

NO: TC-073
DATE: June 2014

PRODUCT: E5GN Temperature Controllers
TYPE: Discontinuation Notice

E5GN Compact 1/32 DIN Size Temperature Controllers to be Discontinued March 2015; Replace with E5GC Series

Last order date: March 2015

Note: Date is subject to change based on raw materials and components availability at the factory.

Affected Parts

Product discontinuation	Recommended replacement
E5GN-C1L-C	E5GC-CX1ACM-000
E5GN-C1T-C	
E5GN-C103T-C-FLK	E5GC-CX1ACM-015
E5GN-C1BT-C	E5GC-CX1ACM-024
E5GN-C1L	E5GC-CX1A6M-000
E5GN-C1T	
E5GN-C103T-FLK	E5GC-CX1A6M-015
E5GN-C1BT	E5GC-CX1A6M-024
E5GN-C1LD-C	E5GC-CX1DCM-000
E5GN-C1TD-C	
E5GN-C103TD-C-FLK	E5GC-CX1DCM-015
E5GN-C1BTD-C	E5GC-CX1DCM-024
E5GN-C1LD	E5GC-CX1D6M-000
E5GN-C1TD	
E5GN-C103TD-FLK	E5GC-CX1D6M-015
E5GN-C1BTD	E5GC-CX1D6M-024
E5GN-QT-C	E5GC-QX0ACM-000
E5GN-QT	E5GC-QX0A6M-000
E5GN-QTD-C	E5GC-QX0DCM-000
E5GN-QTD	E5GC-QX0D6M-000
E5GN-Q1T-C	E5GC-QX1ACM-000
E5GN-Q103T-C-FLK	E5GC-QX1ACM-015
E5GN-Q1BT-C	E5GC-QX1ACM-024
E5GN-Q1T	E5GC-QX1A6M-000
E5GN-Q103L-FLK	E5GC-QX1A6M-015
E5GN-Q103T-FLK	
E5GN-Q1BT	E5GC-QX1A6M-024
E5GN-Q1TD-C	E5GC-QX1DCM-000
E5GN-Q103TD-C-FLK	E5GC-QX1DCM-015
E5GN-Q1BTD-C	E5GC-QX1DCM-024
E5GN-Q1TD	E5GC-QX1D6M-000
E5GN-Q103LD-FLK	E5GC-QX1D6M-015
E5GN-Q103TD-FLK	
E5GN-Q1BTD	E5GC-QX1D6M-024
E5GN-Q2T-C	E5GC-QX2ACM-000
E5GN-Q203T-C-FLK	E5GC-QX2ACM-015

