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# Signal monitor Accessory for Digital I/O

## CM-32L, CM-64L User's Guide

### CONTEC CO.,LTD.

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Thank you for purchasing the CONTEC product.

This product is a Signal Monitor for a CONTEC Digital I/O board/card. This product can monitor the status of the connected signal line or generates pseudo signals onto the signal line to debug programs and check their behavior.

CM-32L: Designed for digital I/O boards/cards having 32 I/O channels.

CM-64L: Designed for digital I/O boards having 64 I/O channels.

## Features

- Signal monitoring LED provide for every point.
- Capable of generating switch-operated signals for all points.
- Capable of checking digital I/O board/card operation without any external device connected.
- Capable of checking operation of an independent external device.
- Capable of supplying external power from this product if connected to an insulated digital I/O board/card.
- Mountable on a 35-mm DIN rail using the DIN rail mounting adapter "DIN-ADP1" (separately priced).

## Product Configuration List

This product is configured as follows. Be sure you have received all of the components listed. If any components are missing or broken, contact the store where you purchased this product.

Your registration card is essential for us to notify our customers of new products. Be sure to fill it out completely and return it.

- Body(One of the following) ...1
  - [CM-32L, CM-64L]
- User's Guide (this document) ...1
- External power supply connector ...1



### CAUTION

The option cable is not appended to the interface board/card and this product. Cable differs according to board/card used. Be sure to check the manual or visit the CONTEC's Web site to buy an appropriate one.

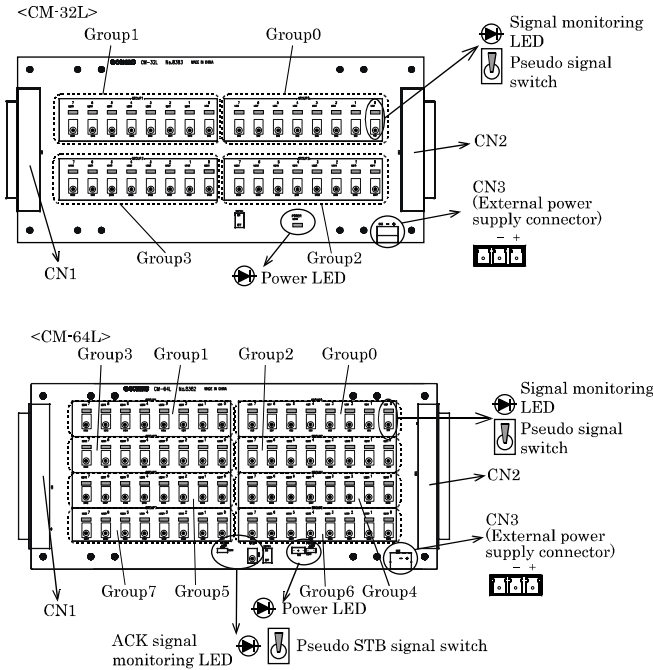
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## Accessories

DIN rail Mounting Adapter for Accessories : DIN-ADP1

AC adaptor (Input: 100VAC, Output: 12VDC 1A) : POA201-10-2

## Parts of the Product



**Figure 1. Component Locations**

### Monitor display (Signal monitoring LED)

The LED for each signal conductor goes ON when the signal level becomes 1 (Low) and goes OFF when it becomes 0 (High).

### Pseudo-signal outputs (Pseudo-signal switches)

A switch is connected to each signal conductor. Turning the switch ON forces the signal conductor to become a level of 1 (Low) while tuning the monitoring LED ON. Turning the switch OFF forces the signal conductor to become a level of 0 (High) while tuning the monitoring LED OFF.

### Power LED

The power LED is ON when the connected digital I/O board/card with an internal power supply uses the power supply, the board/card is an uninstalled type, or when an external power supply is connected.

