

FAULT MONITOR OPTION ASSEMBLY

46S02371-0050 SCHEMATIC 45S02371-0050

DESCRIPTION

This option is one of a series available for Louis Allis Saber DC drives. It consists of components necessary for detecting and displaying the first in a sequence of fault conditions.

The Fault Monitor option is an eight-channel fault detector, which senses the first of a series of faults and provides a visual indication for that fault. The indicator will remain illuminated until the circuit is reset. A built-in rechargeable battery supply maintains the fault indication for up to four hours (for a fully charged battery) after power is removed. The battery requires approximately 8.5 hours to fully charge.

Three channels are dedicated to detecting power line undervoltage or outage, 1ST and overload trips via the 40 pin 12CONN expansion cable system. 1LED indicates low line trips; 2LED indicates 1ST trips; and 3LED indicates overload trips. Since the overload detector circuit may be jumpered to the line monitor input of the gate firing circuit to initiate phaseback in the event of overloads, overload faults (3LED) may also register as a power line undervoltage or outage fault (1LED) as well. Should both 1LED and 3LED illuminate, an overload fault can be presumed, since a power line undervoltage or outage fault (1LED) will not trip the overload fault (3LED). Normally, the fault detector will distinguish between faults occurring as close as 160 msec apart.

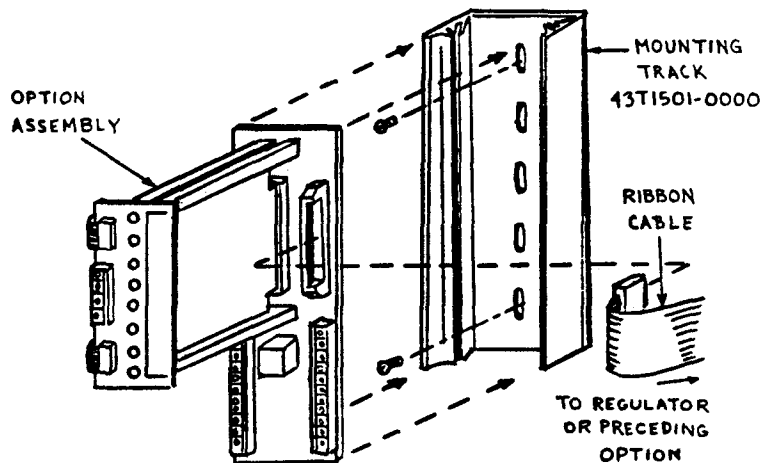


Figure 1.

CHANGE RECORD

| | | |
|---|----------|---------------|
| 1 | STD-1410 | 2/9/82 |
| 2 | STD-1779 | 5/18/83 |
| 3 | STD-2666 | 2-3-84 RRA |

DWG. NO. 02Y00025-0061
SHEET 1 OF 5
EFF. 5/11/82 (K)

WARNING

DO NOT ATTEMPT TO RECHARGE BATTERY (1B). DO NOT STORE BATTERY ABOVE 70°C, OR NEAR A SOURCE OF HIGH HEAT. DO NOT SHORT CIRCUIT BATTERY: THIS MAY CAUSE BURNS.

The remaining five channels (4-8LED) are activated via signals provided by the user and wired to screw terminals on the Option I/O PCB. These channels are opto-isolated and capable of receiving 115 VAC/DC signals with internal current limiting provided. The absence of voltages signifies a fault condition.

In addition to the individual LED's indicating which of the eight faults occurred first, presence or absence of a fault condition is indicated by the energization or de-energization of a DC relay suitable for interfacing with 115 VAC logic. De-energization of the relay occurs on power loss or a fault condition.

Reset of the fault indicators occurs when:

- a. The reset PB (1PB or remote) is pressed.
- b. Power is on and approximately 1/2 hour has elapsed since the last fault.
- c. System power is restored. Restoring system power forces faults to be ignored for about two seconds and resets all but undervoltage faults (1LED).

INSTALLATION

WARNING

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

See Figure 1. Install the option in the following manner:

1. Install PVC mounting track (L.A. part no. 43T1501-0000) to panel where option is to be mounted, using appropriate hardware.
2. Install option assembly by pressing firmly into mounting track.
3. Using 40 conductor ribbon, fabricate and install a double-ended ribbon cable of sufficient length to fit from 12CONN on the right side of the option to 12CONN on the Main PCB in the regulator power cube, or to 12CONN on the left side of a previously installed option.

Cable 12CONN provides the power and signal interface between this option and the Controller 40 pin data bus.

DWG. NO. 02Y00025-0061
SHEET 2 OF 5
EFF. 5/11/82 (K)

INTERCONNECTION

A switch or relay must be installed for each of up to 5 fault conditions to be monitored (4-8LED). The relay coil should be wired into the fault sensing circuit in a manner that causes the coil to de-energize on a fault, thus opening the contacts wired to the Option I/O board.

A remote FAULT RESET push button may also be installed, and wired to the Option Adjust PCB.

