## E5CS－U <br> OmROn

数字式温度控制仪

| Chinese 使用说明书 |
| :---: |
| 感谢您购买欧姆龙E5CS－U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。 <br> 请在使用该产品时注意以下事项： <br> - 使用该产品的人必须具备足够的电气系统知识。 <br> - 在使用该产品前应通读并理解本手册以确保能够正确使用。 <br> －妥善保管该手册以确保在需要时可以随时查阅。 |
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CS7 2162665－6A
－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至致轻度伤害
不允许金属碎片，导线线头或者安装时产生的细小的金属局进入设备。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。
注意一火灾或触电的危险
型过程控制设备，必须安装在能够防止火花进出的机壳
b）在使用两个以上断电开关的情况下，维修前请先断开所有有开关，确保本产品处于断电状态
c）信意：输入为S S 减少火，灰限能能电的危险，不要将不同的2类回路的输出互联。
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炏烧。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 $0.50 \mathrm{~N} \cdot \mathrm{~m}$ 的力矩拧紧端子螺丝。松动的螺丝可能导致火灾。

果设定与受控系统不匹配，则会产生意外动作，从而导致设备损坏或事故。请按如下所述设定温度控制仪


温度控制器误动作很可能造成控制操作失效或阻止报警辁出，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。

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的系统上使该品在嶅套装备或系统中适当使用和安装欧姆彦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

请务必造守下述注意事项，以防止动作失败，误动作或者对产品的性能和功能产生负面影响。若不遗守注意事项，可能会导致点外事故。
1）该产品品被设证为要内在以下任何地方使用或存放该产品

直接受加热设备热鎘射的地

- 有液体或油气飞飞滩
- 灰尘较多或有㡾仲性气体（特别是硫化物气体和虫气）的地方
- 温度剧烈变化的地方。

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
4）使用规定尺寸（M3．5，小于或等于 7.2 mm 宽）的接线瑞子进行接线。使用标有 AWG24～AWG18（相当于横截面面积 $0.205 \sim 0.832 \mathrm{~mm}^{2}$ ）的铜统线或实心电缆连接辣线和端子块。（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瑞子
5）按端子的极性进行正确的接线
6）不用的的端子不要接线
7）电圧输出（控制输出）未与内部电路进行电气绝缘。使用接地温度传感器时，请勿将任何控制输出 8）在子控制地。否则会产产生有害的电流通路，从而导致测量误差。

10）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
11）使用PID操作（自整定）时，应在接通温度控制仪电源的同时或之前接通负载侧的电源
显的断开标志。 有。
 15）确保铂电阻温度计的类型与温度控制仪中设定的输入类型一致
控制仪时，请勿用手触摸电子元件或电路板上的导线图案。操作付时应抓推温度度控制从仪煎壳中拉出温度 18）不要使用油濝稀释剂或同粦化学品清洁该产品。使用标准等级的酒精

－开关



－保护开
保括茠关上调到 ON 时，不能使用上调能及下调键并能防止设



## 端子连线

－E5CS－R1ロU，－R2ロU，－Q1ロU，－Q2ロU（报警输出型

不隹用（3）不使用（3）


－表面安装
虽 2 果在垂真方向上的室原。装。多台温度控制仪，应在安装插座的上下方各留


| 自我诊断功能 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| 显示 | 异常内容 | 现象 | 处理 |  | 出 |
| FFF |  | － |  | OFF | O |
| －－－ |  | － |  | ON | OFF |
|  |  |  <br>  <br>  |  | OFF | OFF |
| （可称） |  | ： <br>  <br>  <br>  |  | OFF | OFF |
| E！ 1 |  |  |  | OFF | OFF |


