E5EWL

OMRON

Temperature Controller

EN Instruction Manual

Thank you for purchasing the OMRON E5EWL Temperature Controller. This manual describes the functions, performance, and application methods needed for optimum use of the product.

Please observe the following items when using the product.

- This product is designed for use by qualified personnel with a knowledge of electrical systems.
- Before using the product, thoroughly read and understand this manual to ensure correct use.
- Keep this manual in a safe location so that it is available for reference whenever required.

OMRON CORPORATION

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2266757-7A (EL2)

Safety Precautions

Key to Warning Symbols

⚠CAUTION	Indicates a potentially hazardous situation which, if not avoided, is likely to result in minor or moderate injury or property damage. Read this manual carefully before using the product.

Warning Symbols

⚠ CAUTION

- Do not touch the terminals while power is being supplied. Doing so may occasionally result in minor injury due to electric shock.
- Do not allow pieces of metal, wire clippings, or fine metallic shavings or filings from installation to enter the product. Doing so may occasionally result in electric shock, fire, or malfunction.
- Do not use the product where subject to flammable or explosive gas. Otherwise, minor injury from explosion may occasionally occur.
- Never disassemble, modify, or repair the product or touch any of the internal parts. Minor electric shock, fire, or malfunction may occasionally occur.
- If the output relays are used past their life expectancy, contact fusing or burning may occasionally occur. Always consider the application conditions and use the output relays within their rated load and electrical life expectancy. The life expectancy of output relays varies considerably with the output load and switching conditions.
- Tighten the terminal screws to between 0.74 and 0.90 N·m. Loose screws may occasionally result in fire.
- Set the parameters of the product so that they are suitable for the system being controlled. If they are not suitable, unexpected operation may occasionally result in property damage or accidents.
- A malfunction in the Temperature Controller may occasionally make control operations impossible or prevent alarm outputs, resulting in property damage. To maintain safety in the event of malfunction of the Temperature Controller, take appropriate safety measures, such as installing a monitoring device on a separate line.

Suitability for Use

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the product. Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.

Know and observe all prohibitions of use applicable to this product.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

See also product catalog for Warranty and Limitation of Liability.

Precautions for Safe Use

Be sure to observe the following precautions to prevent operation failure, malfunction, or adverse affects on the performance and functions of the product. Not doing so may occasionally result in unexpected events.

(1) The product is designed for indoor use only. Do not use the product outdoors or in any of the following locations.
- Places directly subject to heat radiated from heating equipment.
- Places subject to splashing liquid or oil atmosphere.
- Places subject to direct sunlight.
- Places subject to dust or corrosive gas (in particular, sulfide gas and ammonia gas).
- Places subject to intense temperature change.
- Places subject to icing and condensation.
- Places subject to vibration and large shocks.

(2) Use/store within the rated temperature and humidity ranges. Provide forced-cooling if required.

(3) To allow heat to escape, do not block the area around the product. Do not block the ventilation holes on the product.

(4) Be sure to wire properly with correct polarity of terminals.

(5) Use specified size (M3.5, width 7.2 mm or less) crimped terminals for wiring. To connect bare wires to the terminal block, use copper braided or solid wires with a rated temperature of over 70°C and a gauge of AWG24 to AWG14 (equal to a cross-sectional area of 0.205 to 2.081 mm^2). (The stripping length is 5 to 6 mm.) Up to two wires of same size and type, or two crimped terminals can be inserted into a single terminal.

(6) Do not wire the terminals which are not used.

(7) Allow as much space as possible between the controller and devices that generate a powerful high-frequency or surge. Separate the high-voltage or large-current power lines from other lines, and avoid parallel or common wiring with the power lines when you are wiring to the terminals.

(8) Use this product within the rated load and power supply.

(9) Make sure that the rated voltage is attained within two seconds of turning ON the power using a switch or relay contact. If the voltage is applied gradually, the power may not be reset or output malfunctions may occur.

(10) Make sure that the Controller has 30 minutes or more to warm up after turning ON the power before starting actual control operations to ensure the correct temperature display.

(11) A switch or circuit breaker should be provided close to this unit. The switch or circuit breaker should be within easy reach of the operator, and must be marked as a disconnecting means for this unit.

(12) Do not use paint thinner or similar chemical to clean with. Use standard grade alcohol.

(13) Design system (control panel, etc) considering the 2 second of delay that the controller's output to be set after power ON.

(14) The output may turn OFF when shifting to certain levels. Take this into consideration when performing control.

(15) The number of non-volatile memory write operations is limited.