### CN1 and CN2

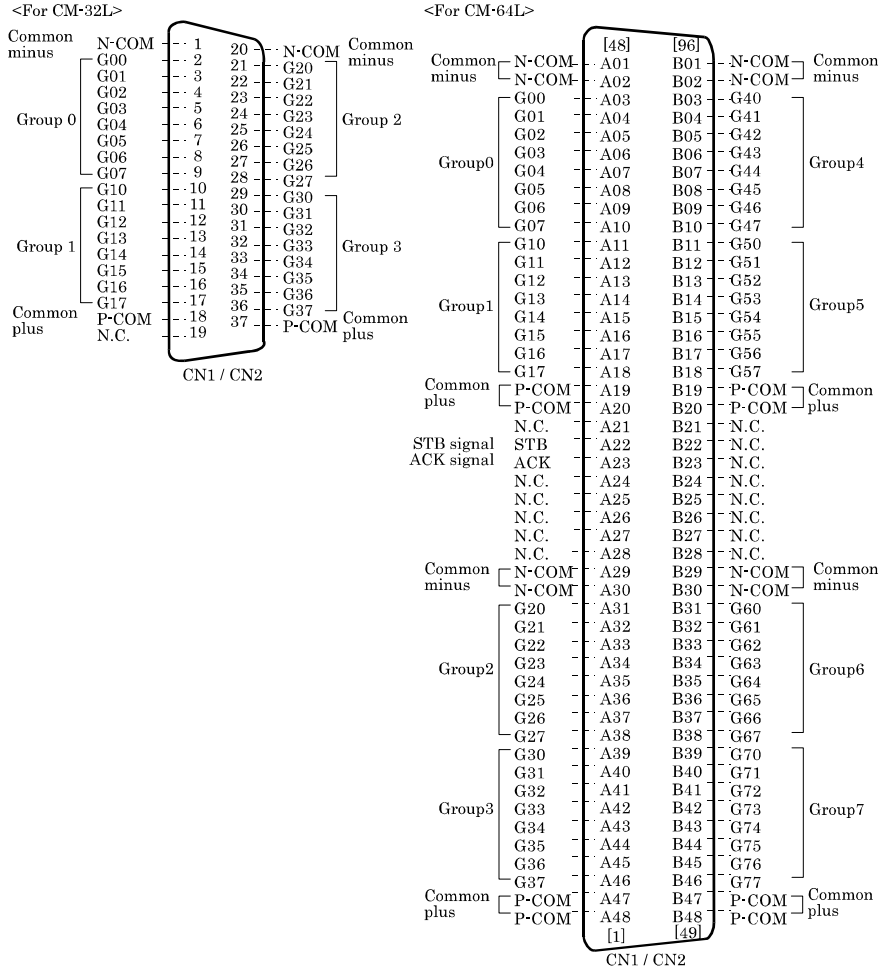
The CN1 and CN2 are connected digital I/O board/card or external device.

### CN3 (External power supply connector)

When the product is connected to an insulated digital I/O board/card, the CN3 can supply external power to it (for all common terminals).

# Wiring Diagram

CN1, CN2



The numbers in square brackets [ ] are pin numbers designated by HONDA TSUSHIN KOGYO CO., LTD.

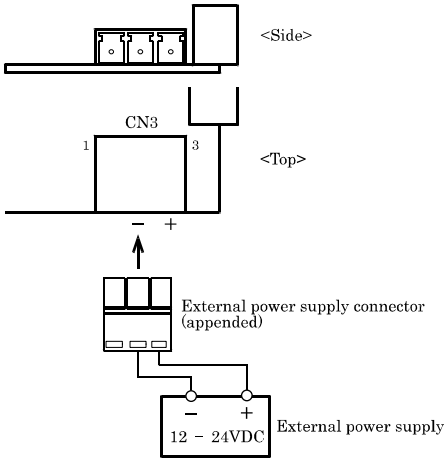
Figure 2. Wiring Diagram (CN1, CN2)

CN3

When the product is connected to an insulated digital I/O board/card, the CN3 can supply external power to it (for all common terminals).

When using the external power supply, please connect with external power supply connector (Appended goods) and install to CN3.

When using the optional AC adaptor [POA201-10-2], please connect directly to the CN3.

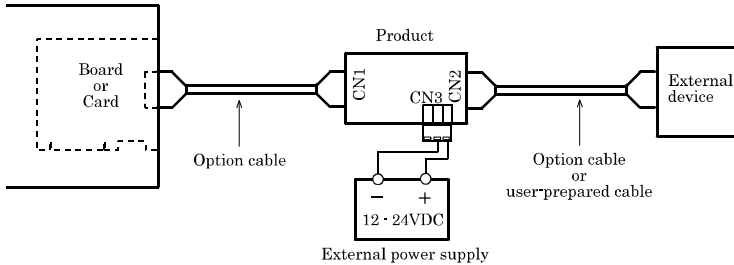


**Figure 3. Connecting an External Power Supply**

**⚠ CAUTION**

- If the connected digital I/O board has and uses an internal power supply, do not use any external power supply.
- If this product is connected to an uninsulated digital I/O board/card, do not connect any external power supply.

## CM-32L or CM-64L Connections



**Figure 4. CM-32L or CM-64L Connections**

- (1) Connect the interface board/card and the product using the separately available option cable.
- (2) Connect an external device and an external power supply to this product as required.

### **⚠ CAUTION**

- If the connected digital I/O board has and uses an internal power supply, do not use any external power supply.
- If this product is connected to an uninsulated digital I/O board/card, do not connect any external power supply.

## Mounting on a DIN Rail

The product can be mounted on a 35-mm DIN rail using the DIN rail mounting adapter “DIN-ADP1” (separately priced). For details on the mounting procedure, refer to the DIN-ADP1 instruction manual.

