

## 7-4 Wiring

### 7-4-1 Terminal Arrangement

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

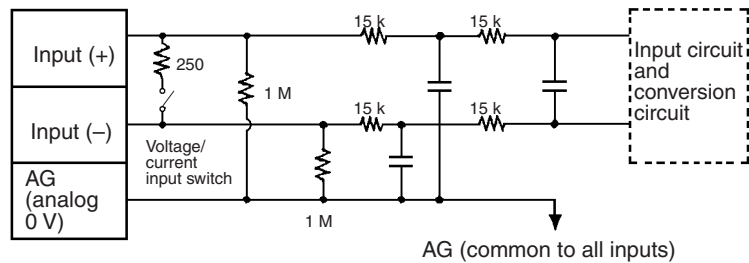
|                      |    |    |                      |
|----------------------|----|----|----------------------|
| Voltage output 2 (+) | B1 | A1 | Voltage output 1 (+) |
| Output 2 (-)         | B2 | A2 | Output 1 (-)         |
| Current output 2 (+) | B3 | A3 | Current output 1 (+) |
| N.C.    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

- Note**
1. The analog I/O numbers that can be used are set in the Data Memory (DM).
  2. The I/O signal ranges for individual inputs and outputs are set in the Data Memory (DM). They can be set in units of I/O numbers.
  3. The AG terminal (A7, B7) is connected to the 0-V analog circuit in the Unit. Connecting shielded input lines can improve noise resistance.
  4. The N.C. terminals (A4, B4) are not connected to internal circuitry.

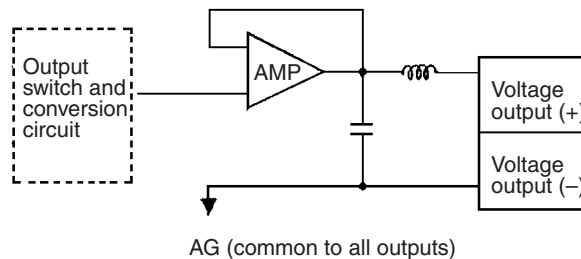
### 7-4-2 Internal Circuitry

The following diagrams show the internal circuitry of the analog I/O section.

