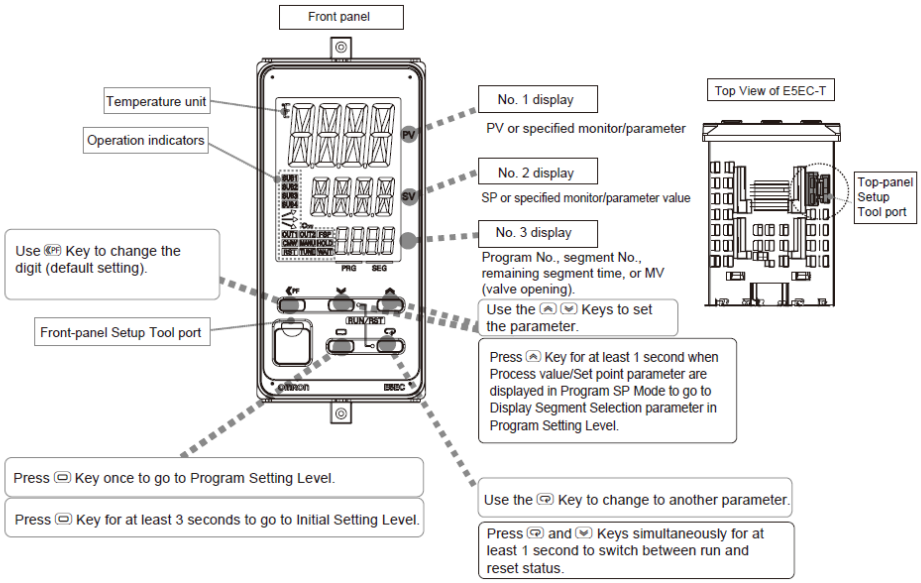


Recommendable replacement
E5[]C-T series

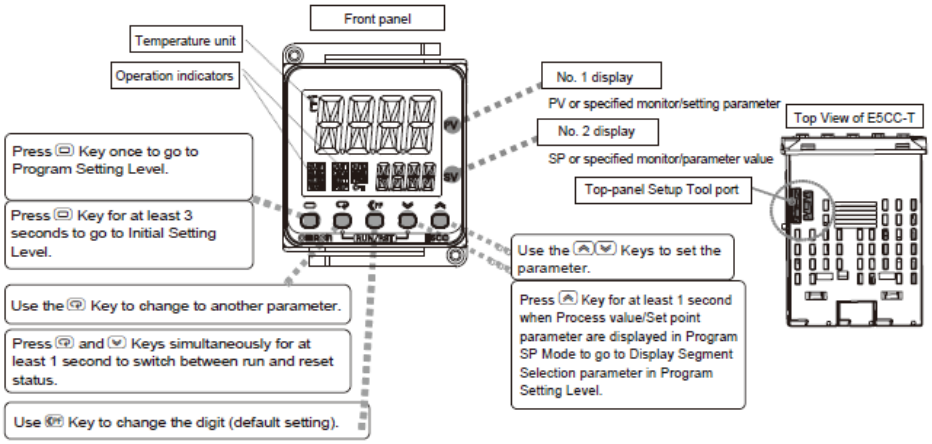
E5AC-T series



E5EC-T series



E5CC-T series



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.