Product Discontinuation Notices

Product Discontinuation	Recommended Replacement
Temperature Controllers	Temperature Controllers
E5AN-HPRR series **E5EN-HPRR series**	**E5AC-PR series** **E5EC-PR 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 3A for discontinued products to
 2A for recommended replacement.
・Analog input scaling has been changed from -19999~30000 for discontinued products to -1999~9999 for
 recommended replacement.
・The recommended replacement do not have a bank switching function.
・The PID setting range differs between discontinued products and recommended replacement.
 Refer to "Characteristics" section of the text.
・The alarm setting range has been changed from -19999~32400 for discontinued products to
 -1999~9999 for recommended replacement.

[Difference from discontinued product]

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

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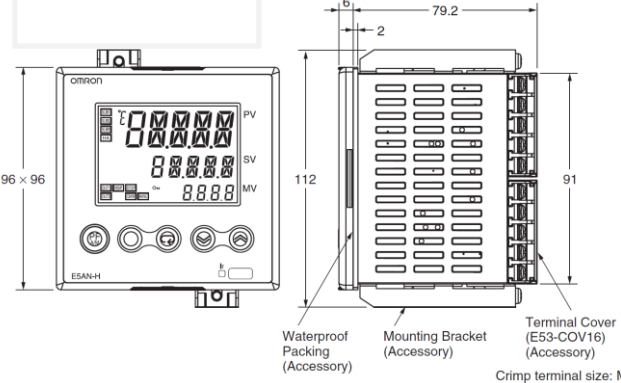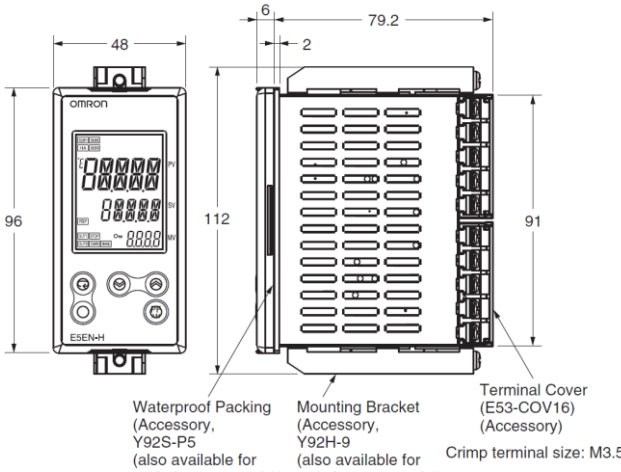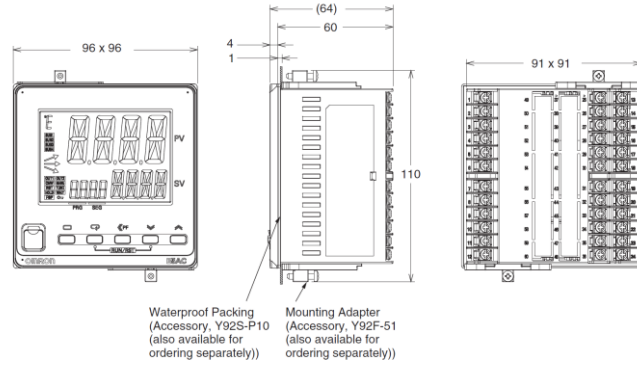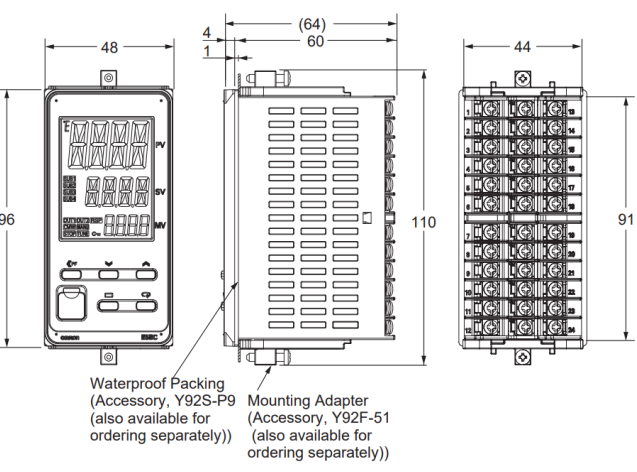-- : Not compatible
- : No corresponding specification

