

TRANSDUCER INTERFACE OPTION PCB

-24 VDC, 1CH	46S02513-0010	SCHEMATIC 45S02513-0010
	46S02513-0011, -0050	SCHEMATIC 45S02513-0011
-24 VDC, 3CH	46S02513-0030	SCHEMATIC 45S02513-0030
	46S02513-0031, -0060, -0070	SCHEMATIC 45S02513-0031
115 VAC, 1CH	46S02513-0020	SCHEMATIC 45S02513-0020
	46S02513-0021	SCHEMATIC 45S02513-0021
115 VAC, 3CH	46S02513-0040	SCHEMATIC 45S02513-0040
	46S02513-0041	SCHEMATIC 45S02513-0041

DESCRIPTION

The basic Lancer I drive can accept normal Manual Speed pot reference input. The basic drive does not provide for shaping of the automatic signal for the application, nor any automatic/manual switching logic. The Transducer Interface option PCB provides the following functions:

1. MAN/AUTO selection logic for either the standard -24VDC control logic or 115 VAC control logic. If 115VAC control logic is used, the 115VAC Interface option PCB must also be used. Also, a MAN/AUTO selector switch, or similar device, must be added to the operator's controls and wired per interconnect diagrams in the Instruction Manual for standard -24 VDC control, or provided with the 115 VAC Interface instruction sheet for 115 VAC control.

2. Signal Shaping Adjustments

a. OFFSET - Adjusts minimum effective external signal level.

b. MINIMUM SPEED - Adjusts minimum speed at set offset.

c. RATIO - Adjusts slope speed signal ratio.

d. AUTO SPEED LIMIT - Limits top speed to set value.

There are four types of Transducer Interface option PCBs, as listed above and shown in Figures 1 and 2.

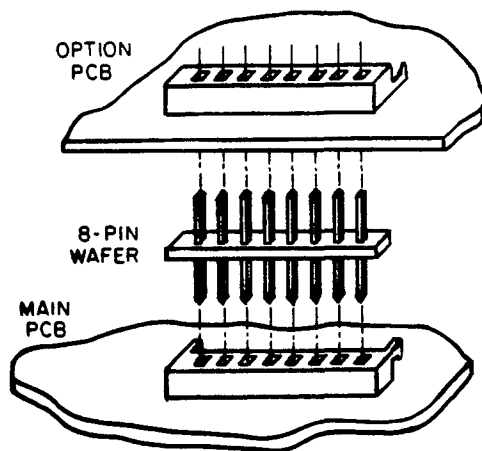
INSTALLATION

The Transducer Interface PCB mounts to three standoffs located on the bottom portion of the Rectifier Main PCB (Refer to Figure 7-4 in the Instruction Manual). Connection is made to the Rectifier Main PCB thru 107CONN. No connections are made to the Inverter Main PCB. To install the Transducer Interface PCB, first install the standoffs onto the Rectifier Main PCB. Next, insert 8-pin wafer into 107CONN on the Rectifier Main PCB (see illustration). Locate the Transducer Interface PCB so that pins on the wafer are lined up with holes on the back of the option PCB behind 107CONN. Push the PCB onto the wafer pins and standoffs.

CHANGE RECORD

3	STD-2945	1/25/88
2	STD-2534	6/11/86
1	STD-2426	7/25/86

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INTERCONNECTION

Terminal board 2TB located on the right side of the Transducer Interface PCB provides for customer connection of control logic (see Figure 3). For wire routing, refer to the interconnect diagrams provided in the Instruction Manual. For wiring of the MAN/AUTO control, refer to wiring diagrams in the Instruction Manual. (Note: If 115VAC control is used, refer to interconnect and wiring diagrams provided with the 115VAC Interface option PCB instruction sheet). For all other wire connections to the Transducer Interface PCB, refer to wiring diagrams provided with this instruction sheet.

If the Transducer Interface PCB is being added after the drive has been installed, refer to Section 1.2 in the Instruction Manual for instructions on how to update the 53SL number. A simplified diagram in the form of a pastie has been included with the Transducer Interface PCB. Modify the Signal Flow Diagrams in the Instruction Manual by pasting the pastie in position on Sheet 4.

ADJUSTMENTS

Perform all adjustments given in Section V of the Instruction Manual before

performing the following. Use the following procedures to set up each speed band of the Transducer Interface PCB. For three speed band PCBs, the speed band being adjusted (LEAD, LAG, STANDBY) must be selected. Only one speed band may be used at a time. The procedures apply to both -24VDC and 115VAC control. For single speed band versions, no band selection is required.

1. Range Adjustment Switches. The settings of the range adjustment switches are dependent upon the change in the transducer signal which produces a min to max speed variation. Set these switches per Tables 1 and 2.