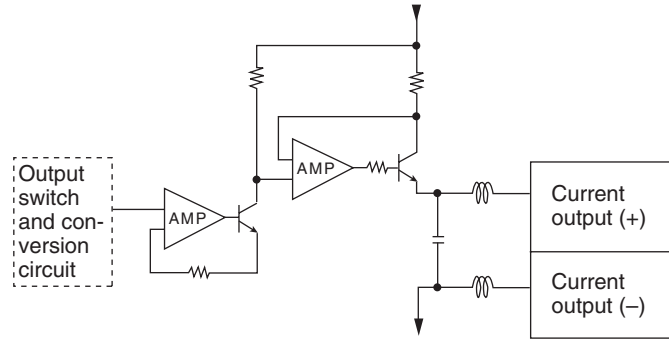
#### Input Circuitry



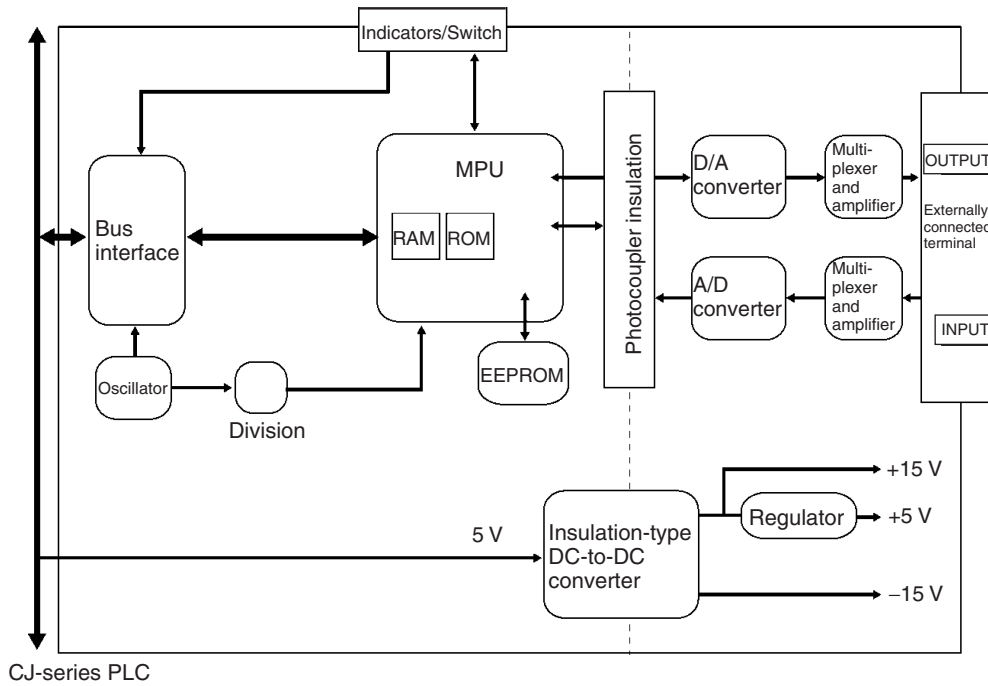
#### Output Circuitry



Current Output Circuitry

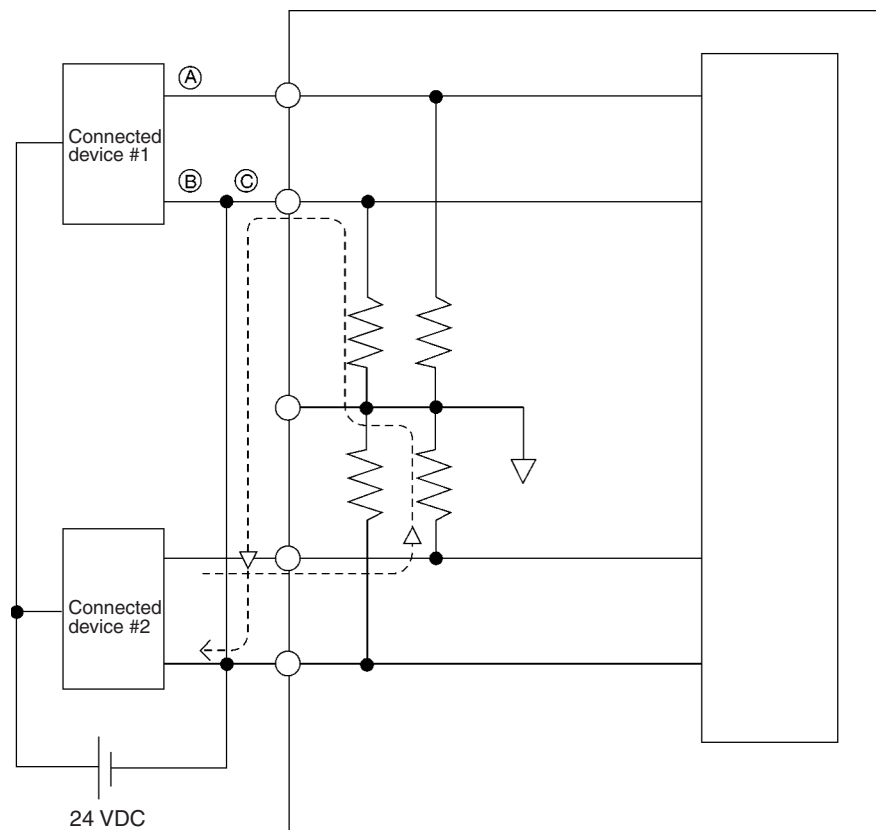


Internal Configuration



CJ-series PLC

### 7-4-3 Voltage Input Disconnection



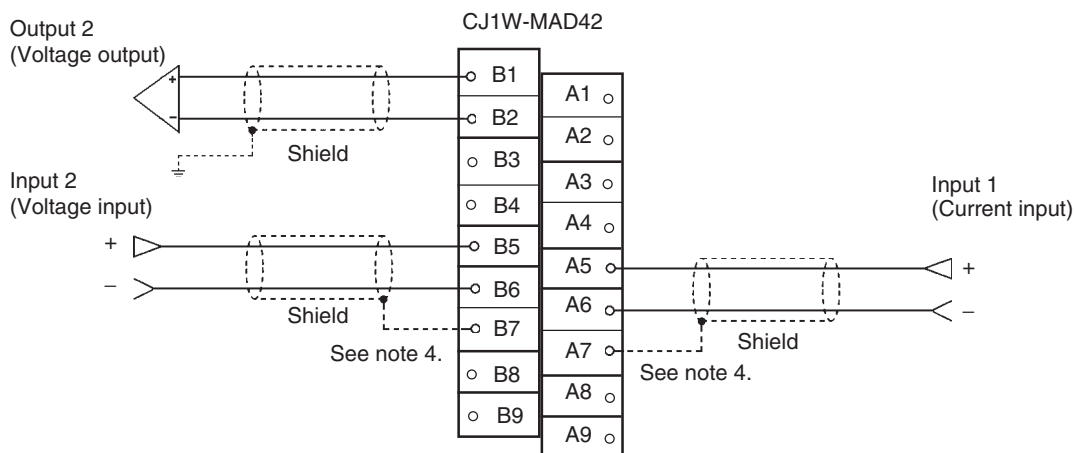
**Note** If the connected device #2 in the above example outputs 5 V and the power supply is shared by 2 channels as shown in the above diagram, approximately one third of the voltage, or 1.6 V, will be input at input 1.

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.

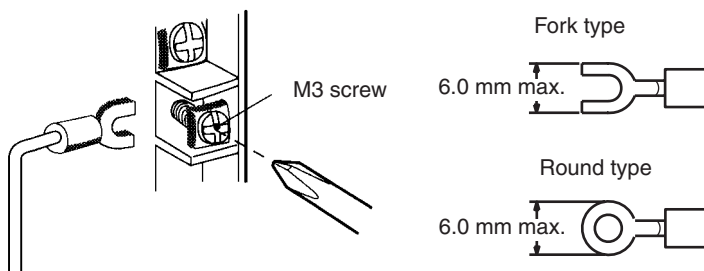
When the power supply at the connected devices is shared and section A or B is disconnected, power will flow in the direction of the broken line and the output voltage of the other connected devices will be reduced to between a third to a half of the voltage. If 1 to 5 V is used and the reduced voltage 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.

### 7-4-4 I/O Wiring Example



- Note**
1. When using current inputs, pins IN1 of the voltage/current switch must be set to ON. Refer to 7-3-3 *Voltage/Current Switch* for further details. Also set the voltage and current ranges in D(m+35) in the DM Area.
  2. For inputs that are not used, either set to “0: Not used” in the input number settings (refer to 7-6-1 *Input Settings and Conversion Values*) or short-circuit the voltage input terminals (V+) and (V-).
  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 (A7, B7), as shown in the previous diagram, use a wire that is 30 cm max. in length if possible.



Connecting shielded cable to the Unit’s AG terminals (A7, B7) can improve noise resistance.

To minimize output wiring noise, ground the output signal line to the input device.