



# Bulletin 1395

## 3.6A - 345A Power Stage Interface Board Replacement Instructions

<b>Description</b>	<p>The primary function of the Power Stage Interface Board is to provide interface between the Main Control Board, and the Power Bridge boards such as the Pulse Transformer and Snubber boards and the Feedback Board. The primary functions performed include:</p> <ul style="list-style-type: none"><li>• Distribution of DC Control power to the Main Control Board.</li><li>• Provide 3 phase line synchronization signals to the Main Control Board.</li><li>• Produce all Armature and Field bridge SCR gate signals from control signals provided from the Main Control Board.</li><li>• Contactor and other logic control with interface to Main Control Board for these functions.</li></ul>
<b>Installation</b>	<p>The following procedure describes the removal and replacement of the Bulletin 1395 Power Stage Interface Board.</p>



**WARNING:** To avoid an electrical shock hazard, REMOVE POWER before attempting to perform the following procedure.

1. Ensure that power to the Drive is removed.
2. The Power Stage Interface is located on the back side of the 2nd swing down panel with the Unit Power Supply.
3. Loosen the screws holding the two swing down panels, and carefully lower the panels for access to the Power Stage Interface.
4. Disconnect the 10 ribbon and wire connectors (J1 thru J10) located on the board (refer to Figure 1).
5. Disconnect the wires connected to the TB1 screw terminal on the board.
6. Loosen the 6 screws securing the board to the panel, noting the board orientation. Remove the board.
7. Position the new Power Stage Interface Board on the panel and secure.
8. Reconnect the various wires and cables, checking for correct placement. Verify correct connections have been made using Table 1-1.
9. Verify voltage selection for the Reset and Motor Thermo inputs is correct per Table 1-2. Jumpers J11 and J12 on the Power Stage Interface determine whether the voltage used for the Reset and Motor Thermo inputs to the drive can be 24 VDC or 115 VAC. Both jumpers should be in the same position. Position 1-2 is for 115 VAC and position 2-3 is for 24 VDC.
10. Secure the swing-down panels in the upright position.
11. Check the Drive for proper operation.

