

TRANSDUCER INTERFACE OPTION PCB

46S02371-0081 SCHEMATIC 45S02371-0081
46S02371-1081 SCHEMATIC 45S02371-1081

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 (46S02371-0081) is designed for use with linear variable differential transformers (LVDT) transducers. The second (46S02371-1081) 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 $\pm 15V$, $+5V$ or $+24V$.
- 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.

3. Tare weight adjustment (2RH).

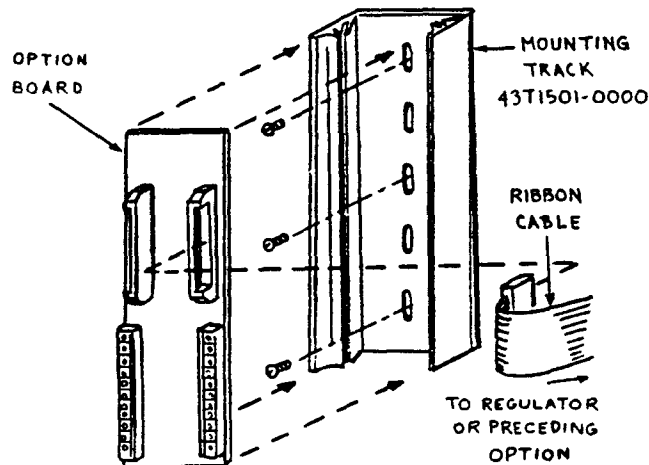


Figure 1.

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4. Span adjustment (3RH).

5. Meter calibration adjustment (4RH).

The (-0081) version also provides a LVDT Balance adjustment (1RH), and the (-1081) 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 to 12CONN on the Volt/Speed Main PCB (3306) or Regulator PCB (3412) 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 (46S02371-0191) will be required.

INTERCONNECTION

Perform interconnections for this option according to Table 1.

ADJUSTMENTS

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

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

3. Apply maximum working load on the load cells. On the LVDT version (-0081), adjust LVDT BALANCE (1RH) until the voltage at 4TP is equal to twice that at 2TP.

4. Set the SPAN adjustment (3RH) for -10.00 VDC at 4TP.

5. Adjust METER CALIBRATION (4RH) for maximum indication on the meter, which reflects the maximum working load on the loadcells.

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 (-0081); replace if necessary.

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

a. +15 VDC \pm 5% at 2TB(4).

b. -15 VDC \pm 5% at 1TB(5).

c. -24 VDC \pm 20% at 2TB(17) (LVDT version).

d. +5 VDC \pm 5% at 2TB(19) (Strain Gage version).

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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(17)	+24 VDC Supply
Strain Gage Supply (Figure 3)	2TB(19)	+5 VDC Supply
Transducer Common	2TB(18)	Supply Common
Voltmeter	2TB(29)	
1mA Tension Meter	2TB(30)	Calibrated Close 1SS(1) for low scale operation Close 1SS(2) to increase meter
0-2V Digital Meter	2TB(31)	Calibrated Install jumper from 2TB (21) to 2TB (30)
Meter Common	2TB(21)	
External Damping Capacitor	2TB(28) 2TB(29)	If required

