

3SFB1000 & 1001 AND 3SFB1100 & 1101 REMOTE ACCESSORY ADAPTER OPTIONS FOR STATOTROL* II DRIVE

DESCRIPTION

The 3SFB1000 and 1001 adapters are small printed circuit boards which plug into the main component board of Statotrol II controllers. The adapter option interfaces between the control circuit and the proper remote accessories to provide tachometer feedback, remote voltage reference following (tachometer follower applications), and speed indication.

The 3SFB1100 and 1101 options are similar to the above units, except that the options are designed to interface with remote signal generating instruments (instrument follower applications).

NOTE

When any 3SFB series option is installed, a feedback tachometer must be used. The follower and speed indication features may either be used or ignored.

INSTALLATION

Refer to Figure 2 in the controller instruction book for proper location and orientation for installation. The adapter is mounted and connected by two screws and a row of eleven pins and receptacles. Two of the receptacles on the main component board are connected together by a factory installed metal jumper (terminals 20 and 22). This jumper must be removed before the adapter option is installed. To install the option, position it carefully so that each pin is properly mated with its receptacle, press the option board down toward the main component board, and then insert and tighten the two screws. The screws provide electrical connection in addition to providing physical mounting.

CAUTION

Screws of the proper length are supplied with the option. Do not substitute longer screws, since longer screws may short the control circuit to the chassis.

NOTE: The wire attached to the remote accessory adapter unit should be connected to terminal 99 on terminal strip 2TB.

ELECTRICAL CONNECTIONS

Connection diagrams and wiring instructions are provided in the controller instruction book under the heading "Remote Accessory Wiring", and on figure 1 of this sheet.

To avoid electrical noise pickup, it is necessary to keep the remote accessories wiring separate from all other wiring. Do not run these wires through conduits with power conductors or relay coil wiring.

If separation of the remote accessories wiring is physically impossible or impractical to do, then insulated, shielded cabling should be used. Connect the shield to circuit 2 at the controller 2TB terminal board. Do not connect the shield at the other end but do insulate it so it cannot come in contact with other circuits or building ground.

CAUTION

If shielded wire is used, the shield must be insulated. Allowing the shield to contact building ground will cause damage to the controller.

CAUTION

All remote circuitry connected to the Statotrol II drive must be completely isolated from ground, or a line isolation transformer must be used to supply power to the controller. In no case should more than one circuit point be grounded. If more than one drive is to follow the same signal, each drive must have a line isolation transformer.

VOLTAGE LIMITATIONS

CAUTION

Overvoltage from a feedback tachometer or a remote reference signal may damage the control.

Option	Feedback Voltages				Follower (remote reference) voltage	
	Max** Overvoltage		Nominal for ** Rated Speed		Max Overvoltage	Nominal for Rated Speed
	w/7J	w/o 7J	w/7J	w/o 7J		
3SFB1000	50	75	35	50	50	35
3SFB1001	100	125	70	87.5	100	70
3SFB1100	50	75	35	50	12.5*	8.0
3SFB1101	100	125	70	87.5	12.5*	8.0

*When connected to a current source a protective shunt resistor is required. Refer to Figure 6 in Controller instruction book. When connected to a voltage source, a protective series resistor is required. Refer to figure 1 on this sheet.

**Jumper 7J is factory installed on the option. Remove 7J by cutting it out to increase maximum and nominal feedback voltages as shown.

ADJUSTMENTS

WARNING

Line voltage is exposed when the Statotrol II cover is removed. Electrical power should be disconnected at the branch circuit breaker before any work other than potentiometer adjustments is performed inside the controller. Internal adjustments should be performed by qualified electricians.

FEEDBACK SIGNAL ADJUSTMENT (If Instrument Follower Feature is not Used)

The maximum speed adjustment, potentiometer 3P, on the main controller component board does not,

by itself, limit the maximum motor speed when tachometer feedback is used. However, to get the correct signal level for proper operation, the maximum speed adjustment should be left at its factory setting. If the factory setting has been disturbed, turn 3P to approximately 80% of its possible CW rotation.