在以下情况下，揍制揄出和报警输出会操作正常




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执，所以要求用户采取适当的措施蔵少干扰。
〔符合安全标准
在辅入电源，继电器揄出之间以及其他㟨子之间提供了强化绝潒。

| 规格 |  |
| :---: | :---: |
| 供电电压 | ${ }^{100 \sim} 240 \mathrm{VaC}$ 型 5016 OHz |
|  | 24V AC 型 $50 / 60 \mathrm{~Hz} / 24 \mathrm{~V}$ DC型 |
| 工作电压范围 | 额定电压的85－110\％ |
|  | 约 |
|  | 热电他类娄 |
|  | （ （显示值的 $\pm 1.0 \%$ 或者 $\pm 2^{\circ} \mathrm{C}$ 中的较大值） |
|  |  |
|  | － |
|  | 显示值的 $\pm 0.5 \%$ 或者 $\pm^{\circ} \mathrm{C}$ 冓的较大值 |
|  |  |
|  | 1．0\％FS 最大 t 1 位数 |
| 控制铪出 |  |
|  | 电压闍出： 12 VDC 21 mA |
|  | 继电鹳电气寿命： 1000,000 次工作 |
| 摭制方法法等出 |  |
|  |  |
| 环䔄温度 | $-10 \sim 55^{\circ} \mathrm{C}$ |
|  | （捤象结冰或结需） |
| 环填温度 | 25－85\％ |
| 存怵温度 | $-25 \sim 65^{\circ} \mathrm{C}$ |
| $\begin{aligned} & \text { 高膺 } \\ & \text { 推萑保险丝 } \end{aligned}$\|重量 |  |
|  | T2A 250 V AC，时延，低鿍断含星 |
|  | 约110g（仅包舍主单元） |
| 防护等级 |  |
|  | 后壳： 1 P20， |
| 安装环境 | 安数种数，污染等级2（IEC61010－1） |
|  | 非挥发内存 |
|  | （写次数： $1.000,000$ 次，环樈温度 $25^{\circ} \mathrm{C}$ ） |
| 璊子 | － |
| $\left\lvert\, \begin{aligned} & \text { 适用连接据座 } \\ & \text { (单蚛他抅 } \end{aligned}\right.$ |  |
|  | P2CF－08．P2CF－08－E和3G－08 |
|  | 报譬输出型用插座（11针）： |

操作手册


[^0]| E5CS-U <br> Temperatu | OmRO <br> ure Controller |
| :---: | :---: |
| English | struction |
| Thank you for purchasing the OMRON E5CS-U functions, performance, and application methods needed for optimum use of the product. |  |
|  |  |
| - This product is designed for use by qualified personnel |  |
|  |  |
|  |  |
| Before using the product, thoroughly read and understand this manual to ensure coct use. |  |
| understand this manual to ensure correct use.- Keep this manual in a safe location so that it is available |  |
| OMRON Corporation <br> (C) All Rights Reserved |  |
|  |  |



|  |
| :---: |
| Precautions for Safe Use |

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

1) The eroduct is sesigned for indoor use only. Do not use the product outdoors or in any of the followi 1) The product is designed for indoor use only. Do not use the prod
Places directly subject to heat raviated from heating equipment.
Places subiect to splashing licuid or oil atmosphes - Placeses subiectict to spolashing liruid

- Places subject to direct sunlight.
- Places subject to direct sunlight.
Places subject to dust or orrosive gas (in particular, sulfide gas and ammonia gas).
Places subiect to intense temperature change.
- Places subject to intense temperature change
Places subuect to ining and oondensation.
Places subiect o vibration and large shocks.




Do not wire any of the VO terminals incorrectly.

5) Do not wire the teminals which are not used
6) The voltage output (control output) is no electicaly is
7) The voltage eutput (contril) output) is not eletertically solated fom the internal circuits. When using a grounded temperature sensor,


