FUEL/AIRDATA COMPUTER

(ADC 2000)

P/NS:
962830-1, 962830-2, 962830-3

INSTALLATION MANUAL

REV L

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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 DWG, OAT Probe Assembly Kit P/N 681201-1	2/14/05	C |
4028-395	Installation, Mounting Tray, ADC2000	3/03/05	B |
4070-005	Installation Dwg, Serial to Argus 5000/7000 Converter P/N 937000-03	2/14/05	B |
4028-423	Installation Wiring, Fuel/Airdata Computer (ADC2000) to Fuel System	3/11/03	B |
4028-425	Installation Wiring, Fuel/Airdata Computer (ADC2000) to OAT/Heading System	2/14/05	A |
4028-944	Installation Wiring, Loop-Back Harness for F/ADC200, 2000, D-Sub Connector	2/14/05	B |
4028-945	Installation Wiring, F/ADC200, 2000 to Navigational 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	3/11/03	A |
N/A	Parts List, OAT Probe Assembly Kit P/N 681201-1	2/14/05	G |
N/A	Parts List, ADC2000 Installation Kit P/N IK9630-1	3/21/05	A |

11.0 INSTALL DRAWINGS AND INSTALL KITS PARTS LISTS (continued)

Drawing No.	Description/Part Number	DATE	REV
	AIRCRAFT SPECIFIC		
4028-818	Installation Wiring, F/ADC-200, 2000 w/Analog FF to Beech KingAir Indicators	3/11/03	B |
4028-819	Installation Wiring, F/ADC200, 2000 Sine FF to Mitsubishi MU-300 & Model 400 Beechjet	2/14/05	B |
4028-909	Installation Wiring, ADC200/2000 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/ADC200, 2000 with Sine FF to Rockwell Commander 690 and 695	2/14/05	A |
4028-940	Installation Wiring, F/ADC200, 2000 or DigiData with DC FF to Raytheon Beechjet 400A Aircraft	2/14/05	A |
4028-941	Installation Wiring, F/ADC200, 2000 or DigiData with DC FF to Westwind 1124 Models	2/14/05	A |
4028-942	Installation Wiring, F/ADC200, 2000 to Fairchild SA226 Series Aircraft	1/17/05	A |
4028-943	Installation Wiring, F/ADC200, 2000 to Navigational Receivers with RS-232	1/17/05	C |
4028-949	Installation Wiring, F/ADC200, 2000 to Aerospatiale AS365N2 Dauphin	2/14/05	A |
4028-950	Installation Wiring, F/ADC200, 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 |

REVISION LOG

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 2nd 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 useage. 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	WMP	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.

Indicates change since previous revision

1.0 OVERVIEW

1.1 The Manual

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

1.2 Product Information

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

Receives Serial Data from:

Magellan
Skynav 5000

ARNAV	Trimble	Bendix King
STAR 5000	2000/2000A	KLN90
FMS 7000	2100/3000	KLN90A
R5000	3100/2101	KLN90B
		KLN89/89B

Garmin	BFGoodrich	IIMorrow
150, 155, 155XL, 165	Pronav LNS 6000	611, 612, 618
230, 230XL		NMS 2001
300, 300XL		800, 820, 360
430/530		GX50, 55, 60

Transmits Serial Data to:

ARNAV	Magellan	Note: To find out which particular receiver models have Airdata receive capability, contact the manufacturers.
Bendix/King	Trimble	
Garmin		

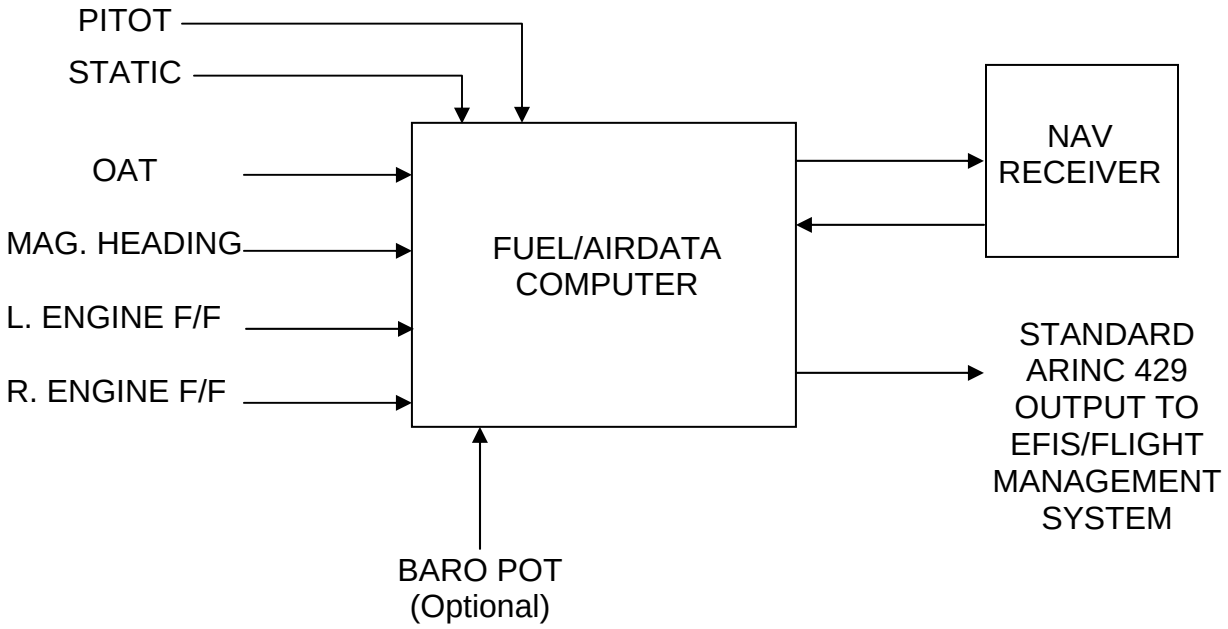
Transmits ARINC Data to:

ASINC	Bendix King	Honeywell	Universal
Airshow	EFIS 40/50	SPZ-5000	UNS-1M
		Data Nav III	

Global	Trimble	IIMorrow	Garmin
GNSX	TNL8100	2101	430/530
GNS-Xls			

1.3 System Configuration

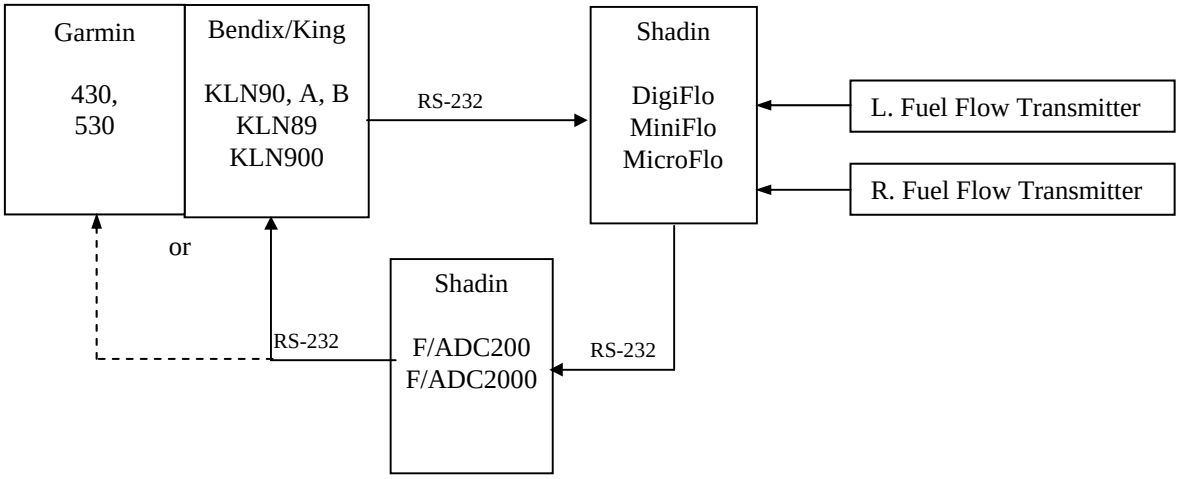
The Fuel/AirData system is a remote mounted box which is connected to the GPS receiver via serial data and standard ARINC 429 output. It is, also, connected to the pitot and static line, OAT probe, fuel flow sensors and the aircraft heading source. In addition, optional barometric information my be received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



SYSTEM CONFIGURATION

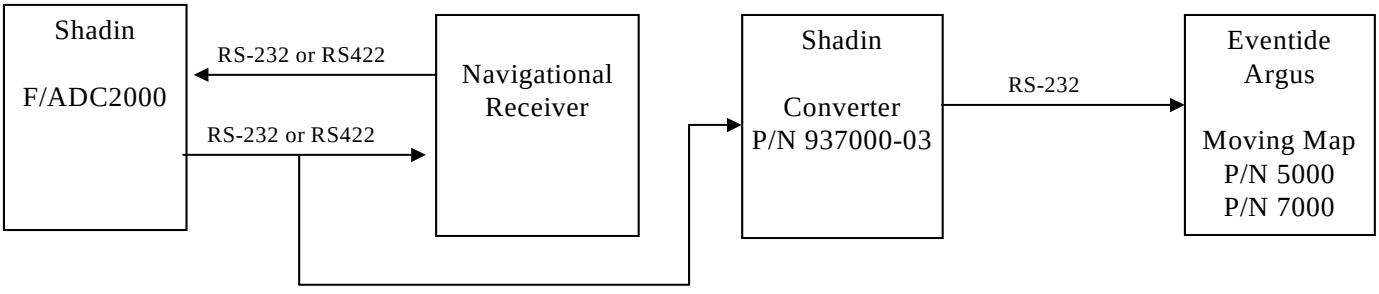
1.4 Fuel Totalizer Configuration

Shown below is an optional system configuration utilizing a Shadin Fuel Flow Indicator. Note that the only navigational receiver 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 a Eventide Argus moving map using the Shadin serial to serial data converter P/N 937000-03. The fuel and airdata are displayed on the Eventide-Argus moving map. Consult Drawing numbers 4070-005 and 4028-948 contained in section 11.



2.0 FUEL AND AIRDATA 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

PARAMETER	Accuracy	RANGE
IAS	±1 kts.	20 to 350 kts.
P.ALT	±25 ft.	–1000 to 5000 ft.
P.ALT	±30 ft.	5000 to 11000 ft.
P.ALT	±40 ft.	11000 to 30000 ft.
P.ALT	±100 ft.	30000 to 55000 ft.
OAT	±2°C	–60°C to +60°C
HEADING	±1°	0 - 360 degrees
IVS	±40 ft./min.	± 10,000 ft./min.
TAS	±2 kts.	20 - 600 kts.
MACH	±.01	.2 - .95
WIND SPEED	±1 kts.	5 - 360 kts.
WIND DIRECTION	±5°	0 - 360 degrees
FUEL FLOW	±2%	1 - 450 GPH

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/high speed GAMA (Has to be configured at the factory)

See paragraph 2.5.3 for ARINC 429 output data capabilities.