# Specifications

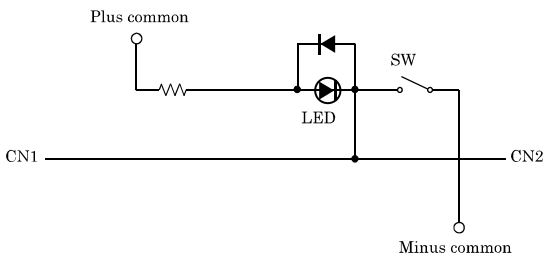
**Table 1. Specifications**

Item	CM-32L	CM-64L
Number of I/O channels	32	64
Number signal monitoring LEDs	32	64
Number of pseudo-signal switches	32	64
External power supply*1	12 - 24VDC (depending on the board/card connected)	12 - 24VDC (depending on the board connected)
Connector used	CN1, CN2: 37 pin D-SUB connector [Female] DCLC-J37SAF-20L9 [mfd. by JAE, Female] equivalent Screw lock #4-40UNC CN3: MC 1,5/ 3-G-3,5 [mfd. by PHOENIX CONTACT] equivalent	CN1, CN2: PCR-E96LMD [mfd. by HONDA] CN3: MC 1,5/ 3-G-3,5 [mfd. by PHOENIX CONTACT] equivalent
Operating Conditions	0 - 50°C, 20 - 90%RH (No condensation)	
Physical Dimensions (mm)	105(W) x 230(D) x 35(H)	
Weight	200g	260g
Facilities for additional functions	None	STB input, ACK output

\*1: When the product is connected with a digital I/O board/card with an integrated power supply, no external power supply is required if the product uses that internal power supply.

No external power supply is required when the product is connected with a non-isolated digital I/O board/card.

## Internal Circuit



**Figure 5. Internal Circuit**

## Physical Dimensions

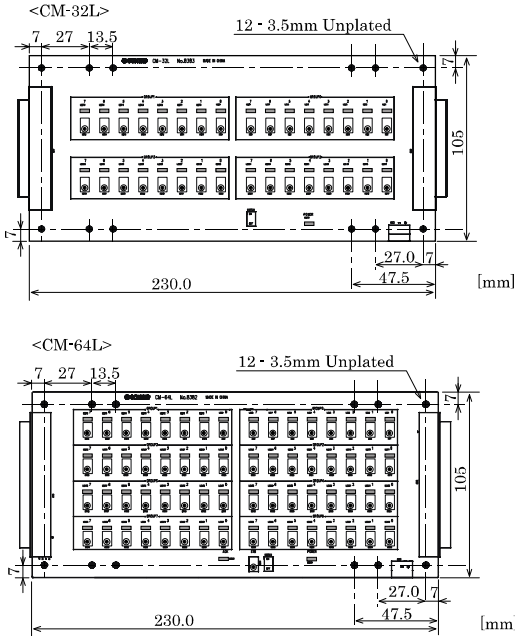


Figure 6. Physical Dimensions

## Difference point with CM-32(PC)E or CM-64(PC)E

This product is a successor of the previous model CM-32(PC)E or CM-64(PC)E. So you can use the same operating procedures as CM-32(PC)E or CM-64(PC)E.

The differences on the specification are as follows :

	CM-32L	CM-32(PC)E
External power supply	12 · 24VDC	5 · 24VDC
Shape of CN3	MC 1.5/ 3-G-3.5 [mfd. by PHOENIX CONTACT] equivalent ※External power supply connector is appended	M3 screw-type terminals.
Pin assignment of CN3	Unconnection, -, +	+, -
Weight	200g	230g

	CM-64L	CM-64(PC)E
External power supply	12 · 24VDC	5 · 24VDC
Shape of CN3	MC 1.5/ 3-G-3.5 [mfd. by PHOENIX CONTACT] equivalent ※External power supply connector is appended	M3 screw-type terminals.
Pin assignment of CN3	Unconnection, -, +	+, -
Weight	260g	320g

## Cautions

- The foreign body (the metal piece, the combustible, and liquid, etc.) must not touch this product. Otherwise, this product may malfunction, overheat or cause a failure.
- Do not strike or bend this product. Otherwise, this may malfunction, overheat, cause a failure or breakage.
- Make sure that ample power is supplied to the board when you use an external power supply. Insufficiently energized boards could malfunction, overheat, or cause a failure.
- Do not insert or remove the connector while the power is turned on to the PC. Failure to observe this precaution may cause malfunction, overheating.
- Use this product in the specified environment (temperature and humidity).
- Do not use or store this product in a location exposed to extremely high or low temperature or susceptible to rapid temperature changes.  
For example: - Do not exposure to direct sunlight
  - In the vicinity of a heat source
- When carrying this product, be careful not to apply direct vibration or shock to this product.
- Please do not modify this product.  
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