



FUEL/AIR DATA COMPUTER

(ADC 2000)

**P/NS:
962830-XY**

INSTALLATION MANUAL

REV S

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P/N: IM2830

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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>
4028-394	Installation DWG, ADC2000, Digital Fuel Flow P/N 962830-1	3/21/05	E
4028-431	Installation DWG, ADC2000, Sine Fuel Flow P/N 962830-2	3/21/05	D
4028-432	Installation DWG, ADC2000, DC Fuel Flow P/N 962830-3	3/21/05	D
4028-005	Installation, OAT Probe Assembly Kit P/N 681201-1	2/14/05	C
4028-395	Installation, Mounting Tray, ADC2000	8/01/05	C
4070-005	Installation, Serial to Argus 5000/7000 Converter P/N 937000-03	2/14/05	B
4028-423	Installation Wiring, Fuel/Air Data Computer, ADC200/2000 to Fuel Systems	3/11/03	B
4028-425	Installation Wiring, Fuel/Air Data Computer (ADC2000) to OAT/Heading System	5/17/07	B
4028-944	Installation Wiring, Loop Back Harness for F/ADC200, 2000, D-Sub Connector	9/19/05	C
4028-945	Installation Wiring, ADC2000 to Nav Receivers with ARINC 429	3/11/03	A
4028-946	Installation Wiring, F/ADC200, 2000 to Navigational Receivers with RS-422, RS-485	3/11/03	A
4028-947	Installation Wiring, F/ADC200, 2000, Shadin Fuel Flow Indicators to Bendix/King Nav Receiver	3/11/03	A
4028-948	Installation Wiring, F/ADC200, 2000 and Shadin Converter to Eventide Argus	2/14/05	A
4028-A80	Label, ADC200/2000 Access Cover, P/N 712801	2/14/05	A
4028-A82	Installation Wiring, ADC 2000, D-Sub Connector to Altimeter Baro Pot	3/11/03	C
4028-B94	Installation Wiring, F/ADC200, 2000, Shadin Fuel Flow Indicators to Garmin 430/530	4/29/11	B
N/A	Parts List, OAT Probe Assembly Kit P/N 681201-1	4/6/07	H
N/A	Parts List, Install Kit, ADC2000 P/N IK9630-1	6/4/07	D

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11.0 **INSTALL DRAWINGS AND INSTALL KITS PARTS LISTS (continued)**

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AIRCRAFT SPECIFIC			
4028-818	Installation Wiring, F/ADC 200/2000 w/Analog FF to Beech King Air Indicators D-Sub Connector	3/11/03	B
4028-819	Installation Wiring, F/ADC 200, 2000 Sine FF to Mitsubishi MU-300 and Model 400 Beechjet	2/14/05	B
4028-909	Installation Wiring, F/ADC-200(2000) to Mitsubishi MU-2 w/Foxboro PC-620 System	2/14/05	B
4028-936	Installation Wiring, F/ADC200, 2000 or DigiData with DC FF to Cessna Citation 500, 501, 550, S550, 551, 552	2/14/05	A
4028-937	Installation Wiring, F/ADC200, 2000 or DigiData with DC FF to Cessna Citation 525 Jet	2/14/05	A
4028-938	Installation Wiring, F/ADC200, 2000 or DigiData with Digital FF to BomBardier LearJet 24, 25D	1/17/05	A
4028-939	Installation Wiring, F/ADC-200, 2000 with Sine FF to Rockwell Commander 690 and 695	2/14/05	A
4028-940	Installation Wiring, F/ADC-200, 2000 or DigiData with DC FF to Raytheon Beechjet 400A Aircraft	2/14/05	A
4028-941	Installation Wiring, F/ADC-200, 2000 or DigiData with DC FF to Westwind 1124 Models	2/14/05	A
4028-942	Installation Wiring, F/ADC-200, 2000 to Fairchild SA226 Series Aircraft	1/17/05	A
4028-943	Installation Wiring, F/ADC-200, 2000 to Nav Receivers w/RS-232	1/17/05	C
4028-949	Installation Wiring, F/ADC-200, 2000 to Aerospatiale AS365N2 Dauphin	2/14/05	A
4028-950	Installation Wiring, F/ADC-200, 2000 to Aerospatiale AS332 Super Puma	2/14/05	A
4028-A29	Installation Wiring, F/ADC-200, 2000 or DigiData with DC FF Piper Cheyenne PA31T	1/17/05	C

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REV	DATE	APP'D	CHANGE
–	6/8/95	SES	Baseline release
A	9/12/95	SES	Miscellaneous updates
B	6/9/97	KCL	4 Stage loop back procedure report to 4028C; Expand index
C	6/13/97	KCL	Correct manual rev
D	6/23/97	KCL	Revise limitations section
E	1/8/98	KCL	Miscellaneous updates, format change
F	12/17/98	KCL	Added new sections 5.9, 5.10, Switch 4 table page 9-10, Special Options page 9-11, updated table 1 page 10-2, updated Dwg 4028-944 and included Dwg's 4028-A29, 4028-A80, and 4028-A82, and new parts list IK9630-1
G	7/26/00	EDJ	Added Bendix B & Garmin 430/530 Format G to page 9-7, Added one more Ragen Indicator / Transmitter to page 11-32. Added Garmin 430/530 to page 1-1. Added ARINC Label 234 & 235 to page 2-4. Changed OAT Install kit to 681201A-1 on page iii. Changed pages 11-11, -13, -16, -21, & -29. Added Allied Signal to page 2-5. Moved Raytheon Hawker HS-125-3A to page 2-9. Added 2 nd AN816 fitting to page 5-5.
H	9/13/00	EDJ	Changed page iv to reflect change to 4028-943. Page iii and 1-3 changed to include Dwg # 4028-B94. Page 2-1 changed for OAT tolerance, IVS to 10,000 fpm, and Pitot & IAS set to 20 knots for low speed. Page 2-4 and 2-5 changed to clarify configuration A parameters. Page 5-4 changed to include Sandel heading source. Page 9-1, 9-2, 9-6, and 9-7 changed to clarify software version usage. Page 9-11 moved to 9-16. Pages 9-11 to 9-15 added for Procedure 3. Page 5-1 changed to add TSO paragraph.
J	11/03/00	KCL	Add sections 2.8 and 2.9. Update sections 2.0, 5.1, 5.7 and 9.2. Moved page 9-16 to 9-21. Included updated Dwg 4028-A82.
K	6/27/02	EDJ	Corrected typo in section 1.3 system figure. Added 681201 OAT probe installation and parts list to page iv drawing list. Updated Page 2-4 ARINC table. Corrected page 10-3 Table 2. Added pages 9-21 to 9-26. Page 9-21 became 9-27.
L	3/21/05	WP	Changed "Shadin Company Inc." and "SCI" to "Shadin" everywhere. Updated rev levels of cited documents. Removed loopback procedure for S/W Version 93.00.79. From §2.5.3, removed unsupported ARINC 429 Label 247. From §11.0 Install Drawings and Install Kits Parts Lists, removed 4012-177 and PL, 681201A-1. Updated Aerosonic altimeter, 10420-11968E replacing 102220-1188.
M	9/20/05	ZK	Updated 4028-395, 4028-944, IK9630-1 Parts List, and section 2.2. Corrected pages 5-1 and 10-5
N	7/25/06	CB	Updated company logo & formatting
P	6/04/07	DU	Added tolerance tables for IAS, TAS, PALT, IVS, and MACH Number in Section 2.2, updated ARINC Label Configuration Table in Section 2.5.2, added Software Certification Level to Part Numbering Scheme in Section 2.7, updated Certification Section 3.0, added Loopback Procedure 5 for S/W Version 93.00.87+, added Pin 11 to DWG No. 4028-425, and updated 681201-1 & IK9630-1 Parts Lists. Released by ERN # 0703/007.
R	6/19/07	RJW	Added Antonov and Yak-40 SSEC information in Section 2.6.4. Corrected True & Magnetic heading text from °C to ° in Section 2.2. Changed software 93.00.87 & above to 93.00.85 & above in Sections 2.7 and Loopback Procedure 5 in section 9.2.
S	5/6/11	ZK	Updated Dwg 4028-B94

The information in this manual is subject to change without notification. To ensure complete and current updates, note the Revision Log above and call Technical Assistance for updated information.

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1.0 OVERVIEW**1.1 The Manual**

This manual is designed to facilitate the installation of the Shadin Fuel/Air Data 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

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

Bendix/King

Garmin

Magellan

Trimble

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

Garmin

430/530

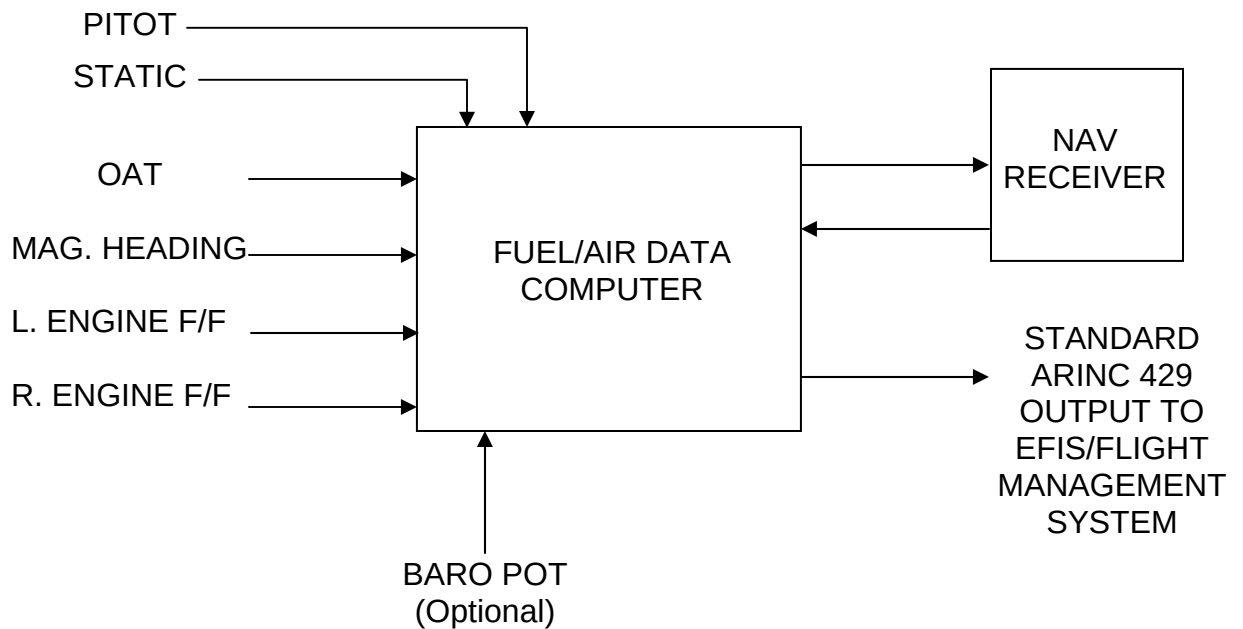
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1.3 System Configuration

The Fuel/Air Data system is a remote mounted box which is connected to the GPS receiver via serial data and standard ARINC 429 output. It is, also, connected to the pitot and static line, OAT probe, fuel flow sensors and the aircraft heading source. In addition, optional barometric information may be received from the aircraft altimeter, if available.



SYSTEM CONFIGURATION

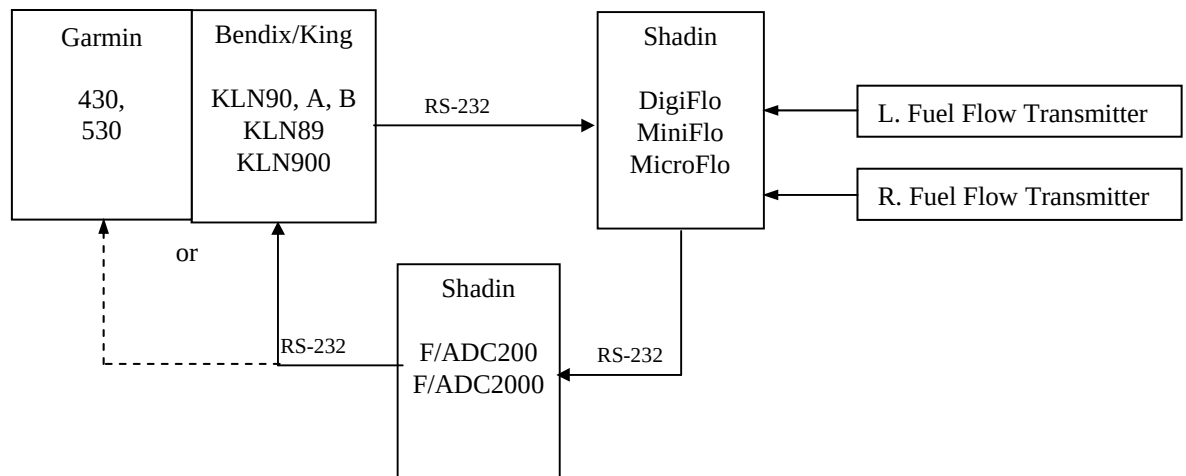
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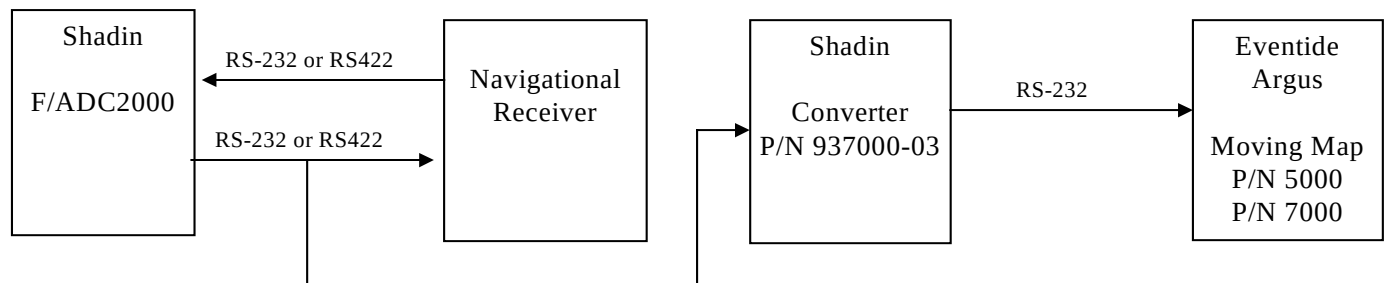
1.4 Fuel Totalizer Configuration

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 and Garmin 430/530 series. Consult Drawing Number 4028-947 contained in this manual for installation information for the Bendix/King KLN series. Consult Drawing Number 4028-B94 for installation information for the Garmin 430/530.



1.5 F/ADC2000, Argus Moving Map Configurations.

Shown below is the system configuration that supports output to an 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 4028-948 contained in section 11.



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2.0 FUEL AND AIR DATA SYSTEM SPECIFICATIONS

2.1 Input Data Range

Pitot	20 to 350 kts.
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

<u>PARAMETER</u>	<u>Accuracy</u>	<u>RANGE</u>
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

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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.

AIRSPEED 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: 36 oz.

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 speed

See paragraph 2.5.3 for ARINC 429 output data capabilities.

2.5.1 Serial Output Data Parameters**Fuel Group**

Left Fuel Flow
Right Fuel Flow
Fuel Used Total
Total Fuel Used
Fuel Used Right
Fuel Used Left
Fuel Remaining*

Air Data Group

Aircraft Type	Density Altitude
MACH Number	Drift Angle
True Air Speed (TAS)	Magnetic Heading
Indicated Air Speed (IAS)	Baro Pressure
Wind Direction and Speed	Baro Corrected Alt
Vertical Speed	Pressure Altitude
True Air Temperature	Rate of Turn
Outside Air Temperature (OAT)	

*Only present with Digiflo input.

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 Labels Associated with Switch Settings

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

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
- 9 - Allied Signal, Mk VII GPWS (50 ms rate)
- A* - Allied Signal, Mk VI & VIII (50 ms rate)

* for ARINC software version 71.73.01 and up

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2.6 Limitations

2.6.1 Warm-up time

The Fuel/Air Data System requires a warm-up time that varies with ambient temperature:

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

If the ADC has been configured for a fuel flow delay, fuel flow and thus fuel used information shall be unavailable at startup for the duration of the selected delay.

2.6.2 Supplemental equipment

All Shadin F/ADC(s) and ADC(s) are not designed to replace factory installed Air Data 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/Air Data System will make corrections to pressure altitude by compensating for static source error. For some of these models, the Fuel/Air Data 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/Air Data 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**Antonov An-12 (SSEC only)**

Airplane Flight Manual, An-12, Sect. 1 General Information
 1991, MCA USSR Subsect. 1.5. S&DSECs
 approved 02/05/1992

Page 9

Antonov An-24 (SSEC only)

Airplane Flight Manual, An-24, Sect. 6 Flight Characteristics
 2001, Ukrainian SAA Subsect. 6.7 S&DSECs
 approved 03/29/2002

Page 81

Antonov An-26 (SSEC only)

Airplane Flight Manual, An-26, Sect. 6 Flight Characteristics
 2001, Ukrainian SAA Subsect. 6.10 S&DSECs
 approved 03/29/2002

Page 53

Antonov An-30 (SSEC only)

Airplane Flight Manual, An-30, Sect. 6 Airplane Characteristics
 1982, MCA USSR Subsect. Flight Characteristics
 approved 12/25/1979

Page 31

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

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 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

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SSEC/PSEC LISTING (Continued)

Cessna 501 (SSEC only)

Airplane Flight Manual, Cessna/Citation I SP Model 501, Section IV, Performance

FAA approved	Altitude Correction	Figure 4-5
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Original	Pilot & Copilot system	Page 4-15
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NOTE: Uses same Hardware configuration as Cessna 500

Cessna 525 (SSEC only)

Airplane Flight Manual Model 525

	Altitude Correction	Rept FT525-4
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	Pilot & Copilot system	Page 47
--	------------------------	---------

Cessna 550 (SSEC only)

Airplane Flight Manual, Cessna/Citation II Model 550, Section IV, Performance

FAA approved	Altitude Correction	Figure 4-5
--------------	---------------------	------------

Original	Pilot & Copilot system	Page 4-15
----------	------------------------	-----------

Cessna 560 (SSEC only)

Airplane Flight Manual, Model 560, S/N 259 & Below, Section IV, Performance

FAA approved	Altitude Correction	Figure 4-5
--------------	---------------------	------------

Original	Pilot & Copilot system	Page 4-17
----------	------------------------	-----------

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	
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SSEC/PSEC LISTING (Continued)**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 Page 4

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

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SSEC/PSEC LISTING (Continued)**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 Lbs., 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

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 Lbs.	
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

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SSEC/PSEC LISTING (Continued)**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.

