



FUEL/AIRDATA COMPUTER

(ADC 2000)

P/Ns:
962830A-1-S-5
962830A-2-S-5
962830A-3-S-5

INSTALLATION MANUAL

REV J

Shadin Avionics
6831 Oxford Street
St. Louis Park, MN 55426
USA

Sales: (800) 328-0584
Customer Service: (800) 388-2849
www.shadin.com

P/N: IM2830A-XS5

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11.0 INSTALL DRAWINGS AND INSTALL KITS PARTS LISTS

<u>Drawing No.</u>	<u>Description/Part Number</u>	<u>DATE</u>	<u>REV</u>
4028-005	Installation DWG, OAT Probe Assembly Kit P/N 681201-1	02/14/05	C
N/A	Parts List, OAT Probe Assembly Kit P/N 681201-1	04/06/07	H
4028-395	Installation, Mounting Tray, ADC 2000	08/01/05	C
4028-A45	Installation Wiring, ADC 2000 to COMM/PWR/BARO/OAT/HEADING	09/12/00	B
4028-A46	Installation Wiring, ADC 2000, MS Conn, Digital, Sine and DC Fuel Flow	03/11/03	B
4028-A47	Installation Wiring, ADC2000, MS Conn, to Altimeter Baro Pot	03/11/03	D
4028-A62	Installation Wiring, Loop Back Harness for F/ADC 200, 2000, MS Connector	09/28/98	—
4028-A80	Label, ADC 200/2000 Access Cover P/N 712801	02/14/05	A
4028-A83	Installation, ADC2000, MS Conn., Dig FF, Shadin OAT, Gray Code P/N 962830A-1-S-5	03/29/05	A
4028-A84	Installation, ADC2000, MS Conn., Sine FF, Shadin OAT, Gray Code P/N 962830A-2-S-5	03/29/05	A
4028-A85	Installation, ADC2000, MS Conn., DC FF, Shadin OAT, Gray Code P/N 962830A-3-S-5	03/29/05	A
4070-005	Installation, Serial to Argus 5000/7000 Converter P/N 937000-03	02/14/05	B
N/A	Parts List, Install Kit, ADC 2000, MS Conn/No OAT P/N IK9630A-1	04/09/07	H
4028-B98	Installation Wiring, F/ADC 2000, MS Conn Shadin Fuel Flow Indicators to Garmin 430/530	04/29/11	D

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AIRCRAFT SPECIFIC

4028-A29	Installation Wiring, F/ADC200, 2000 or Digidata with DC FF Piper Cheyene PA31T	01/17/05	C
4028-A48	Installation Wiring, F/ADC 2000 w/ Analog FF to Beech King Air Indicators MS Connector	03/11/03	B
4028-A49	Installation Wiring, F/ADC 2000 MS Conn, Sine FF to Mitsubishi MU-300 and Model 400 BeechJet	01/20/99	A
4028-A50	Installation Wiring, F/ADC 2000 to Mitsubishi MS Conn SINE FF, MU-2 w/Foxboro PC-620 System	07/19/00	B
4028-A51	Installation Wiring, F/ADC 2000, MS Conn, with DC FF to Cessna Citation 500, 501, 550, S550, 551, 552	01/20/99	B
4028-A52	Installation Wiring, F/ADC 2000 MS Conn with DC FF to Cessna Citation 525 Jet	01/20/99	B
4028-A53	Installation Wiring F/ADC 2000 MS Conn with Digital FF to Bombardier LearJet 24, 25D	01/20/99	B
4028-A54	Installation Wiring, F/ADC 2000 MS Conn with Sine FF to Rockwell Commander 690 and 695	01/20/99	B
4028-A55	Installation Wiring, F/ADC 2000 MS Conn with DC FF to Raytheon BeechJet 400A Aircraft	01/20/99	B
4028-A56	Installation Wiring, F/ADC 2000 MS Conn with DC FF to Westwind 1124 Models	01/20/99	B
4028-A57	Installation Wiring, F/ADC 2000 MS Conn to Fairchild SA226 Series Aircraft	03/29/05	C
4028-A58	Installation Wiring, F/ADC 2000 MS Conn to Aerospatiale AS365N2 Dauphin	01/20/99	B
4028-A59	Installation Wiring, F/ADC 2000 MS Conn to Aerospatiale AS332 Super Puma	01/20/99	B
4028-A60	Installation Wiring, F/ADC 2000 MS Conn Shadin Fuel Flow Indicators to Bendix/King Nav. Receiver	03/11/03	B
4028-A61	Installation Wiring F/ADC 2000 MS Conn and Shadin Converter to Eventide Argus	09/18/00	B

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REVISION LOG

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1.0 OVERVIEW**1.1 The Manual**

This manual is designed to facilitate the installation of the Shadin Fuel/Airdata Computer (ADC 2000).

1.2 Product Information

The Shadin ADC 2000 system is designed to provide a **combined** source of fuel and air data. Listed below are the navigational systems that the ADC 2000 has been designed to be compatible with.

Receives Serial Data from:Magellan

Skynav 5000

ARNAV

STAR 5000

FMS 7000

R5000

Trimble

2000/2000A

2100/3000

3100/2101

Bendix King

KLN90

KLN90A

KLN90B

KLN89/89B

KLN900

Garmin

150, 155, 155XL, 165

230, 230XL

300, 300XL

430, 530

BFGoodrich

Pronav LNS 6000

IIMorrow

611, 612, 618

NMS 2001

800, 820, 360

GX50, 55, 60

Transmits Serial Data to:

ARNAV

Magellan

Bendix/King

Trimble

Garmin

Note: To find out which particular receiver models have air data receive capability, contact the manufacturers.

Transmits ARINC Data to:ASINC

Airshow

Bendix King

EFIS 40/50

Honeywell

SPZ-5000

Data Nav III

Universal

UNS-1M

Global

GNSX

GNS-Xls

Trimble

TNL8100

IIMorrow

2101

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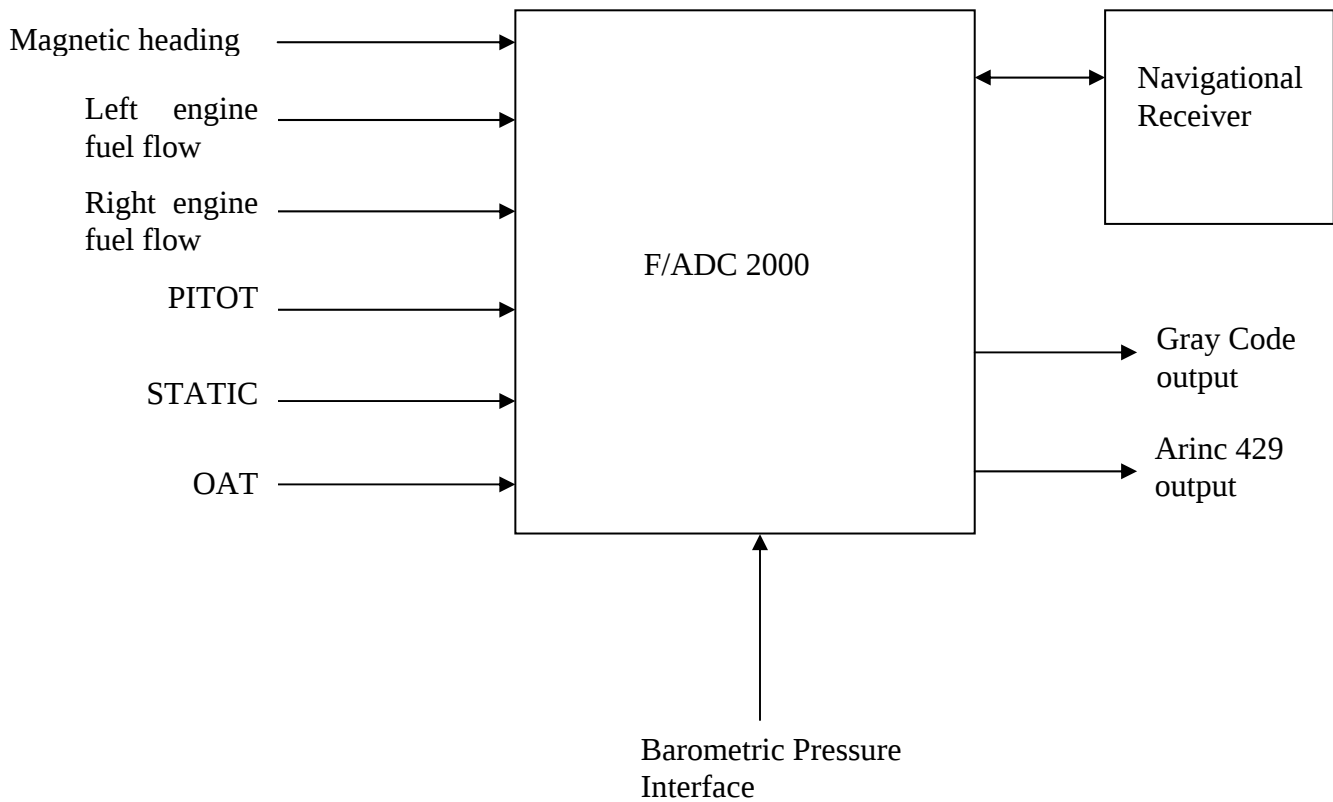
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1.3 System Configuration

The Fuel/Airdata system is a remote mounted computer, which is connected to the GPS receiver via serial data. It is also connected to the pitot and static line, OAT probe, fuel flow sensors, altimeter barometric pressure potentiometers and the aircraft heading source.



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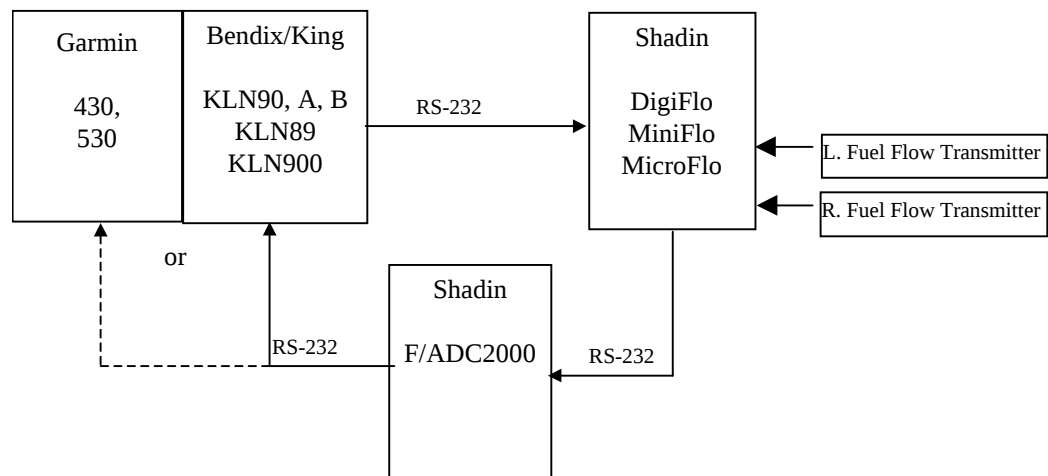
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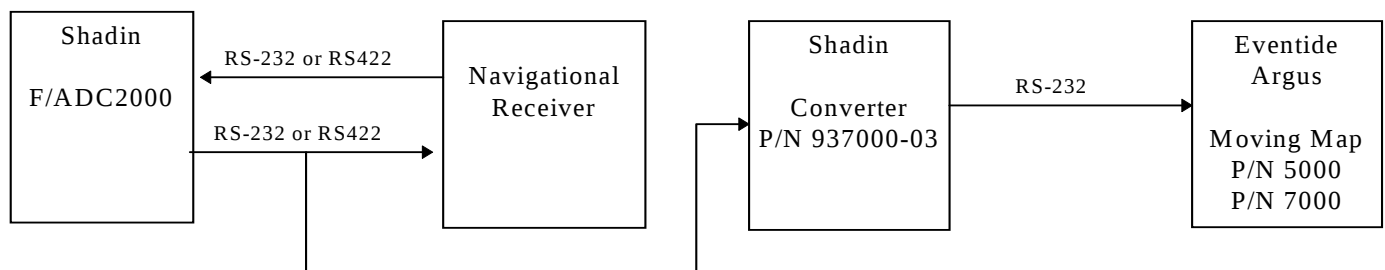
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1.4 Fuel Totalizer Configuration

Shown below is an optional system configuration utilizing a Shadin Fuel Flow Indicator. Note that the only navigational receivers supported in this configuration are the Bendix/King KLN series and the Garmin 430/530. Consult Drawing Number 4028-A60 contained in this manual for installation information on the Bendix/King KLN series and Drawing Number 4028-B98 for installation information on the Garmin 430/530.

**1.5 F/ADC2000, Argus Moving Map Configurations**

Shown below is the system configuration that supports output to a Eventide Argus moving map using the Shadin serial to serial data converter P/N 937000-03. The fuel and air data are displayed on the Eventide-Argus moving map. Consult Drawing numbers 4070-005 and 4028-A61 contained in this manual.



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2.0 FUEL AND AIRDATA SYSTEM SPECIFICATIONS**2.1 Input Data Range**

Pitot	20 to 350 kt.
Static	-1000 to 55,000 ft.
OAT	-60°C to +60°C
Heading	0 - 360°
Fuel Flow	1 to 450 GPH Range Selected
K Factor	500 to 130000 PPG Continuous

2.2 Output Data Range

Parameter	Accuracy*	Range
IAS	Table 1	20 to 350 kts.
P.ALT	Table 2	-1000 to 50000 ft
OAT	±1.5°C per TSO	-60°C to +60°C
TRUE HEADING	±2°	0 - 360 degrees
MAGNETIC HEADING	±1°	0 - 360 degrees
IVS	Table 3	± 10,000 ft./min.
TAS	Table 1	20 - 600 kts
MACH	Table 4	.2 - .95
WIND SPEED	±5 kts.	5 - 360 kts
WIND DIRECTION	±10°	0 - 360 degrees
FUEL FLOW	±2%	1 - 450 GPH

* Listed accuracy's are after warm-up is complete. Table below lists the warm-up times:

+70°C ambient	5 minutes warm-up required
+15°C ambient	10 minutes warm-up required
-20°C ambient	20 minutes warm-up required
-40°C ambient	25 minutes warm-up required

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This table is used as the tolerance for both IAS and TAS. For values between table rows, linearly interpolate between the adjacent table points.

AIRSPED KNOTS	TOLERANCE ± KNOTS
50	5.0
80	3.0
100	2.0
120	2.0
150	2.0
200	2.0
250	2.4
300	2.8
350	3.2
400	3.6
450	4.0

Table 1 - Calibrated Airspeed Tolerance

This table is used as the tolerance for pressure altitude. Note that for an altitude between points in the tables, the tolerance is linearly interpolated between the adjacent table points.

ALTITUDE FEET	TOLERANCE ± FEET
0	25
1000	25
2000	25
3000	25
4000	25
5000	25
8000	30
11000	35
14000	40
17000	45
20000	50
30000	75
40000	100
50000	125

Table 2 -Pressure Altitude Tolerance

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This table is used as the tolerance for vertical speed. For values between table rows, linearly interpolate between the adjacent table points.

VERTICAL SPEED FPM	TOLERANCE ± FPM
20000	1000
6000	300
4000	200
2000	100
1000	50
500	45
200	45
100	45
50	45
0	45
-50	45
-100	45
-200	45
-500	45
-1000	50
-2000	100
-4000	200
-6000	300
-20000	1000

Table 3 - Vertical Airspeed Tolerance

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This table is used as the tolerance for MACH Number. For values between table rows, linearly interpolate between the adjacent table points.

ALTITUDE	TOLERANCE	
FEET	MACH	± MACH
0	.3	.012
	.4	.012
	.5	.010
	.6	.0075
10,000	.4	.012
	.5	.010
	.6	.0075
	.7	.005
20,000	.4	.012
	.5	.010
	.6	.0075
	.7	.005
30,000	.6	.0075
	.7	.005
	.80	.005
	.90	.005
	.95	.0075
40,000	.70	.005
	.80	.005
	.90	.005
	.95	.0075
50,000	.75	.005
	.90	.005
	.95	.0075
	1.00	.015

Table 4 - MACH Tolerance

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2.3 Dimensions (including mounting rack)

Size: 7.4" L x 4.3" H x 3.9" W

Weight: 2.75 LB

2.4 Power Requirements**System Power required: 28 VDC @ 1300 mA 14 VDC @ 900 mA****2.5 Output Data**

1. Electric Format: RS-422 or RS-232
2. ARINC 429 low/high speed GAMA (Has to be configured at the factory)
3. Gray Code

See paragraph 2.5.2 for ARINC 429 output data capabilities.

2.5.1 Serial Output Data Parameters**Fuel Group**

L. ENG. Fuel Flow
 R. ENG. Fuel Flow
 Fuel Used Total
 Total Fuel Used
 Fuel Used L. ENG.
 Fuel Used R. ENG.
 Fuel Remaining
 NM/Fuel Unit (ground)
 Fuel to Destination
 Fuel at Destination

Airdata Group

Pressure Altitude (PALT)
 Density Altitude
 Barometric Corrected Altitude
 Indicated Air Speed (IAS)
 True Air Speed (TAS)
 Vertical Speed
 True Air Temperature (TAT)
 Outside Air Temperature (OAT)
 Drift Angle
 Magnetic Heading

Rate of Turn
 MACH Number
 Wind Direction and Speed
 Baro Correction (mb #1)
 Baro Correction (hg")

Note: Not all parameters will be available to all navigational receivers. Contact the manufacturer for display capabilities.

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2.5.2 ARINC 429 (GAMA) Output Labels

In Table 5 – ARINC Label Configuration below, the heading row containing the numbers 1-A indicates the setting of the ARINC rotary switch on the back of the unit. The number in the cell at the intersection of an ARINC switch setting and an ARINC label number is the repeat time in msec for that label. Zero indicates that the label is not generated with that switch setting. Tolerance on the rate is $\pm 10\%$ averaged over one second.

LABEL	Description	0	1	2	3	4	5	6	7	8	9	A
074G	Flight Plan Header	1000	0	0	0	1000	1000	0	0	0	0	0
075G	Active Waypoint To/From	100	0	0	0	100	100	0	0	0	0	0
100	Selected Course	0	0	0	200	200	200	200	0	0	0	0
113G	Waypoint Group Checksum	100	0	0	0	100	100	0	0	0	0	0
114	Desired Track (True)	50	0	0	50	50	50	50	0	0	0	0
115	Waypoint Bearing (True)	50	0	0	50	50	50	50	0	0	0	0
116	Cross Track Distance	50	0	0	50	50	50	50	0	0	0	0
147G	Magnetic Variation	200	0	0	200	200	200	200	0	0	0	0
203	PALT (1013.25 mB)	0	200	50	200	0	200	200	200	100	50	50
204	PALT (Baro Corrected)	0	200	50	200	0	0	200	200	100	50	50
205	MACH	0	200	50	200	0	200	200	200	0	0	0
206	Indicated Airspeed (IAS)	0	0	50	200	0	0	200	200	100	50	50
210	True Airspeed	100	100	0	100	0	100	100	100	100	50	50
211	OAT	0	200	0	200	0	0	200	200	0	0	0
212	Vertical Speed (IVS)	0	200	50	200	0	0	200	200	0	50	50
213	TAT (Static)	0	200	0	200	0	200	200	200	100	0	50
244	Total Fuel Flow	0	0	0	0	0	0	0	100	0	0	0
251G	Distance To Go	200	0	0	200	200	0	200	0	0	0	0
252	Time To Go	200	0	0	200	200	0	200	0	0	0	0
275G	LRN Status Word	200	200	0	200	200	200	0	0	0	0	0
300	Navigation Aid Info	100	0	0	0	100	100	0	0	0	0	0
303G	Waypoint Group Header	100	0	0	0	100	100	0	0	0	0	0
304G	Message ID Characters 1-3	100	0	0	0	100	100	0	0	0	0	0
305G	Message ID Characters 4-6	100	0	0	0	100	100	0	0	0	0	0
306G	Waypoint Latitude	100	0	0	0	100	100	0	0	0	0	0
307G	Waypoint Longitude	100	0	0	0	100	100	0	0	0	0	0
310	Present Latitude	200	0	0	200	200	200	200	0	0	0	0
311	Present Longitude	200	0	0	200	200	200	200	0	0	0	0
312	Ground Speed	50	0	0	50	50	50	50	0	0	0	0
313	True Track	0	0	0	200	200	200	200	0	0	0	0
314	True Heading	0	0	0	100	100	0	100	0	0	0	0
315	Wind Speed	100	100	0	100	100	100	100	0	0	0	0
316	Wind Direction (True)	100	100	0	100	100	100	100	0	0	0	0
320	Magnetic Heading	0	100	0	100	100	0	100	0	0	0	0
321	Drift Angle	50	50	0	50	50	0	50	0	0	0	0
347	Left/Right Fuel Flow	200	200	0	200	200	0	200	200	200	0	0
351G	Distance to Final Destination	0	0	0	0	0	200	0	0	0	0	0
352G	Time to Final Destination	0	0	0	0	0	200	0	0	0	0	0
371	Equipment ID	0	0	0	0	0	200	0	0	0	0	0

Table 5 – ARINC Label Configuration

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2.5.3 ARINC 429 Labels Associated with Switch Settings

- | | |
|--|-------------------------------------|
| 0 - Honeywell SPZ-5000 for Cessna | 6 - Trimble 8100 (No label 275) |
| 1 - Bendix KLN90B or Global GNSXC(LS) | 7 - TNL-8100 |
| 2 - HUD-Heads Up Display for Flt Visions | 8 - Collins FMS 800 (100 ms rate) |
| 3 - UNS1 | 9 - Mk VII GPWS (50 ms rate) |
| 4 - EFIS40/50 | A - Mk VI & VIII EGPWS (50 ms rate) |
| 5 - ASINC Airshow Cabin Display | |

Note that 3 and 6 are the same except for label 275.

The following is a list of the different switch settings that the ARINC switch may be set to. The ARINC switch position is shown in section 9.2.

- 0 - Long Range Nav function of Honeywell SPZ-5000 Flight Guidance/EFIS System installed on the Cessna Citation Jet Aircraft.
- 1 - Bendix to Global/Cabin Info System installed on the Cessna Citation Jet Aircraft.
- 2 - Reserved
- 3 - 8100, UNS1
- 4 - Bendix/King EFIS 40/50
- 5 - ASINC Airshow
- 6 - 8100, UNS1, except no label 275. Use when there is no serial navigation data being received by the ADC2000.
- 7 - TNL-8100, with total fuel flow label 244
- 8 - Collins FMS 800 (100 ms rate)
- 9 - Allied Signal, Mk VII GPWS (50 ms rate)
- A - Allied Signal, Mk VI and VIII EGPWS (50 ms rate)

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2.5.4 Gray Code Output (optional)

A parallel interface is also provided to allow Altitude Encoder data communications with most aircraft transponders (the transponder should be set to operate in altitude reporting Mode C) or other avionics equipment requiring Gray Code data. The parallel interface data is delivered from the Airdata Computer in standard ICAO code for S.S.R. pressure altitude transmission with a resolution accurate to within 100 feet of pressure altitude.

The Gray Code output operates by pulling one line of the parallel interface low at a time. This parallel interface does not provide a "high" state to the signal lines. No provisions were included to disable the output of the Encoder data with a strobe or Gray Code Common line. It is the installer's responsibility to provide for line pull-ups, isolation, and switching requirements.

The following portion of the S.S.R. Automatic Pressure Altitude Transmission Code table may be useful for installation verification and trouble shooting as it exercises all the parallel Gray code lines.

Altitude Ft.	A1	A2	A4	B1	B2	B4	C1	C2	C4	D2	D4
5800			•			•			•		
13000		•			•			•			
34300	•			•			•				•

A dot indicates active code line.

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2.6 Limitations**2.6.1 Warm-up time**

The Fuel/Airdata Computer output data accuracy is valid after a specified warm-up time that varies with ambient temperature. Refer to Section 2.2 for time specifications.

2.6.2 Supplemental equipment

All Shadin F/ADC(s) and ADC(s) are not designed to replace factory installed Airdata fuel flow systems or other gauges. They are not intended to be used as a primary system to drive altimeters or airspeed indicators. The F/ADC fuel section is not a fuel quantity system and therefore reports only what was manually entered by the operator.

2.6.3 Static Source Error Correction (SSEC),**Pitot Source Error Correction (PSEC)**

For certain models of aircraft, the Fuel/Airdata System will make corrections to pressure altitude by compensating for static source error. For some of these models, the Fuel/Airdata System will make corrections to indicated airspeed by compensating for pitot source error.

The system does not provide true and absolute readings for all circumstances. It makes no altitude corrections when the uncorrected IAS is below 100 knots, and it makes no airspeed corrections when the uncorrected IAS is below 150 knots. It does not account for other factors, such as the current useful weight, that contribute to static source error and pitot source error. Rather, the Fuel/Airdata System performs calculations based solely on indicated airspeed and pressure altitude. The SSEC/PSEC corrections were derived from specific aircraft data referred to in section 2.6.4. To configure the Shadin F/ADC for a specific aircraft model refer to section 9.