[Product Discontinuation and recommended replacement]

Product discontinuation	Recommended replacement
E5AN-HPRR201B-FLK AC100-240	E5AC-PR4A5M-004
E5AN-HPRR201BD-FLK AC/DC24	E5AC-PR4D5M-004
E5AN-HPRR201BF-FLK AC100-240	E5AC-PR4A5M-014
E5AN-HPRR202B-FLK AC100-240	E5AC-PR4A5M-004
E5AN-HPRR202BF-FLK AC100-240	E5AC-PR4A5M-014
E5AN-HPRR203B-FLK AC100-240	E5AC-PR4A5M-004
E5AN-HPRR203BD-FLK AC/DC24	E5AC-PR4D5M-004
E5AN-HPRR203BF-FLK AC100-240	E5AC-PR4A5M-014
E5AN-HPRR203BFD-FLK AC/DC24	E5AC-PR4D5M-014
E5AN-HPRR2BB AC100-240	E5AC-PR4A5M-014
E5AN-HPRR2BBD AC/DC24	E5AC-PR4D5M-014
E5AN-HPRR2BBF AC100-240	E5AC-PR4A5M-014
E5AN-HPRR2BBFD AC/DC24	E5AC-PR4D5M-014
E5AN-HPRR2BF AC100-240	E5AC-PR4A5M-014
E5AN-HPRR2BFM-500 AC100-240	E5AC-PR4A5M-014
E5AN-HPRR2BFMD-500 AC/DC24	E5AC-PR4D5M-014
E5AN-HPRR2BM-500 AC100-240	E5AC-PR4A5M-014
E5AN-HPRR2BMD-500 AC/DC24	E5AC-PR4D5M-014
E5EN-HPRR201B-FLK AC100-240	E5EC-PR4A5M-004
E5EN-HPRR201BD-FLK AC/DC24	E5EC-PR4D5M-004
E5EN-HPRR201BF-FLK AC100-240	E5EC-PR4A5M-014
E5EN-HPRR202B-FLK AC100-240	E5EC-PR4A5M-004
E5EN-HPRR202BF-FLK AC100-240	E5EC-PR4A5M-014
E5EN-HPRR203B-FLK AC100-240	E5EC-PR4A5M-004
E5EN-HPRR203BD-FLK AC/DC24	E5EC-PR4D5M-004
E5EN-HPRR203BF-FLK AC100-240	E5EC-PR4A5M-014
E5EN-HPRR203BFD-FLK AC/DC24	E5EC-PR4D5M-014
E5EN-HPRR2BB AC100-240	E5EC-PR4A5M-014
E5EN-HPRR2BBD AC/DC24	E5EC-PR4D5M-014
E5EN-HPRR2BBF AC100-240	E5EC-PR4A5M-014
E5EN-HPRR2BBFD AC/DC24	E5EC-PR4D5M-014
E5EN-HPRR2BF AC100-240	E5EC-PR4A5M-014
E5EN-HPRR2BFM-500 AC100-240	E5EC-PR4A5M-014
E5EN-HPRR2BFMD-500 AC/DC24	E5EC-PR4D5M-014
E5EN-HPRR2BM-500 AC100-240	E5EC-PR4A5M-014
E5EN-HPRR2BMD-500 AC/DC24	E5EC-PR4D5M-014

[Body color]

Product discontinuation E5AN-HPRR series/E5EN-HPRR series	Recommendable replacement E5AC-PR series/E5EC-PR series
Case color E5AN-HPRR series Black E5EN-HPRR series Black	**Case color** E5AC-PR series Black E5EC-PR series Black

[Mounting dimensions]

Product discontinuation E5AN-HPRR series/E5EN-HPRR series	Recommendable replacement E5AC-PR series/E5EC-PR series
E5AN-HPRR series	E5AC-PR series
E5EN-HPRR series	E5EC-PR series

E5AN-HPRR series
6 79.2 2 96 × 96 112 91
Waterproof Packing (Accessory) Mounting Bracket (Accessory) Terminal Cover (E53-COV16) (Accessory)
Crimp terminal size: M3.5