Product discontinuation	Recommended replacement
E5GN-Q2HT-C	E5GC-QX2ACM-023
E5GN-Q2BT-C	E5GC-QX1ACM-024 (in a case of 1 auxiliary output)
E5GC-QX2ACM-016 (in a case of 1 event input)	
E5GN-Q2T	E5GC-QX2A6M-000
E5GN-Q203T-FLK	E5GC-QX2A6M-015
E5GN-Q2HT	E5GC-QX2A6M-023
E5GN-Q2BT	E5GC-QX1A6M-024 (in a case of 1 auxiliary output)
E5GC-QX2A6M-016 (in a case of 1 event input)	
E5GN-Q2TD-C	E5GC-QX2DCM-000
E5GN-Q203TD-C-FLK	E5GC-QX2DCM-015
E5GN-Q2HTD-C	E5GC-QX2DCM-023
E5GN-Q2BTD-C	E5GC-QX1DCM-024 (in a case of 1 auxiliary output)
E5GC-QX2DCM-016 (in a case of 1 event input)	
E5GN-Q2TD	E5GC-QX2D6M-000
E5GN-Q203TD-FLK	E5GC-QX2D6M-015
E5GN-Q2HTD	E5GC-QX2D6M-023
E5GN-Q2BTD	E5GC-QX1D6M-024 (in a case of 1 auxiliary output)
E5GC-QX2D6M-016 (in a case of 1 event input)	
E5GN-RT-C	E5GC-RX0ACM-000
E5GN-RT	E5GC-RX0A6M-000
E5GN-RTD-C	E5GC-RX0DCM-000
E5GN-RTD	E5GC-RX0D6M-000
E5GN-R1T-C	E5GC-RX1ACM-000
E5GN-R103T-C-FLK	E5GC-RX1ACM-015
E5GN-R1BT-C	E5GC-RX1ACM-024
E5GN-R1T	E5GC-RX1A6M-000
E5GN-R103L-FLK	E5GC-RX1A6M-015
E5GN-R103T-FLK	
E5GN-R1BT	E5GC-RX1A6M-024
E5GN-R1TD-C	E5GC-RX1DCM-000
E5GN-R103TD-C-FLK	E5GC-RX1DCM-015
E5GN-R1BTD-C	E5GC-RX1DCM-024
E5GN-R1TD	E5GC-RX1D6M-000
E5GN-R103LD-FLK	E5GC-RX1D6M-015
E5GN-R103TD-FLK	
E5GN-R1BTD	E5GC-RX1D6M-024
E5GN-R2T-C	E5GC-RX2ACM-000
E5GN-R203T-C-FLK	E5GC-RX2ACM-015
E5GN-R2HT-C	E5GC-RX2ACM-023
E5GN-R2BT-C	E5GC-RX1ACM-024 (in a case of 1 auxiliary output) E5GC-RX2ACM-016 (in a case of 1 event input)
E5GN-R2T	E5GC-RX2A6M-000
E5GN-R203T-FLK	E5GC-RX2A6M-015
E5GN-R2HT	E5GC-RX2A6M-023
E5GN-R2BT	E5GC-RX1A6M-024 (in a case of 1 auxiliary output) E5GC-RX2A6M-016 (in a case of 1 event input)
E5GN-R2TD-C	E5GC-RX2DCM-000
E5GN-R203TD-C-FLK	E5GC-RX2DCM-015
E5GN-R2HTD-C	E5GC-RX2DCM-023
E5GN-R2BTD-C	E5GC-RX1DCM-024 (in a case of 1 auxiliary output) E5GC-RX2DCM-016 (in a case of 1 event input)
E5GN-R2TD	E5GC-RX2D6M-000
E5GN-R203TD-FLK	E5GC-RX2D6M-015
E5GN-R2HTD	E5GC-RX2D6M-023
E5GN-R2BTD	E5GC-RX1D6M-024 (in a case of 1 auxiliary output) E5GC-RX2D6M-016 (in a case of 1 event input)

Product discontinuation	Recommended replacement
E5GN-C101T-C-FLK	Use E5GC-CX1ACM-015 connected with interface converter model K3SC.
E5GN-C101TD-C-FLK	Use E5GC-CX1DCM-015 connected with interface converter model K3SC.
E5GN-C101TD-FLK	Use E5GC-CX1D6M-015 connected with interface converter model K3SC.
E5GN-C101T-FLK	Use E5GC-CX1A6M-015 connected with interface converter model K3SC.
E5GN-Q101T-C-FLK E5GN-Q101TD-C-FLK	Use E5GC-QX1ACM-015 connected with interface converter model K3SC.
E5GN-Q101TD-FLK	Use E5GC-QX1D6M-015 connected with interface converter model K3SC.
E5GN-Q101T-FLK	Use E5GC-QX1A6M-015 connected with interface converter model K3SC.
E5GN-R101T-C-FLK	Use E5GC-RX1ACM-015 connected with interface converter model K3SC.
E5GN-R101TD-C-FLK	Use E5GC-RX1DCM-015 connected with interface converter model K3SC.
E5GN-R101TD-FLK	Use E5GC-RX1D6M-015 connected with interface converter model K3SC.
E5GN-R101T-FLK	Use E5GC-RX1A6M-015 connected with interface converter model K3SC.