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2.6.4 SSEC/PSEC LISTING**Beechcraft BeechJet-400 (SSEC only)**

Airplane Flight Manual, BeechJet 400, Section 6, Performance
 FAA approved 1/86 Altitude Correction
 Revision A9 14/92 Copilot System

Page 6-14

Figure 6-8

Boeing 707-321B Advanced**SSEC**

Airplane Flight Manual, Boeing 707, Section IV, Performance
 FAA approved 3/27/69, D6-1588 Altitude Calibration
 Revision 2/4/69 Pilot & Copilot

Page 19

FLAPS UP

PSEC

Airplane Flight Manual, Boeing 707, Section IV, Performance
 FAA approved 9/20/66, D6-1588 Airspeed Calibration
 Pilot & Copilot

Page 18

FLAPS UP

Cessna 500 (SSEC only)

Airplane Flight Manual, Cessna/Citation Model 500, Section IV, Performance
 FAA approved Aug 7/74 Altitude Correction
 Revision 53 - Dated 11 Dec 85 Pilot & Copilot system

Figure 4-7

Page 4-17.1

Cessna 501 (SSEC only)

Airplane Flight Manual, Cessna/Citation I SP Model 501, Section IV, Performance
 FAA approved Altitude Correction
 Original Pilot & Copilot system
 NOTE: Uses same Hardware configuration as Cessna 500

Figure 4-5

Page 4-15

Cessna 525 (SSEC only)

Airplane Flight Manual Model 525

Altitude Correction
 Pilot & Copilot system

Rept FT525-4

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Cessna 550 (SSEC only)

Airplane Flight Manual, Cessna/Citation II Model 550, Section IV, Performance
 FAA approved Altitude Correction
 Original Pilot & Copilot system

Figure 4-5

Page 4-15

Cessna 560 (SSEC only)

Airplane Flight Manual, Model 560, S/N 259 & Below, Section IV, Performance
 FAA approved Altitude Correction
 Original Pilot & Copilot system

Figure 4-5

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SSEC/PSEC LISTING (Continued)**Cessna 560 (SSEC only)**

Airplane Flight Manual, Model 560 , S/N 260 & Up, Section IV, Performance

FAA approved

Altitude Correction

Figure 4-5

56FMA-00

Pilot & Copilot system

Page 4-19

Cessna Citation S550 (SSEC only)

Airplanes -0115 through -0160 Except Airplanes Incorporating SBS550-32-7 and Airplanes -0001 through -0114 Incorporating SBS550-32-1 but not SBS550-32-7.

Section IV - Performance, Standard Charts

Pages 4-17, 4-18

FAA approved

Altimeter Position Correction

Figure 4-5

Revision 37

Pilot & Copilot

Douglas DC-8**SSEC**

Airplane Manual, Douglas DC-8, Section IV, Performance

Page 20

FAA approved

Altitude Correction

DAC-33161 10/1/66

Pilot & Copilot system

PSEC

Airplane Manual, Douglas DC-8, Section IV, Performance

Page 11

FAA approved

Airspeed Correction

DAC-33161 10/1/66

Pilot & Copilot system

Falcon 10 (SSEC only)

Airplane Flight Manual, Section 6. Performance, 7 Position Error

Page 6-27

FAA approved 10/17/73

Position Error

Revision 14, 6/6/78

Pilot & Copilot

Falcon 20-C, D, E (SSEC only)

Maintenance Instruction Manual, 34-18-03

Page A48

Sept 1/77

Altitude Correction

CS-143

Copilot system

Falcon 20-F (SSEC only)

Maintenance Instruction Manual, 34-18-03

Section 5

DTM30528

Altitude Correction

Subsection 20

DGAC Approved

Copilot system

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SSEC/PSEC LISTING (Continued)**Falcon 50****SSEC**

Airplane Flight Manual, Section 5. Performance Page 5.25.2
 DGAC approved Copilot (for A/C equipped with one ADC)
 Revision 24

PSEC

Airplane Flight Manual, Section 5. Performance Page 5.25.2
 DGAC approved Pilot (normal) and Copilot MACH Indicators
 Revision 24

LearJet 24 (SSEC only)

Airplane Manual, LearJet Model 24, Section IV, Performance
 FAA approved 3/17/66 Altitude Correction Figure 4-10
 Revised 7/19/68 Pilot & Copilot system Page 4-16

LearJet 25D (SSEC only)

Airplane Manual, LearJet 25D/F AFM, Performance
 FAA approved 10/14/86 Altitude Correction Figure 5-10
 FM-018 Release A Copilot system Page 5-18

LearJet 35 (SSEC only)

Flight Manual, LearJet 35, Normal System, Flaps up, Gear up Page 5-18
 FAA approved, 4/30/76 Altitude Position Correction Figure 5-10
 Reissued 2/25/81 Pilot's Altimeter- STBY & Copilot's Altimeter

LearJet 55 (SSEC only)

Gates LearJet 55, APM, Performance Data, Flaps up, Gear up Page 5-20
 FAA approved, 3-17-81 Altitude Position Correction Figure 5-11
 Change 13

Lockheed Jetstar (SSEC only)

Airplane Flight Manual, Performance Data, Weight = 32,000 Lb., Clean Configuration: Leading
 Edge Flaps up, Trailing Edge Flaps up, Landing Gear up Page 4-25
 FAA approved, 12/14/76 Altimeter Installation Correction Figure 4-15

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SSEC/PSEC LISTING (Continued)**Mitsubishi MU-300 (SSEC only)**

Airplane Flight Manual, Diamond IA, Section 6, Performance

FAA approved Jan 11/84

Altitude Correction

Figure 6-8

Copilot system

Page 6-20

Raytheon Hawker HS-125-3A (SSEC only)

Airplane Manual,

Section 5

Document No. H.S.1.10

Static Position Error

Figure 5-4

CAA Approved

Correction to Altimeter

Page 13

Raytheon Hawker HS125-700A (SSEC only)

125 Crew Manual, First Officer, Section 2, Flaps Retracted

Page 2-30

Static Position Correction to Altimeter

Figure 6

Revision: G, 4/77

Sabreliner 60 (SSEC only)

Sabreliner Pilot's Manual, SR 75-064, Weight = 16,000 Lb.

9/1/76

Altitude Calibration

Figure 7-2

Sabreliner 65 (SSEC only)

Pilots Manual, SR-78-028

Altitude Correction

Figures 7-1 through 7-5

Pilot & Copilot system

265-65-7-31,32A, 33

Westwind 1124A (SSEC only)

Airplane Flight Manual, 1124A , Section V, Performance

CAA approved

Altitude Correction

Figures 5-13, Flaps 0

Copilot system

Pages V-25

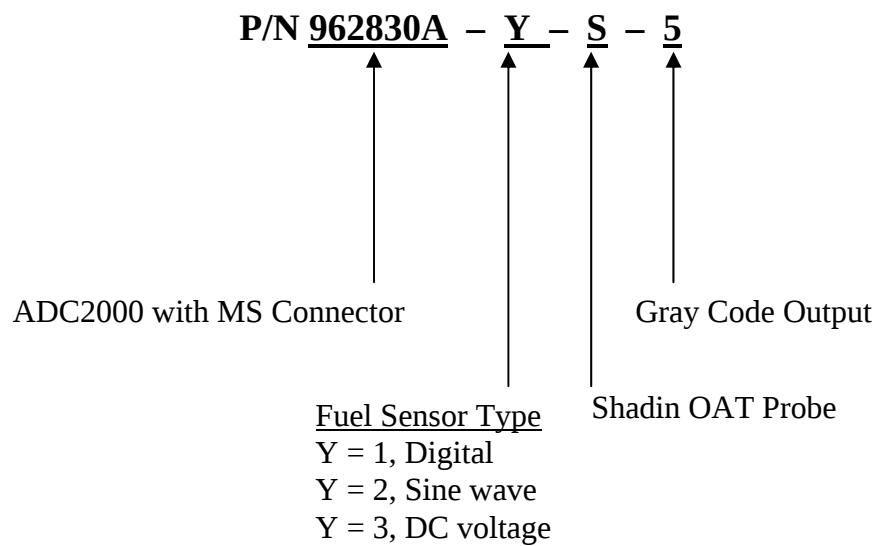
NOTE: Gross Weight averaged at 18,750 lbs.

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2.7 Part Numbering Scheme

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2.8 Electrical Interface Specifications

The specifications for the interfaces heading, fuel flow and baro are listed in this section.

2.8.1 Heading Interface

The heading interface follows the ARINC 407 standard (line voltage of 11.8 Vrms).

Synchro Leg	Input Impedance
H	10 kohm
X	17 kohm
Y	17 kohm

2.8.2 Fuel Flow Interfaces

There are three basic types of fuel flow interfaces supported. The interface type is defined in the ADC2000 part number. Refer to section 2.7 for the part numbering scheme.

2.8.2.1 Digital Fuel Flow Interface

There are two possible installations for the digital fuel flow interface, the first is that the ADC is connected to a dedicated fuel flow transmitter, and the second is that the ADC is connected into a fuel flow system.

Dedicated Transmitter

Fuel Flow Interface Input Impedance	47 kohm
-------------------------------------	---------

Shared Transmitter

Under normal operating conditions the voltage swing (the signal amplitude) can be calculated using $V_s = [R/(R + 47\text{ k})] * 5\text{ Vdc} - 0.5\text{ Vdc}$, where R is the input impedance of the aircraft fuel flow indicator.

For example with an input impedance $R = 1\text{ Mohm}$, the voltage swing $V_s = 4.27\text{ Vdc}$

With the fuel flow information is encoded in frequency and not amplitude, the loading effects do not produce an error provided the aircraft indicator can detect the signal transitions.

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2.8.2.2 Sine Wave Fuel Flow Interface

The interface source signal amplitude varies with frequency. Listed in the table below is the input impedance vs. peak to peak input voltages of the ADC2000 under normal operating conditions.

Input Impedance	Input Voltage
2 Mohm	Input voltage less than or equal to 1.0 Vpp
24.5 kohm	Input voltage greater than 1.0 Vpp

Maximum Input Voltage 10 Vpp

2.8.2.3 DC Voltage Fuel Flow Interface

The DC voltage fuel flow interface has a differential input. The specifications under normal operating conditions are listed below.

Positive input greater than 100 Mohm
 Negative input greater than 100 Mohm

Maximum Input Voltage 10.2 Vdc

2.8.3 Baro Interface

The baro interface requires a three-wire connection to the potentiometer housed in the aircraft altimeterⁱ. The three connections are the high side, low side and wiper. The specifications under normal operating conditions are listed below.

Input Impedance high side greater than 100 Mohm
 Input Impedance low side greater than 100 Mohm
 Input Impedance wiper greater than 100 Mohm

Maximum Input Voltage ± 12 Vdc

ⁱ The altimeters supported are listed in section 9.2 and are dependent upon the ADC2000 software version level.

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2.9 Statistical Specifications**2.9.1 Mean Time Between Failures**

MTBF: 17,660 hours

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3.0 CERTIFICATION**TSO C106, C44a, C88a**Environmental Categories RTCA/DO-160B

Temp. ALT	F2
Temp. Variation	B
Humidity	A
Shock & Vibration	P, K, S, M, N, O
Magnetic Effect	B
Power Input	B
Voltage Spike	B
AF Conducted Susceptibility	B
Induced Signal Susceptibility	B
RF Susceptibility	A
RF Emission	B

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4.0 PLACING AN ORDER

Please know the aircraft year and model number, its serial number, and the engine make and model number when you call to place orders. Information on the fuel flow system previously installed in the aircraft and any communication interface (RS-232, RS-422 and ARINC429) information may also prove useful.

We may request a wiring diagram of the aircraft's fuel flow system and transducer and/or K-factors.

When interfacing an altimeter to the Shadin barometric pressure potentiometer option, consult the list of supported altimeters contained in this manual or contact Shadin Technical Support.

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5.0 INSTALLATION PROCEDURE**5.1 General**

The conditions and tests required for TSO approval of this article are minimum performance standards. It is the responsibility of those installing this article either on or within a specific type or class of aircraft to determine that the aircraft installation conditions are within the TSO standards. TSO articles must have separate approval for installation in an aircraft. The article may be installed only if performed under 14 CFR part 43 or the applicable airworthiness requirements.

All work must conform to AC 43.13-1B.

5.2 F/ADC Location Selection

The Fuel Airdata Computer should be mounted in a dry, temperature stable location with enough distance from motors, pulse generating equipment, relays and cables carrying high DC or AC current to avoid interference with low level signals of the OAT and fuel flow.

The equipment may be installed in non-pressurized and non-controlled temperature locations.

In considering the location, keep in mind that the F/ADC requires signals from the fuel flow, the OAT probe, heading system and the pitot and static lines. Placement in the front section of the aircraft is favorable, in order to avoid running all of these signals to the tail of the aircraft.

5.3 Mounting the F/ADC

Consult the Drawings 4028-A83 or 4028-A84 or 4028-A85 and Drawing 4028-395, before mounting the ADC2000. Use the recommended hardware. Any orientation is acceptable. Make sure that the computer is not the lowest point in the pitot and static system, to reduce the chances of collecting moisture or water in it. Form a water trap, if necessary.

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5.4 Mounting the OAT Probe

1. Refer to drawing 4028-005 and OAT Probe Assy Kit P/N 681201-1. Use the supplied stiffener to support the probe. Keep the probe away from transmitting antennas and static ports of autopilots to avoid interference.
2. Refer to drawing 4028-A45. The OAT probe power is supplied from (red wire) J1:52. The OAT signal is the white wire from J1:33. At least the signal wire to the ADC2000 should be shielded and terminated at the ADC2000 only.
3. The sun shield must be installed for proper indication of OAT.
4. For single engine installation, avoid mounting the OAT probe on the belly of the aircraft to avoid erroneous reading due to the presence of hot exhaust gases.
5. Below is an OAT °C to input current conversion chart for use in testing the OAT Probe.

OAT °C	Input μ A		OAT °C	Input μ A		OAT °C	Input μ A		OAT °C	Input μ A
-60	213		-20	253		+20	293		+60	333
-50	223		-10	263		+30	303			
-40	233		0	273		+40	313			
-30	243		+10	283		+50	323			

1°C = 1 μ A

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5.5 Connection to the Fuel Flow Sensor

1. If the aircraft is not equipped with a fuel flow source, refer to the STC covering the installation of the fuel flow transducer on the engine.
 2. When connecting to any fuel transducer, Shadin recommends using a 3 conductor, 22 gauge, shielded wire with the shield terminated at the Airdata only.
 3. Note that for single engines all fuel flow types should use left side inputs only.
 4. *Install the transducers according to the engine STC, using Drawing 4028-A46 to connect the fuel flow transducer to the computer.
 5. *If the aircraft is equipped with a digital fuel flow system using transducer (P/N 680501), use Drawing 4028-A46 (refer to note 1 on that drawing) and the STC drawing covering the installation.
 6. Before hooking to an existing fuel system in a turbine or jet application, consult all installation drawings contained in this manual.
 7. *If the aircraft is equipped with a DC fuel flow system, use Drawing 4028-A46 (for P/N 962830A-3-S-5) and the STC covering the installation.
 8. *If the aircraft is equipped with a sine wave pickup coil type of fuel flow transducer, use Drawing 4028-A46 (for P/N 962830A-2-S-5).
 9. Make sure that the system is initialized with the proper transducer K factor for a digital or sine systems and with the proper airframe make and model for the DC fuel flow systems. See the attached tables in section 10.0.
- * Consult section 11 for specific aircraft installation wiring drawings.

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5.6 Connection to the Heading Source

The system is designed to interface with any ARINC-407 heading system (X, Y, Z) with no effect on the heading system or the bootstrap.

XYZ Heading ARINC 407	Fuel/ Airdata J1	Collins 328A-2A 2P1	Collins HSI331A P1	Collins MCS 65 P1	Collins 328A-5	King KI525A P2	King KSG105 P1	Sperry Gyro- syn Comp. P1	Sigma- Tek DG	Sandel SN308	
										P1	P2
X	5	11	S	25	32	s	t	L	A		25
Y	4	4	T	40	22	v	p	M	B		6
Z	7	3	U	24	12	t	k	K	D	4	
H	6	26	V	6	53	r	c	H	E		4
C	7	22	W	5	57	u	f	J	H	4	

The C wire (AC common) and the Z wire must be connected together at the source (bootstrap). Refer to Installation Wiring drawing, 4028-A45, for wiring installation details.

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5.7 Connection to the Pitot and Static Lines

The pitot static line should be cut and a tee installed to tap into these lines. Use the appropriate type of fittings to match the type installed in the aircraft. Refer to CFR part 43, appendix E for approved practices in installing and verifying these connections.

PITOT/STATIC adapter helpful hints

To make an adapter for the Shadin ADC2000, the following parts could be used. It is recommended to use all aluminum fittings.

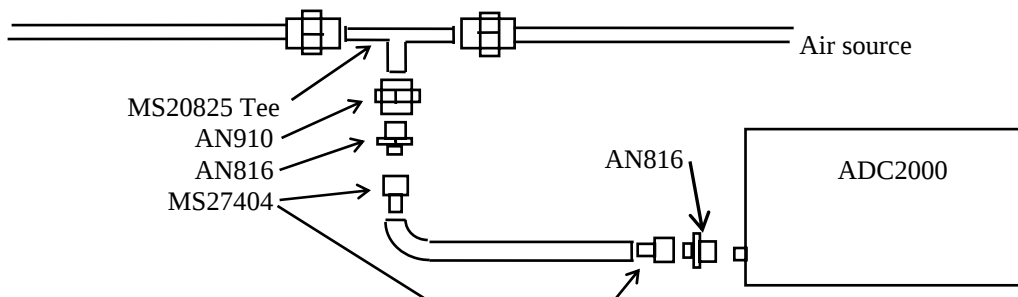
Existing Pitot/Static lines → AN910-1D → AN816-2D → #2 Hose(with female fittings)

AN910 DASH NUMBER		PIPE SIZE
BRASS	ALUM. ALLOY	
-1	-1D	1/8"
-2	-2D	1/4"
-3	-3D	3/8"
-4	-4D	1/2"
-6	-6D	3/4"
-8	-8D	1"

AN816 DASH NUMBER		TUBE O. D.	PIPE THREAD
STEEL	ALUM. ALLOY		
-2	-2D	1/8"	1/8"
-3	-3D	3/16"	1/8"
-4	-4D	1/4"	1/8"
-5	-5D	5/16"	1/8"
-6	-6D	3/8"	1/4"
-8	-8D	1/2"	3/8"
-10	-10D	5/8"	1/2"
-12	-12D	3/4"	3/4"
-16	-16D	1"	1"

MS20825 TEE		TUBE O. D.	PIPE THREAD
STEEL	ALUM. ALLOY		
-2	-2D	1/8"	1/8"
-3	-3D	3/16"	1/8"
-4	-4D	1/4"	1/8"
-5	-5D	5/16"	1/8"

HOSE: Stratoflex 193-2 or Aeroquip 306-2 with MS27404 (P/N 311-2D) on each end.



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5.8 Connection to the Navigation Management System

1. Use installation wiring diagram 4028-A45 to connect the Fuel Airdata Computer's connector J1 to the navigation management system.
2. A 2 amp. circuit breaker should be used for powering the system. Mark the circuit breaker by engraving, painting or other approved method.
3. Keep the cables away from power cables, DME and transponder cables.
4. Refer to the specific Nav Receiver Installation Manuals for details.
5. If the ARINC 429 output is used, refer to the digital EFIS or flight management installation manual and sections 2.5.2 – 2.5.4 in this manual.

5.9 Connection to the Altimeter Baro Pot (optional)

1. Use the Installation wiring diagram 4028-A47 to connect the altimeter to J1 of the Airdata Computer.
2. Remember to select the correct altimeter type in the software configuration. See section 9 in this manual.

5.10 Connection to S.S.R. Gray Code Equipment (optional)

1. Read section 2.5.5 before continuing.
2. No connection to the Gray Code output is necessary if the parallel interface is not being utilized.
3. Use drawings numbered 4028-A83 or 4028-A84 or 4028-A85, and the specific manufacturer's installation instructions when connecting to the Gray Code output.
4. It may be necessary to configure the transponder for Mode C.
5. Once the Encoder interface is correctly connected and the F/ADC2000 is turned on, all the Gray Code lines will be enabled (all lines will be in the low or "ground" state) until the F/ADC2000 reaches standard operating temperature. See section 2.6.1 for warm-up times.

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5.11 Post Installation Checkout

1. The pitot and static system must be checked for leaks.
2. Operate the Navigation Management System; select the altitude and airspeed pages. Use the static and pitot test system to check the accuracy of the readout in the Navigation Management System pages.
3. Select heading page. Slew compass through 360°. The error should be within $\pm 1^\circ$.
4. Select the OAT page. Compare to the reported ambient temperature. The error should be within $\pm 1^\circ\text{C}$.
5. Run the engines and select the fuel flow page. Compare the fuel flow readout with the engine manufacturer's fuel flow charts under the ambient temperature and pressure conditions.
6. Set the Barometric pressure to a known value and verify that the reported barometric pressure at the Navigational Receiver is that value ± 0.01 In.Hg. (if the option is installed)
7. Set the pressure altitude to the values shown in the table in section 2.5.5 and verify that the transponder (or other gray code receiving equipment) is receiving the correct altitude.

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6.0 OPERATING INSTRUCTIONS

1. Power the avionics DC buss and the Navigation Management System.
2. After the warm-up period pressure altitude, density altitude and Gray Code are available. IAS will be available but will be out of range until an actual airspeed is obtained. Winds aloft will be available if the IAS is greater than 40 Kts and the magnetic heading is within 40° of the magnetic track. Note that for the winds aloft, the ADC2000 must be receiving ground speed and track data from the navigational receiver.
3. Fuel Flow, Fuel Used, Fuel Remaining, Heading and OAT will be available after power-up.
4. Refer to the specific navigational receiver Operator's Manual for page selection of various data.

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7.0 INITIALIZATION

1. The system requires initialization of K factor for fuel flow transducers or aircraft model for DC fuel flow sensors. Refer to Table 1 **analog** for fuel flow and Table 2 or Table 3 for **digital or sinewave** fuel flow.
2. Refer to the specific Navigational Receiver Operator Manuals for the serial port set up.

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8.0 MAJOR COMPONENTS OF THE SYSTEM

1. Nav Receiver Input/Output
2. Fuel/Airdata Computer
3. Outside Air Temperature Probe (OAT), P/N 681201()

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9.0 CONFIGURING THE AIRDATA

The Airdata Computer needs to be configured to program it for the particular installation. The procedure contained in this Installation Manual is for software version 93.03.69, 93.03.77, and 93.03.82 and up. There are two methods to accomplish this task. The first method is to follow the procedures as set forth in the 'ADSETUPF User Manual'. The second method is to manually enter the information by performing a 'Loop-Back' procedure.

9.1 Configuring with 'ADSETUPF User Manual'

The 'ADSETUPF User Manual' is a configuration utility that allows setting the ADC configuration by running a program on a PC. The PC is connected to the Airdata via the serial communication port. See the 'ADSETUPF User Manual' for more details.

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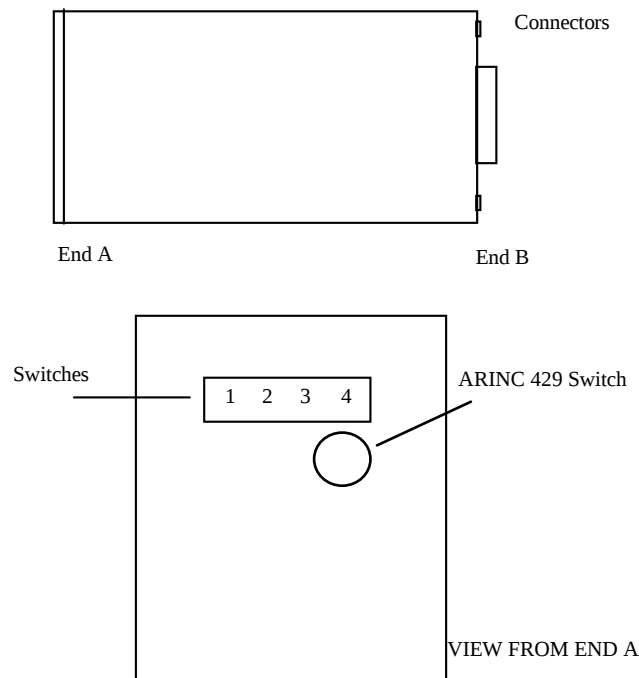
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9.2 Configuring Manually (Loop-Back)

The switches, that are available from the back side of the unit, need to be set to the appropriate positions as determined by the switch settings listed below. After the correct switch positions have been selected, the unit is powered using the 'Loop-Back' harness (consult drawing number 4028-A62 contained in section 11). The purpose of the 'loop back' harness is to tie the RS-232 transmit and receive ports together. This allows the software, when the unit is powered on, to read the switch positions. Switch 1 is set to different positions to select the separate stages that the loopback is performing. There are 2 different loop-back procedures. Use loop-back procedure 1 for Software Versions 93.03.69. Use loop-back procedure 2 for software version 93.03.77. Note that there are 4 stages for these procedures. Use loop-back procedure 2 for software version 93.03.82 and above. This procedure has 5 stages. Remember to cycle power between stages and that the F/ADC is to be powered on for 1 minute for each stage.

The following figure shows the approximate switch positions:



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Loopback Procedure 1 for Software Version 93.03.69**Stage 0 Loopback Configuration:**

Switch 1 is set to 0 to indicate that the stage 0 loopback is being performed.