2.5.1 Serial Output Data Parameters

Fuel Group	**AirData Group**	
Left Fuel Flow	Aircraft Type	Density Altitude
Right Fuel Flow	MACH Number	Drift Angle
Fuel Used Total	True Air Speed (TAS)	Magnetic Heading
Total Fuel Used	Indicated Air Speed (IAS)	Baro Pressure
Fuel Used Right	Wind Direction and Speed	Baro Corrected Alt
Fuel Used Left	Vertical Speed	Pressure Altitude
Fuel Remaining	True Air Temperature	Rate of Turn
NM/Gal (ground)	Outside Air Temperature (OAT)	Baro Correction (mb #1)
Fuel to Destination		Baro Correction (hg ”)
Fuel at Destination		

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

2.5.2 ARINC 429 (GAMA) Output Labels *

LABEL#	**TYPE**	**RATE mS**	**LABEL NAME**
074G	DSC	100	Flight Plan Header
075G	DSC	100	Active WPT from/to
113G	BNR	100	WPT Group Checksum
114	BNR	50	Desired Track (T)
115	BNR	50	WP Bearing (T)
116	BNR	50	Crosstrack Distance
117G	BNR	50	Vertical Deviation
147G	BNR	1000	Magnetic Variation
150	BNR	1000	GMT
162	BNR	200	Density Altitude
163	BNR	1000	Wind on Nose
203	BNR	200	PALT (1013.25 mB)
204	BNR	200	PALT (Baro Corrected)
205	BNR	200	Mach Number
206	BNR	200	IAS

LABEL#	TYPE	RATE mS	LABEL NAME
210	BNR	200	True Airspeed
211	BNR	200	OAT
212	BNR	200	IVS
213	BNR	200	TAT (Static)
234	BNR	100	Baro Correction (mb #1)
235	BNR	100	Baro Correction (mg")
251G	BNR	200	Distance to Go
252	BNR	200	Time to Go
275G	DSC	200	LRN Status Flags
301G	BNR	100	Message Character 7-9
302G	BNR	100	Message Character 10-12
303G	BNR	100	Message Length/Type/Number
304G	BNR	100	Message Character 1-3
305G	BNR	100	Message Character 4-6
306G	BNR	100	NAV/WPT/AP Latitude
307G	BNR	100	NAV/WPT/AP Longitude
310	BNR	200	Present Position Latitude
311	BNR	200	Present Position Longitude
312	BNR	50	Ground Speed
313	BNR	50	Track Angle (T)
314	BNR	100	True Heading (T)
315	BNR	100	Wind Speed
316	BNR	100	Wind Angle (T)
320	BNR	100	Magnetic Heading (M)
321	BNR	100	Drift Angle
347	BNR	100	Left and Right Fuel Flow
351G	BNR	200	Distance to Destination
352G	BNR	200	Estimated Time to Destination

* Not all labels are available at the same time. Certain sets of labels are available depending on the switch selections.

2.5.3 ARINC 429 Labels Associated with Switch Settings

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

* Configuration 2 sends all labels at a 50 msec rate for Flight Visions HUD.

** Configuration 8 sends all labels at a 100 msec rate for Collins FMS 800.

*** Configuration 9 sends all labels at a 50 msec rate for MkVII GPWS.

\# Configuration A sends all labels at a 50 msec rate for Mk VI and VIII EGPWS. Only available w/ARINC software version 71.73.01 and above.

2.5.4 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 (100 ms rate)

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

2.6 Limitations

2.6.1 Warm-up time

The Fuel/AirData 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 airdata fuel flow systems or other gauges. They are not intended to be used as a primary system to drive altimeters or airspeed indicators. The F/ADC fuel section is not a fuel quantity system and therefore reports only what was manually entered by the operator.

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

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

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

2.6.4 SSEC/PSEC LISTING

Beechcraft Beechjet-400 (SSEC only)

Airplane Flight Manual, BeechJet 400, Section 6, Performance		Page 6-14
FAA approved 1/86	Altitude Correction	Figure 6-8
Revision A9 14/92	Copilot System	

Boeing 707-321B Advanced

SSEC

Airplane Flight Manual, Boeing 707, Section IV, Performance		Page 19
FAA approved 3/27/69, D6-1588	Altitude Calibration	FLAPS UP
Revision 2/4/69	Pilot & Copilot	

PSEC

Airplane Flight Manual, Boeing 707, Section IV, Performance		Page 18
FAA approved 9/20/66, D6-1588	Airspeed Calibration	FLAPS UP
	Pilot & Copilot	

Cessna 500 (SSEC only)

Airplane Flight Manual, Cessna/Citation Model 500, Section IV, Performance		
FAA approved Aug 7/74	Altitude Correction	Figure 4-7
Revision 53 - Dated 11 Dec 85	Pilot & Copilot system	Page 4-17.1

Cessna 501 (SSEC only)

Airplane Flight Manual, Cessna/Citation I SP Model 501, Section IV, Performance		
FAA approved	Altitude Correction	Figure 4-5
Original	Pilot & Copilot system	Page 4-15

NOTE: Uses same Hardware configuration as Cessna 500

Cessna 525 (SSEC only)

Airplane Flight Manual Model 525		
	Altitude Correction	Rept FT525-4
	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

SSEC/PSEC LISTING (Continued)

Cessna 560 (SSEC only)

Airplane Flight Manual, Model 560 , S/N 260 & Up, Section IV, Performance		
FAA approved	Altitude Correction	Figure 4-5
56FMA-00	Pilot & Copilot system	Page 4-19

Cessna Citation S550 (SSEC only)

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

Section IV - Performance, Standard Charts		Pages 4-17, 4-18
FAA approved	Altimeter Position Correction	Figure 4-5
Revision 37	Pilot & Copilot	

Douglas DC-8

SSEC

Airplane Manual, Douglas DC-8, Section IV, Performance		Page 20
FAA approved	Altitude Correction	
DAC-33161 10/1/66	Pilot & Copilot system	

PSEC

Airplane Manual, Douglas DC-8, Section IV, Performance		Page 11
FAA approved	Airspeed Correction	
DAC-33161 10/1/66	Pilot & Copilot system	

Falcon 10 (SSEC only)

Airplane Flight Manual, Section 6. Performance, 7 Position Error		Page 6-27
FAA approved 10/17/73	Position Error	
Revision 14, 6/6/78	Pilot & Copilot	

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

Maintenance Instruction Manual, 34-18-03		Page A48
Sept 1/77	Altitude Correction	
CS-143	Copilot system	

Falcon 20-F (SSEC only)

Maintenance Instruction Manual, 34-18-03		Section 5
DTM30528	Altitude Correction	Subsection 20
DGAC Approved	Copilot system	Page 4

SSEC/PSEC LISTING (Continued)

Falcon 50

SSEC

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

PSEC

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

LearJet 24 (SSEC only)

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

LearJet 25D (SSEC only)

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

LearJet 35 (SSEC only)

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

LearJet 55 (SSEC only)

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

Lockheed Jetstar (SSEC only)

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

SSEC/PSEC LISTING (Continued)

Mitsubishi MU-300 (SSEC only)

Airplane Flight Manual, Diamond IA, Section 6, Performance		
FAA approved Jan 11/84	Altitude Correction	Figure 6-8
	Copilot system	Page 6-20

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

Airplane Manual,		Section 5
Document No. H.S.1.10	Static Position Error	Figure 5-4
CAA Approved	Correction to Altimeter	Page 13

Raytheon Hawker HS125-700A (SSEC only)

125 Crew Manual, First Officer, Section 2, Flaps Retracted		Page 2-30
		Static Position
Correction to Altimeter	Figure 6	
Revision :G, 4/77		

Sabreliner 60 (SSEC only)

Sabreliner Pilot's Manual, SR 75-064, Weight = 16,000 Lb.		
9/1/76	Altitude Calibration	Figure 7-2

Sabreliner 65 (SSEC only)

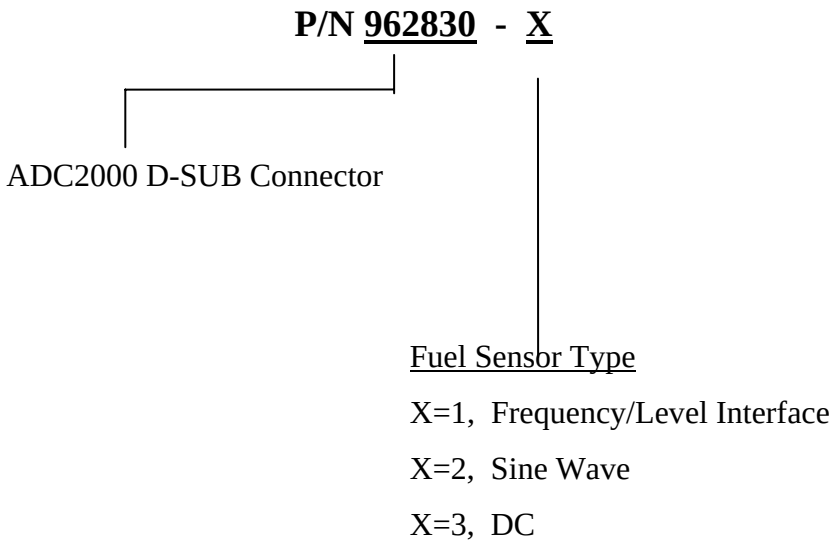
Pilots Manual, SR-78-028		
	Altitude Correction	Figures 7-1 through 7-5
	Pilot & Copilot system	265-65-7-31,32A,33

Westwind 1124A (SSEC only)

Airplane Flight Manual, 1124A , Section V, Performance		
CAA approved	Altitude Correction	
Figures 5-13, Flaps 0	Copilot system	Pages V-25

NOTE: Gross Weight averaged at 18,750 lbs.

2.7 Part Numbering Scheme



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

The 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 $Vs = [R/(R + 47\ k)]*5\ Vdc - 0.5Vdc$, where R is the input impedance of the aircraft fuel flow indicator.

For example with an input impedance R = 1 Mohm, the voltage swing Vs = 4.27 Vdc

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

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 altimeter[i]. 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.

2.9 Statistical Specifications

2.9.1 Mean Time Between Failures

MTBF: 17,660 hours

3.0 CERTIFICATION

TSO C106, C44a

Environmental Categories RTCA 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

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 (RS232, RS422 and ARINC429) information may also prove useful.

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

5.0 INSTALLATION PROCEDURE

5.1 General

The conditions and test required for TSO approval of this article are minimum performance standards. It is the responsibility of those desiring to install the article either on or within a specific type or class of aircraft to demonstrate that the aircraft installation conditions are within the TSO standards. The article may be installed only if installation of the article is approved by the Administrator.

All work must conform to AC 43.13-1B.

5.2 F/ADC Location Selection

The Fuel AirData Computer should be mounted in a dry, temperature stable location with enough distance from motors, pulse generating equipment, relays and cables carrying high DC or AC current to avoid interference with low level signals of the OAT and fuel flow. Refer to aircraft specific installation drawings, if available, for correct installation installation location.

The equipment may be installed in a temperature controlled or uncontrolled environment and in a pressurized or unpressurized location.

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 Drawing 4028-394, -431, -432, and Drawing 4028-395, 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.

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-X. The OAT signal is the white wire from J1:14 for P/N 962830-X. 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 ºC temperature conversion chart for use if testing the OAT.

OAT ºC	Input µA		OAT ºC	Input µA		OAT ºC	Input µA		OAT ºC	Input µA
-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 µA

5.5 Connection to the Fuel Flow Sensor

1. If the aircraft is not equipped with a fuel flow source, refer to the STC covering the installation of the fuel flow transducer on the engine.

2. When connecting to any fuel transducer, Shadin recommends using a 3 conductor, 22 gauge, shielded wire with the shield terminated at the Airdata only.

