



# CX1000 Installation and Connection Guide

IM 04L31A01-73E 3rd Edition



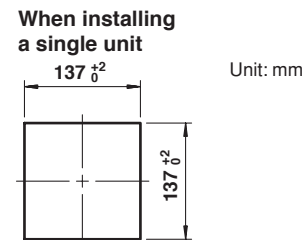
3rd Edition: May 2007(YK)  
All Right Reserved, Copyright © 2001  
Yokogawa Electric Corporation

Thank you for purchasing the CX1000. This manual contains simple explanations about how to install and connect the CX1000. For more information about the procedures described herein, safety precautions, and the CX1000 functions and operation, please refer to the PDF manual found on the provided CD-ROM.

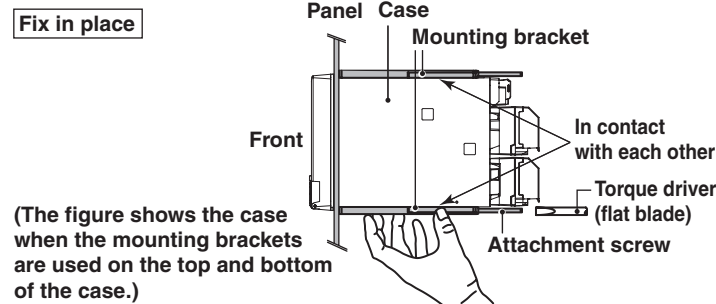
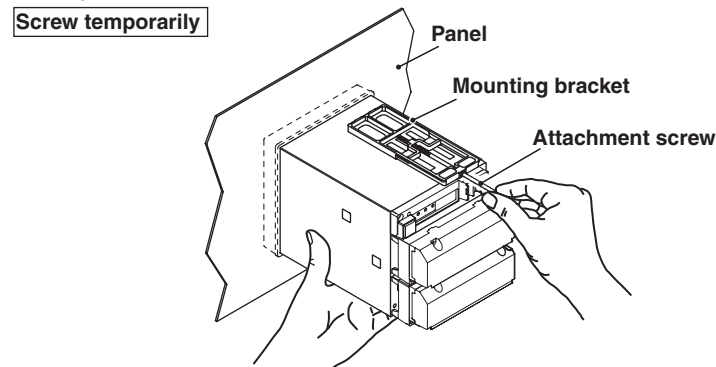
## Installation Procedure

- Cut the instrument panel according to the diagram below. For the panel cut dimensions when installing multiple units closely together, see the *CX1000 User's Manual IM 04L31A01-03E* found on the provided CD-ROM.

### Panel Cut Diagram



- Insert the CX1000 into the front of the panel.
- Using the mounting brackets that came with the package, attach the CX1000 to the panel as shown in the following figure. First, attach the two mounting brackets and temporarily fasten the attachment screws. Next, fix the CX1000 in place by tightening the attachment screws with the appropriate torque (0.7 to 0.9 N-m.). As you fasten the screws, press the mounting bracket against the case so that they are in contact with each other.



For details about the CX1000 external dimensions, installation environment, and more, please refer to the *CX1000 User's Manual (IM 04L31A01-01E)*.

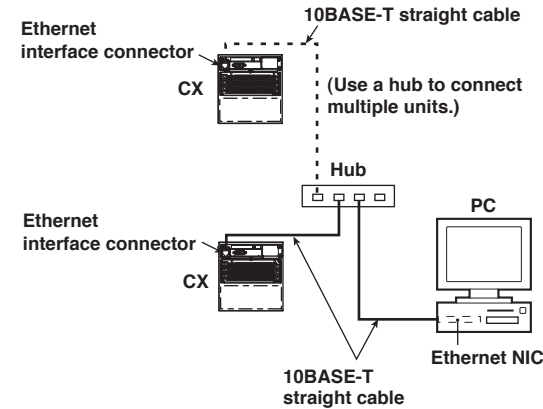
## Connection Types and Procedures

There are various terminals and connectors on the rear panel of the CX1000. Connecting them to peripheral devices allows you to perform control and measurement operations. Below are the names of each connector and terminal, as well as connection procedures.