<u>SWITCH 2</u>	<u>Fuel Units and Engine Type:</u>		
0	- Gallons	Single Engine	
1	- Liters	"	"
2	- Lbs 5.8	"	"
3	- Lbs 6.71	"	"
4	- Kilograms	"	"
5	- Lbs 6.5	"	"
6	- Lbs 6.3	"	"
7	- (not used)	"	"
8	- Gallons	Twin Engine	
9	- Liters	"	"
A	- Lbs 5.8	"	"
B	- Lbs 6.71	"	"
C	- Kilograms	"	"
D	- Lbs 6.5	"	"
E	- Lbs 6.3	"	"
F	- (DO NOT USE)		

<u>SWITCH 3</u>	<u>9600 BAUD Loran Input Type:</u>		
0	- Trimble		
1	- ARNAV		
2	- Bendix or IIMorrow NMS2001, 800, 820, GX50/55/60, 9600		
3	- Garmin		
4	- Northstar (1200 or 9600 baud, 1200 is default for Northstar)		
5	- Foster		
6	- IIMorrow 611, 612 and 618 (1200 baud)		
7	- Shadin Flow Meter		
8-E	- (DO NOT USE)		
F	- Use this position to make selection on <u>SWITCH 4</u>		

<u>SWITCH 4</u>	<u>Other Loran Input Type:</u>		
0	- Northstar, 1200 BAUD		
1	- Foster, 1200 BAUD		
2	- IIMorrow 611, 612, 618; 1200 BAUD		
3-F	- (DO NOT USE)		

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Stage 1 Loopback Configuration:

Switch 1 is set to 1 to indicate that the stage 1 loopback is being performed.

SWITCH 2 **OAT Probe Type:**

- 0 - Shadin OAT Probe
- 1 - ARINC 575 (DO NOT USE)
- 2 - Rosemount 500 Ω (DO NOT USE)
- 3-F - (DO NOT USE)

SWITCH 3 **Loran Output Type:**

- 0 - Format Z - Trimble and Garmin
- 1 - Format X - ARNAV
- 2 - Generic - DO NOT USE
- 3 - Surveyor
- 4 - Bendix C – Bendix/King and F/ADC without Barometric Interface
- 5 - Bendix D - Bendix/King and F/ADC with Barometric Interface
- 6 - Shadin S - IIMorrow GX50, 55, 60
- 7 - Bendix B – (fuel only)
- 8-F - (DO NOT USE)

SWITCH 4 **Altimeter Selection for Baro DC Input:**

- 0 - None
- 1 - Type 1
- 2 - Type 2
- 3 - Type 3
- 4 - Type 4
- 5 - Type 5
- 6 - Type 6
- 7 - Type 7
- 8 - (DO NOT USE)
- 9 - Type 9
- A-F - (DO NOT USE)

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ALTIMETER TYPES

- Type 1: Kollsman PD 44929-935 (done for Cessna 525).
- Type 2: Bendix/King KEA 130A, and KEA 346 versions (King P/N 066-3062-XX) XX = 08 through 11, versions 00 through 07 have no Baro Potentiometer.
- Type 3: ARINC 575-3 specification for ratio to Altitude Correction calculation.
Kollsman IDC 28007-427, -429,
Kollsman IDC 28704-A1001, -A2001, -A4001, -B4001, -C4001, -D1001, -D2001,
-D4001, -D4101, -4E2101, -F2101, and -495.
- Type 4: Kollsman IDC 28711-621 thru 624.
- Type 5: Kollsman IDC 28007-431, -433,
Honeywell (Sperry) BA-141.
- Type 6: Kollsman IDC 28711-500 series and -600 series.
- Type 7: Kollsman IDC 28711-065 and -066.
- Type 8: Reserved for future use (DO NOT USE).
- Type 9: Aerosonic P/N 102220-1188T, 10420-11968E.

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Stage 2 Loopback configuration:

Switch 1 is set to 2 to indicate that the stage 2 loopback is being performed.

SWITCH 2 Fuel Filter Type:

- 0 - Injector
- 1 - Carburetor

SWITCH 3 AND SWITCH 4 CORRECTION For SSEC/PSEC Select:

- | | | |
|---|-----|------------------------------------|
| 0 | 0 | - No correction |
| 0 | 1 | - MITSUBISHI MU-300 |
| 0 | 2 | - CESSNA CITATION 500/501 |
| 0 | 3 | - CESSNA 525 |
| 0 | 4 | - CESSNA 550 |
| 0 | 5 | - Citation 560 SN <=259 |
| 0 | 6 | - Citation 560 SN >=260 |
| 0 | 7 | - Citation 650 |
| 0 | 8 | - Sabreliner 65 |
| 0 | 9 | - WestWind 1124A |
| 0 | A | - Lear 24 |
| 0 | B | - Raytheon Hawker HS 125-3A |
| 0 | C | - Falcon 20-F |
| 0 | D | - Falcon 20-C, D, E |
| 0 | E | - Lear 25D |
| 0 | F | - Douglas DC-8 |
| 1 | 0 | - BeechJet 400 |
| 1 | 1 | - Boeing 707-321B |
| 1 | 2 | - Cessna Citation S550 |
| 1 | 3 | - Falcon 10 |
| 1 | 4 | - Falcon 50 |
| 1 | 5 | - Raytheon Hawker HS125-700A |
| 1 | 6 | - LearJet 35 |
| 1 | 7 | - LearJet 55 |
| 1 | 8 | - Sabreliner 60 (SSEC Only) |
| 1 | 9 | - Lockheed Jetstar II |
| 1 | A-F | - Reserved for future (DO NOT USE) |

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Stage 3 Loopback configuration:

Switch 1 is set to 3 to indicate that the stage 3 loopback is being performed.

SWITCH 2, K-FACTOR TABLE SELECTION:

For F/ADC 962830A-1-S-5 and 962830A-2-S-5 only.

- 0 - Standard K-FACTOR Matrix 0 - (Table 2 in this manual)
- 1 - Alternate K-FACTOR Matrix 1- (Table 3 in this manual)
- 2-F - (DO NOT USE)

SWITCH 3, FUEL FLOW DELAY TIME

- 0 - No Delay
- 1 - 5 Second Delay
- 2 - 10 Second Delay
- 3 - 15 Second Delay
- 4 - 20 Second Delay
- 5 - 25 Second Delay
- 6 - 30 Second Delay
- 7 - 35 Second Delay
- 8 - 40 Second Delay
- 9 - 45 Second Delay
- A-F - (DO NOT USE)

SWITCH 4 SPECIAL OPTION DESCRIPTION

- 0 -ARINC 429 labels 206 (IAS) and 210 (TAS) are not transmitted if the IAS < 20 knots
- 1 -ARINC 429 labels 206 (IAS) and 210 (TAS) are transmitted as zero knots if the IAS < 20 knots
- 2-F Reserved – DO NOT USE

F/ADC Software Version

93.03.69 and up

93.03.69 and up

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Loopback Procedure 2 for Software Version 93.03.77**Stage 0 Loopback Configuration:**

Switch 1 is set to 0 to indicate that the stage 0 loopback is being performed.

<u>SWITCH 2</u>	<u>Fuel Units and Engine Type:</u>	
0	- Gallons	Single Engine
1	- Liters	" "
2	- Lbs 5.8	" "
3	- Lbs 6.71	" "
4	- Kilograms	" "
5	- Lbs 6.5	" "
6	- Lbs 6.3	" "
7	- (not used)	" "
8	- Gallons	Twin Engine
9	- Liters	" "
A	- Lbs 5.8	" "
B	- Lbs 6.71	" "
C	- Kilograms	" "
D	- Lbs 6.5	" "
E	- Lbs 6.3	" "
F	- (DO NOT USE)	

<u>SWITCH 3</u>	<u>9600 BAUD Loran Input Type:</u>
0	- Trimble
1	- ARNAV
2	- Bendix or IIMorrow NMS2001, 800, 820, GX50/55/60, 9600
3	- Garmin
4	- Northstar (1200 or 9600 baud, 1200 is default for Northstar)
5	- Foster
6	- IIMorrow 611, 612 and 618 (1200 baud)
7	- Shadin Flow Meter
8-E	- (DO NOT USE)
F	- Use this position to make selection on <u>SWITCH 4</u>

<u>SWITCH 4</u>	<u>Other Loran Input Type:</u>
0	- Northstar, 1200 BAUD
1	- Foster, 1200 BAUD
2	- IIMorrow 611, 612, 618; 1200 BAUD
3-F	- (DO NOT USE)

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Stage 1 Loopback Configuration:

Switch 1 is set to 1 to indicate that the stage 1 loopback is being performed.

SWITCH 2 **OAT Probe Type:**

- 0 - Shadin OAT Probe
- 1 - ARINC 575 (DO NOT USE)
- 2 - Rosemount 500 Ω (DO NOT USE)
- 3-F - (DO NOT USE)

SWITCH 3 **Loran Output Type:**

- 0 - Format Z - Trimble and Garmin
- 1 - Format X - ARNAV
- 2 - Generic - DO NOT USE
- 3 - Surveyor
- 4 - Bendix C – Bendix/King and F/ADC without Barometric Interface
- 5 - Bendix D - Bendix/King and F/ADC with Barometric Interface
- 6 - Shadin S - IIMorrow GX50, 55, 60
- 7 - Bendix B – (fuel only)
- 8 - Garmin G
- 9-F - (DO NOT USE)

SWITCH 4 **Altimeter Selection for Baro DC Input:**

- 0 - None
- 1 - Type 1
- 2 - Type 2
- 3 - Type 3
- 4 - Type 4
- 5 - Type 5
- 6 - Type 6
- 7 - Type 7
- 8 - (DO NOT USE)
- 9 - Type 9
- A-F - (DO NOT USE)

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ALTIMETER TYPES

- Type 1: Kollsman PD 44929-935 (done for Cessna 525).
- Type 2: Bendix/King KEA 130A, and KEA 346 versions (King P/N 066-3062-XX) XX = 08 through 11, versions 00 though 07 have no Baro Potentiometer.
- Type 3: ARINC 575-3 specification for ratio to Altitude Correction calculation.
Kollsman IDC 28007-427, -429,
Kollsman IDC 28704-A1001, -A2001, -A4001, -B4001, -C4001, -D1001, -D2001,
-D4001, -D4101, -4E2101, -F2101, and -495.
- Type 4: Kollsman IDC 28711-621 thru 624.
- Type 5: Kollsman IDC 28007-431, -433,
Honeywell (Sperry) BA-141.
- Type 6: Kollsman IDC 28711-500 series and -600 series.
- Type 7: Kollsman IDC 28711-065 and -066.
- Type 8: Reserved for future use (DO NOT USE).
- Type 9: Aerosonic P/N 102220-1188T, 10420-11968E.

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Stage 2 Loopback configuration:

Switch 1 is set to 2 to indicate that the stage 2 loopback is being performed.

SWITCH 2 Fuel Filter Type:

- 0 - Injector
- 1 - Carburetor

SWITCH 3 AND SWITCH 4 CORRECTION For SSEC/PSEC Select:

- | | | |
|---|-----|------------------------------------|
| 0 | 0 | - No correction |
| 0 | 1 | - MITSUBISHI MU-300 |
| 0 | 2 | - CESSNA CITATION 500/501 |
| 0 | 3 | - CESSNA 525 |
| 0 | 4 | - CESSNA 550 |
| 0 | 5 | - Citation 560 SN <=259 |
| 0 | 6 | - Citation 560 SN >=260 |
| 0 | 7 | - Citation 650 |
| 0 | 8 | - Sabreliner 65 |
| 0 | 9 | - WestWind 1124A |
| 0 | A | - Lear 24 |
| 0 | B | - Raytheon Hawker HS 125-3A |
| 0 | C | - Falcon 20-F |
| 0 | D | - Falcon 20-C, D, E |
| 0 | E | - Lear 25D |
| 0 | F | - Douglas DC-8 |
| 1 | 0 | - BeechJet 400 |
| 1 | 1 | - Boeing 707-321B |
| 1 | 2 | - Cessna Citation S550 |
| 1 | 3 | - Falcon 10 |
| 1 | 4 | - Falcon 50 |
| 1 | 5 | - Raytheon Hawker HS125-700A |
| 1 | 6 | - LearJet 35 |
| 1 | 7 | - LearJet 55 |
| 1 | 8 | - Sabreliner 60 (SSEC Only) |
| 1 | 9 | - Lockheed Jetstar II |
| 1 | A-F | - Reserved for future (DO NOT USE) |

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Stage 3 Loopback configuration:

Switch 1 is set to 3 to indicate that the stage 3 loopback is being performed.

SWITCH 2, K-FACTOR TABLE SELECTION:

For F/ADC 962830A-1-S-5 and 962830A-2-S-5 only.

- 0 - Standard K-FACTOR Matrix 0 - (Table 2 in this manual)
- 1 - Alternate K-FACTOR Matrix 1- (Table 3 in this manual)
- 2-F - (DO NOT USE)

SWITCH 3, FUEL FLOW DELAY TIME

- 0 - No Delay
- 1 - 5 Second Delay
- 2 - 10 Second Delay
- 3 - 15 Second Delay
- 4 - 20 Second Delay
- 5 - 25 Second Delay
- 6 - 30 Second Delay
- 7 - 35 Second Delay
- 8 - 40 Second Delay
- 9 - 45 Second Delay
- A-F - (DO NOT USE)

SWITCH 4 SPECIAL OPTION DESCRIPTION

- 0 -ARINC 429 labels 206 (IAS) and 210 (TAS) are not transmitted if the IAS < 20 knots
- 1 -ARINC 429 labels 206 (IAS) and 210 (TAS) are transmitted as zero knots if the IAS < 20 knots
- 2-F Reserved – DO NOT USE

F/ADC Software Version

93.03.69 and up

93.03.69 and up

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Loopback Procedure 3 for Software Version 93.03.82 and above**Stage 0 Loopback Configuration:**

Switch 1 is set to 0 to indicate that the stage 0 loopback is being performed.

<u>SWITCH 2</u>	<u>Fuel Units and Engine Type:</u>	
0	- Gallons	Single Engine
1	- Liters	" "
2	- Lbs 5.8	" "
3	- Lbs 6.71	" "
4	- Kilograms	" "
5	- Lbs 6.5	" "
6	- Lbs 6.3	" "
7	- (not used)	" "
8	- Gallons	Twin Engine
9	- Liters	" "
A	- Lbs 5.8	" "
B	- Lbs 6.71	" "
C	- Kilograms	" "
D	- Lbs 6.5	" "
E	- Lbs 6.3	" "
F	- (DO NOT USE)	

<u>SWITCH 3</u>	<u>9600 BAUD Loran Input Type:</u>
0	- Trimble
1	- ARNAV
2	- Bendix or IIMorrow NMS2001, 800, 820, GX50/55/60, 9600
3	- Garmin
4	- Northstar (1200 or 9600 baud, 1200 is default for Northstar)
5	- Foster
6	- IIMorrow 611, 612 and 618 (1200 baud)
7	- Shadin Flow Meter
8-E	- (DO NOT USE)
F	- Use this position to make selection on <u>SWITCH 4</u>

<u>SWITCH 4</u>	<u>Other Loran Input Type:</u>
0	- Northstar, 1200 BAUD
1	- Foster, 1200 BAUD
2	- IIMorrow 611, 612, 618; 1200 BAUD
3-F	- (DO NOT USE)

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Stage 1 Loopback Configuration:

Switch 1 is set to 1 to indicate that the stage 1 loopback is being performed.

SWITCH 2 **OAT Probe Type:**

- 0 - Shadin OAT Probe
- 1 - ARINC 575 (DO NOT USE)
- 2 - Rosemount 500 Ω (DO NOT USE)
- 3-F - (DO NOT USE)

SWITCH 3 **Loran Output Type:**

- 0 - Format Z - Trimble and Garmin
- 1 - Format X - ARNAV
- 2 - Generic - DO NOT USE
- 3 - Surveyor
- 4 - Bendix C – Bendix/King and F/ADC without Barometric Interface
- 5 - Bendix D - Bendix/King and F/ADC with Barometric Interface
- 6 - Shadin S - IIMorrow GX50, 55, 60
- 7 - Bendix B – (fuel only)
- 8 - Garmin G
- 9-F - (DO NOT USE)

SWITCH 4 **Altimeter Selection for Baro DC Input:**

- 0 - None
- 1 - Type 1
- 2 - Type 2
- 3 - Type 3
- 4 - Type 4
- 5 - Type 5
- 6 - Type 6
- 7 - Type 7
- 8 - (DO NOT USE)
- 9 - Type 9
- A-F - (DO NOT USE)

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ALTIMETER TYPES

- Type 1: Kollsman PD 44929-935 (done for Cessna 525).
- Type 2: Bendix/King KEA 130A, and KEA 346 versions (King P/N 066-3062-XX) XX = 08 through 11, versions 00 through 07 have no Baro Potentiometer.
- Type 3: ARINC 575-3 specification for ratio to Altitude Correction calculation.
Kollsman IDC 28007-427, -429,
Kollsman IDC 28704-A1001, -A2001, -A4001, -B4001, -C4001, -D1001, -D2001,
-D4001, -D4101, -4E2101, -F2101, and -495.
- Type 4: Kollsman IDC 28711-621 thru 624.
- Type 5: Kollsman IDC 28007-431, -433,
Honeywell (Sperry) BA-141.
- Type 6: Kollsman IDC 28711-500 series and -600 series.
- Type 7: Kollsman IDC 28711-065 and -066.
- Type 8: Reserved for future use (DO NOT USE).
- Type 9: Aerosonic P/N 102220-1188T, 10420-11968E.

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Stage 2 Loopback configuration:

Switch 1 is set to 2 to indicate that the stage 2 loopback is being performed.

SWITCH 2 Fuel Filter Type:

- 0 - Injector
- 1 - Carburetor

SWITCH 3 AND SWITCH 4 CORRECTION For SSEC/PSEC Select:

- | | | |
|---|-----|------------------------------------|
| 0 | 0 | - No correction |
| 0 | 1 | - MITSUBISHI MU-300 |
| 0 | 2 | - CESSNA CITATION 500/501 |
| 0 | 3 | - CESSNA 525 |
| 0 | 4 | - CESSNA 550 |
| 0 | 5 | - Citation 560 SN <=259 |
| 0 | 6 | - Citation 560 SN >=260 |
| 0 | 7 | - Citation 650 |
| 0 | 8 | - Sabreliner 65 |
| 0 | 9 | - WestWind 1124A |
| 0 | A | - Lear 24 |
| 0 | B | - Raytheon Hawker HS 125-3A |
| 0 | C | - Falcon 20-F |
| 0 | D | - Falcon 20-C, D, E |
| 0 | E | - Lear 25D |
| 0 | F | - Douglas DC-8 |
| 1 | 0 | - BeechJet 400 |
| 1 | 1 | - Boeing 707-321B |
| 1 | 2 | - Cessna Citation S550 |
| 1 | 3 | - Falcon 10 |
| 1 | 4 | - Falcon 50 |
| 1 | 5 | - Raytheon Hawker HS125-700A |
| 1 | 6 | - LearJet 35 |
| 1 | 7 | - LearJet 55 |
| 1 | 8 | - Sabreliner 60 (SSEC Only) |
| 1 | 9 | - Lockheed Jetstar II |
| 1 | A-F | - Reserved for future (DO NOT USE) |

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Stage 3 Loopback configuration:

Switch 1 is set to 3 to indicate that the stage 3 loopback is being performed.

SWITCH 2, K-FACTOR TABLE SELECTION:

For F/ADC 962830A-1-S-5 and 962830A-2-S-5 only.

- 0 - Standard K-FACTOR Matrix 0 - (Table 2 in this manual)
- 1 - Alternate K-FACTOR Matrix 1- (Table 3 in this manual)
- 2-F - (DO NOT USE)

SWITCH 3, FUEL FLOW DELAY TIME

- 0 - No Delay
- 1 - 5 Second Delay
- 2 - 10 Second Delay
- 3 - 15 Second Delay
- 4 - 20 Second Delay
- 5 - 25 Second Delay
- 6 - 30 Second Delay
- 7 - 35 Second Delay
- 8 - 40 Second Delay
- 9 - 45 Second Delay
- A-F - (DO NOT USE)

SWITCH 4 SPECIAL OPTION DESCRIPTION

- 0 -ARINC 429 labels 206 (IAS) and 210 (TAS) are not transmitted if the IAS < 20 knots
- 1 -ARINC 429 labels 206 (IAS) and 210 (TAS) are transmitted as zero knots if the IAS < 20 knots
- 2-F Reserved – DO NOT USE

F/ADC Software Version

93.03.69 and up

93.03.69 and up

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Stage 4 Loopback configuration:

Switch 1 is set to 4 to indicate that the stage 4 loopback is being performed. Refer to the OAT probe calibration certificate for the Ta, Tb, Tc calibration code selection.

SWITCH 2, OAT Ta CALIBRATION CODE SELECTION:

0-F - Refer to calibration certificate for “A” code selection 0 to F.

SWITCH 3, OAT Tb CALIBRATION CODE SELECTION

0-F - Refer to calibration certificate for “B” code selection 0 to F.

SWITCH 4, OAT Tc CALIBRATION CODE SELECTION

0-F - Refer to calibration certificate for “C” code selection 0 to F.

Note: Switch 2, 3, and 4 are set to position 0 (zero), if the OAT probe does not have a calibration code marking, (i.e. A=0, B=0, C=0).

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SELECT NO DELAY

Only under special circumstances should a fuel flow delay time other than “No Delay” be selected. Read the following paragraphs for a description of these special circumstances.

On a few aircraft installations which have digital fuel flow and use a very low K factor (858 pulses per gallon), there has been a problem with the Airdata reporting a large jump in fuel used as well as a corresponding decrease in fuel remaining at engine startup. This is not considered to be a Shadin Airdata problem, but rather has been defined as an aircraft problem involving noise on the digital fuel flow signal.

A solution for this problem is to use the Airdata fuel flow delay feature. This feature suppresses the fuel flow (and its affect on fuel used and remaining) for a startup delay time each time the engine starts. Fuel flow delay time is selectable in the Airdata loopback mode, with selections of 0, 5, 10, 15, 20, 25, 30, 35, 40, and 45 seconds delay available.

If a fuel flow delay is needed, start by reconfiguring the ADC to use a large delay (i.e. 45 seconds). If the large fuel flow mitigated the problem try reducing the delay until the problem returns. Then use the least amount of fuel flow delay that suppresses the problem.

When a fuel flow delay time is selected, the Airdata checks for fuel flow below 15 pph. If the fuel flow is below 15 pph, the Airdata considers the engine to be off and returns a fuel flow of 0. Then as soon as the fuel flow exceeds 15 pph, the Airdata continues to return a fuel flow of 0 until the delay time has expired. In a twin engine, the Airdata zeroes both fuel flows during the startup delay for each engine.

SPECIAL OPTIONS

Only under special circumstance should SPECIAL OPTION 1 be selected. Read the following paragraphs for a description of the special circumstance.

Because the IAS range on the Airdata computer is valid from 20 to 350 knots, ARINC 429 labels 206 and 210 are transmitted with NCD status and stop being transmitted almost simultaneously if the IAS is less than 20 knots. In order to interface with certain avionics equipment which exhibit warnings if a valid IAS or TAS label is not received, SPECIAL OPTION 1 was implemented.

When the Airdata computer is configured with SPECIAL OPTION 1 the ARINC 429 labels 206 and 210 are transmitted with OK status and a value of zero knots if the actual IAS is less than 20 knots.

INSTALLATION MANUAL**FUEL/AIRDATA COMPUTER**

Rev: J

P/N 962830A-1-S-5, 962830A-2-S-5, 962830A-3-S-5

Page: 10-1

10.0 SETTING THE K FACTOR

The process of setting the K Factor is needed to match the F/ADC to the aircraft fuel flow system characteristics. To set the K Factor into the F/ADC you must first determine whether it is an Analog, Digital or Sine Fuel Flow unit.

<u>P/N</u>	<u>FUEL FLOW TYPE</u>
962830A-1-S-5	Digital
962830A-2-S-5	Sine Wave
962830A-3-S-5	Analog

Use the switch settings from the appropriate table to set the K Factor.

For Digital or Sine units (P/N (s) 962830A-1-S-5 and 962830A-2-S-5) use the Digital K Factor Settings Tables.

Switch 1 & 2 selects the left K Factor

Switch 3 & 4 selects the right K Factor

Due to possible fuel flow system peculiarities, switch 1 & 2 and switch 3 & 4 do not necessarily need to be set to the same setting. For a one engine system, use switches 1 & 2.

For Analog units (P/N 962830A-3-S-5) use the Analog K Factor Settings Table.

Switch 1 & 2 selects the main engine K Factor.

Switch 3 & 4 selects the offset.

The offset is simply the value represented by switches 3 & 4 in the Analog K Factor Settings Table below. For example, if you wanted an offset of 0, the switch settings would be 0, 0. If you wanted an offset of 416, the switch settings would be 0, 1. If you wanted an offset of 1094, the switch settings would be 0, 4.

Configuration is now complete.

