LouisAllis
A Division of MagneTek Inc

For use with Saber DC Drives.

TRANSDUCER INTERFACE OPTION PCB

46S02371-0080 SCHEMATIC 45S02371-0080
46S02371-1080 SCHEMATIC 45S02371-1080

DESCRIPTION

This option is one of a series available for Louis Allis Saber DC drives. It is designed to monitor the signals generated from force transducers.

There are two versions of the Transducer Interface option. The first (46S02371-0080) is designed for use with linear variable differential transformer (LVDT) transducers. The second (46S02371-1080) is for use with strain gage transducers. Both versions provide:

1. Selector switch for meter damping and low scale operation.
2. Terminal connections for:
   a. Transducer input signals.
   b. Transducer supply voltages ±15V, +5V or +25V.
   c. External damping capacitor.
   d. External stability capacitor and reset circuit.
   e. Voltmeter output, one milliamp meter output and 0-2V digital meter output and meter common.

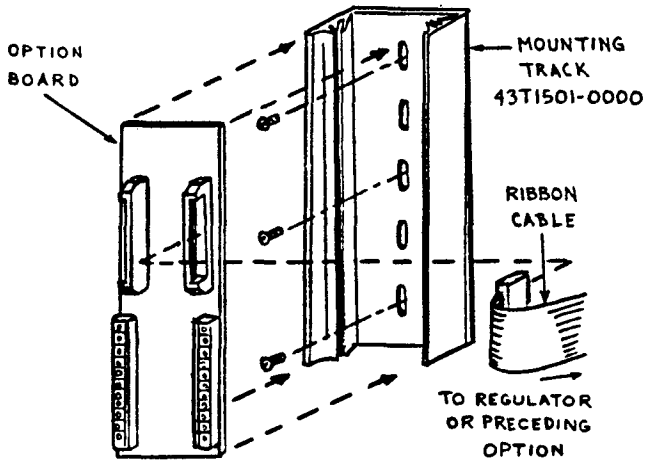

Figure 1.

CHANGE RECORD					DWG. NO. 02Y00025-0079
1 STD-2666 2-3-87 Rev					SHEET 1 OF 6
					EFF. 10/20/82 (M)

3. Tare weight adjustment (2RH).

4. Span adjustment (3RH).

5. Meter calibration adjustment (4RH).

The (-0080) version also provides a LVDT Balance adjustment (1RH), and the (-1080) version provides a switch to select 250mV or 10mV gage type.

INSTALLATION

WARNING

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

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

1. Install PVC mounting track (L.A. part no. 43T1501-000) to the panel where option is to be mounted, using appropriate hardware.

2. Install the option board 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 to12CONN on the Main PCB in the regulator power cube, or to 12CONN on the left side of a previously installed option.

IMPORTANT

If other options are already present, the power supply capability from the Saber power cube may not be sufficient when this option is added; if so, a Booster Power Supply option (46S02371-0190) will be required.

INTERCONNECTION

Perform interconnections for this option according to Table 1.

ADJUSTMENTS

1. Set SPAN adjustment (3RH) at 0%.

2. Either install a jumper between testpoints 2TP and 3TP to common (2TB2) OR remove load cell inputs.

3. Apply power to drive. Adjust the TARE WEIGHT (2RH) pot for 0.00 VDC at 4TP.

4. Remove the jumper previously installed in step 2 or reconnect the load cell inputs.

5. If strain gauge transducer is used, proceed directly to step 7 and continue to step 9.

6. Apply maximum working load on the load cells. On the LVDT version (-0080), adjust the LVDT BALANCE (1RH) until the voltage at 4TP is 75% of that at 2TP and of OPPOSITE polarity.

7. Remove working load from roll. Adjust the TARE WEIGHT (2RH) for 0.00 VDC at 4TP.

IMPORTANT

Voltage (**) may vary according to application. In these instances, the system schematic will state value required. Always refer to system schematic before performing step 8.

