Control/Power Interface Boards

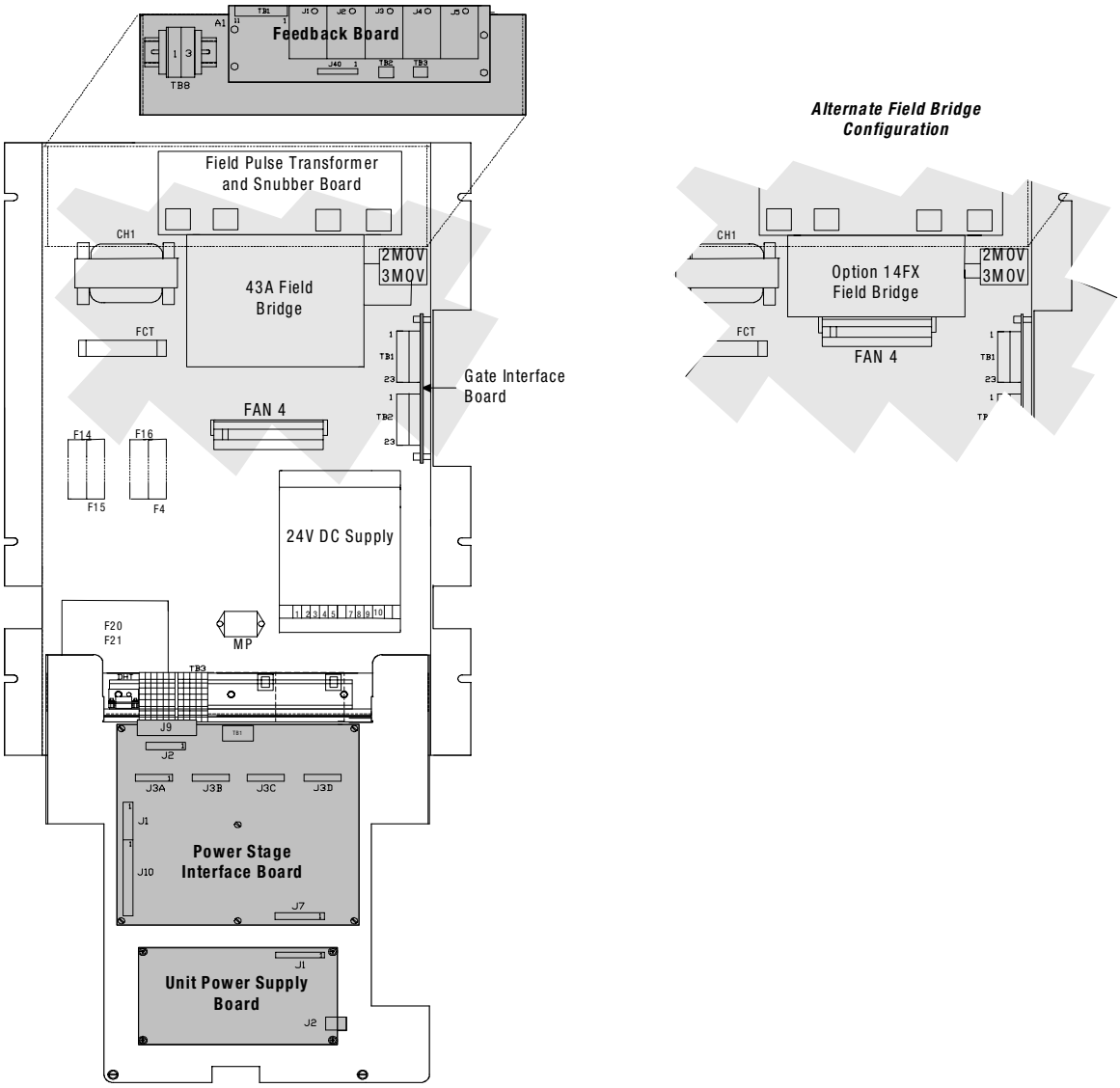
Control/power interface boards are used to provide a link between control boards (which are responsible for managing the drive), and power components (which are closely associated with the actual drive hardware and operations).

The following items are used to provide this interfacing:

- power stage interface board
- unit power supply board
- feedback board

These items are located on the control module in the disconnect bay of the drive, and are arranged as shown below. Accessibility to the power stage interface board and the unit power supply is gained by lowering the front panel.

