

# CHECK MAN

## CM-8 ver.1.04

### Instruction manual (CM-5 Mode, Abridged edition)

#### INTRODUCTION

Thank you for purchasing our CHECK MAN/CM-8. This instruction manual is a simplified version of CM-5 mode. This instruction manual describes the basic functions and precautions in simple terms, so that even people who are unfamiliar with this system can learn how to use it safely.

Before using this unit, read this manual thoroughly in order to get the maximum performance from the CHECK MAN/CM-8. However, since this unit may be used in a wide variety of situations, this instruction manual may not cover every case.

Make sure to store this manual in a handy place for future reference.

**\*In this manual, the following types of messages are used to warn of potential hazards.**

#### **WARNING:**

**If you disregard this information, there is a possibility of death and a likelihood of serious personal injury and/or damage to property.**

#### **CAUTION:**

**If you disregard this information, there is a possibility of injury and a likelihood of damage to the equipment or other property.**

#### **NOTE:**

**This contains special information that should be understood to operate the machine effectively.**

#### **WARNING**

This system is designed and manufactured to perform press fitting operations. If you use this system for any other purpose, the functions and performance of the system are not guaranteed and it may be dangerous.

Do not place any voltage across the output relay terminals. If you do, the machine will be damaged and the warranty will be void.

Never touch the terminal block on the back of the main housing. Otherwise, you may get an electrical shock.

#### **CAUTION**

Never modify, disassemble, or repair this system. If the machine needs to be serviced, please contact us. We will not be responsible for malfunctions or other problems caused by unauthorized service or repairs.

Always make sure to disconnect the power supply before touching the terminal block, since you can get an electrical shock and damage the system.

Use this machine at ambient temperatures between 0 and 50°C. Do not place the system in direct sunlight and or near hot air. Use of the machine in conditions other than those specified may cause a malfunction.

This system is designed on the assumption that it will be used inside Japan. If you use the system outside Japan, please make sure you observe all of the safety regulations in the country of use.

If you loan this machine to someone else, make sure to attach this instruction manual to the machine.

#### **NOTE**

If necessary, if you have operation manual (detailed version) or RS communication function, please download the Japanese version Modbus communication operation manual from our website.

When using with Hand Checkman (model: CMH-003, CMH-12KN-03), only "CM-5 mode" can be used.

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# 1. Operating Chart

After receiving a reset (start) signal, the CM-8 will measure load values continuously until a load measurement complete signal is received. Then it will compare the results with the user specified limits.

## •Comparative output function

Unlike other modes, the CM-5 mode has four comparison output functions: HI (AL1)/GO (AL2)/LO (AL3)/Unique Output (set load arrival output) (AL4). The set load arrival output status is not displayed on the screen.

## •External control input function





In CM-5 mode, the functions assigned to the external control functions are fixed as shown below.