Specifications

Power supply voltage	100 to 240 VAC, 50/60 Hz
Operating voltage range	85% to 110% of the rated voltage
Power consumption	Approx. 3.5VA(One alarm) Approx. 4.2VA(Two alarms)
Sensor type	Thermocouple: K, J, T, R, or S (JIS C 1602-1995 and IEC 60584-1) Platinum resistance thermometer: Pt100 (JIS C 1604-1997 and IEC 60751)
Indication accuracy (ambient temperature: 23°C)	(±0.5% of indication value or ±1°C, whichever is greater) ±1 digit max. R, S thermocouple at 200°C or less: ±3°C ±1 digit max. K, T thermocouple at −100°C or less: ±2°C ±1 digit max.
Control output	Relay output: 250 VAC, 3 A (resistive load) Voltage output (for driving SSR): 12 VDC +25%/−15%, 21 mA
Alarm output	Relay outputs: 250 VAC, 1 A (resistive load)
Control method	ON/OFF or 2-PID control
Electrical life of relay	100,000 operations
Sampling period	250 ms
Malfunction vibration	10 to 55 Hz, 20 m/s^2 for 10 min each in X, Y and Z directions
Vibration resistance	10 to 55 Hz, 20 m/s^2 for 2 h each in X, Y and Z directions
Malfunction shock	100 m/s^2, 3 times each in X, Y, and Z directions
Shock resistance	300 m/s^2, 3 times each in X, Y, and Z directions
Ambient temperature	−10 to 55°C (with no freezing or condensation)
Ambient humidity	25% to 85%
Storage temperature	−25 to 65°C (with no freezing or condensation)
Altitude	2,000 m max.
Recommended fuse	T2A, 250 VAC, time-lag, low-breaking capacity
Weight	Approx. 150 g (Controller only)
Degree of protection	Front panel: IP50, Rear case: IP20, Terminal section: IP00
Installation environment	Installation category II, pollution degree 2 (as per IEC 61010-1)
Memory protection	Non-volatile memory (number of write operations: 100,000)

Wiring

Model Number Legends

E5EWL- ☐☐☐
1 2 3

1 Control output

R	Relay output: 250 VAC, 3 A
Q	Voltage output (for driving SSR): 12 VDC, 21 mA

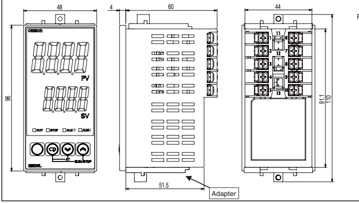
2 Alarm

1	One relay output: 250 VAC, 1 A (resistive load)
2	Two relay outputs: 250 VAC, 1 A (resistive load)

3 Sensor type

TC	Thermocouple (K, J, T, R, or S)
P	Platinum resistance thermometer (Pt100)

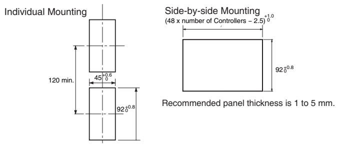
Dimensions (mm)



Package Contents
- Temperature Controller
- Adapter
- Instruction Manual

- Solderless terminal size: M3.5
- Terminal Cover: E53-COV19 (sold separately)

Installation (mm)

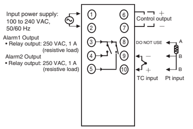


Recommended panel thickness is 1 to 5 mm.

- Insert the mounting brackets into the fixing slots located on the top and bottom of the rear case. Push the adapter on from the rear to secure the Controller.
- Make sure that the surrounding temperature does not exceed the allowable operating temperature given in the specifications, especially when two or more Controllers are mounted.

Connections

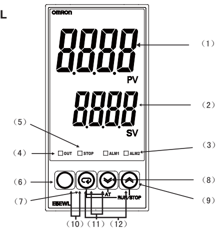
Control Output
- Relay output: 250 VAC, 3 A (resistive load)
- Voltage output (for driving SSR): 12 VDC, 21 mA


Input power supply: 100 to 240 VAC, 50/60 Hz
Alarm1 Output
• Relay output: 250 VAC, 1 A (resistive load)
Alarm2 Output
• Relay output: 250 VAC, 1 A (resistive load)
1
2
3
4
5
6
7
8
9
10
Control output
+
−
DO NOT USE
A
B
B
TC input
Pt input

- The voltage output (control output) is not electrically isolated from the internal wiring. One or the other of the control output terminals must therefore be left ungrounded when using a grounded thermocouple thermometer. (If both are grounded, measurements will be unreliable due to sneak current.)

