

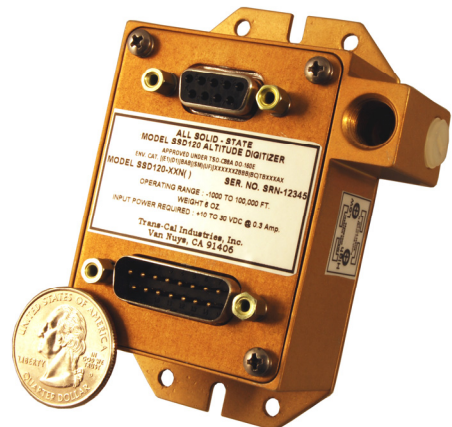
*Trans-Cal Industries, Inc.  
Model SSD120-(XX)N(X)-(X)  
Altitude Digitizer*

*The Smallest, Lightest and Lowest Power Consumption  
Altitude Encoder, The Nano!*

The SSD120-(XX)N(X)-(X) is designed to provide a rugged and reliable altitude digitizer for applications where size, weight and reliability is critical. Incorporating one ICAO grey code port, and optionally available with RS-232 and RS-485 compliant outputs the Model SSD120-(XX)N(X)-(X) is a simple and robust addition to any avionics installation requiring accurate pressure altitude information for multiple aircraft systems.

**Featuring:**

- Dual 1/8-27NPT Static Port Inlets
- One ICAO pressure altitude grey code output
- Optional Two or Five RS-232 compliant data outputs
- One RS-485 compliant data output
- Serial ports may be installer configured to transmit separate data protocols (message & baud rate)
- FAA TSO-C88a and EASA ETSO-C88a Approved
- Tested and Conforming to MIL-STD-704E and RTCA DO-160E
- Power, ground and data I/O lines provided on Industry Standard D-Subminiature Connectors
- Operating Voltage +10 to +33Vdc
- Operating Current: Low Altitude +12Vdc @ 220mA / +28Vdc @ 270mA
- Operating Current: High Altitude +12Vdc @ 55mA / +28Vdc @ 60mA
- Operating Temperature Range: -20° to +70°C optional "E" version -55° to +70°C
- Operating Altitude Ranges: -1200 up to +100,000 feet
- Weight: Low Altitude 5.9oz. / High Altitude 6.8oz.
- Aluminum housing treated to resist corrosion.

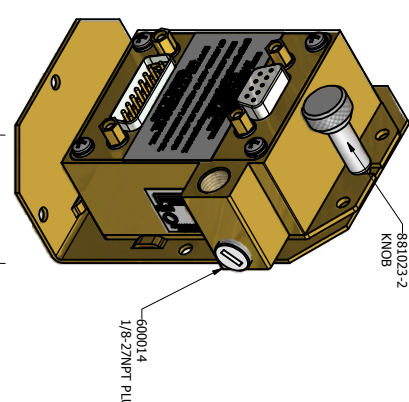
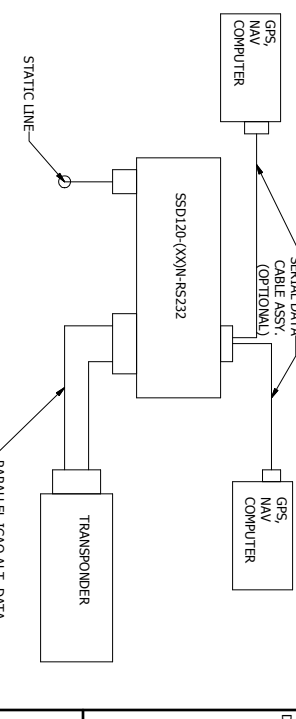


Trans-Cal Industries, Inc.  
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Van Nuys, CA 91406  
www.trans-cal.com