### Connecting the Ethernet Interface

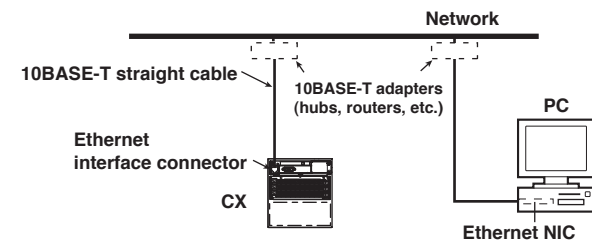
#### When only Connecting to a Hub

Connect the CX1000 and the PC through a HUB as shown in the following figure.



#### When Connecting to a Preexisting Network

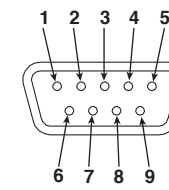
The following figure illustrates an example in which the CX1000 and a PC are connected to the network. When connecting the CX1000 or the PC to a preexisting network items such as the transfer rate and connector type must match. For details, consult your system or network administrator.



### Connecting the Serial Interface

#### RS-232 (When Connecting to a Computer or Other Such Devices)

Verify that the CX1000 has an RS-232 connector, and then connect a serial cable to it. Connect the other end of the serial cable to the other device.

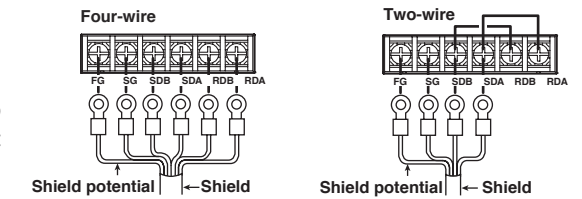


Pin No.	Signal Name	Signal Meaning
2	RD (Received Data)	Received data from the connected device. Input signal.
3	SD (Send Data)	Send data to the connected device. Output signal.
5	SG (Signal Ground)	Signal ground.
7	RS (Request to Send)	Handshaking signal used when receiving data from the connected device. Output signal.
8	CS (Clear to Send)	Handshaking signal used when sending data to the connected device. Input signal.

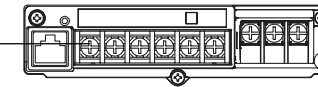
\* Pins 1, 4, 6, and 9 are not used.

#### RS-422/485 (When Connecting to a PLC, Temperature Controller or Other Such Devices)

Verify that the CX1000 has an RS-422/485 connector, and then connect the crimp connectors (for 4-mm screws) to the terminal strip as illustrated on the right. Do not expose more than 5 cm of the cable surface from the shield.

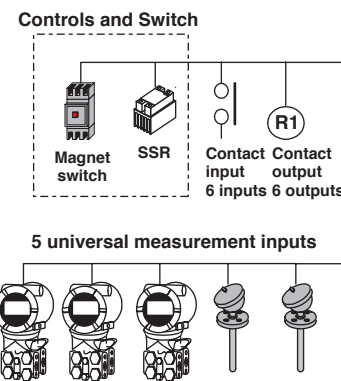
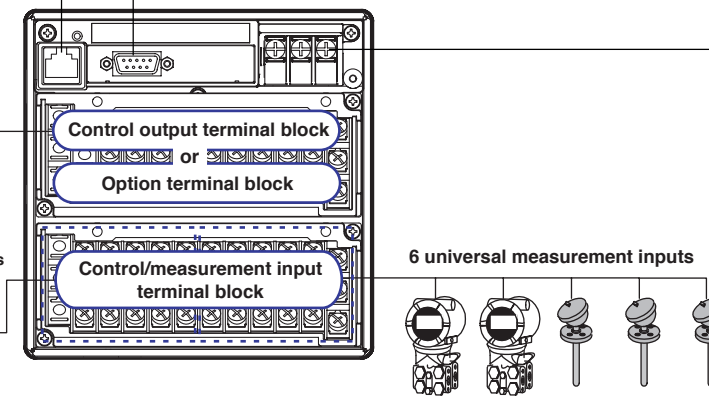


#### With an RS-422/485



#### With an RS-232

#### CX1000 Rear Panel



### Connecting Input/Output Connectors

When connecting various input/output connectors for control or measurement, proceed as described below. Connect the crimp connectors (for 4-mm screws) to the terminal strip.