Yak-40 (SSEC only)

Airplane Flight Manual, Sect. 7.1.3.

Page 7

Yak-40, 1995

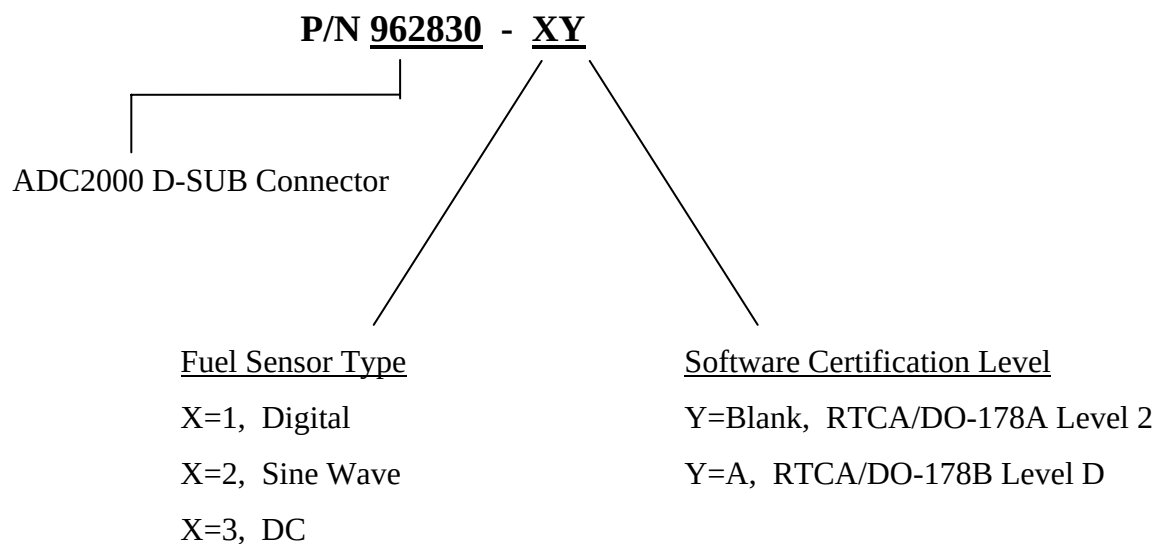
Altitude correction

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2.7 Part Numbering Scheme



Note: In Section 11, the Part Numbers 962830-1, 962830-2, and 962830-3 are identical to their corresponding Part Numbers with an A suffix (software versions 93.00.85 and above) except for their Software Certification Level and additional five SSEC corrections.

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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 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 are 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, -C44b (Incomplete System)**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 ARINC 429) information may also prove useful.

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

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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 or later.

5.2 F/ADC Location Selection

The Fuel Air Data 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. Refer to aircraft specific installation drawings, if available, for correct installation location.

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

The computer should be mounted per Drawings 4028-394, -431, -432, and -395, using 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. +5V is supplied to the OAT probe from (red wire) J1:15 for P/N 962830-XY. The OAT signal is the white wire from J1:14 for P/N 962830-XY. The lead wire to the computer 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 to °C temperature conversion chart for use if testing the OAT.

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 Air Data 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 4028-423 (Freq. Option) to connect the fuel flow transducer to the computer.
5. *If the aircraft is equipped with a digital fuel flow transducer (P/N 680501), use Drawing 4028-423 (High-Level Option) 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 4028-423 (DC Fuel Flow Option) 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 4028-423 (Sine Wave Signal). Use the Converter, P/N 631201. Note that if this is a new installation, use part number 962830-2Y ADC2000.
9. Install the sine to square converter, P/N 631201, between the fuel flow transducer and the F/ADC as indicated on the drawings.
10. Make sure that the system is initialized with the proper transducer K-factor for a digital or sine system and with the proper airframe make and model for the DC fuel flow system. 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 Air Data 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 SN3308	
										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).

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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.

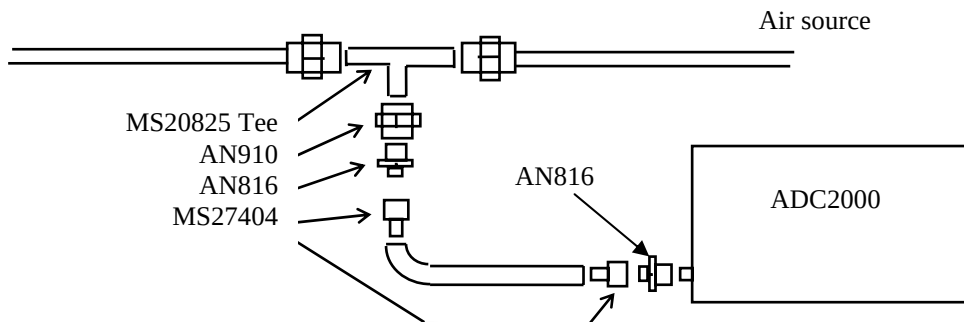
Existing Pitot/Static lines → AN910-1D → AN816-2D → #2 Hose (with female fittings)

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 the appropriate installation wiring diagram to connect the Fuel Air Data Computer's Connector J2 to the navigation management system.
2. A 2 amp. Circuit breaker should be used for powering the system. Mark the C/B "F/ADC" by engraving, painting or other approved method. Refer to specific aircraft installation drawings, if available, for correct circuit breaker location.
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.

5.9 Connection to the Altimeter Baro Pot (optional)

1. Use the Installation wiring diagram 4028-A82 to connect the altimeter to J1 of the Air Data computer.
2. Remember to select the correct altimeter type in the software configuration. See section 9 in this manual.

5.10 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 $\pm 2^\circ\text{C}$.
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 inHg (if the option is installed).

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6.0 OPERATING INSTRUCTIONS

1. Power the avionics DC bus and the Navigation Management System.
2. After the warm-up period density altitude and PALT are available. IAS will be available but will be out of range until actual airspeed is available. Winds aloft will be available if IAS > 40 knots and magnetic heading is within 40° of magnetic track.
3. Fuel Flow, Fuel Used, Fuel Remaining, Heading and OAT will be available after power-up.
4. Refer to the specific Nav Receiver Operator's Manual for page selection of various data.

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7.0 **INITIALIZATION**

1. The system requires initialization of the K-factor for fuel flow transducers or aircraft model for DC fuel flow sensors. Refer to Table 6 for **analog** fuel flow and Table 7 or Table 8 for **digital** 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/Air Data Computer
3. Outside Air Temperature Probe, Shadin P/N 681201()

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9.0 CONFIGURING THE AIR DATA

Each Part Number 962830-XY Air Data Computer needs to be configured to program it for the particular installation. The procedure contained in this Installation Manual is for software versions 93.00.16 to 93.00.29, 93.00.51 to 93.00.71, 93.00.77, and 93.00.82 and above. 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 unit via the serial communication port. Following the steps as set forth in the user manual allow the Air Data to be configured. See the 'ADSETUPF User Manual' for more details.

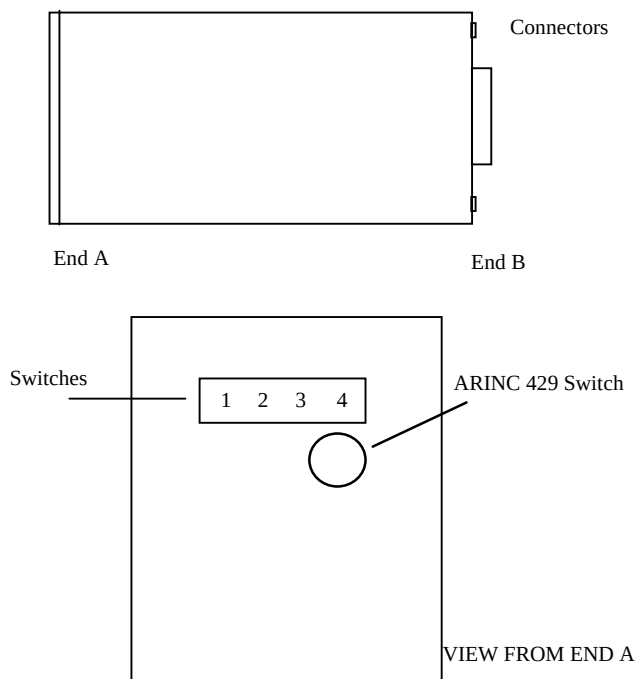
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9.2 Configuring Manually (Loop-Back)

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 4028-944 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 5 different 'loopback' procedures. Use 'loopback' procedure 1 for Software Versions 93.00.16-93.00.29. Use 'loopback' procedure 2 for software versions 93.00.51-93.00.71. Use 'loopback' procedure 3 for software versions 93.00.77. Use 'loopback' procedure 4 for software version 93.00.82 and above. Note that procedure 1 has 2 stages. Procedure 2, 3 and 4 have 4 stages and procedure 5 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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Loop-back Procedure 1 for Software Version 93.00.16 - 93.00.29**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 Apollo NMS2001, 800, 820		
3	- Garmin		
4	- Northstar		
5	- Foster		
6	- IIMorrow 611, 612 and 618		
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 **PALT Correction (static pressure correction by model):**

- 0 - None
- 1 - MU-300
- 2 - Cessna Citation 501
- 3 - Cessna 525
- 4 - Cessna 550
- 5-F - (DO NOT USE)

SWITCH 3 **Loran Output Type:**

- 0 - Format Z - Trimble and Garmin
- 1 - Format X - ARNAV
- 2 - Generic
- 3 - Surveyor
- 4 - Bendix C - Bendix/King and F/ADC without Baro Interface
- 5 - Bendix D - Bendix/King and F/ADC with Baro Interface
- 6 - Shadin S - IIMorrow GX50, 55, 60
- 7-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-F - (not used)

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ALTIMETER TYPES

- Type 1:** Kollsman PD 44929-935 (done for Cessna 525).
- Type 2:** Bendix/King KEA 130A, and -346.
- 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, -E2101, -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.

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Loopback Procedure 2 for Software Version 93.00.51 - 93.00.71**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 Apollo NMS2001, 800, 820
3	- Garmin
4	- Northstar
5	- Foster
6	- IIMorrow 611, 612 and 618
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
- 3 - Surveyor
- 4 - Bendix C - Bendix/King and F/ADC without Baro Interface
- 5 - Bendix D - Bendix/King and F/ADC with Baro 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 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

<u>SWITCH 3 AND SWITCH 4</u>		<u>CORRECTION For SSEC/PSEC Select:</u>	<u>F/ADC Software Version:</u>
0	0	- No correction	ALL
0	1	- MITSUBISHI MU-300	93.00.29 - 93.00-51
0	2	- CESSNA CITATION 500/501	93.00.29 - 93.00-51
0	3	- CESSNA 525	93.00.29 - 93.00-51
0	4	- CESSNA 500	93.00.29 - 93.00-51
0	5	- Citation 560 SN <=259	93.00.29 - 93.00-51
0	6	- Citation 560 SN >=260	93.00.29 - 93.00-51
0	7	- Citation 650	93.00.29 - 93.00-51
0	8	- Sabreliner 65	93.00.29 - 93.00-51
0	9	- WestWind 1124A	93.00.29 - 93.00-51
0	A	- LearJet 24	93.00.29 - 93.00-51
0	B	- Raytheon Hawker HS 125-3A	93.00.29 - 93.00-51
0	C	- Falcon 20-F	93.00.29 - 93.00-51
0	D	- Falcon 20-C, D, E	93.00.29 - 93.00-51
0	E	- LearJet 25D	93.00.29 - 93.00-51
0	F	- Douglas DC-8	93.00.58 - 93.00.63
1	0	- Beechjet 400	93.00.63 and up
1	1	- Boeing 707-321B	93.00.63 and up
1	2	- Cessna Citation S550	93.00.63 and up
1	3	- Falcon 10	93.00.63 and up
1	4	- Falcon 50	93.00.63 and up
1	5	- Raytheon Hawker HS125-700A	93.00.63 and up
1	6	- LearJet 35	93.00.63 and up
1	7	- LearJet 55	93.00.63 and up
1	8	- Sabreliner 60 (SSEC Only)	93.00.63 and up
1	9	- Lockheed Jetstar II	93.00.63 and up
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 962830-1 and 962830-2 only.

- 0 - Standard K-FACTOR Matrix 0 - (Table 7 in this manual)
- 1 - Alternate K-FACTOR Matrix 1- (Table 8 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)

<u>SWITCH 4</u>	<u>SPECIAL OPTION DESCRIPTION</u>	<u>F/ADC Software Version</u>
0	-ARINC 429 labels 206 (IAS) and 210 (TAS) are not transmitted if the IAS < 20 knots	93.00.67 and up
1	-ARINC 429 labels 206 (IAS) and 210 (TAS) are transmitted as zero knots if the IAS < 20 knots	93.00.67 and up
2-F	Reserved – DO NOT USE	

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Loopback Procedure 3 for Software Version 93.00.77**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 Apollo NMS2001, 800, 820
3	- Garmin
4	- Northstar
5	- Foster
6	- IIMorrow 611, 612 and 618
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
- 3 - Surveyor
- 4 - Bendix C - Bendix/King and F/ADC without Baro Interface
- 5 - Bendix D - Bendix/King and F/ADC with Baro 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 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

<u>SWITCH 3 AND SWITCH 4</u>		<u>CORRECTION For SSEC/PSEC Select:</u>	<u>F/ADC Software Version:</u>
0	0	- No correction	ALL
0	1	- MITSUBISHI MU-300	93.00.29 - 93.00-51
0	2	- CESSNA CITATION 500/501	93.00.29 - 93.00-51
0	3	- CESSNA 525	93.00.29 - 93.00-51
0	4	- CESSNA 500	93.00.29 - 93.00-51
0	5	- Citation 560 SN <=259	93.00.29 - 93.00-51
0	6	- Citation 560 SN >=260	93.00.29 - 93.00-51
0	7	- Citation 650	93.00.29 - 93.00-51
0	8	- Sabreliner 65	93.00.29 - 93.00-51
0	9	- WestWind 1124A	93.00.29 - 93.00-51
0	A	- LearJet 24	93.00.29 - 93.00-51
0	B	- Raytheon Hawker HS 125-3A	93.00.29 - 93.00-51
0	C	- Falcon 20-F	93.00.29 - 93.00-51
0	D	- Falcon 20-C, D, E	93.00.29 - 93.00-51
0	E	- LearJet 25D	93.00.29 - 93.00-51
0	F	- Douglas DC-8	93.00.58 - 93.00.63
1	0	- Beechjet 400	93.00.63 and up
1	1	- Boeing 707-321B	93.00.63 and up
1	2	- Cessna Citation S550	93.00.63 and up
1	3	- Falcon 10	93.00.63 and up
1	4	- Falcon 50	93.00.63 and up
1	5	- Raytheon Hawker HS125-700A	93.00.63 and up
1	6	- LearJet 35	93.00.63 and up
1	7	- LearJet 55	93.00.63 and up
1	8	- Sabreliner 60 (SSEC Only)	93.00.63 and up
1	9	- Lockheed Jetstar II	93.00.63 and up
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 962830-1 and 962830-2 only.

- 0 - Standard K-FACTOR Matrix 0 - (Table 7 in this manual)
- 1 - Alternate K-FACTOR Matrix 1- (Table 8 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)

<u>SWITCH 4</u>	<u>SPECIAL OPTION DESCRIPTION</u>	<u>F/ADC Software Version</u>
0	-ARINC 429 labels 206 (IAS) and 210 (TAS) are not transmitted if the IAS < 20 knots	93.00.67 and up
1	-ARINC 429 labels 206 (IAS) and 210 (TAS) are transmitted as zero knots if the IAS < 20 knots	93.00.67 and up
2-F	Reserved – DO NOT USE	

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Loopback Procedure 4 for Software Version 93.00.82**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 Apollo NMS2001, 800, 820
3	- Garmin
4	- Northstar
5	- Foster
6	- IIMorrow 611, 612 and 618
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
- 3 - Surveyor
- 4 - Bendix C - Bendix/King and F/ADC without Baro Interface
- 5 - Bendix D - Bendix/King and F/ADC with Baro 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 - (DO NOT USE)
- B - Type 11
- C-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 10420-11968E
- Type 10:** Reserved for future use (DO NOT USE).
- Type 11:** IDC P/N KTS B45152 10 410

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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

<u>SWITCH 3 AND SWITCH 4</u>		<u>CORRECTION For SSEC/PSEC Select:</u>	<u>F/ADC Software Version:</u>
0	0	- No correction	ALL
0	1	- MITSUBISHI MU-300	93.00.29 - 93.00-51
0	2	- CESSNA CITATION 500/501	93.00.29 - 93.00-51
0	3	- CESSNA 525	93.00.29 - 93.00-51
0	4	- CESSNA 500	93.00.29 - 93.00-51
0	5	- Citation 560 SN <=259	93.00.29 - 93.00-51
0	6	- Citation 560 SN >=260	93.00.29 - 93.00-51
0	7	- Citation 650	93.00.29 - 93.00-51
0	8	- Sabreliner 65	93.00.29 - 93.00-51
0	9	- WestWind 1124A	93.00.29 - 93.00-51
0	A	- LearJet 24	93.00.29 - 93.00-51
0	B	- Raytheon Hawker HS 125-3A	93.00.29 - 93.00-51
0	C	- Falcon 20-F	93.00.29 - 93.00-51
0	D	- Falcon 20-C, D, E	93.00.29 - 93.00-51
0	E	- LearJet 25D	93.00.29 - 93.00-51
0	F	- Douglas DC-8	93.00.58 - 93.00.63
1	0	- Beechjet 400	93.00.63 and up
1	1	- Boeing 707-321B	93.00.63 and up
1	2	- Cessna Citation S550	93.00.63 and up
1	3	- Falcon 10	93.00.63 and up
1	4	- Falcon 50	93.00.63 and up
1	5	- Raytheon Hawker HS125-700A	93.00.63 and up
1	6	- LearJet 35	93.00.63 and up
1	7	- LearJet 55	93.00.63 and up
1	8	- Sabreliner 60 (SSEC Only)	93.00.63 and up
1	9	- Lockheed Jetstar II	93.00.63 and up
	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 962830-1 and 962830-2 only.