INSTALLATION MANUAL**FUEL/AIRDATA COMPUTER**

Rev: J

P/N 962830A-1-S-5, 962830A-2-S-5, 962830A-3-S-5

Page: 10-2

Analog K Factor Settings Table

<u>Manufacturer</u>	<u>Model</u>	<u>SW1</u>	<u>SW2</u>	<u>SW3</u>	<u>SW4</u>	<u>K-Factor</u>	<u>Offset</u>
Beech	KingAir B200	0	0	0	1	77000	416
Beech	KingAir A100	0	1	0	2	26150	875
Beech	KingAir C90	0	1	0	2	26150	875
Beech	KingAir F90	0	0	0	1	77000	416
Beech	KingAir C90A	0	0	0	1	77000	416
Beech	KingAir 200	0	0	0	1	77000	416
Beech	BeechJet	0	2	0	0	11540	0
Beech	KingAir B100	0	3	0	2	26150	875
Beech	Beech 600	0	4	0	0	38460	0
Beech	Beech 750	0	5	0	0	30770	0
Beech	Beech 800	0	6	0	0	28850	0
Cessna	Citation, Ametek Gauge, VSDL-02 C208E	0	C	0	0	16270	0
Cessna	Citation, Simmons Gauge 393002-009	1	C	0	0	14300	0
Cessna	Citation II/SII	0	C	0	0	16270	0
Cessna	Citation III	0	D	0	4	9620	1094
Cessna	Model 525	0	E	0	0	21980	0
Piper	Cheyene III	1	9	0	0	41960	0
Piper	Cheyene IV	1	1	0	0	46150	0
Lear	LearJet	0	7	0	0	15380	0
Lear	Model 36 (5V)	0	2	0	0	11540	0
Lear	Model 36 (10V)	0	8	0	0	23080	0
Boeing	Boeing-737-300	0	9	0	3	1790	0
British Aero	BAE ATP	0	7	0	0	15380	0
British Aero	BAE-125-800	0	A	0	0	8240	378
British Aero	HS-125	0	B	0	0	10490	0
Canadian	CL600	0	F	0	0	6590	0
Canadian	CL601	1	0	0	0	5130	0
Dornier	DO-228	1	1	0	0	46150	0
Daussault	FALCON 10	1	2	0	0	11540	0
Daussault	FALCON 20	1	2	0	0	7690	0
Daussault	TFE-371	1	2	0	0	7690	0
Swearngen	MERLIN	0	4	0	0	38460	0
Gulfstream	GULFSTREAM II	1	3	0	0	2880	0
Gulfstream	GULFSTREAM III	1	4	0	0	2310	0
Aerospatiale	PUMA	1	5	0	0	76920	0
DHC	DHC DASH 8	1	6	0	0	19230	0
IAI	ASTRA 1125	1	7	0	5	9230	2188
IAI	WESTWIND 1124	1	8	0	0	10490	0
Sikorsky	S-76A	1	1	0	0	46150	0
Sikorsky	S-76B	0	6	0	0	28850	0
Sabre	SABRE 65	1	7	0	5	9230	2188

Table 6

INSTALLATION MANUAL**FUEL/AIRDATA COMPUTER**

Rev: J

P/N 962830A-1-S-5, 962830A-2-S-5, 962830A-3-S-5

Page: 10-3

Matrix 0 - Digital K Factor Settings

<u>PPG</u>	<u>SW1</u>	<u>SW2</u>	<u>PPG</u>	<u>SW1</u>	<u>SW2</u>	<u>PPG</u>	<u>SW1</u>	<u>SW2</u>
860	D	D	8800	5	0	15300	E	F
5000	6	B	9000	5	1	18000	3	0
5050	6	C	9200	5	2	18200	3	1
5100	6	D	9400	5	3	18400	2	2
5150	6	E	9600	5	4	18600	3	3
5200	6	F	9800	5	5	18800	3	4
5250	7	0	10000	5	6	19000	3	5
5300	7	1	10100	5	7	19200	3	6
5600	6	0	10200	5	8	19400	3	7
5650	6	1	10300	5	A	19600	3	8
5700	6	2	10400	5	B	19800	3	9
5750	6	3	10500	5	C	20000	3	A
5800	6	4	10600	5	D	20200	3	B
5850	6	5	10700	5	E	20400	3	C
5900	6	6	10800	5	F	20600	3	D
5950	6	7	10900	D	6	20800	3	E
6000	6	8	11000	D	7	21000	3	F
6380	C	B	11100	D	8	21200	4	0
6400	C	C	11200	D	9	21400	4	1
6420	C	D	11300	D	A	21600	4	2
6440	C	E	11400	D	B	21800	4	3
6460	C	F	11500	D	C	22000	4	4
6480	D	0	14500	D	E	22200	4	5
6500	D	1	14600	D	F	22400	4	6
6520	D	2	14700	E	9	22600	4	7
6540	D	3	14800	E	A	22800	4	8
6560	D	4	14900	E	B	23000	4	9
6580	D	5	15000	E	C	23200	4	A
6660	6	A	15100	E	D	23400	4	B
7640	5	9	15200	E	E	23600	4	C

Table 7

INSTALLATION MANUAL**FUEL/AIRDATA COMPUTER**

Rev: J

P/N 962830A-1-S-5, 962830A-2-S-5, 962830A-3-S-5

Page: 10-4

Matrix 0 - Digital K Factor Settings
(Continued)

<u>PPG</u>	<u>SW1</u>	<u>SW2</u>	<u>PPG</u>	<u>SW1</u>	<u>SW2</u>	<u>PPG</u>	<u>SW1</u>	<u>SW2</u>
23800	4	D	29800	F	B	40000	9	4
24000	4	E	30000	F	C	40200	9	5
24200	4	F	30200	F	D	40400	9	6
24400	B	A	30400	F	E	40600	9	7
24600	B	B	33800	6	9	40800	9	D
24800	B	C	37000	B	9	41000	9	E
25000	B	D	37200	B	8	41200	9	F
25200	B	E	37400	B	7	41400	1	0
25400	B	F	37600	B	6	41600	1	1
25600	C	0	37800	B	5	41800	1	2
25800	C	1	38000	8	0	42000	1	3
26000	C	2	38100	8	1	42200	1	4
26200	C	4	38200	8	2	42400	1	5
26400	C	5	38300	8	3	42600	1	6
26600	C	6	38400	8	4	42800	1	7
26800	C	7	38500	8	5	43000	1	8
27000	C	8	38600	8	6	43200	1	9
27200	C	9	38700	8	7	43400	1	A
27400	C	A	38800	8	8	43600	1	B
27600	F	0	38900	8	9	43800	1	C
27800	F	1	39000	8	A	44000	1	D
28000	F	2	39100	8	B	44200	1	E
28200	F	3	39200	8	C	44400	1	F
28400	F	4	39300	8	D	44600	2	0
28600	F	5	39400	8	E	44800	2	1
28800	F	6	39500	8	F	45000	2	2
29000	F	7	39600	9	0	45200	2	3
29200	F	8	39700	9	1	45400	2	4
29400	F	9	39800	9	2	45600	2	5
29600	F	A	39900	9	3	45800	2	6

Table 7 continued

INSTALLATION MANUAL**FUEL/AIRDATA COMPUTER**

Rev: J

P/N 962830A-1-S-5, 962830A-2-S-5, 962830A-3-S-5

Page: 10-5

Matrix 0 - Digital K Factor Settings
(Continued)

<u>PPG</u>	<u>SW1</u>	<u>SW2</u>	<u>PPG</u>	<u>SW1</u>	<u>SW2</u>	<u>PPG</u>	<u>SW1</u>	<u>SW2</u>
46000	2	7	57700	A	7	93000	7	2
46200	2	8	57800	A	8	94000	7	3
46400	2	9	57900	A	9	95000	7	4
46600	2	A	58000	A	A	96000	7	5
46800	2	B	58100	A	B	97000	7	6
47000	2	C	58200	A	C	98000	7	7
47200	2	D	58300	A	D	99000	7	8
47400	2	E	58400	A	E	100000	7	9
47600	2	F	58500	A	F	101000	7	A
49000	9	8	58600	B	0	102000	7	B
49100	9	9	58700	B	1	103000	7	C
49200	9	A	58800	B	2	104000	7	D
49300	9	B	58900	B	3	105000	7	E
49400	9	C	60000	B	4	106000	7	F
49500	E	2	77000	0	0			
49700	E	3	78000	0	1			
50000	E	4	79000	0	2			
50200	E	5	80000	0	3			
50400	E	6	81000	0	4			
50500	E	7	82000	0	5			
50800	E	8	83000	0	6			
55500	C	3	84000	0	7			
55550	F	F	85000	0	8			
57000	A	0	86000	0	9			
57100	A	1	87000	0	A			
57200	A	2	88000	0	B			
57300	A	3	89000	0	C			
57400	A	4	90000	0	D			
57500	A	5	91000	0	E			
57600	A	6	92000	0	F			

Table 7 continued

INSTALLATION MANUAL**FUEL/AIRDATA COMPUTER**

Rev: J

P/N 962830A-1-S-5, 962830A-2-S-5, 962830A-3-S-5

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Matrix 1 - Alternate Digital K-Factor Setting Table (software version 93.03.69+)

PPG	SW1	SW2	PPG	SW1	SW2	PPG	SW1	SW2
200	1	0	1940	8	0	16100	4	E
400	1	1	2000	3	D	16300	4	F
440	1	2	2200	3	E	16500	5	0
490	1	3	2400	3	F	16600	5	1
510	1	4	2600	4	0	16800	5	2
520	1	5	2800	4	1	17000	5	3
530	1	6	3000	4	2	17200	5	4
540	1	7	3200	4	3	17400	5	5
550	1	8	3400	4	4	17600	5	6
560	1	9	3600	4	5	17800	5	7
570	1	A	3610	0	0	30600	6	3
580	1	B	3650	0	1	30800	6	4
590	1	C	3690	0	2	31000	6	5
600	1	D	3730	0	3	31200	6	6
610	1	E	3760	0	4	31400	6	7
620	1	F	3800	0	5	31600	6	8
630	2	0	3800	4	6	31800	6	9
640	2	1	3840	0	6	32000	6	A
650	2	2	3880	0	7	32200	6	B
660	2	3	3920	0	8	32400	6	C
670	2	4	3960	0	9	32600	6	D
680	2	5	4000	0	A	32800	6	E
690	2	6	4000	4	7	33000	6	F
700	2	7	4040	0	B	33200	7	0
710	2	8	4080	0	C	33400	7	1
720	2	9	4120	0	D	33600	7	2
730	2	A	4160	0	E	34000	7	3
740	2	B	4200	0	F	34200	7	4
750	2	C	4200	4	8	34400	7	5
760	2	D	4400	4	9	34600	7	6
770	2	E	4700	4	A	34800	7	7
780	2	F	11700	5	8	35000	7	8
790	3	0	11900	5	9	35200	7	9
800	3	1	12100	5	A	35400	7	A
810	3	2	12400	5	B	35600	7	B
820	3	3	12600	5	C	35800	7	C
840	3	4	12800	5	D	36000	7	D
850	3	5	13000	5	E	36400	7	E
880	3	6	13500	5	F	36800	7	F
900	3	7	14000	6	0			
1000	3	8	14200	6	1			
1200	3	9	14400	6	2			
1400	3	A	15500	4	B			
1600	3	B	15700	4	C			
1800	3	C	15900	4	D			

Table 8

INSTALLATION MANUAL
FUEL/AIRDATA COMPUTER
P/N 962830A-1-S-5, 962830A-2-S-5, 962830A-3-S-5

SECTION 11.0

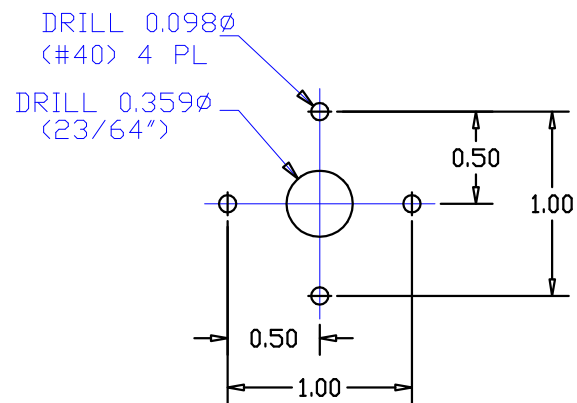
**INSTALLATION DRAWINGS AND
INSTALL KIT PARTS LISTS**

NOTES:

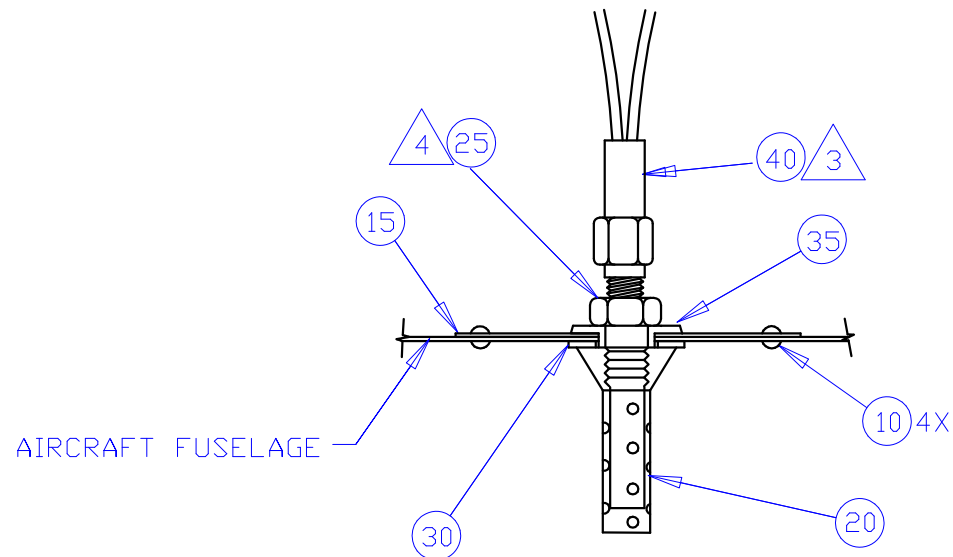
1. REFERENCE P/N 681201-1 DAT PROBE ASSEMBLY KIT
2. AVOID INSTALLING DAT PROBE IN OR NEAR:
PROP AIRSTREAM
ENGINE EXHAUST FLOW PATH
CABIN HEATERS EXHAUST FLOW PATH
TRANSMITTING ANTENNAS (DME, TXP, COMM.)
DARK PAINTED AREAS

△ 3 DAT PROBE, P/N 681201

△ 4 TORQUE NUT, FN 25, TO 1.3 IN-LBS (MAX)



DETAIL A
MOUNTING HOLE DETAIL



0501/032	C	2/14/05	PAB	WMP	UPDATED TITLE BLOCK & NOTE 4; ADDED "KIT" TO TITLE
0111/001	B	11/14/01	PAB	KCL	STANDARDIZED DWG FORMAT TO MIMIC DWG NO. 4012-177
0002/036	A	3/11/96	WMP	PG	CONVERT TO CAD; ADD NOTES 1 AND 3
N/A	-	4/8/91	DAP	SES	BASLINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

UNLESS OTHERWISE NOTED
DIMENSIONS ARE IN INCHES
TOLERANCES: ±0.01

FINISH: N/A
MATERIAL: N/A
SCALE: NONE

DRAWING DATE
4/8/91
DRAFTER
DAP
APPROVED
SES
FILE NAME
681201-1C.J.DWG
DIRECTORY
681201-1
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION,
DAT PROBE ASSEMBLY KIT

DRAWING NO. 4028-005
SIZE A
P/N681201-1
REV C

Report: 4032D
ECO Date: April 4, 2007
Rev: H
Sec.: IX
Page 1 of 1

ECO #: 0704/002
Release date: 4-6-2007
Approved: Z K

PARTS LIST

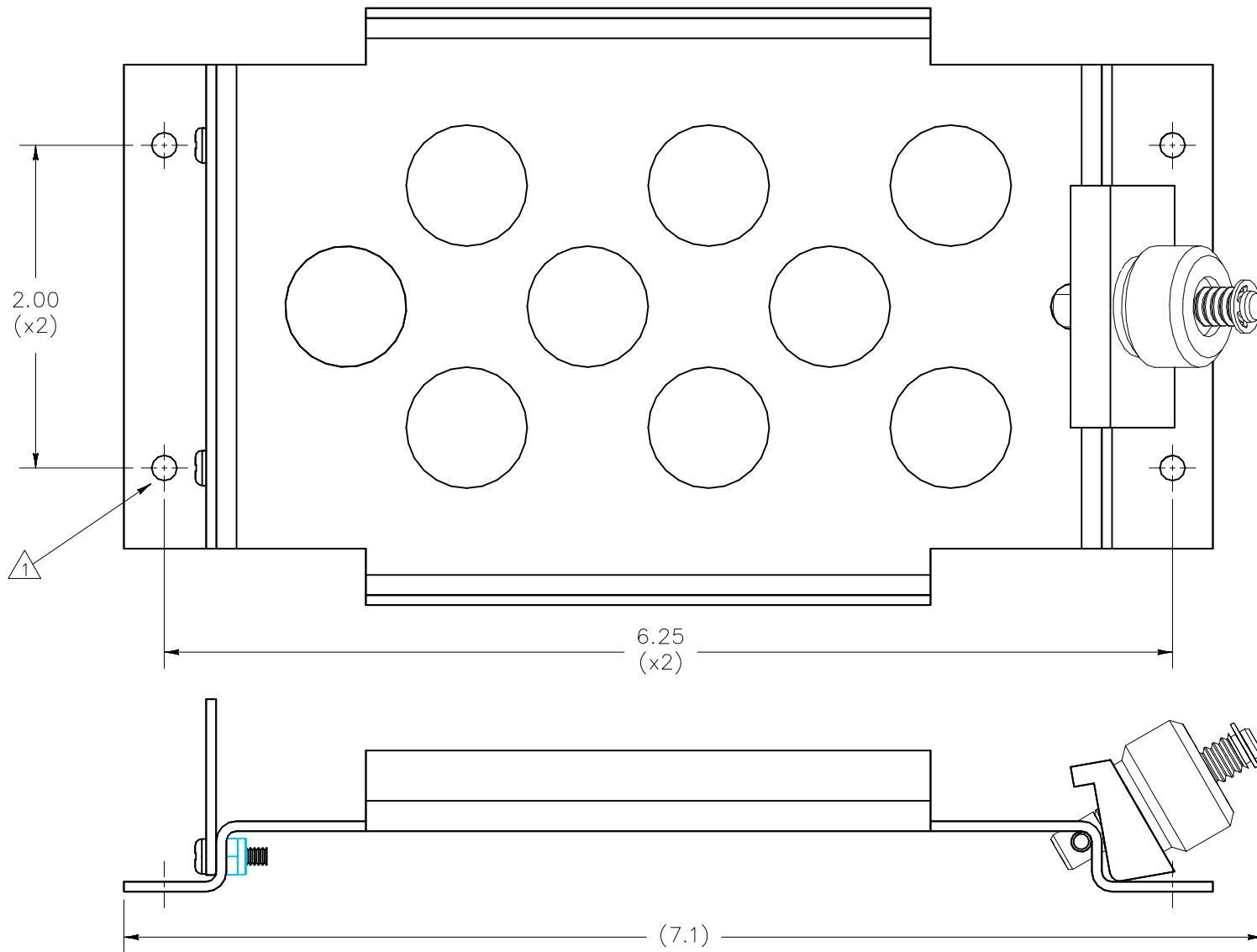
Part #: **681201-1**

Drawing #: 4028-005 Rev C

Description: **OAT PROBE ASSEMBLY KIT**

<u>FN</u>	<u>P/N</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>MFG.</u>	<u>MFG.#</u>	<u>DESIGNATION</u>	<u>COMMENTS</u>
10	511201	4	RIVET, AN4703-4 or MS20470AD3-4				
15	543216	1	OAT STIFFENER RING	SHA	4032-082		
20	670503	1	SHIELD, Temp Sensor Assy	SHA	4005-265		
25	670504	1	NUT, Temp Sensor	SHA	4005-266		
30	670505	1	WASHER, Flat OAT	SHA	4005-303		
35	670506	1	WASHER, Shoulder OAT	SHA	4005-304		
40	681201	1	OAT PROBE	SHA	4005-794		

10 items



NOTES:

1. USE #6 MOUNTING HARDWARE.
2. (DELETED).
3. USE THIS DRAWING TO INSTALL SHADIN P/N 612826B, 612826A, OR 612826 MOUNTING TRAY.

0507/053	C	8/1/05	PAB	ZK	CH. NOTE 3
0501/032	B	3/3/05	PAB	WMP	DELETED NOTE 2 & 10 DIMENSIONS; ADDED NOTE 3
0211/047	A	2/7/03	PAB	BAL	ADDED DIMENSIONS
9512/017	-	12/13/95	WMP	SES	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

3D CAD FILE AVAIL: YES

UNLESS OTHERWISE NOTED
DIMENSIONS ARE IN INCHES
TOLERANCES: X.X - ± 0.1
X/X $\pm 1/64$ X.XX - ± 0.01
/- $\pm 1'$ X.XXX - ± 0.005

FINISH: N/A

MATERIAL: N/A

SCALE: 1 : 1

DRAWING DATE
9/22/94
DRAFTER
PAB
APPROVED
SES

FILE NAME
4028-395CJ.DWG
DIRECTORY
4028

SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION, MOUNTING
TRAY, ADC2000

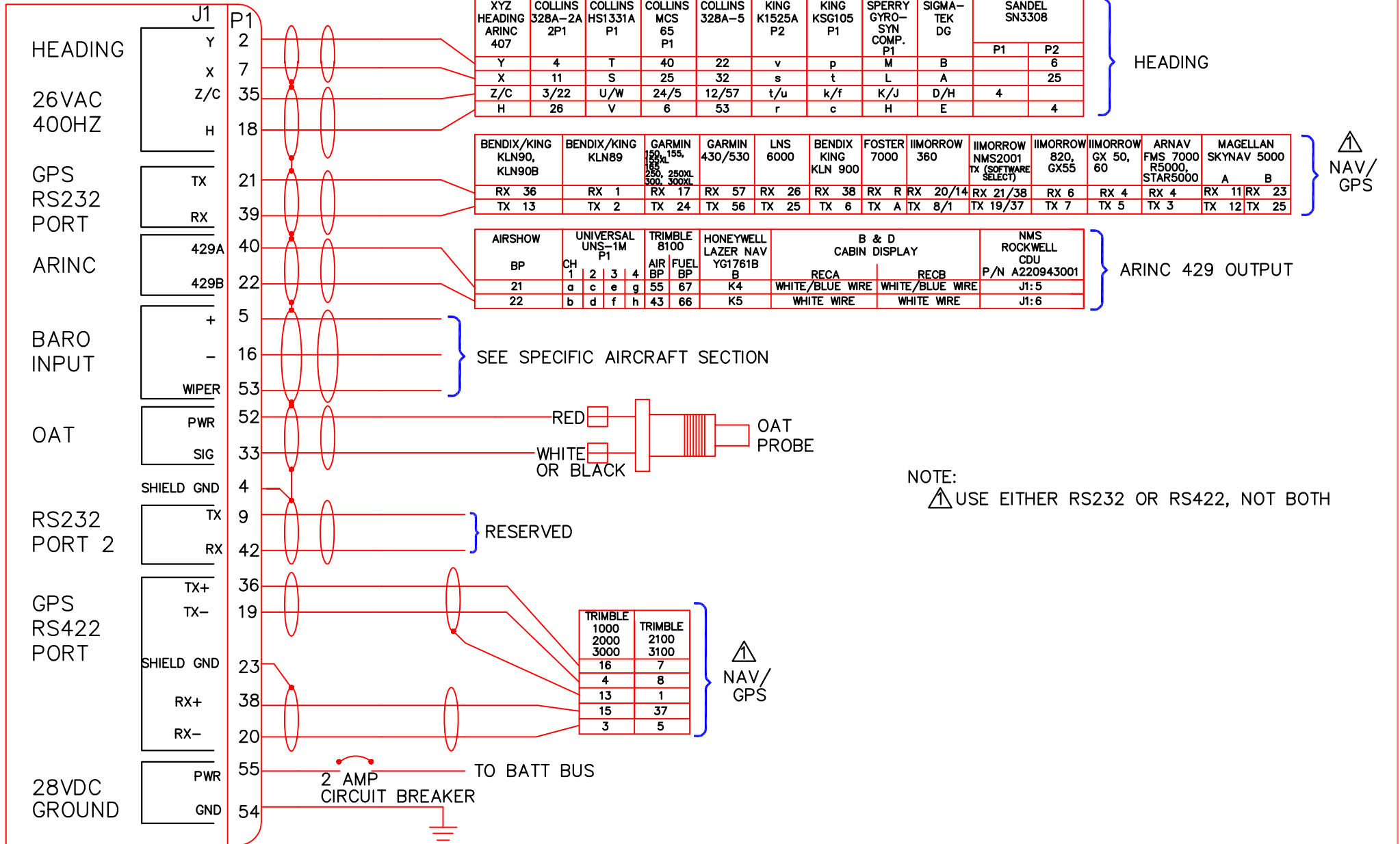
DRAWING NO.
4028-395

SIZE
A

P/N -----

REV
C

P/N 962830A-1, 962830A-2, 962830A-3
P/N 962830A-1-S-5, 962830A-2-S-5, 962830A-3-S-5

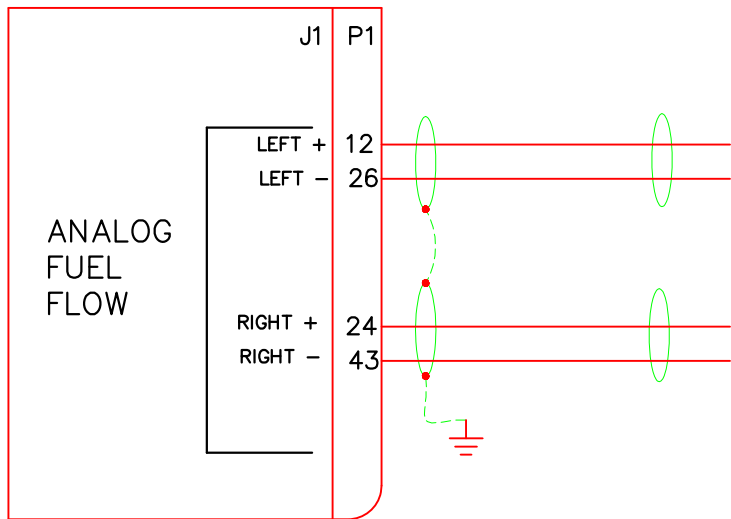


DRAWING DATE 9/14/98	SHADIN CO., INC. MINNEAPOLIS, MN 55426		
DRAFTER DLR	INSTALLATION WIRING, ADC 2000		
APPROVED KCL	TO COMM/PWR/BARO/ OAT/HEADING		
FILE NAME 4028A45BJ.DWG	DRAWING NO.	SIZE	REV
DIRECTORY 4028	4028-A45	A	B
SHEET 1 OF 1	P/N _____		

