

## 3-4 Wiring

### 3-4-1 Terminal Arrangement

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


#### CJ1W-AD041-V1

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

#### CJ1W-AD081-V1

Input 2 (+)	B1	A1	Input 1 (+)
Input 2 (-)	B2	A2	Input 1 (-)
Input 4 (+)	B3	A3	Input 3 (+)
Input 4 (-)	B4	A4	Input 3 (-)
AG	B5	A5	AG
Input 6 (+)	B6	A6	Input 5 (+)
Input 6 (-)	B7	A7	Input 5 (-)
Input 8 (+)	B8	A8	Input 7 (+)
Input 8 (-)	B9	A9	Input 7 (-)

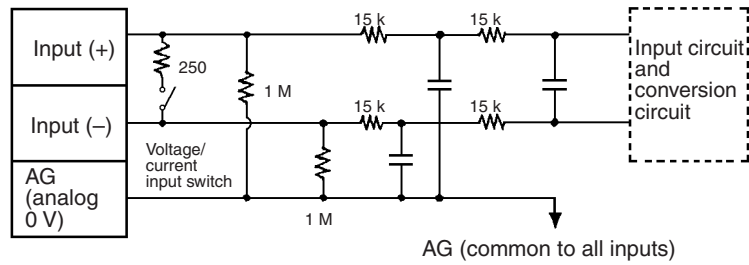
- Note**
1. The analog input numbers that can be used are set in the Data Memory (DM).
  2. The input signal ranges for individual inputs are set in the Data Memory (DM). They can be set in units of input numbers.
  3. The AG terminals are connected to the 0-V analog circuit in the Unit. Connecting shielded input lines can improve noise resistance.