3. Note that for single engines all fuel flow types should use left side inputs only.

4. *Install the transducers according to the engine STC, using Drawing 4028-423 (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 962830-2 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 systems and with the proper airframe make and model for the DC fuel flow systems. See the attached tables in section 10.0.

* Consult section 11 for specific aircraft installation wiring drawings.

5.6 Connection to the Heading Source

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

XYZ Heading ARINC 407	FUEL AirData J1	Collins 328A-2A 2P1	Collins HSI331A P1	Collins MCS 65 P1	Collins 328A-5	King KI525A P2	King KSG105 P1	Sperry Gyro-syn Comp. P1	Sigma-Tek DG	Sandel 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).

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.

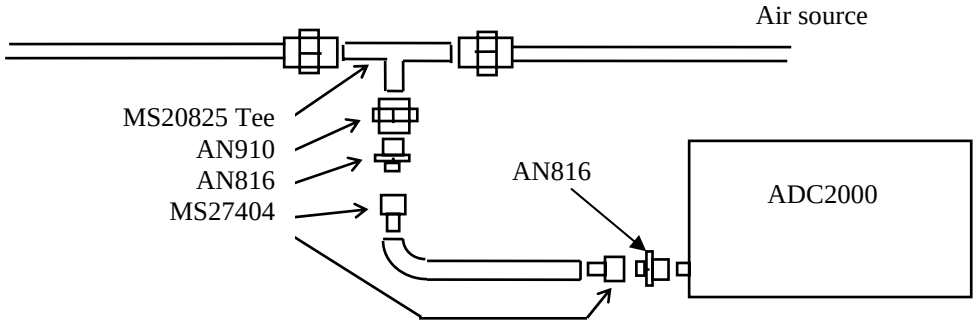
Existing Pitot/Static lines ⟶AN910-1D ⟶AN816-2D ⟶#2 Hose(with female fittings)

AN910 DASH NUMBER		PIPE
BRASS	ALUM. ALLOY	SIZE
-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	PIPE
STEEL	ALUM. ALLOY	O. D.	THREAD
-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	PIPE
STEEL	ALUM. ALLOY	O. D.	THREAD
-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.



5.8 Connection to the Navigation Management System

1. Use the appropriate installation wiring diagram to connect the Fuel AirData 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 AirData 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°.

4. Select the OAT page. Compare to the reported ambient temperature. The error should be within $\pm$2°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 $\pm$ 0.01 In.Hg (if the option is installed).

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.

7.0 INITIALIZATION

1. The system requires initialization of K factor for fuel flow transducers or aircraft model for DC fuel flow sensors. Refer to Table 1 **analog** for fuel flow and Table 2 or Table 3 for **digital** fuel flow.

2. Refer to the specific Navigational Receiver Operator Manuals for the serial port set up.

8.0 MAJOR COMPONENTS OF THE SYSTEM

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

9.0 CONFIGURING THE AIRDATA

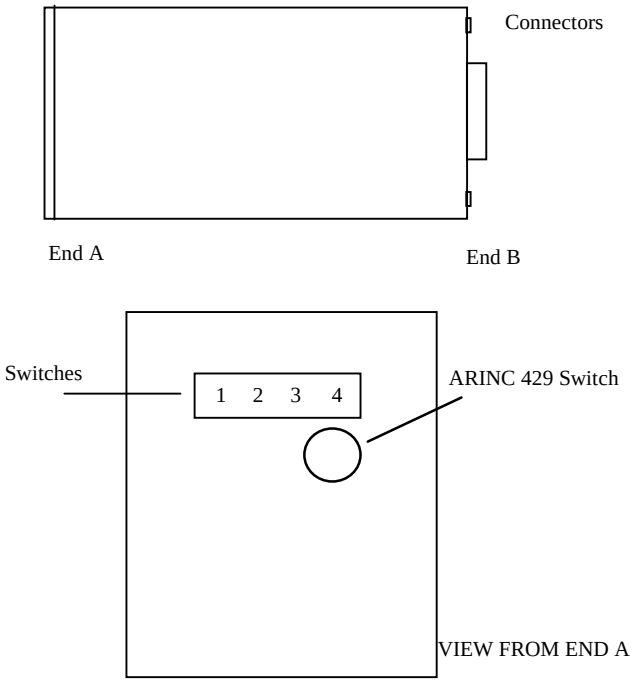
Part number 962830-X (X= 1 or 2 or 3) AirData Computer needs to be configured to program it for the particular installation. The procedure contained in this Installation Manual is for software versions 93.00.16 to 93.00.29, 93.00.51 to 93.00.71, 93.00.77, and 93.00.82 and above. There are two methods 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 AirData to be configured. See the 'ADSETUPF User Manual' for more details.

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:



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.

SWITCH 2	Fuel Units and Engine Type:	
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)	

SWITCH 3	9600 BAUD Loran Input Type:
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 SWITCH 4

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

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)

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.

Type 8: Reserved for future use (DO NOT USE).

Type 9: Aerosonic 10420-11968E

Loopback Procedure 2 for Software Version 93.00.51 to 93.00.71

Stage 0 Loopback Configuration:

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

SWITCH 2		Fuel Units and Engine Type:	
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)	

SWITCH 3		9600 BAUD Loran Input Type:
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 SWITCH 4

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

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)

ALTIMETER TYPES

Type 1: Kollsman PD 44929-935 (done for Cessna 525).

Type 2: Bendix/King KEA 130A, and KEA 346 versions (King P/N 066-3062-XX) XX = 08 through 11, versions 00 though 07 have no Baro Potentiometer.

Type 3: ARINC 575-3 specification for ratio to Altitude Correction calculation.
Kollsman IDC 28007-427, -429,
Kollsman IDC 28704-A1001, -A2001, -A4001, -B4001, -C4001, -D1001, -D2001, -D4001, -D4101, -4E2101, -F2101, and -495.

Type 4: Kollsman IDC 28711-621 thru 624.

Type 5: Kollsman IDC 28007-431, -433,
Honeywell (Sperry) BA-141.

Type 6: Kollsman IDC 28711-500 series and -600 series.

Type 7: Kollsman IDC 28711-065 and -066.

Type 8: Reserved for future use (DO NOT USE).

Type 9: Aerosonic P/N 10420-11968E

Stage 2 Loopback configuration:

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

SWITCH 2 Fuel Filter Type:

0 - Injector
1 - Carburetor

SWITCH 3	AND SWITCH 4	CORRECTION For SSEC/PSEC Select:	F/ADC Software Version:
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)	

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

SWITCH 3, FUEL FLOW DELAY TIME

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

SWITCH 4	SPECIAL OPTION DESCRIPTION	F/ADC Software Version
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	

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.

SWITCH 2		Fuel Units and Engine Type:	
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)	

SWITCH 3		9600 BAUD Loran Input Type:
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 SWITCH 4

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

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)

ALTIMETER TYPES

Type 1: Kollsman PD 44929-935 (done for Cessna 525).

Type 2: Bendix/King KEA 130A, and KEA 346 versions (King P/N 066-3062-XX) XX = 08 through 11, versions 00 though 07 have no Baro Potentiometer.

Type 3: ARINC 575-3 specification for ratio to Altitude Correction calculation.
Kollsman IDC 28007-427, -429,
Kollsman IDC 28704-A1001, -A2001, -A4001, -B4001, -C4001, -D1001, -D2001, -D4001, -D4101, -4E2101, -F2101, and -495.

Type 4: Kollsman IDC 28711-621 thru 624.

Type 5: Kollsman IDC 28007-431, -433,
Honeywell (Sperry) BA-141.

Type 6: Kollsman IDC 28711-500 series and -600 series.

Type 7: Kollsman IDC 28711-065 and -066.

Type 8: Reserved for future use (DO NOT USE).

Type 9: Aerosonic P/N 10420-11968E

Stage 2 Loopback configuration:

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

SWITCH 2 Fuel Filter Type:

0 - Injector
1 - Carburetor

SWITCH 3	AND SWITCH 4	CORRECTION For SSEC/PSEC Select:	F/ADC Software Version:
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)	

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

SWITCH 3, FUEL FLOW DELAY TIME

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

SWITCH 4	SPECIAL OPTION DESCRIPTION	F/ADC Software Version
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	

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.

SWITCH 2		Fuel Units and Engine Type:	
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)	

SWITCH 3		9600 BAUD Loran Input Type:
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 SWITCH 4

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

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)

ALTIMETER TYPES

Type 1: Kollsman PD 44929-935 (done for Cessna 525).

Type 2: Bendix/King KEA 130A, and KEA 346 versions (King P/N 066-3062-XX) XX = 08 through 11, versions 00 though 07 have no Baro Potentiometer.

Type 3: ARINC 575-3 specification for ratio to Altitude Correction calculation.
Kollsman IDC 28007-427, -429,
Kollsman IDC 28704-A1001, -A2001, -A4001, -B4001, -C4001, -D1001, -D2001, -D4001, -D4101, -4E2101, -F2101, and -495.

Type 4: Kollsman IDC 28711-621 thru 624.

Type 5: Kollsman IDC 28007-431, -433,
Honeywell (Sperry) BA-141.

Type 6: Kollsman IDC 28711-500 series and -600 series.

Type 7: Kollsman IDC 28711-065 and -066.

Type 8: Reserved for future use (DO NOT USE).

Type 9: Aerosonic P/N 10420-11968E

Type 10: Reserved for future use (DO NOT USE).

Type 11: IDC P/N KTS B45152 10 410

Stage 2 Loopback configuration:

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

SWITCH 2 Fuel Filter Type:

0 - Injector
1 - Carburetor

SWITCH 3	AND SWITCH 4	CORRECTION For SSEC/PSEC Select:	F/ADC Software Version:
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)	

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

SWITCH 3, FUEL FLOW DELAY TIME

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

SWITCH 4	SPECIAL OPTION DESCRIPTION	F/ADC Software Version
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	

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).

SELECT NO DELAY

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

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

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

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

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

SPECIAL OPTIONS

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

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

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

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.

P/N	FUEL FLOW TYPE
962830-1	Digital
962830-2	Sine Wave
962830-3	Analog

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

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

Switch 1 & 2 selects the left K Factor

Switch 3 & 4 selects the right K Factor

Due to possible fuel flow system peculiarities, 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 962830-3) use the Analog K Factor Settings Table.

Switch 1 & 2 selects the main engine K Factor.

Switch 3 & 4 selects the offset.

