Trans-Cal Industries, Inc.
ATS-200
Encoder Test Set

General:

The ATS-200 Encoder Test Set is designed to display the output of encoding altimeters or digitzers, which conform to the International (ICAO) Standard for SSR Pressure Altitude Transmission. In accordance with U.S. national standards for common system component characteristics for the I.F.F. Mark X (SIF)/Air Traffic Control Radar Beacon System SIF/ATCRBS.

The ATS-200 will display the output of these devices in both numeric and ARINC 532D forms, from -1000 to +99000 feet. The ATS-200 will also facilitate the automation of data collection by repeating the encoder output on a serial port conforming to the EIA-RS232C standard. This data may then be utilized in a PC spreadsheet or other application utilizing serial data capture software such as PROCOMM™, VERSATERM™, SOFTWARE WEDGE™, TERMINAL (Windows® 3.x) or HYPERTERMINAL (Windows® 95 or 98).

Operation: **(See Block Diagram 200212 for sample test set-up.)**

1.) Turn the power switch on the front panel of the ATS-200 off.

2.) Connect the 7.5VDC power supply to the ATS-200 back panel jack and to a 110V AC outlet.

3.) Connect a 28VDC power supply to the ATS-200 back panel jacks, connect positive to red and negative to black.

4.) Construct/connect a wiring harness between the ATS-200 and the altimeter/digitizer to be tested.

5.) Connect the required pressure and vacuum source to the altimeter/digitizer.

6.) Energize the 28VDC power supply.

7.) Move the ATS-200 Encoder power switch to 14V or 28V.

8.) Select 100' or 1000' horn signal on the back panel. The horn will sound at the 1000 foot transitions or the 100 foot transitions.

9.) Move the ATS-200 power switch to the “on” position.

10.) Move the strobe switch to the “on” position.

11.) Press the test switch to verify all 8's on the numeric display and all 11 binary LED displays should light.

12.) The ATS-200 should now display the output of the device under test.

13.) Exercise the encoder over its operating range, noting the output on both the numeric and binary ARINC code display.

14.) Verify the strobe operation by moving the strobe switch on and off. The display should show "-00" and no ARINC outputs when the strobe is in the "off" position.

Connector Pin Assignments:

15 Pin D-Subminiature Connector

Pin	Function	Pin	Function
1	D4	9	B2
2	A1	10	B4
3	A2	11	C1
4	A4	12	C4
5	B1	13	C2
6	Strobe	14	+14V Output
7	D2	15	Ground
8	+28V Output		

9 Pin D-Subminiature Connector

Pin	Function	Pin	Function
1	N/C	6	N/C
2	TxD	7	N/C
3	N/C	8	N/C
4	N/C	9	N/C
5	Ground		

Serial Data Protocol:

Electrical Format: Conforming to the EIA RS-232C standard.

Logic Levels: ‘0’, +9 volts. Logic ‘1’, -9 volts.
Driver Output Maximum Voltage: ±25 VDC.
Driver Load Impedance: 3k Ω typ.
One Receiver Allowed Per Serial Port.
Maximum Cable Length: 50 Feet.
Code Format: ASCII
Communication System: Simplex (Talk Only).
Transmission Method: Asynchronous.
Transmission Rate: 9600 bps.
Update Rate: 1/sec.

At a baud rate of 9600 bps the encoder sends a ten byte message. The message begins with ALT followed by a space and five altitude bytes; concluding with a carriage return. Examples of serial messages:

Message:	**Definition:**
ALT 99900 ↵	**Encoder disabled.**
ALT 10500 ↵	**Altitude 10,500 feet.**

