

警告标志的含义

警告 如果操作不当,潜在的危險可能导致轻度或中度的人身伤害,或财产损坏。

警告

偶尔会发生轻度的触电、起火、机器故障。请勿让金属、导线、安装加工过程中的粉尘跑进产品内部。

偶尔会发生爆炸引起轻度的伤害。使用时请远离有易燃易燃气体的场所。

偶尔会发生起火。请按照以下规定的扭矩拧紧端子螺丝。P2CF 端子座: 4.4 Lb-In (0.5 N·m)

触电偶尔会引起轻度的伤害。通电中不要触摸端子。排线时一定要盖上前端盖子。

关闭容量、关闭条件对输出继电器的寿命影响很大,因此请考虑实际使用条件、额定负载、在继电器寿命次数内使用。如超过寿命继续使用,会有触点熔敷、烧蚀的危险。此外,负载电流必须小于额定值。使用加热器等装置时,务必在负载电路中接入热敏开关。

偶尔会发生轻度的触电、起火、机器故障。请勿擅自拆开、改造、修理。请勿触摸产品内部。

- 1) 进行面板安装时,加粗螺栓时请两位交替着拧,注意两位松紧程度要均衡。如果两个螺栓紧度不均,面板内部可能会进水。
2) 请在额定温度范围内保存本产品。此外,如果在-10℃以下的环境下保存,使用前请在室温下放置2小时以上再通电。
3) 安全安装可能会缩短产品的使用寿命。
4) 使用周围温度、湿度、请控制在额定范围内。
5) 请避免在下列环境中使用本产品。
* 湿度高、易结露的地方
* 震动、冲击影响大的地方
* 会淋到雨或水的地方
* 含盐分的空气
* 腐蚀性气体的地方、阳光直射的地方使用。
6) 在产生大量静电气的场所(比如管道成型材料、粉、液体材料的情况下)使用。
7) 请勿将本产品安装在下列场所。
* 若附加额外的电压,内部元件会有遭到破坏的危险。
* 排线时请勿弄脏端子座的引线。
8) 请勿将本产品安装在靠近强电的输入信号源的场所。输入信号源的排线,以及产品本体。
9) 使用压接端子时,1个端子最多接两根。
10) 排线时,如果1个端子接2条线,这2条线必须是同线种。
11) 请勿将本产品安装在下列场所。
* 适用电线 AWG18~22 单线或绞线
12) 设置开关或熔断器,并作出适当标识,以便作业人员可以迅速切断电源。
13) 请遵守下列安全事项。
* 请通过开关、继电器等接点迅速施加电压,以使电源电压能在0.1秒以内达到额定电压。如果直接施加电压,电源可能没有到位,或者发生输出动作故障。
14) 电源切断时请迅速断开开关、继电器等接点,如果电压下降慢,输出可能会发生动作,或者发生其它异常。
15) 采用“常时取方式”,计时过程中若改变以下设定值会导致输出,需要注意。
“输入模式:UP”情况下,“计时值=设定值”
“输入模式:DOWN”的情况下,“计时值=设定值”
“DOWN”模式下,设定值的改变量会在计时值的基础上加上/减去。设定值=0时的动作,在信号输出的瞬间开始启动,通过复位操作停止输出。
16) 本产品安全性能依赖于材料(材料、排线等)、腐蚀性、强酸性物质使用,请勿使用。
17) 请勿安装在LCD正常动作,不同使用环境下可能会加速LCD、树脂等部件的劣化,导致显示不良,因此请定期检修、定期更换。
18) 请勿安装在不同的使用环境下,会发生劣化、收缩、硬化,因此请定期检修、定期更换。
19) 请勿安装在不同的使用环境下,会发生劣化、收缩、硬化,因此请定期检修、定期更换。
20) 请勿安装在不同的使用环境下,会发生劣化、收缩、硬化,因此请定期检修、定期更换。
21) 请勿安装在不同的使用环境下,会发生劣化、收缩、硬化,因此请定期检修、定期更换。