 **Caution** Do not make any connections to the N.C. terminals.

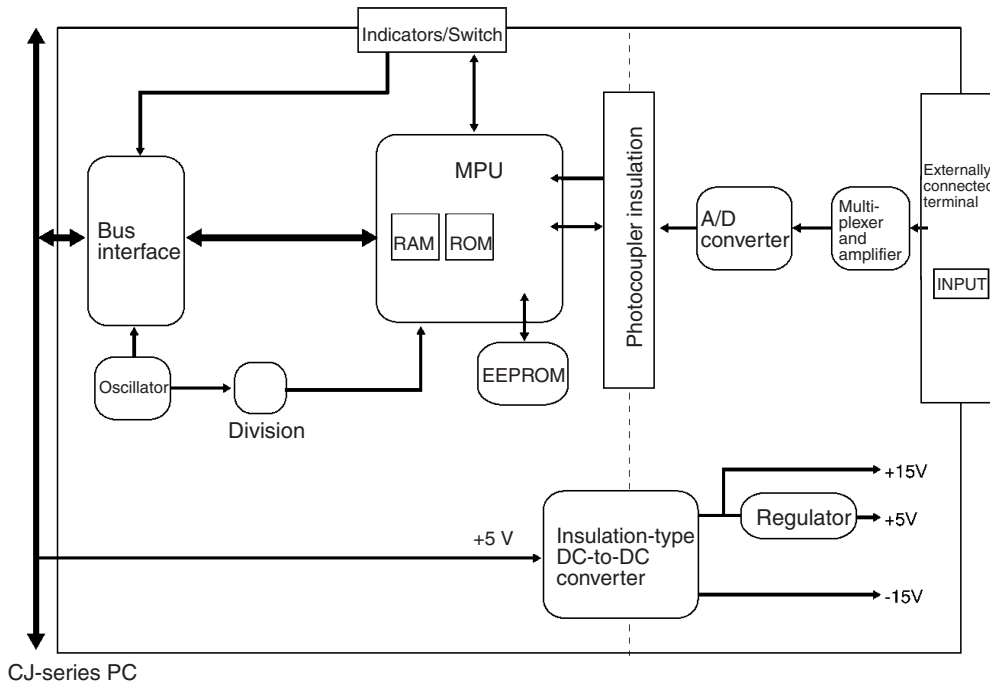
### 3-4-2 Internal Circuitry

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

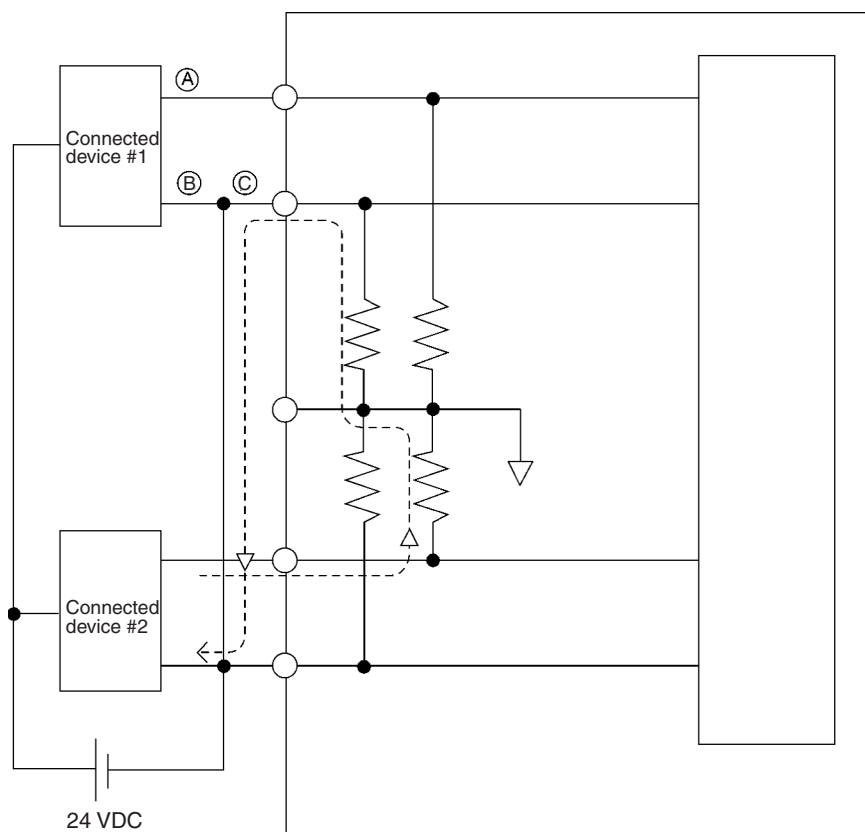
#### Input Circuitry



#### Internal Configuration



### 3-4-3 Voltage Input Disconnection



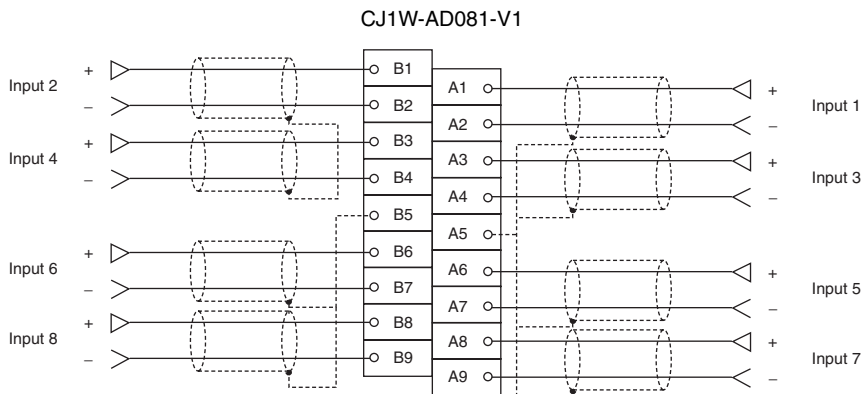
**Note** If the connected device #2 in the above example outputs 5 V and the power supply is shared by 2 channels as shown in the above diagram, approximately one third of the voltage, or 1.6 V, will be input at input 1.

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 broken 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 output, disconnection may not be detectable. If section C is disconnected, the power at the (-) 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.

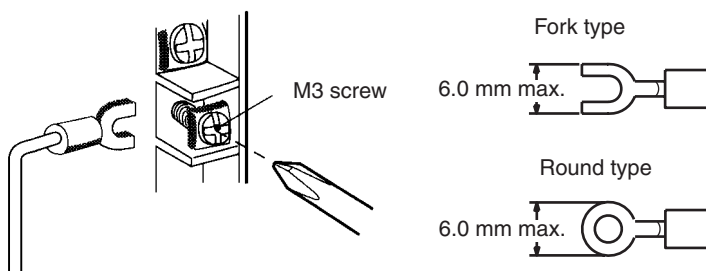
### 3-4-4 Input Wiring Example



**Note** There are only four inputs for the CJ1W-AD041-V1. Inputs 5 to 8 are not used.

- Note**
1. When using current inputs, turn ON the voltage/current switches. Refer to 3-3-4 Voltage/Current Switch for further details.
  2. For inputs that are not used, either set to “0: Not used” in the input number settings (refer to 3-6-1 Input Settings and Conversion Values) or short-circuit the voltage input terminals (V+) and (V-). If this is not performed and the inputs are set for the 1 to 5-V or 4 to 20-mA range, the Line Disconnection Flag will turn ON.
  3. Crimp-type 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.
  4. When connecting the shield of the analog input cables to the Unit’s AG terminals, as shown in the above diagram, use a wire that is 30 cm max. in length if possible.

**Caution** Do not connect anything to N.C. terminals shown in the wiring diagram on page 93.



Connecting shielded cable to the Unit’s AG terminals can improve noise resistance.

### 3-4-5 Input Wiring Considerations

When wiring inputs, apply the following points to avoid noise interference and optimize Analog Input Unit performance.

- Use two-core shielded twisted-pair cables for input connections.
- Route input cables separately from the AC cable, and do not run the Unit’s cables near a main circuit cable, high voltage cable, or a non-PLC load cable.