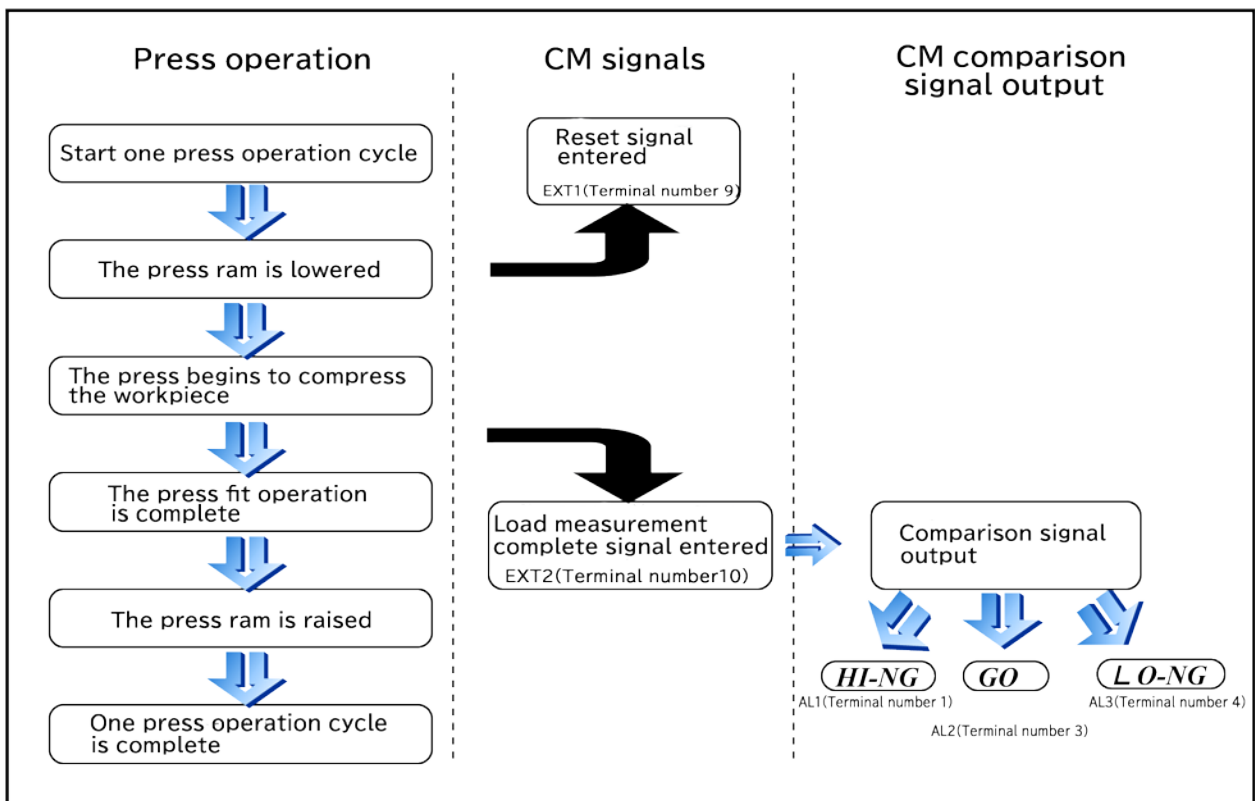
- Terminal 1 function: Reset (start) signal
- Terminal 2 function: Load measurement complete signal
- Terminal 3 function: None or Pattern Change1
- Terminal 4 function: None or Pattern Change2
- Terminal 5 function: None or Pattern Change3

\*Please refer to the detailed edition of the operation manual for switching and controlling pattern selection (1 ~ 3) by pattern selection (3 -1. Setting items).