- 0 - Standard K-FACTOR Matrix 0 - (Table 7 in this manual)
- 1 - Alternate K-FACTOR Matrix 1- (Table 8 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**F/ADC Software Version**

- | | |
|-----|---|
| 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 |

93.00.67 and up

93.00.67 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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Loopback Procedure 5 for Software Version 93.00.85+**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 Apollo NMS2001, 800, 820	
3	- Garmin	
4	- Northstar	
5	- Foster	
6	- IIMorrow 611, 612 and 618	
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
- 3 - Surveyor
- 4 - Bendix C - Bendix/King and F/ADC without Baro Interface
- 5 - Bendix D - Bendix/King and F/ADC with Baro 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 - (DO NOT USE)
- B - Type 11
- C-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 10420-11968E
- Type 10:** Reserved for future use (DO NOT USE).
- Type 11:** IDC P/N KTS B45152 10 410

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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

<u>SWITCH 3 AND SWITCH 4</u>		<u>CORRECTION For SSEC/PSEC Select:</u>	<u>F/ADC Software Version:</u>
0	0	- No correction	ALL
0	1	- MITSUBISHI MU-300	93.00.29 - 93.00-51
0	2	- CESSNA CITATION 500/501	93.00.29 - 93.00-51
0	3	- CESSNA 525	93.00.29 - 93.00-51
0	4	- CESSNA 500	93.00.29 - 93.00-51
0	5	- Citation 560 SN <=259	93.00.29 - 93.00-51
0	6	- Citation 560 SN >=260	93.00.29 - 93.00-51
0	7	- Citation 650	93.00.29 - 93.00-51
0	8	- Sabreliner 65	93.00.29 - 93.00-51
0	9	- WestWind 1124A	93.00.29 - 93.00-51
0	A	- LearJet 24	93.00.29 - 93.00-51
0	B	- Raytheon Hawker HS 125-3A	93.00.29 - 93.00-51
0	C	- Falcon 20-F	93.00.29 - 93.00-51
0	D	- Falcon 20-C, D, E	93.00.29 - 93.00-51
0	E	- LearJet 25D	93.00.29 - 93.00-51
0	F	- Douglas DC-8	93.00.58 - 93.00.63
1	0	- Beechjet 400	93.00.63 and up
1	1	- Boeing 707-321B	93.00.63 and up
1	2	- Cessna Citation S550	93.00.63 and up
1	3	- Falcon 10	93.00.63 and up
1	4	- Falcon 50	93.00.63 and up
1	5	- Raytheon Hawker HS125-700A	93.00.63 and up
1	6	- LearJet 35	93.00.63 and up
1	7	- LearJet 55	93.00.63 and up
1	8	- Sabreliner 60 (SSEC Only)	93.00.63 and up
1	9	- Lockheed Jetstar II	93.00.63 and up
1	A	- Antonov (AN 12)	93.00.85 and up
1	B	- Antonov (AN 24)	93.00.85 and up
1	C	- Antonov (AN 26)	93.00.85 and up
1	D	- Antonov (AN 30)	93.00.85 and up
1	E	- Yakovlev (YAK 40)	93.00.85 and up

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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 962830-1Y and 962830-2Y only.

- 0 - Standard K-FACTOR Matrix 0 - (Table 7 in this manual)
- 1 - Alternate K-FACTOR Matrix 1- (Table 8 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)

<u>SWITCH 4</u>	<u>SPECIAL OPTION DESCRIPTION</u>	<u>F/ADC Software Version</u>
0	-ARINC 429 labels 206 (IAS) and 210 (TAS) are not transmitted if the IAS < 20 knots	93.00.67 and up
1	-ARINC 429 labels 206 (IAS) and 210 (TAS) are transmitted as zero knots if the IAS < 20 knots	93.00.67 and up
2-F	Reserved – DO NOT USE	

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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 Air Data 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 Air Data 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 Air Data 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 Air Data 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 Air Data checks for fuel flow below 15 pph. If the fuel flow is below 15 pph, the Air Data considers the engine to be off and returns a fuel flow of 0. Then, as soon as the fuel flow exceeds 15 pph, the Air Data continues to return a fuel flow of 0 until the delay time has expired. In a twin engine, the Air Data 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 Air Data 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 Air Data 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.

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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 systems 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>
962830-1Y	Digital
962830-2Y	Sine Wave
962830-3Y	Analog

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

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

Switches 1 & 2 select the left K-Factor

Switches 3 & 4 select the right K-Factor

Due to possible fuel flow system peculiarities, switches 1 & 2 and switches 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 962830-3Y), use the Analog K-Factor Settings Table.

Switches 1 & 2 select the main engine K-Factor.

Switches 3 & 4 select the offset.

The offset is simply the value represented by switches 3 & 4 in the Analog K-Factor Settings Table on the following page. 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.

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<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, 02C208E	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	Cheyenne III	1	9	0	0	41960	0
Piper	Cheyenne IV	1	1	0	0	46150	0
LearJet	LearJet	0	7	0	0	15380	0
LearJet	Model 36 (5V)	0	2	0	0	11540	0
LearJet	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 – Analog K-Factor Settings

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PPG	SW1	SW2	PPG	SW1	SW2	PPG	SW1	SW2
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 – Matrix 0 - Digital K-Factor Settings

Note: The Digital K-Factor Settings for SW1 and SW2 are the same for SW3 and SW4 respectively.

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<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 – Matrix 0 - Digital K-Factor Settings (continued)

Note: The Digital K-Factor Settings for SW1 and SW2 are the same for SW3 and SW4 respectively.

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PPG	SW1	SW2	PPG	SW1	SW2	PPG	SW1	SW2
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 – Matrix 0 - Digital K-Factor Settings (continued)

Note: The Digital K-Factor Settings for SW1 and SW2 are the same for SW3 and SW4 respectively.

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<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>
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			

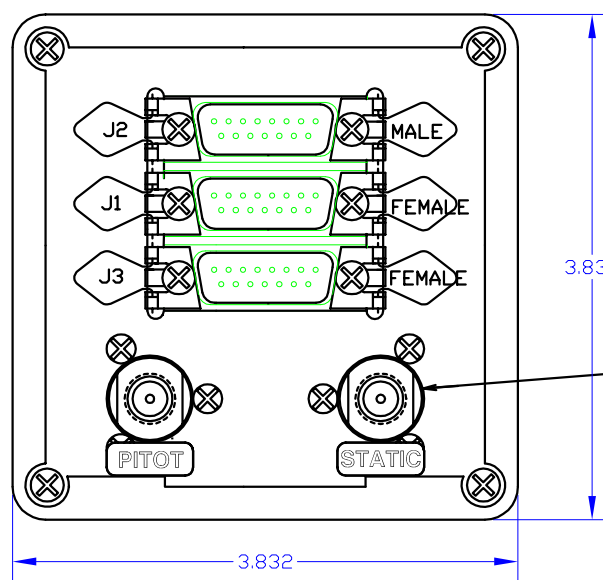
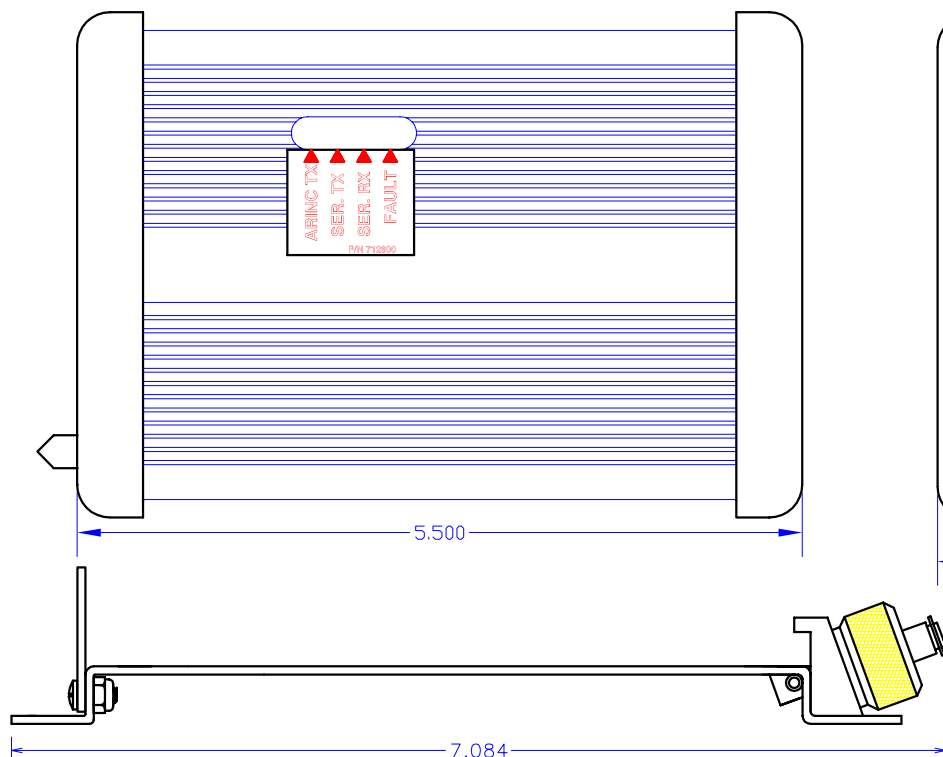
Table 8 – Matrix 1 - Alternate Digital K-Factor Setting (software version 93.00.61+)

Note: The Digital K-Factor Settings for SW1 and SW2 are the same for SW3 and SW4 respectively.

**INSTALLATION MANUAL
FUEL/AIR DATA COMPUTER
P/N 962830-XY**

SECTION 11.0

**INSTALLATION DRAWINGS AND
INSTALL KIT PARTS LISTS**



MATING CONNECTORS:

P1, P3

230051 - CONN, SHELL, MALE

230054 - CONN, PINS, MALE

230038 - CONN, HOOD, 15 PIN

P2

230050 - CONN, SHELL, FEMALE

230055 - CONN, PINS, FEMALE

230038 - CONN, HOOD, 15 PIN

FEMALE, 1/8-NPTF (2)

J2 PINOUT

1. 12 - 28v DC POWER INPUT
2. NC
3. RX+, RS-422 *
4. RX-, RS-422 *
5. RX, RS-232 *
6. TX, RS-232 *
7. TX, ARINC429 A
8. TX, ARINC429 B
9. GROUND
10. NC
11. TX+, RS-422 *
12. TX-, RS-422 *
13. NC
14. SIGNAL GND
15. NC

J3 PINOUT

1. NC
2. NC
3. NC
4. NC
5. NC
6. NC
7. NC
8. NC
9. NC
10. NC
11. NC
12. NC
13. NC
14. NC
15. NC

* USE RS-232 OR RS-422, NOT BOTH

J1 PINOUT

1. FUEL FLOW RIGHT - POWER
2. FUEL FLOW RIGHT - SIGNAL
3. GROUND
4. HEADING Y
5. HEADING X
6. 26V 400Hz, H
7. 26V 400Hz, Z, C
8. BARD. WIPER
9. FUEL FLOW LEFT - POWER
10. FUEL FLOW LEFT - SIGNAL
11. GROUND
12. BARD. (+)
13. BARD. (-)
14. DAT - (Signal)
15. DAT + (+5V)

DRAWING DATE
9-22-94
DRAFTER
DAP
APPROVED
SES
FILE NAME
962830-1EJ.DWG
DIRECTORY
962830

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION DWG, ADC2000,
DIGITAL FUEL FLOW

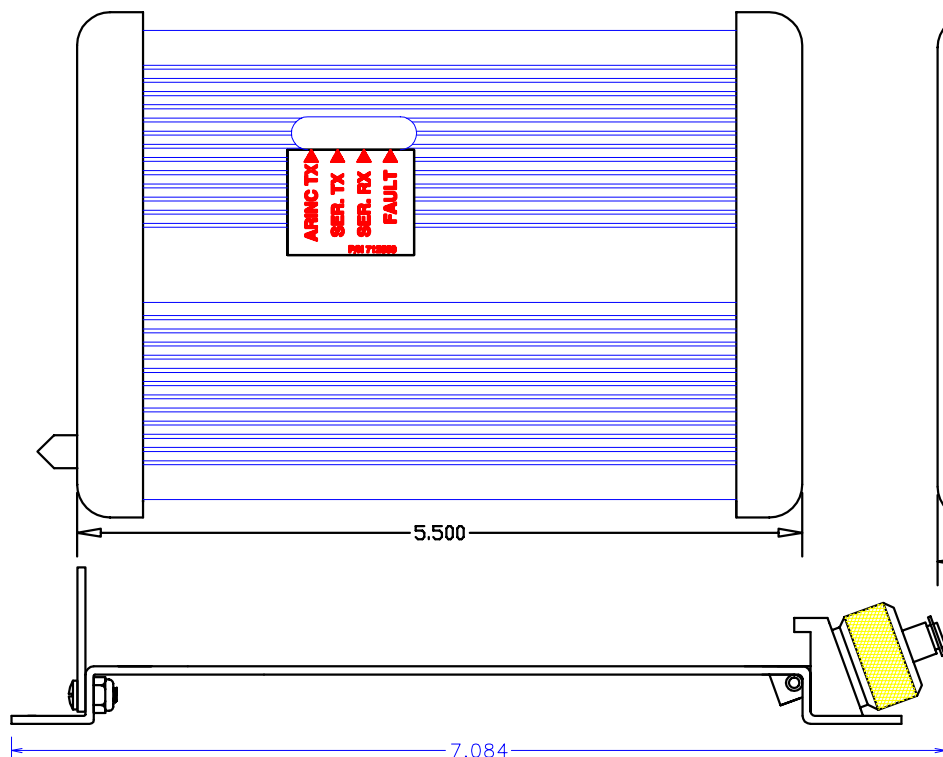
DRAWING NO.
4028-394

SIZE
A

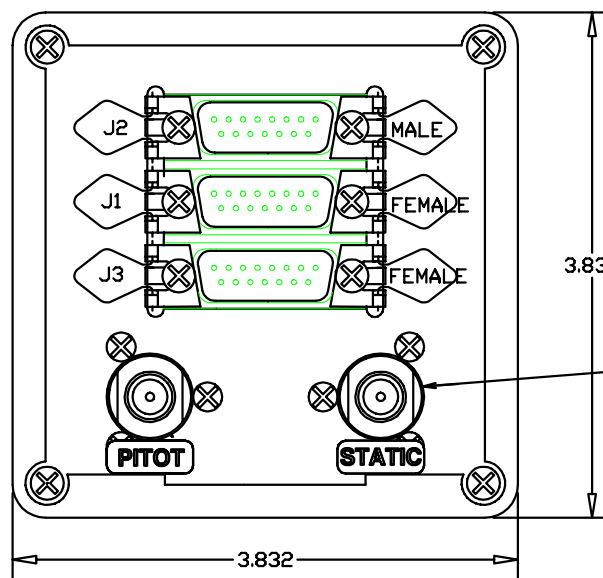
P/N 962830-1

REV.
E

0501/032	E	3/21/05	PAB	WMP	UPDATED TITLE BLOCK; CH TITLE; CORR PITOT/STC LABEL LOCNS
9803/054	D	3/26/98	SRB	KCL	CORRECT J1 DES. FOR PIN 3 AND PIN 11
9706/017	C	6-9-97	WMP	KCL	UPDATE J3
9505/014	B	5-11-95	WMP	SES	ADD SPRING LATCH CLIPS
9412/005	A	12-7-94	DAP	SES	BASLINE RELEASE
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION



- J1 PINOUT
1. FUEL FLOW RIGHT (-)
 2. FUEL FLOW RIGHT (+)
 3. GROUND
 4. HEADING Y
 5. HEADING X
 6. 26V 400Hz, H
 7. 26V 400Hz, Z, C
 8. BARD. WIPER
 9. FUEL FLOW LEFT (-)
 10. FUEL FLOW LEFT (+)
 11. GROUND
 12. BARD. (+)
 13. BARD. (-)
 14. DAT - (Signal)
 15. DAT + (+5V)



MATING CONNECTORS:

P1, P3
 230051 - CONN, SHELL, MALE
 230054 - CONN, PINS, MALE
 230038 - CONN, HOOD, 15 PIN

P2
 230050 - CONN, SHELL, FEMALE
 230055 - CONN, PINS, FEMALE
 230038 - CONN, HOOD, 15 PIN

FEMALE, 1/8-NPTF (2)

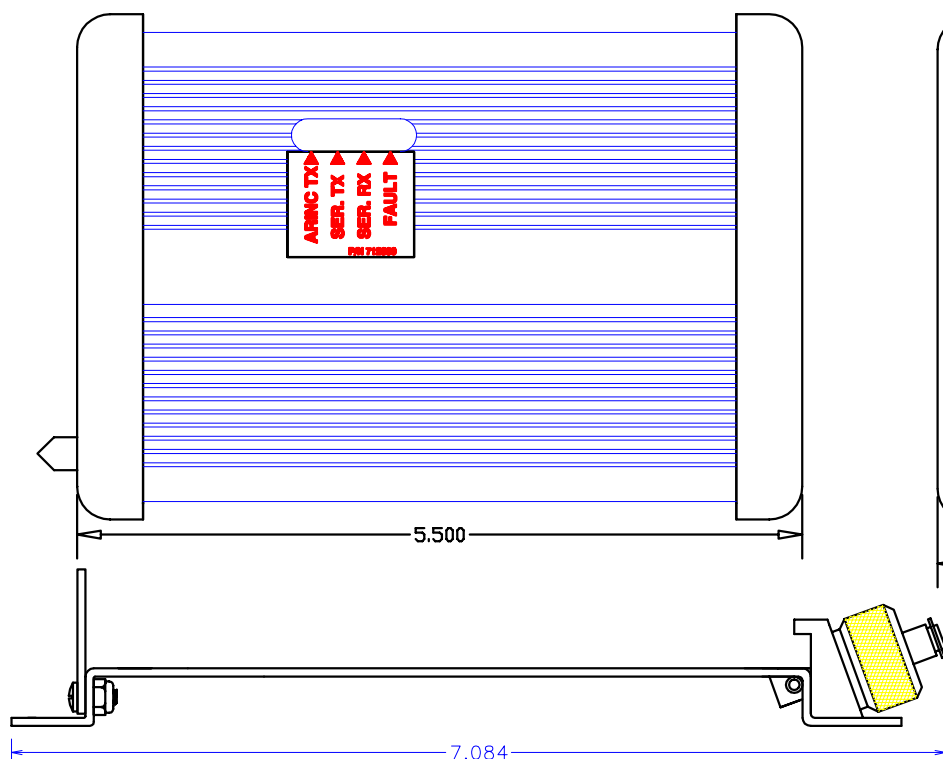
- J2 PINOUT
1. 12 - 28v DC POWER INPUT
 2. NC
 3. RX+, RS-422 *
 4. RX-, RS-422 *
 5. RX, RS-232 *
 6. TX, RS-232 *
 7. TX, ARINC429 A
 8. TX, ARINC429 B
 9. GROUND
 10. NC
 11. TX+, RS-422 *
 12. TX-, RS-422 *
 13. NC
 14. SIGNAL GND
 15. NC

