

### 3.1 Standard Connection Diagram

Connect the drive and peripheral devices as shown in *Figure 3.1*. It is possible to run the drive via the digital operator without connecting digital I/O wiring. This section does not discuss drive operation; *Refer to Start-Up Programming & Operation on page 51* for instructions on operating the drive.

**NOTICE:** *Inadequate branch short circuit protection could result in damage to the drive. Install adequate branch circuit short circuit protection per applicable codes. The drive is suitable for circuits capable of delivering not more than 30,000 RMS symmetrical amperes, 240 Vac maximum (200 V Class) and 480 Vac maximum (400 V Class).*

**NOTICE:** *When the input voltage is 480 V or higher or the wiring distance is greater than 100 meters, pay special attention to the motor insulation voltage or use a drive duty motor. Failure to comply could lead to motor insulation breakdown.*

**NOTICE:** *Do not connect AC control circuit ground to drive enclosure. Improper drive grounding can cause control circuit malfunction.*

**NOTICE:** *The minimum load for the multi-function relay output MA-MB-MC is 10 mA. If a circuit requires less than 10 mA (reference value), connect it to a photocoupler output (P1, P2, PC). Improper application of peripheral devices could result in damage to the photocoupler output of the drive.*

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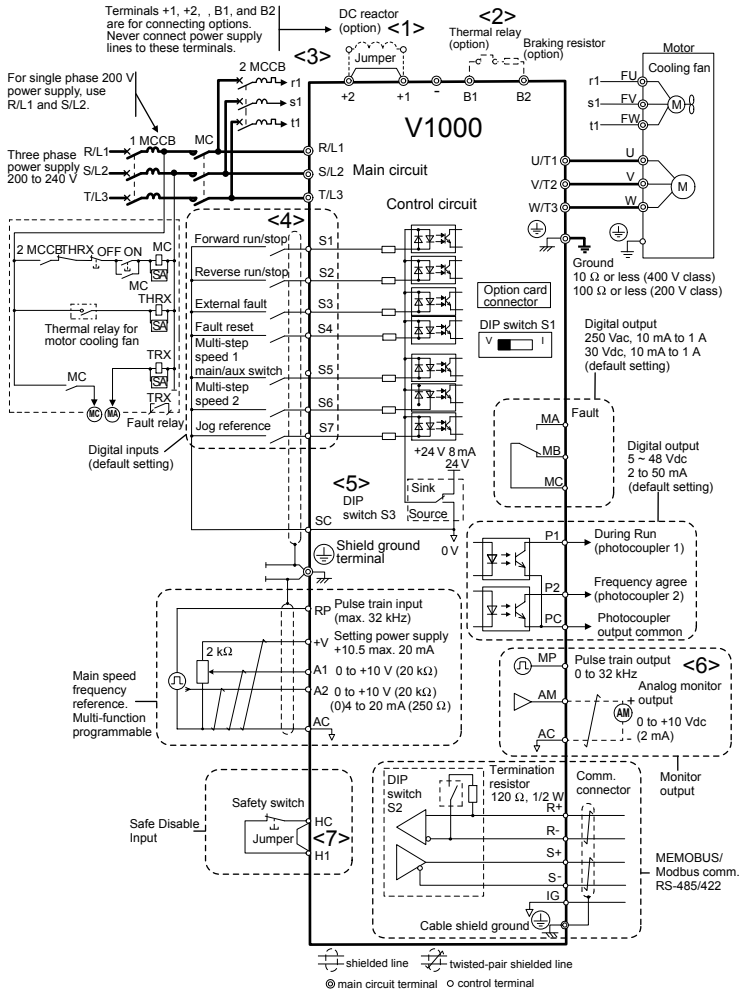


Figure 3.1 Drive Standard Connection Diagram

<1> Remove the jumper when installing an optional DC reactor.

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- <2> The MC on the input side of the main circuit should open when the thermal relay is triggered.
- <3> Self-cooled motors do not require separate cooling fan motor wiring.
- <4> Connected using sequence input signal (S1 to S7) from NPN transistor; Default: sink mode (0 V com).
- <5> Use only a +24 V internal power supply in sinking mode; the source mode requires an external power supply [Refer to I/O Connections on page 44](#).
- <6> Monitor outputs work with devices such as analog frequency meters, ammeters, voltmeters and wattmeters; they are not intended for use as a feedback-type of signal.
- <7> Disconnect the wire jumper between HC and H1 when utilizing the safety input. [Refer to Wiring Procedure on page 41](#) for details on removing the jumper. The wire length for the Safe Disable input should not exceed 30 m.

**WARNING! Sudden Movement Hazard.** Do not close the wiring for the control circuit unless the multifunction input terminal parameter is properly set (S5 for 3-Wire; H1-05 = "0"). Improper sequencing of run/stop circuitry could result in death or serious injury from moving equipment.

**WARNING! Sudden Movement Hazard.** Ensure start/stop and safety circuits are wired properly and in the correct state before energizing the drive. Failure to comply could result in death or serious injury from moving equipment. When programmed for 3-Wire control, a momentary closure on terminal S1 may cause the drive to start.

**WARNING!** When 3-Wire sequence is used, set the drive to 3-Wire sequence before wiring the control terminals and ensure parameter b1-17 is set to 0 (drive does not accept a run command at power up (default)). If the drive is wired for 3-Wire sequence but set up for 2-Wire sequence (default) and if parameter b1-17 is set to 1 (drive accepts a Run command at power up), the motor will rotate in reverse direction at power up of the drive and may cause injury.

**WARNING!** When the application preset function is executed (or A1-06 is set to any value other than 0) the drive I/O terminal functions change. This may cause unexpected operation and potential damage to equipment or injury.

[Figure 3.2](#) illustrates an example of a 3-Wire sequence.

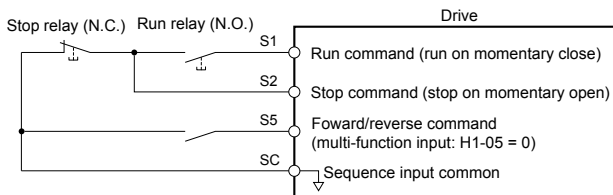


Figure 3.2 3-Wire Sequence