E5EN-HPRR series
48 6 79.2 2 96 112 91
Waterproof Packing (Accessory, Y92S-P5 (also available for ordering separately)) Mounting Bracket (Accessory, Y92H-9 (also available for ordering separately)) Terminal Cover (E53-COV16) (Accessory)
Crimp terminal size: M3.5

E5AC-PR series
96 x 96 4 1 (64) 60 110 91 x 91
Waterproof Packing (Accessory, Y92S-P10 (also available for ordering separately)) Mounting Adapter (Accessory, Y92F-51 (also available for ordering separately))

E5EC-PR series
48 4 1 (64) 60 96 110 44 91
Waterproof Packing (Accessory, Y92S-P9 (also available for ordering separately)) Mounting Adapter (Accessory, Y92F-51 (also available for ordering separately))

[Terminal layout / Wire connection]

Product discontinuation E5AN-HPRR series/E5EN-HPRR series	Recommendable replacement E5AC-PR series/E5EC-PR series
(Terminal layout diagram)	(Terminal layout diagram)

[Ratings]

Item	Product discontinuation E5AN-HPRR series E5EN-HPRR series	Recommendable replacement E5AC-PR series E5EC-PR series
Power supply voltage	100 to 240 VAC, 50/60 Hz 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: 12 VA 24 VAC/VDC: 8.5 VA (24 VAC) /5.5 W (24 VDC)	E5AC-PR series 100 to 240 VAC: 9.0 VA max. 24 VAC/VDC: 5.6 VA max. (24 VAC)/ 3.4 W max. (24 VDC) E5EC-PR series 100 to 240 VAC: 8.3 VA max. 24 VAC/VDC: 5.5 VA max. (24 VAC)/ 3.2 W max. (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 MΩ min. (Use a 1:1 connection when connecting the ES2-HB-N.)	Same as on the left.

Control method		ON/OFF control or 2-PID control (with auto-tuning)	Same as on the left
Control output	**Relay output for position-proportional control**	Relay output: Open and close: SPST-NO, 250 VAC, 1 A (including in-rush current), Electrical life: 100,000 operations min. Potentiometer input: Must be between 100 Ω and 2.5 kΩ for maximum open position.	SPST-NO, 250 VAC, 5 A (resistive load), Electrical life: 100,000 operations, Minimum applicable load: 5 V, 10 mA (reference value)
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	Relay output: SPST-NO, 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 outputs**	2 or 4 (with an E53-AKB)	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	Same as on the left.
Logic operations	**Number of operations**	8 max.	Same as on the left.
	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	Same as on the left.
	Output	One work bit per operation	Same as on the left.
	Work bit assignment	Any of the following can be assigned to up to eight work bits (logic operation results): Event input operations, auxiliary outputs, or control outputs.	Same as on the left.
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

	Number of inputs	1	Same as on the left.
RSP input	**Signal type**	Current input: 4 to 20 mA (input impedance: 150 Ω ±10%)	Current input: 4 to 20 mA DC or 0 to 20 mA DC (input impedance: 150 Ω max.) Voltage input: 1 to 5 V, 0 to 5 V, or 0 to 10 V (input impedance: 1 MΩ min.)
	Analog input scaling	Scaling of signal to engineering units (EU) −19,999 to 30,000 (display: 30,000 max.)	-1999 to 9999
	Accuracy	(±0.2% of FS) ±1 digit max.	Same as on the left
	input sampling period	60 ms	—
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: PV: 11.8 mm, SV: 8.1 mm, MV: 5.8 mm Content of 3-level display: PV/SV/MV, PV/SV/Bank No., or soak time remain Number of digits: 5 for PV and SV, 4 for MV	11-segment digital display and individual indicators Character height: E5AC-PR series PV: 25.0 mm, SV: 15.0 mm, MV: 9.5 mm E5EC-PR series PV: 18.0 mm, SV: 11.0 mm, MV: 7.8 mm Three displays Contents: PV/SV/MV, PV/SV/Multi-SP, or PV/SV/Remaining soak time, etc Numbers of digits: 4 digits each for PM, SV, and MV displays
Multi SP		None	Up to eight set points (SP0 to SP7) can be saved and selected using the event inputs, key operations, or serial communications.
Bank switching		Supported (number of banks: 8) Local SP, alarm settings, PID sets (PID constants, MV upper limit, MV lower limit, etc.)	None
Ambient operating temperature		−10 to 55°C (with no condensation or icing), for 3-year warranty: −10 to 50°C	Same as on the left.
Ambient operating humidity		25% to 85%	Same as on the left.