- J3 PINOUT
1. NC
 2. NC
 3. NC
 4. NC
 5. NC
 6. NC
 7. NC
 8. NC
 9. NC
 10. NC
 11. NC
 12. NC
 13. NC
 14. NC
 15. NC

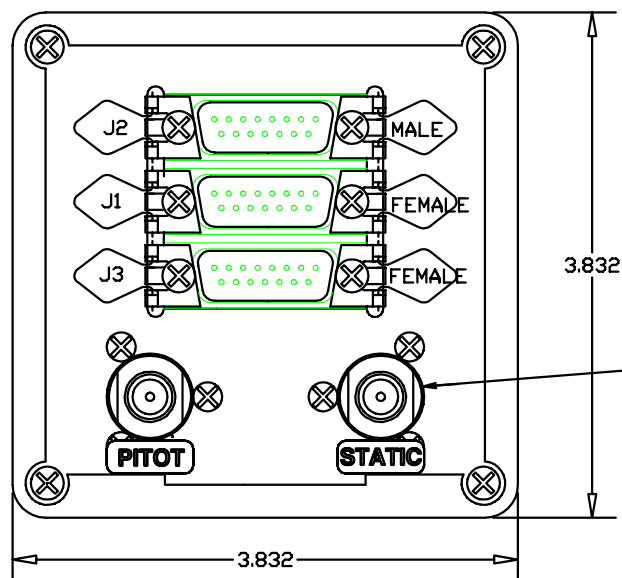
* USE RS-232 OR RS-422, NOT BOTH

0501/032	D	3/21/05	PAB	WMP	UPDATED TITLE BLOCK; CH TITLE; CORR PITOT/STC LABEL LOCNS
9706/017	C	6-9-97	WMP	KCL	UPDATE J3
9505/028	B	5/17/95	DAP	SES	REVERSE FF POLARITY
9505/014	A	5-11-95	WMP	SES	ADD SPRING LATCH CLIPS
9412/005	-	12-7-94	DAP	SES	BASELINE RELEASE
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION

DRAWING DATE 9-22-94	SHADIN MINNEAPOLIS, MN 55426		
DRAFTER DAP	INSTALLATION DWG, ADC2000, SINE FUEL FLOW		
APPROVED SES			
FILE NAME 962830-2DJ.DWG	DRAWING NO. 4028-431		
DIRECTORY 962830			
	SIZE A	P/N 962830-2	REV. D



- J1 PINOUT
1. FUEL FLOW RIGHT (-)
 2. FUEL FLOW RIGHT (+)
 3. GROUND
 4. HEADING Y
 5. HEADING X
 6. 26V 400Hz, H
 7. 26V 400Hz, Z, C
 8. BARD. WIPER
 9. FUEL FLOW LEFT (-)
 10. FUEL FLOW LEFT (+)
 11. GROUND
 12. BARD. (+)
 13. BARD. (-)
 14. DAT - (Signal)
 15. DAT + (+5V)



MATING CONNECTORS:

- P1, P3
- 230051 - CONN, SHELL, MALE
 - 230054 - CONN, PINS, MALE
 - 230038 - CONN, HOOD, 15 PIN

- P2
- 230050 - CONN, SHELL, FEMALE
 - 230055 - CONN, PINS, FEMALE
 - 230038 - CONN, HOOD, 15 PIN

FEMALE, 1/8-NPTF (2)

- J2 PINOUT
1. 12 - 28v DC POWER INPUT
 2. NC
 3. RX+, RS-422 *
 4. RX-, RS-422 *
 5. RX, RS-232 *
 6. TX, RS-232 *
 7. TX, ARINC429 A
 8. TX, ARINC429 B
 9. GROUND
 10. NC
 11. TX+, RS-422 *
 12. TX-, RS-422 *
 13. NC
 14. SIGNAL GND
 15. NC

- J3 PINOUT
1. NC
 2. NC
 3. NC
 4. NC
 5. NC
 6. NC
 7. NC
 8. NC
 9. NC
 10. NC
 11. NC
 12. NC
 13. NC
 14. NC
 15. NC

* USE RS-232 OR RS-422, NOT BOTH

0501/032	D	3/21/05	PAB	WMP	UPDATED TITLE BLOCK; CH TITLE; CORR PITOT/STC LABEL LOCNS
9706/017	C	6-9-97	WMP	KCL	UPDATE J3
9505/018	B	5/17/95	DAP	SES	REVERSE FF POLARITY
9505/014	A	5-11-95	WMP	SES	ADD SPRING LATCH CLIPS
9412/005	-	12-7-94	DAP	SES	BASELINE RELEASE
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION

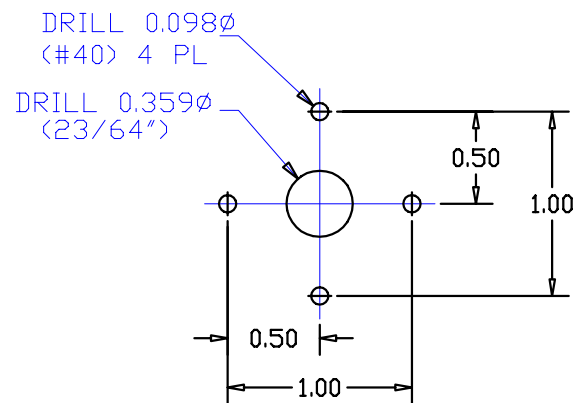
DRAWING DATE 9-22-94	SHADIN MINNEAPOLIS, MN 55426			
DRAFTER DAP	INSTALLATION DWG, ADC2000, DC FUEL FLOW			
APPROVED SES				
FILE NAME 962830-3DJ.DWG				
DIRECTORY 962830	DRAWING NO. 4028-432	SIZE A	P/N 962830-3	REV. D

NOTES:

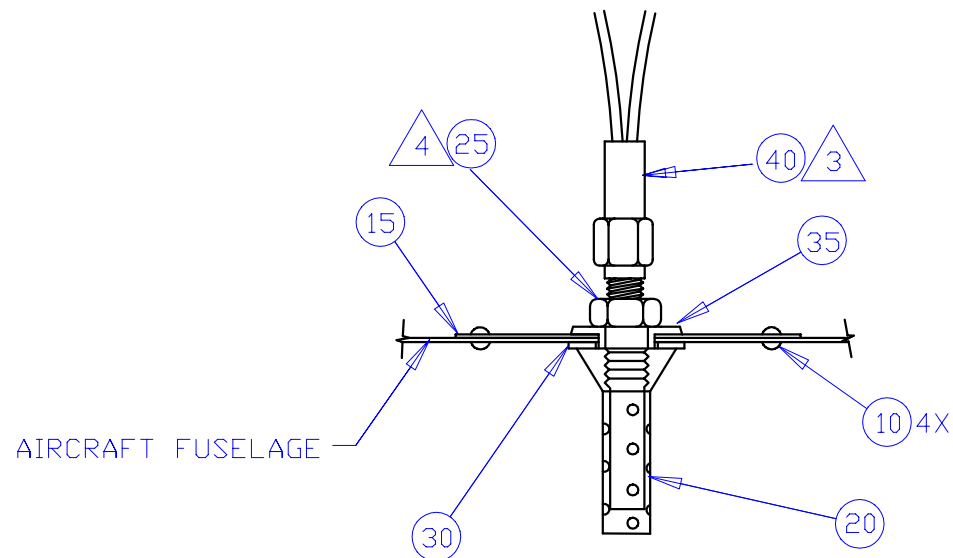
1. REFERENCE P/N 681201-1 DAT PROBE ASSEMBLY KIT
2. AVOID INSTALLING DAT PROBE IN OR NEAR:
PROP AIRSTREAM
ENGINE EXHAUST FLOW PATH
CABIN HEATERS EXHAUST FLOW PATH
TRANSMITTING ANTENNAS (DME, TXP, COMM.)
DARK PAINTED AREAS

△ 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	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

UNLESS OTHERWISE NOTED
DIMENSIONS ARE IN INCHES
TOLERANCES: ±0.01

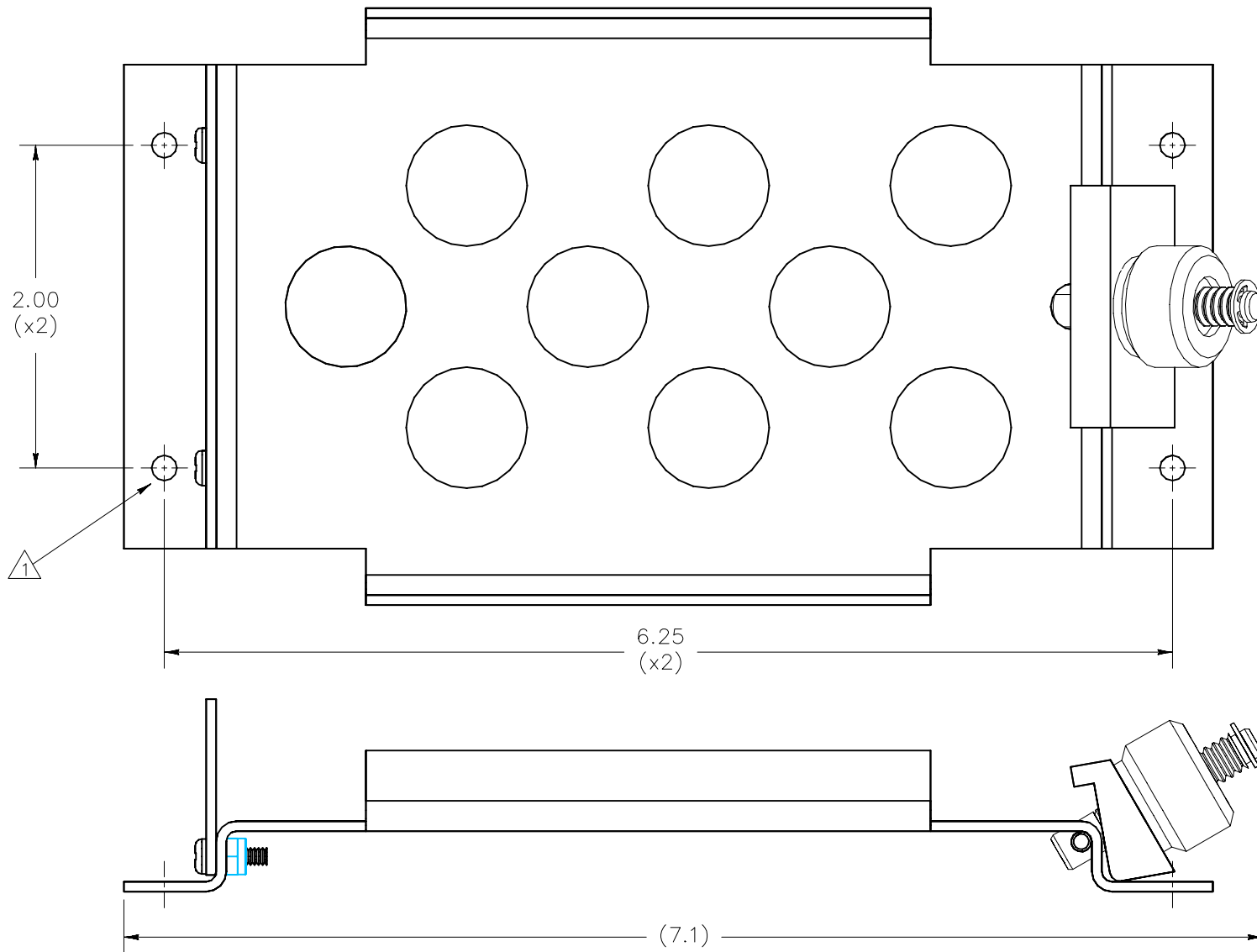
FINISH: N/A
MATERIAL: N/A
SCALE: NONE

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



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
 $\angle$ - $\pm 1^\circ$ 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

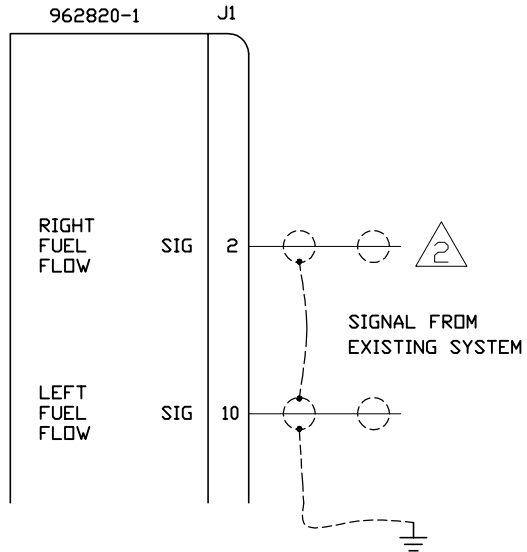
SIZE
A

P/N -----

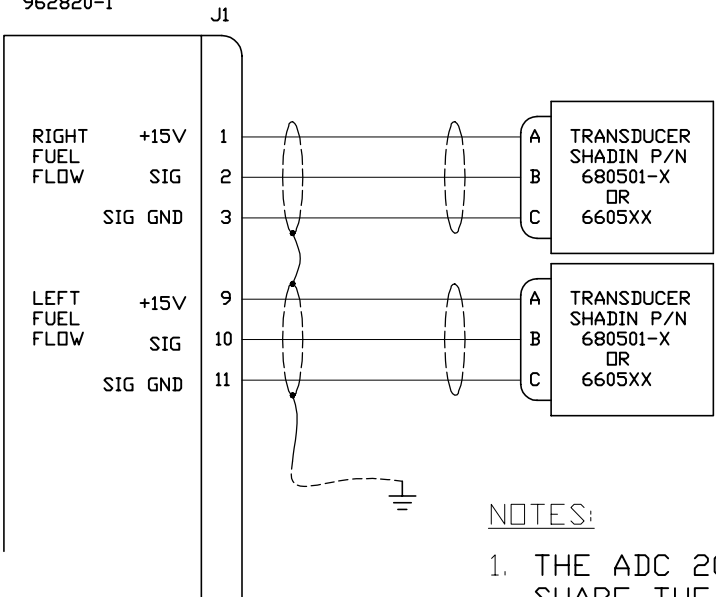
REV
C

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

LEVEL FF INTERFACE OPTION
962830-1
962820-1



FREQUENCY FF INTERFACE OPTION
962830-1
962820-1



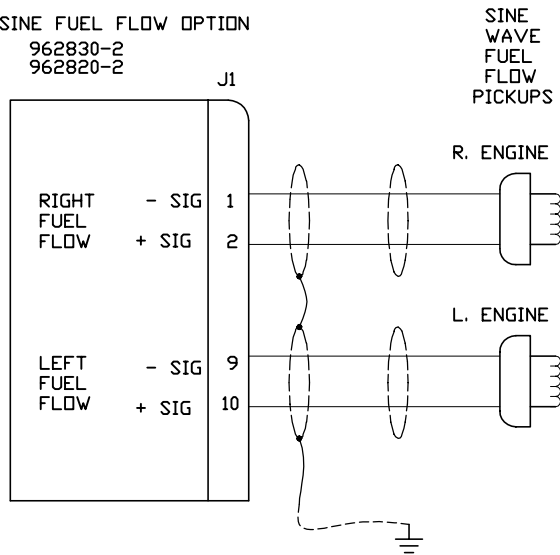
NOTES:

1. THE ADC 200 AND ADC 2000 D-SUB CONNECTOR SHARE THE SAME FUEL FLOW PIN LOCATIONS.

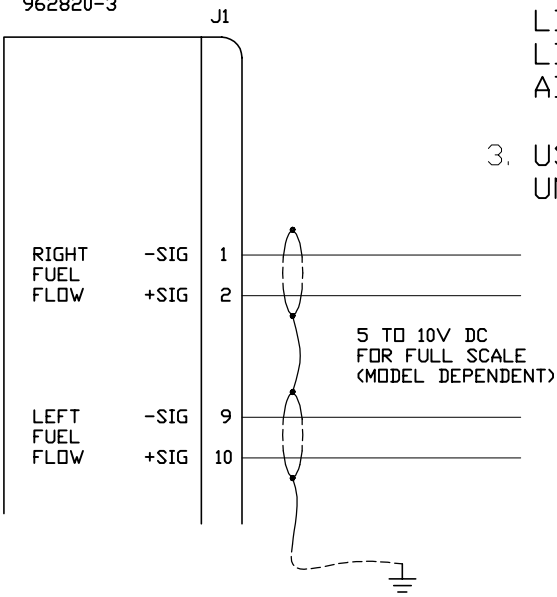
2. WHEN INSTALLING TO ANY EXISTING FREQUENCY FUEL FLOW TRANSDUCER, USE ONLY THE SIGNAL LINE. DO NOT CONNECT POWER AND GROUND LINES. THIS COULD DAMAGE THE ADC AND OR AIRCRAFT INSTRUMENTS.