Front Panel Part Names and Functions

E5EWL



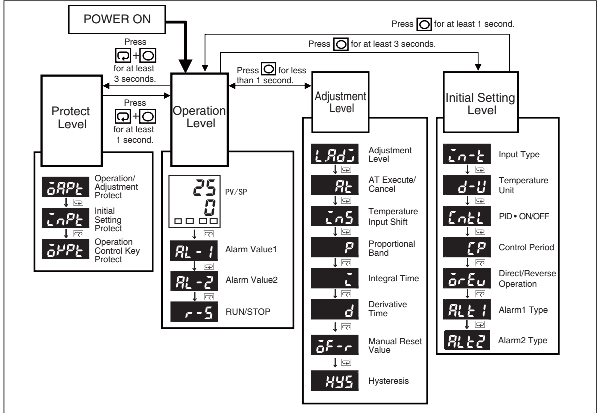
(1) Display No. 1	Displays the process value (PV) or parameter.
(2) Display No. 2	Displays the set point (SP) or parameter setting.
(3) ALM1(ALM2)	Lit while the alarm1(alarm2) is ON. Not lit while the alarm is OFF.
(4) OUT	Lit while the control output is ON. Not lit while the control output is OFF.
(5) STOP	Not lit during operation. Lit while operation is stopped.
(6) ◯	Level Key: Changes the setting level.
(7) ⏎	Mode Key: Changes the parameter within the setting level.
(8) ▼	Down Key: Reduces the setting.
(9) ▲	Up Key: Increases the setting.
(10) ◯ +⏎	Press these keys for at least 3 seconds in Operation Level or Adjustment Level to go to Protect Level. Press these keys for at least 1 second in Protect Level to return to Operation Level.
(11) ⏎+▼	Press these keys for at least 2 seconds to start or stop autotuning.*1
(12) ⏎+▲	Press these keys for at least 2 seconds to start or stop operation.*2

*1: These keys are disabled when starting and stopping autotuning has been disabled with operation control key protection.

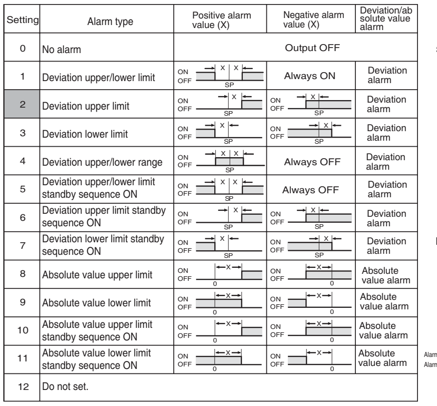
*2: These keys are disabled when starting and stopping operation has been disabled with operation control key protection.

Operation Menu

Parameter Operations



Alarms

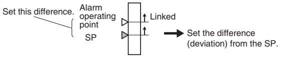


	Setting	Alarm type	Positive alarm value (X)	Negative alarm value (X)	Deviation/absolute value alarm
	0	No alarm	Output OFF		
	1	Deviation upper/lower limit		Always ON	Deviation alarm
	2	Deviation upper limit			Deviation alarm
	3	Deviation lower limit			Deviation alarm
	4	Deviation upper/lower range	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

The default alarm type is 2.

Deviation Alarm

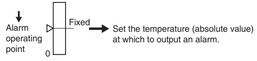
Use a deviation alarm to link the alarm to the SP.
If the SP is changed, the alarm operating point will also change.



Absolute Value Alarm

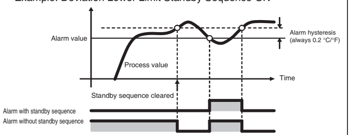
Use an absolute value alarm when the alarm is not linked to the SP.

Set the alarm operating point as the temperature (absolute value).


Alarm operating point
0
Fixed
Set the temperature (absolute value) at which to output an alarm.

✻ Alarms with a Standby Sequence
The alarm is blocked until the first safe-state is reached.
Unwanted alarm during start-up are prevented.

Example: Deviation Lower Limit Standby Sequence ON



The standby sequence is cleared when the alarm OFF condition has been met.
The standby sequence is started again when any of the following conditions is met.
- Operation is started (power is turned ON or operation is switched from stop to run).
- The alarm value is changed.
- The temperature input offset is changed.
- The set point is changed.

Parameter Tables

Step 1 Initial Setting Level: Used to set basic specifications.

Display	Parameter name	Description	Setting/monitoring range	Default
in-t	Input Type	Set the input sensor type.	*Refer to table on the right.	0 or 8
d-U	Temperature Unit	Set the unit for temperature input to Celsius (°C) or Fahrenheit (°F).	C (°C)/F (°F)	°C
CntL	PID • ON/OFF	Set either 2-PID control or ON/OFF control.	onoF/Pid	ON/OFF
CP	Control Period	Set the time-proportional control period for the control output. (Displayed only when PID control is selected.)	0.5, 1 to 99	20 or 2 (s)
orEv	Direct/Reverse Operation	Set either reverse option (heating control) or direct operation (cooling control).	or-r (reverse control) or-d (direct control)	Or-r (reverse control)
ALt1	Alarm1 Type	Set the alarm type.	*Refer to table on the right.	2 (Deviation upper limit)
ALt2	Alarm2 Type	Set the alarm type.	*Refer to table on the right.	2 (Deviation upper limit)

Step 2 Operation Level: Used to monitor the process value and to set the set point, alarm value, etc.