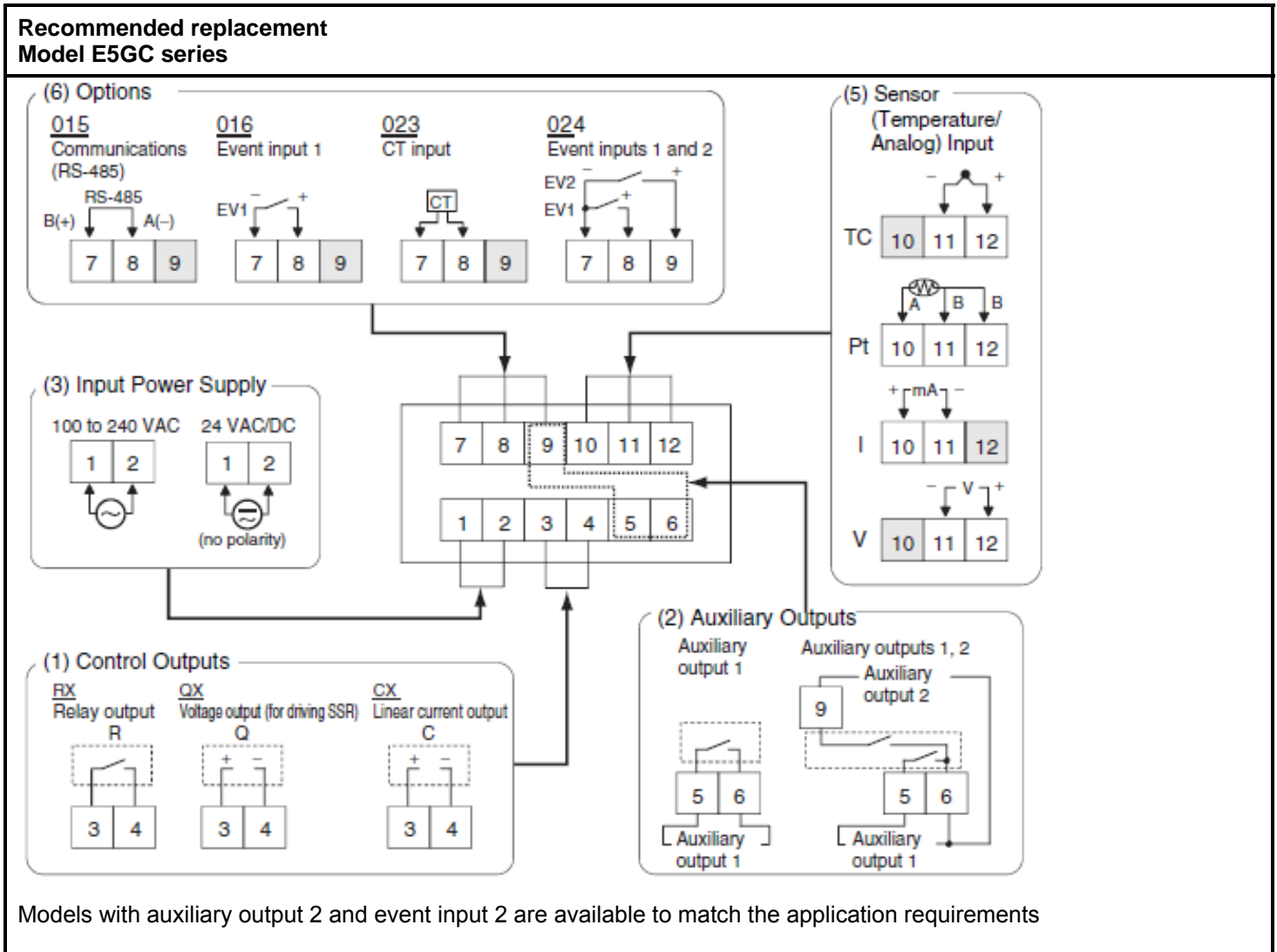
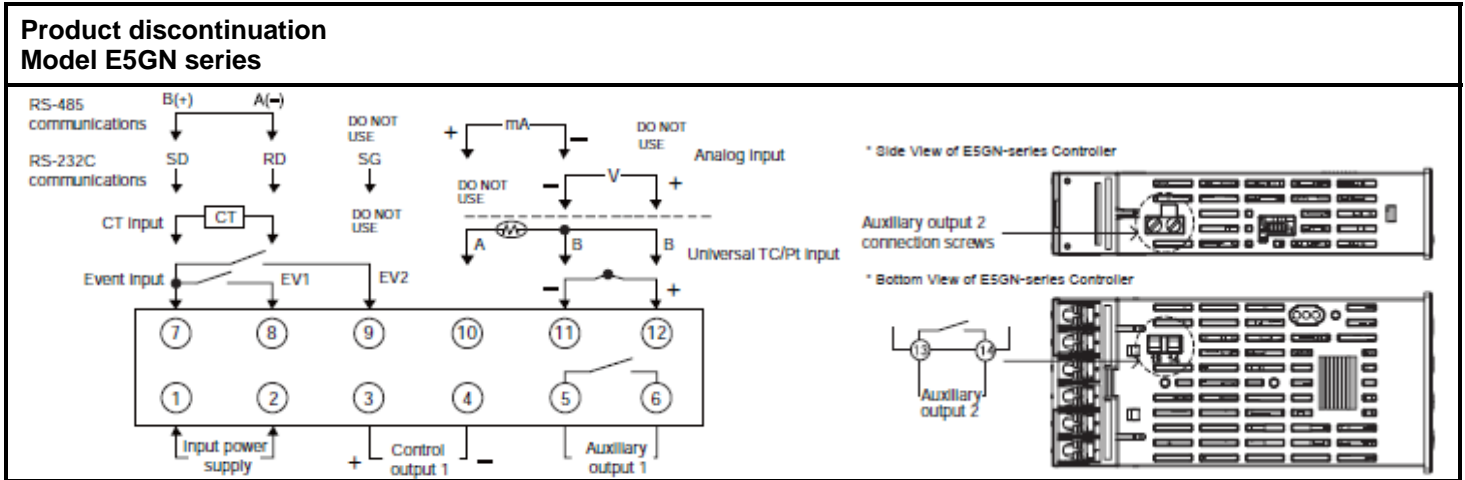
Cautions on Applying Replacements