[Characteristics]

Item	Product discontinuation E5AN-HPRR series E5EN-HPRR series	Recommendable replacement E5AC-PR series E5EC-PR series
Indication accuracy	Thermocouple: (±0.1% of indicated value or ±1°C, whichever is greater) ±1 digit max. The indication accuracy of K thermocouples in the −200 to 1300°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	Thermocouple: (±0.3% of indication value or ±1°C, whichever is greater) ±1 digit max. The indication accuracy of K thermocouples in the -200 to 1300°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

	of B thermocouples in the 400 to 800°C range 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. 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	specified. The indication accuracy of B thermocouples in the 400 to 800°C range 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 C/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. 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.	Same as on the left.
RSP input accuracy	(±0.2% of FS) ±1 digit max.	Same as on the left.
Influence of temperature **Influence of voltage** **Influence of EMS.** **(at EN 61326-1)**	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. (K thermocouple at −100°C max.: ±10°C 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. (K thermocouple at -100°C max.: ±10°C 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. Remote SP input: ±1% FS ±1 digit max.
Sampling period	60 ms	50 ms
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)	Same as on the left.
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	Same as on the left.
	Destruction	10 to 55 Hz, 0.75-mm single amplitude for 2 hrs each in X, Y, and Z directions	Same as on the left.
Shock resistance	**Malfunction**	100 m/s2, 3 times each in X, Y, and Z directions	Same as on the left.
	Destruction	300 m/s2, 3 times each in X, Y, and Z directions	Same as on the left.
Life (Relay output)	**Electrical**	100,000 operations min.	Same as on the left.
Memory protection		Non-volatile memory (number of writes: 1,000,000 times)	Same as on the left.
Weight		E5AN-HPRR series Controller: Approx. 310 g, Mounting Bracket: Approx. 100 g E5EN-HPRR series Controller: Approx. 260 g, Mounting Bracket: Approx. 100 g	E5AC-PR series Controller: Approx. 250 g, Mounting Adapter: Approx. 8 g E5EC-PR series Controller: Approx. 210 g, Mounting Adapter: Approx. 8 g
Degree of protection		Front panel: IP66, Rear case: IP20, Terminals: IP00	Same as on the left.
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.), Lloyd's standards
	Conformed standards	EN 61010-1 (IEC 61010-1): Pollution level 2, overcurrent category II, Lloyd's standards	EN 61010-1 (IEC 61010-1), RCM
EMC		EMI: EN 61326-1 Radiated Interference Electromagnetic Field Strength:	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
		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

[Operation ratings]

Product discontinuation E5AN-HPRR series/E5EN-HPRR series

Input Ranges

Thermocouple/Platinum Resistance Thermometer (Fully Universal Inputs)

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

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
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		Description of function
		When alarm value X is positive	When alarm value X is negative	
0	Alarm function OFF	Output OFF		No alarm
1	Upper- and lower-limit *1	[diagram]	*2	Set the deviation in the set point by setting the alarm upper limit (H) and alarm lower limit (L).
2	Upper-limit	[diagram]	[diagram]	Set the upward deviation in the set point by setting the alarm value (X).
3	Lower-limit	[diagram]	[diagram]	Set the downward deviation in the set point by setting the alarm value (X).
4	Upper- and lower-limit range *1	[diagram]	*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	[diagram] *5	*4	A standby sequence is added to the upper- and lower-limit alarm (1). *7
6	Upper-limit with standby sequence	[diagram]	[diagram]	A standby sequence is added to the upper-limit alarm (2). *7
7	Lower-limit with standby sequence	[diagram]	[diagram]	A standby sequence is added to the lower-limit alarm (3). *7
8	Absolute-value upper-limit	[diagram]	[diagram]	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	[diagram]	[diagram]	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	[diagram]	[diagram]	A standby sequence is added to the absolute-value upper-limit alarm (8). *7
11	Absolute-value lower-limit with standby sequence	[diagram]	[diagram]	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	[diagram]	[diagram]	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	[diagram]	[diagram]	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/E5AN/E5EN/E5GN Digital Temperature Controllers User's Manual Basic Type (Cat. No. H156) for information on the operation of the standby sequence.