Display	Parameter name	Description	Setting/monitoring range	Default
—	PV/SP	Monitor the process value and set the set point.	—	SV: 0 (°C)
AL-1	Alarm value1	Set the alarm value. The location of the decimal point depends on the input type.	-1999 to 9999	0 (°C)
AL-2	Alarm value2	Set the alarm value. The location of the decimal point depends on the input type.	-1999 to 9999	0 (°C)
r-S	RUN/STOP	Start and stop control operation.*1	rUn/StoP	RUN

Step 3 Adjustment Level: Used to tune parameters and set control parameters.

Display	Parameter name	Description	Setting/monitoring range	Default
L.Adj	Adjustment Level	This display indicates that you have moved to Adjustment Level.	—	—
At	AT Execute/Cancel	Starts and stops autotuning. (Displayed only when PID control is selected.)*1*2	oFF/on	OFF
inS	Temperature Input Shift	Set a compensation value for the temperature input in increments of 0.1°C or 0.1°F.	-199.9 to 999.9	0.0 (°C)
P	Proportional Band	Set the proportional band in increments of 0.1°C or 0.1°F.(Displayed only when PID control is selected.)	0.1 to 999.9	8.0 (°C)
i	Integral Time	Set the integral time in increments of 1 s. (Displayed only when PID control is selected.)	0 to 3999	233 (s)
d	Derivative Time	Set the derivative time in increments of 1 s. (Displayed only when PID control is selected.)	0 to 3999	40 (s)
oF-r	Manual Reset Value	Set the manipulated value to use for P or PD control (I = 0). The offset will be canceled.	0.0 to 100.0	50.0 (%)
HYS	Hysteresis	Set the hysteresis to use to achieve stable operation when switching the control output ON/OFF during ON/OFF control. (Displayed only when ON/OFF control is selected.)	0.1 to 999.9	1.0 (°C)

Step 4 Protect Level: Used to set parameters to restrict key operations.

Display	Parameter name	Description	Setting/monitoring range	Default
oAPt	Operation/Adjustment Protect	Set protection for Operation Level and Adjustment Level.	*Refer to table on the right.	0
inPt	Initial Setting Protect	Set protection for Initial Setting Level.	*Refer to table on the right.	1
oKPt	Operation Control Key Protect	Set protection for the AT Key and RUN/STOP Key (operation control keys).	*Refer to table on the right.	0

*1: Displayed only when Operation Control Key Protection is set to 4.

*2: The setting cannot be changed during autotuning. Autotuning will be stopped if you move to Initial Setting Level or stop control operation.
- Displays during Autotuning
  E5EWL: The AT Execute/Cancel characters on display No. 1 and the PV/SP characters on display No. 2 will flash.

Input type: Thermocouple

Input	Setting	Setting range (°C)	Setting range (°F)
K	0	−200 to 1300	−300 to 2300
	1	−20.0 to 500.0	0.0 to 900.0
J	2	−100 to 850	−100 to 1500
	3	−20.0 to 400.0	0.0 to 750.0
T	4	−200 to 400	−300 to 700
	5	−199.9 to 400.0	−199.9 to 700.0
R	6	0 to 1700	0 to 3000
S	7	0 to 1700	0 to 3000

The default input type is 0.

Input type: Platinum Resistance Thermometer

Input	Setting	Setting range (°C)	Setting range (°F)
Pt100	8	−200 to 850	−300 to 1500
	9	−199.9 to 500.0	−199.9 to 900.0

The default input type is 8.

Troubleshooting

Display	Meaning	Action
S.Err (S.ERR)	Input error*1	Check the wiring of inputs, disconnections, short circuits and input type.
E111 (E111)	RAM memory error	Turn the power OFF then back ON again.*2
E111/SUM (E111)/(SUM) *3	Non-volatile memory memory error	Press the ▲ and ▼ Keys for at least 3 seconds to initialize the settings and clear the non-volatile memory error.*2

- The control output and the alarm output will turn OFF when an error occurs.
  (For S.Err, the alarm output will be processed for a high temperature error.)
- If the input value exceeds the display limit (-1999 to 9999) but it is still within the control range, cccc will be displayed for values under -1999.
  Under these conditions, the control output and alarm output will operate normally.

*1: This error is displayed only when the process value and set point are displayed.

*2: If the display does not change, the Controller needs to be repaired.
If operation returns to normal, then noise may have caused the problem. Check for noise.

*3: On the E5EWL, E111 will be displayed on display No. 1 and SUM will be displayed on display No. 2.

⚠ Conformance to EN/IEC Standards

This is a class A product.In residential areas it may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.

Protection

- Operation/Adjustment Protection

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

Default: 0
◎: Can be displayed and changed.
○: Can only be displayed.
×: Display or changing to another level is not possible.

- Initial Setting Protection

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

Default: 1
◎: Can be displayed and changed.
×: Display or changing to another level is not possible.

- Operation Control Key Protection

Operation Control	Setting 0	1	2	3	4
AT Execute/Cancel (⏎+▼)	○	×	○	×	△
RUN/STOP (⏎+▲)	○	○	×	×	△

Default: 0
○: Operation control keys are enabled but operation control using parameters is disabled.
△: Operation control keys are disabled but operation control using parameters is enabled.
×: Operation control keys and operation control using parameters are disabled.

