

Lineup



Note: The Controller can be used for heating/cooling control even if only 1 control output is used.

Model Number Structure

Model Number Legend

Controllers

E5AN/E5EN-□□□□□□□M□-□-500
 1 2 3 4 5 6 7 8 9 10 11

- 1. Type**
H: Advanced
- 2. Control Mode**
Blank: Standard or heating/cooling control
P: Position-proportional control *2
- 3. Control Output 1**
A: Control Output Unit
R: Relay output *2
S: SSR output *1
- 4. Control Output 2**
A: Control Output Unit
R: Relay output *2
S: SSR output *1
- 5. Auxiliary Outputs**
2: Two outputs
3: Three outputs
- 6. Option 1**
Blank: None
H: Heater burnout/SSR failure/Heater overcurrent detection (CT1)
HH: Heater burnout/SSR failure/Heater overcurrent detection (CT2)
- 7. Option 2**
B: Two event inputs
BF: Event input + Transfer output
- 8. Option 3**
M: Option Unit can be mounted.
- 9. Power Supply Voltage**
Blank: 100 to 240 VAC
D: 24 VAC/VDC
- 10. Case Color**
Blank: Black
W: Silver
- 11. Terminal Cover**
-500: With Terminal Cover

Option Units

E53-
1

- 1. Function**
EN01: RS-232C communications
EN02: RS-422 communications
EN03: RS-485 communications
AKB: Event input

Output Units

E53-

1 2

- 1. Control Output**
R: Relay output
Q: Voltage output (for driving SSR)
Q3: Voltage output (for driving SSR) + 24 VDC (NPN)
Q4: Voltage output (for driving SSR) + 24 VDC (PNP)
C3: Current output + 4 to 20 mA DC
C3D: Current output + 0 to 20 mA DC
V34: Linear voltage output + 0 to 10 VDC
V35: Linear voltage output + 0 to 5 VDC
- 2. Version**
Blank: Available for E5AN-E5EN-H.
N: Available only for E5AN-H/E5EN-H.

***1. Orders are no longer available since March 31, 2018.**

***2.** Orders are no longer available since March 31, 2025.

This data sheet is provided as a guideline for selecting products. Be sure to refer to the following user manuals for application precautions and other information required for operation before attempting to use the product.

E5CN-H/E5AN-H/E5EN-H Digital Controllers User's Manual Advanced Type (Cat. No. H157)

E5CN-H/E5AN-H/E5EN-H Digital Controllers Communications Manual Advanced Type (Cat. No. H159)

Ordering Information

E5AN-H

Size	Case color	Power supply voltage	Control method	Auxiliary output	Control output 1/2	Heater burnout	Optional functions			Model
							Event inputs	Transfer output	RSP	
1/4 DIN 96 × 96 × 78 (W × H × D)	Black	100 to 240 VAC	Basic	2	Control Output Unit × 2	1	2		4 to 20-mA input	E5AN-HAA2HBM-500
					SSR outputs × 2	1	2		4 to 20-mA input	E5AN-HSS2HBM-500 *1
					Control Output Unit × 2	2	2	4 to 20-mA output	4 to 20-mA input	E5AN-HAA2HHBFM-500
					SSR outputs × 2	2	2	4 to 20-mA output	4 to 20-mA input	E5AN-HSS2HHBFM-500 *1
			3		Control Output Unit × 2		2	4 to 20-mA output	4 to 20-mA input	E5AN-HAA3BFM-500
					SSR outputs × 2		2	4 to 20-mA output	4 to 20-mA input	E5AN-HSS3BFM-500 *1
			Valve	2	Relay outputs × 2		2		4 to 20-mA input	E5AN-HPRR2BM-500 *2
					Relay outputs × 2		2	4 to 20-mA output	4 to 20-mA input	E5AN-HPRR2BFM-500 *2
		24 VAC/ VDC	Basic	2	Control Output Unit × 2	1	2		4 to 20-mA input	E5AN-HAA2HBMD-500
					SSR outputs × 2	1	2		4 to 20-mA input	E5AN-HSS2HBMD-500 *1
					Control Output Unit × 2	2	2	4 to 20-mA output	4 to 20-mA input	E5AN-HAA2HHBFMD-500
					SSR outputs × 2	2	2	4 to 20-mA output	4 to 20-mA input	E5AN-HSS2HHBFMD-500 *1
			3		Control Output Unit × 2		2	4 to 20-mA output	4 to 20-mA input	E5AN-HAA3BFMD-500
					SSR outputs × 2		2	4 to 20-mA output	4 to 20-mA input	E5AN-HSS3BFMD-500 *1
			Valve	2	Relay outputs × 2		2		4 to 20-mA input	E5AN-HPRR2BMD-500 *2
					Relay outputs × 2		2	4 to 20-mA output	4 to 20-mA input	E5AN-HPRR2BFMD-500 *2
	Silver	100 to 240 VAC	Basic	2	Control Output Unit × 2	1	2		4 to 20-mA input	E5AN-HAA2HBM-W-500
					Control Output Unit × 2	2	2	4 to 20-mA output	4 to 20-mA input	E5AN-HAA2HHBFM-W-500
		24 VAC/ VDC			Control Output Unit × 2	1	2		4 to 20-mA input	E5AN-HAA2HBMD-W-500