2. Set RATIO pot(s) to 0%.

3. Set MIN SPEED pot(s) to 0%.

4. Set OFFSET pot(s) to 100%.

5. Set AUTO (SPEED) LIMIT pot to 50%.

6. Select the Auto mode and start the drive.

7. Increase MIN SPEED pot slightly greater than desired Auto mode speed (frequency can be read at 8TP on the Inverter Main PCB where 6V = 60Hz).

8. Adjust AUTO (SPEED) LIMIT pot to set the exact desired maximum Auto mode speed.

9. Reduce MIN SPEED pot to 0%.

10. Increase input reference signal while measuring DC voltage at 4TP until voltage reaches desired offset point. (Note: If the reference signal is a current signal, switch 2SS must be closed).

11. Monitor DC voltage at 2TP. Turn OFFSET pot until DC voltage at 2TP begins to rise positively, then turn OFFSET pot in the opposite direction until DC voltage at 2TP goes to zero.

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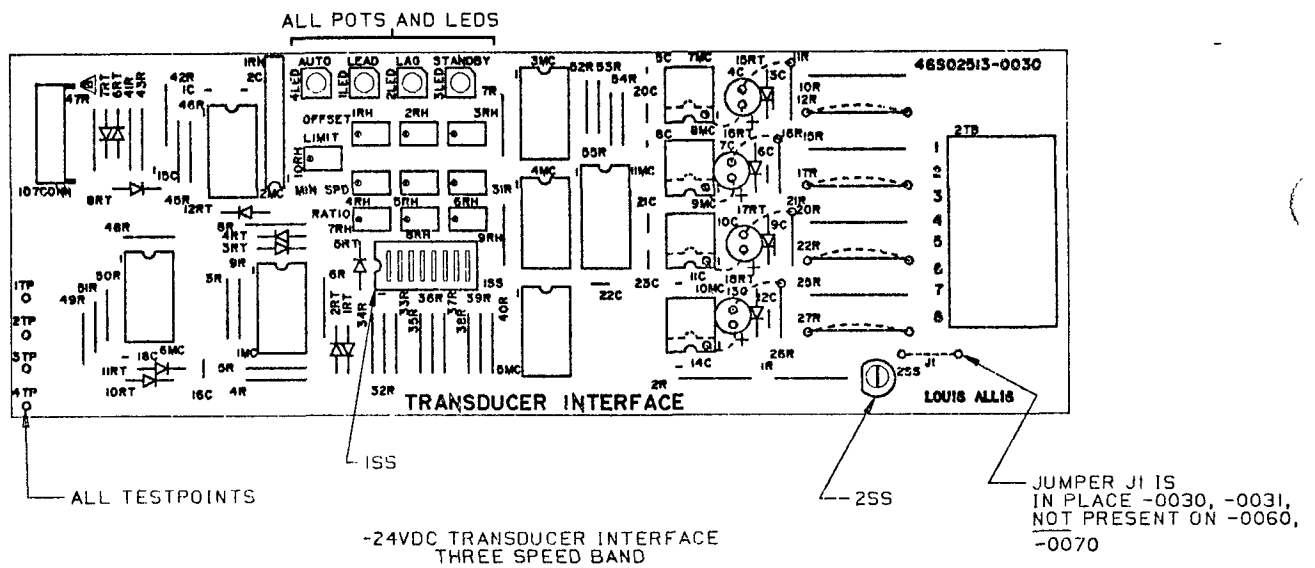
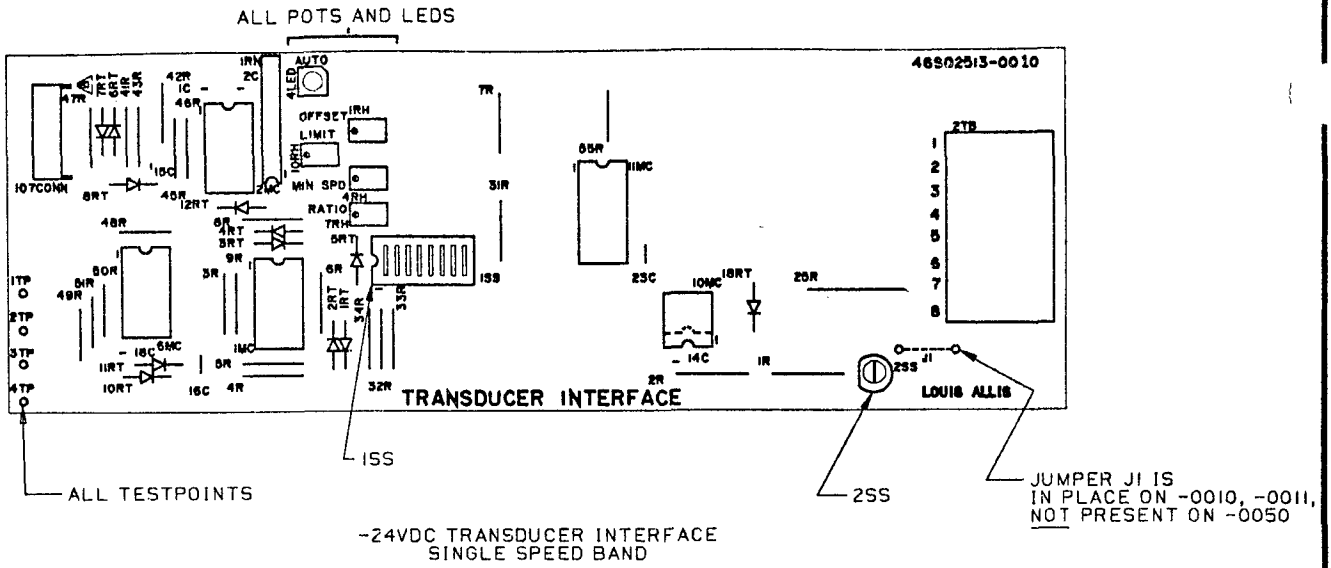
12. Set MIN SPEED pot to desired minimum speed.