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E5EWL

OMRON

数字式温度控制仪

CHN　使用说明书

感谢您购买欧姆龙E5EWL数字式温度控制仪。
为了您更好的使用这一产品，该手册描述了其功能、特性以及应用方法。
请在使用该产品时注意以下事项：

- 使用该产品的人必须具备足够的电气系统知识。
- 在使用该产品前应通读并理解本手册以确保正确的使用。
- 妥善保管该手册以确保在需要时可以随时查阅。

欧姆龙公司

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安全警告

●警告符号的要点

⚠警告	表示潜在的危险情况，如不加以防止，很可能导致轻度或中度的人身伤害，或财产损坏。在使用该产品前应仔细阅读本手册。

●警告符号

⚠警告	
当电源带电时，不要接触端子。 这样做很可能会因为电击导致轻度伤害。	⚠
不允许金属碎片、导线线头或者安装时产生的细小的金属屑进入设备。这样做很可能导致电击、火灾或误动作。	🛇
不要将该产品用于有易燃易爆气体的场合。 否则有可能因为爆炸而造成轻度伤害。	
绝对不要拆卸，改装以及修理该产品或接触任何内部元件。 有时会发生轻微的电击、火花或误动作。	
如果输出继电器超过了预期的使用寿命，有时会发生触点熔化和燃烧。 始终要注意输出继电器的应用环境，并在额定负载及预期寿命以内使用。 输出继电器的预期寿命随着输出负载以及开关条件的变化而变化。	⚠
使用0.74～0.90 N・m的力矩拧紧端子螺丝。松动的螺丝可能导致火灾。	!
设定适当的产品参数以使系统可控。如果设置不合适，意外的操作可能造成财产损失或事故。	
温度控制器误动作很可能造成控制操作失效或阻止报警输出，导致财产损失。为了在温度控制器发生误动作时确保安全，应采取适当的安全措施，如使用单独的线路安装监控设备。	

使用的适用性

欧姆龙不负责遵守任何使用该产品进行集成的用户产品的标准、章程或规则。采取一切必要的步骤来决定该产品对采用该产品的系统、机器和设备的适用性。
了解并遵守一切使用该产品的禁止行为。
如果应用该产品的系统在设计上不能保证有效处理对生命、财产的危害，不要在这样的系统上使用该产品。在整套装备或系统中适当使用和安装欧姆龙产品。
参见产品目录中有关保证和免责事项。

安全使用注意事项

了解以下警告以避免操作失误、误动作或产品特性、功能的相反效果。如果不这样做，可能导致不可预期的事情发生。

1） 该产品只被设计为室内使用。不要将该产品用在室外或者下列地点。
   - 直接受加热设备热辐射的地方。
   - 有液体或油气飞溅的地方。
   - 阳光直射的地方。
   - 灰尘较多或有腐蚀性气体（特别是硫化物气体和氨气）的地方。
   - 温度剧烈变化的地方。
   - 结冰和结露的地方。
   - 有震动或大的冲击的地方。

2） 在额定的温度和湿度范围内使用/存储该设备。必要时应采取强制冷却。
3） 允许热量散发，不要填塞该产品周围的空间。
不要堵塞产品的通风孔。
4） 按端子的极性进行正确的接线。
5） 使用规定尺寸（M3.5，小于等于7.2 mm宽）的接线端子进行接线。
对于连接，须使用AWG24到AWG14（相当于横截面积0.205到2.081mm²）且额定温度高于70℃的铜绞线或实心铜线。（剥线长度5到6 mm）
一个端子内最多插入两根相同型号尺寸的导线或接线端子。
6） 不用的端子不要接线。
7） 在控制器与可以产生高频和浪涌的设备之间应保持足够远的距离。
将高压或大电流导线与其它导线隔离，在端子接线时避免与电源线共端或并联。
8） 在额定负载和供电电源下使用该产品。
9） 使用开关或继电器触点以确保在两秒内将电源升为额定电压。如果电压是逐渐上升的，电源可能无法复位或者发生输出误动作。
10） 在接通电源到开始实际操作前应确保温度控制器进行30分钟以上的预热，以保证正确的温度显示。
11） 在该产品的附近应该有开关或者断路器。
开关或者断路器应该在操作者便于够到的地方，并且有明显的断开标志。
12） 不要使用油漆稀释剂或同类化学品清洁该产品。使用标准等级的酒精。
13） 在设计系统（如控制面板）的时候，需要考虑到控制器的输出在电源上电后有2秒的延时。
14） 在改变至某一菜单的时候输出可能置OFF，在实施控制的时候需要考虑到这一点。
15） 非挥发内存的写次数是有限的。