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

Analog K Factor Settings Table

Manufacturer	Model	SW1	SW2	SW3	SW4	K-Factor	Offset
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 1

Matrix 0 - Digital K Factor Settings

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 2

Matrix 0 - Digital K Factor Settings (Continued)

PPG	SW1	SW2	PPG	SW1	SW2	PPG	SW1	SW2
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 2 continued

Matrix 0 - Digital K Factor Settings (Continued)

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			
50600	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 2 continued

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

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

Table 3

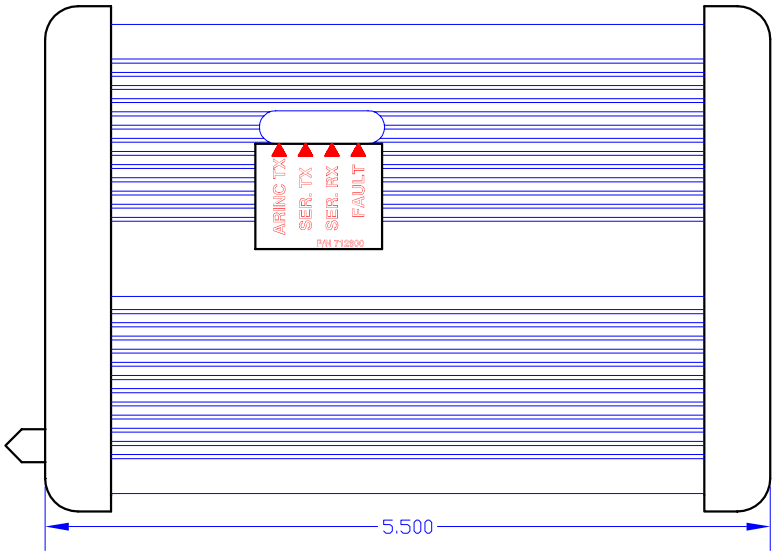
INSTALLATION MANUAL

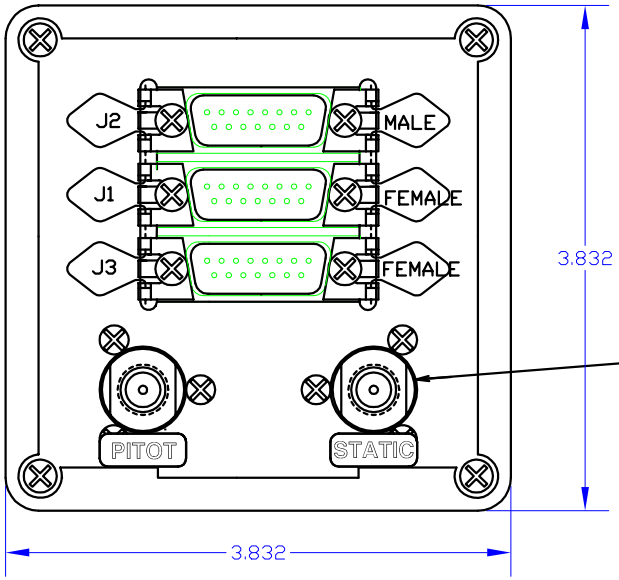
FUEL/AIRDATA COMPUTER

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

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)

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. BARO. WIPER
9. FUEL FLOW LEFT - POWER
10. FUEL FLOW LEFT - SIGNAL
11. GROUND
12. BARO. (+)
13. BARO. (-)
14. OAT - (Signal)
15. OAT + (+5V)

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

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

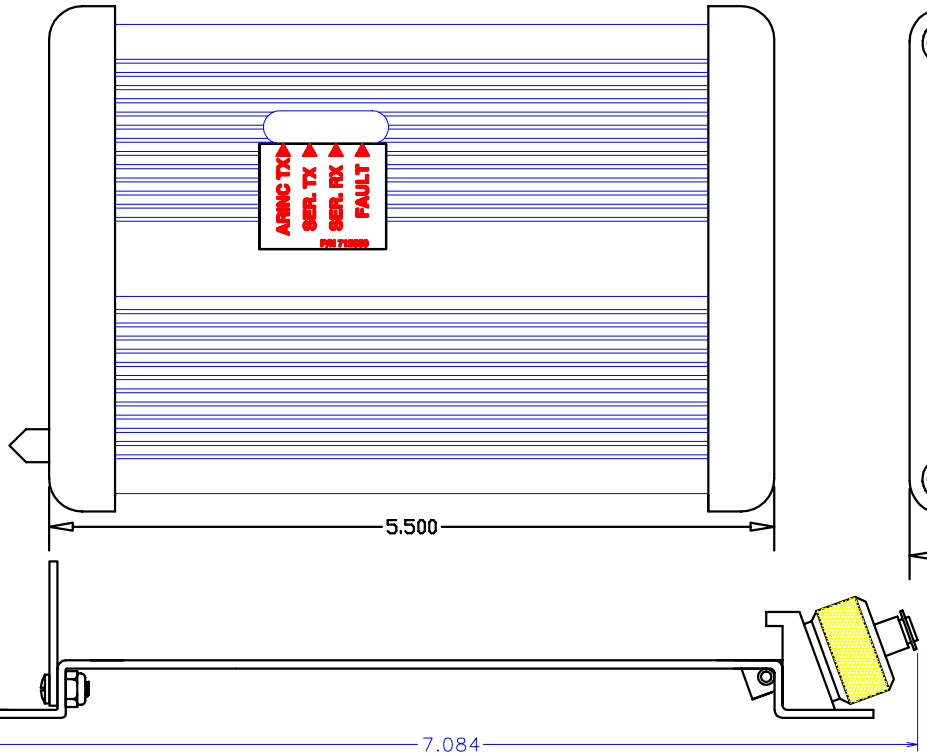
DO NOT SCALE DRAWING

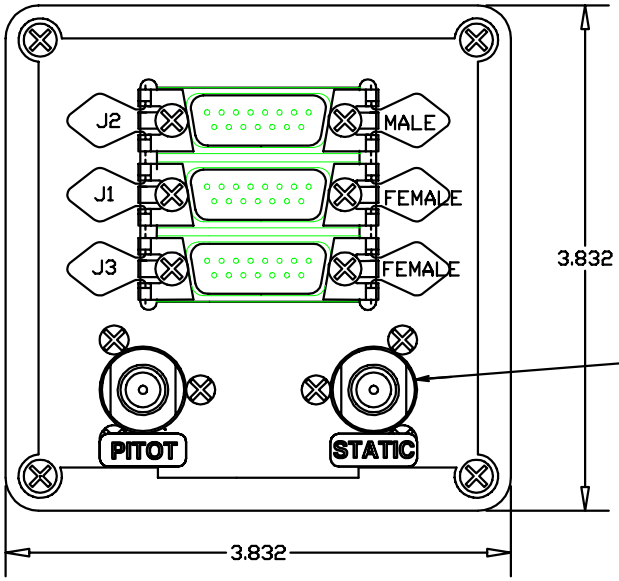
DRAWING DATE 9-22-94
DRAFTER DAP
APPROVED SES
FILE NAME 962830-1EJ.DWG
DIRECTORY 962830
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION DWG, ADC2000, DIGITAL FUEL FLOW

DRAWING NO. 4028-394
SIZE A
P/N 962830-1
REV. E





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)

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. BARO. WIPER
9. FUEL FLOW LEFT (-)
10. FUEL FLOW LEFT (+)
11. GROUND
12. BARO. (+)
13. BARO. (-)
14. OAT - (Signal)
15. OAT + (+5V)

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

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
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

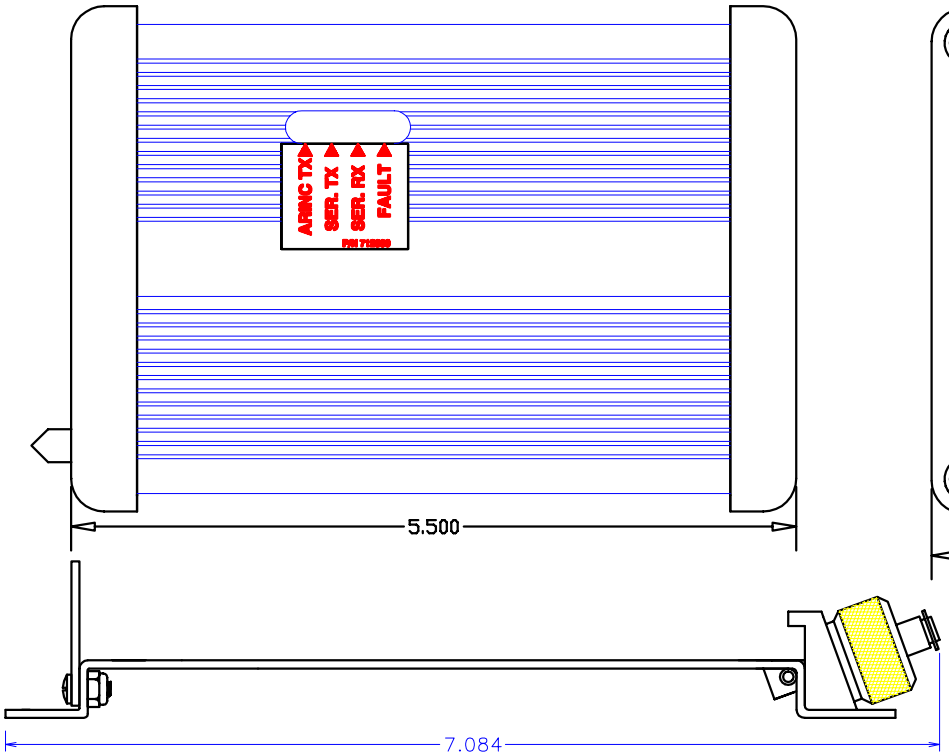
DO NOT SCALE DRAWING

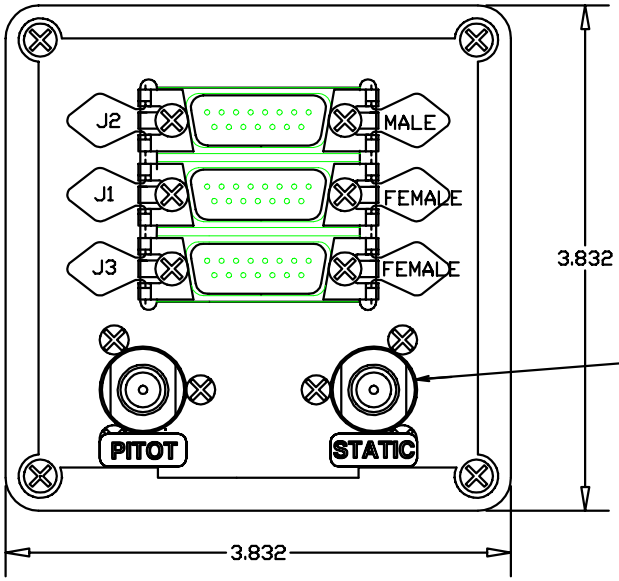
DRAWING DATE 9-22-94
DRAFTER DAP
APPROVED SES
FILE NAME 962830-2DJ.DWG
DIRECTORY 962830
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION DWG, ADC2000, SINE FUEL FLOW

DRAWING NO. 4028-431
SIZE A
P/N 962830-2
REV. D





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)

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. BARO. WIPER
9. FUEL FLOW LEFT (-)
10. FUEL FLOW LEFT (+)
11. GROUND
12. BARO. (+)
13. BARO. (-)
14. OAT - (Signal)
15. OAT + (+5V)

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

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
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

DO NOT SCALE DRAWING

DRAWING DATE 9-22-94
DRAFTER DAP
APPROVED SES
FILE NAME 962830-3DJ.DWG
DIRECTORY 962830
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION DWG, ADC2000, DC FUEL FLOW