After all items in the "Pre-Power Checks and Adjustments" section of the controller instruction book have been completed, set the control to "manual" (if the control station has "auto" and "manual" settings), start the control (in either forward or reverse) and turn the speed control knob to full speed. Rotate 9P on the adapter option until the motor runs at the highest speed needed for the particular application. It is recommended that maximum operating speed be limited to the nameplate rating of the motor since the drive may not perform as specified if the motor is in an overspeed condition.

TACHOMETER FOLLOWER ADJUSTMENT WITH FEEDBACK PREVIOUSLY ADJUSTED

The tachometer follower feature on the 3SFB1000 & 1001 should be adjusted after the tachometer feedback feature has been adjusted with the control in "manual".

To adjust the follower feature, set the tachometer to the output which calls for the highest Statotrol motor operating speed required by the application. Press the "auto" and "start" buttons on the control station, and adjust potentiometer 12P on the remote accessory adapter option until the Statotrol motor runs at the correct speed (do not exceed rated speed).

ADJUSTMENT WHEN INSTRUMENT FOLLOWER FEATURE AND TACHOMETER FEEDBACK ARE BOTH USED

After all items in the "Pre-Power Checks and Adjustments" section of the controller instruction book have been completed, adjust the follower and feedback adjustments as follows:

- 1) Set the output of the reference generator to the signal which must correspond to zero speed of the Statotrol motor. Press the "start" and "auto" buttons on the control station, and turn the minimum speed adjustment potentiometer, 4P, clockwise until the Statotrol motor starts to turn. Then, slowly turn 4P CCW until the motor just stops.
- 2) Press the "Manual" button on the Statotrol control station, and turn the speed control knob to full speed. Locate 9P on the remote accessory adapter option, and turn 9P until the motor runs at the highest speed required for the application (do not exceed rated speed).
- 3) Press the "Auto" button on the control station, and set the output of the current generator to the current which corresponds to the highest motor speed required by the application.

CAUTION

The correct protective resistor must be connected as shown in the remote accessory connection diagram of the controller instruction book for current signal instruments or as shown in figure 1 of this sheet for voltage signal instruments.

Locate 12P on the remote accessory adapter option and rotate 12P until the motor runs at the correct speed. It may be necessary to "fine tune" the drive by repeating steps 1, 2, and 3.

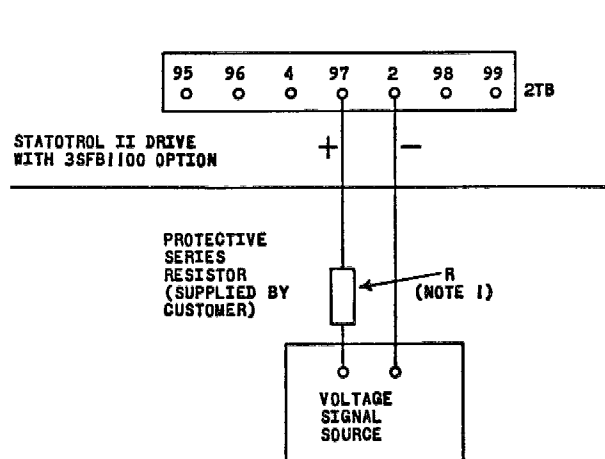
SPEED INDICATION ADJUSTMENT

The speed indicator should be adjusted after the tachometer feedback and follower adjustments are complete. Start the motor and set the speed control knob near full speed. Measure the speed of the motor with a strobe or a tachometer, and adjust potentiometer 10P on the remote accessory adapter option until the speed meter indicates the actual motor speed.

VOLTAGE SIGNAL FOLLOWER

In cases where it is necessary to follow a DC voltage signal from an instrument, the 3SFB1100 option may be used with a voltage generator connected as shown in Figure 1. The voltage applied across 2TB-97 and 2TB-2 must be of the indicated polarity and a protective series resistor must be used to limit the applied voltage to 12 volts maximum during overvoltage conditions.

Adjustments should be performed as described on this sheet under the heading "Adjustment when Instrument Follower and Tachometer Feedback are Both Used".



NOTE 1: $R = 250 \cdot V - 2000$ OHMS, WHERE V IS THE MAXIMUM OUTPUT VOLTAGE OF THE VOLTAGE SIGNAL SOURCE. IF V IS LESS THAN 8 VOLTS, CONTACT THE FACTORY FOR SPECIAL INSTRUCTIONS.

Connection Diagram for Remote Voltage Signal Source
Figure 1