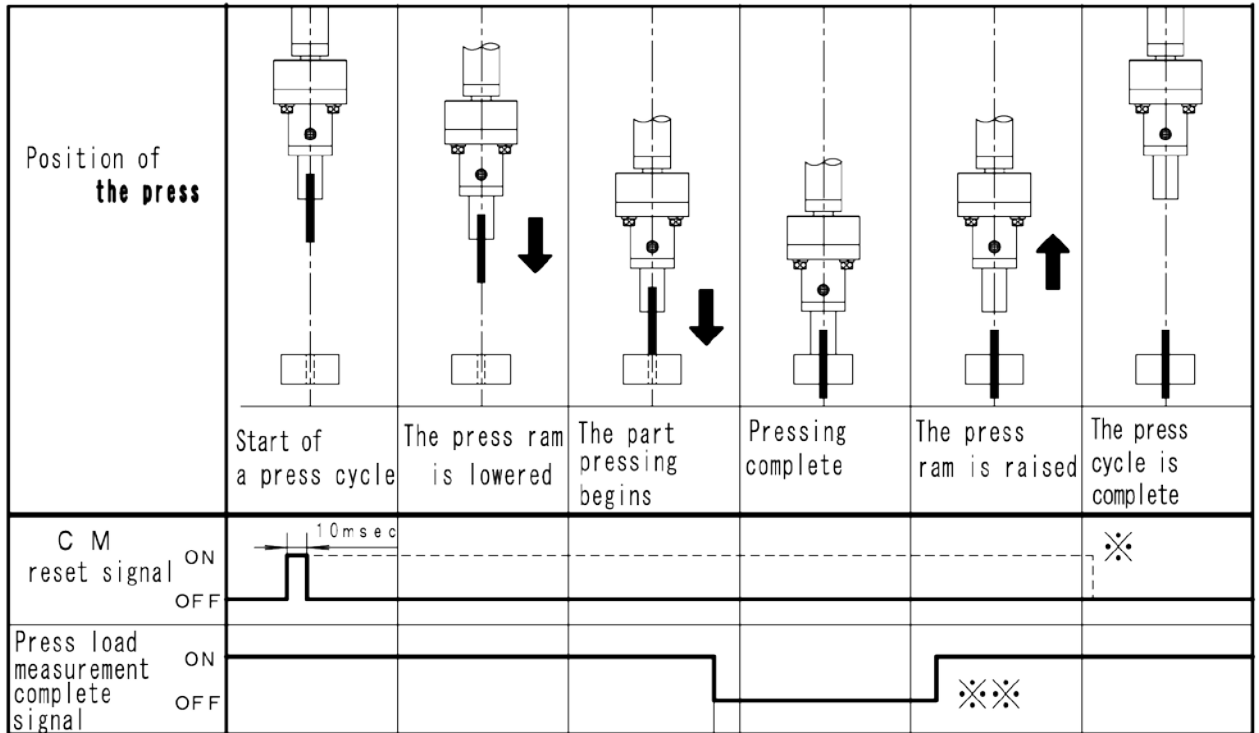
## •Regist shortcut function

The functions assigned to the shortcut function are fixed as follows.

-  : Reset (start) signal (By holding down of the keys for 1sec, the function will be done.)
-  : Load measurement complete signal
-  : Pattern Select
-  : None