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E5EN-H

Size	Case color	Power supply voltage	Control method	Auxiliary output	Control output 1/2	Heater burn-out	Optional Functions			Model
							Event inputs	Transfer output	RSP	
1/8 DIN 48 × 96 × 78 (W × H × D)	Black	100 to 240 VAC	Basic	2	Control Output Unit × 2	1	2		4 to 20-mA input	E5EN-HAA2HBM-500
					SSR outputs × 2	1	2		4 to 20-mA input	E5EN-HSS2HBM-500 *1
					Control Output Unit × 2	2	2	4 to 20-mA output	4 to 20-mA input	E5EN-HAA2HHBFM-500
					SSR outputs × 2	2	2	4 to 20-mA output	4 to 20-mA input	E5EN-HSS2HHBFM-500 *1
			3	Control Output Unit × 2		2	4 to 20-mA output	4 to 20-mA input	E5EN-HAA3BFM-500	
				SSR outputs × 2		2	4 to 20-mA output	4 to 20-mA input	E5EN-HSS3BFM-500 *1	
		Valve	2	Relay outputs × 2		2		4 to 20-mA input	E5EN-HPRR2BM-500 *2	
				Relay outputs × 2		2	4 to 20-mA output	4 to 20-mA input	E5EN-HPRR2BFM-500 *2	
		24 VAC/VDC	Basic	2	Control Output Unit × 2	1	2		4 to 20-mA input	E5EN-HAA2HBMD-500
					SSR outputs × 2	1	2		4 to 20-mA input	E5EN-HSS2HBMD-500 *1
					Control Output Unit × 2	2	2	4 to 20-mA output	4 to 20-mA input	E5EN-HAA2HHBFMD-500
					SSR outputs × 2	2	2	4 to 20-mA output	4 to 20-mA input	E5EN-HSS2HHBFMD-500 *1
	3		Control Output Unit × 2		2	4 to 20-mA output	4 to 20-mA input	E5EN-HAA3BFMD-500		
			SSR outputs × 2		2	4 to 20-mA output	4 to 20-mA input	E5EN-HSS3BFMD-500 *1		
	Valve	2	Relay outputs × 2		2		4 to 20-mA input	E5EN-HPRR2BMD-500 *2		
			Relay outputs × 2		2	4 to 20-mA output	4 to 20-mA input	E5EN-HPRR2BFMD-500 *2		
	Silver	100 to 240 VAC	Basic	2	Control Output Unit × 2	1	2		4 to 20-mA input	E5EN-HAA2HBM-W-500
		Control Output Unit × 2			2	2	4 to 20-mA output	4 to 20-mA input	E5EN-HAA2HHBFM-W-500	
24 VAC/VDC		Control Output Unit × 2			1	2		4 to 20-mA input	E5EN-HAA2HBMD-W-500	

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Accessories (Order Separately)