●规格

供电电压	AC100-240V 50/60Hz
工作电压范围	额定电压的85～110%
功率消耗	约3.5VA(一路报警)，约4.2VA(两路报警)
传感器类型	热电偶:K, J, T, R, S (JIS C 1602-1995, IEC60584-1) 铂电阻:Pt100 (JIS C 1604-1997, IEC60751)
指示精度 (环境温度：23℃)	(指示值的±0.5% 或±1℃，其中较大的一个)±1位以下 当R、S是200℃以下时，精度为±3℃±1位以下 当K、T是-100℃以下时，精度为±2℃±1位以下
控制输出	继电器输出 AC250V 3A (阻性负载) 电压输出(用于驱动SSR)DC12V +25%/-15% 21mA
报警输出	继电器输出 AC250V 1A (阻性负载)
控制方法	ON/OFF或2路PID控制
继电器的电气寿命	100,000次
采样周期	250ms
误动作振动	10～55Hz　20m/s² 3个坐标轴方向 10min
耐久振动	10～55Hz　20m/s² 3个坐标轴方向 2h
误动作冲击	100m/s² 3个坐标轴方向 各3次
耐久冲击	300m/s² 3个坐标轴方向 各3次
环境温度	－10～55℃(避免结冰或结露)
环境湿度	RH 25～85%
存储温度	－25～65℃(避免结冰或结露)
高度	最大2,000m
推荐保险丝	T2A、250VAC，时延，低熔断容量
重量	约150g(仅包含主单元)
防护等级	前面板：IP50，后壳：IP20，端子：IP00
安装环境	安装种类Ⅱ、污染等级2(IEC61010-1)
内存保护	非挥发内存(写次数：100,000)

■配线

●形式基准

E5EWL-□□□
　　　　❶❷❸

❶控制输出

R	继电器输出 AC250V 3A
Q	电压输出（驱动 SSR）DC12V 21mA

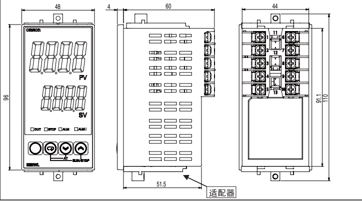
❷报警

1	1 路继电器输出　AC250V 1A（阻性负载）
2	2 路继电器输出　AC250V 1A（阻性负载）

❸传感器类型

TC	热电偶（K, J, T, R, S）
P	铂电阻（Pt100）

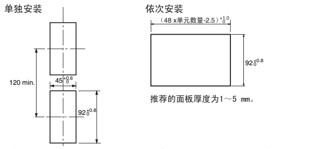
●尺寸规格（单位 mm）



在包装里包括
- 主单元
- 适配器　2 个
- 使用说明书

- 非焊接端子尺寸：M3.5
- 端子盖（另售）
（E53-COV19）

●安装（单位：mm）

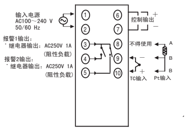


推荐的面板厚度为1～5 mm。

- 将适配器插入后外壳顶部和底部的固定槽，从后面推上适配器并暂时固定，确保控制器，面板和适配器之间无缝隙。
- 确保周围的温度不要超过说明书给出的允许工作温度，尤其是当安装有两个以上控制器的时候。

●连接

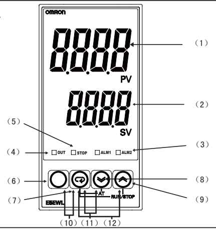
控制输出
- 继电器输出：AC250V 3A （阻性负载）
- 电压输出（驱动 SSR）：DC12V 21mA



- 因为电压输出（控制输出）在内部接线上不是电气绝缘的，所以在使用接地的热电偶温度计时，必须使一个控制输出端子不接地。
（连接会由于寄生电流造成测量不可靠）

●前面板的名称和动作

E5EWL

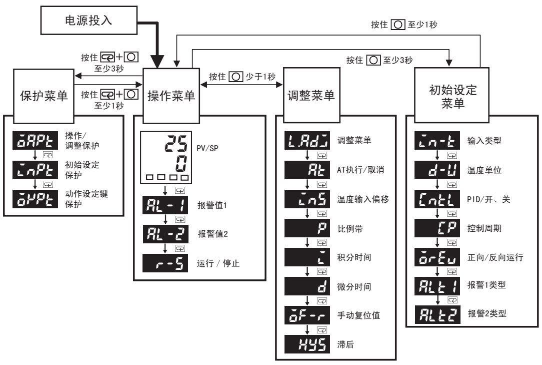


（1）第一显示	当前值（PV）或设定数据符号	
（2）第二显示	设定值（SV）或者设定数据	
（3）ALM1（ALM2）	报警输出 1（报警输出 2）功能 ON 时灯亮、OFF 时灯灭	
（4）OUT	控制输出功能 ON 时灯亮、OFF 时灯灭	
（5）STOP	RUN 时灯灭、STOP 时灯亮	
（6）▢	菜单键	使用该键切换菜单
（7）⮐	模式键	使用此键在设定菜单内切换设定数据
（8）⮟	向下键	使用此键减少设定的值
（9）⮝	向上键	使用此键增加设定的值
（10）▢+⮐		在操作菜单或调整菜单模式下同时按住 3 秒以上进入保护菜单 在保护菜单模式下按住 1 秒以上返回到操作菜单
（11）⮐+⮟		同时按住 2 秒以上设定自动调节执行／取消　※1
（12）⮐+⮝		同时按住 2 秒以上设定 RUN ／ STOP　※2