Trans-Cal Industries, Inc.
16141 Cohasset Street
Van Nuys, CA 91406

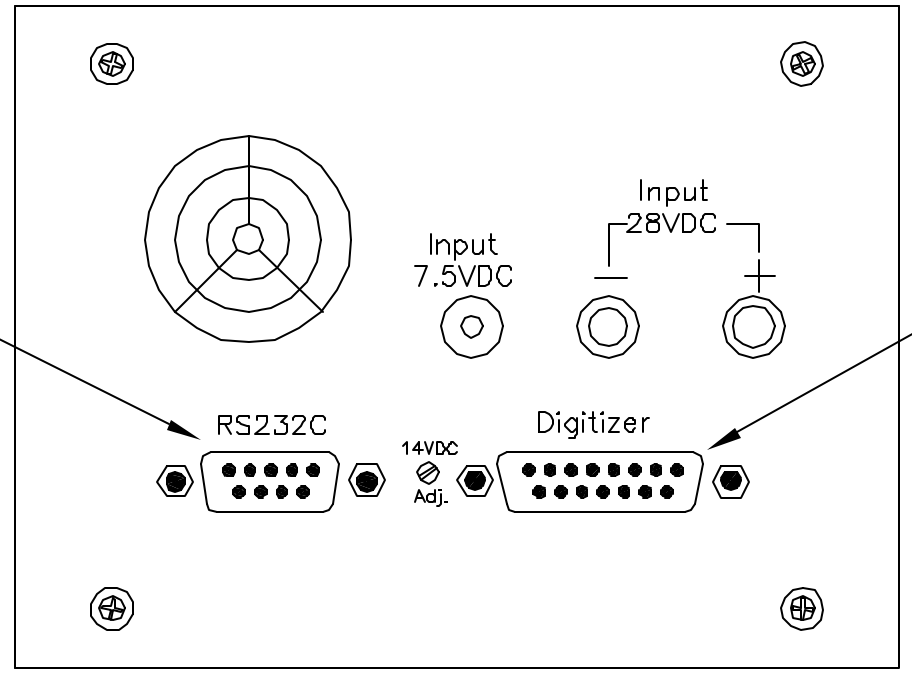
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

FNAME

REVDATE

DE-9P

Function	Pin
TxD	2
Ground	5



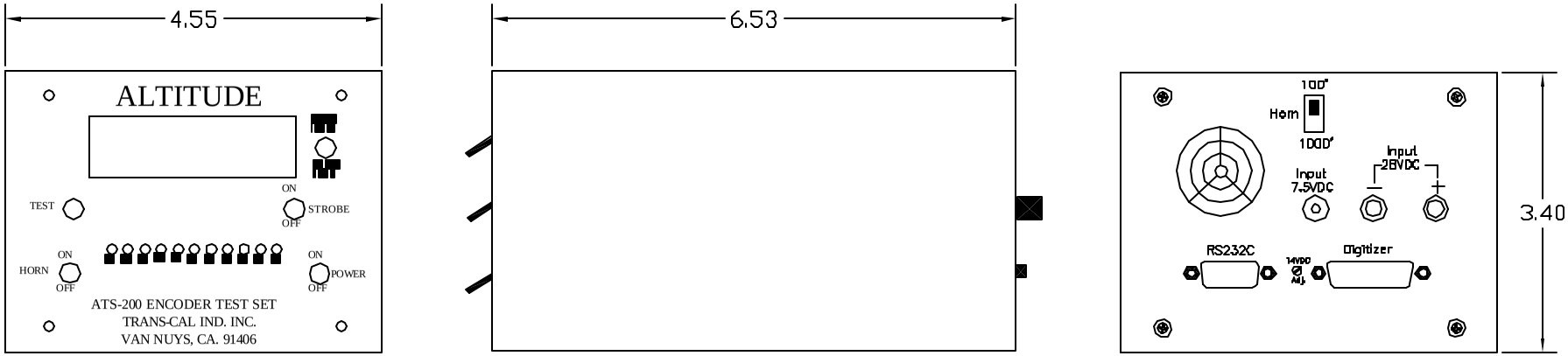
DA-15P

Function	Pin
D2	7
D4	1
A1	2
A2	3
A4	4
B1	5
B2	9
B4	10
C1	11
C2	13
C4	12
Digitizer Power 14V	14
Digitizer Power 28V	8