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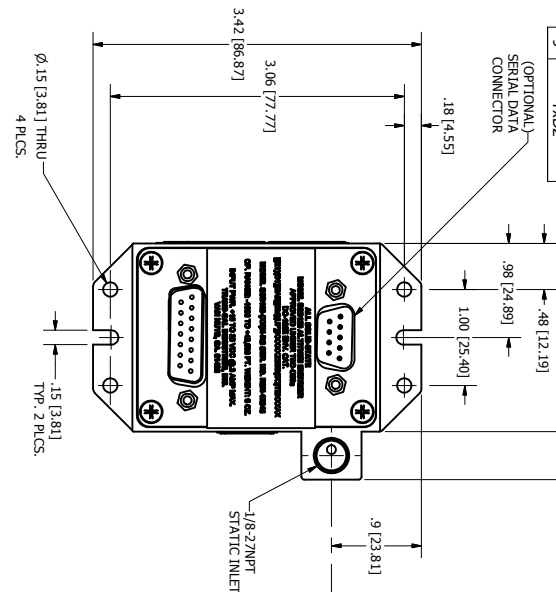
REVISION HISTORY		
REV	DESCRIPTION	DATE
A	PRODUCTION RELEASE	10/17/2007
B	ADDED 3.8 & 1.96 DIM. 1.13	02/06/2008
C	ADDED [MM] UNITS	06/06/2008
D	ADDED SHEET 5	03/04/2009

**INSTALLATION EXAMPLE**  
**BLOCK DIAGRAM**



DE-9S D-SUB CONN.	
1	GROUND
2	10 RES.
3	RxD
4	TxD1
5	GROUND
6	PROTOCOL
7	PROTOCOL
8	GROUND
9	TxD2

SEE NOTE [2]

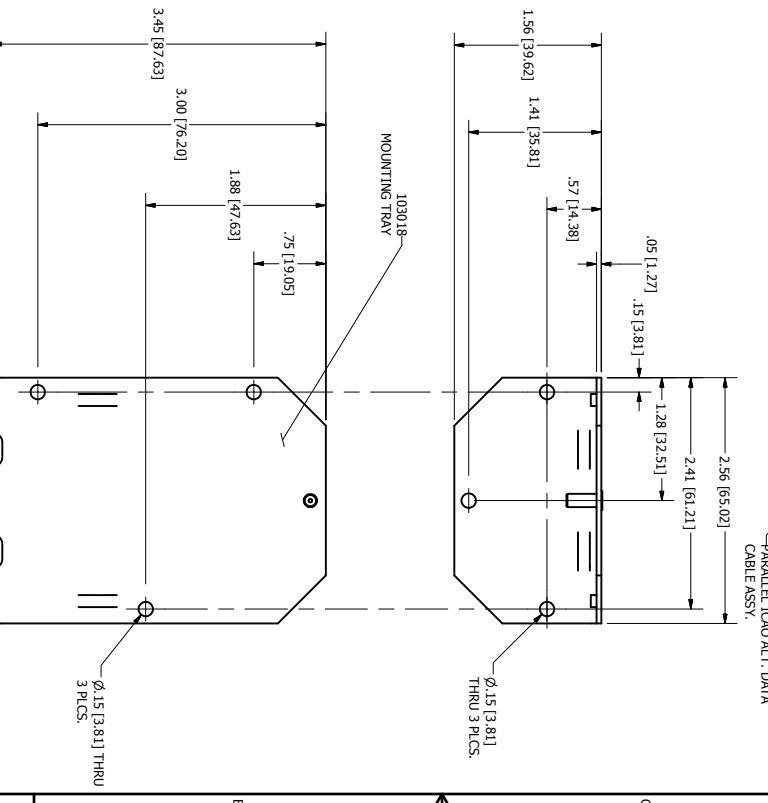
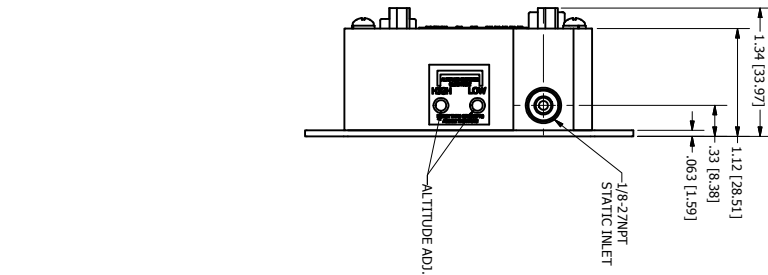


MODEL NUMBER DESIGNATIONS

MODEL NO.	OPERATING RANGE
SSD120-30N	-1000 TO +30,000 FT.
SSD120-35N	-1000 TO +35,000 FT.
SSD120-42N	-1000 TO +42,000 FT.