- Turn off the CX1000 and remove the terminal cover.
- Wire the signal wires to the terminals. Attach the terminal cover and secure it with screws.

#### Option terminal block (one of the following)

Measurement alarm output (/A6 option)	Measurement alarm output + remote input/output (/A6R option)
Measurement alarm output + FAIL/memory end output (/A4F option)	Measurement alarm output + FAIL/memory end output + remote input/output (/A4FR option)

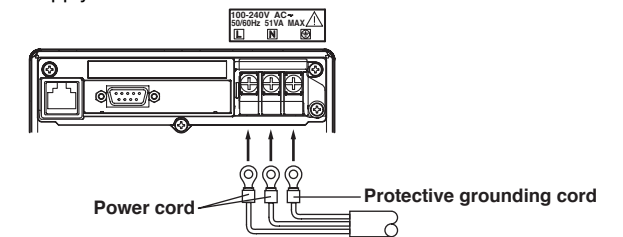
### Connecting the Power Supply

**When using electrical wiring, be certain to follow the safety recommendations prescribed in the CX1000 User's Manual.**

Use a power supply that meets the following conditions:

Rated supply voltage:	100 to 240 VAC
Supply voltage range used:	90 to 132, 180 to 264 VAC
Rated supply voltage frequency:	50/60 Hz
Permitted supply voltage frequency range:	50/60 Hz ± 2%
Maximum power consumption:	39 VA (100 V), 51 VA (240 V)

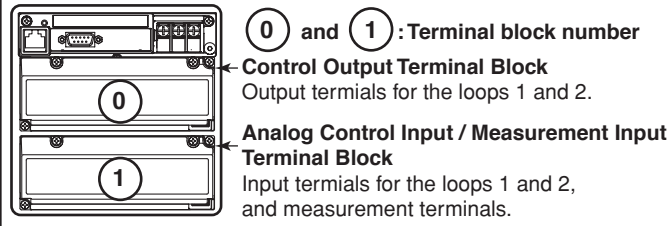
- Turn OFF the CX1000 and open the cover (transparent) for the power supply wires.
- Connect the power cord and the protective ground cord to the power supply terminals.



- Close the cover (transparent) for the power supply wires and secure it in place with screws.

For the power supply specifications and connection method of the 24VDC/AC power supply option, please refer to the CX1000 User's Manual.

### Arrangement of the Control Input/Output Terminals on the CX1206 and CX1200

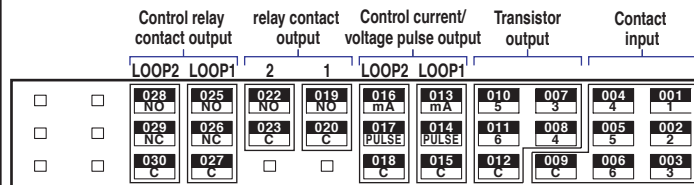


**Symbols**

- 005 ← Terminal number
- +A ← Character indicating the type of input/output signal
- (Symbol with diagonal line) For the maintenance use only. Do not wire.
- (Empty box) No screw terminal is attached.
- C: Common
- NO: Normally Opened
- NC: Normally Closed
- mA: Current output
- PULSE: Voltage pulse output

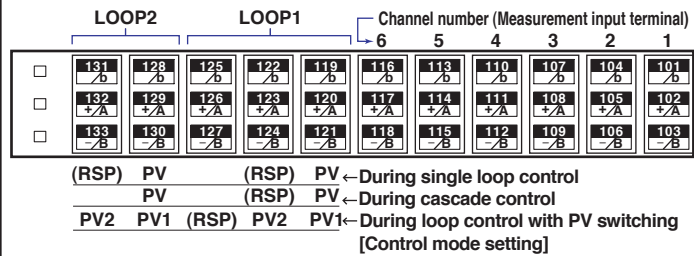
### Control Output Terminal (Terminal Block: 0)

Installed on the CX1206 and CX1200.