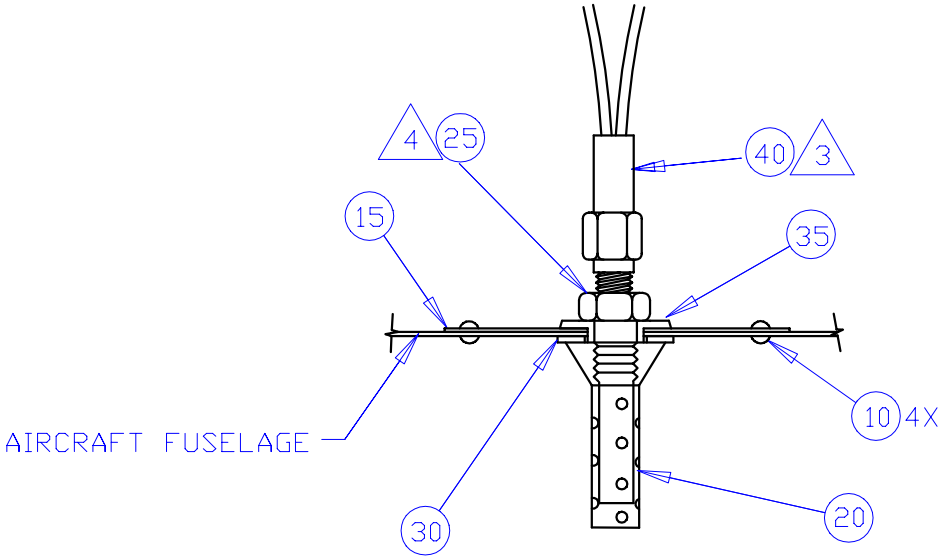
DRAWING NO. 4028-432
SIZE A
P/N 962830-3
REV. D

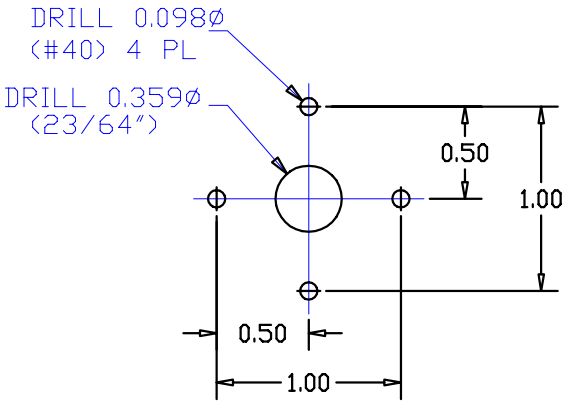
NOTES:

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

△3 OAT PROBE, P/N 681201

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





DETAIL A

MOUNTING HOLE DETAIL

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
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

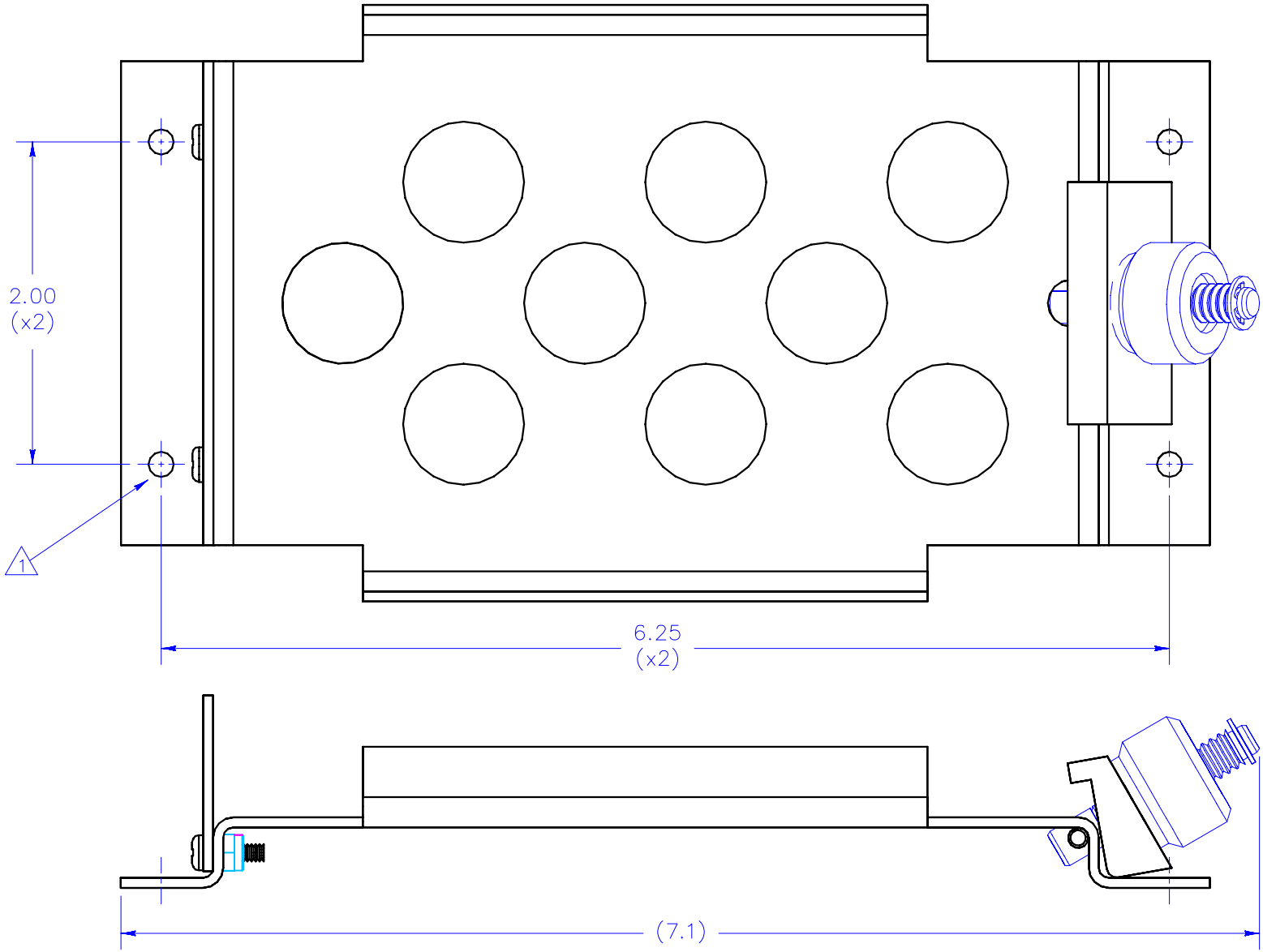
UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES
TOLERANCES: ±0.01
FINISH: N/A
MATERIAL: N/A
SCALE: NONE

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

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION, OAT PROBE ASSEMBLY KIT

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



NOTES:

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

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
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

3D CAD FILE AVAIL: YES

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES
TOLERANCES: X.X – ±0.1
X/X ± 1/64 X.XX – ±0.01
∠– ±1° X.XXX – ±0.005

FINISH: N/A

MATERIAL: N/A

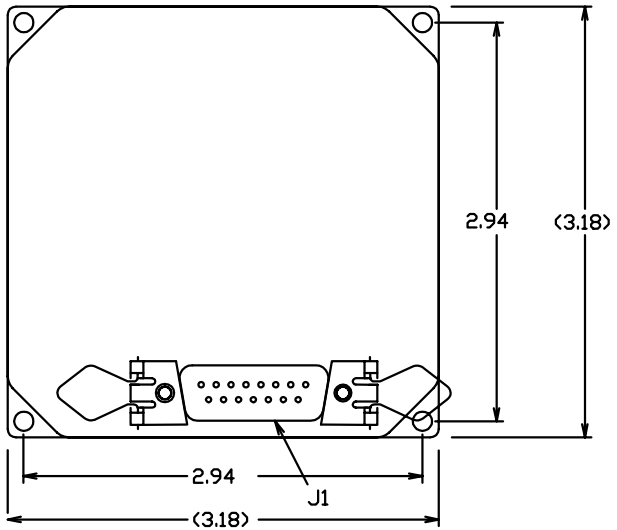
SCALE: 1 : 1

DRAWING DATE 9/22/94
DRAFTER PAB
APPROVED SES
FILE NAME 4028-395BJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

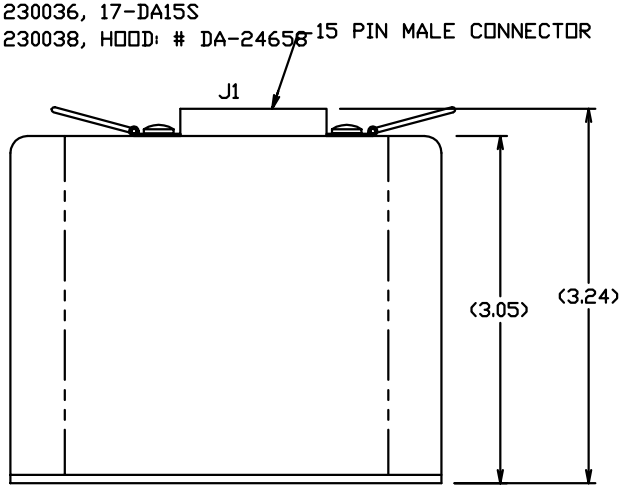
INSTALLATION, MOUNTING TRAY, ADC2000

DRAWING NO. 4028-395 | SIZE A | P/N ------ | REV B



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

MATING CONNECTOR:
SHADIN P/N 230036, 17-DA15S
SHADIN P/N 230038, HOOD: # DA-24658



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

WEIGHT: 8 oz.
POWER CONSUMPTION:
210 ma. @ 28v DC

CONNECTOR KEY

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

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

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES
TOLERANCES: X.X = ±0.1
X.XX = ±0.01

FINISH: N/A

MATERIAL: N/A

SCALE: NONE

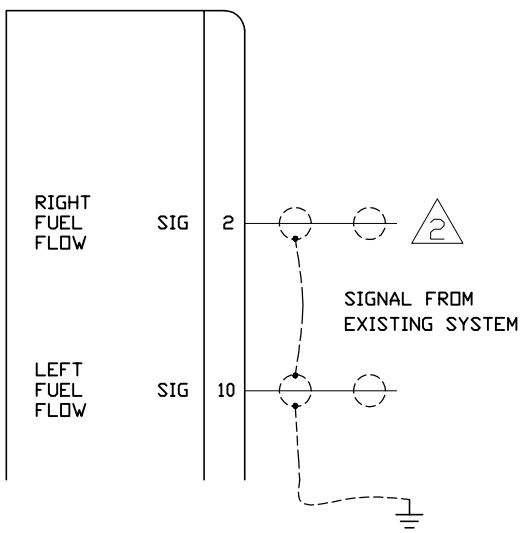
DRAWING DATE 7/14/97
DRAFTER PAB
APPROVED PG
FILE NAME 937000-03BJ.DWG
DIRECTORY 937000-03
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

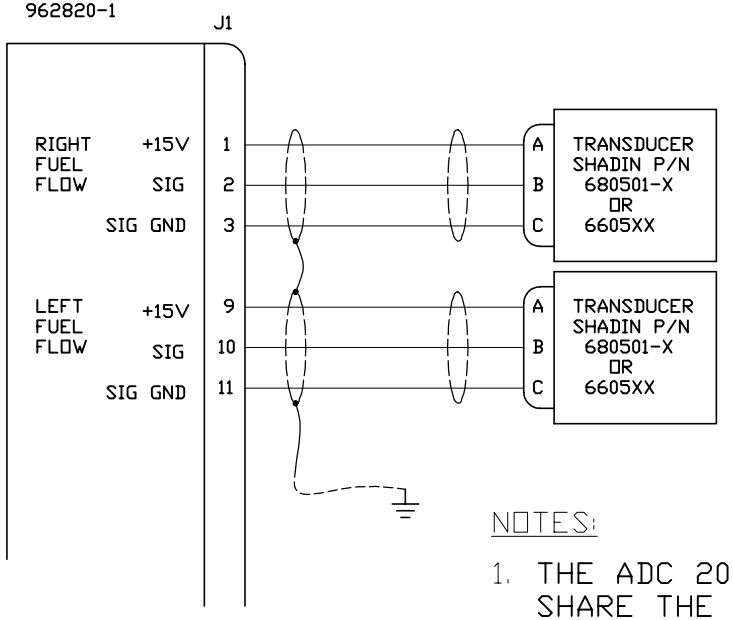
INSTALLATION, SERIAL TO ARGUS 5000/7000 CONVERTER