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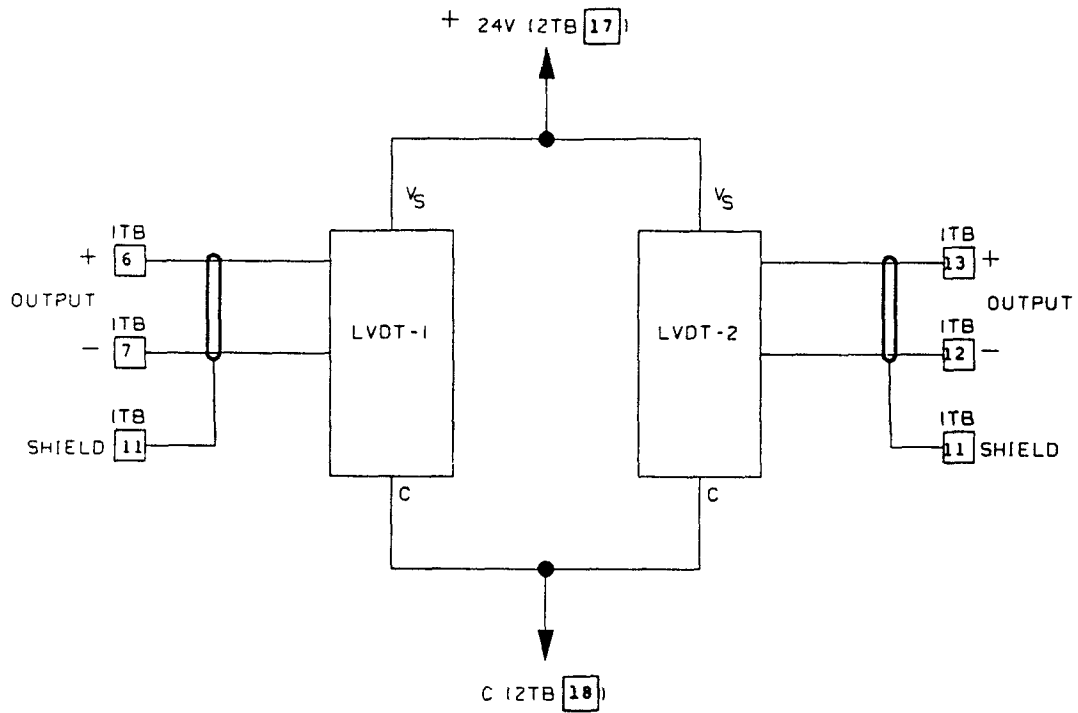


Figure 2. LVDT Transducer Connections

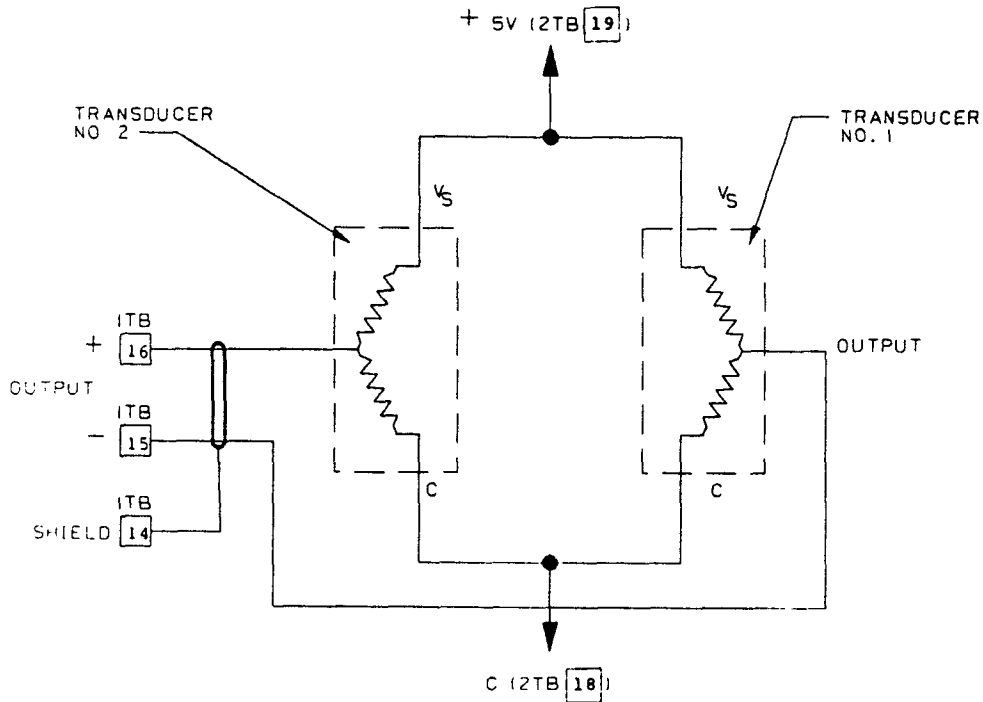


Figure 3. Strain Gage Transducer Connections

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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 \pm 10%.

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

OPTION RECORDS

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

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