3. USE SHIELDED WIRE BUT GROUND ONLY ON ADC UNIT END TO PREVENT A GROUND LOOP.

SINE FUEL FLOW OPTION
962830-2
962820-2

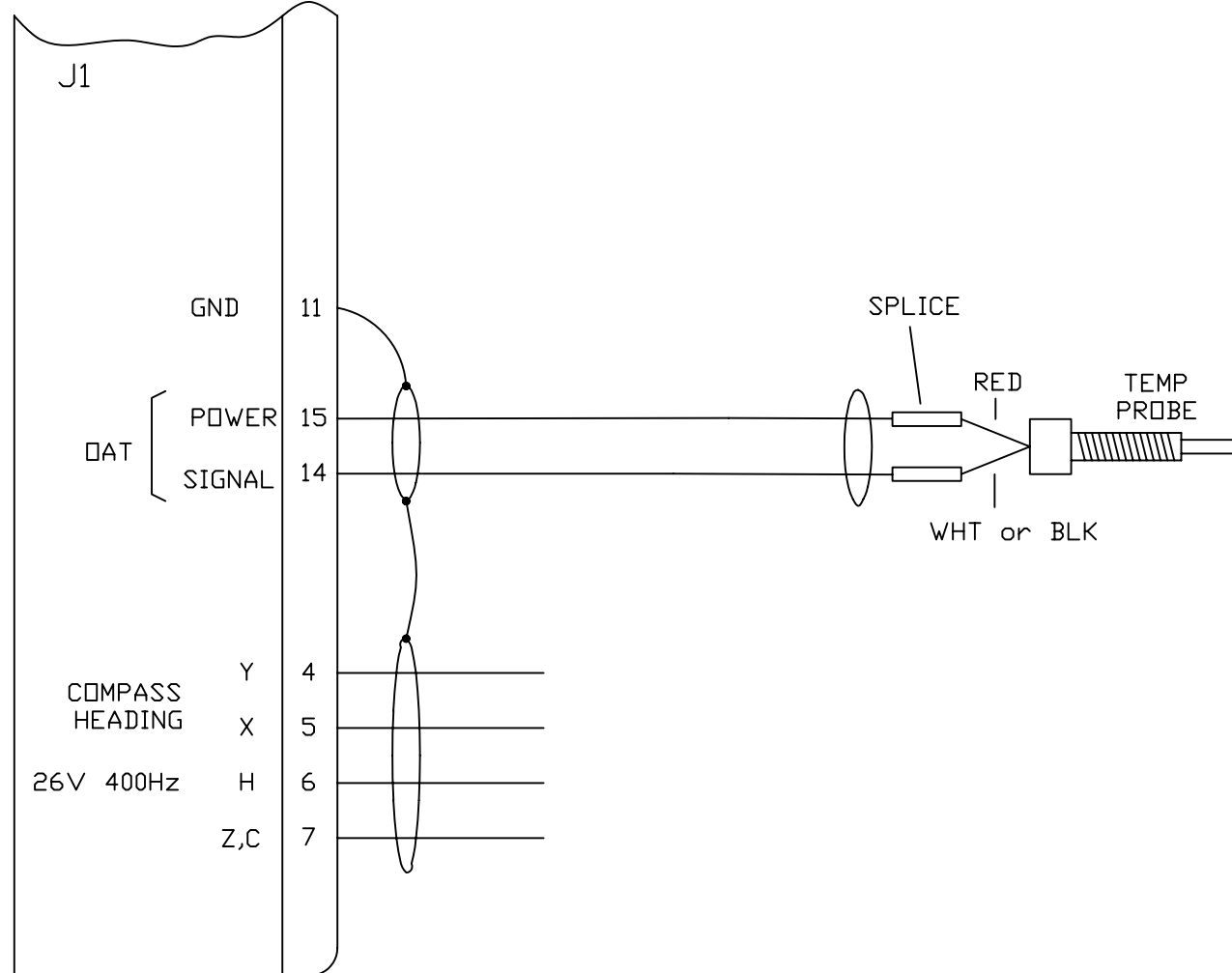


D.C. FUEL FLOW OPTION
962830-3
962820-3



0211/047	B	3/11/03	PAB	BAL	REMOVED GNDS; ADDED NOTES & ADC 200 TO TITLE	DRAWING DATE 12/6/94	SHADIN MINNEAPOLIS, MN 55426	REV	B
9505/028	A	5/17/95	DAP	SES	CORRECT SINE FF LABELING	DRAFTER DAP	INSTALLATION WIRING, FUEL/AIRDATA	SIZE	P/N
9412/005	-	12/7/94	DAP	SES	BASELINE RELEASE	APPROVED SES	COMPUTER ADC 200/ADC 2000 TO	FILE NAME	4028-423J.DWG
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION	DIRECTORY 4028	FUEL SYSTEMS	DRAWING NO.	4028-423
SCALE: NONE						SHEET	1 OF 1	SIZE	A

962830-X



0703/007	B		PAB		ADDED PIN 11
0501/032	A	2/14/05	PAB	WMP	UPDATED TITLE BLOCK
9412/005	-	12/7/94	DAP	SES	BASELINE RELEASE
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION

SCALE: NONE

DRAWING DATE	12/6/94
DRAFTER	DAP
APPROVED	SES
FILE NAME	4028-425BJ.DWG
DIRECTORY	4028
SHEET	1 OF 1



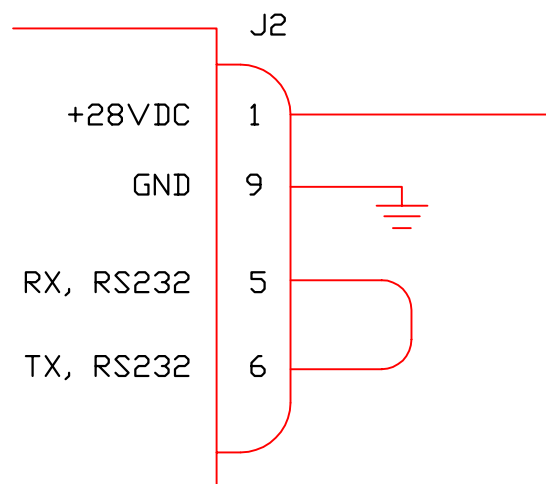
MINNEAPOLIS, MN 55426

DRAWING NO.	4028-425
SIZE	A

INSTALLATION WIRING,
FUEL/AIRDATA
COMPUTER (ADC2000)
TO DAT/HEADING
SYSTEM

P/N

REV
B

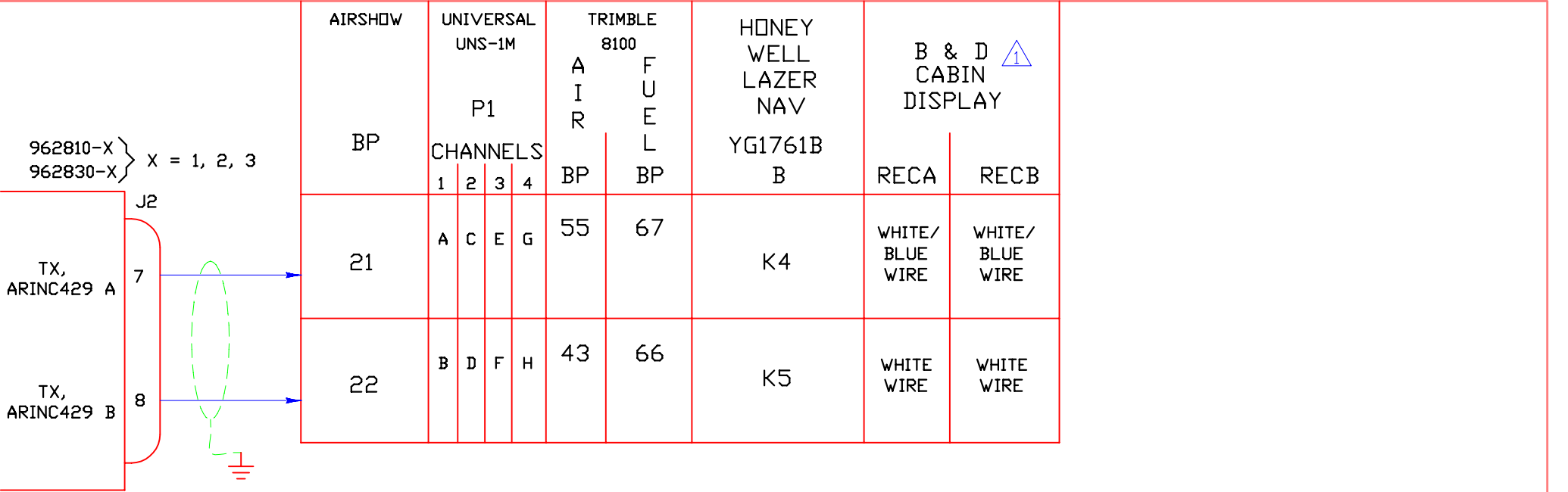


NOTES:

1. CONSULT INSTALLATION MANUAL FOR F/ADC PROGRAMMING INSTRUCTIONS.
2. MATING CONNECTOR: 15 PIN FEMALE D-SUB (SHADIN PN 230050C) OR EQUIVALENT

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0509/028	C	9/19/05	PAB	ZK	CORRECTED PIN OUT J2:5 & 6, EDITED NOTE 2
0501/032	B	2/14/05	PAB	VMP	UPDATED TITLE BLOCK
9809/022	A	9/28/98	DLR	KCL	CORRECTED PIN OUT
9803/025	-	3-26-98	SRB	KCL	BASELINE RELEASE

DRAWING DATE 3/25/98	SHADIN MINNEAPOLIS, MN 55426			
DRAFTER SRB	INSTALLATION WIRING, LOOP BACK HARNESS FOR F/ADC200, 2000, D-SUB CONNECTOR			
APPROVED KCL				
FILE NAME 4028-944C.J.DWG				
DIRECTORY 4028	DRAWING NO. 4028-944	SIZE A	P/N	REV C
SHEET 1 OF 1	NOT TO SCALE			



NOTES:

1. FOR THE B & D CABIN DISPLAY THE ARINC 429 LABELS RECEIVED ARE DEPENDANT UPON THE WAY THE B & D WAS BUILT, NOT SHADIN. ALSO THE P/N OF THE B & D INDICATES IF IT IS SET UP FOR RECEIVE A OR RECEIVE B. FOR EXAMPLE, P/N 2700-X XX YY ZZ X XXXX. IF YY = FØ, THEN REC A. IF ZZ = FØ, THEN REC B.
2. THERE MAY BE OTHER TYPES OF EQUIPMENT THAT WILL USE ARINC 429 LABELS.

962810-X
962820-X
962830-X

X = 1, 2, 3

TRIMBLE	TRIMBLE	NORTHSTAR
1000,	2100,	M1A
2000,	2101,	M2
3000	3100	M3
		60/600

RX, SDA+	RX, SDA+	N/A
16	7	
RX, SDB-	RX, SDB-	N/A
4	8	
TX, SDA+	TX, SDA+	TX, SDA+
15	37	11
TX, SDB-	TX, SDB-	TX, SDB-
3	5	6

RS-422
TX, SDA+

RS-422
TX, SDB-

RS-422
RX, SDA+

RS-422
R, SDB-

J2

11

12

3

4



DRAWING DATE
3/25/98
DRAFTER
SRB
APPROVED
KCL
FILE NAME
4028-946A.J.DWG
DIRECTORY
4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

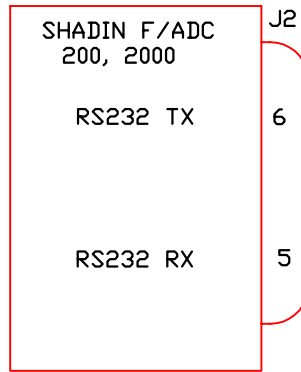
INSTALLATION WIRING, F/ADC200, 2000
TO NAV RECEIVERS W/RS-422, RS-485

DRAWING NO.	SIZE	REV
4028-946	A	A

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0211/047	A	3/11/03	PAB	BAL	DEL PIN 9; ADDED GND
9803/025	-	3/26/98	SRB	KCL	BASELINE RELEASE

NOT TO SCALE

BENDIX/KING



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

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

NOTES:

1. CONFIGURE SHADIN F/ADC 200 I/O FOR FLOWMETER/BENDIX C.
2. CONFIGURE SHADIN F/ADC 2000 I/O FOR FLOWMETER/BENDIX C OR FLOWMETER/BENDIX D IF USING THE BARD-METRIC INTERFACE.
3. CONFIGURE SHADIN FUEL FLOW METER I/O FOR ON/AIRDATA.
4. FUEL FLOW TRANSDUCER SIGNAL(S) ARE CONNECTED TO THE SHADIN FUEL FLOW METER. NO FUEL SIGNAL CONNECTION TO THE ADC.
5. MINIMUM SOFTWARE LEVEL:
 DIGIFLO 60.10.77
 MINIFLO 60.01.77
 MICROFLO 60.08.77
 ADC 200/2000 93.XX.77

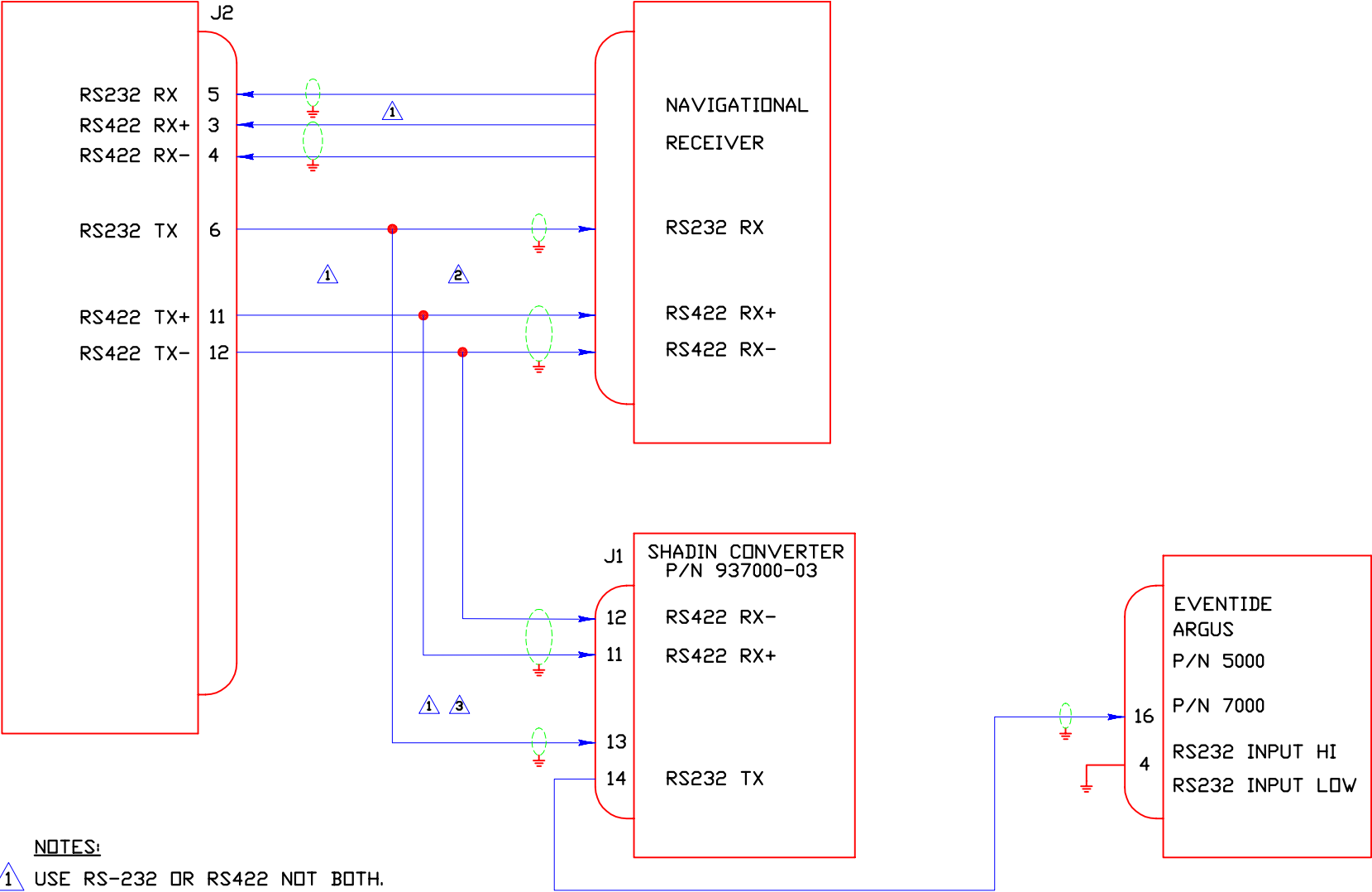
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0211/047	A	3/11/03	PAB	BAL	ADDED NOTES 4 & 5; ADDED FUEL FLOW METER SW VERSIONS
9803/025	-	3/26/98	SRB	KCL	BASELINE RELEASE

NOT TO SCALE

DRAWING DATE 3/25/98	SHADIN MINNEAPOLIS, MN 55426		
DRAFTER SRB	INSTALLATION WIRING, F/ADC200, 2000, SHADIN FUEL FLOW INDICATORS TO BENDIX/KING NAV. RECEIVER.		
APPROVED KCL			
FILE NAME 4028-947A.JDWG			
DIRECTORY 4028	DRAWING NO. 4028-947	SIZE A	P/N _____
SHEET 1 OF 1			REV A

F/ADC200, 2000
P/N 962810-X
P/N 962820-X
P/N 962830-X

} X = 1, 2, 3



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.