DRAWING NO. 4070-005 | SIZE A | P/N 937000-03 | REV B

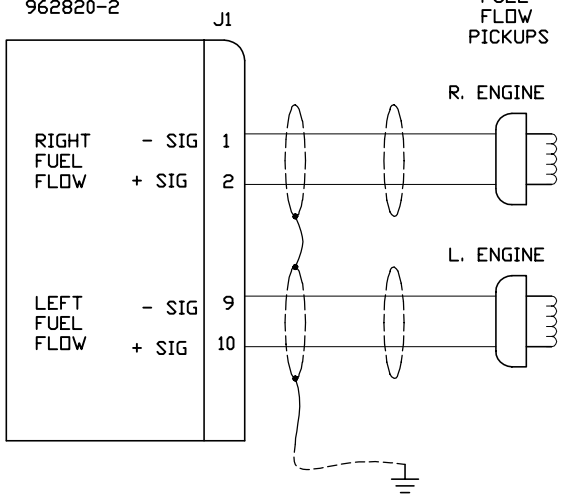
LEVEL FF INTERFACE OPTION
962830-1
962820-1



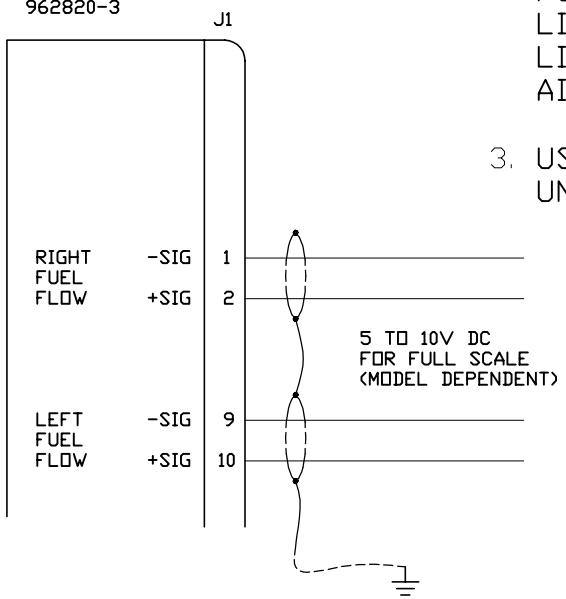
FREQUENCY FF INTERFACE OPTION
962830-1
962820-1



SINE FUEL FLOW OPTION
962830-2
962820-2



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



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.

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0211/047	B	3/11/03	PAB	BAL	REMOVED GNDS; ADDED NOTES & ADC 200 TO TITLE
9505/028	A	5/17/95	DAP	SES	CORRECT SINE FF LABELING
9412/005	-	12/7/94	DAP	SES	BASELINE RELEASE

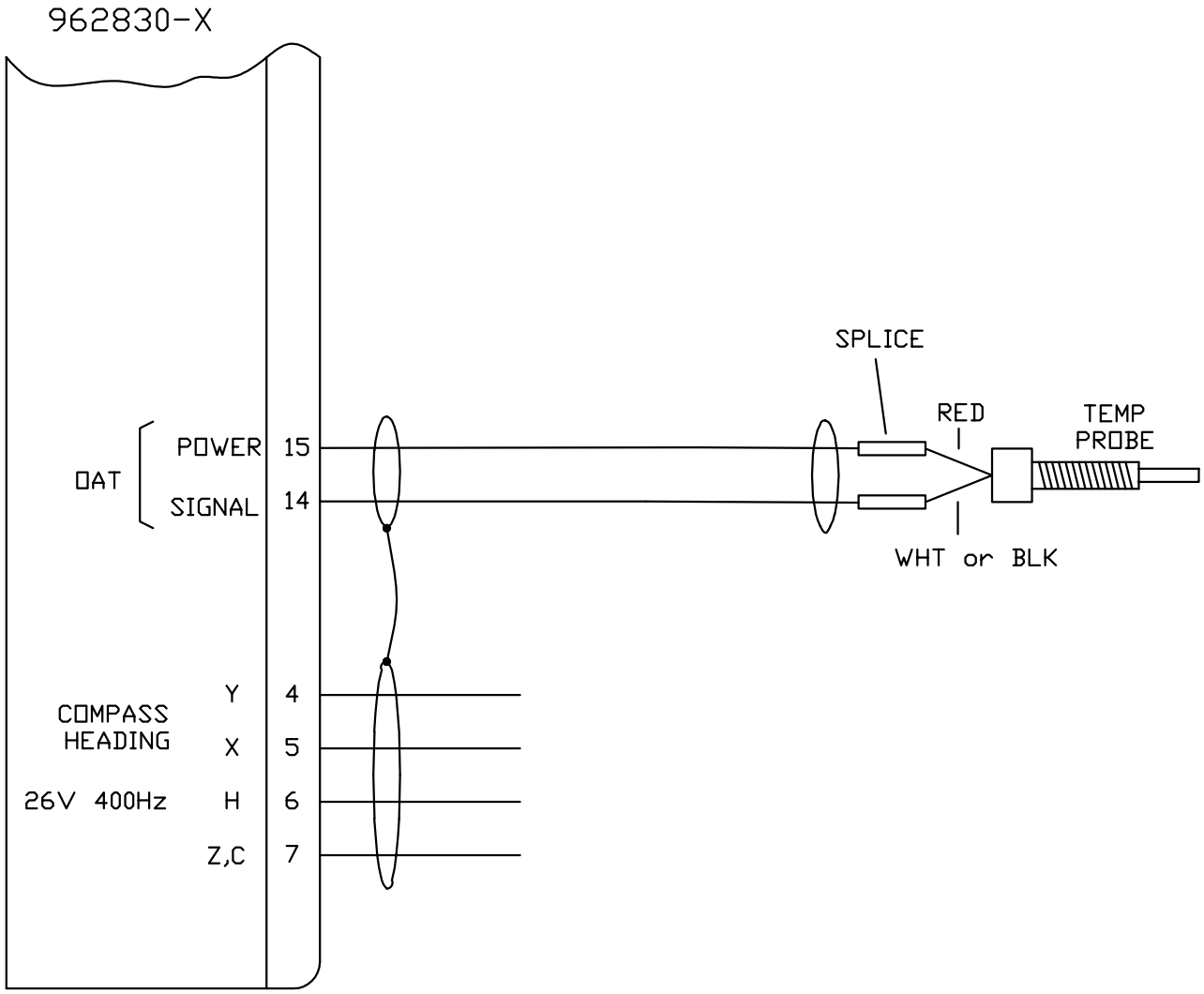
SCALE: NONE

DRAWING DATE 12/6/94
DRAFTER DAP
APPROVED SES
FILE NAME 4028-423BJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, FUEL/AIRDATA COMPUTER ADC 200/ADC 2000 TO FUEL SYSTEMS

DRAWING NO. 4028-423
SIZE A
P/N ------
REV B



ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0501/032	A	2/14/05	PAB	WMP	UPDATED TITLE BLOCK
9412/005	-	12/7/94	DAP	SES	BASELINE RELEASE

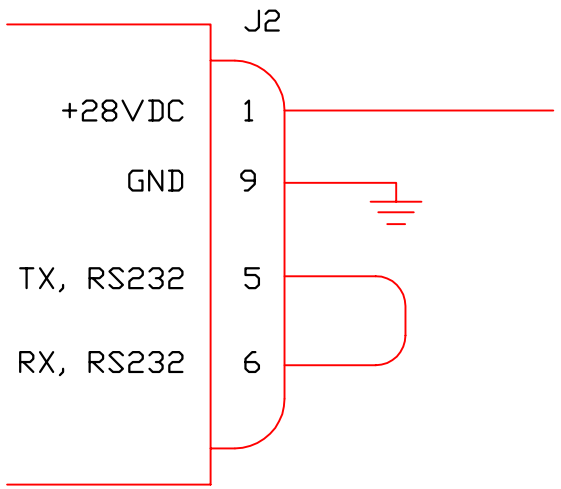
SCALE: NONE

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

SHADIN MINNEAPOLIS, MN 55426

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

DRAWING NO. 4028-425 | SIZE A | P/N | REV A



NOTES:

1. CONSULT INSTALLATION MANUAL FOR F/ADC PROGRAMMING INSTRUCTIONS.
2. MATING CONNECTOR: 15 PIN MALE D-SUB (SHADIN PN 230051C) OR EQUIVALENT

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0501/032	B	2/14/05	PAB	PAB	UPDATED TITLE BLOCK
9809/022	A	9/28/98	DLR	KCL	CORRECTED PIN OUT
9803/025	-	3-26-98	SRB	KCL	BASELINE RELEASE

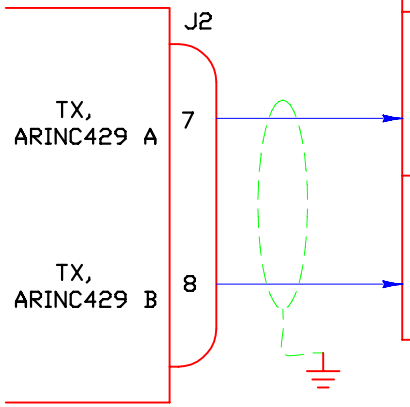
NOT TO SCALE

DRAWING DATE 3/25/98
DRAFTER SRB
APPROVED KCL
FILE NAME 4028-944BJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, LOOP BACK HARNESS FOR F/ADC200, 2000, D-SUB CONNECTOR

DRAWING NO. 4028-944 | SIZE A | P/N ——— | REV B



	AIRSHOW	UNIVERSAL UNS-1M P1 CHANNELS				TRIMBLE 8100		HONEY WELL LAZER NAV	B & D CABIN DISPLAY ⚠1	
		1	2	3	4	AIR BP	FUEL BP	YG1761B B	RECA	RECB
962810-X	BP									
962830-X	21	A	C	E	G	55	67	K4	WHITE/ BLUE WIRE	WHITE/ BLUE WIRE
	22	B	D	F	H	43	66	K5	WHITE WIRE	WHITE WIRE

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 XXXXX. 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.