- 1) H5CZ系列的AC24V/DC12-24V电源型,电源端子信号输入端子之电压用非绝缘的无变压器电源方式,使用非绝缘型号的DC电源时,可能会因排线的绝缘层而产生火花,偶尔会有内部零件烧毁(损坏)的危险。使用前请务必充分确认排线。
2) 电源接通时的一瞬间有尖峰电流流过(约10A),个别电源容量下可能会出现无法启动的情况,请提前充分确认排线。
3) 电源电压的变动范围请控制在允许范围内。
4) 定时器的外部设备(传感器等)的启动时间,定时器在电源接通后,要经过200~250ms才开始动作。因此,在启动电源时请提前设定于240ms,开始输出开始的等待时间将是200~250ms之间的时间。另外,另外计时值显示从250ms开始(若设定大于250ms则正常动作)。如果设定值必须小于249ms,请使用信号输出。
5) 请注意,定时器在5~500ms以后就不再输入了。
6) 电源ON/OFF时的输入电压可能会发生电压变化,因此我们推荐将额定在10A以上的机器进行开闭。
7) 各种设定值请配合被测对象正确设定。若设定内容与被测对象不一致,会有意想不到的动作发生,可能会损坏装置,甚至引发火灾。
8) 在高温下,若长时间向输出端子施加电压,可能会加速内部零件(如电解电容器)的劣化,请尽量避免。
9) 前EEPROM的写入次数为10万次。EEPROM的可重复写入次数为10万次。EEPROM在电源断电、功能设定模式、机械选择模式切换到RUN模式时进行写入。
10) 报废本产品时,请遵守各地环保法规的生产废弃物处理方法。

H5CZ 数字定时器(时间继电器)

指导手册

感谢您购买OMRON产品。在使用前请详细阅读本指导手册,熟悉功能和特征。请妥善保管本手册以备将来参考所需。

欧姆龙公司

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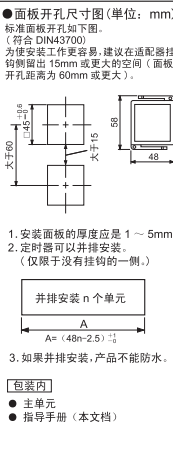
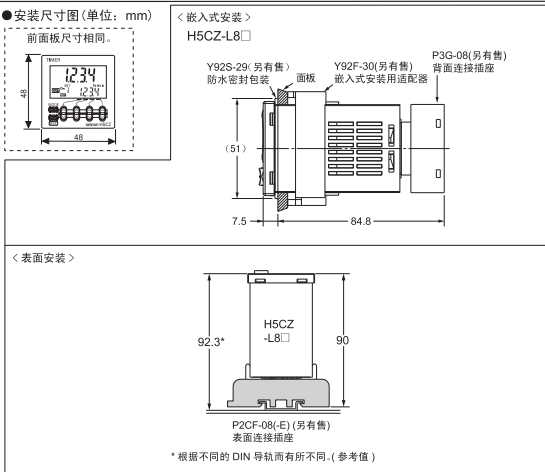
使用的适用性

欧姆龙不保证使用该产品的用户产品能符合任何标准、章程或规则。

采取一切必要的步骤来决定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、财产的危险,不要在这样的系统上使用该产品。在整套装置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声明。

安装及面板加工尺寸图



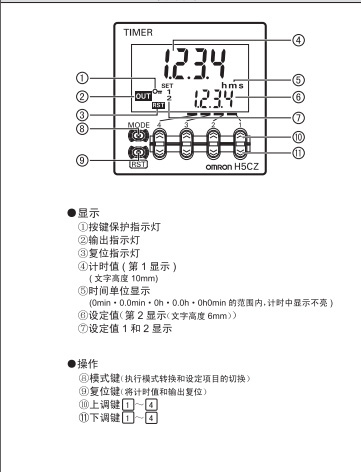
额定(规格)

Table with 2 columns: Parameter and Specification. Parameters include: 电源电压 (AC100~240V, 50/60Hz), 容许电压变动范围 (AC24V, 50/60Hz / DC12~24V), 消耗功率 (额定: 0.85W, 最大: 1.1W), 使用温度范围 (-10~+50°C), 保存温度范围 (-25~+70°C), 使用湿度范围 (25~85%), 推荐保险丝 (T2A, AC250V), 质量 (约105g), 设置环境 (无灰尘, 无污染), 输入方式 (短脉冲型), 控制输出 (继电器输出: AC250V 5A, DC30V 5A), 继电器寿命 (10万次), 机械寿命 (1000万次), 保护构造 (IP66, UL508 Type 4X).

