LouisAllis
A Division of MagneTek Inc

For use with Saber 3306 DC Drives.

FIELD LOSS RELAY (1FL) OPTION

46S02300-0010 SCHEMATIC 45S02300-0010

DESCRIPTION

This option is one of a series available for Louis Allis Saber DC drives. It consists of components capable of preventing motor overspeed due to the loss of shunt field current. This option senses actual motor field current and closes a relay contact only if the field current is within an acceptable range. Four current shunt taps are available to select from 1-20 amperes maximum. The lower limit drop-out can be set between 10% and 80% of the range selected. An indicator lamp glows and the relay contact is opened when field current is less than the set trip level or greater than 150% of the selected range. The relay contact is normally wired into the drive STOP circuit so that the drive will stop in the event of a motor field current malfunction.

INSTALLATION

WARNING

REMOVE ALL INPUT POWER TO THE DRIVE BEFORE INSTALLING OPTION COMPONENTS.

The relay assembly is to be installed to the panel, as shown in Figure 1. Once mounted on the panel bracket, it is easily accessible for wiring.

INTERCONNECTION

For proper operation, this option requires proper field connection, as described below. Refer to Table 1 and Figure 2, and the Controller schematic.

1. Refer to motor nameplate for field amps (example: 2.5 amps).

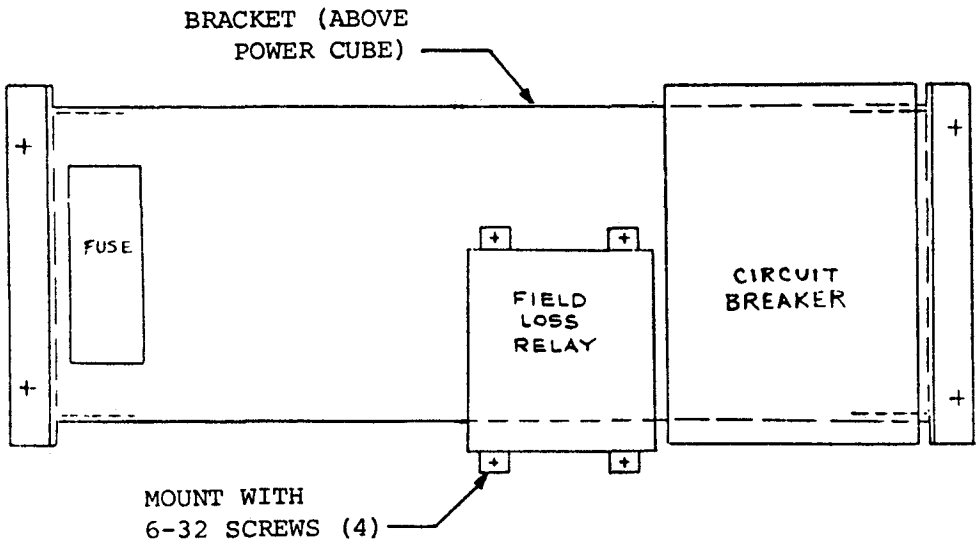


Figure 1.

CHANGE RECORD					DWG. NO. 02Y00025-0077
1 STD-2666 2-5-87 REE					SHEET 1 OF 4
					EFF. 9/1/81 (M)

D&S 333-3/86

2. Select lowest current tap range that includes motor field nameplate current, and connect negative polarity (F2) motor shunt field lead to that terminal on the Field Loss Relay (5 amp range for this example).

3. Connect a wire from terminal "(-) RET" of Field Loss Relay to the negative terminal of the Field Supply Source (3TB-F2).

4. Connect fused 115 VAC from secondary of panel transformer 2PT and panel fuse 4F to terminals "A" and "C" of 1FL.

5. Remove wire 25A from 1TB (16) and connect to terminal "X" of 1FL.

6. Connect a wire from terminal "Y" of 1FL to 1TB(16).

7. SAFETY COVERS included with option, MUST BE INSTALLED over terminal blocks on 1FL.

ADJUSTMENTS

1. Calculate minimum acceptable field current (example: .75A).

2. Convert to percentage of current tap range used (for this example, .75A min./5A range equals 15%).

3. Set % of LOSS TRIP potentiometer (1RH on 1FL) to a value slightly below the value determined above (i.e., 13% for this example.

TROUBLESHOOTING

Troubleshooting consists of checking input voltage and continuity.