8) Make sure that the rated voltage is attained within two seconds of tumning ON the power using a switch or


power oN.
9) A switch or cir
10) A switch or circuit breaker should be provided close to this unit. The swith or circuit breaker should be within easy
reach of the operator, and must be marked as a d disconnecting means for this unit.
.
reach of the operator, ant must be marked as a disconnecting means for this unit.
11) Make sure that the Controller has 30 minutes or morer to warm up after turning o N the power before starting actual
control operations to ensure the correct temperatur display
12) Be sure that the platioum resistance thermometeratype and the in
13) Be sure that the platinum resistance themmometer type and the ingut type set on the Temperature Controler are the same.
14) When extending the themeouple lead wires always use compensating conductors suitable tor the tye of
themococuple. Do not extend the lead wires on a platitum resistance thermometer. Use only low-resistance wire

 or patterns on the board with your hand. Hold the Temperature Controler by the edge of the front panel when handing it.
D)
Do not use paint thinner or similar chemical to clean with Use standard grace alcohol.
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 produ
 ENSURING THAT THE SYSTEM AS A WHOLE HAS BEE DESIGNE TO ADDRESS THE RISKS, AND THAT THE OMRON
PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUUPMENT OR
SYSTEM. See also product catalog for Warranty and Limitation of Liability.
-Mounting

| Dimensions |  |  |
| :---: | :---: | :---: |
| ESCS-U(mm) |  |  |
|  |  |  |


| Names of Front Parts |  |
| :---: | :---: |
|  | Temperature indicato <br> The present temperature, set temperature, alarm set <br> LED deviation indicators <br> - : Lit when the difference between the present <br> than $+1 \% \mathrm{FS}(+0.25 \%$ FS for TC/Pt multi-input <br> models). : Lit when the difference between the present <br> temperature and the set temperature is within $\pm 1 \% \mathrm{FS}( \pm 0.25 \%$ FS for TC/Pt multi-input <br> $\pm 1 \%$ FS ( $\pm 0.25 \%$ FS for TC/Pt multi-input <br> v : Lit when the difference between the present temperature and the set temperature is smaller than -1\% models). FS ( $-0.25 \%$ FS for TC/Pt multi-input |
| - Switch <br> Pull forward on the front door open/close notch on the right of the front Open the front door only when setting the switches. Do not open it at any other time. <br> *1 There is no alarm mode selector switch on models without an alarm. <br> *2 The INIT switch is always OFF <br> - Protection switch <br> The protection switch can be turned ON to disable the Up and The Mode key, however, will operate even when the protection switch is ON (i.e., the display can be switched between the and input shift value) | Output operation indicator <br> OUT: Control output indicator <br> Lit when the output function is ON; not lit when the Alarm output operation indicator <br> ALM1: Alarm 1 indicator Lit when the alarm 1 function is ON. <br> ALM2: Alarm 2 indicator Lit when the alarm 2 function is ON. Mode indicators <br> SP: Lit when the set temperature is displayed. <br> ALM: Lit when the alarm set temperature is displayed. <br> ode key <br> Switches the display between the present <br> temperature, set temperature, alarm set temperature, <br> Up key / Down key <br> The set temperature, alarm set temperature, or input shift value will increase when the Up Key is pressed. shift value will decrease when the Down Key is pressed. |



| Terminal Layout |  |
| :---: | :---: |
| - E5CS-R $\square U,-Q \square U$ (No alarm output type) Suitable socket is P2CF-08- $\square$ or P3G-08 | -E5CS-R1 $\square \mathrm{U},-\mathrm{R} 2 \square \mathrm{U},-\mathrm{Q} 1 \square \mathrm{U},-\mathrm{Q} 2 \square \mathrm{U}$ (Alarm output type) Suitable socket is P2CF-11- $\square$ or P3GA-11 |


| SELF-DIAGNOSTIC FUNCTION |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| Display | Eror | Meaning | Action |  |  |
| ${ }_{\text {FFFF }}$ |  | Thatmeemomemem |  |  |  |
|  |  |  |  | on | off |
| ${ }_{\text {ceme }}$ |  | mamem |  | of | off |
|  |  |  |  |  |  |
| namas |  |  |  | OFF | off |
| E" |  | Nemony nastaxa |  | off | off |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| $\triangle$ Conformance to ENIEC Standards |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| $\triangle$ Conformance to Safety Standards |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  | 回 |

## Operation



|  | Specifications |
| :--- | :--- |
|  |  |

[^1]
[^0]:    －制適商
    

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