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DEVICESLASER
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PLC

HUMAN MACHINE
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SOLUTIONS

FA COMPONENTS

MACHINE VISION
SYSTEMSUV CURING
SYSTEMS

Timers

Time Switches

Counters

Hour Meters

Options

Limit Switches

Temperature
Controllers

Solenoids

Fan Motors

Selection
Guide

LH2H

TH63/TH64

TH13/TH23

TH14/TH24

TH40

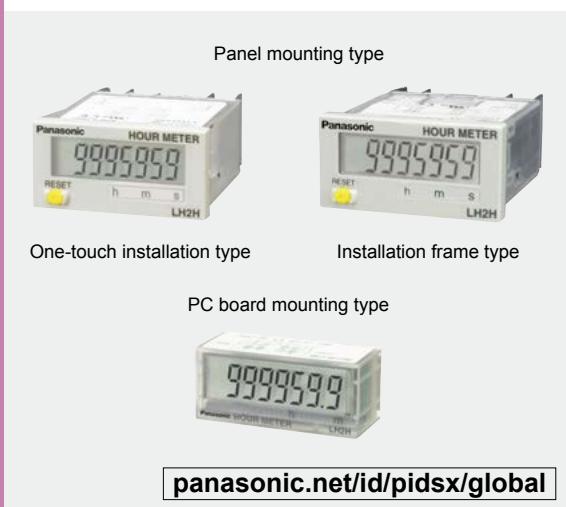
TH8

Related Information

■ General terms and conditions..... F-3

■ Selection guide P.1411~

■ Options P.1428



Features

- 7-segment LCD with 8.7 mm **0.343 in** letter height (total digits: 7)
- Select by switch between two time ranges in a single meter.
- Battery replacement easy on environment
- Screw terminals are constructed to protect fingers to ensure safety.
- Backlight can be switched between green and red (for backlight type)
- IP66 compliant for resistance against negative environmental influences (only when panel surface uses rubber packing) (for installation frame type)
- Replaceable panel cover

Panel design can be changed from standard (ash gray) to black (sold separately).

IP66

Time selectable

**Large display in a small body,
achieving high viewability and
user-friendliness**

PRODUCT TYPES

Panel mounting type

Installation type	Input method	Measurement time range (switchable)		Backlight	Front reset	Model No.
		0 to 999999.9 h	0 to 999 h 59 m 59 s			
		0 to 3999 d 23.9 h	0 to 9999 h 59.9 m			
One-touch installation type	Non-voltage input type	Yes	No	No	Yes	LH2H-FE-DHK
		No	Yes	No	Yes	LH2H-FE-HMK
	Voltage input type (4.5 to 30 V DC)	Yes	No	No	Yes	LH2H-FE-DHK-DL
		No	Yes	No	Yes	LH2H-FE-HMK-DL
		Yes	No	Yes	Yes	LH2H-FE-DHK-DL-B
		No	Yes	Yes	Yes	LH2H-FE-HMK-DL-B
Installation frame type	Free voltage input type (24 to 240 V AC/DC)	Yes	No	No	Yes	LH2H-FE-DHK-FV
		No	Yes	No	Yes	LH2H-FE-HMK-FV
	Non-voltage input type	Yes	No	No	Yes	LH2H-F-DHK
		No	Yes	No	Yes	LH2H-F-HMK
		Yes	No	No	Yes	LH2H-F-DHK-DL
		No	Yes	No	Yes	LH2H-F-HMK-DL
		Yes	No	Yes	Yes	LH2H-F-DHK-DL-B
		No	Yes	Yes	Yes	LH2H-F-HMK-DL-B
	Free voltage input type (24 to 240 V AC/DC)	Yes	No	No	Yes	LH2H-F-DHK-FV
		No	Yes	No	Yes	LH2H-F-HMK-FV

Note: Please ask us about products without front reset button.

PC board mounting type

Input method	Measurement time range		Backlight	Front reset	Model No.
Non-voltage input type	0 to 999999.9 h	No	No	No	LH2H-C-H-N
	No	0 to 9999 h 59.9 m	No	No	LH2H-C-HM-N

Note: There is no front panel reset button on the PC board mounting type.