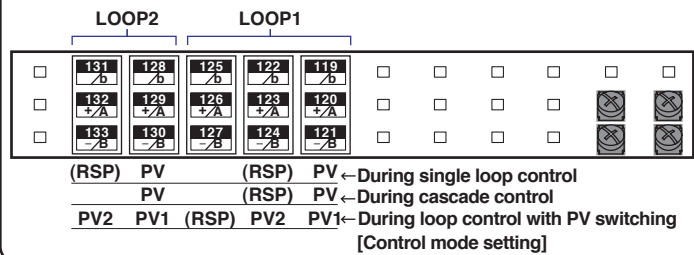
### Analog Control Input / Measurement Input Terminal (Terminal Block: 1)

Installed on the CX1206.



### Analog Control Input Terminal (Terminal Block: 1)

Installed on the CX1200.



### Label on the Front of the Terminal Cover

The terminal numbers are written on the label on the front of the terminal cover. Terminal numbers are unique three-digit numbers. They are used to locate terminals on the wiring diagram, etc. The highest digit indicates the arrangement position of the terminal block; the lower two digits indicate the terminal position within the terminal block (top right terminal is assigned "01" bottom left terminal is assigned "36"). The terminals that cannot be used are indicated as "□".

### Label on the Back of the Terminal Cover

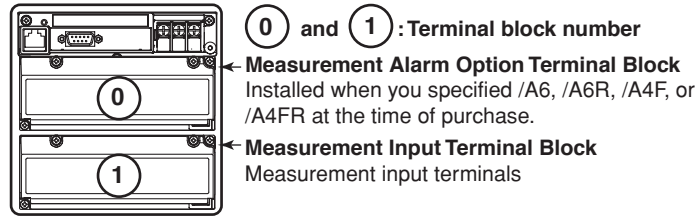
Indicates the type of input/output signals for each terminal. You can select the control modes from "single loop control", "cascade control", and "loop control with PV switching" on the CX. The arrangement of the analog control input (PV) terminals are changed depending on the control mode selected. The terminal arrangement for these three control modes are written on the label on **Analog Control Input Terminal**.

[Control mode setting]

During single-loop control →	SNGL	(RSP)	PV	□	(RSP)	PV
During cascade control →	CAS	□	PV	□	(RSP)	PV
During loop control with PV switching →	PVSW	PV2	PV1	(RSP)	PV2	PV1

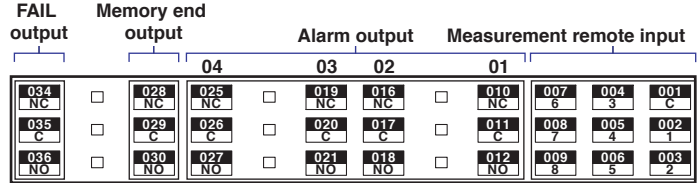
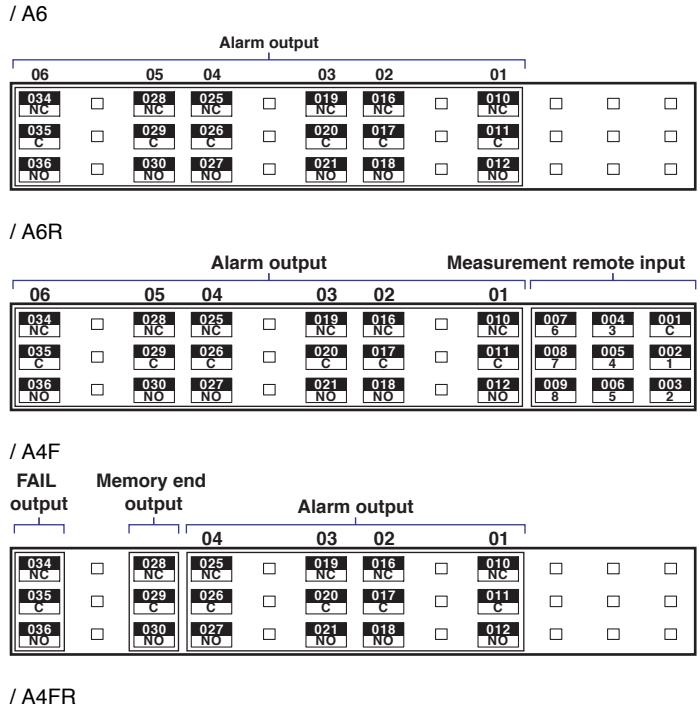
PV, PV1, PV2: PV input, (RSP): RSP input(not used during program control), □: unused terminal