DA-15P D-SUB CONN.	FUNCTION
1	D4
2	A1
3	A2
4	A4
5	B1
6	OUTPUT ENABLE
7	-----
8	+14 TO 28VDC INPUT
9	B2
10	B4
11	C1
12	C4
13	C2
14	+14 TO 28VDC INPUT
15	GROUND

SEE NOTE [3]



- APPROVED UNDER FAA TSO-C88A AND EASA ETSO-C88A.
- ALL GROUNDS ON THE SERIAL DATA PORT ARE INTERNALLY CONNECTED TO GROUND.
- DATA NOT INCLUDED ON UNITS OPERATING ABOVE 50,000 FEET.
- SHEETS 2, 8, & 9 DETAIL THE SSD120-(XX)N WITH OPERATING CEILINGS BETWEEN 50,000 AND 100,000 FT.
- FIG. RS232-9 DETAIL THE LOGIC FOR SERIAL DATA.
- FIG. RS232-9 DETAIL THE LOGIC FOR SERIAL DATA.
- FIG. RS232-9 DETAIL THE LOGIC FOR SERIAL DATA.
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**Trans-Cal Industries, Inc.**  
Van Nuys, CA 91406

Outline Drawing, SSD120-(XX)N(XX) Series  
Altitude Digitizer

SCALE 1:1 UNITS: INCH (MM) SHEET 1 OF 5

REV	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	10/17/2007	J. Ferrero
B	ADDED 3.8 & 1.96 DIM. 1.13	02/06/2008	J. Ferrero
C	ADDED [MM] UNITS	06/06/2008	J. Ferrero
D	ADDED SHEET 5	03/04/2009	J. Ferrero

TOP ASSY NUMBER	DRAWN	DATE
MODEL SSD120-(XX)N REF.	H. Smith	2/5/2007
TOP ASSY 103016	M. Remenh	2/8/2007
MODEL SSD120-(XX)N-RS232 REF.	J. Ferrero	10/17/2007
TOP ASSY 103022	C. Herrera	10/17/2007
	J. Ferrero	10/17/2007

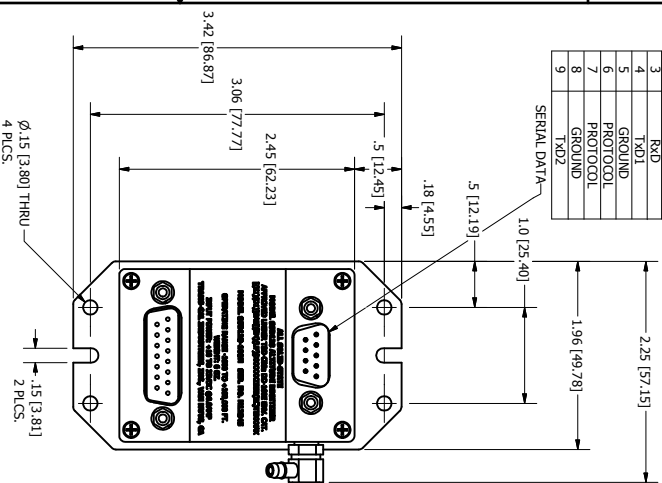
TOLERANCES UNLESS OTHERWISE NOTED  
Decimals: Angles ±1°  
---±.010  
XX±.005  
THIRD ANGLE PROJECTION



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DE-9S D-SUB. CONN. PIN	FUNCTION
1	GROUND
2	10 RES.
3	KxD
4	TxD1
5	GROUND
6	PROTOCOL
7	PROTOCOL
8	GROUND
9	TxD2

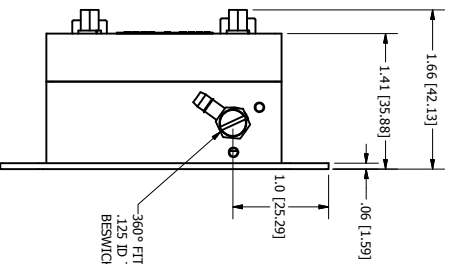
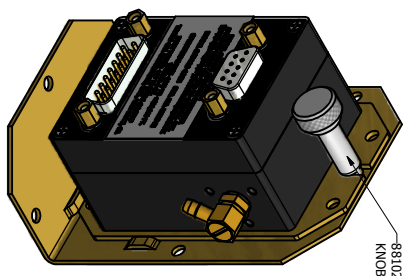
SEE NOTE 5



