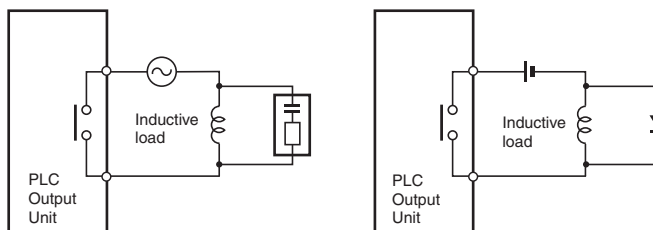


4-4 Wiring

⚠ Caution Always connect surge suppressors to inductive loads in the system (e.g., magnetic contactors, relays, and solenoids). Always separate devices that generate surge from the Analog Input Unit. Faulty Unit operation may cause unexpected system operation.

If inductive loads are connected to output signals from Relay Contact Output Units, connect a surge suppressor in an AC circuit and a diode in a DC circuit close to the inductive load to absorb the back electromotive force.



Connect a surge suppressor in an AC circuit and a diode in a DC circuit.

4-4-1 Terminal Arrangement

The signal names corresponding to the connecting terminals are as shown in the following diagram.

Current input 2 (+) *	B1	A1	Current input 1 (+) *
Voltage input 2 (+)	B2	A2	Voltage input 1 (+)
Input 2 (-)	B3	A3	Input 1 (-)
AG	B4	A4	AG
Current input 4 (+) *	B5	A5	Current input 3 (+) *
Voltage input 4 (+)	B6	A6	Voltage input 3 (+)
Input 4 (-)	B7	A7	Input 3 (-)
AG	B8	A8	AG
NC	B9	A9	N.C.

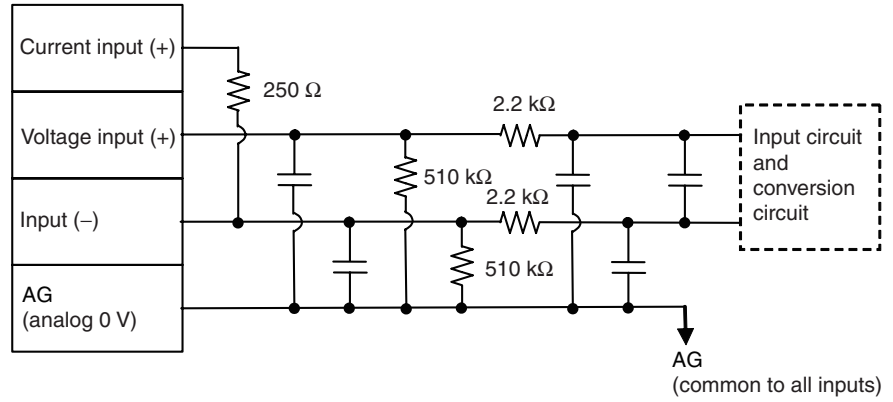
* To use a current input, connect the positive current input terminal and positive voltage input terminal with the enclosed short bar.

- Note**
1. The number of analog inputs that can be used is set in the DM Area.
 2. The input signal ranges for individual inputs are set in the DM Area. The input signal range can be set separately for each input.
 3. The AG terminals are connected to the 0-V analog circuit in the Unit. Connecting the input line shield can improve noise resistance.
 4. Do not make any connections to the NC terminals.

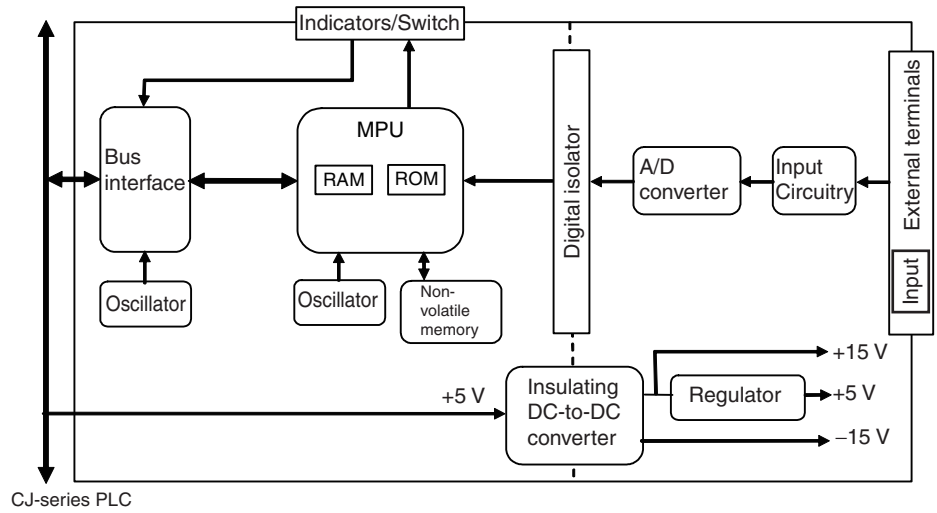
4-4-2 Internal Circuitry

The following diagrams show the internal circuitry of the analog input section.