### Arrangement of the Measurement Input/Output Terminals on the CX1006 and CX1000



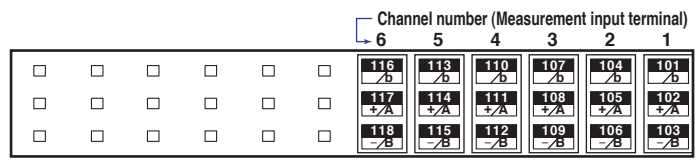
### Measurement Alarm Option Terminal (Terminal Block: 0)

The measurement alarm option terminal block is the terminal block that you specified as an option to the CX1006 or CX1000 at the time of purchase. The following four types are available.



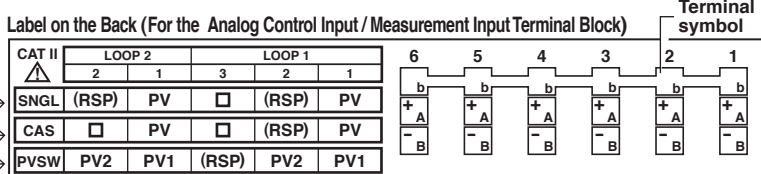
### Measurement Input Terminal (Terminal Block: 1)

Installed on the CX1006.



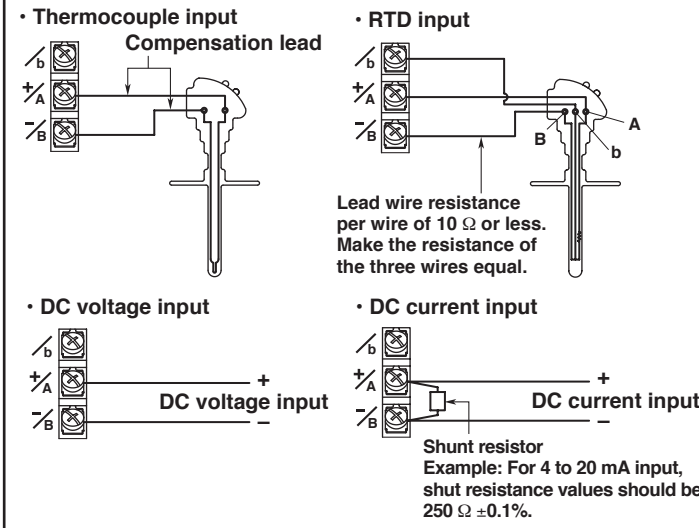
### Label on the Front (For the Analog Control Output Terminal Block)

CAT II	CTRL-OUT	DIGITAL-OUT	CTRL-OUT	DIGITAL-OUT	DIGITAL-IN
□	028	025	022	019	016
□	029	026	023	020	017
□	030	027	□	018	015