- E5GC does not directly support RS-232C communications. Connect interface converter K3SC series to enable RS-232C communications.
- When replacing models, be sure that Sysway Protocol is disabled; it is not supported by E5GC.
- Two auxiliary outputs and two event inputs cannot be used at the same time.
- The waterproof packing and mounting adapter for E5GC is different from E5GN. Do not try to mount E5GC using E5GN mounting adapter and waterproof packing.

See tables below for details about differences between series.

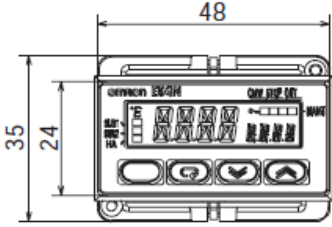
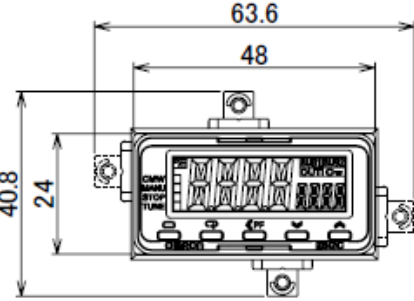
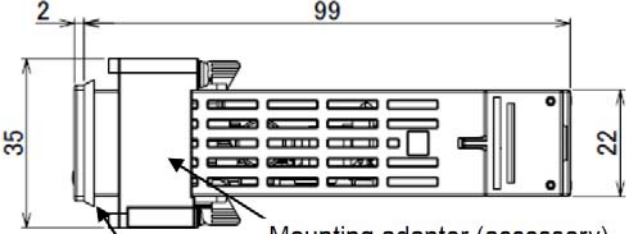
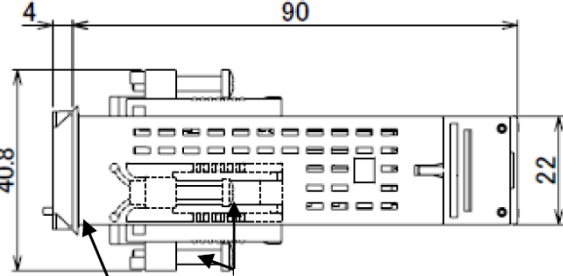
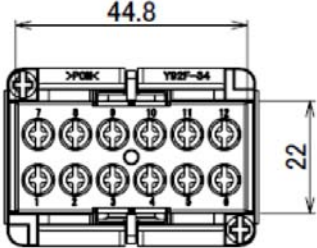
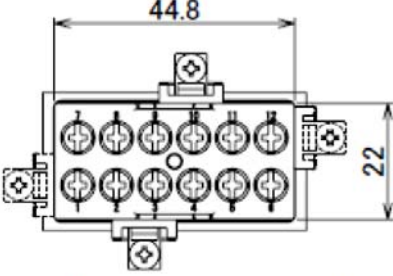
Detail of Differences