Perform interconnection wiring according to the following chart and Figure 2.

| FROM | TO |
|--------------------------------|--|
| 115V, AC or DC | Fault switches or relays (N.O.) |
| AC or DC Common | I/O PCB, 1TB (2),(4),(6) I/O PCB, 2TB (2),(4) |
| Fault 1 switch or relay (N.O.) | I/O PCB, 1TB (1) |
| Fault 2 switch or relay (N.O.) | I/O PCB, 1TB (3) |
| Fault 3 switch or relay (N.O.) | I/O PCB, 1TB (5) |
| Fault 4 switch or relay (N.O.) | I/O PCB, 2TB (1) |
| Fault 5 switch or relay (N.O.) | I/O PCB, 2TB (3) |
| Remote FAULT RESET P.B. | Option Adjust PCB, 1TB (1),(2) |

DWG. NO. 02Y00025-0061
SHEET 3 OF 5
EFF. 5/11/82 (K)

ADJUSTMENTS

No adjustments are necessary for this option.

TROUBLESHOOTING

If other options or modifications have been installed, troubleshoot them thoroughly before discarding this option as faulty.

Troubleshooting consists of checking the output logic levels as the input switches are operated.

1. Verify that the input switches are properly wired and that the input signals are getting to the assembly.

2. Refer to the schematic diagram of the Fault Monitor option and the functional operation description in this installation procedure. Verify that the output logic levels are functionally correct. If not, replace the Fault Monitor Option.

OPTION RECORDS

After completing installation of this option, insert this instruction sheet immediately behind the front cover of the Controller instruction manual.

DWG. NO. 02Y00025-0061
SHEET 4 OF 5
EFF. 5/11/82 (K)

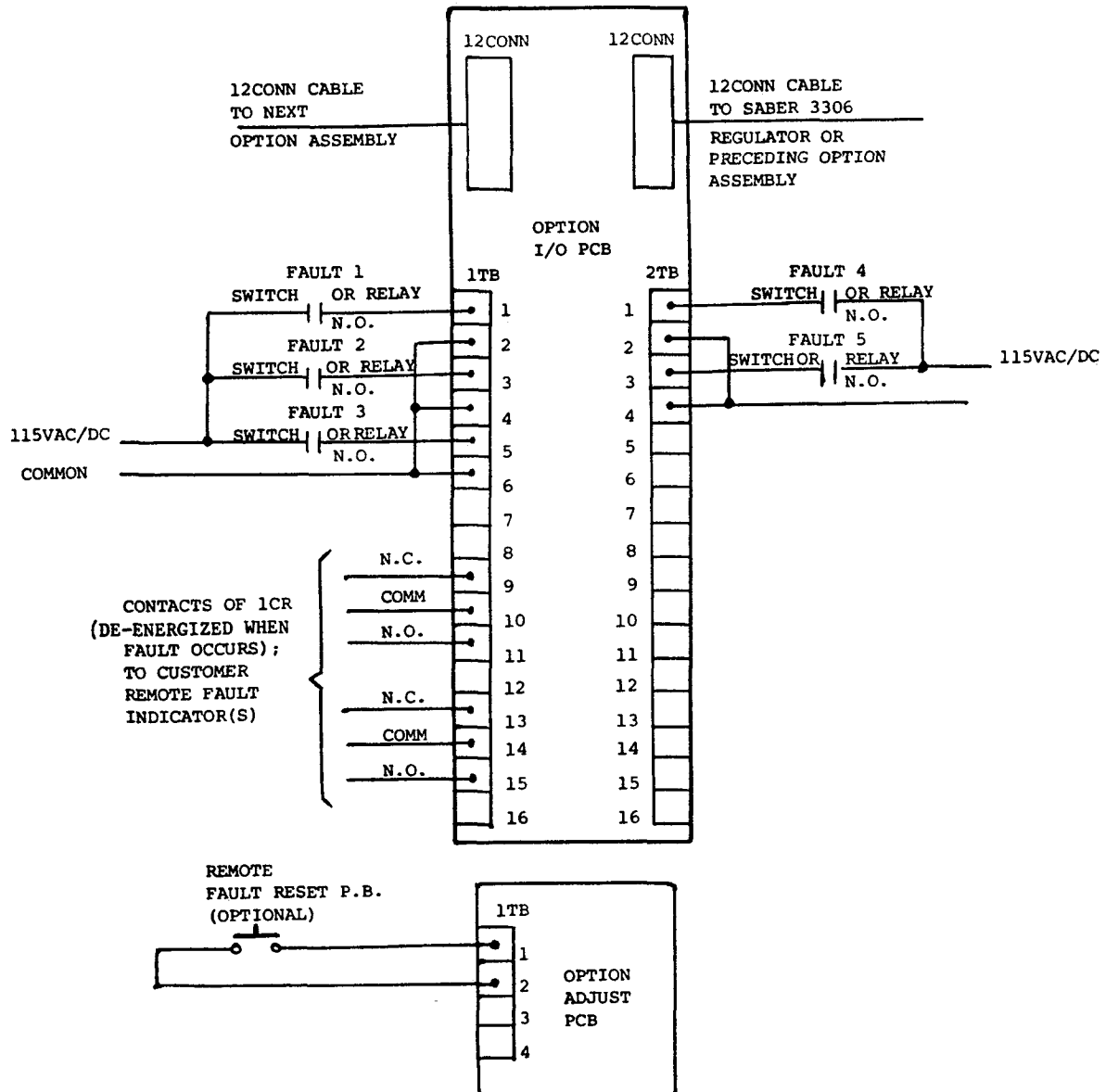


Figure 2. Interconnection Diagram

DWG. NO. 02Y00025-0061
 SHEET 5 OF 5
 EFF. 5/11/82 (K)