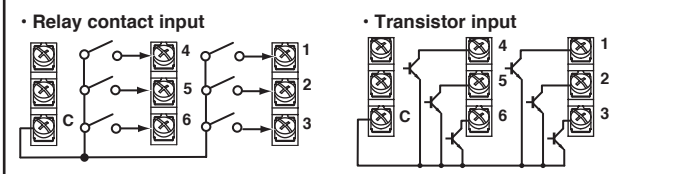


### Input Wiring

#### Measurement Input Wiring



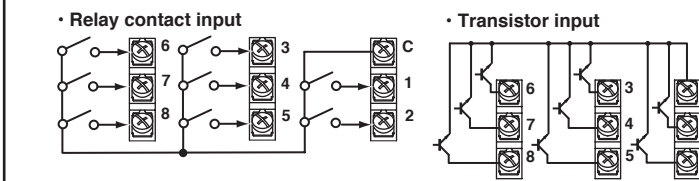
#### Contact Input (DIGITAL IN) Wiring



#### Relay Contact Input/Transistor Input

Input signal: no-voltage contact, open collector  
 Input condition: ON voltage, under 0.5 V (30 mADC); OFF voltage, leakage current under 0.25 mA  
 Input format: photocoupler isolation (common)  
 Withstand voltage: 500 VDC, 1 min (between input terminal and earth)

#### Measurement Alarm Option Terminal Block Contact Input (REMOTE) Wiring

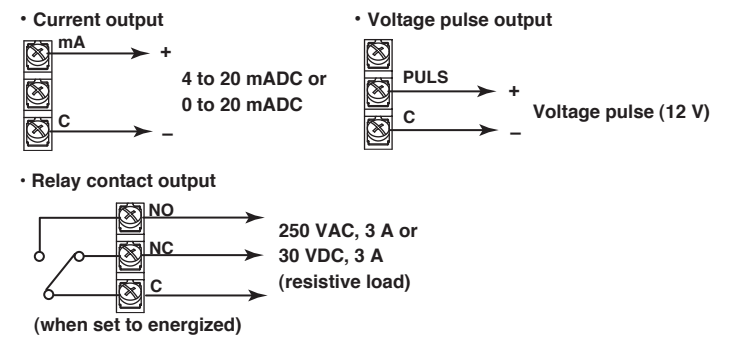


#### Relay Contact Input/Transistor Input

See "Relay Contact Input (DIGITAL IN) Wiring."

### Output Wiring

#### Control Output (LOOP1 and 2) Wiring



#### Current Output

Output signal: 4 to 20 mADC or 0 to 20 mADC  
 Resistive load: 600 Ω or less

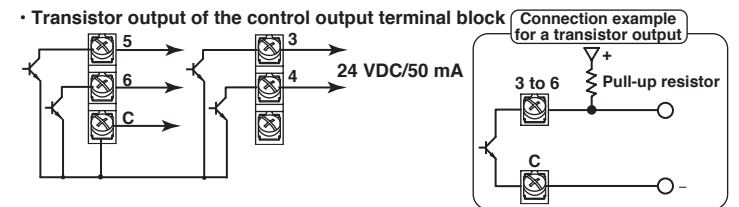
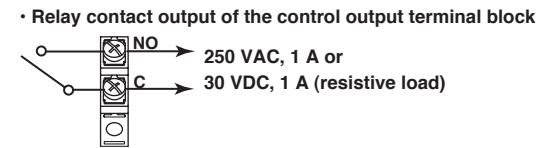
#### Voltage Pulse Output

Output signal: ON voltage=12 VDC  
 Resistive load: 600 Ω or more

#### Relay Contact Output

Output signal: NC, NO, COM  
 Contact rating: 250 VAC (50/60 Hz)/3 A or 30 VDC/3 A (resistive load)

#### Contact Output (DIGITAL OUT) Wiring



#### Relay Output

Output form: relay contact  
 Contact rating: 250 VAC (50/60 Hz)/1 A or 30 VDC/1 A (resistive load)

#### Transistor Output

Output method: open collector output  
 Contact rating: 24 VDC/50 mA  
 A label indicating the terminal arrangement is affixed to the front and back of the terminal cover of each terminal block.

#### Measurement Alarm Option Terminal Block Contact Output (ALARM, FAIL, MEMORY) Wiring



#### Relay Output

Output form: relay contact  
 Contact rating: 250 VAC (50/60 Hz)/1 A or 250 VDC/0.1 A (resistive load)