EN/IEC 规格对应

适用于EMC的布线及其他条件,请参考本说明书的内容。本商品属于class A(工业环境商品)。若用于住宅环境,可能会产生电磁干扰,需要对干扰实施适当对策。电源-输入端子间为基本绝缘。(H5CZ-L8□D的电源-输入端子间为非绝缘。)电源-输出:输入-输出端子间为非绝缘。需要采取绝缘或绝缘化措施时,请根据空间距离或固体绝缘等,施加适合最高使用电压的IEC60644定义的双重绝缘、强化绝缘。

部件名称



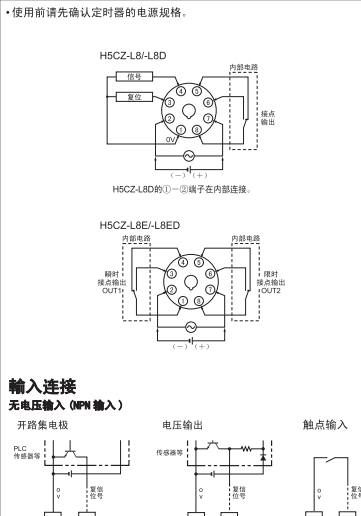
作为定时器使用时的情况

第1步 用正面按键进行各种功能设定。从RUN模式切换到功能设定模式。用功能设定模式各参数。出厂设置为反色字符显示。Table with columns: Image, Parameter Name, Setting Value, Remarks. Parameters include: 时间范围 (0.1s-99.99s), 输出模式 (R, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z), 输出时间 (0.00s-99.99s), 输入信号脉宽 (0.05s-1.5s), 设定范围上限 (0.00s-99.99s), 按键保护等级 (P-1 to P-7), 输出ON次数报警 (9-9999), 输出ON次数监视值 (1-1000).

作为双定时器使用时的情况

第1步 首先切换到双定时器。在RUN模式显示。第2步 用正面按键进行各种功能设定。从RUN模式切换到功能设定模式。用功能设定模式各参数。出厂设置为反色字符显示。Table with columns: Image, Parameter Name, Setting Value, Remarks. Parameters include: OFF时间范围 (0.1s-99.99s), ON时间范围 (0.1s-99.99s), UP/DOWN模式 (UP, DOWN), 双定时器输出模式 (R, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z), 输入信号脉宽 (0.05s-1.5s), 设定范围上限 (0.00s-99.99s), 设定范围2上限 (0.00s-99.99s), 按键保护等级 (P-1 to P-7), 输出ON次数报警 (9-9999), 输出ON次数监视值 (1-1000).

端子排列

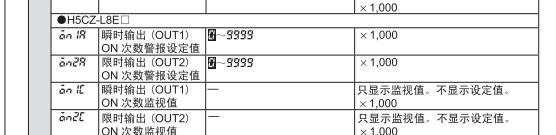


※1: 时间范围的设定值如下。

Table showing time range settings. Columns: Representation, Range. Values include: 0.1s-99.99s (初值), 0.1s-999.9s, 1s-9999s, 0.0min0.1s-99min59s, 0.1min-999.9min, 1min-9999min, 0.0h1min-99h59min, 0.1h-999.9h, 1h-9999h, 0.001s-9.999s.