8. Apply maximum working load on the load cells. Monitor 4TP and adjust the SPAN (3RH) pot for -10.00 VDC (**).

9. Close 1SS(1) and adjust the METER CALIBRATION (4RH) for maximum indication on the meter which reflects the maximum working load on the loadcells.

Table 1.

FROM	TO	REMARKS
LVDT-1 Output Signal (Figure 2)	+ 1TB (6) - 1TB (7)	2-Conductor Shielded Cable.
LVDT-2 Output Signal (Figure 2)	+ 1TB (13) - 1TB (12)	2-Conductor Shielded Cable.
LVDT Shields	1TB (11)	
Strain Gage Output (Figure 3)	+ 1TB (16) - 1TB (15)	2-Conductor Shielded Cable. Close 1SS(3) & 1SS(4) for 250mV gage. Open 1SS(3) & 1SS(4) for 10mV gage.
Strain Gage Shield	1TB (14)	
LVDT Supply (Figure 2)	2TB (1)	+24 VDC Supply
Strain Gage Supply (Figure 3)	2TB (3)	+5 VDC Supply
Transducer Common	2TB (2)	Supply Common
Voltmeter	2TB (13)	
1mA Tension Meter	2TB (14)	Calibrated. Close 1SS(1) for low scale operation. Close 1SS(2) to increase meter damping.

Table 1.
(Continued)

FROM	TO	REMARKS
0-2V Digital Meter	2TB (15)	Calibrated. Install jumper from 2TB(5) to 2TB(14).
Meter Common	2TB (5)	
External Damping Capacitor	2TB (12) 2TB (13)	If required.

