7   Minimum connection requirements

⚠ **DANGER**
EXPOSED SIGNALS
Hazardous voltage levels may be present if using an open frame power supply to power the optocouplers and motor power.
Failure to follow these instructions will result in death or serious injury.

⚠ **CAUTION**
HOT PLUGGING!
Do not connect or disconnect DC power, logic or communications while the device is in a powered state.
Failure to follow these instructions can result in equipment damage.

⚠ **CAUTION**
EMI and RFI
These recommendations will provide optimal protection against EMI and RFI. The actual cable type, wire gauge, shield type and filtering devices used are dependent on the customer's application and system.
Logic level cables must not run parallel to power cables. Power cables will introduce noise into the logic level cables and make your system unreliable.
Logic level cables must be shielded to reduce the chance of EMI induced noise. The shield needs to be grounded at the signal source to earth. The other end of the shield must not be tied to anything, but allowed to float. This allows the shield to act as a drain.
Failure to follow these instructions may result in damage to system components!

CONNECTOR OPTIONS

The MDrive Step/direction products family has an extensive set of connector options. The purpose of this section is to give a general overview of the I/O interface methods and practices.

Please see the section specific to the MDrive product you purchased in the second part of this document for connectors, pin configurations and connectivity options.

7.1   Minimum connection requirements

The diagrams below illustrates the minimum connections required to operate the MDrive microstepping integrated motor and driver.

These connections are:

- ■   +V Motor power
- ■   Power ground
- ■   Optocoupler reference
- ■   Step clock
- ■   CW/CCW direction

Connecting SPI communications is not required as the device will operate using the factory default settings in full step mode at 25% run current.
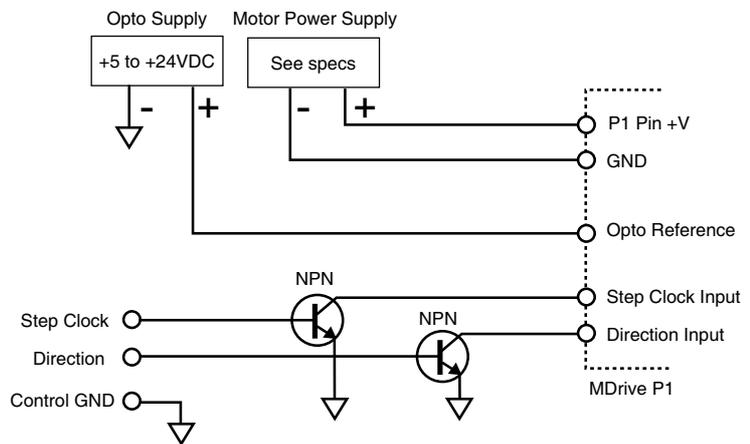

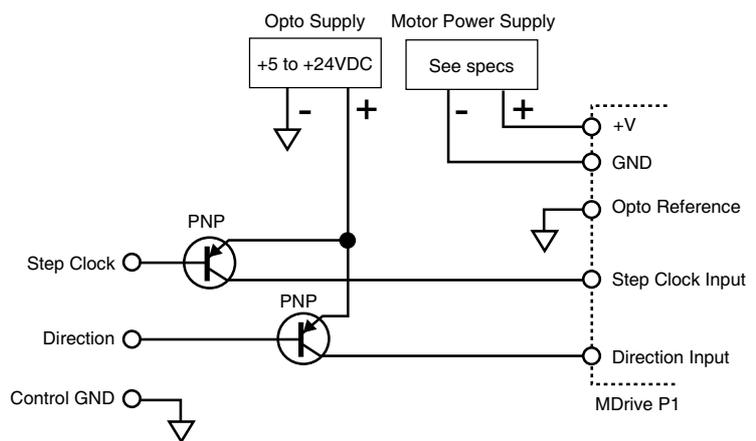Figure 6.1   Minimum connections, open-collector sinking configuration

Figure 6.2   Minimum connections, open-collector sourcing configuration