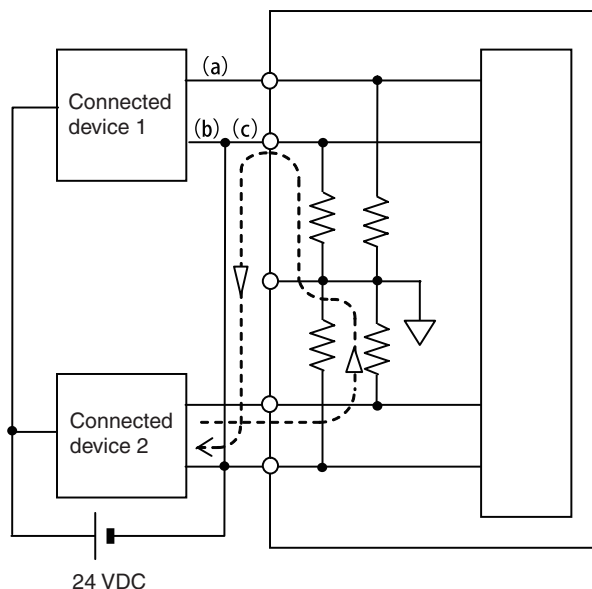
Input Circuitry



Internal Configuration



4-4-3 Voltage Input Disconnection



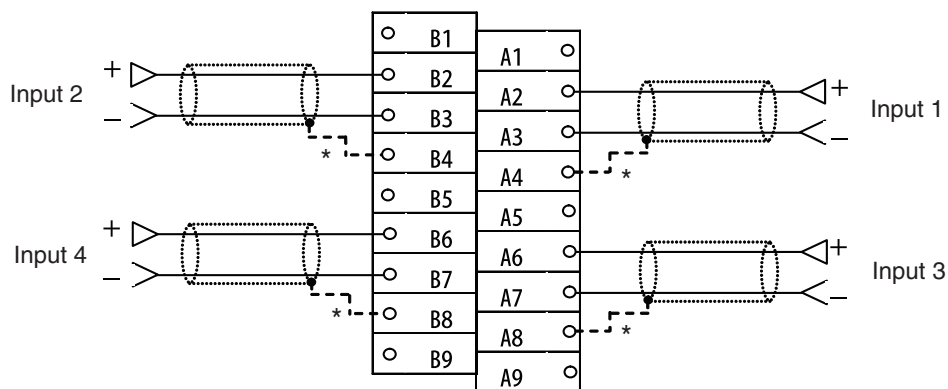
When voltage inputs are used and a disconnection occurs, separate the power supply at the side of the connected devices or use an insulating device (isolator) for each input to avoid the following problems.

When the power supply at the connected devices is shared and section a or b is disconnected, power will flow in the direction of the dotted line and the output voltage of the other connected devices will be reduced to between a third to a half of the voltage. If 1 to 5 V is used and the reduced voltage occurs, disconnection may not be detectable. If section c is disconnected, the power at the negative input terminal will be shared and disconnection will not be detectable.

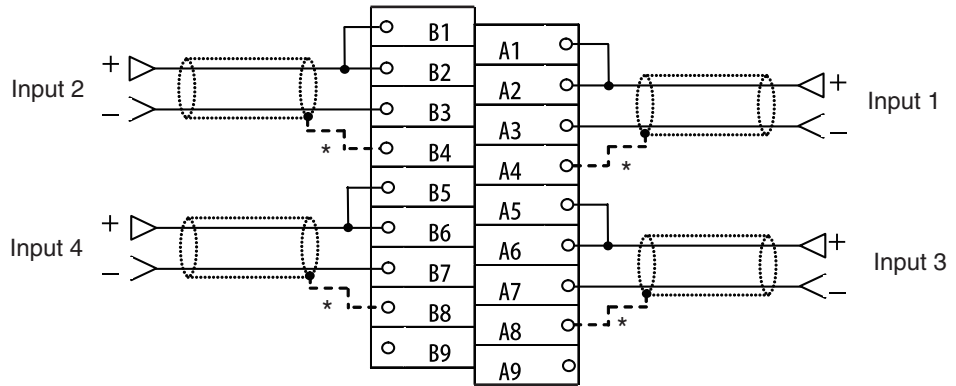
For current inputs, sharing the power supply between the connected devices will not cause any problems.

4-4-4 Input Wiring Example

■ Wiring Example for a Voltage Input

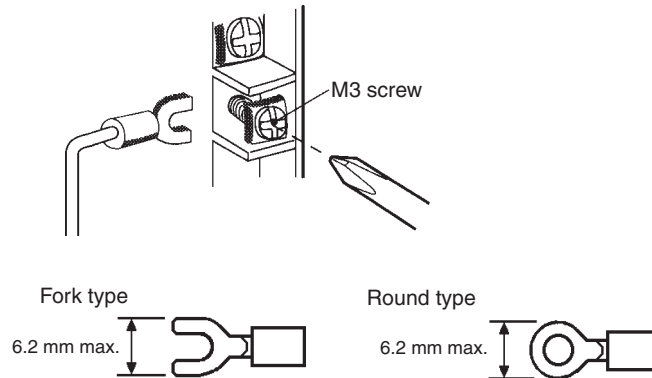


■ Wiring Example for a Current Input



* Connect the positive current input terminal and positive voltage input terminal with the enclosed short bar.

Note Crimp terminals must be used for terminal connections, and the screws must be tightened securely. Use M3 screws and tighten them to a torque of 0.5 N·m.



- Note**
1. Set the number of analog inputs to be used so that unused inputs are set so that they are not used. (Refer to pages 150 and 155.) If an input that is not used is set to be used, the input data for it may be unstable. The input data can be made stable by cross-connecting the voltage input terminals (V+) and (V-). However, if these terminals are connected and the inputs are set for the 1 to 5-V or 4 to 20-mA range, the Disconnection Detection Flag will turn ON.
 2. When connecting the shield of the analog input cable* to the Unit's AG terminal, as shown in the above diagram, use a wire that is 30 cm or shorter if possible.
 3. Do not connect anything to NC terminals shown in the wiring diagram on page 142.
 4. Connect the analog input line shield to the AG terminal on the Analog Input Unit to improve noise resistance.