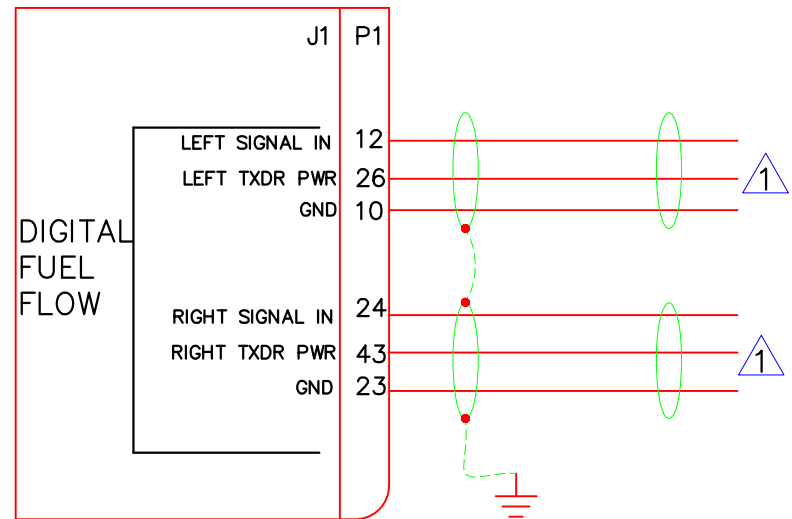
0009/001	B	9/12/00	PAB	EDJ	ADD GARMIN 430/530 GPS, SANDEL SN3308
9901/015	A	1/20/99	DMD	KCL	ADD P/NS 962830A-1-S-5, -2-S-5, -3-S-5
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

DO NOT SCALE DRAWING

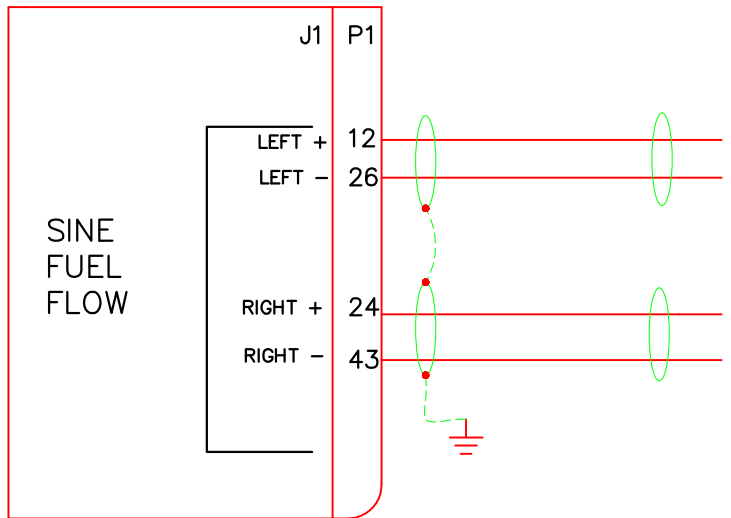
P/N 962830A-3
P/N 962830A-3-S-5



P/N 962830A-1
P/N 962830A-1-S-5



P/N 962830A-2
P/N 962830A-2-S-5



NOTES:

- DO NOT CONNECT J1/P1:26 OR J1/P1:43 WHEN INTERFACING WITH EXISTING FUEL FLOW SYSTEM.
- ALL ADC 2000 MS CONNECTOR OPTIONS SHARE THE SAME PINS FOR FUEL FLOW.

0211/047	B	3/11/03	PAB	BAL	ADDED NOTE 2 & GNDS; EDITED NOTE 1; DEL PINS 10 & 23 FROM ANALOG AND SINE FUEL FLOW
9901/015	A	1/20/99	DMD	KCL	ADD P/NS 962830A-1-S-5, -2-S-5, -3-S-5
9809/013	-	9/25/98	DLR	KCL	BASLINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

DO NOT SCALE DRAWING

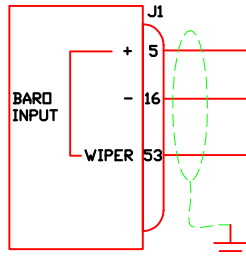
DRAWING DATE 9/25/98
DRAFTER DLR
APPROVED KCL
FILE NAME 4028-A46BJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, ADC 2000
MS CONN, DIGITAL, SINE, AND
DC FUEL FLOW

DRAWING NO. 4028-A46	SIZE A	P/N _____	REV B
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P/N 962830A-1
P/N 962830A-2
P/N 962830A-3
P/N 962830A-1-S-5
P/N 962830A-2-S-5
P/N 962830A-3-S-5



IDC 44929-935	BENDIX/KING KEA130A, 346 -08 TO -11		IDC 28007-427, -429	IDC 28704-A1001, -A2001, -A4001, -B4001, -C4001, -D1001, -D2001, -D4001, -E2101, -F2101, -495	IDC 28711-621, -622, -623, -624	IDC 28711-500, -600 SERIES	IDC 28007-431, -433	SPERRY BA141	IDC 28711-065, -066	AEROSONIC 10420-11968E	IDC KTS B45152 10 410
	130A	346									
W	J2A	S	a	d	T	T	a	X	g	L	V
U	J2C	Z	c	f	V	V	c	Z	J	b	U
V	J2B	Y	b	e	U	U	b	Y	h	J	w

NOTES:

- △ EXCITATION VOLTAGE USUALLY SUPPLIED BY AIRCRAFT HARNESS (5-12 VDC), J1:5 TO EXCITATION, J1:16 TO GND.
- △ EXCITATION VOLTAGE MAY BE SUPPLIED BY AIRCRAFT HARNESS (5 VDC), J1:5 TO EXCITATION, J1:16 TO GND.
- △ EXCITATION VOLTAGE SUPPLIED BY AIRCRAFT HARNESS (-10VDC) J1:16 TO EXCITATION, J1:5 TO GND.
4. J1:52 (+5VDC DAT POWER) MAY BE USED FOR EXCITATION.
5. MAXIMUM DIFFERENTIAL INPUT VOLTAGE BETWEEN BARO (+) AND BARO (-) IS ±12VDC.

0211/047	D	3/11/03	PAB	BAL	DEL PIN 4; ADDED GND, IDC 28007-427 & -431
0010/031	C	10/26/00	PAB	KCL	KEA 346 WAS "J2A, J2C, & J2B" RESPECTIVELY; ADD IDC P/N "KTS B45152 10 410"
0007/031	B	7/19/00	PAB	RH	"Y" IN SPERRY LABEL WAS "V"
9901/015	A	1/20/99	DMD	KCL	ADD P/NS 962830A-1-S-5, -2-S-5, -3-S-5
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

DRAWING DATE 9/14/98
DRAFTER DLR
APPROVED KCL
FILE NAME 4028-A47DJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

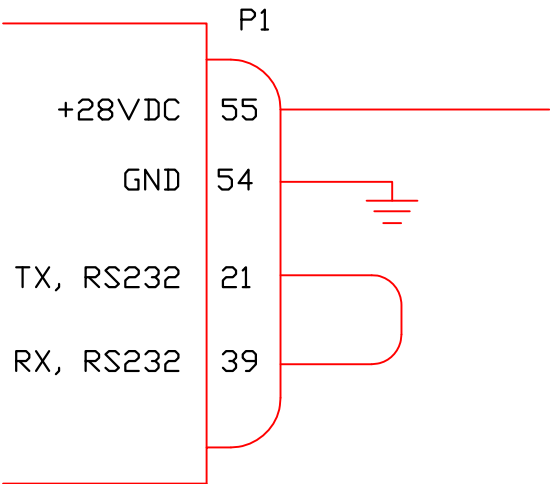
INSTALLATION WIRING, ADC 2000,
MS CONN, TO ALTIMETER BARO POT

DRAWING NO. 4028-A47 SIZE A P/N _____ REV D

SCALE: NONE

NOTE:

- 1. CONSULT INSTALLATION MANUAL FOR F/ADC PROGRAMMING INSTRUCTIONS.
- 2. MATING CONNECTOR: MS 24266R22B55S SHADIN PN 233272 OR EQUIVALENT



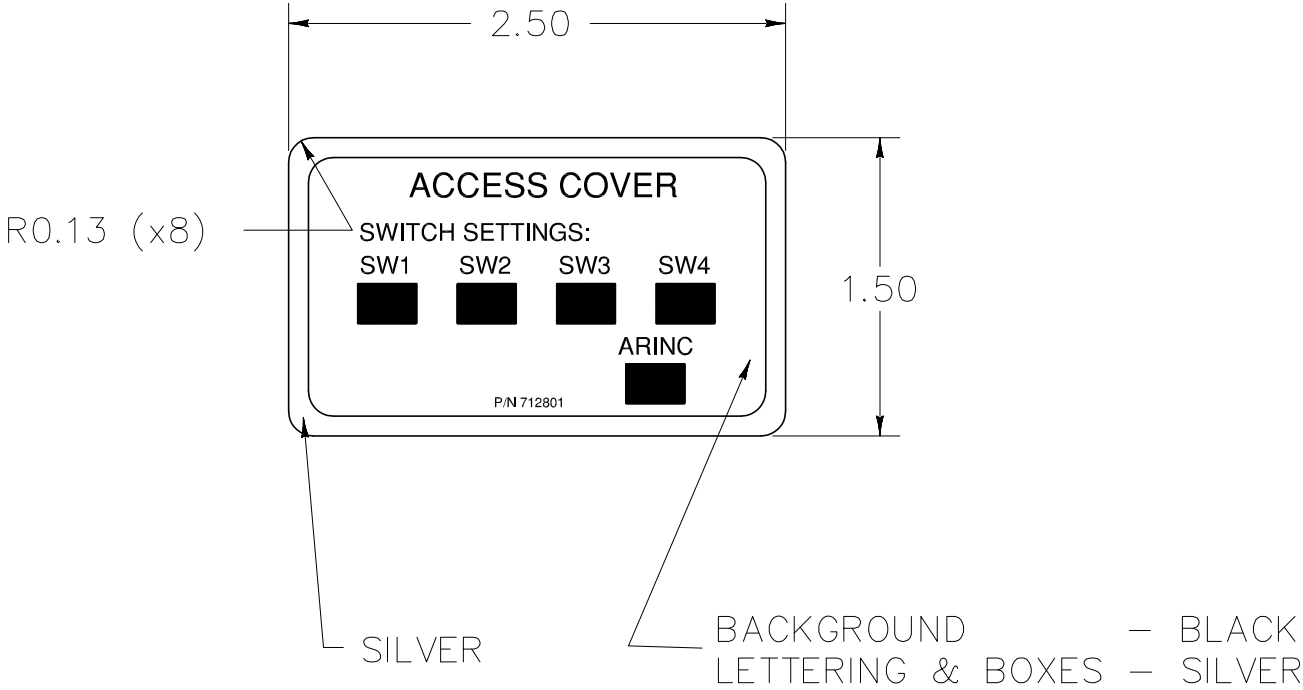
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MANUFACTURING NOTES:

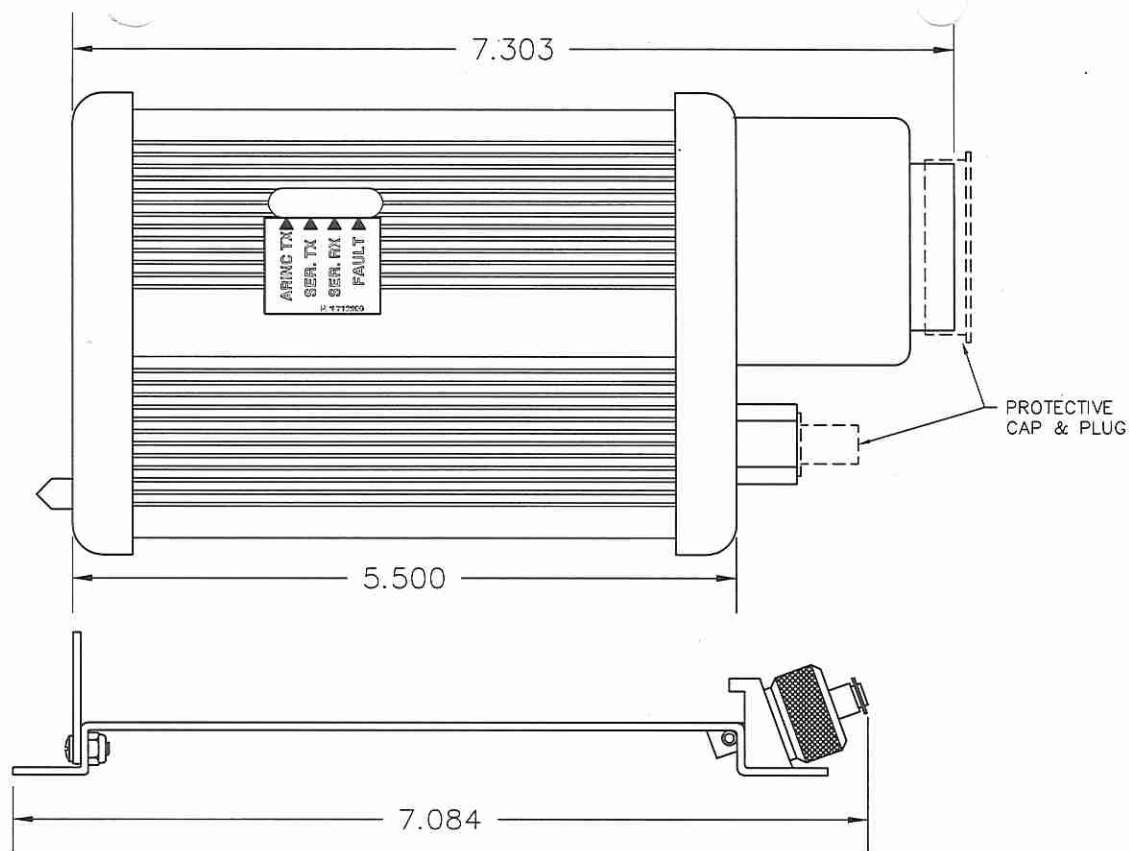
1. MATCH FONT STYLE AND SIZES. ALL OTHER DIMENSIONS AS SHOWN.
2. SWITCH SETTING BOX DIMENSIONS ARE AS FOLLOWS:
WIDTH = .295
HEIGHT = .200

APPLICATION NOTES:

- A. IF CONFIGURATION IS NECESSARY PRINT SWITCH SETTINGS IN SPACE PROVIDED. PRINT "N/A" WHEN SWITCHES ARE NOT USED.
(MANUFACTURER IGNORE)



UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES TOLERANCES: X.X - ±0.1 X.XX - ±0.01 X.XXX - ±0.005 FINISH: N/A MATERIAL: 3M 7983 SCALE: FULL						DRAWING DATE 12/2/98		SHADIN MINNEAPOLIS, MN 55426 LABEL, ADC200/2000 ACCESS COVER					
						DRAFTER PAB							
						APPROVED KCL							
						FILE NAME 712801A.DWG		DRAWING NO.		SIZE A	P/N712801		REV A
						DIRECTORY 71XXXX		4028-A80					
0501/032	A	2/14/05	PAB	WMP	UPDATED TITLE BLOCK								
9812/002	-	12/3/98	PAB	KCL	BASELINE RELEASE								
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION								



J1 PINOUT

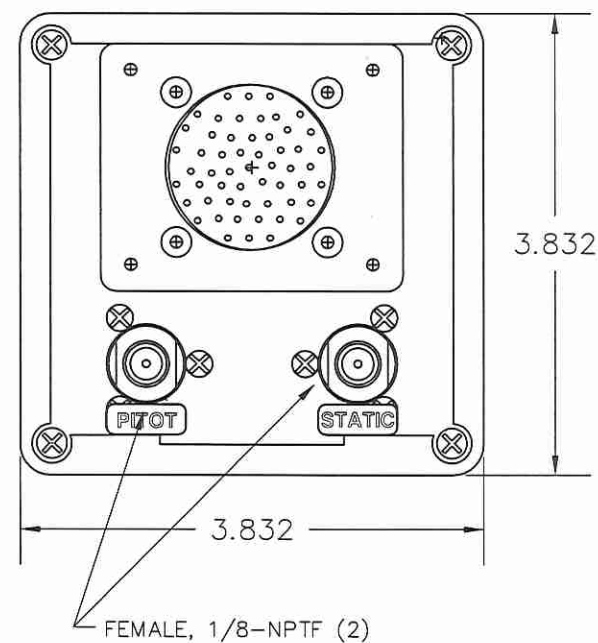
1. N/C
2. HEADING Y-SYNCHRO INPUT
3. N/C
4. GROUND
5. BARO INPUT +
6. N/C
7. HEADING X-SYNCHRO INPUT
8. N/C
9. N/C
10. GROUND
11. N/C
12. LEFT DIGITAL FF
13. GRAY CODE A2
14. GRAY CODE A4
15. GRAY CODE B1
16. BARO INPUT-
17. N/C
18. HEADING HOT 26 VAC
19. TX, RS422 (-)

J1 PINOUT

20. RX, RS422 (-)
21. TX, RS232
22. TX, ARINC 429B
23. GROUND
24. RIGHT DIGITAL FF
25. N/C
26. LEFT TXD POWER
27. GRAY CODE A1
28. GRAY CODE B4
29. GRAY CODE C1
30. GRAY CODE C2
31. GRAY CODE D4
32. N/C
33. OAT SIGNAL
34. N/C
35. HEADING COMMON 26 VAC
36. TX, RS422 (+)
37. N/C
38. RX, RS422 (+)

J1 PINOUT

39. RX, RS232
40. TX, ARINC 429A
41. N/C
42. N/C
43. RIGHT TXD POWER
44. N/C
45. N/C
46. GRAY CODE B2
47. N/C
48. GRAY CODE C4
49. N/C
50. GROUND
51. N/C
52. OAT POWER
53. BARO WPER
54. GROUND
55. +28 VDC



MATING CONNECTORS:

SUPPLIED AS PART OF INSTALLATION KIT.

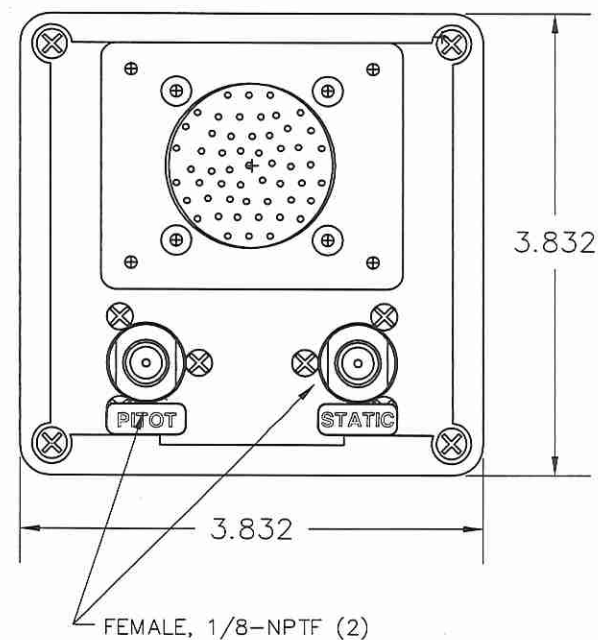
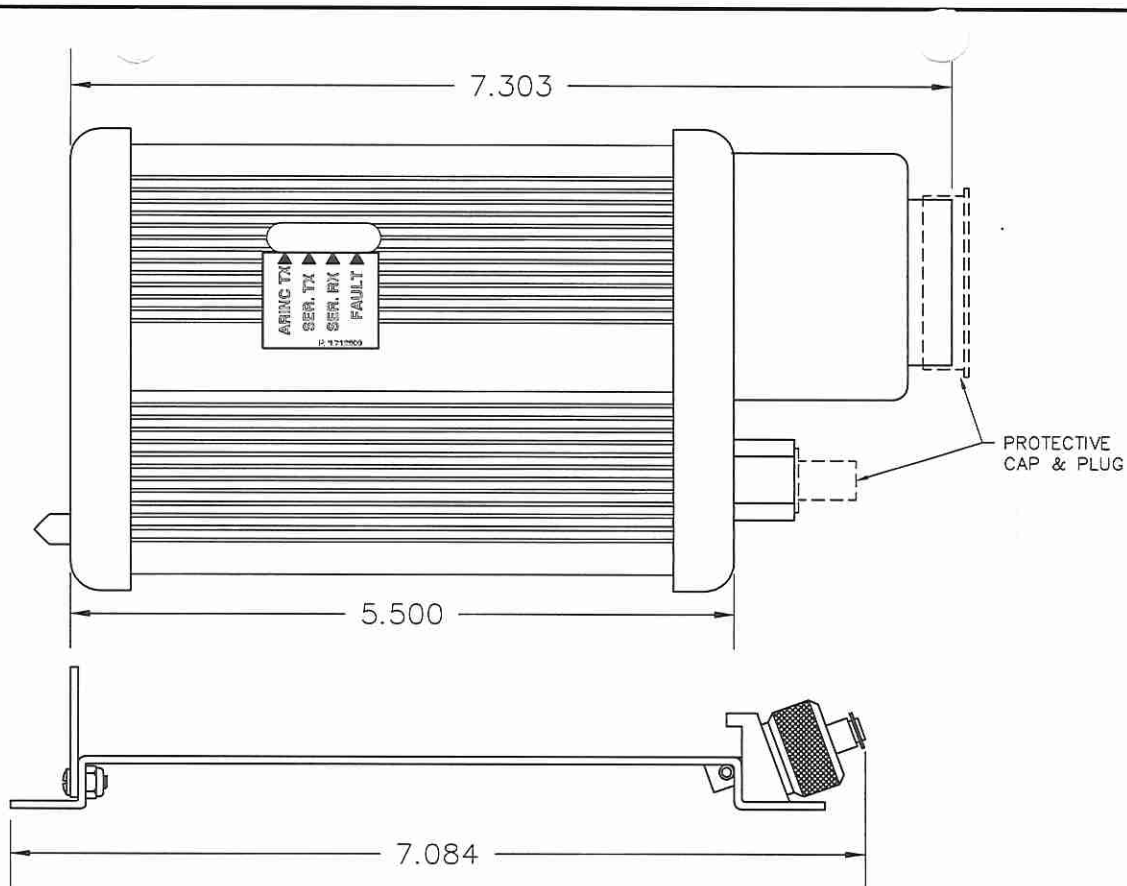
P1

CONN. - MS24266R22B55S (P/N 233272)

CLAMP - MS27291-6 (P/N 233273)

0503/052	A	5/29/05	PAB	24	CORRECTED PITOT/STATIC LABEL LOCATIONS
9812/020	-	12/16/98	DMD	PAB	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

DRAWING DATE 12/13/98	SHADIN MINNEAPOLIS, MN 55426		
DRAFTER DMD	INSTALLATION, ADC2000, MS CONN, DIG FF, SHADIN OAT, GRAY CODE		
APPROVED KCL			
FILE NAME 962830A1S5AJ.DWG			
DIRECTORY 962830A-X-S-5	DRAWING NO. 4028-A83	SIZE A	REV A
SHEET 1 OF 1	P/N962830A-1-S-5		



- J1 PINOUT
1. N/C
 2. HEADING Y-SYNCHRO INPUT
 3. N/C
 4. GROUND
 5. BARO INPUT +
 6. N/C
 7. HEADING X-SYNCHRO INPUT
 8. N/C
 9. N/C
 10. GROUND
 11. N/C
 12. LEFT FF SIGNAL +
 13. GRAY CODE A2
 14. GRAY CODE A4
 15. GRAY CODE B1
 16. BARO INPUT-
 17. N/C
 18. HEADING HOT 26 VAC
 19. TX, RS422 (-)