*8. Refer to the E5CN/E5AN/E5EN/E5GN Digital Temperature Controllers User's Manual Basic Type (Cat. No. H156) for information on the loop burnout alarm (LBA).

*9. Refer to the E5CN/E5AN/E5EN/E5GN Digital Temperature Controllers User's Manual Basic Type (Cat. No. H156) for information on the PV change rate alarm.

Recommendable replacement
E5AC-PR series/E5EC-PR 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

| 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		Description of function
		When alarm value X is positive	When alarm value X is negative	
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) / Always ON	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) / Always ON	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).
18	RSP absolute-value upper-limit alarm *10			This alarm type turns ON the alarm when the remote SP (RSP) is higher than the alarm value (X).
19	RSP absolute-value lower-limit alarm *10			This alarm type turns ON the alarm when the remote SP (RSP) 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 "H."

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

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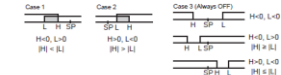
*4. Set value: 5, Upper- and lower-limit with standby sequence. For Upper- and Lower-Limit Alarm Described Above *2
• Case 1 and 2
  Always OFF when the upper-limit and lower-limit hysteresis overlaps.
• Case 3: Always OFF

*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 E5□C Digital Temperature Controllers User's Manual (Cat. No. H174) for information on the operation of the standby sequence.

*7. Refer to the E5□C Digital Temperature Controllers User's Manual (Cat. No. H174) for information on the loop burnout alarm (LBA). This setting cannot be used with a position-proportional model.

*8. Refer to the E5□C Digital Temperature Controllers User's Manual (Cat. No. H174) for information on the PV change rate alarm.
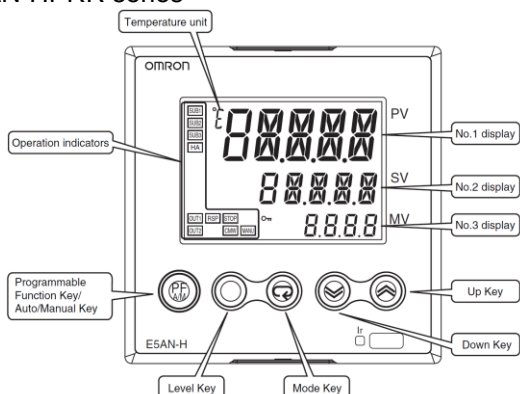
*9. When heating/cooling control is performed, the MV absolute upper limit alarm functions only for the heating operation and the MV absolute lower limit alarm functions only for the cooling operation.

*10. This value is displayed only when a remote SP input is used. It functions in both Local SP Mode and Remote SP Mode.
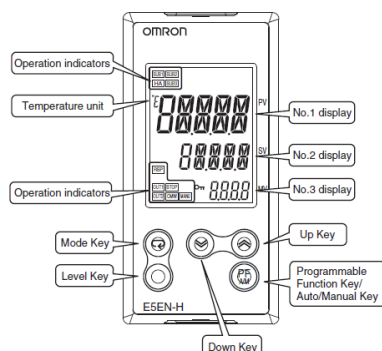
[Operation methods]