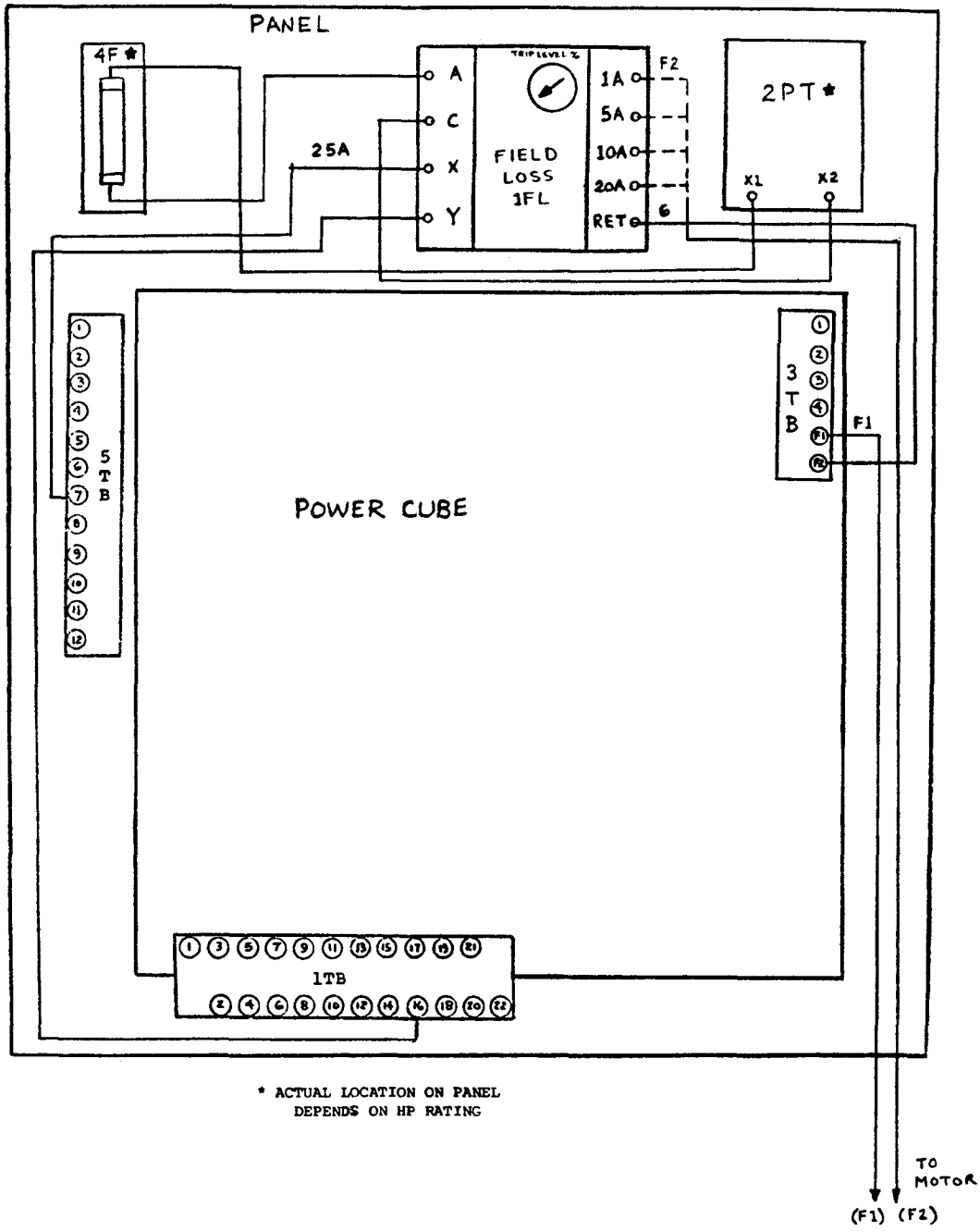
1. Remove all input power to the drive.

2. Disconnect field from drive. With an ohmmeter, be sure proper field resistance is present (per nameplate data).

3. Reconnect field.

Table 1. Field Loss Relay 1FL Interconnection

WIRE NO.	FROM		TO		REMARKS
	EQUIPMENT	TB OR OTHER MARKING	EQUIPMENT	TB OR OTHER MARKING	
25A	Controller	5TB(7)	Controller	1FL(X)	
JUMPER	Controller	1TB(16)	Controller	1FF(Y)	
F1	Controller	3TB(F1)	Motor	F1	
F2	Motor	F2	Controller	1FL(*)	* Current tap range terminal as determined by motor amp rating
20	Controller	Fuse 4F	Controller	1FL(A)	
22	Controller	2PT (X2)	Controller	1FL(C)	
6	Controller	3TB(F2)	Controller	1FL(RET)	



WARNING

ONCE FIELD CIRCUIT IS ENERGIZED, POTENTIAL VOLTAGE UP TO 600V IS PRESENT FROM TERMINAL BLOCKS TO EARTH GROUND OR CHASSIS.

Figure 2. Interconnection Diagram

DWG. NO. 02Y00025-0077
SHEET 3 OF 4
EFF. 9/1/81 (M)

4. With an ohmmeter, check that all interconnections are correct.

a. Is field connected to correct taps?

b. Are terminals "X" and "Y" properly connected to drive stop circuit?

c. Are terminals "A" and "C" connected to 115V transformer 1PT and panel fuse 4F?

5. If a, b, and c are all correct, reapply power to drive. Use a DMM to see that 115 VAC is present across terminals "A" and "C".

6. Is % LOSS TRIP pot set correctly?

7. If steps 2, 4, 5 and 6 are all correct, replace 1FL field loss relay assembly.

MODIFICATION RECORDS

After completing installation of all modifications:

A. Modify the Controller identification number using Method 1 in the Controller instruction manual. Insert the appropriate designator in block 7.

B. Insert this instruction sheet immediately behind the front cover of the Controller instruction manual.