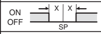
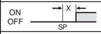
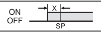
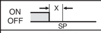
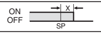
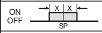
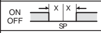
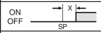
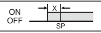
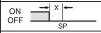
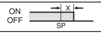
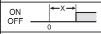
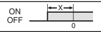
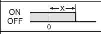
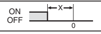
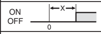
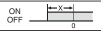
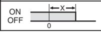
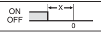
※1　利用动作设定键保护将自动调节执行／取消设定为无效时，失效
※2　利用动作设定键保护将 RUN/STOP 设定为无效时，失效

■操作菜单

●设定数据操作一览

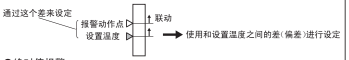


●报警种类

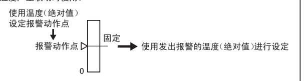
	设定值	报警种类	正报警值（X）	负报警值（X）	偏差报警/绝对值报警
	0	无报警功能	没有输出		偏差报警
	1	偏离上/下限		一直为ON	偏差报警
	2	偏离上限			偏差报警
	3	偏离下限			偏差报警
	4	偏离上/下范围		一直为OFF	偏差报警
※	5	偏离上/下限 待机序列 ON		一直为OFF	偏差报警
※	6	偏离上限 待机序列 ON			偏差报警
※	7	偏离下限 待机序列 ON			偏差报警
	8	绝对值上限			绝对值报警
	9	绝对值下限			绝对值报警
※	10	绝对值上限 待机序列 ON			绝对值报警
※	11	绝对值下限 待机序列 ON			绝对值报警
	12	不推荐使用			

默认值是「2」

●偏差报警
在想要和设置温度产生联动时使用。
报警动作点会随着设置温度的变更而改变。

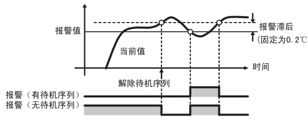


●绝对值报警
无需和设置温度产生联动时使用。



※待机序列 ON报警动作是指
　从当前值超出报警范围外开始，到进入下一次报警范围前，
　即使达到报警ON的条件，报警也不会ON。

例）报警种类：偏离下限待机序列 ON



当满足报警OFF的条件时，待机序列将被解除。
满足下述任一条件时，待机序列将被再次启动。
- 开始操作时（开启电源时，停止→操作时）
- 变更报警值（或者报警上下限值）时
- 变更温度输入补正值时
- 变更设置温度时

●设定数据一览

第一步 初始设定菜单　设定基本规格。

显示	设定数据名	说明	设定（监控）范围	默认值
in-t	输入类型	设定输入传感器的类型。	※参照右表	0 or 8
d-U	温度单位	把温度输入的单位设定为摄氏（℃）或华氏（℉）。	℃＝C、℉＝F (℃为摄氏度，℉为华氏度)	C
CntL	PID/ 开、关	把控制方法设定为 2 路 PID 控制或者 ON/OFF 控制。	使用 ON/OFF 控制时 ＝ onoF 使用 2 路 PID 控制时 ＝ PId	onoF
CP	控制周期	设定控制输出的时间分割比例周期。（仅在选择 PID 控制时显示）	0.5、1～99	20 or 2（秒）
orEu	正向／反向运行	设定为反向动作（加热控制）或者正向动作（制冷控制）。	逆动作（加热）＝ or-r 正动作（冷却）＝ or-d	or-r
ALt1	报警 1 类型	选择报警类型。	※参照右表	2（偏离上限）
ALt2	报警 2 类型	选择报警类型。	※参照右表	2（偏离上限）

第二步 操作菜单　监控当前值并设定设定值・报警值等。

显示	设定数据名	说明	设定（监控）范围	默认值
—	PV/SP	设定当前值的显示和设定值。	—	SV：0（℃）
AL-1	报警值 1	设定报警值。根据输入类型，小数点的位置有所不同。	-1999～9999	0（℃）
AL-2	报警值 2	设定报警值。根据输入类型，小数点的位置有所不同。	-1999～9999	0（℃）
r-S	运行／停止	设定操作／取消。※1	当控制开始时 ＝ rUn 当控制停止时 ＝ StoP	rUn