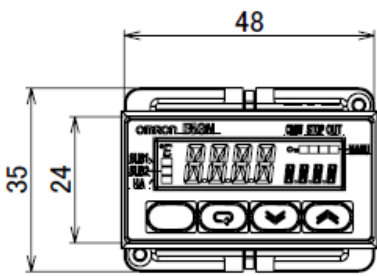
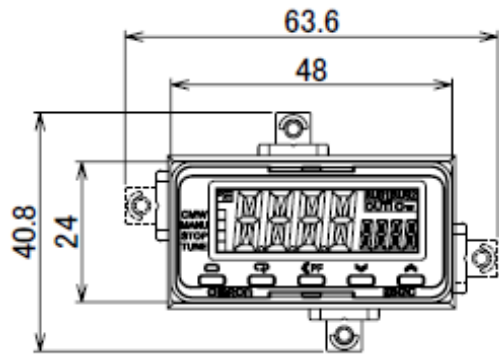
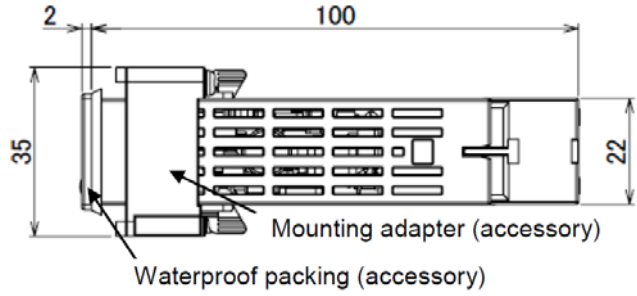
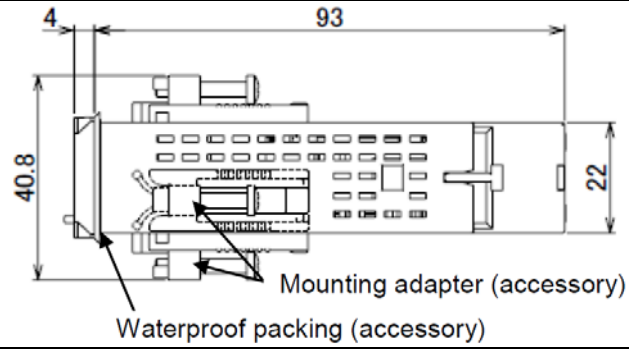
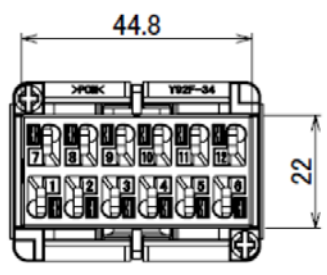
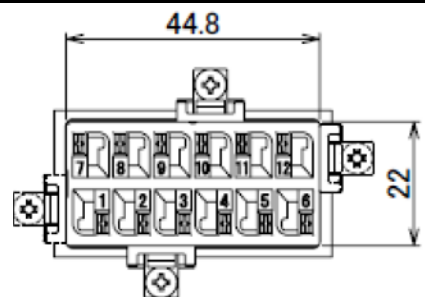
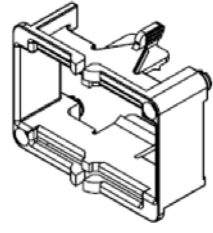
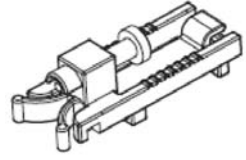
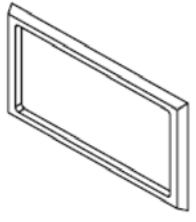
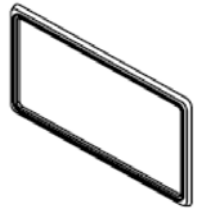
Terminal arrangement / Wire connection



Models with auxiliary output 2 and event input 2 are available to match the application requirements

Dimensions

Product discontinuation Model E5GN series	Recommended replacement Model E5GC series
<p>Screw terminal blocks</p>  <p>* Diagram includes a mounting adapter.</p>	<p>Screw terminal blocks</p>  <p>* Diagram includes a mounting adapter.</p>
 <p>Mounting adapter (accessory) Waterproof packing (accessory)</p>	 <p>Mounting adapter (accessory) Waterproof packing (accessory)</p>
 <p>* Diagram includes a mounting adapter.</p>	 <p>* Diagram includes mounting adapters.</p>