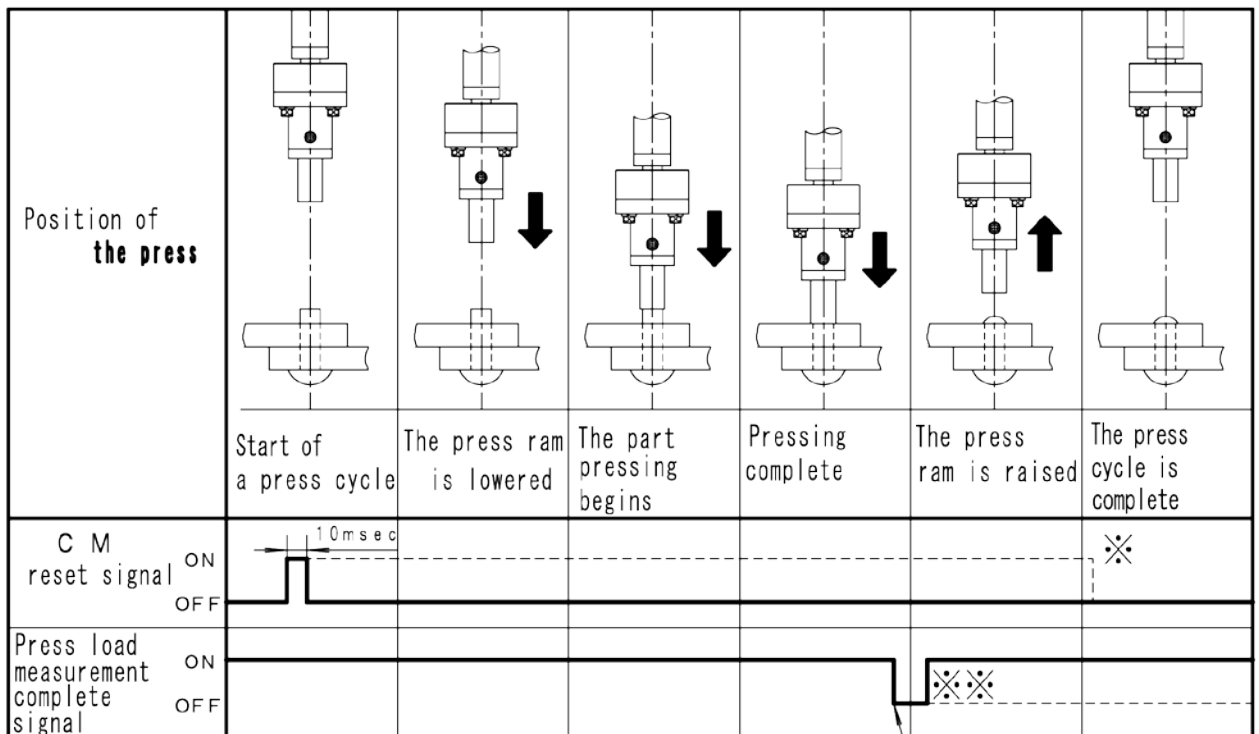
## Press fit operation



Just before completing of press fitting.

(Input the load measurement end signal about 0.3 to 0.5 mm before.)

## Press output control, such as a caulking operation

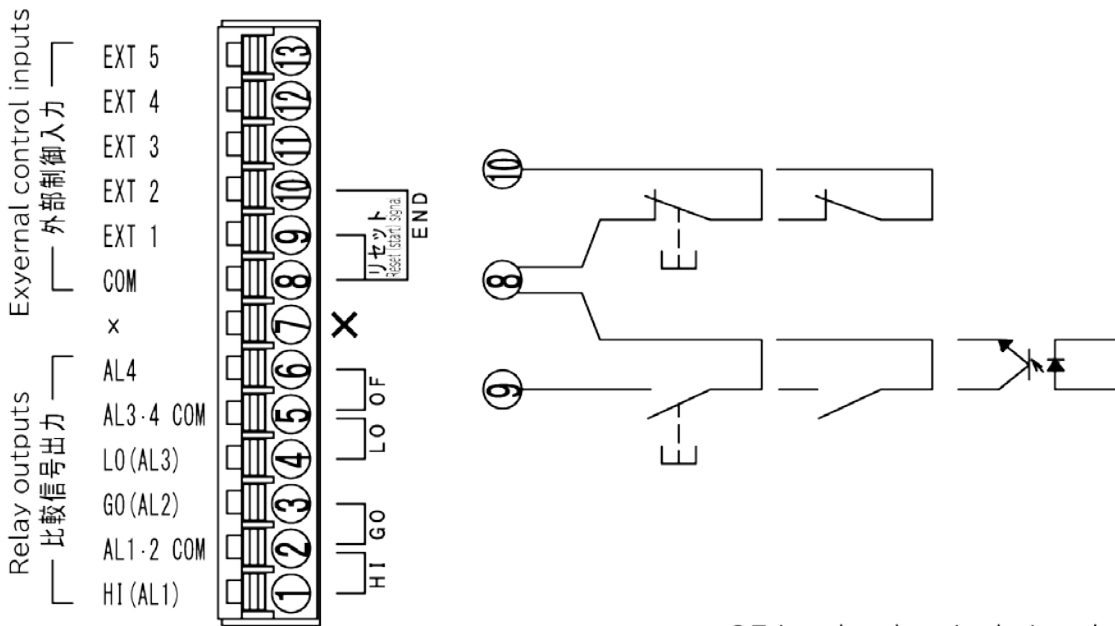


※----The reset signal may be any signal from 1 cycle start 10 msec to the end of 1 cycle.

※※--The load measurement end signal is set at any time until the next reset signal input.

At the pressurization end signal ram rise signal, etc.