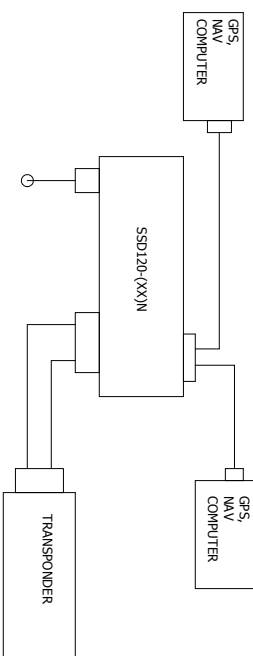
MODEL NO.	OPERATING RANGE
SSD120-50N(1)RS232	-1000 TO +50,000 FT.
SSD120-62N(1)RS232	-1000 TO +62,000 FT.
SSD120-65N(1)RS232	-1000 TO +65,000 FT.
SSD120-80N(1)RS232	-1000 TO +80,000 FT.
SSD120-85N(1)RS232	-1000 TO +85,000 FT.
SSD120-100N(1)RS232	-1000 TO +100,000 FT.

DA-15P D-SUB CONN. PIN	FUNCTION
1	D4
2	A1
3	A2
4	A4
5	B1
6	OUTPUT ENABLE
7	D2
8	+14 TO 28VDC INPUT
9	B2
10	B4
11	C1
12	C4
13	C2
14	+14 TO 28VDC INPUT
15	GROUND

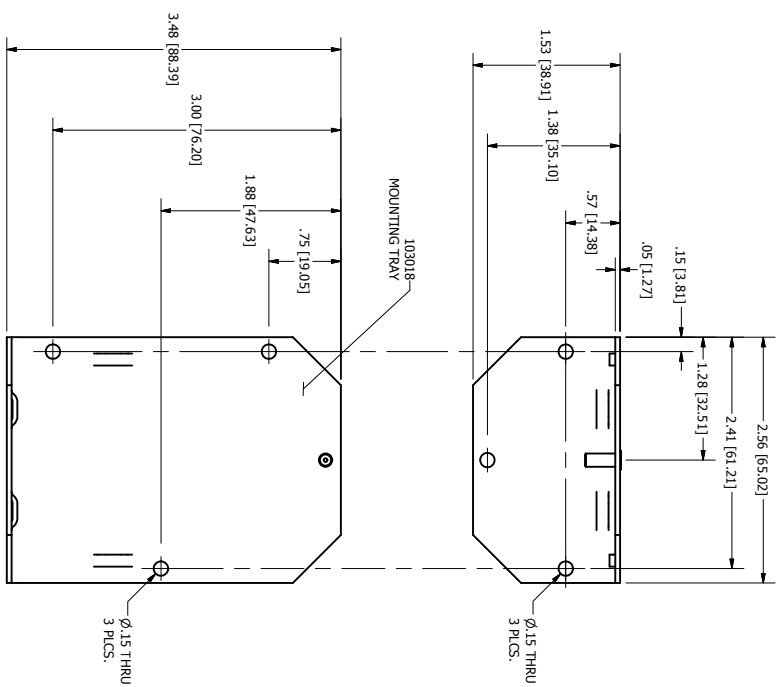
SEE NOTE 4



INSTALLATION EXAMPLE BLOCK DIAGRAM



REV	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	10/17/2007	J. Ferrero
B	ADDED 3.3 & 1.96 DIM. 1.13 WAS 1.12	2/5/2007	J. Ferrero
C	ADDED [MM] UNITS	2/5/2007	J. Ferrero
D	ADDED SHEET 5	3/4/2009	J. Ferrero