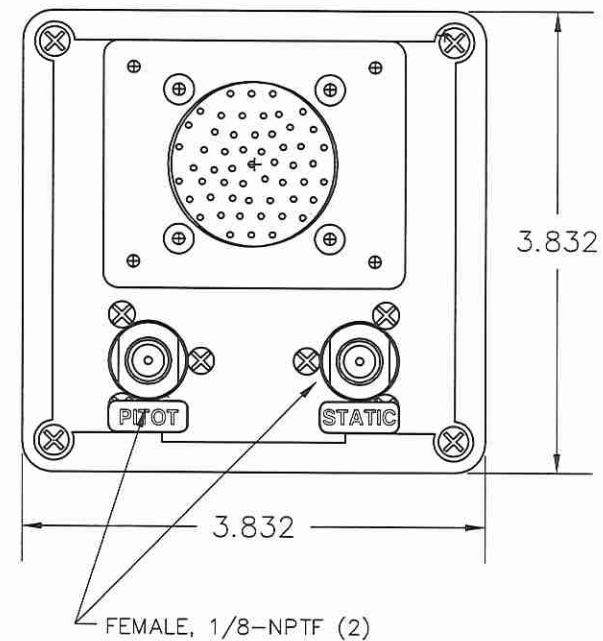
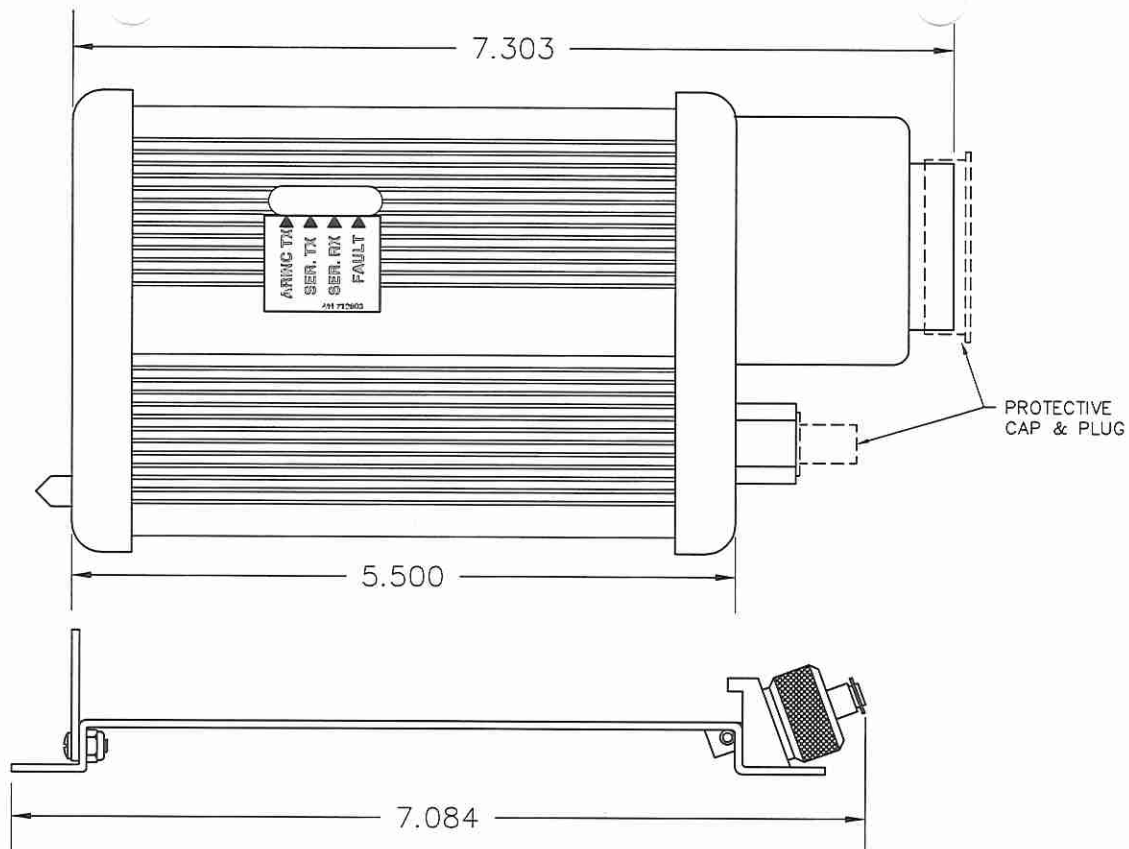
- J1 PINOUT
20. RX, RS422 (-)
 21. TX, RS232
 22. TX, ARINC 429B
 23. GROUND
 24. RIGHT FF SIGNAL +
 25. N/C
 26. LEFT FF SIGNAL -
 27. GRAY CODE A1
 28. GRAY CODE B4
 29. GRAY CODE C1
 30. GRAY CODE C2
 31. GRAY CODE D4
 32. N/C
 33. OAT SIGNAL
 34. N/C
 35. HEADING COMMON 26 VAC
 36. TX, RS422 (+)
 37. N/C
 38. RX, RS422 (+)

- J1 PINOUT
39. RX, RS232
 40. TX, ARINC 429A
 41. N/C
 42. N/C
 43. RIGHT FF SIGNAL -
 44. N/C
 45. N/C
 46. GRAY CODE B2
 47. N/C
 48. GRAY CODE C4
 49. N/C
 50. GROUND
 51. N/C
 52. OAT POWER
 53. BARO WIPER
 54. GROUND
 55. +28 VDC

MATING CONNECTORS:
 SUPPLIED AS PART OF INSTALLATION KIT.
 P1
 CONN. - MS24266R22B55S (P/N 233272)
 CLAMP - MS27291-6 (P/N 233273)

0503/052	A	3/29/05	PAB	24	CORRECTED PITOT/STATIC LABEL LOCATIONS
9812/020	-	12/16/98	DMD	PAB	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

DRAWING DATE 12/13/98	SHADIN MINNEAPOLIS, MN 55426	
DRAWN DMD	INSTALLATION, ADC2000, MS CONN, SINE, FF, SHADIN OAT, GRAY CODE	
APPROVED KCL		
FILE NAME 962830A255AJ.DWG	DRAWING NO.	SIZE
DIRECTORY 962830A-X-S-5	4028-A84	A
SHEET 1 OF 1	P/N 962830A-2-S-5	REV A



J1 PINOUT

1. N/C
2. HEADING Y-SYNCHRO INPUT
3. N/C
4. GROUND
5. BARO INPUT +
6. N/C
7. HEADING X-SYNCHRO INPUT
8. N/C
9. N/C
10. GROUND
11. N/C
12. LEFT FF SIGNAL +
13. GRAY CODE A2
14. GRAY CODE A4
15. GRAY CODE B1
16. BARO INPUT-
17. N/C
18. HEADING HOT 26 VAC
19. TX, RS422 (-)

J1 PINOUT

20. RX, RS422 (-)
21. TX, RS232
22. TX, ARINC 429B
23. GROUND
24. RIGHT FF SIGNAL +
25. N/C
26. LEFT FF SIGNAL -
27. GRAY CODE A1
28. GRAY CODE B4
29. GRAY CODE C1
30. GRAY CODE C2
31. GRAY CODE D4
32. N/C
33. OAT SIGNAL
34. N/C
35. HEADING COMMON 26 VAC
36. TX, RS422 (+)
37. N/C
38. RX, RS422 (+)

J1 PINOUT

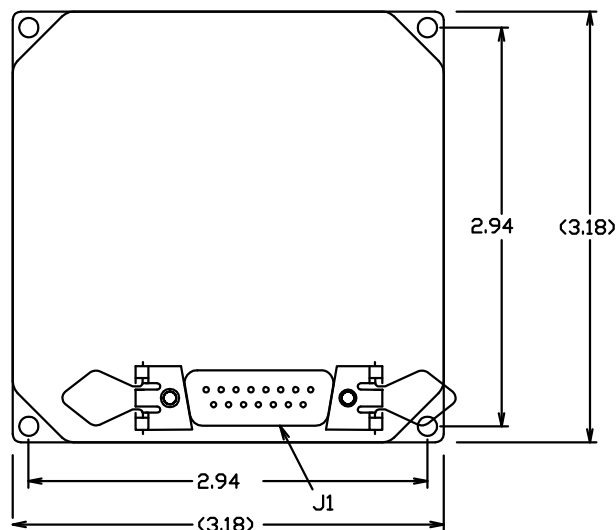
39. RX, RS232
40. TX, ARINC 429A
41. N/C
42. N/C
43. RIGHT FF SIGNAL -
44. N/C
45. N/C
46. GRAY CODE B2
47. N/C
48. GRAY CODE C4
49. N/C
50. GROUND
51. N/C
52. OAT POWER
53. BARO WIPER
54. GROUND
55. +28 VDC

MATING CONNECTORS:

SUPPLIED AS PART OF INSTALLATION KIT.
P1
CONN. - MS24266R22B55S (P/N 233272)
CLAMP - MS27291-6 (P/N 233273)

0503/052	A	3/29/03	PAB	ILK	CORRECTED PITOT/STATIC LABEL LOCATIONS
9812/020	-	12/16/98	DMD	PAB	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

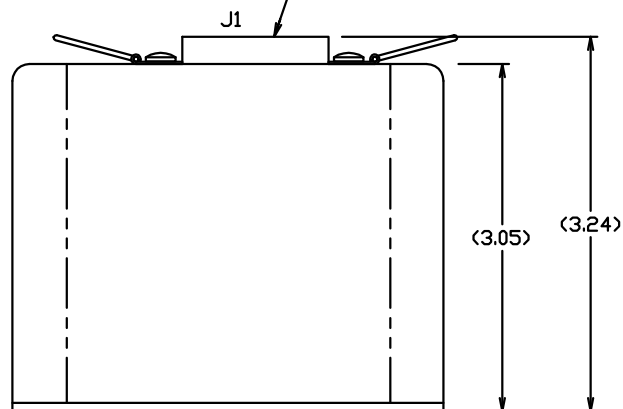
DRAWING DATE 12/13/98	SHADIN MINNEAPOLIS, MN 55426				
DRAFTER DMD	INSTALLATION, ADC2000, MS CONN, DC, FF, SHADIN OAT, GRAY CODE				
APPROVED KCL					
FILE NAME 962830A355AJ.DWG					
DIRECTORY 962830A-X-S-5	DRAWING NO. 4028-A85	SIZE A	P/N	N962830A-3-S-5	REV A
SHEET 1 OF 1					



MATING CONNECTOR:

SHADIN P/N 230036, 17-DA15S

SHADIN P/N 230038, HOOD: # DA-24658 15 PIN MALE CONNECTOR



SELECTOR TABLE

RS232 RX : TIE J1:7 TO J1:1
RS422 RX : DEFAULT (NO JUMPER REQ'D)
SINGLE ENGINE : J1:7 TO J1:2
TWIN ENGINE : DEFAULT (NO JUMPER REQ'D)

WEIGHT: 8 oz.

POWER CONSUMPTION:
210 ma. @ 28v DC

1. THE CONVERTER CAN BE MOUNTED IN ANY ORIENTATION
2. 4" SPACING IS REQUIRED ABOVE CONNECTOR
3. NO COOLING IS REQUIRED
4. THE CONVERTER CAN BE INSTALLED IN A PRESSURIZED OR NON-PRESSURIZED AREA, PROVIDING TEMPERATURE DOES NOT DROP BELOW -20°C
5. 1 AMP CIRCUIT BREAKER IS REQUIRED
6. NO SHOCK MOUNT REQUIRED
7. USE HARDWARE PROVIDED IN INSTALL KIT P/N IK9337 TO ASSEMBLE MATING CONNECTOR.

CONNECTOR KEY

PIN	FUNCTION	
1	RS232 OR RS422 SELECT	SEE SELECTOR TABLE
2	TWIN OR SINGLE ENGINE SELECT	
3	N.C.	
4	N.C.	
5	N.C.	
6	N.C.	SEE SELECTOR TABLE
7	SELECT POWER (OUTPUT)	
8	+14 TO 28 V DC POWER IN	
9	N.C.	
10	SIGNAL GROUND	
11	RS422 RX+	FROM SHADIN ADC (USE RS-232 OR RS-422, NOT BOTH)
12	RS422 RX-	
13	RS232 RX	
14	RS232 TX, TO ARGUS 5000/7000	
15	POWER GND	

0501/032	B	2/14/05	PAB	WMP	UPDATED TITLE BLOCK; "CONVERTER" WAS "TXMTR"
9801/025	A	10/12/98	DMD	PG	ADDED NOTE 7, CORRECTED HEIGHT, PROVIDED SHADIN P/N FOR MATING CONN.
9707/023	-	7/15/97	PAB	PG	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES TOLERANCES: X.X = ±0.1 X.XX = ±0.01		DRAWING DATE 7/14/97	SHADIN MINNEAPOLIS, MN 55426	
FINISH: N/A		DRAFTER PAB	INSTALLATION, SERIAL TO ARGUS 5000/7000 CONVERTER	
MATERIAL: N/A		APPROVED PG		
SCALE: NONE		FILE NAME 937000-03BJ.DWG	DRAWING NO.	SIZE
		DIRECTORY 937000-03	4070-005	A
		SHEET 1 OF 1	P/N 937000-03	REV B

Report: 4028B
ECO Date: April 9, 2007
Rev: H
Sec.: IX
Page 1 of 1

Shadin Avionics
File Name: Copy of IK9630A-1HP.doc
DIRECTORY: INSTALL KITS

ECO #: 0704/003
Release Date: 4-9-07
Approved: ZK

PARTS LIST

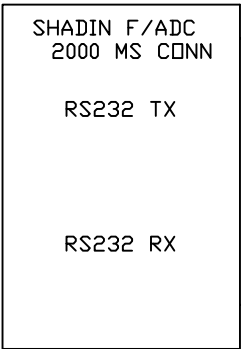
Part #: **IK9630A-1**
Description: **INSTALL KIT, ADC2000 MS CONN/NO OAT**

Drawing #: N/A

<u>FN</u>	<u>P/N</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>MFG.</u>	<u>MFG.#</u>	<u>DESIGNATION</u>	<u>COMMENTS</u>
5	233272	1	CONN, 55 Pin, St Plug, Socket, Blk	APH	MS24266R22B55SN		
10	233273	1	CONN, Clamp, Straight, #22, Blk	APH	MS27291-6		
15	612826A	1	TRAY, Mounting, ADC-2000	SHA	4028-T54		
15	612826	Alt	MOUNTING TRAY ASSEMBLY	SHA	4028-437		
17	753217	1	Thermal Label, 4"x 1"	ULI	S-8601		

4 items

GARMIN



GARMIN 430	GARMIN 530
P4001	P5001
57	57
56	56

SHADIN FUEL FLOW METER			
DIGIFLO-L	DIGIFLO-L	MINIFLO-L	MICROFLO-L
P/N 91053XT	P/N 91053XP	P/N 91204XT-D	91204XT-38-D
J	5	6	6
H	12	9	9

NOTES:

1. CONFIGURE SHADIN F/ADC 2000 I/O FOR FLOWMETER/GARMIN G.
2. CONFIGURE SHADIN FUEL FLOW METER I/O FOR ON/AIRDATA.
3. CONFIGURE GARMIN 430/530 I/O FOR CHANNEL 1 TO SHADIN FADC/AVIATION.
4. MINIMUM SOFTWARE LEVEL

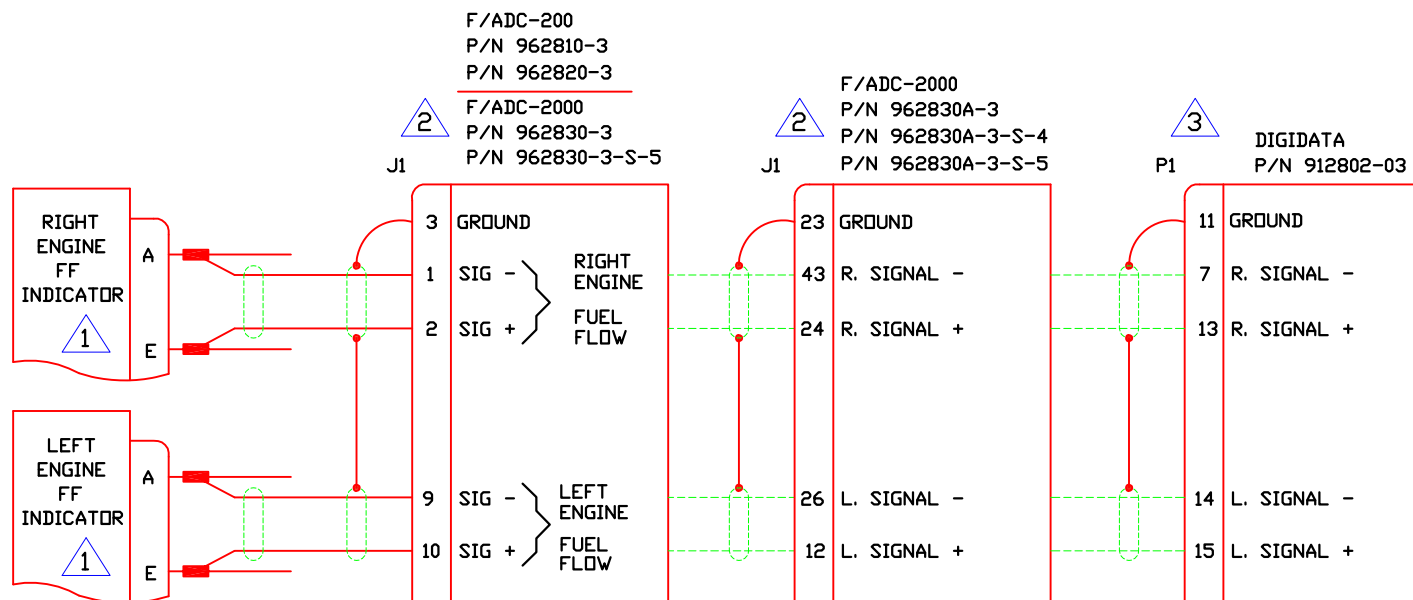
ADC 2000	93.XX.77
GARMIN 430	2.17
GARMIN 530	2.02
DIGIFLO-L	60.10.84
MINIFLO-L	60.01.83
MICROFLO-L	60.08.86
5. FUEL FLOW TRANSDUCER SIGNAL(S) ARE CONNECTED TO THE SHADIN FUEL FLOW METER. NO FUEL SIGNAL CONNECTED TO THE ADC.

1104/005	D	4/29/11	HWL	ZK	CHANGED SOFTWARE LEVEL IN NOTE 4
0504/005	C	4/12/05	PAB	ZK	CORRECTED NOTE 4
0211/047	B	3/11/03	PAB	BAL	CONVERTED TABLE TO BECOME NOTE 4; ADDED *-L MODELS TO TABLE; ADDED NOTE 5
0103/012	A	3/19/01	PAB	EDJ	REMOVED SOFTWARE VERSION AND ADDED *-L* TO FF METER BLOCK
0009/002	-	9/5/00	PAB	EDJ	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

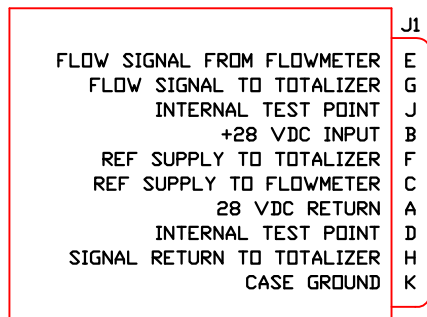
DRAWING DATE 9/4/00
DRAFTER PAB
APPROVED EDJ
FILE NAME 4028-B98D.DWG
DIRECTORY 4028
SHEET 1 OF 1


MINNEAPOLIS, MN 55426
DRAWING NO. 4028-B98
SIZE A

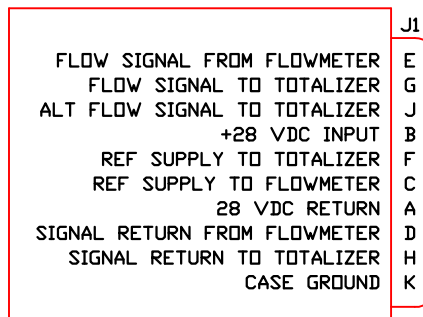
INSTALLATION WIRING, F/ADC2000, MS CONN SHADIN FUEL FLOW INDICATORS TO GARMIN 430/530	
P/N	REV D



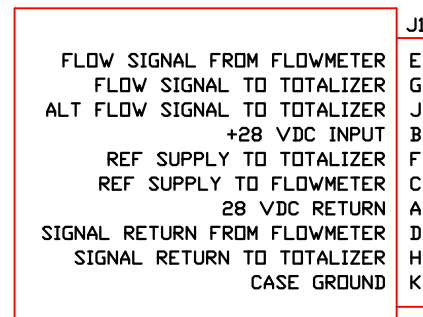
RAGEN P/N 3265013-0601



RAGEN P/N 3265013-0801



RAGEN P/N 3265013-1201



NOTES:

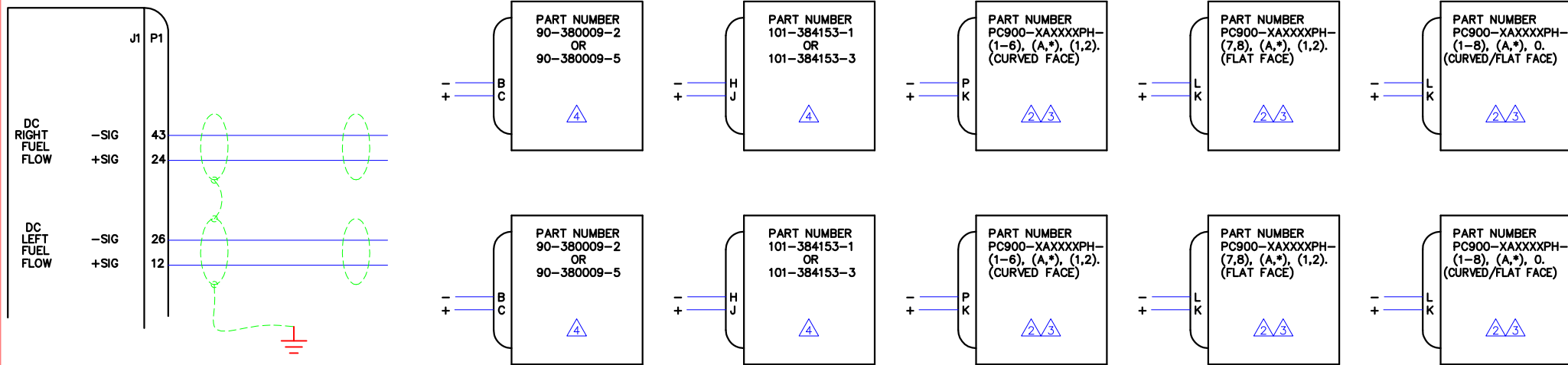
- FOR AIRCRAFT WITH THE FOLLOWING INDICATOR/TRANSMITTERS; SEE TABLE FOR INDICATOR WIRING.
INDICATOR PART NO. (RAGEN) 3265013-0601 w/TRANSMITTER PART NO. (RAGEN) 3268011-0101.
INDICATOR PART NO. (RAGEN) 3265013-0801 + 3265013-1201 w/TRANSMITTER PART NO. (RAGEN) TFF-2905-9 OR PIPER P/N 489-487.
- SET AIRDATA SWITCHES AS FOLLOWS; SW1 = 1, SW2 = 1, SW3 = 0, SW4 = 0.
- PROGRAM DIGIDATA FOR LEFT K-FACTOR = RIGHT K-FACTOR = 46,160
PPG, LEFT OFFSET = RIGHT OFFSET = 0.

DRAWING DATE 8/7/98	SHADIN MINNEAPOLIS, MN 55426	
DRAFTER DMD	INSTALLATION WIRING, F/ADC-200, 2000	
APPROVED KCL	OR DIGIDATA WITH DC FF PIPER	
FILE NAME 4028-A29CJ.DWG	CHEYENNE PA31T	
DIRECTORY 4028	DRAWING NO. 4028-A29	SIZE A
SHEET 1 OF 1	P/N	REV C

0501/006	C	1/17/05	PAB	ZK	ADD IND 3265013-0801, & RAGEN P/N TABLES
0001/016	B	1/31/00	LJM	EDJ	ADD IND 3265013-1201, XMTR TFF-2905-9 TO NOTE 1.
9901/015	A	1/20/99	DMD	KCL	ADD P/NS 962830A-3-S-5, 962830-3-S-5
9808/012	-	8/7/98	DMD	KCL	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

NOT TO SCALE

ADC 2000 MS CONNECTOR



NOTES:

- 1 THIS SCHEMATIC IS USED FOR KNOWN BEECH KING AIR MODELS. SOME INDICATORS ARE NOT LISTED BUT MAY BE INTERFACED. CALL SHADIN TECH SUPPORT IF YOU DO NOT SEE THE PART NUMBER OF YOUR INDICATOR LISTED. INDICATOR PART NUMBERS POSSESSING A PREFIX OF "PC900-" ARE XOTECHNOLOGIES TYPE INDICATORS. THE LAST DIGIT REPRESENTS THE INDICATOR AUXILIARY RATE OUTPUT (1 NUMBER). SHADIN SUPPORTS THE "-1" MODELS ONLY.
- 2 XOTECHNOLOGIES INDICATOR P/N PC900-XAXXXXPH-XX0 IS NOT SUPPORTED. THE AUXILIARY RATE OUTPUT OF THIS UNIT IS 0-1 mA. INDICATOR P/NS THAT END WITH A "-XX2" WILL ENCOUNTER A DEGRADATION IN PERFORMANCE DUE TO THE AUX. RATE OUTPUT OF 0-5.333 VDC. INDICATOR P/NS ENDING WITH AN "*" ARE UNKNOWN.
- 3 THE FOLLOWING XOTECHNOLOGIES INDICATOR P/NS POSSESS A K-FACTOR KNOWN TO SHADIN:

ADC200/2000 SWITCH SETTINGS

PART NUMBER	K-FACTOR/OFFSET	AUX RATE OUTPUT	SW1	SW2	SW3	SW4
PC900-1A0600-XX1	38,460/0	0-5 VDC	0	4	0	0
PC900-1A0750-XX1	30,770/0	0-5 VDC	0	5	0	0
PC900-1A0800-XX1	28,850/0	0-5 VDC	0	6	0	0

- 4 THE FOLLOWING BEECH INDICATOR P/NS POSSESS A K-FACTOR KNOWN TO SHADIN:

ADC200/2000 SWITCH SETTINGS

PART NUMBER	K-FACTOR/OFFSET	SW1	SW2	SW3	SW4
90-380009-2	77,000/416	0	0	0	1
90-380009-5	77,000/416	0	0	0	1
101-384153-1	30,777/0	0	5	0	0
101-384153-3	30,777/0	0	5	0	0

- 5 THE J1 CONNECTOR OF THE ADC 200 AND ADC 2000 HAVE THE SAME FUEL FLOW PIN LOCATIONS.
- 6 THE PIN LOCATION OF THE ADC 2000 W/MS CONNECTOR OPTION IS THE SAME FOR ALL MODELS POSSESSING THE MS CONNECTOR OPTION.
7. USE SHIELDED WIRE BUT GROUND ONLY ON ADC UNIT END TO PREVENT A GROUND LOOP.