CAUTIONS FOR USE

Non-voltage input type

For both panel mounting and PC board mounting types

- Never apply voltage to the non-voltage input type. This will damage the internal elements.
- Since the current flow is very small from the start input and reset input terminals (① and ③ on panel mounting type and ⑮ to ⑰ and ⑳ to ㉓ on PC board mounting type) please use relays and switches with high contact reliability. When inputting with an open collector of a transistor, use a transistor for small signals in which I_{CBO} is 1 μA or less and always input with no voltage.
- When wiring, try to keep all the input lines to the start and reset inputs as short as possible and avoid running them together with high voltage and power transmission lines or in a power conduit. Also, malfunctions might occur if the floating capacitance of these wires exceeds 500 pF (10 m 32.808 ft. for parallel wires of 2 mm²). In particular, when using shielded wiring, be careful of the capacitance between wires.

PC board mounting type

- For external power supply use manganese dioxide or lithium batteries (CR type: 3 V).
- Always reset after external power is applied and confirm that the display reads "0".
- Make the wiring from the battery to the hour meter unit as short as absolutely possible. Also, be careful of polarity.
- Calculate battery life with the following formula.

$$t = A/I$$

t: battery life [h]

I: LH2H current consumption [mA]

A: battery capacity until minimum operation voltage is reached [mAh]

- Hand solder to the lead terminal. Do not dip solder. With the tip of the soldering iron at 300 °C 572 °F perform soldering within 3 seconds (for 30 to 60 W soldering iron).

Voltage input type

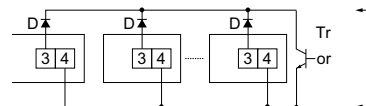
- Be aware that applying more than 30 V DC to start input terminals ① and ②, and reset input terminals ③ and ④ will cause damage to the internal elements.
- For external resetting use H level (application of 4.5 to 30 V DC) between reset terminals ③ and ④ of the rear terminals. In this case, connect + to terminal ③ and – to terminal ④. This is the valid polarity; therefore, the hour meter will not work if reversed.
- When wiring, try to keep all the input lines to the start and reset inputs as short as possible and avoid running them together with high voltage and power transmission lines or in a power conduit. Also, malfunctions might occur if the floating capacitance of these wires exceeds 500 pF (10 m 32.808 ft. for parallel wires of 2 mm²).

Free voltage input type

- Use start input terminals ① and ② for free voltage input and reset input terminals ③ and ④ for non-voltage input.
- Be aware that the application of voltage that exceeds the voltage range of the H level to the start input terminal, and the application of voltage to the reset input terminal, can cause damage to the internal elements.
- Since the current flow is very small from reset input terminal ③, please use relays and switches with high contact reliability.
- When inputting a reset with an open collector of a transistor, use a transistor for small signals in which I_{CBO} is 1 μA or less and always input with no voltage.
- To reset externally, short reset input terminals ③ and ④ on the rear.
- Input uses a high impedance circuit; therefore, erroneous operation may occur if the influence of induction voltage is present. If you plan to use wiring for the input signal that is 10 m 32.808 ft. or longer (wire capacitance 120 pF/m at normal temperature), we recommend the use of a CR filter or the connection of a bleeder resistor.

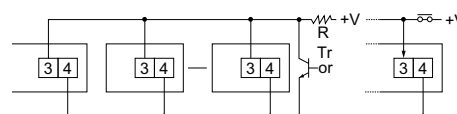
How to reset multiple panel mounting type counters all at once (input is the same for count)

Non-voltage input type



- Notes: 1) Use the following as a guide for choosing transistors used for input (Tr).
Leakage current < 1 μA
- 2) Use as small a diode (D) as possible in the forward voltage so that the voltage between terminals 3 and 4 during reset input meets the standard value (0.5 V). (At $I_F = 20 \mu\text{A}$, forward voltage: Max. 0.1 V)

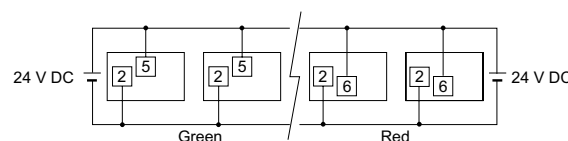
Voltage input type



Note: Make sure that H (reset ON) level is at least 4.5 V.

Backlight luminance

To prevent varying luminance among backlights when using multiple backlight types, please use the same backlight power supply.



Terminal connection

Tighten the terminal screws with a torque of 0.8 N·m or less.

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MENT
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LH2H

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