## 2. External connection terminals and their functions



- \*OF is a load arrival signal
- \*OFは、設定荷重到達信号出力です。
- \*Contact rating:AC250V 2A,DC30V 2A
- \*接点定格:AC250V 2A,DC30V 2A

\*Suitable wire:AWG24 to 16

No.	Name	Description
1	HI(AL1)	AL1 relay output (HI-NG)
2	AL1・2 COM	Common terminal for outputs of AL1 and AL2
3	GO(AL2)	AL2 relay output (GO)
4	LO(AL3)	AL3 relay output (LO-NG)
5	AL3・4 COM	Common terminal for outputs of AL3 and AL4
6	AL4 (OF)	AL4 relay output (set load arrival signal)
7	×	N.C. *1
8	COM	Common terminal for external control inputs
9	EXT CONTROL 1	External control input No.1(Reset (start) signal)
10	EXT CONTROL 2	External control input No.2(END signal:Load measurement complete signal)
11	EXT CONTROL 3	External control input No.3
12	EXT CONTROL 4	External control input No.4
13	EXT CONTROL 5	External control input No.5

\*1 Please do not wire to N.C. terminal.

## 3. Settings and changes

### Language Select



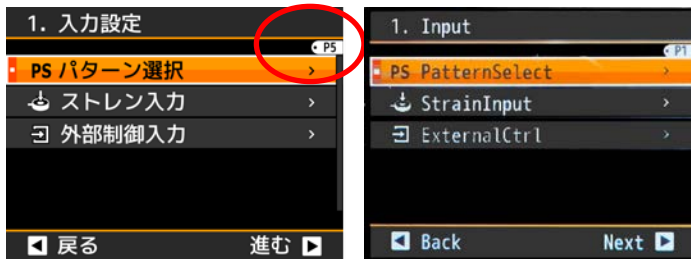
Select menu language.

Operation:「MENU」⇒「System(システム設定)」⇒「General(全般)」⇒「Language(言語)」

Setting value: Japanese(日本語) \*Initial state、English

### Pattern Select

You can store and set up 8 patterns (8 kinds) of various settings such as input and output with this unit, you can select the pattern to save the setting in "PatternSelect".



The pattern number being set is displayed as "P5" on the upper right of the setting screen as shown above.

Operation:「MENU」⇒「Input(入力設定)」⇒「PatternSelect(パターン選択)」

Setting value: Pattern1、Pattern2、.....Pattern8

### Changing and storing upper and lower comparison values

You can change the upper and lower values that are used for comparing with the measured load.



Operation:「MENU」⇒「Output(出力設定)」⇒「CM-5Mode(CM-5モード)」⇒「Threshold(比較判定値)」

Setting value: LowerValue(下限値) ±99999 (Default is 100)

UpperValue(上限値) ±99999 (Default is 1000)

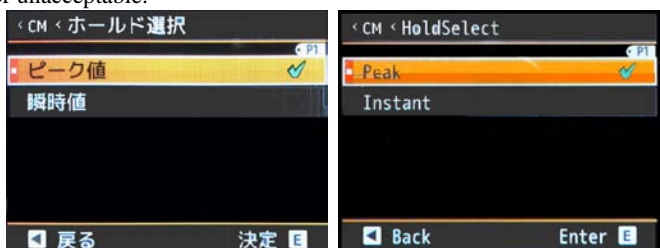
## Method for selecting the measurement mode

### \* Peak value mode...This is selected as the default mode when the system is delivered. \*Peak(ピーク値)

- The system will sample the measured values in real time and update the peak value. The highest peak value is displayed, until the load measurement complete signal is input.
- After the load measurement complete signal is input, the system will store the highest value between the reset signal input and the load measurement complete signal input. Then the system compares that value with the upper and lower values that were specified beforehand. Finally, it decides whether the measured value is acceptable or unacceptable.