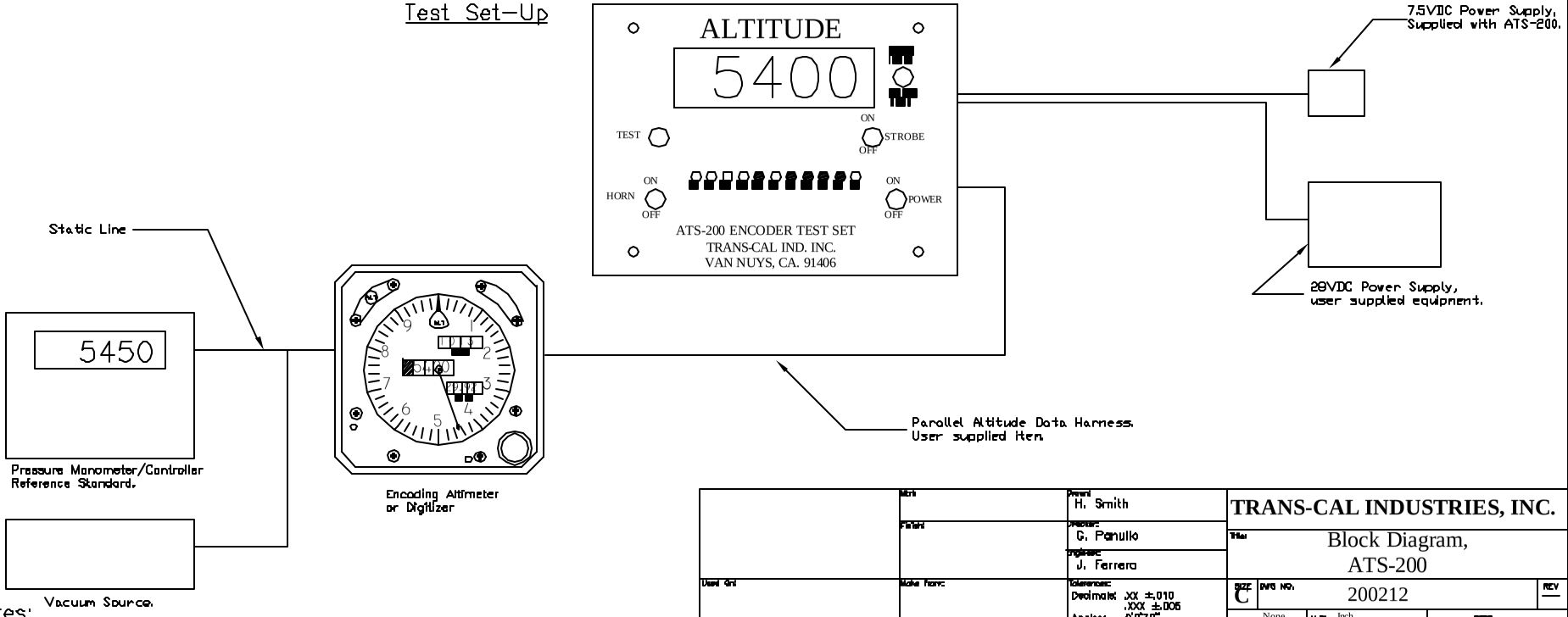
Notes:

Used on: ATS-200A	Dwn: H. Smith 6/99	Trans-Cal Industries, Inc.
	Engr: J. Ferrero 6/99	Title: Back Panel Pin Assignments ATS-200
Mtrl.	Chk: G. Pannullo 6/99	
Finish	Tolerances: Decimals: .XX±.010 .XXX±.005 Angles ±0°30'	SIZE B / DWG NO. 200209 / REV
		SCALE None / Units: Inch / SHEET

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



Test Set-Up



Notes:

Drawn	H. Smith	TRANS-CAL INDUSTRIES, INC.	
Checked	G. Panullo	Title: Block Diagram, ATS-200	
Engineer	J. Ferrera	SIZE C	DWG NO. 200212
Tolerances: Decimals .XX ±.010, .XXX ±.005; Angles 0°0'30"		SCALE None	WT: Inch
			SHEET

FNAME REVDATE