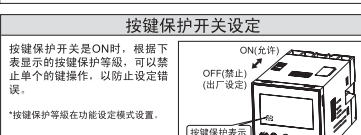
※2: 设定值到最末尾时,通过功能键重新返回前端。

※1: 时间范围的设定值与「作为定时器使用时的情况」相同。



※2: 设定值到最末尾时,通过功能键重新返回前端。

输入连接



按键保护开关设定

按键保护开关设定。根据下表显示的按键保护等级,可以禁止单个的按键操作,以防止设定错误。*按键保护等级在功能设定模式设置。Table with columns: Key, Mode Change, RUN Mode Change, Reset, Up/Down Key. Keys include KP-1 to KP-5.

自诊断功能

Table with columns: Display 1, Display 2, Content, Output Status, Reset Method, Reset Value. Displays include: E1 (CPU error), E2 (RAM error), E3 (EEPROM error), E4 (EEPROM error).

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制造商 欧姆龙(上海)有限公司 地址: 上海市浦东新区金桥出口加工区金吉路789号 电话: (86) 21-5050-9988

Thank you for purchasing the OMRON Product. To ensure the safe application of the Product, read this manual carefully before using the Product and always keep it close at hand when the Product is in use.

OMRON Corporation ©All Rights Reserved For details, refer to the latest datasheet (Cat. No. L111).

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.

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.

SAFETY PRECAUTIONS

Keys to Warning Symbols

CAUTION Indicates a potentially hazardous situation which, if not avoided, is likely to result in minor or moderate injury or in property damage.

CAUTION

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.

Minor injury due to explosion may occasionally occur. Do not use the Timer where subject to flammable or explosive gas.

Fire may occasionally occur. Tighten the terminal screws to the rated torque P2CF socket terminals: 4.4 lb-in (0.5 N·m)

Minor injury due to electric shock may occasionally occur. Do not touch any of the terminals while power is being supplied. Be sure to mount the terminal cover after wiring.

The life expectancy of the output relay varies considerably according to its usage. Use the output relay within its rated load and electrical life expectancy. If the output relay is used beyond its life expectancy, its contacts may become fused or there may be a risk of fire. Also, be sure that the load current does not exceed the rated load current and when using a heater, be sure to use a thermal switch in the load circuit.

Minor electric shock, fire, or malfunction may occasionally occur. Do not disassemble, modify, or repair the Timer or touch internal components.

Precautions for Safe Use

- 1) When mounting the Timer to a panel, tighten the two mounting screws alternately, a little at a time, so as to keep them at an equal tightness... 2) The Timer at the specified temperature... 3) Measure the Timer side-by-side... 4) Use the Timer within the specified ranges... 5) Locations subject to sudden or extreme changes in temperature... 6) Do not use this Timer in dusty environments... 7) Initial The Timer will away from any sources of static electricity... 8) Internal elements may be destroyed if a voltage outside the rated voltage range is applied... 9) Wire terminal polarity correctly... 10) Separate the Timer from sources of noise... 11) Do not connect more than two crimp terminals to the same terminal... 12) Use two wires of the same size and type... 13) Use the specified wires for wiring... 14) Install a switch or circuit breaker that allows the operator to immediately turn OFF the power... 15) Approximately 14 V is output from the input terminals... 16) Use a switch, relay, or other contact so that the rated power supply voltage will be reached within 0.1 seconds... 17) When changing the set value during a timing operation... 18) Elapsed time (LPI) mode: Present value > Set value... 19) Do not use organic solvents... 20) The waterproof packing may deteriorate, scratch, or harden... 21) Confirm that indicators are working normally... 22) The waterproof packing may deteriorate... 23) Periodic inspection and replacement are required.