### \* End value (constant load measurement) mode \*Instant(瞬時値)

- This mode releases the peak hold function. If you want to avoid the extreme load readings caused by the shock when workpieces hit each other, select this mode.
- The system samples and displays the load constantly. If the load decreases to zero while making a measurement, the display will also show zero.
- After the load measurement complete signal is input, the system will store the current value. Then the system compares the stored value with the upper and lower limits that were specified beforehand. Finally, it decides whether the measured value is acceptable or unacceptable.



Operation:「MENU」⇒「Output (出力設定)」⇒「CM-5Mode (CM-5モード)」⇒「HoldSelect (ホールド選択)」

Setting value: Peak(ピーク値) \* Peak value mode...This is selected as the default mode when the system is delivered.

Instant(瞬時値) \* End value (constant load measurement) mode

## Act Conditions

Select the condition of comparison output function.

**Always(常時)**: Judgment is always made for the displayed value during measurement, and either HI / GO / LO comparison output is output.

**OnHold(ホールド時のみ)**: The moment the END signal (Load measurement complete signal) turns from ON to OFF, the display value at that moment is used for judgment and a comparative output is output. After that, the comparison output turns off when the reset signal turns on.



Operation:「MENU」⇒「Output (出力設定)」⇒「CM-5Mode (CM-5モード)」⇒「Act Condition (比較動作条件)」

Setting value: Always(常時) / OnHold(ホールド時のみ) \* Initial state

## Unique Threshold

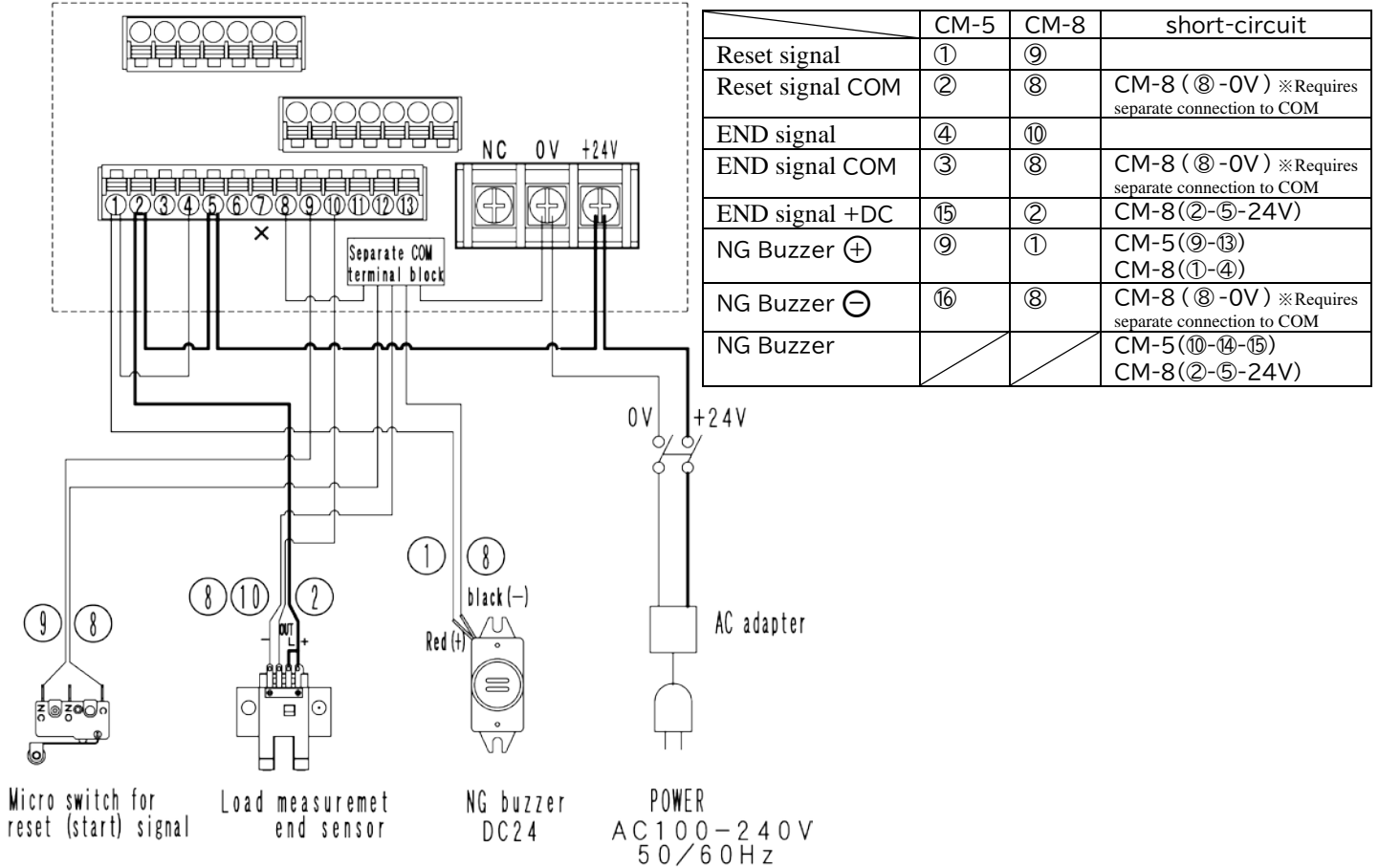
Set the judgment value used to set load arrival output.