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0211/047	A	3/11/03	PAB	BAL	ADDED NOTE 2, SHIELD, & GND; DEL "F/" & "-200" FROM TITLE
9803/025	-	3/26/98	SRB	KCL	BASELINE RELEASE

NOT TO SCALE

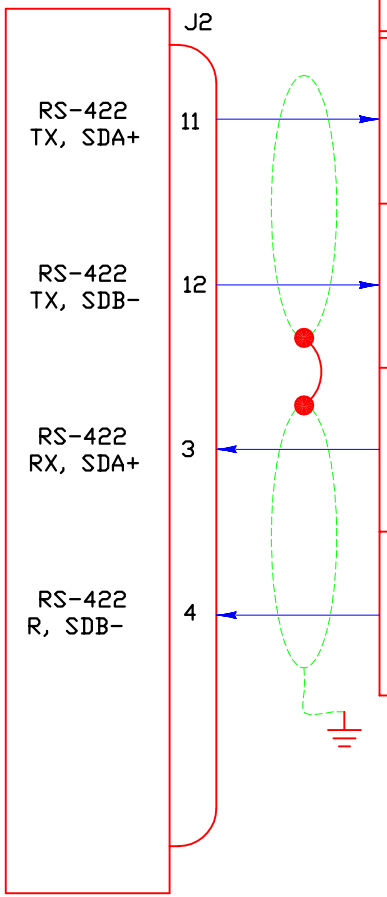
DRAWING DATE 3/25/98
DRAFTER SRB
APPROVED KCL
FILE NAME 4028-945AJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, ADC2000
TO NAV RECEIVERS ARINC 429

DRAWING NO. 4028-945 | SIZE A | P/N ——— | REV A

962810-X
962820-X
962830-X
} X = 1, 2, 3



TRIMBLE 1000, 2000, 3000	TRIMBLE 2100, 2101, 3100	NORTHSTAR M1A M2 M3 60/600
RX, SDA+ 16	RX, SDA+ 7	N/A
RX, SDB- 4	RX, SDB- 8	N/A
TX, SDA+ 15	TX, SDA+ 37	TX, SDA+ 11
TX, SDB- 3	TX, SDB- 5	TX, SDB- 6

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

DRAWING DATE 3/25/98
DRAFTER SRB
APPROVED KCL
FILE NAME 4028-946AJ.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. 4028-946 | SIZE A | P/N ——— | REV A

BENDIX/KING

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

SHADIN F/ADC 200, 2000

J2

RS232 TX — 6

RS232 RX — 5

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 BARO-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

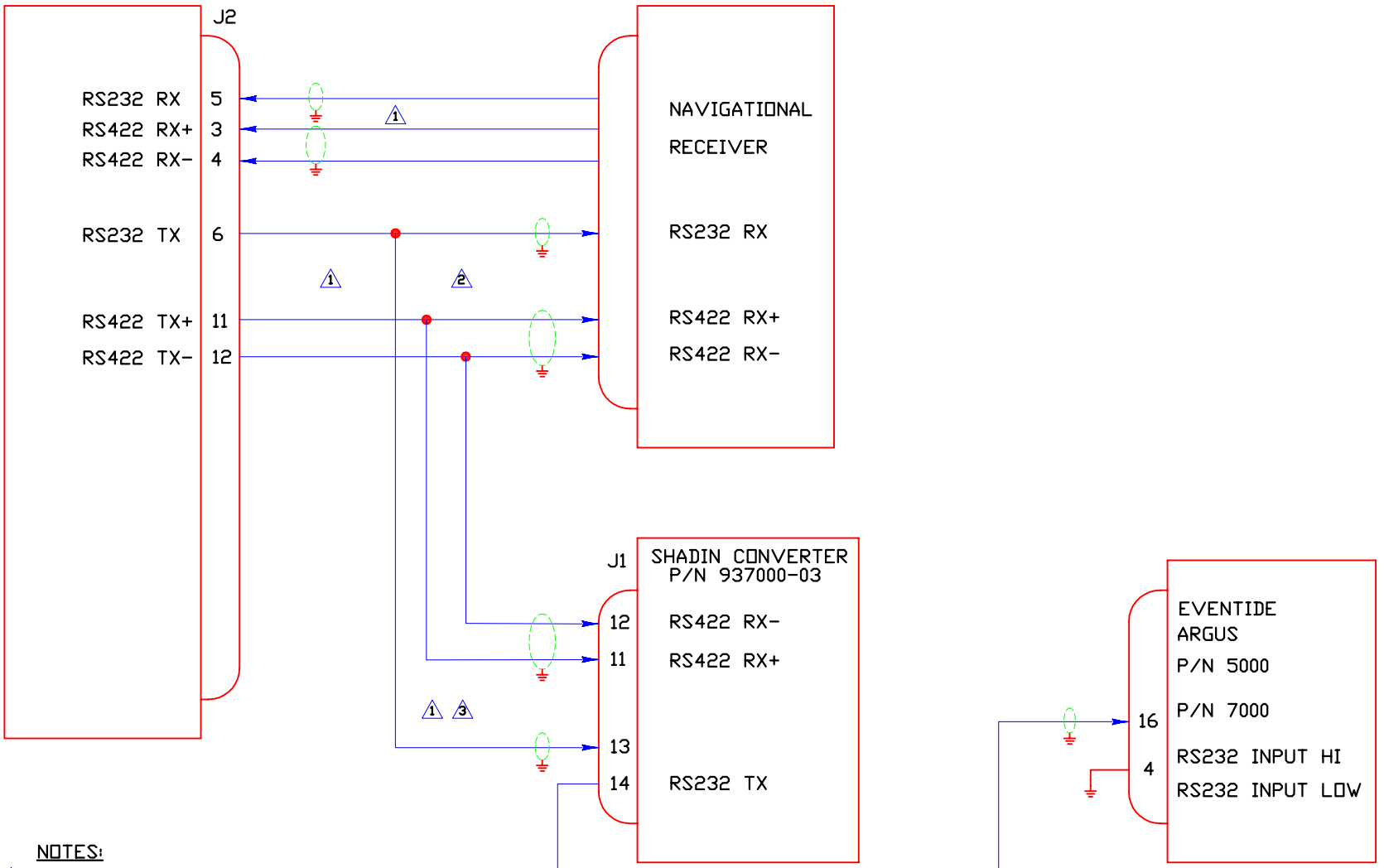
DRAWING DATE 3/25/98
DRAFTER SRB
APPROVED KCL
FILE NAME 4028-947AJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC200, 2000, SHADIN FUEL FLOW INDICATORS TO BENDIX/KING NAV. RECEIVER.

DRAWING NO. 4028-947 | SIZE A | P/N ——— | REV A

F/ADC200, 2000
P/N 962810-X
P/N 962820-X } X = 1, 2, 3
P/N 962830-X



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.

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

NOT TO SCALE

DRAWING DATE 3/25/98
DRAFTER SRB
APPROVED KCL
FILE NAME 4028-948AJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC200, 2000 AND SHADIN CONVERTER TO EVENTIDE ARGUS

DRAWING NO. 4028-948 | SIZE A | P/N ——— | REV A

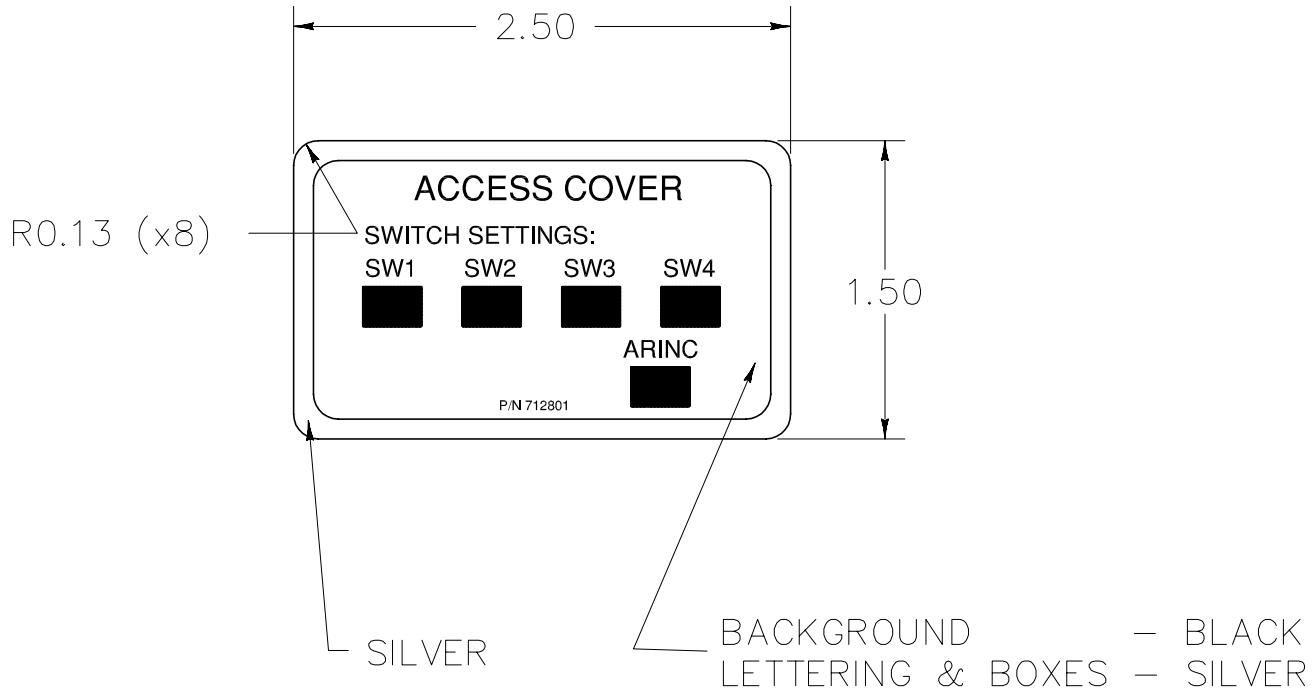
MANUFACTURING NOTES:

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)



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

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES
TOLERANCES: X.X – ±0.1
X.XX – ±0.01
X.XXX – ±0.005

FINISH: N/A

MATERIAL: 3M 7983

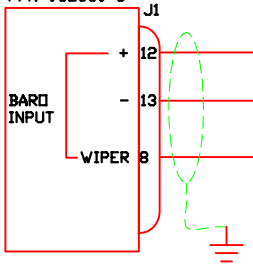
SCALE: FULL

DRAWING DATE 12/2/98
DRAFTER PAB
APPROVED KCL
FILE NAME 712801A.DWG
DIRECTORY 71XXXX
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

LABEL, ADC200/2000
ACCESS COVER

DRAWING NO. 4028–A80 | SIZE A | P/N712801 | REV A



IDC 44929-935 ⚠1	BENDIX/KING KEA130A, 346 -08 TO -11 ⚠2		IDC 28007-427 -429 ⚠1	IDC 28704-A1001, -A2001, -A4001, -B4001, -C4001, -D1001, -D2001, -D4001, -E2101, -F2101, -495 ⚠1	IDC 28711-621, -622, -623, -624 ⚠1	IDC 28711-500, -600 SERIES ⚠1	IDC 28007-431 -433 ⚠1	SPERRY BA141 ⚠3	IDC 28711-065, -066 ⚠1	AEROSONIC 10420-11968E ⚠1	IDC KTS B45152 10 410
	130A	346									
W	J1:A	S	a	d	T	T	a	X	g	L	v
U	J1:C	Z	c	f	V	V	c	Z	J	$\overline{b}$	U
V	J1:B	Y	b	e	U	U	b	Y	h	J	W

NOTES:

⚠1 EXCITATION VOLTAGE USUALLY SUPPLIED BY AIRCRAFT HARNESS (5-12 VDC), J1:12 TO EXCITATION, J1:13 TO GND.

⚠2 EXCITATION VOLTAGE MAY BE SUPPLIED BY AIRCRAFT HARNESS (5 VDC), J1:12 TO EXCITATION, J1:13 TO GND.

⚠3 EXCITATION VOLTAGE SUPPLIED BY AIRCRAFT HARNESS (-10VDC) J1:13 TO EXCITATION, J1:12 TO GND.

4. J1:15 (+5VDC OAT POWER) MAY BE USED FOR EXCITATION.
5. MAXIMUM DIFFERENTIAL INPUT VOLTAGE BETWEEN BARO (+) AND BARO (-) IS ±12VDC.