Product discontinuation Model E5GN series	Recommended replacement Model E5GC series
<p>Screwless clamp terminal blocks</p>  <p>* Diagram includes a mounting adapter</p>	<p>Screwless clamp terminal blocks</p>  <p>* Diagram includes a mounting adapter</p>
 <p>Mounting adapter (accessory) Waterproof packing (accessory)</p>	 <p>Mounting adapter (accessory) Waterproof packing (accessory)</p>
 <p>* Diagram includes mounting adapter.</p>	 <p>* Diagram includes mounting adapter.</p>
<p>Mounting adapter</p> 	<p>Mounting adapter 2 mounting adapters are used for E5GC. (vertical or horizontal direction) Mounting adapter for E5GN cannot be used.</p> 
<p>Waterproof packing</p> 	<p>Waterproof packing When using E5GC, be sure to use accessory waterproof packing for E5GC.</p> 

Ratings

Item		Product discontinuation Model E5GN series	Recommended replacement Model E5GC series
Power consumption		100 to 240 VAC: 5.5 VA (max.) 24 VAC/VDC: 3 VA/2 W (max.)	100 to 240 VAC: 5.9 VA (max.) 24 VAC/VDC: 3.2 VA/1.8 W (max.)
Input impedance		Current input: 150Ω max. Voltage input: 1MΩ minimum	Current input: 150Ω max. Voltage input: 1MΩ minimum (No change)
Control output	Relay output	SPST-NO, 2 A at 250 VAC (resistive load) Electrical life 100,000 operations, Minimum applicable load 10 mA at 5 V (reference)	SPST-NO, 2 A at 250 VAC (resistive load) Electrical life 100,000 operations, Minimum applicable load 10 mA at 5 V (reference) (No change)
	Voltage output (for driving SSR)	Output voltage 12 VDC±15% (PNP) Max. Load current 21 mA, with short-circuit protection circuit	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: 500Ω max. Resolution: Approx. 10,000	4 to 20 mA DC/0 to 20 mA DC Load: 500Ω max. Resolution: Approx. 10,000
Indication method		11 segment digital displays and individual indicators (7-segment also possible) Character height: PV: 7.5mm, SV: 3.6mm	11 segment digital display and individual indicators. Character height: PV: 10.5mm, SV: 5mm
Multiple set point function		Up to four set points (SP0 to SP3) can be saved and selected using event inputs, key operations or serial communications.	Up to eight set points (SP0 to SP7) can be saved and selected using event inputs, key operations or serial communications.
Other functions (change points)		—	<p>Functions to be deleted: Heater overcurrent (OC) functions Control output ON/OFF count monitor Color change function Character select</p> <p>Functions to be added: Moving average of input Luminance display setup Work bit message Parameter changes Digit shifting</p>

Characteristics

Item		Product discontinuation Model E5GN series	Recommended replacement Model E5GC series
Input sampling cycle		250 ms	50 ms
Integral time (I)		0 to 3999s (in units of 1s)	0 to 9999s (in units of 1s), 0.0 to 999.9s (in units of 1s)
Derivative time (D)		0 to 3999s (in units of 1s)	0 to 9999s (in units of 1s), 0.0 to 999.9s (in units of 1s)
Control cycle		0.5, 1 to 99s (in units of 1s)	0.1, 0.2, 0.5, 1 to 99s (in units of 1s)
Dielectric strength		2,300 VAC, 50 or 60 Hz for 1 min (between terminals with different charge)	100 to 240 VAC: 3,000 VAC, 50 or 60 Hz for 1 min (between terminals with different charge) 24 VAC/VDC: 2300 VAC, 50 or 60 Hz for 1 min (between terminals with different charge)
Weight		Controller: approx.90g Mounting Bracket: approx.10g	Controller: approx. 80g Adapter: approx. 4g×2
Setup tool		CX-Thermo Ver.4.2 or higher	CX-Thermo Ver.4.62 or higher
Setup tool port		Provided on the side of the E5GN. Connect this port to the computer when using the Setup Tool. An E58-CIFQ1 USB-Serial Conversion Cable is required to connect the computer to the port on the side of the E5GN.	E5GC side panel: An E58-CIFQ2 USB-Serial Conversion Cable is used to connect a USB port on the computer. E5GC bottom panel: An E58-CIFQ2 USB-Serial Conversion Cable and E58-CIFQ2-E Conversion Cable are used together to connect a USB port on the computer.
Standards	Approved standards	cULus UL61010-1 2nd edition (CSA C22.2 No.61010-1 2nd edition evaluated by UL)	cULus UL61010-1 3rd edition (CSA C22.2 No.61010-1 3rd edition evaluated by UL) Korean Radio Waves Act (Act 10564)