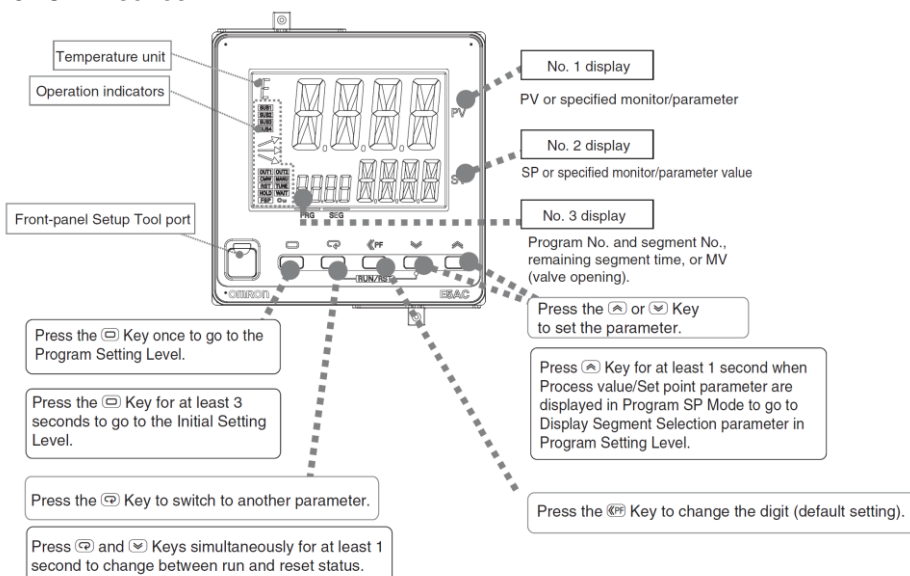## Recommendable replacement
E5AN-HPRR series/E5EN-HPRR series
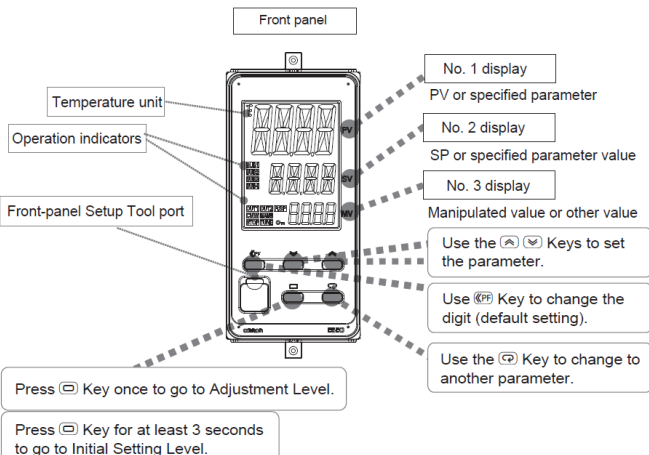
E5AN-HPRR series

Temperature unit

Operation indicators

PV — No.1 display

SV — No.2 display

MV — No.3 display

Programmable Function Key/ Auto/Manual Key

Up Key

Down Key

Level Key

Mode Key

E5AN-H

E5EN-HPRR series

Operation indicators

Temperature unit

Operation indicators

Mode Key

Level Key

PV — No.1 display

SV — No.2 display

MV — No.3 display

Up Key

Programmable Function Key/ Auto/Manual Key

Down Key

E5EN-H

Recommendable replacement
E5AC-PR series/E5EC-PR series

E5AC-PR series

Temperature unit

Operation indicators

Front-panel Setup Tool port

No. 1 display

PV or specified monitor/parameter

No. 2 display

SP or specified monitor/parameter value

No. 3 display

Program No. and segment No., remaining segment time, or MV (valve opening).

Press the ⌃ or ⌄ Key to set the parameter.

Press ⌃ Key for at least 1 second when Process value/Set point parameter are displayed in Program SP Mode to go to Display Segment Selection parameter in Program Setting Level.

Press the ⌾ Key once to go to the Program Setting Level.

Press the ⌾ Key for at least 3 seconds to go to the Initial Setting Level.

Press the ⌾ Key to switch to another parameter.

Press ⌾ and ⌄ Keys simultaneously for at least 1 second to change between run and reset status.

Press the ⌚PF Key to change the digit (default setting).

E5EC-PR series

Front panel

Temperature unit

Operation indicators

Front-panel Setup Tool port

No. 1 display

PV or specified parameter

No. 2 display

SP or specified parameter value

No. 3 display

Manipulated value or other value

Use the ⌃ ⌄ Keys to set the parameter.

Use ⌚PF Key to change the digit (default setting).

Use the ⌾ Key to change to another parameter.

Press ⌾ Key once to go to Adjustment Level.

Press ⌾ Key for at least 3 seconds to go to Initial Setting Level.