Operation:「MENU」⇒「Output (出力設定)」⇒「CM-5Mode (CM-5モード)」⇒「UniqueThreshold (到達出力判定値)」

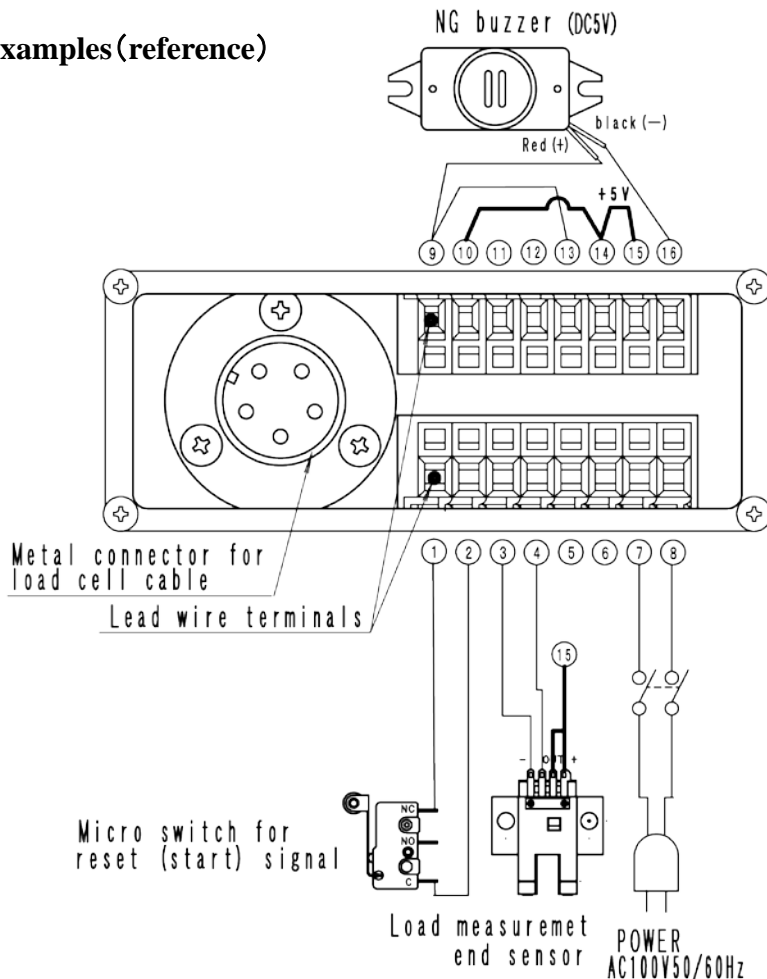
Setting value: UniqueThreshold(到達出力判定値) Default is +99999