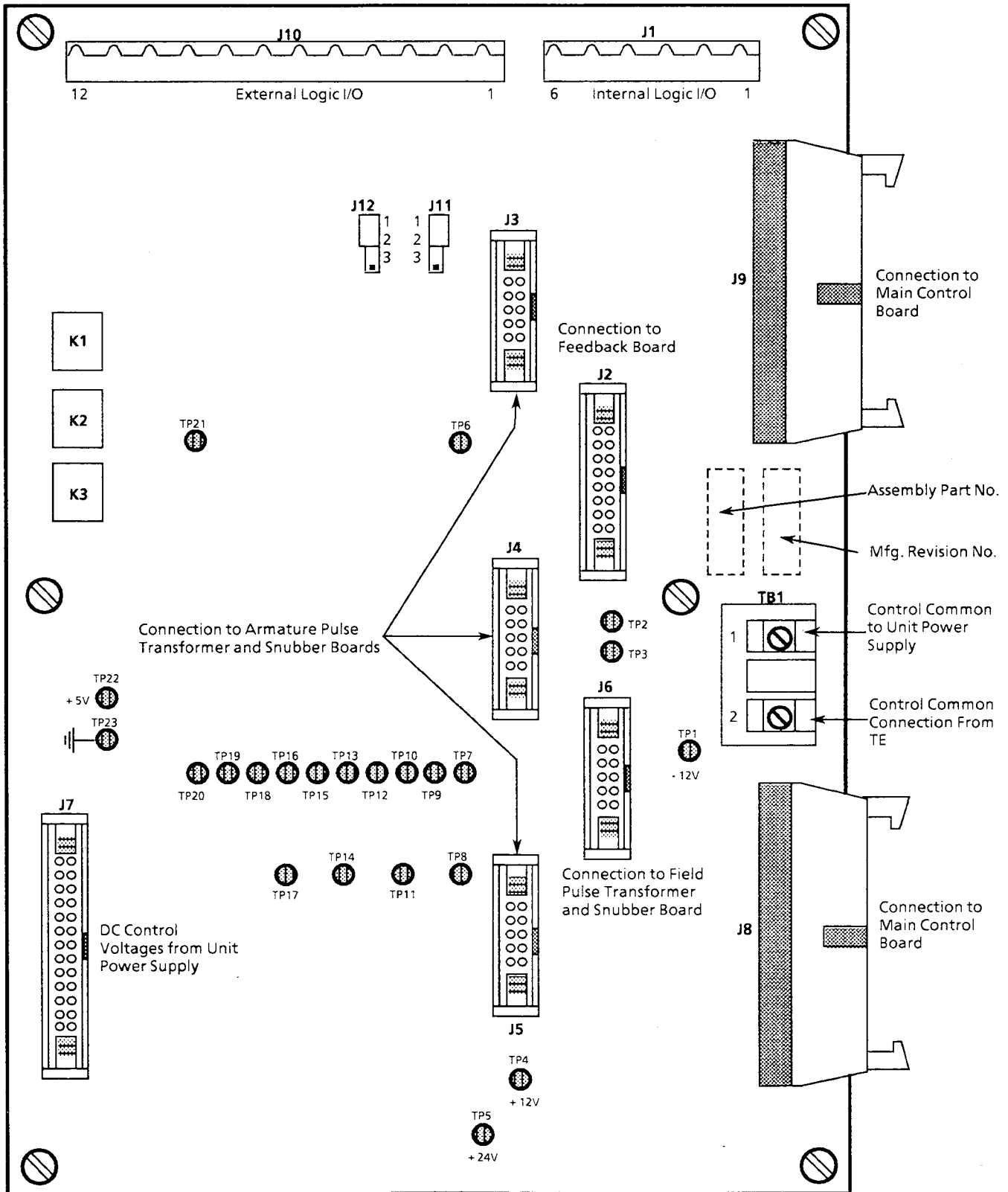


Figure 1. Power Stage Interface (A7) Overview

**Table 1-1. Power Stage Interface Connections**

CONN	TYPE	PURPOSE
TB1	2 TERM SCREW	Connection to control common. Control common is connected to signal ground TE
J1	6 PIN PLUG	Provides hard wiring for : - Pilot Relay (PR) coil control voltage - Main contactor auxiliary contact feedback - 115 VAC control voltage input to Power Stage Interface
J2	16 PIN RIBBON	Connection for feedback signals from Feedback Board
J3	10 PIN RIBBON	Connection to Armature Pulse Transformer and Snubber Board A2
J4	10 PIN RIBBON	Connection to Armature Pulse Transformer and Snubber Board A3
J5	10 PIN RIBBON	Connection to Armature Pulse Transformer and Snubber Board A4
J6	10 PIN RIBBON	Connection to Field Pulse Transformer and Snubber Board A5
J7	26 PIN RIBBON	Connection to Unit Power Supply. All DC control voltages enter the Power Stage Interface thru J7.
J8	34 PIN RIBBON	Connection to Main Control Board to send DC control voltages and 3 phase synchronization signals to Main Control Board.
J9	34 PIN RIBBON	Connection to Main Control Board for logic and firing control signals.
J10	12 PIN PLUG	Connection for external logic control hardware devices. Actual wiring is from J10 to terminals 1-12 of drive terminal TB3. External devices are connected directly to TB3.

**Table 1-2. Power Stage Interface Jumpers**

JUMPER	POSITION	PURPOSE
J11	*1-2	115 VAC Motor Thermo Input
	2-3	24 VDC Motor Thermo Input
J12	*1-2	115 VAC Reset input
	2-3	24 VDC Reset input

\* Indicates Normal Jumper Position

Table 1-3 lists the 23 test points which are provided to monitor signal values on the Power Stage Interface Board.

Table 1-3. Power Stage Interface Test Points

TP	NORMAL VALUE	SIGNAL	
1	- 12 ± 0.36 VDC	- 12 VDC power supply	
2	+ 5 VDC when field firing is enabled.	FFIREEN signal from Main Control Board	
3	0 VDC	Not Used	
4	+ 12 ± 0.36 VDC	+ 12 VDC power supply	
5	+ 24 ± 6 VDC	+ 24 VDC power supply	
6	+ 5 VDC when armature firing is enabled	AFIREEN signal from Main Control Board	
		BRIDGE	SCR
7	See Note 1	Armature	1F
8	See Note 1	Armature	5F
9	See Note 1	Armature	3F
10	See Note 1	Armature	4R
11	See Note 1	Armature	2R
12	See Note 1	Armature	6R
13	See Note 1	Field	FLD1
14	See Note 1	Armature	2F
15	See Note 1	Field	FLD2
16	See Note 1	Armature	4F
17	See Note 1	Armature	5R
18	See Note 1	Armature	6F
19	See Note 1	Armature	1R
20	See Note 1	Armature	3R
21	0 VDC when relay K3 is energized	Control signal to K3	
22	+ 5 ± 0.1 VDC	+ 5 VDC power supply	
23	+ 0 ± 0VDC	Control Common (TE signal ground)	

NOTE 1: Test points TP-7 thru TP-20 are used to monitor the gate pulses to the armature and field SCRs. The observed signal for these test points will be a square wave + 24 V to 0 V DC 120 degrees on and 240 degrees off when the particular SCR is being fired.



Motion Control Division