DRAWING DATE 3/25/98	SHADIN MINNEAPOLIS, MN 55426		
DRAFTER SRB	INSTALLATION WIRING, F/ADC200, 2000 AND SHADIN CONVERTER TO EVENTIDE ARGUS		
APPROVED KCL			
FILE NAME 4028-948A.JDWG	DRAWING NO. 4028-948	SIZE A	P/N _____
DIRECTORY 4028	REV A		
SHEET 1 OF 1			

0501/032	A	2/14/05	PAB	VMP	UPDATED TITLE BLOCK
9803/025	-	3/26/98	SRB	KCL	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

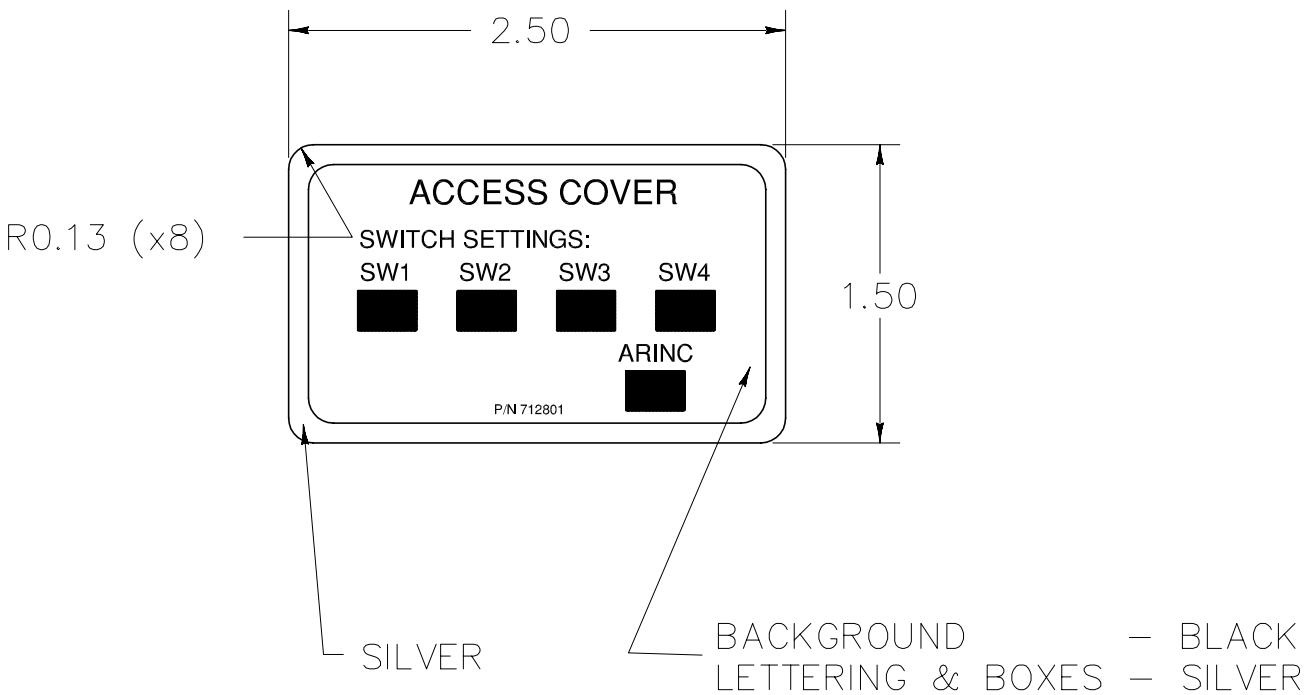
NOT TO SCALE

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)

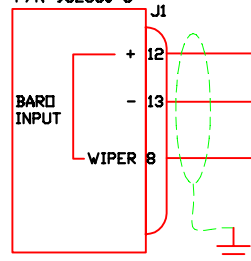


0501/032	A	2/14/05	PAB	WMP	UPDATED TITLE BLOCK
9812/002	-	12/3/98	PAB	KCL	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES TOLERANCES: X.X - ±0.1 X.XX - ±0.01 X.XXX - ±0.005	DRAWING DATE 12/2/98 DRAFTER PAB APPROVED KCL	FILE NAME 712801A.DWG DIRECTORY 71XXXX	DRAWING NO. 4028-A80	SIZE A	P/N712801	REV A
FINISH: N/A	MATERIAL: 3M 7983	SCALE: FULL	SHEET 1 OF 1			

<i>SHADIN</i> MINNEAPOLIS, MN 55426	
LABEL, ADC200/2000 ACCESS COVER	

P/N 962830-1
P/N 962830-2
P/N 962830-3



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	J1A	S	a	d	T	T	a	X	g	L	v
U	J1C	Z	c	f	V	V	c	Z	J	b	U
V	J1B	Y	b	e	U	U	b	Y	h	J	w

NOTES:

- ⚠ EXCITATION VOLTAGE USUALLY SUPPLIED BY AIRCRAFT HARNESS (5-12 VDC), J1:12 TO EXCITATION, J1:13 TO GND.
- ⚠ EXCITATION VOLTAGE MAY BE SUPPLIED BY AIRCRAFT HARNESS (5 VDC), J1:12 TO EXCITATION, J1:13 TO GND.
- ⚠ EXCITATION VOLTAGE SUPPLIED BY AIRCRAFT HARNESS (-10VDC) J1:13 TO EXCITATION, J1:12 TO GND.
- J1:15 (+5VDC DAT POWER) MAY BE USED FOR EXCITATION.
- MAXIMUM DIFFERENTIAL INPUT VOLTAGE BETWEEN BARD (+) AND BARD (-) IS ±12VDC.

0211/047	C	3/11/03	PAB	BAL	DEL PIN 11; ADDED GND
0011/003	B	11/2/00	PAB	KCL	KEA 346 WAS "J1A, J1C, & J1B" RESPECTIVELY; ADD IDC P/N "KTS B45152 10 410"
0007/031	A	7/19/00	PAB	RH	"Y" IN SPERRY LABEL WAS "V"
9812/001	-	12/14/98	DLR	KCL	BASELINE RELEASE

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
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SCALE: NONE

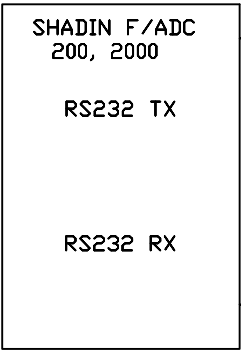
DRAWING DATE 12/14/98
DRAFTER DLR
APPROVED KCL
FILE NAME 4028-A82C.J.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, ADC 2000,
D-SUB CONN, TO ALTIMETER BARD POT

DRAWING NO. 4028-A82	SIZE A	P/N-----	REV C
-------------------------	-----------	----------	----------

GARMIN



GARMIN 430	GARMIN 530
P4001	P5001
57	57
56	56

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

NOTES:

1. CONFIGURE SHADIN F/ADC 200/2000 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 200/2000 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	B	4/29/11	HWL	ZK	CHANGED SOFTWARE LEVEL IN NOTE 4
0211/047	A	3/11/03	PAB	BAL	CHANGED TABLE TO NOTE 4; ADDED NOTE 5; UPDATED SW VERSIONS OF FLOW METERS
0008/028	-	9/12/00	PAB	EDJ	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

DRAWING DATE 8/21/00
DRAFTER PAB
APPROVED EDJ
FILE NAME 4028-B94BJ.DWG
DIRECTORY 4028


MINNEAPOLIS, MN 55426
DRAWING NO. 4028-B94
SIZE A

INSTALLATION WIRING, F/ADC200, 2000, SHADIN FUEL FLOW INDICATORS TO GARMIN 430/530	
P/N	REV B

NOT TO SCALE

SHEET 1 OF 1

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

ECO #: 0704/002
Release date: 4-6-07
Approved: ZK

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

Shadin Avionics

File Name:

DIRECTORY:

COPY OF IK9630-1DP.DOC

Install Kits

Report: N/A

ECO Date: March 15, 2007

Rev: D

Sec.: IX

Page 1 of 1

ECO #: 0703/007

Release Date: 6-4-07

Approved: DU

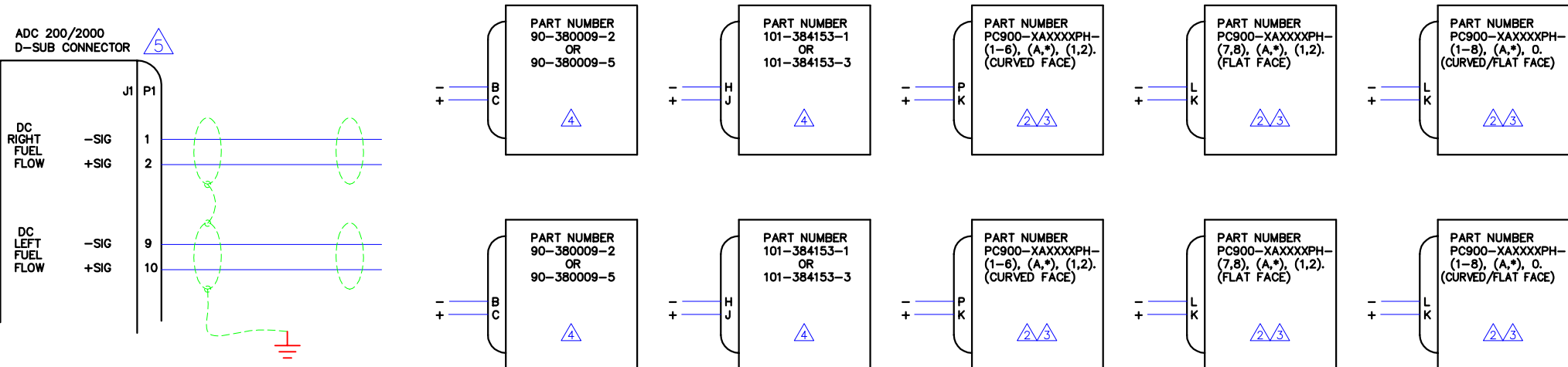
PARTS LISTPart #: **IK9630-1**

Drawing #: N/A

Description: **INSTALL KIT, ADC2000**

<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>
15	612826A	1	TRAY, Mounting, ADC-2000	SHA	4028-T54		
20	230019H-1	6	SPRING LATCH CLIP	SHA	4028-074		
25	230050C	1	CONN, 15Pin, D-Sub, F Crimp, w/Contacts	POS	M24308/2-2 (RD15F10000-50)		
30	230051C	2	CONN, 15 Pin, D-Sub M Crimp, w/Contacts	POS	M24308/4-2 (RD15M10000-50)		
35	230038	3	CONN, Hood 15 Pin D Sub	CIN	DA-24658		
40	511002	6	SCREW, 4-40 x 1/4" Phil Pan HD SS	MCM	91772A106		
45	512007	6	NUT, 4-40 3/16 x 1/16 SS	AFT	HNSP188 04C000		
50	541001	6	WASHER, #4 Split Lock SS	MCM	92147A005		

31 items



- 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:

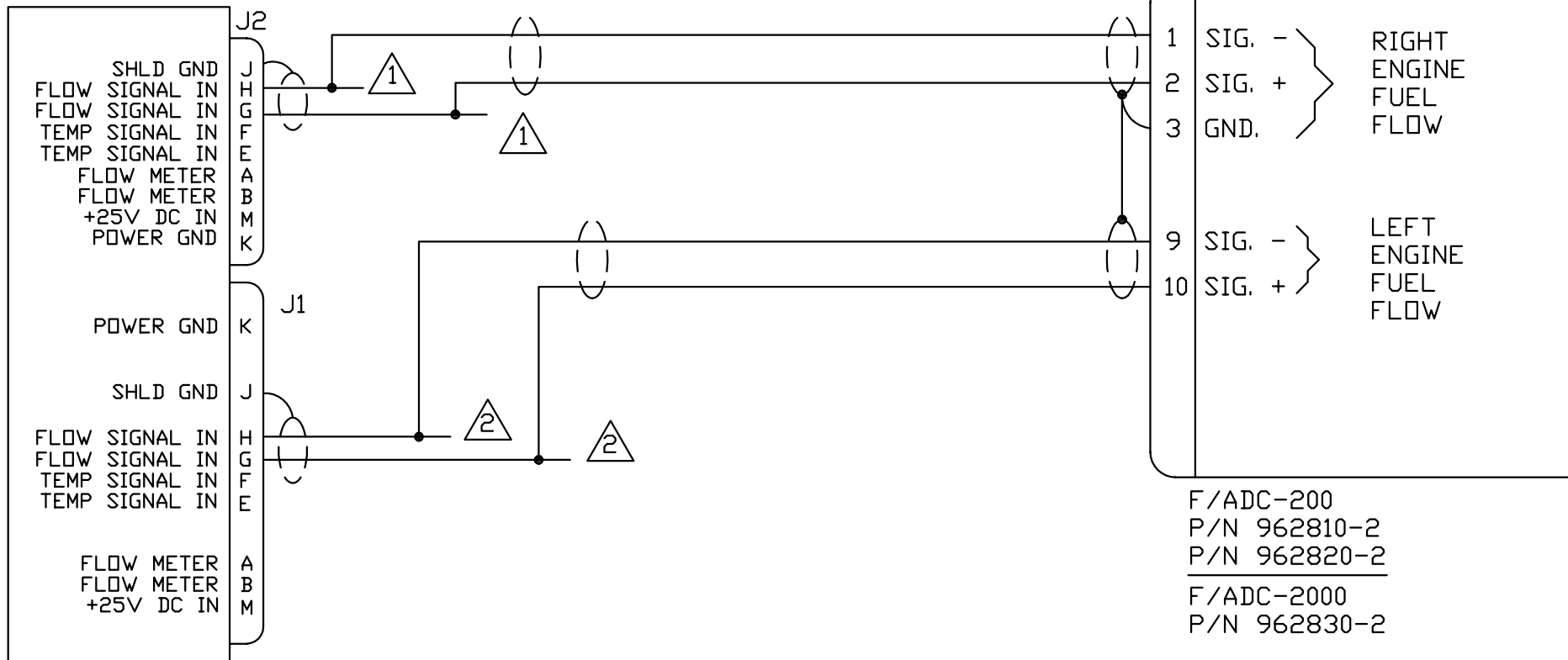
ADC200/2000 SWITCH SETTINGS						
PART NUMBER	K-FACTOR/OFFSET	AUX RATE OUTPUT	SW1	SW2	SW3	SW4
PC900-1A0600-XX1	38,460/0	0-5 VDC	0	4	0	0
PC900-1A0750-XX1	30,770/0	0-5 VDC	0	5	0	0
PC900-1A0800-XX1	28,850/0	0-5 VDC	0	6	0	0

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. USE SHIELDED WIRE BUT GROUND ONLY ON ADC UNIT END TO PREVENT A GROUND LOOP.

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



NOTES

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

SIG COND. P/N
45AS86801-003

<u>K-FACTOR</u>	<u>SW1</u>	<u>SW2</u>	<u>SW3</u>	<u>SW4</u>
5150 PPG	6	E	6	E

3

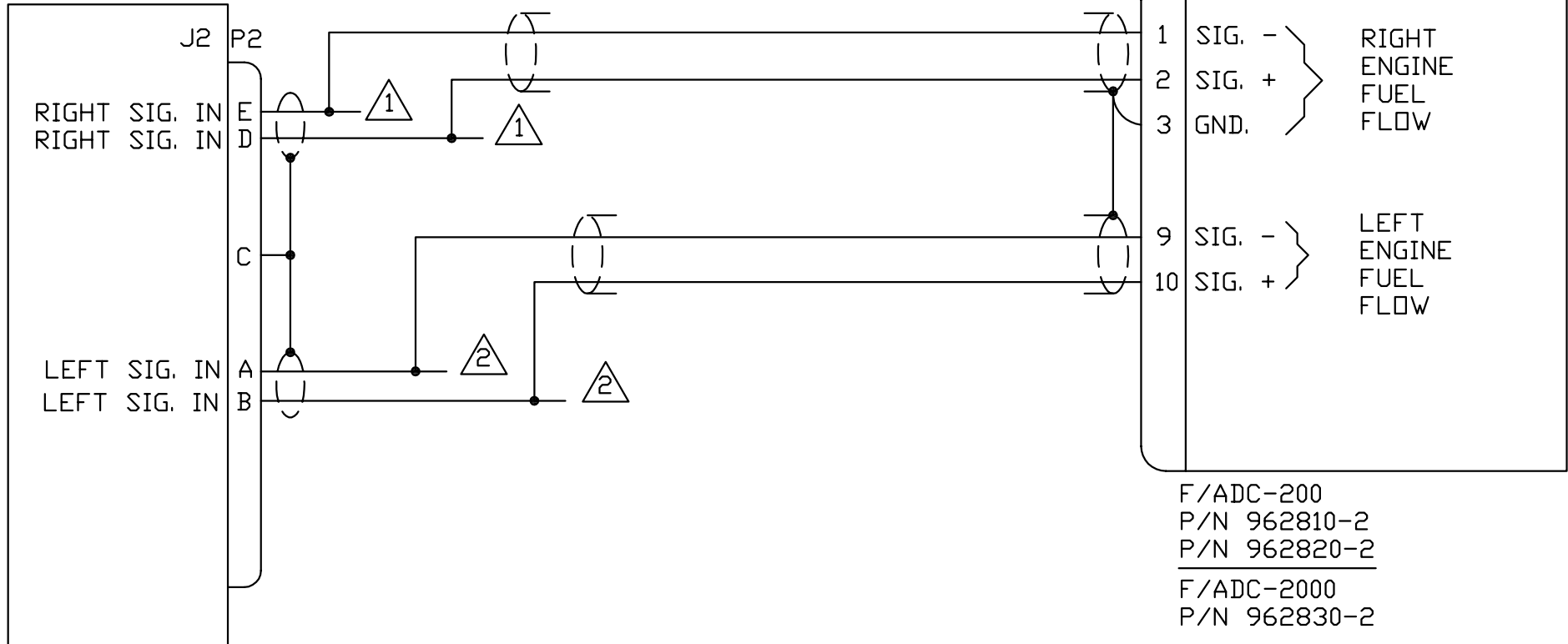
0501/032	B	2/14/05	PAB	WMP	UPDATED TITLE BLOCK
9803/025	A	3/26/98	SRB	KCL	CHANGE TITLE, CHANGE FILE NAME FROM 4028-819--DWG
9711/021	-	1-8-98	DMD	KCL	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

DRAWING DATE 12/17/97	<i>SHADIN</i> MINNEAPOLIS, MN 55426		
DRAFTER DMD	INSTALLATION WIRING, F/ADC 200, 2000		
APPROVED KCL	SINE FF TO MITSUBISHI MU-300 AND		
FILE NAME 4028-819BJDWG	MODEL 400 BEECHJET		
DIRECTORY 4028	DRAWING NO. 4028-819	SIZE A	P/N _____
SHEET 1 OF 1			REV B

NOTES

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

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

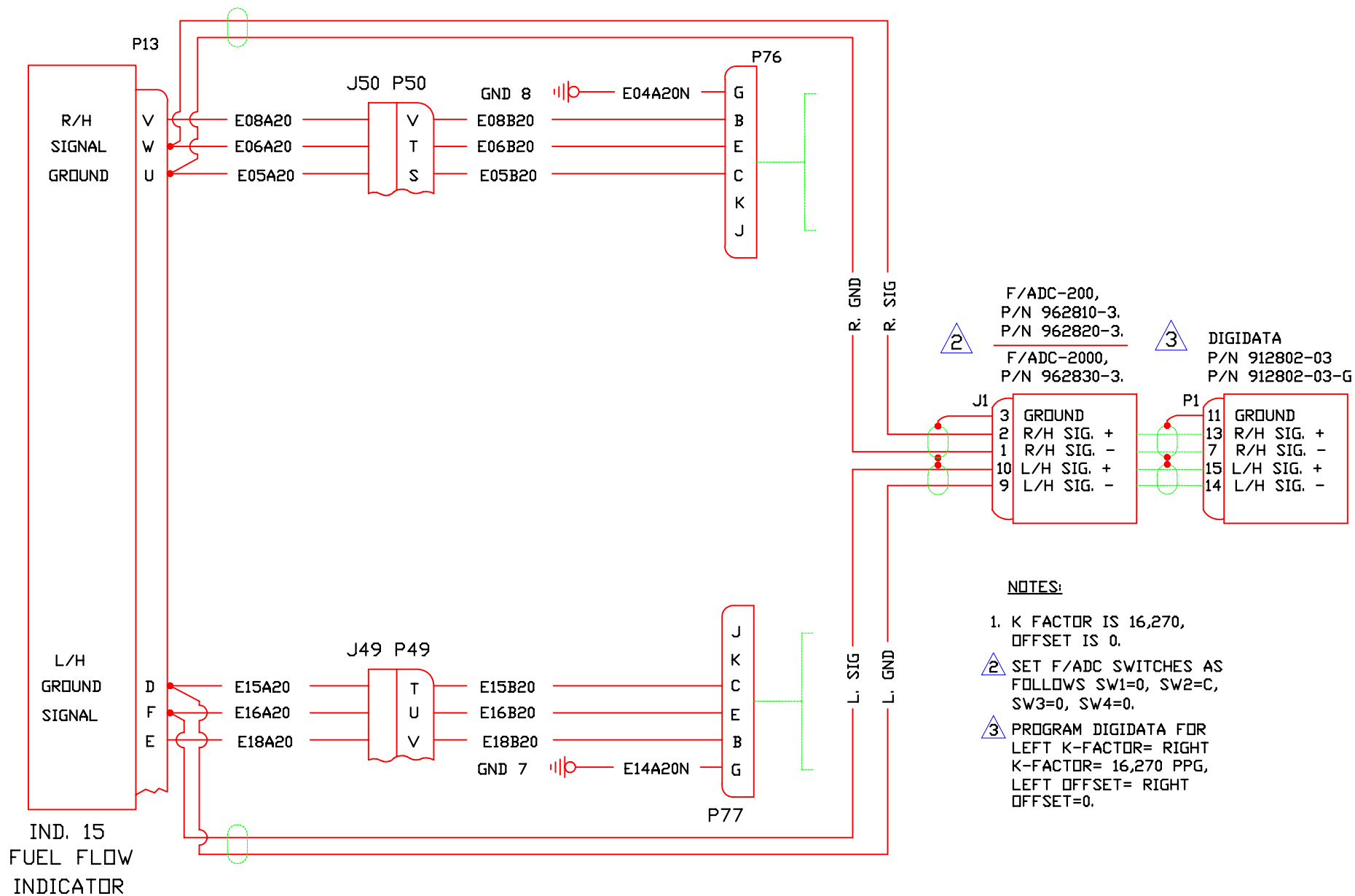


F/ADC-200
P/N 962810-2
P/N 962820-2
F/ADC-2000
P/N 962830-2

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

DRAWING DATE 12/17/97	SHADIN MINNEAPOLIS, MN 55426		
DRAFTER DMD	INSTALLATION WIRING:		
APPROVED KCL	F/ADC-200(2000) TO MITSUBISHI		
FILE NAME 4028-909BJ.DWG	MU-2 W/FOXBORO PC-620 SYSTEM		
DIRECTORY 4028	DRAWING NO. 4028-909	SIZE A	P/N
SHEET 1 OF 1	DO NOT SCALE		REV B