Precautions for Correct Use

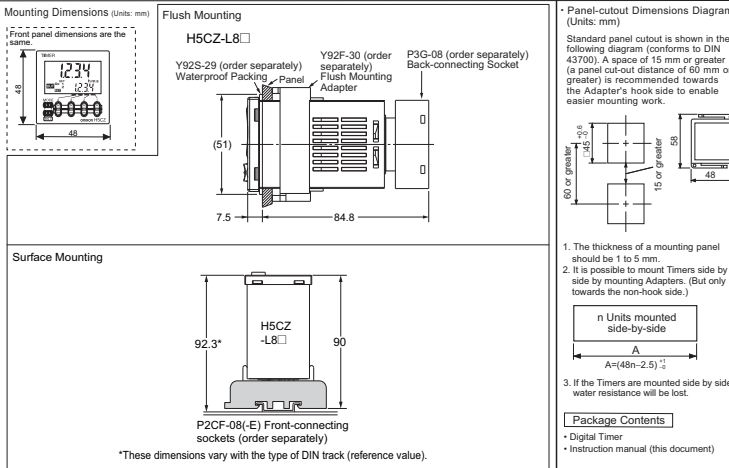
- 1) H5CZ models with a 24 VAC/12 to 24 VDC power supply use a transformer-less power supply method... 2) An inrush current of approx. 10 A will flow for a short time when the power supply is turned ON... 3) Maintain voltage fluctuations in the power supply within the specified operating voltage range... 4) Do not allow the startup time of peripheral devices (sensors, etc.)... 5) The input signal will not be accepted after 1 to 200 ms has elapsed from when the power supply is turned OFF... 6) Fresh current generated by turning ON or OFF the power supply may deteriorate contacts... 7) Make sure that all settings are appropriate for the application... 8) Do not leave the Timer for long periods of time at a high temperature... 9) Eeprom is used as memory when the power is interrupted... 10) Dispose of the product according to local ordinances as they apply.

Precautions for Compliance with UL Standards and CSA Standards

Notice to Users of the H5CZ in the USA and Canada Please use the following installation information in addition of the general information in the instruction manual in order to use the product under certified conditions of UL and CSA...

Table with 3 columns: Component, Part Number, and Reference. Includes items like Track Mounting/Front Connecting Socket, Flush Mounting Adapter, and Waterproof Packing.

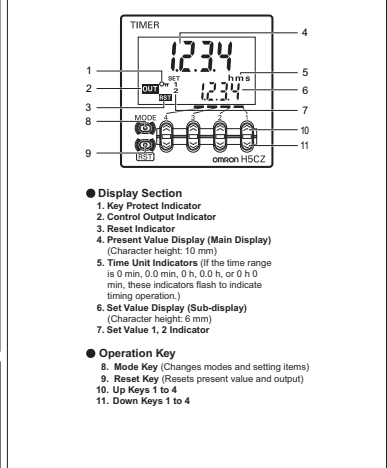
Mounting and Panel-cutout Dimensions Diagram



Ratings (Specifications)

Table of ratings and specifications including Power supply voltage (100 to 240 VAC), Allowable voltage fluctuation range (85% to 110%), Operating temperature range (-10 to 50°C), Storage temperature range (0 to 85°C), and Electrical life of relay (10,000,000 operations).

Nomenclature



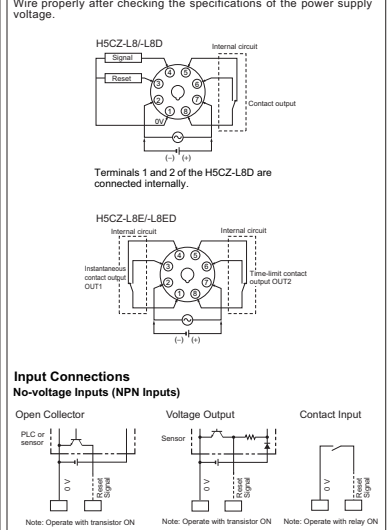
Application as a Timer

Application as a Timer section including Step 1 (Parameters set with operation keys) and Step 2 (Parameters set with operation keys). Includes a table for parameter settings and diagrams for function setting modes.

Application as a Twin Timer

Application as a Twin Timer section including Step 1 (First, switch to a Twin Timer) and Step 2 (Parameters set with the operation keys). Includes diagrams for twin timer operation and parameter setting tables.

Terminal Arrangement



Key-protect Switch Settings

Key-protect Switch Settings section including a diagram of the switch and a table for Key-protect levels (KP-1 to KP-7) and their corresponding settings.

Self-diagnostic Functions

Table of self-diagnostic functions showing error codes (E1-E3), error descriptions (Not R CPU error, Memory error, etc.), and the corresponding actions to be taken.

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