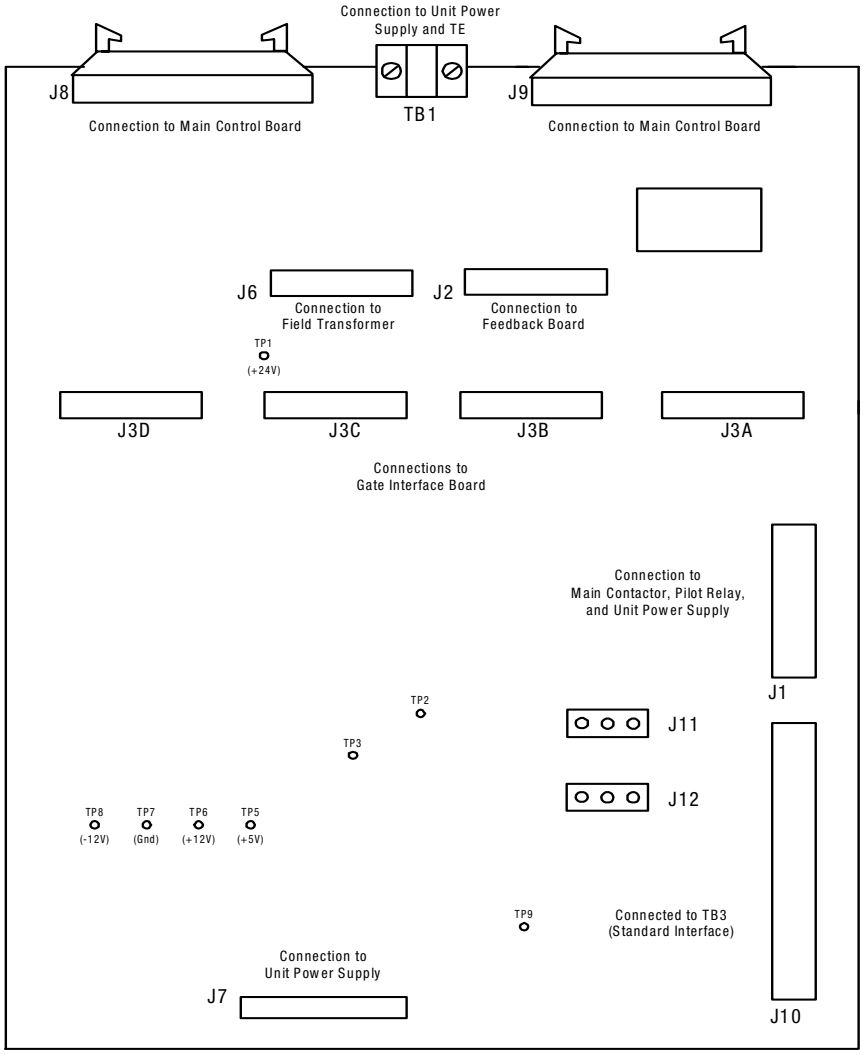
Figure 1.4
Control/Power Interface Boards



Power Stage Interface Board

The power stage interface board is used as the chief interface between the main control board and other boards of the system. This board is responsible for distributing power and control signals to and from the main control board, gate interface board, field-pulse transformer board, feedback board, and unit power supply. Refer to Figure 1.1 to see how this board is connected in the drive.

Figure 1.5
Power Stage Interface Board



The test points and jumpers shown in the diagram are used for startup and troubleshooting procedures. Refer to the troubleshooting manual for more information on test points and jumpers.

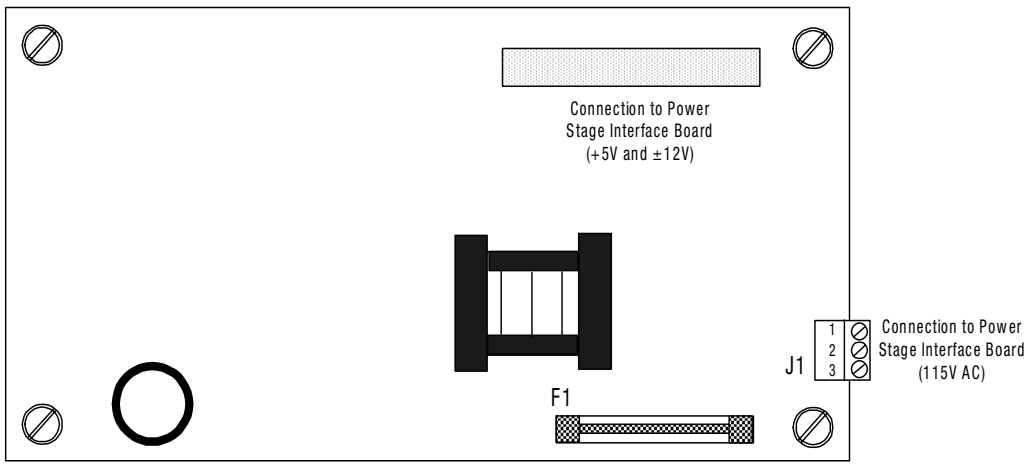
The power stage interface board provides the following services between the main control board and other boards in the system:

- furnishes DC control power to the main control board (from the unit power supply)
- provides 3-phase line synchronization signals to the main control board
- accepts signals from the main control board and produces the logic and drivers for armature and field-pulse transformers
- accepts signals for start/stop logic, protection I/O, and drivers for operating the main DC contactor

Unit Power Supply Board

The unit power supply board converts 115V AC input into regulated +5V DC and ±12V DC control voltages. These control voltages are routed through the power stage interface board to provide power to all the printed circuit boards.

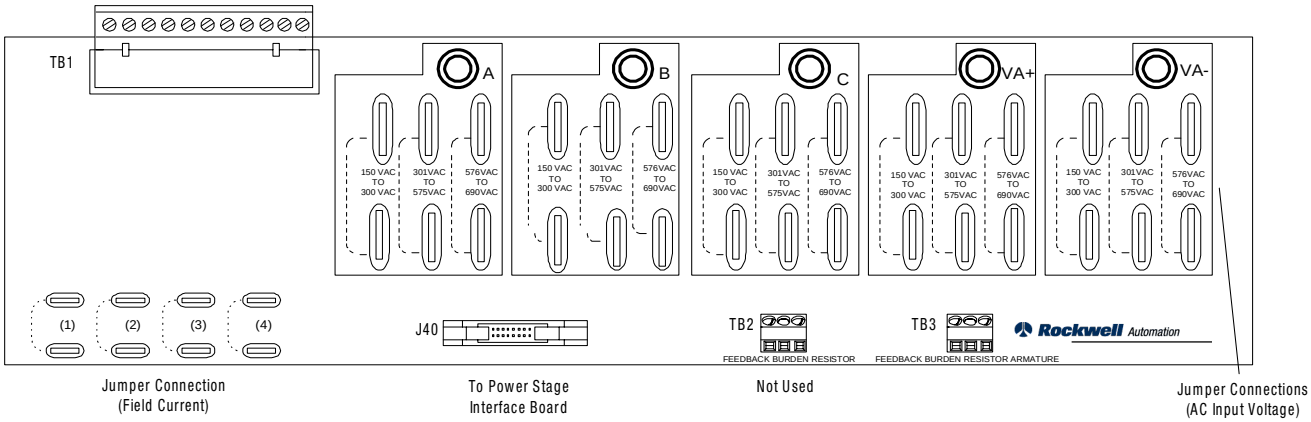
Figure 1.6
Unit Power Supply Board



Feedback Board

The feedback board receives status information from the drive components, scales it to a signal level, and supplies it to the main control board (through the power stage interface board).

Figure 1.7
Feedback Board



The feedback board has terminals for the 3-phase AC inputs (A, B, and C) and for the armature power (VA+ and VA-), a series of jumper connections to adjust for AC input voltage, jumper connections for the field current, a bus connection to the power stage interface board, two terminals blocks for placing burden resistors in parallel to the circuit, and a Phoenix connection terminal block connected to other drive components.

> ***Note:*** *Jumper settings are defined in the installation chapter of this manual.*

24V DC Power Supply

There are three 24V DC power supply units that may be installed in the drive. There is a feedback board supply, an optional air flow sensor supply, and an optional control board supply (used to power an optional adapter board). These supply units are fed from the 115V AC control power circuit.

Gate Interface Board

The gate interface board is the junction between the power stage interface board and the individual armature-pulse transformer boards. This board has four bus connections to the power stage interface board and four Phoenix terminal blocks distributing signals to the armature-pulse transformer boards.

Figure 1.8
Gate Interface Board