Communication Performance

Item		Product discontinuation Model E5GN series	Recommended replacement Model E5GC series
Connection of transmission path		RS-485: Multipoint RS-232C: Point to point	RS-485: Multi-drop (Multipoint)
Communication method		RS-485 (two-wire, half duplex), RS-232C	RS-485 (two-wire, half duplex)
Protocol		CompoWay/F, Sysway, Modbus	CompoWay/F, Modbus
DTE speed (baud rate)		1200, 2400, 4800, 9600, 19200, 38400, 57600 bps	9600, 19200, 38400, 57600 bps
Error detection		Vertical parity (none, even, odd) Frame check sequence (FCS) with SYSWAY Block check character (BCC) with CompoWay/F or CRC-16 Modbus	Vertical parity (none, even, odd) Block check character (BCC) with CompoWay/F or CRC-16 Modbus
Interface		RS-485, RS-232C	RS-485

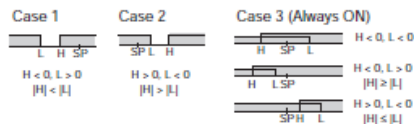
Alarm Types

Product discontinuation: Model E5GN series

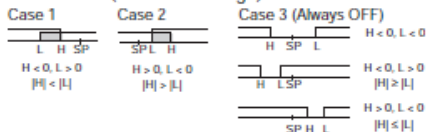
Set value	Alarm type	Alarm output operation		Description of function
		When alarm value X is positive	When alarm value X is negative	
0	Alarm function OFF	Output OFF		No alarm
1 (See note 1.)	Upper- and lower-limit		See note 2.	Set the deviation in the set point by setting the alarm upper limit (H) and 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 (See note 1.)	Upper- and lower-limit range		See note 3.	Set the deviation above the set point as the alarm upper limit (H) and the deviation below the set point as the alarm lower limit (L). The alarm output will be ON within the set deviations.
5 (See note 1.)	Upper- and lower-limit with standby sequence		See note 4.	A standby sequence is added to the upper- and lower-limit alarm (1). (See note 6.)
6	Upper-limit with standby sequence			A standby sequence is added to the upper-limit alarm (2). (See note 6.)
7	Lower-limit with standby sequence			A standby sequence is added to the lower-limit alarm (3). (See note 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). (See note 6.)
11	Absolute-value lower-limit with standby sequence			A standby sequence is added to the absolute-value lower-limit alarm (9). (See note 6.)
12	LBA (alarm 1 type only)	---		Refer to page 118. (See note 7.)
13	PV change rate alarm	---		Refer to page 72. (See note 8.)

Note (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 (Lower limit range)



(4) Set value: 5 (Upper- and lower-limit with standby sequence)

- For the lower-limit alarms in cases 1 and 2 above, the alarm is always OFF if upper- and lower-limit hysteresis overlaps.
- In case 3, the alarm is always OFF.

(5) Set value: 5 (Upper- and lower-limit with standby sequence)

- The alarm is always OFF if upper- and lower-limit hysteresis overlaps.

(6) Refer to 4-2-1 *Standby Sequence* for information on the operation of the standby sequence.

(7) Refer to 4-12-1 *Loop Burnout Alarm (LBA)*.

(8) Refer to *PV Change Rate Alarm* on page 72.

- Set the alarm type independently for each alarm in the Alarm 1 to 3 Type parameters in the initial setting level. The default is 2 (Upper-limit alarm).