第三步 调整菜单　为了执行并控制运行而进行设定。

显示	设定数据名	说明	设定（监控）范围	默认值
L.AdJ	调整菜单	显示转入调整菜单。	—	—
At	AT 执行／取消	选择 AT 执行／取消。（仅在选择 PID 控制时显示）※1　※2	oFF、on	oFF
inS	温度输入偏移	以 0.1℃或者°F 为单位设定温度输入的偏移值。	-199.9～999.9	0.0（℃）
P	比例带	以 0.1℃或者°F 为单位设定比例带。（仅在选择 PID 控制时显示）	0.1～999.9	8.0（℃）
i	积分时间	以 1 秒为单位设定积分时间。（仅在选择 PID 控制时显示）	0～3999	233（秒）
d	微分时间	以 1 秒为单位设定微分时间。（仅在选择 PID 控制时显示）	0～3999	40（秒）
oF-r	手动复位值	P、PD 控制时（I=0），设定操作量，取消补偿。	0.0～100.0	50.0（%）
HYS	滞后	ON/OFF 控制时，为了能够在控制输出的 ON/OFF 切换点上稳定的运转，设定磁滞。（仅在选择 ON/OFF 控制时显示）	0.1～999.9	1.0（℃）

第四步 保护菜单　为了限制键操作进行相关设定。

显示	设定数据名	说明	设定（监控）范围	默认值
oAPt	操作／调整保护	进行操作菜单／调整菜单的保护设定。	※参照右表	0
inPt	初始设定保护	进行初始设定的保护设定。	※参照右表	1
oYPt	动作设定键保护	进行 AT 键、RUN/STOP 键（动作设定键）的保护设定。	※参照右表	0

※1 「动作设定键保护」设定仅在「4」的情况下显示。
※2 AT执行过程中，不能变更设定值。转入初始设定菜单时，或者切换到STOP时，中止AT。

•AT执行过程中的显示
E5EWL：「AT执行/取消」的第一显示（字符）和「当前值/目标值」的第二显示（字符）闪烁。

●输入类型：热电偶

输入	设定	设定范围（℃）	设定范围（°F）
K	0	-200 ～ 1300	-300 ～ 2300
	1	-20.0 ～ 500.0	0.0 ～ 900.0
J	2	-100 ～ 850	-100 ～ 1500
	3	-20.0 ～ 400.0	0.0 ～ 750.0
T	4	-200 ～ 400	-300 ～ 700
	5	-199.9 ～ 400.0	-199.9 ～ 700.0
R	6	0 ～ 1700	0 ～ 3000
S	7	0 ～ 1700	0 ～ 3000

默认值是「0」

●输入类型：铂电阻

输入	设定	设定范围（℃）	设定范围（°F）
Pt100	8	-200 ～ 850	-300 ～ 1500
	9	-199.9 ～ 500.0	-199.9 ～ 900.0

默认值是「8」

●错误显示（故障诊断）

显示	意义	操作
S.Err (S.ERR)	输入错误　※1	检查输入接线，断开、短接和输入类型。
E111 (E111)	内存错误 （RAM 错误）	关掉电源再打开。※2
E111/SUM (E111)/(SUM)　※3	内存错误 （非挥发内存错误）	按住 ⮟+⮝ 至少 3 秒，初始化设定值，解除非挥发内存异常。※2

- 发生错误时，控制输出・报警输出将同时OFF。
（S.Err时，报警输出将作为异常高温进行处理）。
- 如果输入值超出了显示界限（－1999～9999），即使它仍然在控制范围内，低于－1999的将显示cccc。
在这种情况下，控制输出和报警输出工作正常。

※1　错误显示只针对"PV/SP"。
※2　显示内容不变时需要进行修理。
　　修理正常后考虑到噪音的影响，请确认是否有噪音产生。
※3　E5EWL在第一显示中显示「E111」，在第二显示中显示「SUM」。

⚠ 符合 EN/IEC 标准

这是一种A类产品。在住宅区中会导致无线电干扰，所以要求用户采取适当的措施减少干扰。

●保护功能

・操作／调整保护

菜单		设定值			
		0	1	2	3
操作菜单	当前值	○	○	○	○
	PV ／ SP	◎	◎	◎	○
	其他（报警值）	◎	◎	×	×
调整菜单		◎	×	×	×

默认值是「0」
　◎：可以变更显示／设定
　○：可以显示
　×：不能显示或转移到其他菜单

・初始设定保护

菜单	设定值		
	0	1	2
初始设定菜单	不推荐使用	◎	×

默认值是「1」
　◎：可以变更显示／设定
　×：不能显示或转移到其他菜单

・动作设定键保护

动作设定键	设定值				
	0	1	2	3	4
AT 执行／取消（⮐+⮟）	○	×	○	×	△
运行／停止（⮐+⮝）	○	○	×	×	△

默认值是「0」
　○：可以使用动作设定键，但不能使用设定数据进行动作设定
　△：不可以使用动作设定键，但可以使用设定数据进行动作设定
　×：不可以使用动作设定键以及设定数据来进行动作设定

■联系方式

■制造商

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