0501/032	B	2/14/05	PAB	WMP	UPDATED TITLE BLOCK
0007/031	A	7/19/00	PAB	RH	ADD 'OR PC-425-0098'
9711/021	-	1/8/98	DMD	KCL	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION



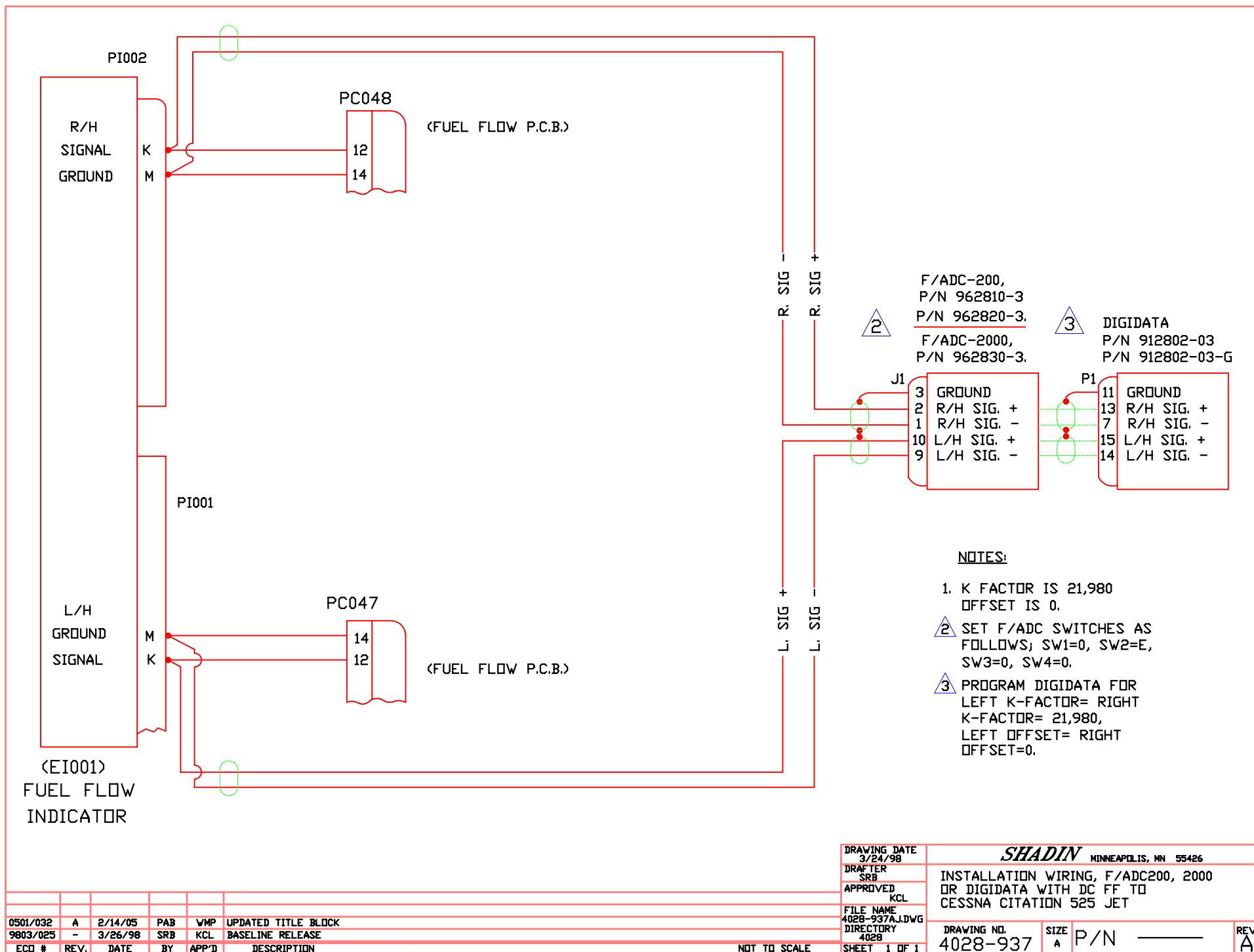
NOTES:

- K FACTOR IS 16,270, OFFSET IS 0.
- SET F/ADC SWITCHES AS FOLLOWS SW1=0, SW2=C, SW3=0, SW4=0.
- PROGRAM DIGIDATA FOR LEFT K-FACTOR= RIGHT K-FACTOR= 16,270 PPG, LEFT OFFSET= RIGHT OFFSET=0.

0501/032	A	2/14/05	PAB	WMP	UPDATED TITLE BLOCK
9803/025	-	3/26/98	SRB	KCL	BASELINE RELEASE
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION

NOT TO SCALE

DRAWING DATE 3/24/98	SHADIN MINNEAPOLIS, MN 55426			
DRAFTER SRB	INSTALLATION WIRING, F/ADC200, 2000			
APPROVED KCL	OR DIGIDATA WITH DC FF TO CESSNA CITATION 500, 501, 550, 555, 551, 552.			
FILE NAME 4028-936A.JDWG	DRAWING NO.	SIZE	P/N	REV
DIRECTORY 4028	4028-936	A	—	A
SHEET 1 OF 1				



0501/032 A 2/14/05 PAB WMP UPDATED TITLE BLOCK					
9803/025 - 3/26/98 SRB KCL BASLINE RELEASE					
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION

DRAWING DATE

3/24/98

DRAFTER

SRB

APPROVED

KCL

FILE NAME

4028-937A.DWG

DIRECTORY

4028

4028-937

1 OF 1

NOT TO SCALE

DRAWING NO.

4028-937

SIZE

A

P/N

REV

A

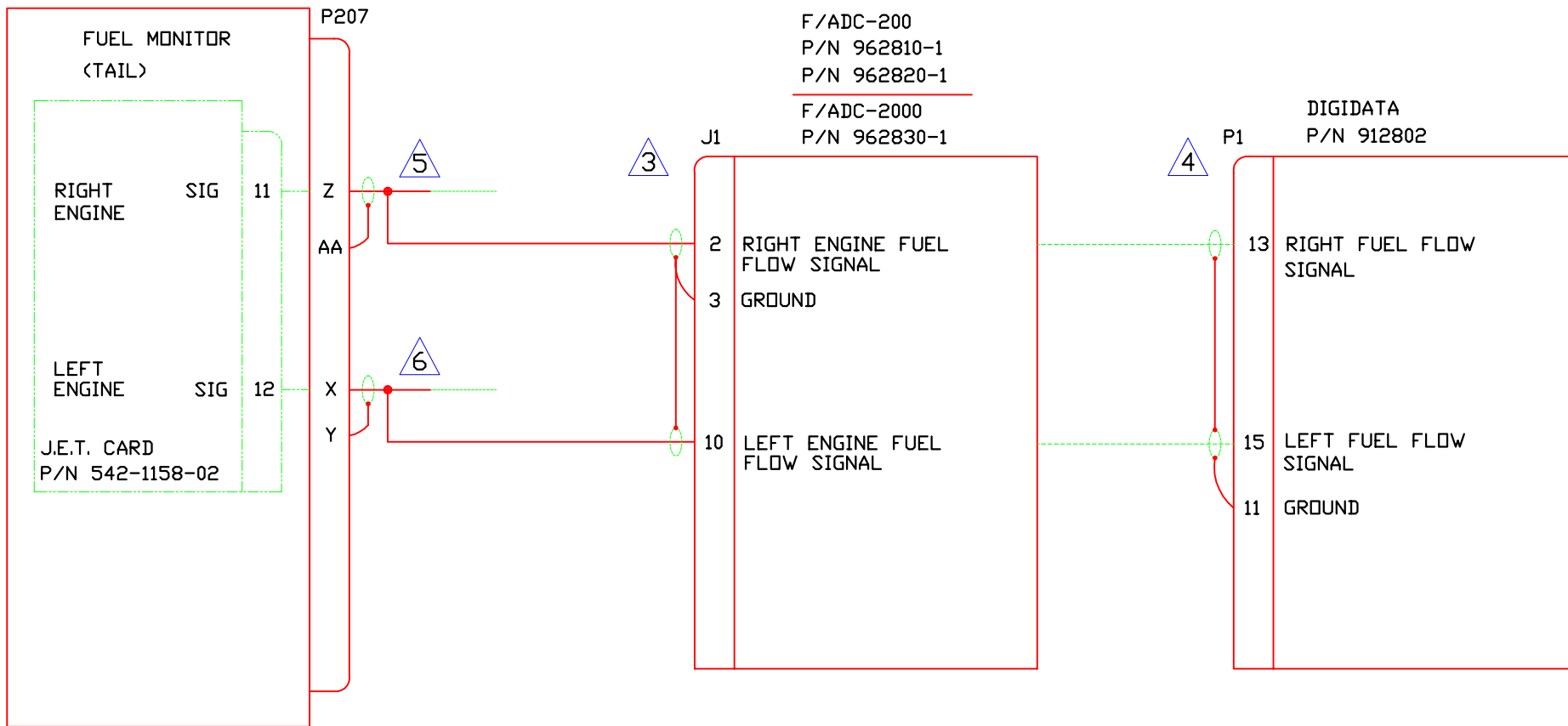
SHADIN

MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC200, 2000

OR DIGIDATA WITH DC FF TO

CESSNA CITATION 525 JET



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. SB542-1158-7B.

2. K-FACTOR IS 860.

3 SET F/ADC SWITCHES AS FOLLOWS; SW1=D, SW2=D, SW3=D, SW4=D.

4 PROGRAM THE DIGIDATA FOR LEFT K-FACTOR = RIGHT K-FACTOR = 860 PPG, LEFT OFFSET = RIGHT OFFSET = 0.

5 J.E.T. CARD PIN 11 CORRESPONDS TO FUEL MONITOR PIN Z.

6 J.E.T. CARD PIN 12 CORRESPONDS TO FUEL MONITOR PIN X.

DRAWING DATE
3/24/98
DRAFTER
SRB
APPROVED
KCL
FILE NAME
4028-938AJ.DWG
DIRECTORY
4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

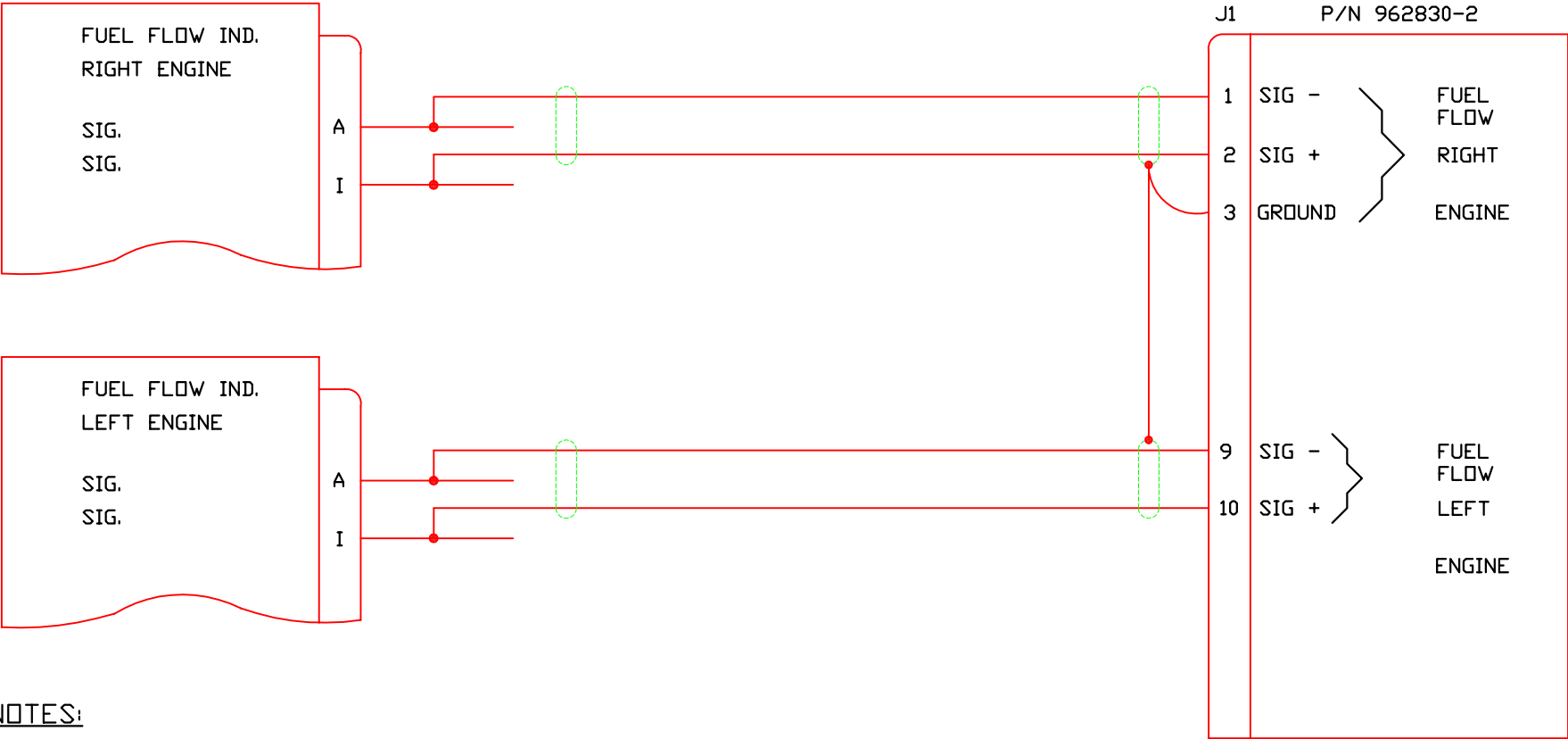
INSTALLATION WIRING, F/ADC200, 2000
OR DIGIDATA WITH DIGITAL FF TO
BOMBARDIER LEARJET 24, 25D.

DRAWING NO. 4028-938 SIZE A P/N REV A

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0501/006	A	1/17/05	PAB	ZK	CORRECTED NOTES 1, 5, & 6
9803/025	-	3/26/98	SRB	KCL	BASELINE RELEASE

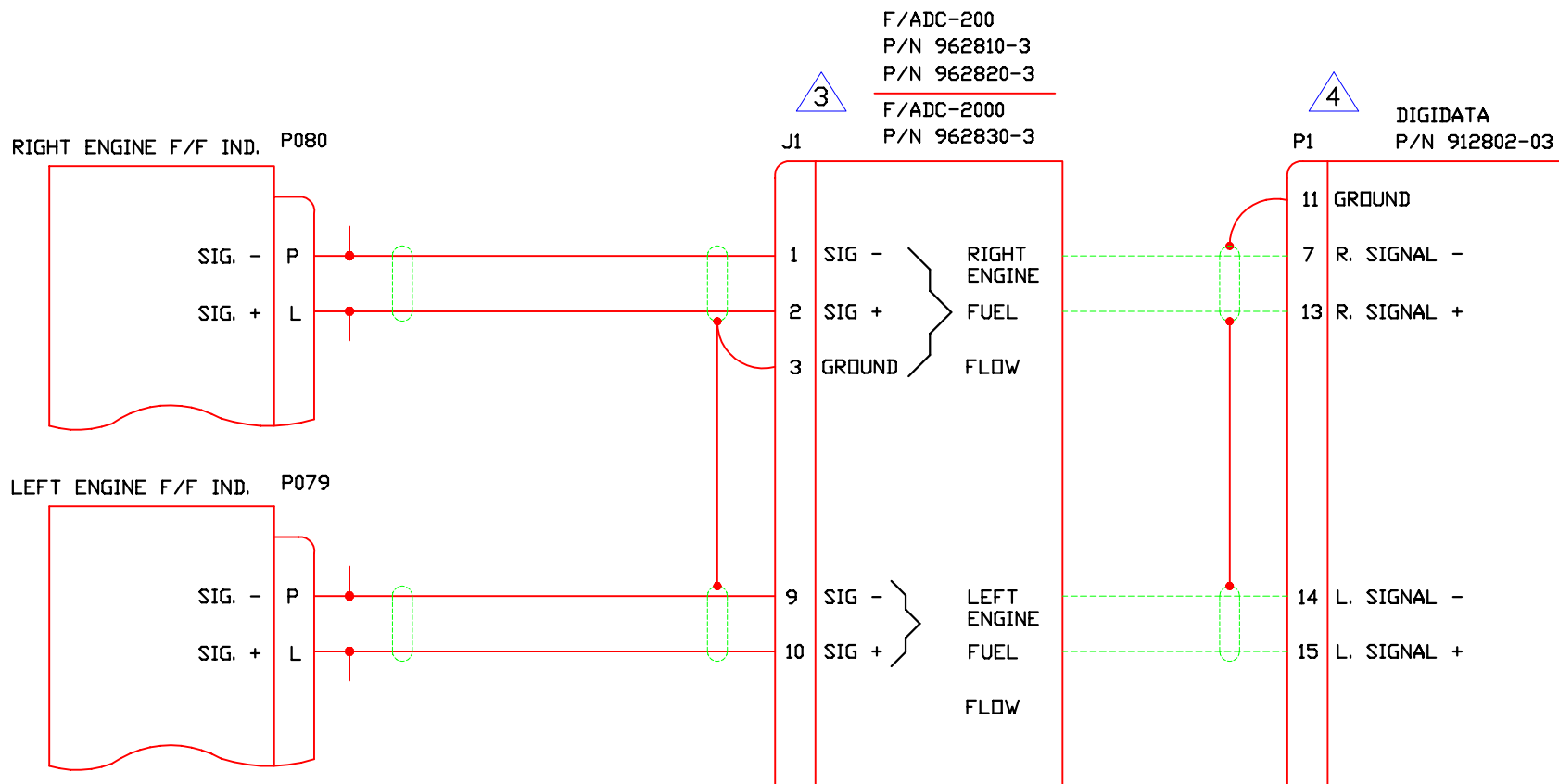
NOT TO SCALE

F/ADC-200
P/N 962810-2
P/N 962820-2
F/ADC-2000
P/N 962830-2



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.