Alarm Types continued


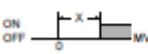

Recommended replacement: Model E5GC series

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		*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 	Standard Control 	This alarm type turns ON the alarm when the manipulated variable (MV) is higher than the alarm value (X).
	Heating/Cooling Control (Heating MV)		Heating/Cooling Control (Heating MV)	
	Always ON			

(Notes are on the next page →)

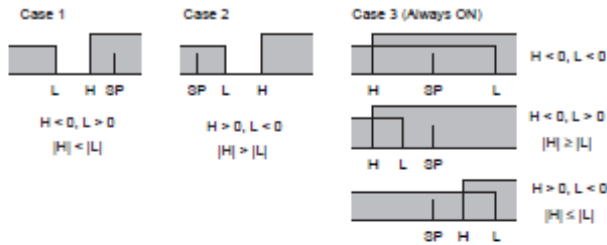
Alarm Types continued

Recommended replacement: Model E5GC series

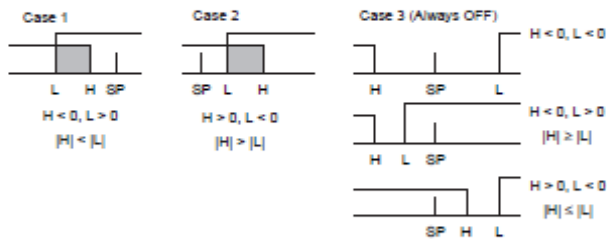
17	MV absolute-value lower-limit alarm*9	<p>Standard Control</p>  <p>ON OFF</p> <p>Heating/Cooling Control (Cooling MV)</p>  <p>ON OFF</p>	<p>Standard Control</p>  <p>ON OFF</p> <p>Heating/Cooling Control (Cooling MV)</p> <p>Always ON</p>	This alarm type turns ON the alarm when the manipulated variable (MV) is lower than the alarm value (X).
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*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 alarm with standby sequence)

- For the upper- and lower-limit alarms in cases 1 and 2 above, the alarm is always OFF if upper- and lower-limit hysteresis overlaps.
- In case 3, the alarm is always OFF.

*5 Set value: 5 (Upper- and lower-limit alarm with standby sequence)

- The alarm is always OFF if upper- and lower-limit hysteresis overlaps.

*6 Refer to *Standby Sequence Reset* on page 6-62 for information on the operation of the standby sequence.





*7 Refer to *5-11-1 Loop Burnout Alarm (LBA)*.

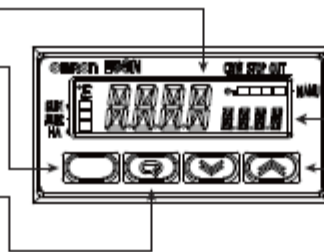
*8 Refer to *PV Change Rate Alarm* on page 4-35.



Operation Methods

Product discontinuation

Model E5GN series

- No.1 display
Process value or set data symbol
 - Level key
Use this key to change levels:
• Press the  key and the  key together for at least 3 seconds to switch to protect level.
 - Mode key
Press this key to change the contents of the display.
Press this key for 1 s or longer for reverse scroll.
- Press the  key and the  key together for at least 3 seconds to switch to protect level.







- No.2 display
Set point, set data read-out value or changed input value
- Up and Down keys
Use the keys to change the values displayed on the No.2 display.
Each press of  key increments or advances the values displayed on the No.2 display.
Each press of  key decrements or returns the values displayed on the No.2 display.

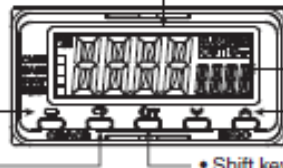
Recommended replacement



Model E5GC series

Compared with E5GN, shift key (PF key) is added for E5GC.

By making this shift key (PF key) disabled, the same key operations as E5GN become available.

- No.1 display
Process value or set data symbol
 - Level key
Use this key to change levels:
• Press the  key and the  key together for at least 3 seconds to switch to protect level.
 - Mode key
Press this key to change the contents of the display.
Press this key for 1 s or longer for reverse scroll.
- Press the  key and the  key together for at least 3 seconds to switch to protect level.



- No.2 display
Set point, set data read-out value or changed input value
- Up and Down keys
Use the keys to change the values displayed on the No.2 display.
Each press of  key increments or advances the values displayed on the No.2 display.
Each press of  key decrements or returns the values displayed on the No.2 display.
- Shift key (PF key)
The default PF Setting parameter is for shifting the digit.
This is a function key. When it is pressed, the function set for the PF Setting parameter will operate.

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.