Output unit	Model	Specifications
Relay output	E53-RN	SPST-NO, 250 VAC, 5 A (resistive load), electrical life: 100,000 operations
Voltage output (for driving SSR)	E53-QN	12 VDC (PNP), max. load current: 40-mA, with short-circuit protection
	E53-Q3	24 VDC (NPN), max. load current: 20-mA, with short-circuit protection
	E53-Q4	24 VDC (PNP), max. load current: 20-mA, with short-circuit protection
Current output	E53-C3N	4 to 20-mA DC, load: 600 Ω max., resolution: approx. 10,000
	E53-C3DN	0 to 20-mA DC, load: 600 Ω max., resolution: approx. 10,000
Linear voltage output	E53-V34N	0 to 10 VDC, load: 1 kΩ min., resolution: approx. 10,000
	E53-V35N	0 to 5 VDC, load: 1 kΩ min., resolution: approx. 10,000

USB-Serial Conversion Cable

Model
E58-CIFQ1

Terminal Cover

Connectable models	Model
E5AN-H	E53-COV16
E5EN-H	

Note: The Terminal Cover comes with the E5CN-□□□-500 models.

Mounting Brackets

Model
Y92H-9

Note: These Mounting Brackets are provided with the Digital Controller.

Waterproof Packing

Connectable models	Model
E5AN-H	Y92S-P4
E5EN-H	Y92S-P5

Note: The Waterproof Packing is included with the Controller.

Current Transformers (CTs)

Hole diameter	Model
5.8 dia.	E54-CT1
12.0 dia.	E54-CT3

CX-Thermo Support Software

Model
EST2-2C-MV4

Specifications

Ratings

Power supply voltage		No D in model number: 100 to 240 VAC, 50/60 Hz D in model number: 24 VAC, 50/60 Hz; 24 VDC
Operating voltage range		85% to 110% of rated supply voltage
Power consumption		100 to 240 VAC: 12 VA 24 VAC/VDC: 8.5 VA (24 VAC)/5.5 W (24 VDC)
Sensor input		Any of the following can be selected. 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
Input impedance		Current input: 150 Ω max., Voltage input: 1 M Ω min. (Use a 1:1 connection when connecting the ES2-HB-N.)
Control method		ON/OFF control or 2-PID control (with auto-tuning)
Control output	Relay output	Output Unit (Install the Output Unit (sold separately).)
	Voltage output (for driving SSR)	
	Current output	
	Linear voltage 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 k Ω for maximum open position.
Auxiliary output	Number of outputs	2 or 3 max.
	Output specifications	Relay output: SPST-NO, 250 VAC, 3 A (resistive load), electrical life: 100,000 operations, minimum applicable load: 5 V, 10 mA
Event input	Number of outputs	2 or 4 (with an E53-AKB)
	External contact input specifications	Contact input: ON: 1 k Ω max., OFF: 100 k Ω 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): Event input operations, auxiliary outputs, or control outputs.
Transfer outputs	Number of outputs	1 max. (Depends on model. Models with transfer output (F in model number)
	Output specifications	Current output: 4 to 20 mA DC, Load: 600 Ω max., Resolution at 4 to 20 mA: Approx. 10,000
RSP input	Number of inputs	1
	Signal type	Current input: 4 to 20 mA (input impedance: 150 Ω $\pm$ 10%)
	Analog input scaling	Scaling of signal to engineering units (EU) -19,999 to 30,000 (display: 30,000 max.)
	Accuracy	($\pm$ 0.2% of FS) $\pm$ 1 digit max.
	Input sampling period	60 ms
Setting method		Set digitally using keys on the front panel or by using the RSP input.
Indication method		11-segment digital display and individual indicators (7-segments displays also possible) Character height: E5AN-H: PV: 15.8 mm, SV: 9.5 mm, MV: 6.8 mm; E5EN-H: 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
Bank switching		Supported (number of banks: 8) Local SP, alarm settings, PID sets (PID constants, MV upper limit, MV lower limit, etc.)
Other functions		Manual output, heating/cooling control, loop burnout alarm, SP ramp, other alarm functions, heater burnout detection, 40% AT, 100% AT, MV limiter, input digital filter, self-tuning, temperature input shift, run/stop, protection functions, control output ON/OFF counter, extraction of square root, MV change rate limit, PV/SV status display, logic operations, automatic cooling coefficient adjustment
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%
Storage temperature		-25 to 65°C (with no condensation or icing)