DRAWING DATE
09/14/98

DRAFTER
DLR

APPROVED
KCL

FILE NAME
4028-A48BJ.DWG

DIRECTORY
4028

SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC 2000 W/
ANALOG F.F. TO BEECH KING AIR INDICATORS
MS CONNECTOR

DRAWING NO.
4028-A48

SIZE
A

P/N _____

REV
B

0211/047 B 3/11/03 PAB BAL DEL NOTES 1- 3; ADDED NOTES 1-7; CORRECTED TITLE; GROUNDED SHIELDS

9901/015 A 1/20/99 DMD KCL ADD P/N 962830A-3-S-5

9809/013 - 9/25/98 DLR KCL BASELINE RELEASE

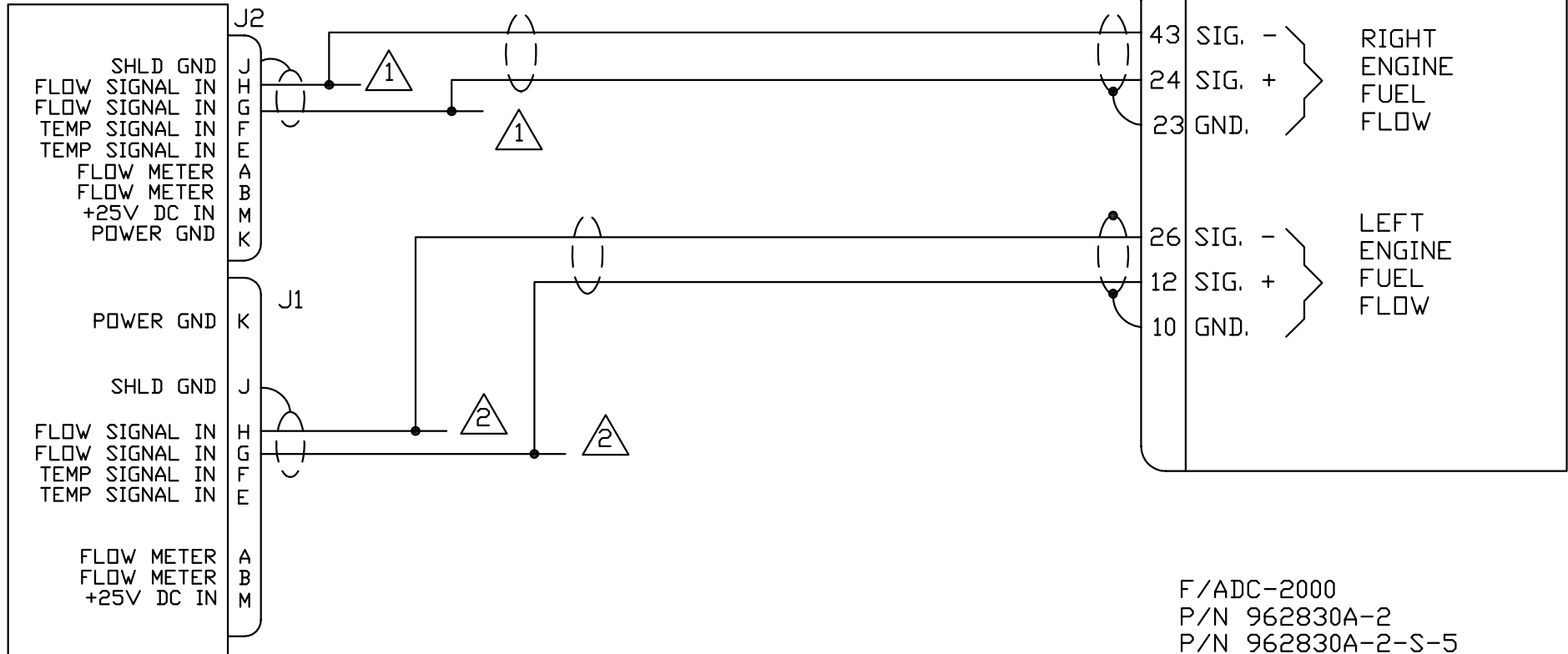
ECO # REV. DATE BY APP'D DESCRIPTION

SCALE: NONE

NOTES

- 1 FROM RIGHT ENGINE FF TRANSMITTER.
- 2 FROM LEFT ENGINE FF TRANSMITTER.
- 3 F/ADC SWITCH SETTINGS

AIRCRAFT'S FUEL FLOW
SIGNAL CONDITIONER
(P/N 45AS86801-003).



F/ADC-2000
P/N 962830A-2
P/N 962830A-2-S-5

SIG COND. P/N
45AS86801-003

K-FACTOR SW1 SW2 SW3 SW4
5150 PPG 6 E 6 E

3

DRAWING DATE 09/14/98	SHADIN MINNEAPOLIS, MN 55426		
DRAFTER DLR	INSTALLATION WIRING, F/ADC 2000 MS CONN,		
APPROVED KCL	SINE FF TO MITSUBISHI MU-300 AND		
FILE NAME 4028-A49AJ.DWG	MODEL 400 BEECHJET.		
DIRECTORY 4028	DRAWING NO. 4028-A49	SIZE A	REV A

9901/015	A	1/20/99	DMD	KCL	ADDED P/N 962830A-2-S-5
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

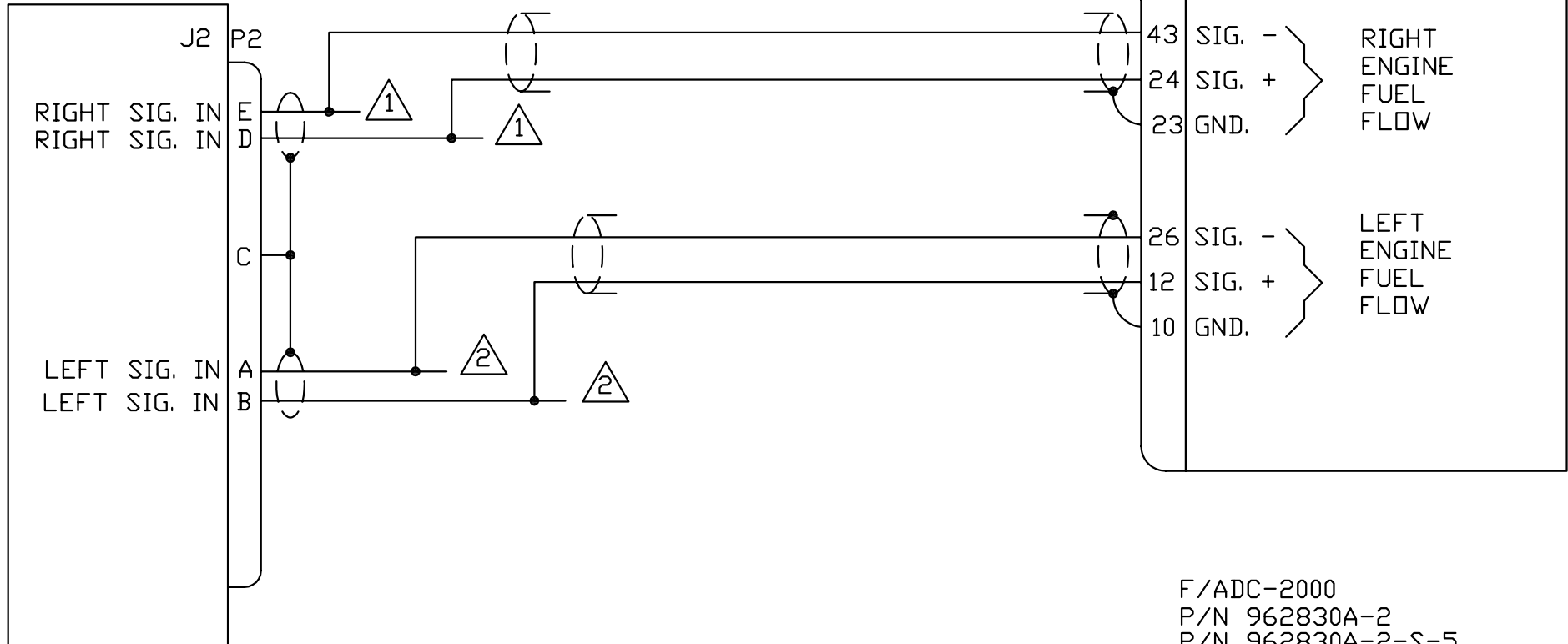
DO NOT SCALE

SHEET 1 OF 1

NOTES

- 1 FROM RIGHT ENGINE FF TRANSMITTER.
- 2 FROM LEFT ENGINE FF TRANSMITTER.

SIGNAL COND.
P/N PC-620-0098 OR PC-425-0098



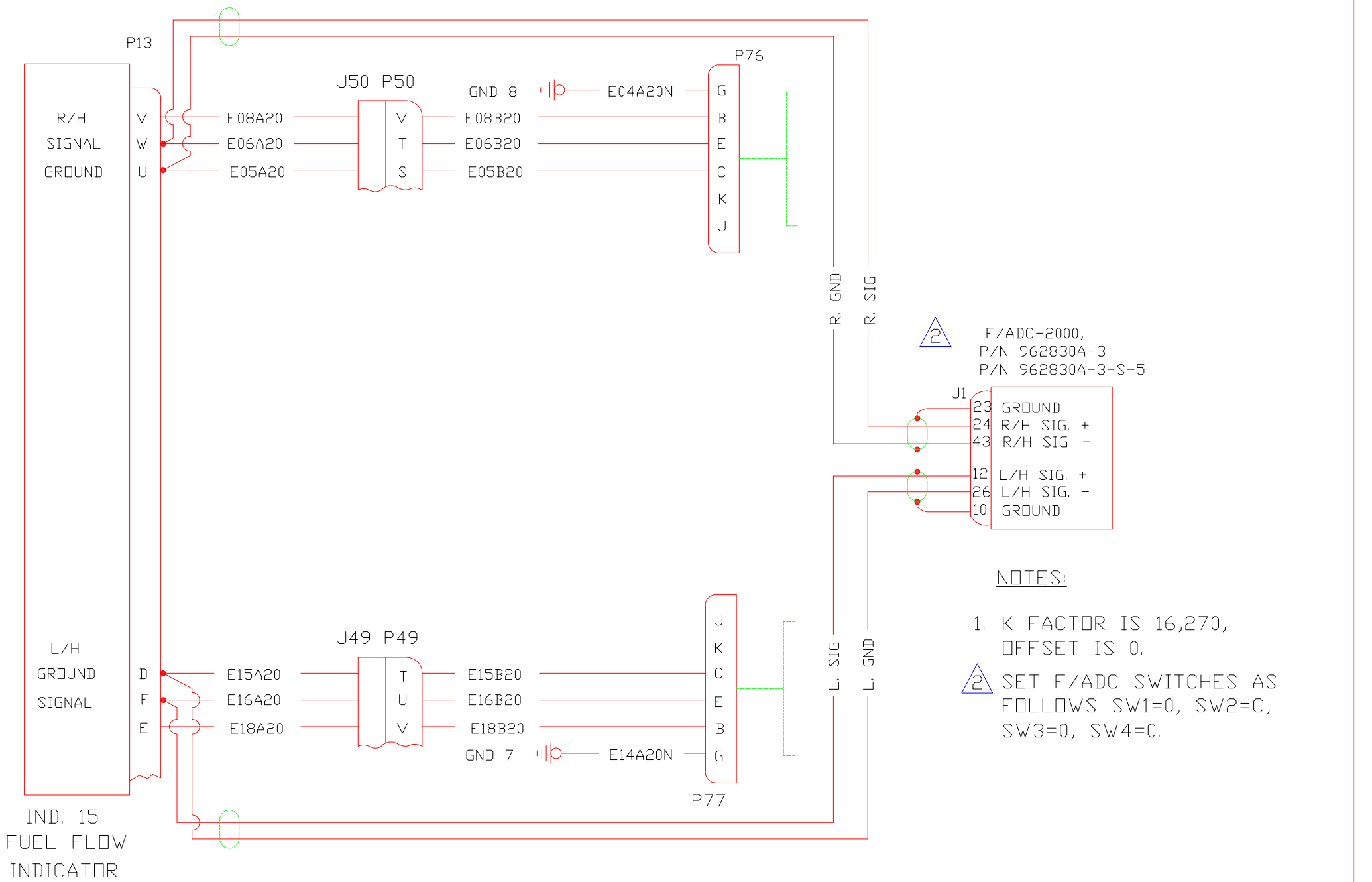
F/ADC-2000
P/N 962830A-2
P/N 962830A-2-S-5

SIG COND. P/N K-FACTOR SW1 SW2 SW3 SW4
PC-620-0098 33800 6 9 6 9

DRAWING DATE 09/14/98	SHADIN MINNEAPOLIS, MN 55426		
DRAFTER DLR	INSTALLATION WIRING:		
APPROVED KCL	F/ADC 2000 TO MITSUBISHI MS CONN SINE FF,		
FILE NAME 4028-A50BJ.DWG	MU-2 W/FOXBORO PC-620 SYSTEM		
DIRECTORY 4028	DRAWING NO.	SIZE	REV
	4028-A50	A	B
SHEET 1 OF 1	P/N		

0007/031	B	7/19/00	PAB	RH	ADD "DR PC-425-0098"
9901/015	A	1/20/99	DMD	KCL	ADDED P/N 962830A-2-S-5
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

DO NOT SCALE



F/ADC-2000,
P/N 962830A-3
P/N 962830A-3-S-5

23	GROUND
24	R/H SIG. +
43	R/H SIG. -
12	L/H SIG. +
26	L/H SIG. -
10	GROUND

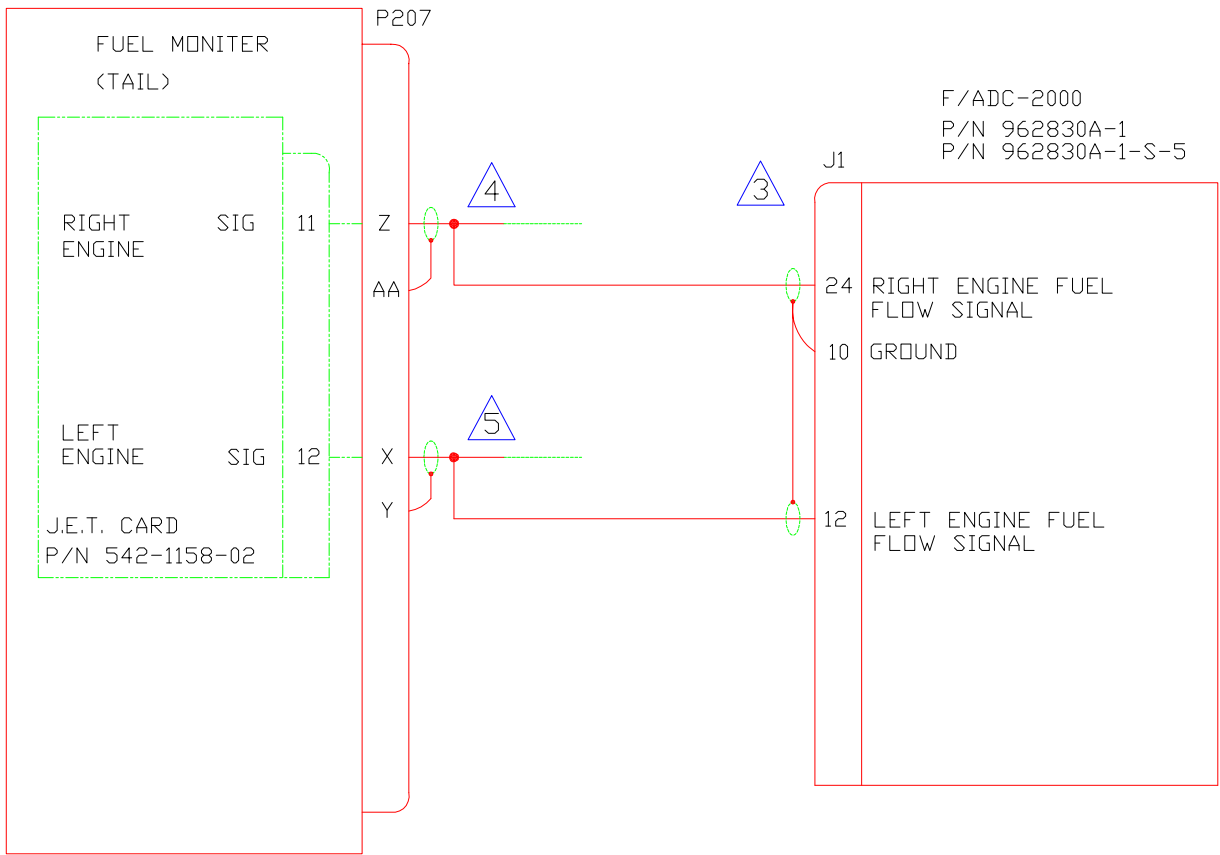
NOTES:

1. K FACTOR IS 16,270,
OFFSET IS 0.
2. SET F/ADC SWITCHES AS
FOLLOWS SW1=0, SW2=C,
SW3=0, SW4=0.

9901/015	B	1/20/99	DMD	KCL	ADD P/N 962830A-3-S-5
9811/021	A	12/7/98	DMD	PG	CORRECT PART NUMBER REFERENCE
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION

NOT TO SCALE

DRAWING DATE 09/14/98	SHADIN MINNEAPOLIS, MN 55426	
DRAFTER DLR	INSTALLATION WIRING, F/ADC 2000, MS CONN, WITH DC FF TO CESSNA CITATION 500, 501, 550, S550, 551, 552.	
APPROVED KCL		
FILE NAME 4028-A51BJ.DWG		
DIRECTORY 4028	DRAWING NO. 4028-A51	SIZE A
SHEET 1 OF 1	P/N	REV B



NOTES:

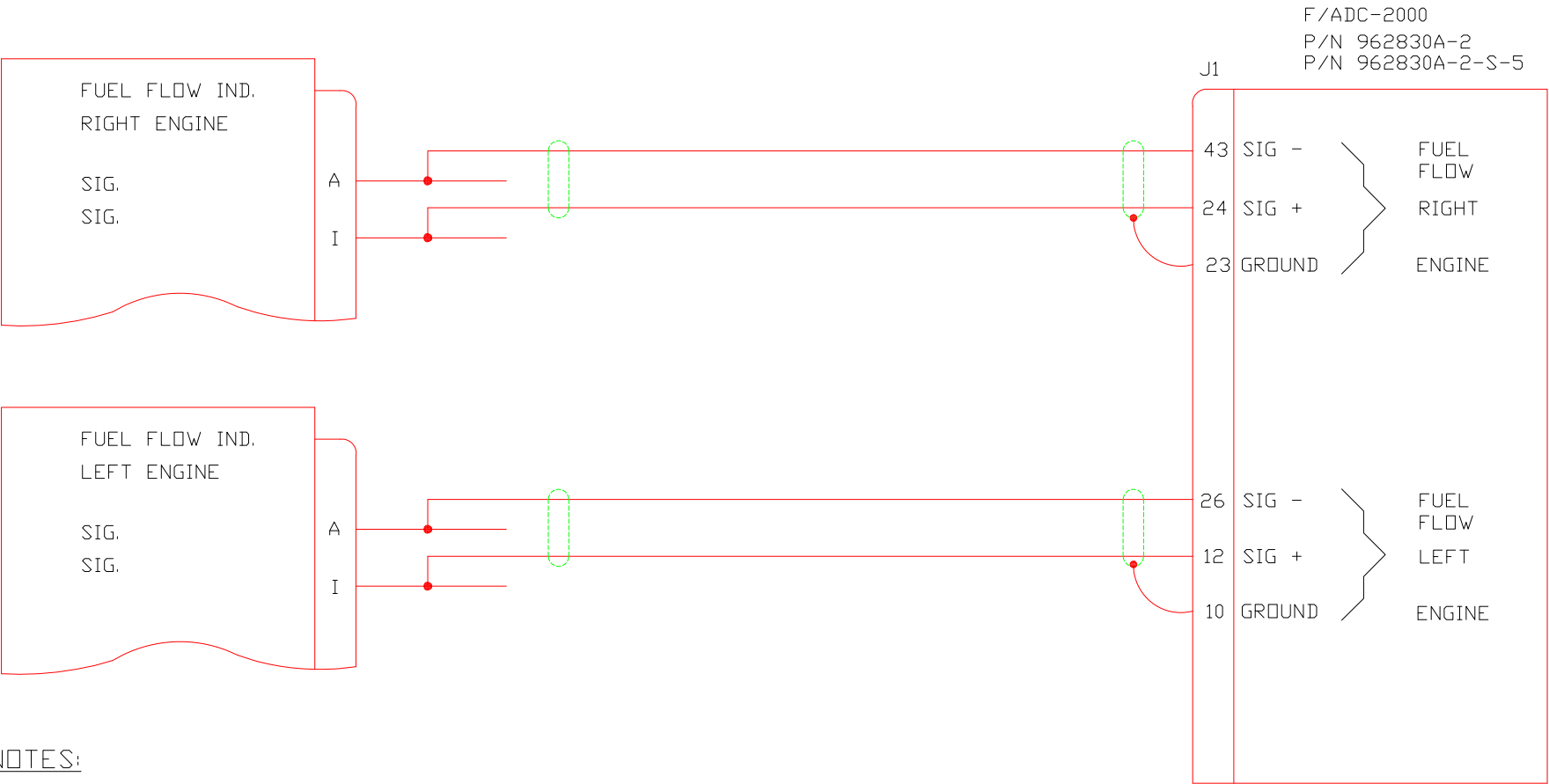
1. THIS INSTALLATION APPLICABLE TO AIRCRAFT WITH J.E.T. FUEL MODULE PART NUMBER 542-1158-02 ONLY. J.E.T. MODULE NOS. 542-1158-01 MAY BE CHANGED TO 542-1158-02 BY J.E.T. SB542-1158-7A.
2. K-FACTOR IS 860.

- 3 SET F/ADC SWITCHES AS FOLLOWS; SW1=D, SW2=D, SW3=D, SW4=D.
- 4 J.E.T. CARD PIN 11 CORRESPONDS TO FUEL MONITOR PIN Z.
- 5 J.E.T. CARD PIN 12 CORRESPONDS TO FUEL MONITOR PIN X.

9901/015	B	1/20/99	DMD	KCL	ADD P/N 962830A-1-S-5
9811/021	A	12/7/98	DMD	PG	CORRECT PART NUMBER REFERENCE
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION

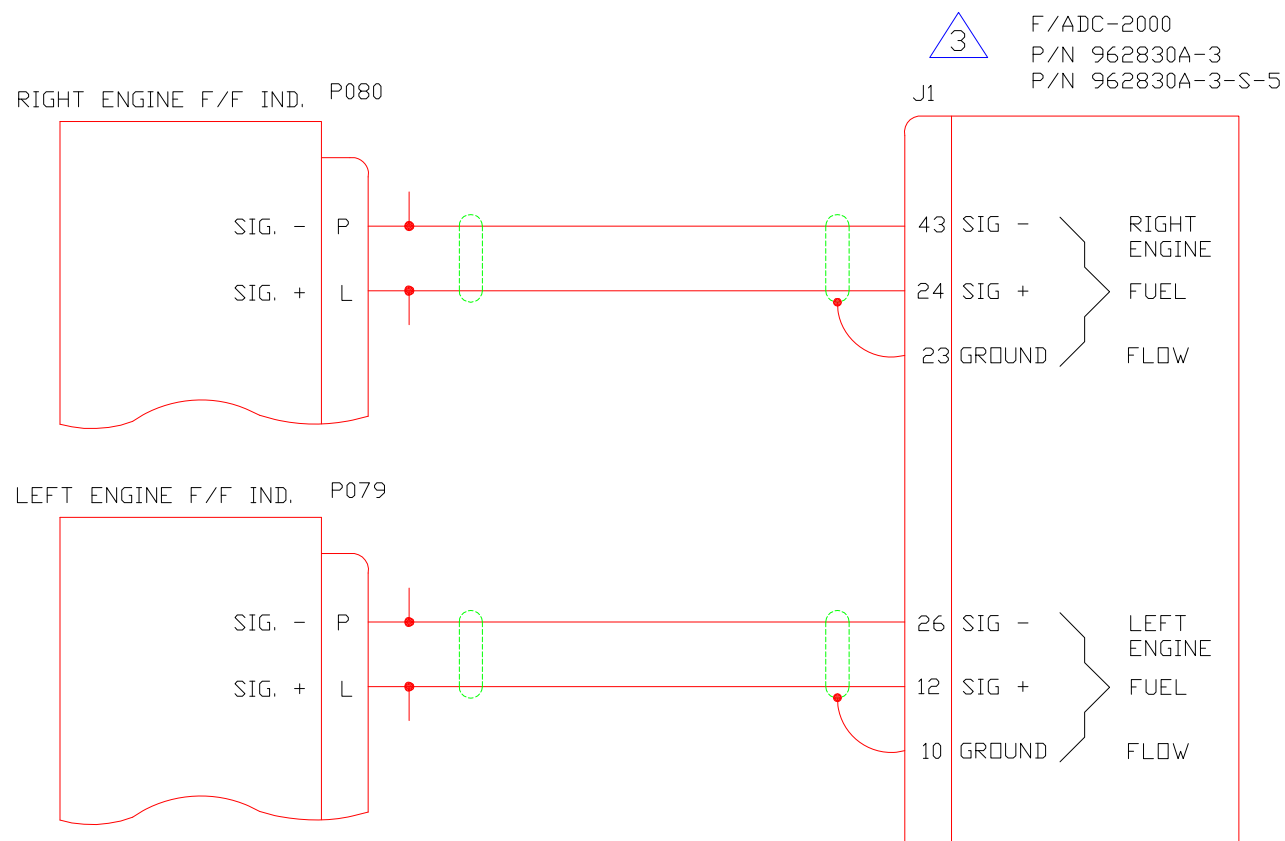
NOT TO SCALE

DRAWING DATE 09/14/98	SHADIN MINNEAPOLIS, MN 55426		
DRAFTER DLR	INSTALLATION WIRING, F/ADC 2000 MS CONN		
APPROVED KCL	WITH DIGITAL FF TO		
FILE NAME 4028-A53BJ.DWG	BOMBARDIER LEARJET 24, 25D.		
DIRECTORY 4028	DRAWING NO. 4028-A53	SIZE A	REV B
SHEET 1 OF 1	P/N		



NOTES:

- 1. FOR AIRCRAFT WITH THE FOLLOWING INDICATORS/TRANSMITTERS;
 - A. INDICATOR PART NOS. 850590-1, 850590-507, DSF1549 OR D5154-9.
 - B. TRANSMITTER PART NOS. 850590-513, 850590-515, TFF2905-11 OR 151906-001.
- 2. K-FACTOR IS 27.6 (27,600 PPG).
- 3. SET F/ADC SWITCHES TO: SW1 = F, SW2 = 0, SW3 = F, SW4 = 0.