## 4. CM-8 Connection examples

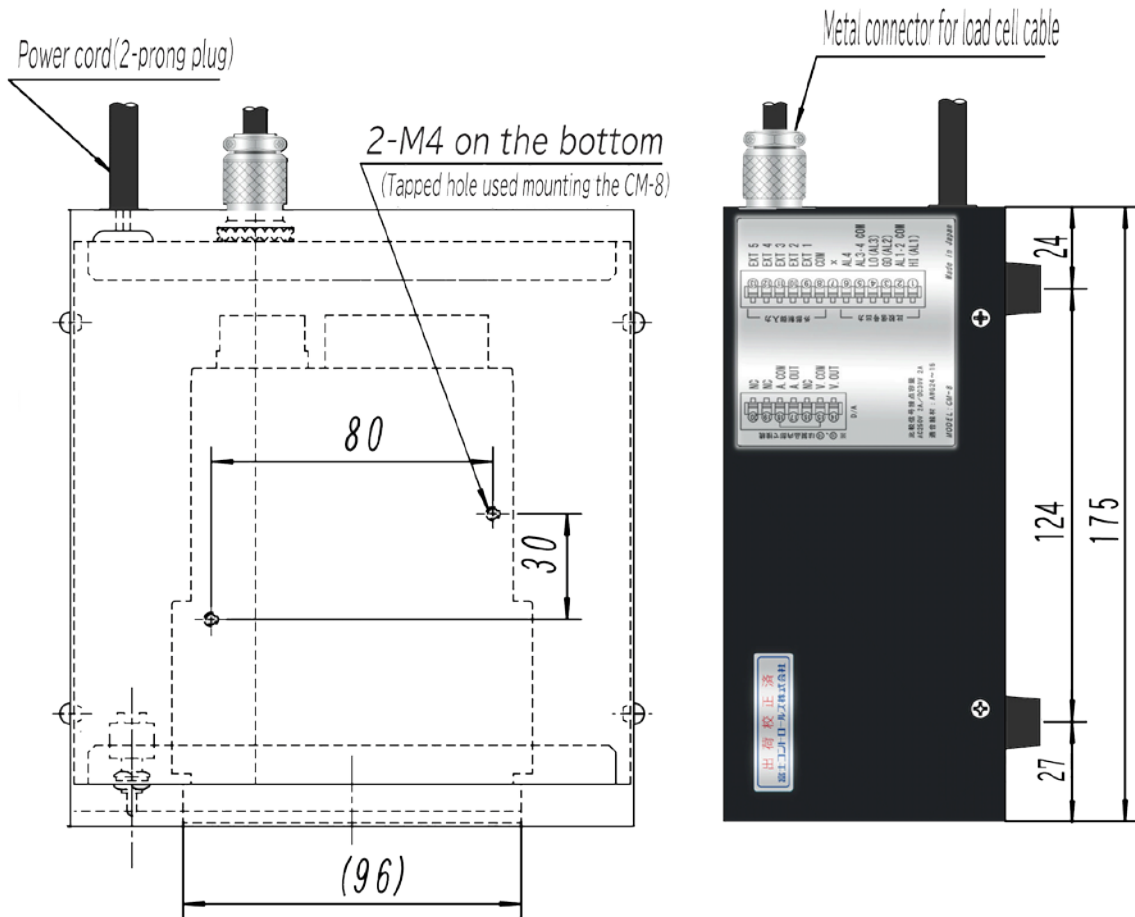


Note: Since the load measurement end signal (END signal) of the is set to contact b, wire before use. If the cable is not wired, it is judged as NG (The measured value is "OVER" or "0").

### ■ CM-5 Connection examples (reference)



## 5. Dimensional drawing



Note: The contents of this manual are subject to change without notice due to changes in product specifications.

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