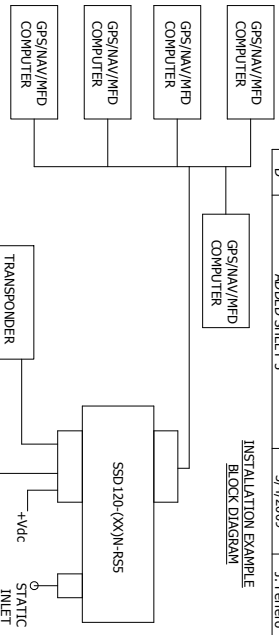
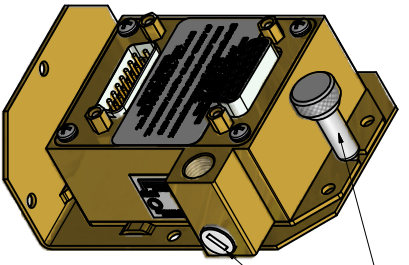
- APPROVED UNDER TSO-C88A AND ETSO-C88A.
- ALL GROUNDS ON THE SERIAL DATA CONNECTOR ARE DATA GROUNDS AND ARE INTERNALLY CONNECTED TO GROUND.
- D2 DATA BIT INCLUED ON UNITS OPERATING ABOVE 62,750 FEET ONLY.
- SHEET 1 DETAILS THE SSD120-(XX)N WITH OPERATING CEILINGS UP TO 42,000 FT. SHEET 2 DETAILS HIGH ALTITUDE MODEL SSD120-(XX)N-RS232.
- PINS 14 AND 8 CONNECTED INTERNALLY.
- AN "E" SUFFIX IN THE PART NO. (SSD120-50NE1-RS232) DESIGNATES FULL TEMPERATURE RANGE (-55 TO +70°C) NOTES:

TOP ASSY. NUMBER 103019	DRAWN H. Smith	2/5/2007	<b>Trans-Cal Industries, Inc.</b> Van Nuys, CA 91406
	CHECKED M. Remenih	2/8/2007	
TOLERANCES UNLESS OTHERWISE NOTED Demiangle: Angles ±1° XX±.005 ---±.005 THIRD ANGLE PROJECTION	QA C. HERRERA	10/17/2007	<b>Outline Drawing, SSD120-(XX)N(XX) Series</b> Attitude Digitizer
	MFG C. Herrera	10/17/2007	
	APPROVED J. Ferrero	10/17/2007	TITLE Outline Drawing, SSD120-(XX)N(XX) Series Attitude Digitizer
	METRIC (SI) EQUIVALENTS BASED ON 1"=25.4MM		SIZE DO NOT SCALE DRAWING DWG NO. Outline SSD120-(XX)N SCALE 1:1 UNITS: INCH (MM) SHEET 3 OF 5

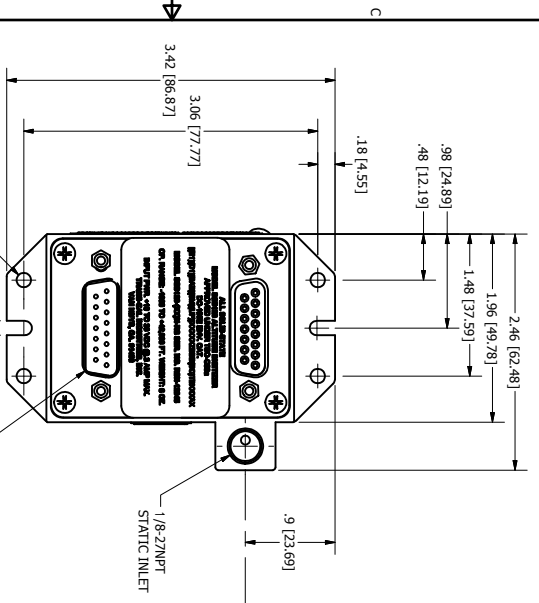


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PIN	FUNCTION	--	PIN	FUNCTION
1	GROUND		9	PROTOCOL
2	10' RES.		10	PROTOCOL
3	RxD		11	GROUND
4	GROUND		12	TxD3
5	GROUND		13	GROUND
6	TxD1		14	TxD4
7	GROUND		15	TxD5
8	TxD2		--	--