13. Adjust input reference signal level to level desired for maximum speed.

14. Adjust RATIO pot to set desired maximum speed for the band being adjusted.

15. If more than one speed band is being used, select the next band and repeat steps 7 thru 14.

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TD.I.2Y25.0123 FIG1

FIGURE 1. -24VDC CONTROL

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TABLE 1

TRANSDUCER SIGNAL CHG		MINIMUM SPEED % OF MAXIMUM SPEED										
ΔV VOLTS	ΔI mA	10	20	30	40	50	60	70	80	90	95	98
.21	1											
.41	2											
1.02	5				I							
1.54	7.5											
2.05	10											
3.08	15											
4.10	20					II						
5.13	25											
6.15	30											
7.18	35									III		
8.20	40											
9.23	45											
10.25	50											

ΔV OR ΔI IS DEFINED AS THE DESIRED CHANGE IN LEVEL OF TRANSDUCER SIGNAL TO PRODUCE MAXIMUM SPEED FROM THE REQUIRED MINIMUM SPEED POINT.

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REF.2Y25.0123.2

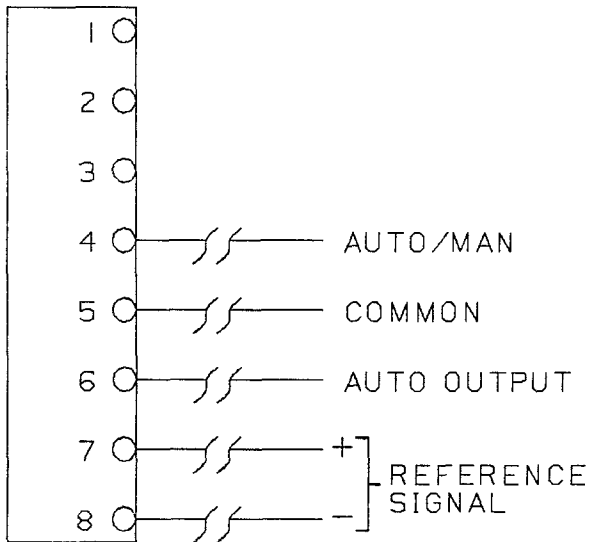
TABLE 2

SPEED BAND	SWITCH	REGION (FROM TABLE I)		
		I	II	III
1	ISS-1	X		
	ISS-2		X	
2	ISS-4	X		
	ISS-5		X	
3	ISS-7	X		
	ISS-8		X	

X-INDICATES SWITCH IS CLOSED

REF.2Y25.0123.3

SINGLE SPEED BAND
2TB



THREE SPEED BAND
2TB

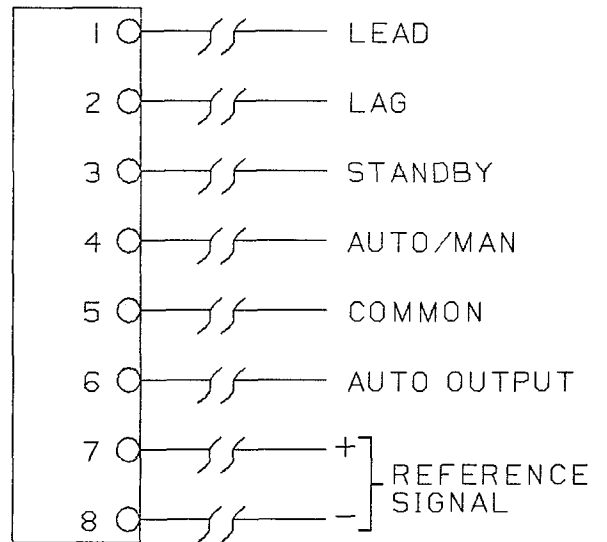


FIGURE 3. WIRING DIAGRAM -24 VDC CONTROL AND 115 VAC CONTROL

REF.2Y25.0123.1

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