NOTES:

- FOR AIRCRAFT SERIAL NOS. RK-45, RK-49 AND AFTER WITH FUEL INDICATOR PART NO. PC900-3B2000-PH1.
- K-FACTOR IS 11.54 (11,540 PPG), OFFSET IS 0.

3 SET F/ADC SWITCHES TO: SW1 = 0, SW2 = 2, SW3 = 0, SW4 = 0.

9901/015	B	1/20/99	DMD	KCL	ADD P/N 962830A-3-S-5
9811/021	A	12/7/98	DMD	PG	CORRECT PART NUMBER REFERENCE
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION

NOT TO SCALE

DRAWING DATE	9/14/98
DRAFTER	DLR
APPROVED	KCL
FILE NAME	4028-A55BJ.DWG
DIRECTORY	4028
SHEET	1 OF 1

SHADIN MINNEAPOLIS, MN 55426

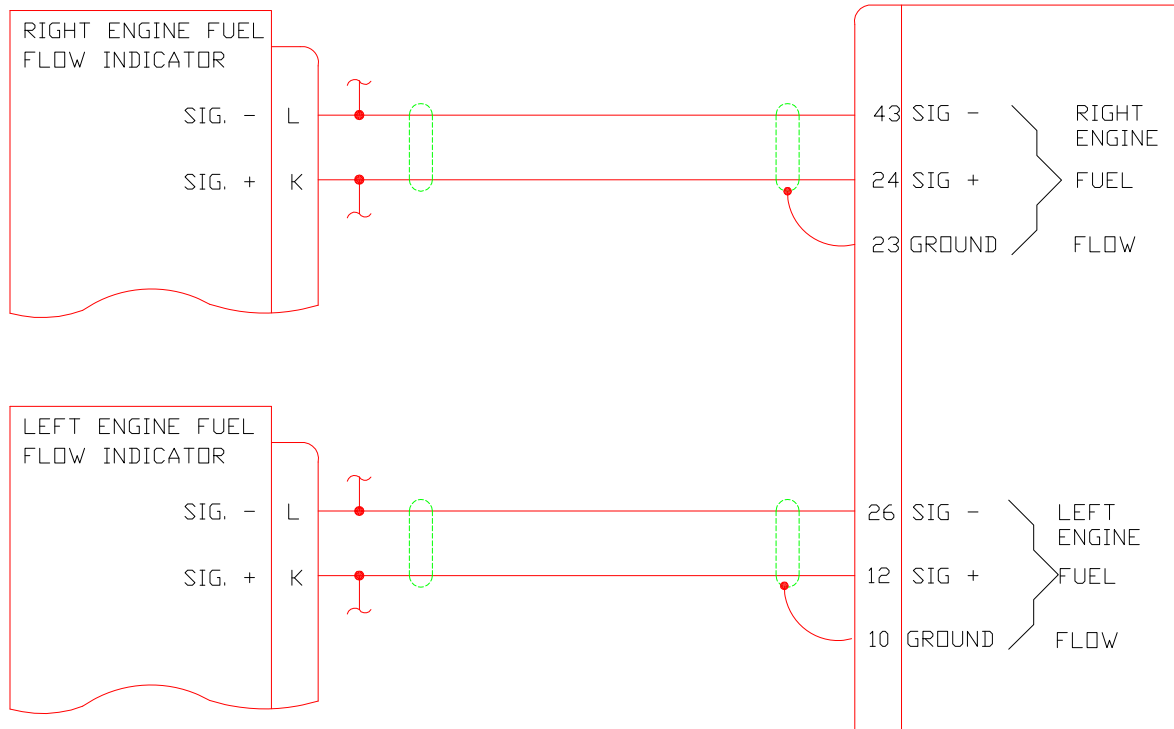
INSTALLATION WIRING, F/ADC 2000 MS CONN
WITH DC FF TO RAYTHEON
BEECHJET 400A AIRCRAFT.

DRAWING NO.	SIZE	P/N	REV
4028-A55	A	_____	B



F/ADC-2000
P/N 962830A-3
P/N 962830A-3-S-5

J1



NOTES:

- FOR AIRCRAFT WITH THE FOLLOWING INDICATOR/TRANSMITTERS;
 - INDICATOR PART NO. (RAGEN) 1291-2
 - TRANSMITTER PART NO. (GULL) 151-909-001
- K-FACTOR IS 10.49 (10,490 PPG), OFFSET IS 0.

 SET AIRDATA SWITCHES AS FOLLOWS; SW1 = 1, SW2 = 8, SW3 = 0, SW4 = 0.

9901/015	B	1/20/99	DMD	KCL	ADD P/N 962830A-3-S-5
9811/021	A	12/7/98	DMD	PG	CORRECT PART NUMBER REFERENCE
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION

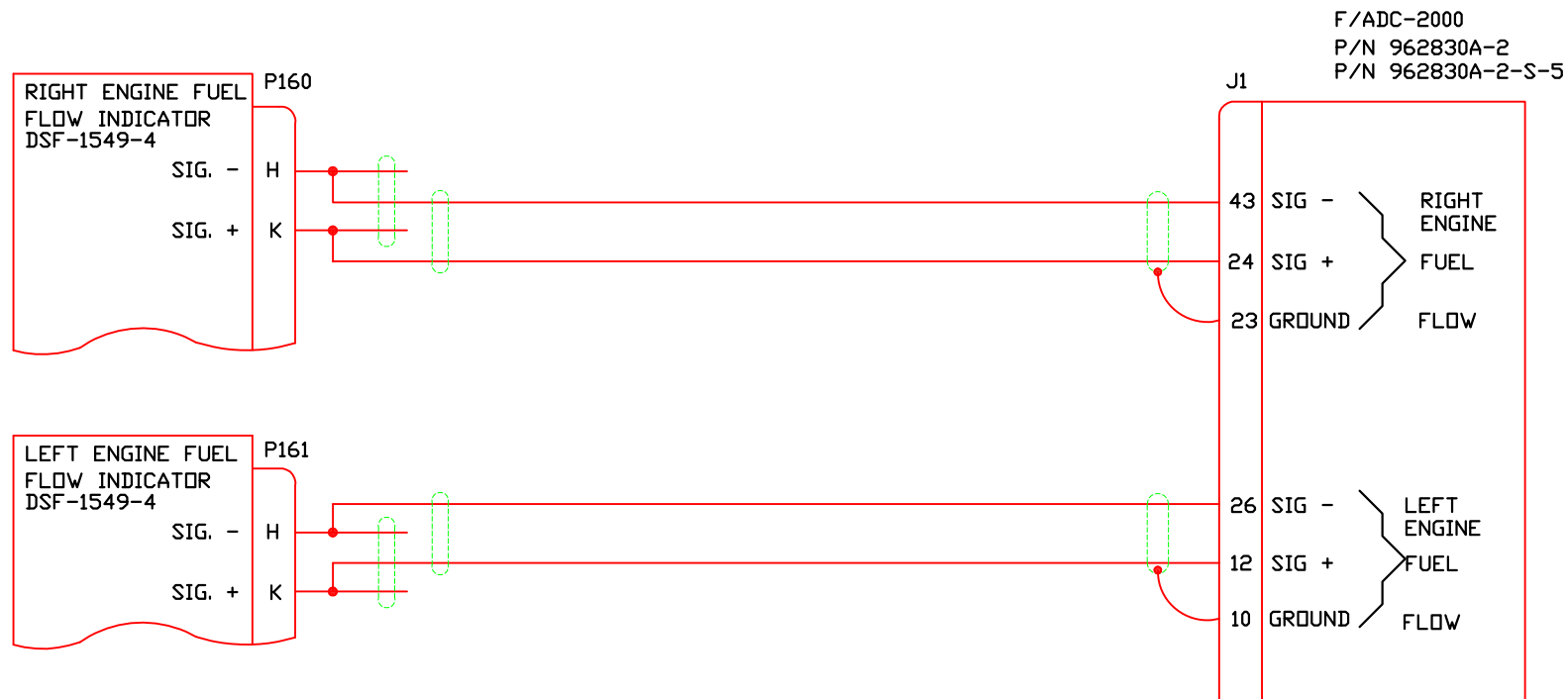
NOT TO SCALE

DRAWING DATE 9/14/98
DRAFTER DLR
APPROVED KCL
FILE NAME 4028-A56BJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC 2000 MS CONN,
WITH DC FF TO WESTWIND
1124 MODELS.

DRAWING NO. 4028-A56	SIZE A	P/N _____	REV B
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DSF-1549-2

FLOW TURBINE (FROM PROB)	A
COMPENSATOR (ENVIRONMENT)	B
SIGNAL GROUND	C
CASE GROUND	D
DC POWER INPUT (APPROX. 28 VDC)	E
TOTALIZER LOW (-)	F
TOTALIZER OUTPUT (+)	G
TEMP SENSOR	H
SIGNAL GROUND	I
DC GROUND	J

DSF-1549-4

5V LIGHT RETURN	A
28 VDC POWER INPUT	B
28 VDC POWER RETURN	C
CASE GROUND	D
COMPENSATOR (ENVIRONMENT)	E
SIGNAL GROUND	F
TOTALIZER GROUND	G
SIGNAL GROUND	H
TOTALIZER OUTPUT	J
FLOW TURBINE (FROM PROB)	K
TEMP SENSOR	L
5 VDC LIGHT (+)	M

DSF-1549-5

FLOW TURBINE (FROM PROB)	A
COMPENSATOR (ENVIRONMENT)	B
GROUND	C
CASE GROUND	D
DC POWER INPUT (APPROX. 28 VDC)	E
SIGNAL GROUND	F
TOTALIZER OUTPUT	G
TEMP SENSOR	H
DC GROUND	J

NOTES:

1. FOR AIRCRAFT WITH FUEL FLOW INDICATOR PART NOS. DSF1549-2, -4, -5 (SEE TABLES FOR PINOUTS)
2. K-FACTOR IS 26.8 (26,800 PPG).
3. SET AIRDATA SWITCHES AS FOLLOWS; SW1 = C, SW2 = 7, SW3 = C, SW4 = 7.

DRAWING DATE	9/14/98
DRAFTER	DLR
APPROVED	KCL
FILE NAME	4028-A57C.JDWG
DIRECTORY	4028
SHEET	1 OF 1

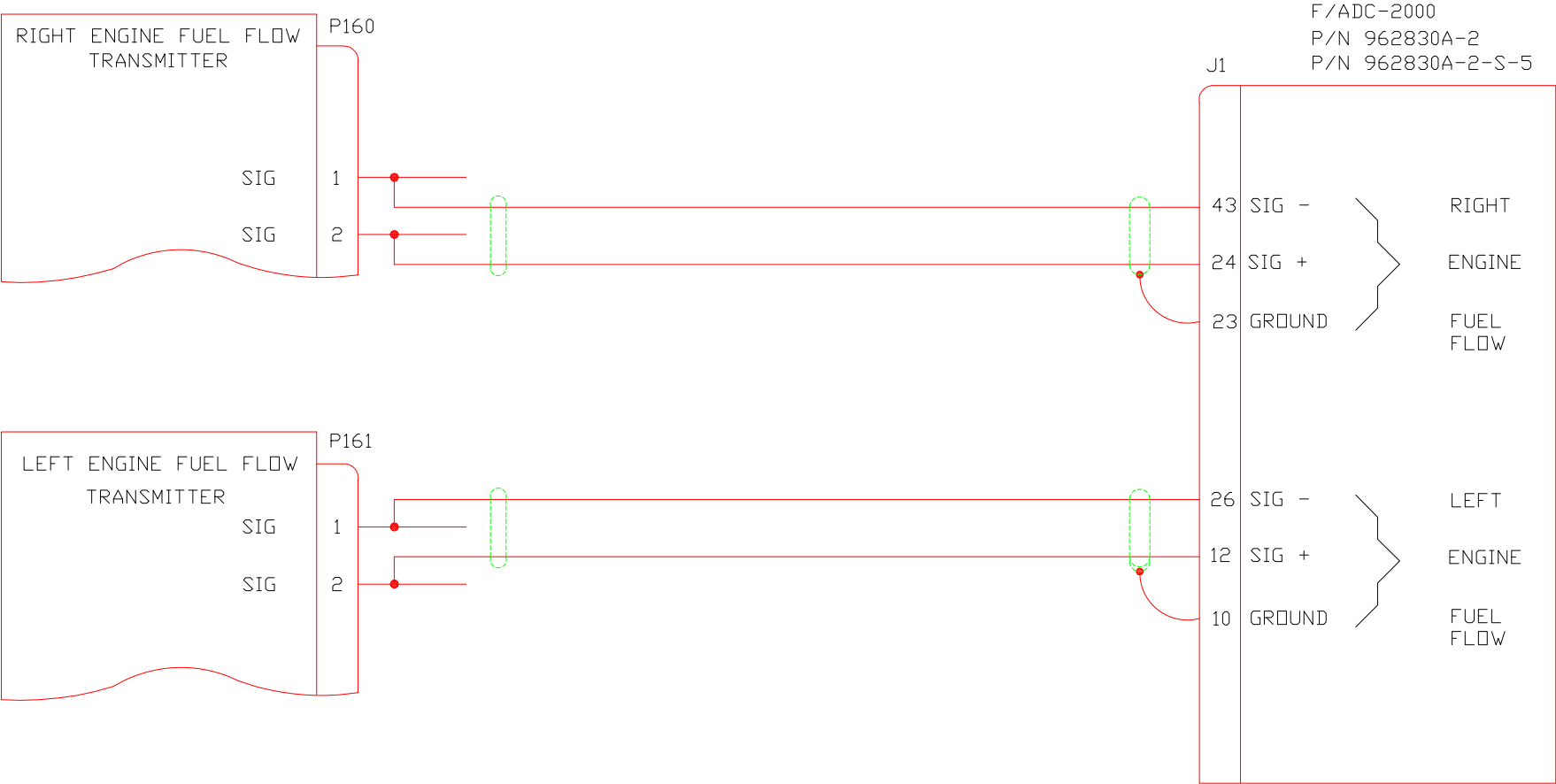
SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC 2000 MS CONN
TO FAIRCHILD SA226 SERIES AIRCRAFT

DRAWING NO. 4028-A57 SIZE A P/N _____ REV C

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0503/052	C		PAB		ADDED PINOUTS
9901/015	B	1/20/99	DMD	KCL	ADD P/N 962830A-2-S-5
9811/021	A	12/7/98	DMD	PG	CORRECT PART NUMBER REFERENCE
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE

NOT TO SCALE

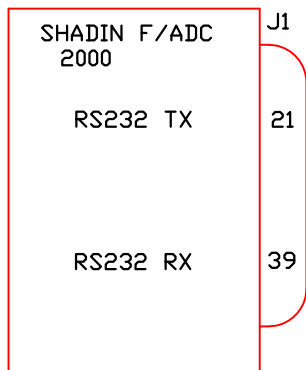


NOTES:

1. FOR AIRCRAFT WITH FAURE-HERMAN FUEL FLOW TRANSMITTERS, PART NO. TN(A)S-1024-118.
2. CONFIGURE THE F/ADC FOR THE ALTERNATE DIGITAL K-FACTOR TABLE: MATRIX 1. K-FACTOR IS 3.88 (3,880 PPG).
3. SET AIRDATA SWITCHES AS FOLLOWS; SW1 = 0, SW2 = 7, SW3 = 0, SW4 = 7.

DRAWING DATE 9/14/98						SHADIN MINNEAPOLIS, MN 55426				
DRAFTER DLR						INSTALLATION WIRING, F/ADC 2000 MS CONN TO AEROSPATIALE AS365N2 DAUPHIN.				
APPROVED KCL										
FILE NAME 4028-A58BJ.DWG						DRAWING NO. 4028-A58	SIZE A	P/N _____		
DIRECTORY 4028										
9901/015	B	1/20/99	DMD	KCL	ADD P/N 962830A-2-S-5	REV B				
9811/021	A	12/7/98	DMD	PG	CORRECT PART NUMBER REFERENCE					
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE					
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION	NOT TO SCALE				
SHEET 1 OF 1										

P/N 962830A-1
P/N 962830A-2
P/N 962830A-3
P/N 962830A-1-S-5
P/N 962830A-2-S-5
P/N 962830A-3-S-5



BENDIX/KING

KLN90,A,B	KLN89	KLN900
P901	P891	P9002
36	1	38
13	2	6

SHADIN FUEL FLOW METER 3			
DIGIFLO-L P/N 91053XT	DIGIFLO-L P/Ns 91053XP 91053X-46	MINIFLO-L P/N 91204XT-D	MICROFLO-L 91204XT-38-D
J	5	6	6
H	12	9	9

NOTES:

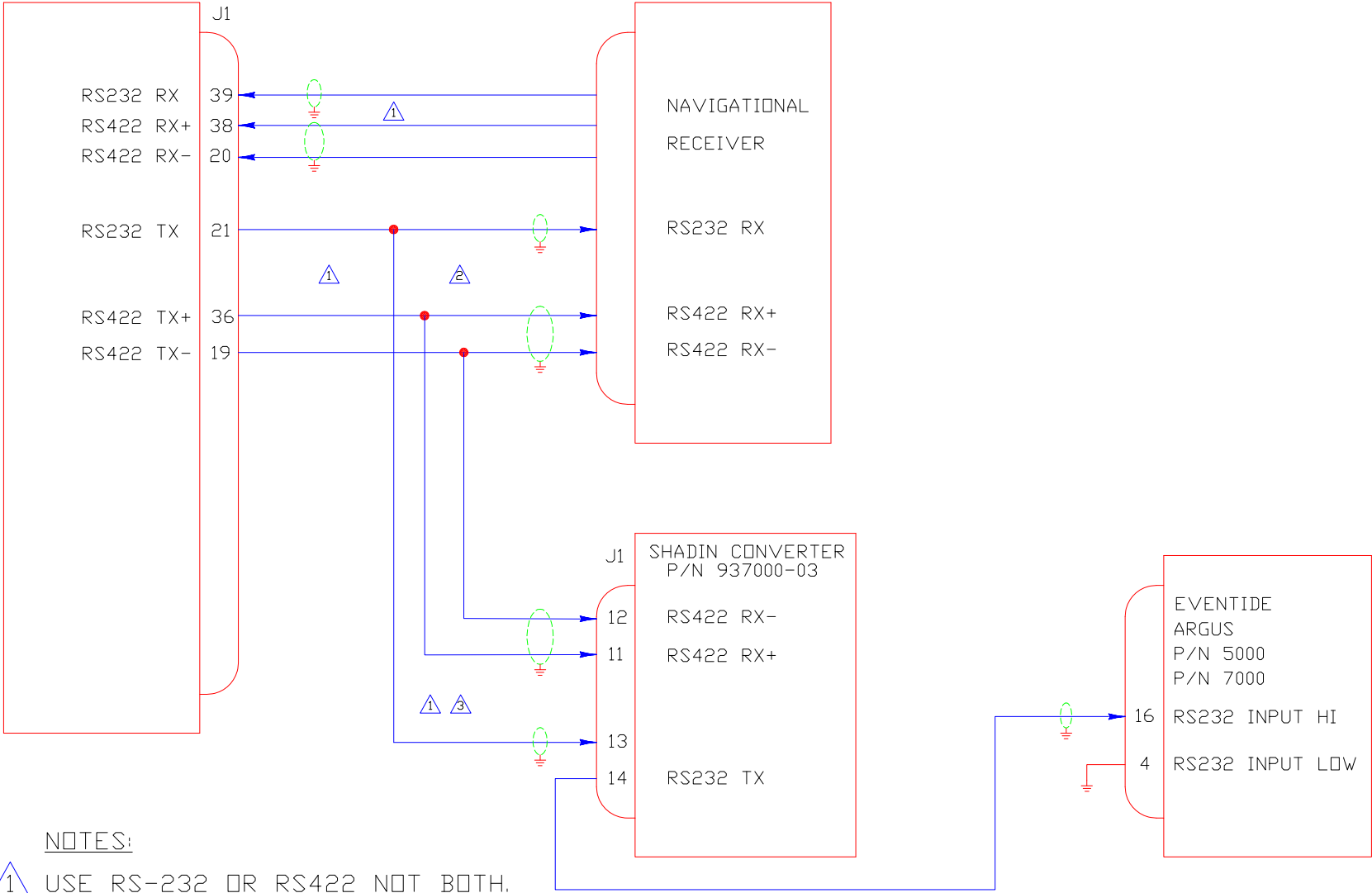
1. CONFIGURE SHADIN F/ADC 2000 I/O FOR FLOWMETER/BENDIX C OR FLOWMETER/BENDIX D IF USING THE BARD-METRIC INTERFACE.
2. CONFIGURE SHADIN FUEL FLOW METER I/O FOR ON/AIRDATA.
- 3 FUEL FLOW TRANSDUCER SIGNAL(S) IS/ARE CONNECTED TO THE SHADIN FUEL FLOW METER. NO FUEL SIGNAL CONNECTION TO THE ADC.
4. MINIMUM SOFTWARE LEVEL
DIGIFLO-L 60.10.77
MINIFLO-L 60.01.77
MICROFLO-L 60.08.77

0211/047	B	3/11/03	PAB	BAL	ADDED NOTE 4, EDITED NOTE 3
9901/015	A	1/20/99	DMD	KCL	ADD P/N 962830A-1-S-5, -2-S-5, -3-S-5, 91053X-46
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

NOT TO SCALE

DRAWING DATE 9/14/98	SHADIN MINNEAPOLIS, MN 55426		
DRAFTER DLR	INSTALLATION WIRING, F/ADC 2000, MS CONN		
APPROVED KCL	SHADIN FUEL FLOW INDICATORS TO		
FILE NAME 4028-A60BJ.DWG	BENDIX/KING NAV. RECEIVER		
DIRECTORY 4028	DRAWING NO. 4028-A60	SIZE A	P/N _____
SHEET 1 OF 1			REV B

F/ADC 2000
P/N 962830A-1 P/N 962830A-1-S-5
P/N 962830A-2 P/N 962830A-2-S-5
P/N 962830A-3 P/N 962830A-3-S-5



NOTES:

- 1 USE RS-232 OR RS422 NOT BOTH.
- 2 CONNECT SHADIN CONVERTER P/N 937000-03 IN PARALLEL WITH NAVIGATIONAL RECEIVERS SERIAL DATA INPUT.
- 3 CONSULT DRAWING NUMBER 4070-005 FOR WIRING AND STRAPPING INFORMATION.

0009/005	B	9/18/00	PAB	EDJ	TOP LEFT "J1" WAS "J2"	DRAWING DATE 9/14/98	SHADIN MINNEAPOLIS, MN 55426		INSTALLATION WIRING, F/ADC 2000 MS CONN AND SHADIN CONVERTER TO EVENTIDE ARGUS.	
9901/015	A	1/20/99	DMD	KCL	ADD P/N 962830A-1-S-5, -2-S-5, -3-S-5	DRAFTER DLR	DRAWING NO. 4028-A61		SIZE A	
9809/013	-	9/25/98	DLR	KCL	BASELINE RELEASE	APPROVED KCL				
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION	FILE NAME 4028-A61BJ.DWG	P/N		REV B	
						DIRECTORY 4028	SHEET 1 OF 1			
						SHEET 1 OF 1				
						NOT TO SCALE				