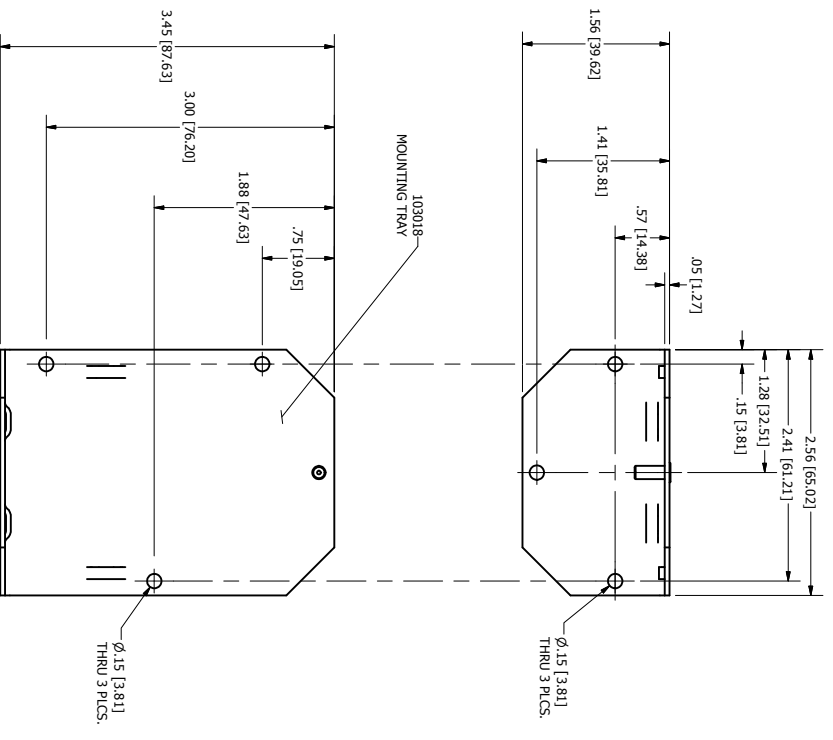
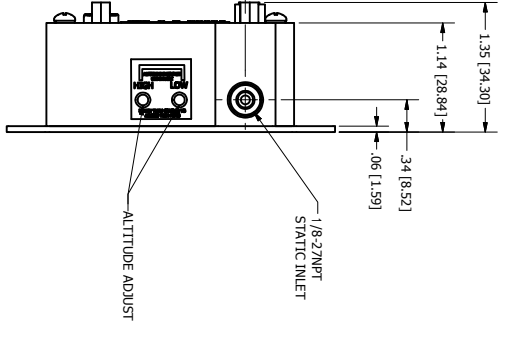


REV	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	10/17/2007	J. Ferrero
B	ADDED .33 & 1.96 DIM. 1.13 VAS 1.12	2/5/2007	J. Ferrero
C	ADDED DIM. UNITS	2/5/2007	J. Ferrero
D	ADDED SHEET 5	3/4/2009	J. Ferrero



MODEL NO.	OPERATING RANGE
SSD120-30N-R55	-1000 TO +30,000 FT.
SSD120-35N-R55	-1000 TO +35,000 FT.
SSD120-42N-R55	-1000 TO +42,000 FT.

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	+14/28Vdc
7	D2		15	GROUND
8			--	--



- APPROVED UNDER TSO-C88A AND ETSO-C88A.
- ALL GROUNDS ON THE SERIAL DATA CONNECTOR ARE DATA GROUNDS AND ARE INTERNALLY CONNECTED TO GROUND.
- D2 DATA BIT INCLUDED ON UNITS OPERATING ABOVE 62,750 FEET ONLY.
- SHEET 1 DETAILS THE SSD120-(XX)N WITH OPERATING CEILING UP TO 42,000 FT. SHEET 2 DETAILS HIGH ALTITUDE MODEL. SSD120-(XX)N-R522. SHEET 3 DETAILS S. HIGH ALTITUDE UNITS WITH SWIVEL STATIC PORT FITTING. SHEET 4 DETAILS UNITS WITH RS485 AND RS232 OUTPUTS.

- AN 'E' SUFFIX IN THE PART NO. (SSD120-30NE-R55) DESIGNATES FULL TEMPERATURE RANGE (-55 TO +70°C).
- NOTES:

TOP ASSEMBLY 103901		DRAWN H. Smith 2/5/2007		<h2>Trans-Cal Industries, Inc.</h2> <p>Van Nuys, CA 91406</p> <h3>Outline Drawing, SSD120-(XX)N(XX) Series</h3> <h3>Altitude Digitizer</h3>	
CHECKED M. Remenih 2/8/2007		CHECKED M. Remenih 2/8/2007			
TOLERANCES UNLESS OTHERWISE NOTED Digi-angle: Angles ±1° XX±.010 XXX±.005		DATE 10/17/2007		TITLE	
THIRD ANGLE PROJECTION		DATE 10/17/2007		SIZE DO NOT SCALE DRAWING	
		DATE 10/17/2007		SCALE 1:1	
		DATE 10/17/2007		UNITS: INCH (MM)	
		DATE 10/17/2007		SHEET 5 OF 5	