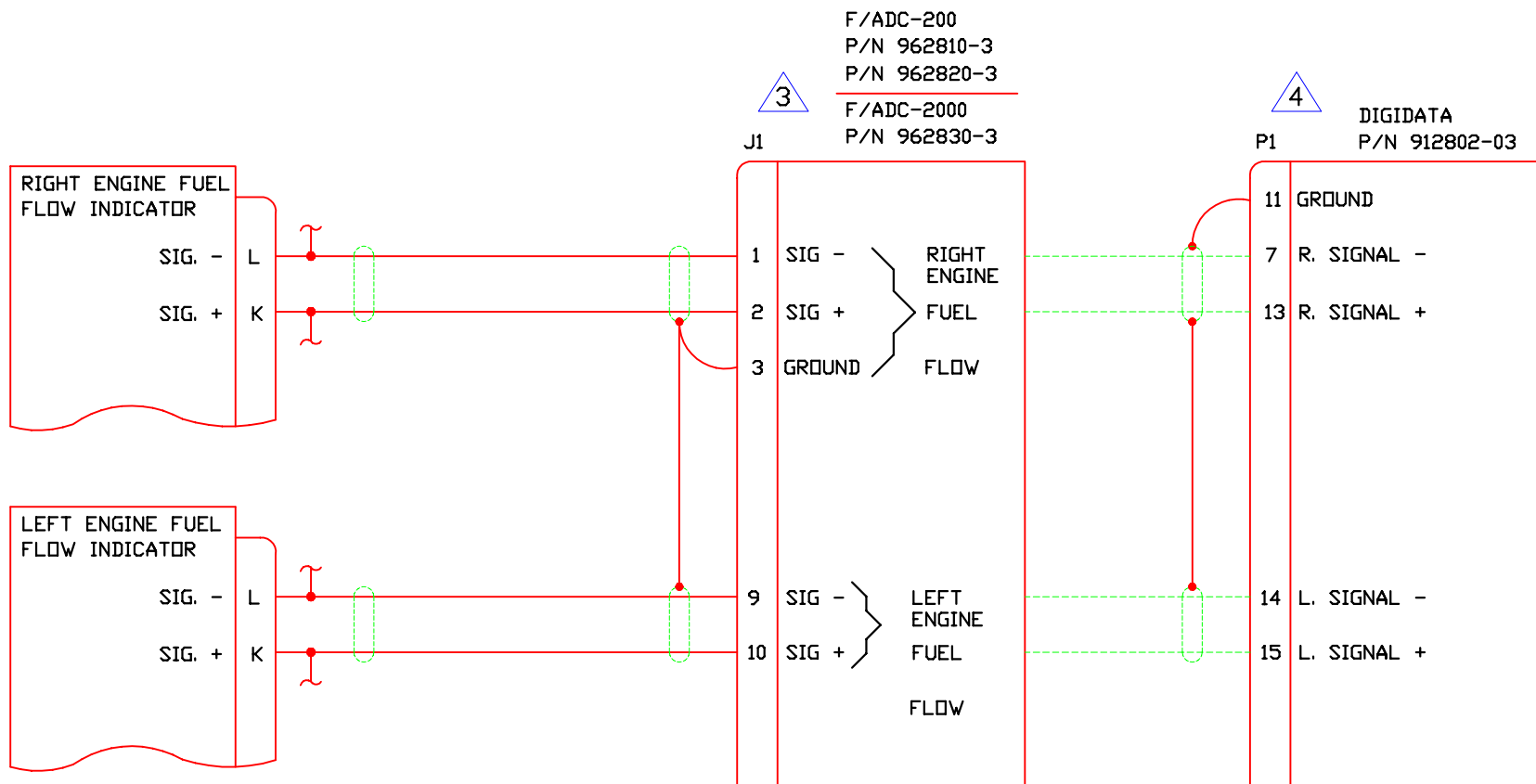


NOTES:

1. FOR AIRCRAFT SERIAL NOS. RK-45, RK-49 AND AFTER WITH FUEL INDICATOR PART NO. PC900-3B2000-PH1.
2. 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.
- 4 PROGRAM DIGIDATA FOR LEFT K-FACTOR = RIGHT K-FACTOR = 11,540 PPG, LEFT OFFSET = RIGHT OFFSET = 0.

						APPROVED KCL	OR DIGIDATA WITH DC FF TO RAYTHEON			
						FILE NAME 4028-940A.DWG	BEECHJET 400A AIRCRAFT			
0501/032	A	2/14/05	PAB	WMP	UPDATED TITLE BLOCK	DIRECTORY 4028	DRAWING NO.	SIZE	P/N	REV
9803/025	-	3/26/98	SRB	KCL	BASELINE RELEASE		4028-940	A		A
ECD #	REV.	DATE	BY	APP'D	DESCRIPTION	NOT TO SCALE	SHEET 1 OF 1			

NOT TO SCALE



NOTES:

1. FOR AIRCRAFT WITH THE FOLLOWING INDICATOR/TRANSMITTERS;
 - INDICATOR PART NO. (RAGEN) 1291-2
 - TRANSMITTER PART NO. (GULL) 151-909-001
2. K-FACTOR IS 10.49 (10,490 PPG), OFFSET IS 0.
- 3 SET AIRDATA SWITCHES AS FOLLOWS; SW1 = 1, SW2 = 8, SW3 = 0, SW4 = 0.
- 4 PROGRAM DIGIDATA FOR LEFT K-FACTOR = RIGHT K-FACTOR = 10,490 PPG, LEFT OFFSET = RIGHT OFFSET = 0.

0501/032	A	2/14/05	PAB	WMP	UPDATED TITLE BLOCK
9803/025	-	3/26/98	SRB	KCL	BASELINE RELEASE
ECO #	REV.	DATE	BY	APP'D	DESCRIPTION

NOT TO SCALE

DRAWING DATE
3/25/98
DRAFTER
SRB
APPROVED
KCL
FILE NAME
4028-941AJ.DWG
DIRECTORY
4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC-200, 2000
OR DIGIDATA WITH DC FF TO WESTWIND
1124 MODELS

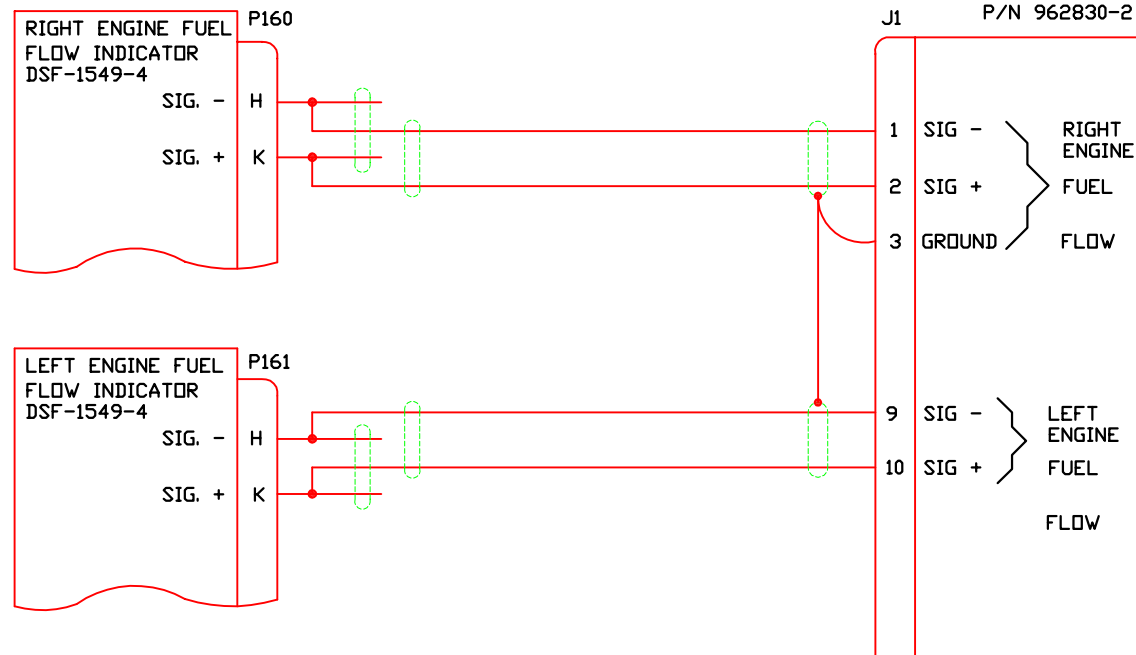
DRAWING NO.
4028-941

SIZE
A

P/N _____

REV
A

F/ADC-200
P/N 962810-2
P/N 962820-2
F/ADC-2000
P/N 962830-2



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:

- FOR AIRCRAFT WITH FUEL FLOW INDICATOR PART NOS. DSF-1549-2, -4, -5. SEE TABLE FOR INDICATOR PINOUTS.
- K-FACTOR IS 26.8 (26,800 PPG).
- SET AIRDATA SWITCHES AS FOLLOWS; SW1 = C, SW2 = 7, SW3 = C, SW4 = 7.

DRAWING DATE
3/25/98
DRAFTER
SRB
APPROVED
KCL
FILE NAME
4028-942A.JDWG
DIRECTOR
4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC-200, 2000
TO FAIRCHILD SA226 SERIES AIRCRAFT.

DRAWING NO. 4028-942 SIZE A P/N REV A

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0501/006	A	2/14/05	PAB	VMP	CORRECTED PINOUTS & NOTE 1
9803/025	-	3/26/98	SRB	KCL	BASELINE RELEASE

NOT TO SCALE

RIGHT ENGINE FUEL FLOW
TRANSMITTER

P160

SIG

1

SIG

2

LEFT ENGINE FUEL FLOW
TRANSMITTER

P161

SIG

1

SIG

2

J1

F/ADC-200
P/N 962810-2
P/N 962820-2
F/ADC-2000
P/N 962830-2

1

SIG -

RIGHT

2

SIG +

ENGINE

3

GROUND

FUEL
FLOW

9

SIG -

LEFT

10

SIG +

ENGINE

FUEL
FLOW

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	3/26/98
DRAFTER	SRB
APPROVED	KCL
FILE NAME	4028-949AJ.DWG
DIRECTORY	4028
SHEET	1 OF 1

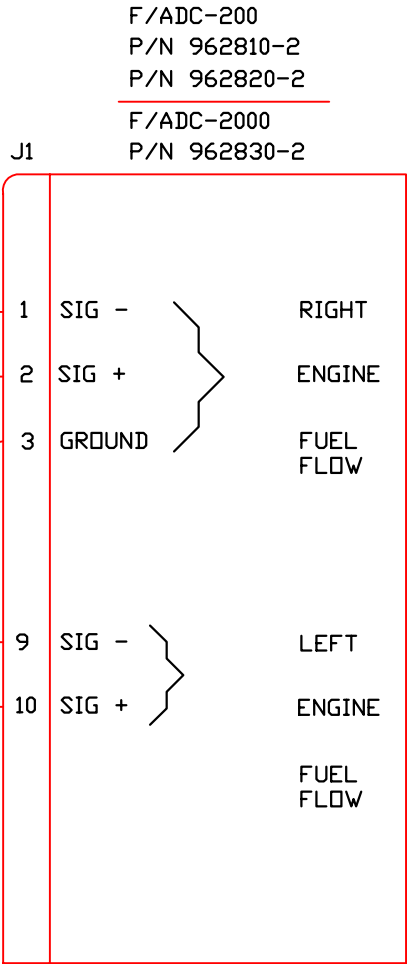
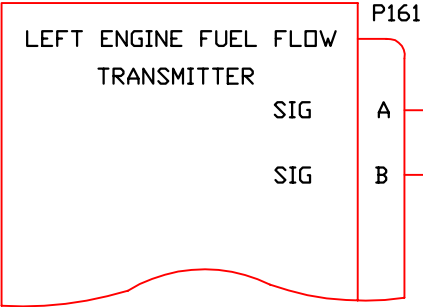
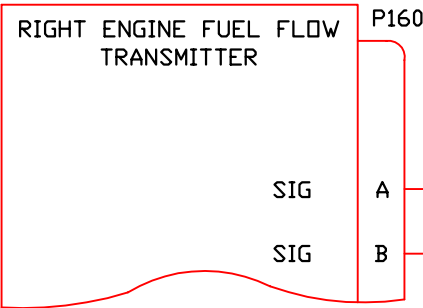
SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC-200, 2000
TO AEROSPATIALE AS365N2 DAUPHIN.

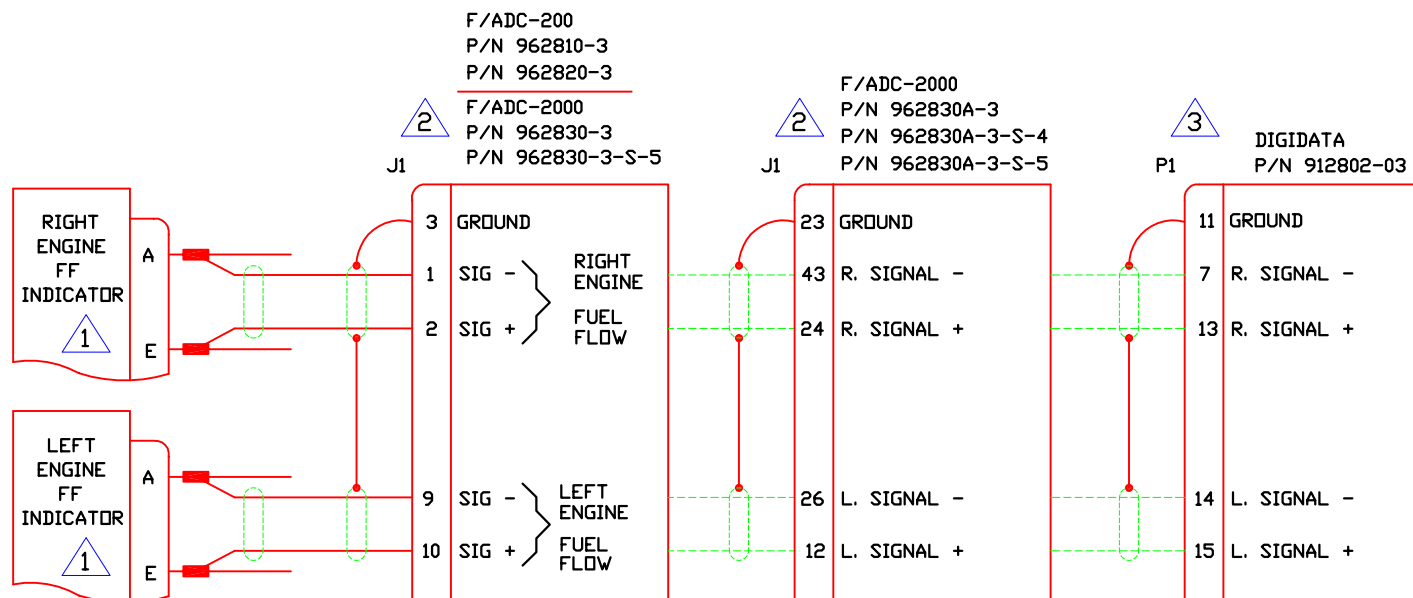
DRAWING NO. 4028-949 SIZE A P/N REV A

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0501/032	A	2/14/05	PAB	WMP	UPDATED TITLE BLOCK
9803/041	-	3/26/98	SRB	KCL	BASELINE RELEASE

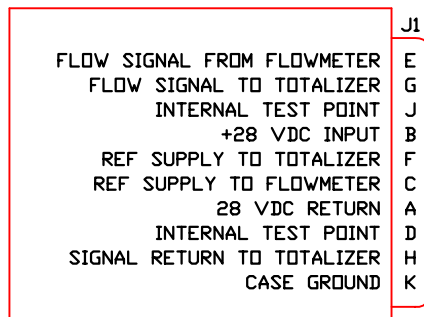
NOT TO SCALE



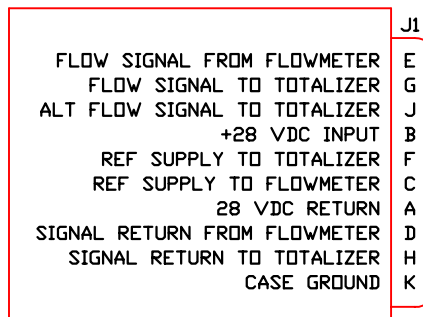
- NOTES:
1. FOR AIRCRAFT WITH FAURE-HERMAN FUEL FLOW TRANSMITTERS, PART NO. TN(A)S-512-231-1.
 2. CONFIGURE THE F/ADC FOR THE ALTERNATE DIGITAL K-FACTOR TABLE: MATRIX 1. K-FACTOR IS 1.94 (1,940 PPG).
 3. SET AIRDATA SWITCHES TO; SW1 = 8, SW2 = 0, SW3 = 8, SW4 = 0.



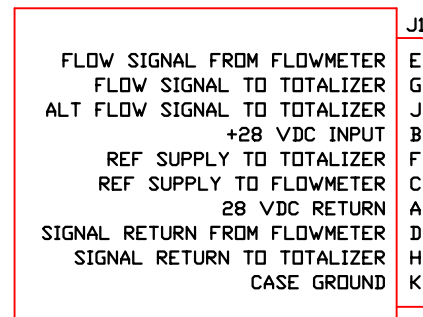
RAGEN P/N 3265013-0601



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