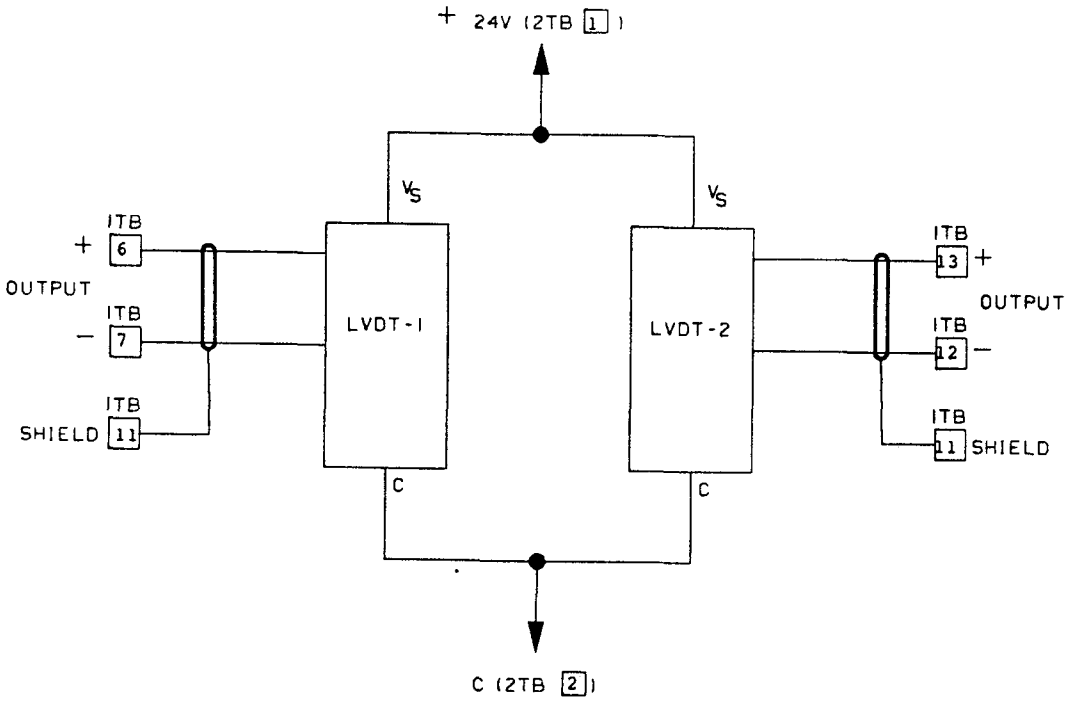

Figure 2. LVDT Transducer Connections

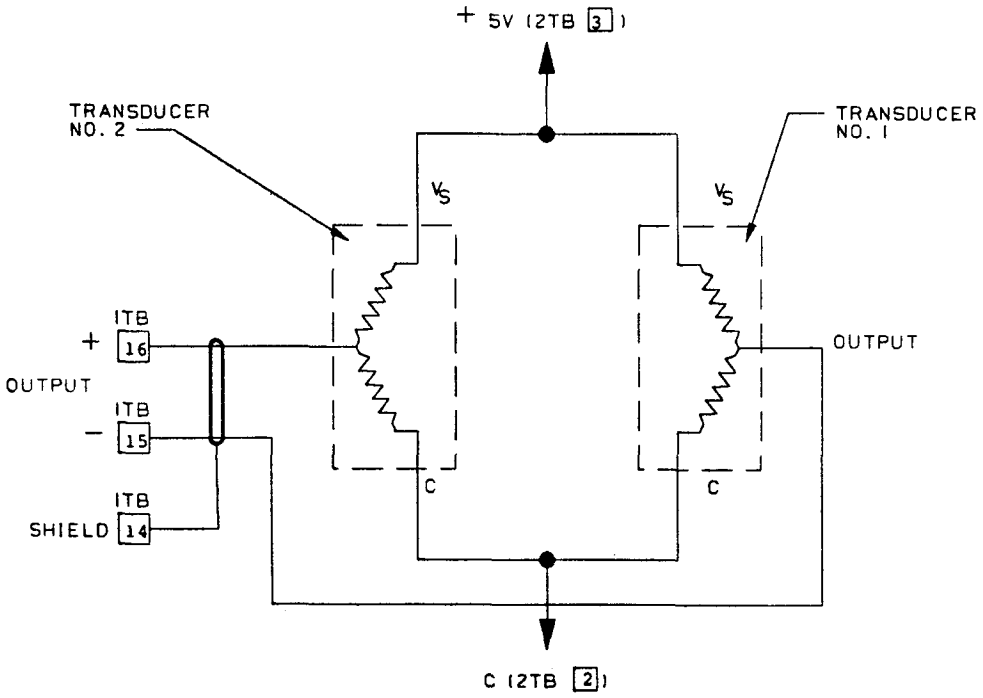

Figure 3. Strain Gage Transducer Connections

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TROUBLESHOOTING

If other options have been installed, troubleshoot them thoroughly before discarding this option as faulty. If the desired function can not be obtained, follow the steps below for troubleshooting.

1. Remove power from the drive and refer to the interconnection table; make sure all connections are correct.

2. Check fuse 1F on the LVDT version (-0080); replace if necessary.

3. Apply power to the drive and measure the following supply voltages relative to common, 2TB(2).

   a. +15 VDC ±5% at 2TB(4).

   b. -15 VDC ±5% at 1TB(5).

   c. +24 VDC ±20% at 2TB(1) (LVDT version).

   d. +5 VDC ±5% at 2TB(3) (Strain Gage version).

4. Check for proper polarities at the loadcell inputs by measuring voltages at 1TP or 2TP and 3TP. The voltages should always be positive with load applied to the loadcells. If not, correct wiring.

5. Remove the loadcell inputs from the option assembly. With SPAN adjustment (3RH) at 0% and TARE WEIGHT (2RH) at 100%, the voltage at 4TP should be -4.42 VDC ±10%.

6. Adjust SPAN (3RH) for -10.00 VDC at 4TP. The voltage at 2TB(13) should be +10.00 VDC ±5%.

OPTION RECORDS

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