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0211/047	C	3/11/03	PAB	BAL	DEL PIN 11; ADDED GND
0011/003	B	11/2/00	PAB	KCL	KEA 346 WAS 'J1:A, J1:C, & J1:B' 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

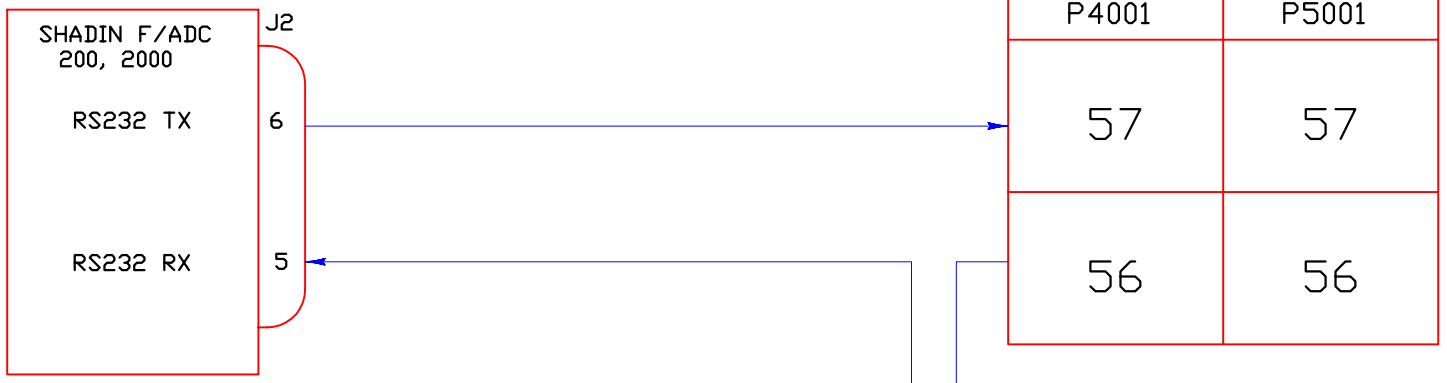
SCALE: NONE

DRAWING DATE 12/14/98
DRAFTER DLR
APPROVED KCL
FILE NAME 4028-A82CJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, ADC 2000, D-SUB CONN, TO ALTIMETER BARO 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	60.10.77
MINIFLO-L	60.01.77
MICROFLO-L	60.08.77

5. FUEL FLOW TRANSDUCER SIGNAL(S) ARE CONNECTED TO THE SHADIN FUEL FLOW METER. NO FUEL SIGNAL CONNECTED TO THE ADC.

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
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

NOT TO SCALE

DRAWING DATE 8/21/00
DRAFTER PAB
APPROVED EDJ
FILE NAME 4028-B94AJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC200, 2000, SHADIN FUEL FLOW INDICATORS TO GARMIN 430/530

DRAWING NO. 4028-B94 | SIZE A | P/N ——— | REV A

Shadin
Filename: 681201-1GP.doc
DIRECTORY: 681201-1

Report: 4032D
ECO Date: January 17, 2005
Rev: G
Sec.: IX

ECO #: 0501/032
Release date: 02/14/05
Approved: WP

PARTS LIST

Part #: **681201-1**

Drawing #s: 4028-005 Rev C

Description: **OAT PROBE ASSEMBLY KIT**

FN	P/N	QTY.	DESCRIPTION	MFG.	MFG.#	DESIGNATION	COMMENTS
10	511201	4	RIVET, AN470AD3-4 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		
45	IM1201	1	Installation Manual, 681201-1	SHA			
50	PK1002	1	BAG, 3 x 4, 4 MIL Zip Lock				
55	PK1009	1	BAG, 6 x 12, 4 MIL				
60	753217	1	COMPUTER LABEL, 3.5x15/16"	AVR	4013		

14 items

PARTS LIST

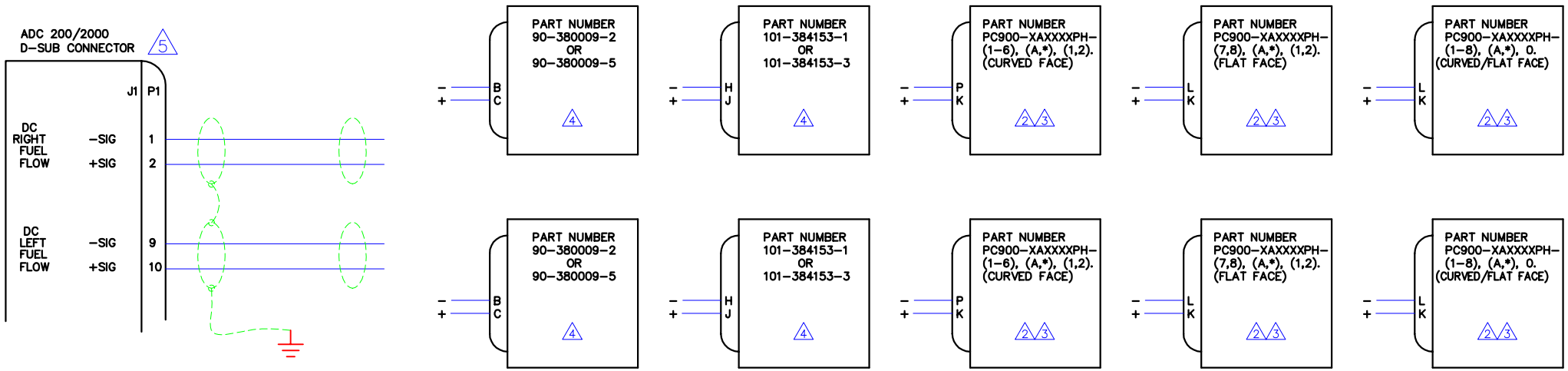
Part #: **IK9630-1**

Drawing #'s: N/A

Description: **INSTALL KIT, ADC2000**

FN	P/N	QTY.	DESCRIPTION	MFG	MFG.#	DESIGNATION	COMMENTS
15	612826A	1	TRAY, Mounting, ADC-2000	SHA	4028-T54		
15	612826	ALT	MOUNTING TRAY ASSEMBLY	SHA	4028-437		
20	230019H-1	6	SPRING LATCH CLIP	SHA	4028-074		
25	230050C	1	CONN, 15Pin, D-Sub, F Crimp, w/Contacts	TTI	M24308/2-2		
30	230051C	2	CONN, 15 Pin, D-Sub M Crimp, w/Contacts	TTI	M24308/4-2		
35	230038	3	CONN, Hood 15 Pin D Sub	CIN	DA-24658		
40	511002	6	SCREW, 4-40 x ¼"L, 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		
	753217	1	COMPUTER LABEL, 3½" x 15/16"	AVR	4013		
	PK1001	1	BAG, 2.5 x 3, 4 MIL Zip Lock				
	PK1009	1	BAG, 6 x 12, 4 MIL				

34 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.

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0211/047	B	3/11/03	PAB	BAL	UPDATED NOTES 1-6; CORRECTED TITLE; GROUNDED SHIELDS
9803/022	A	3/26/98	SRB	KCL	CHANGED NOTE 3 : 90-380009-5 FRO 26,150/416, REMOVE P/N 9628X0-3
9706/007	-	6/13/97	PAB	KCL	BASELINE RELEASE

SCALE: NONE

DRAWING DATE 6/9/97
DRAFTER PAB
APPROVED KCL
FILE NAME 4028-818BJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

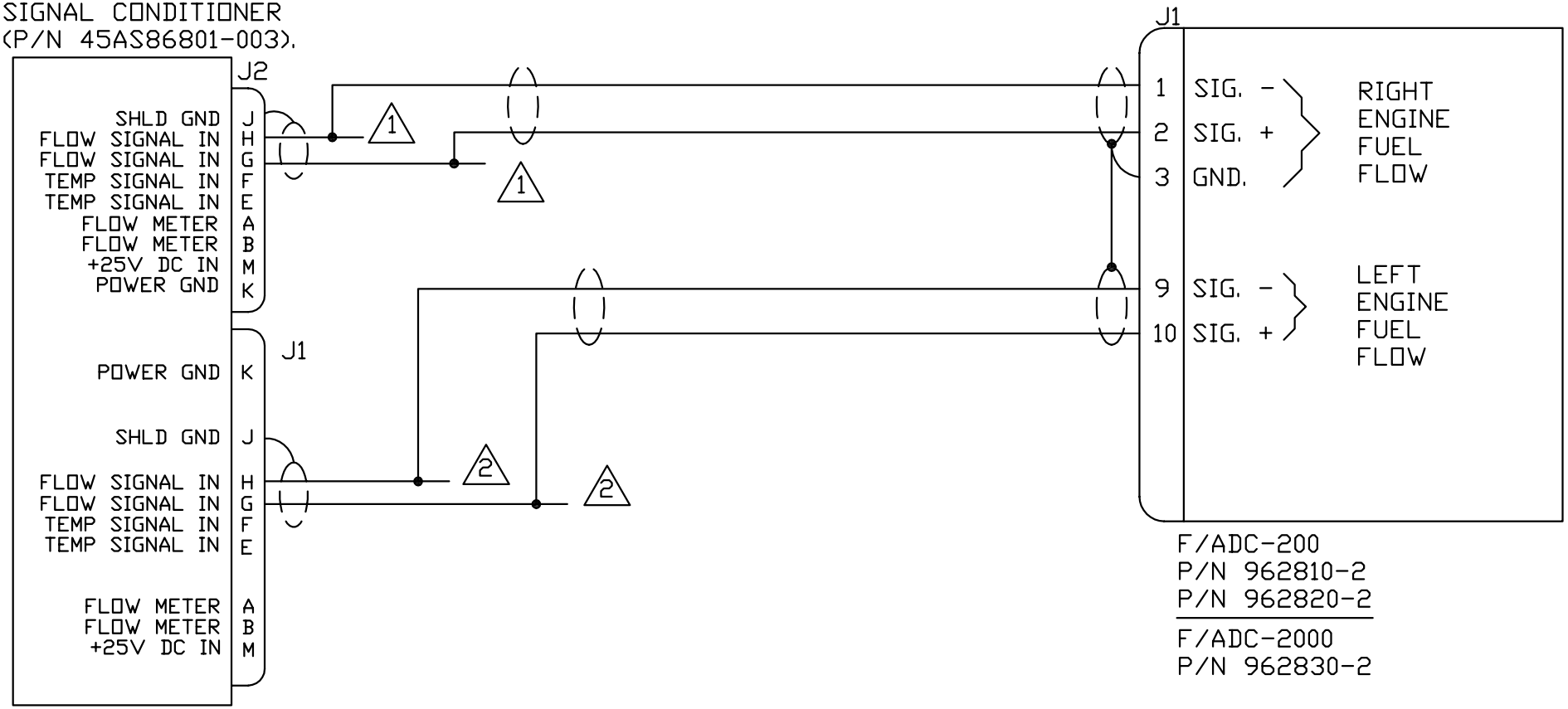
INSTALLATION WIRING, F/ADC 200/2000 W/ ANALOG F.F. TO BEECH KING AIR INDICATORS D-SUB CONNECTOR

DRAWING NO. 4028-818 | SIZE A | P/N ——— | REV B

NOTES

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

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



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

F/ADC-2000
P/N 962830-2

3

SIG COND. P/N	K-FACTOR	SW1	SW2	SW3	SW4
45AS86801-003	5150 PPG	6	E	6	E

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
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

DO NOT SCALE

DRAWING DATE 12/17/97
DRAFTER DMD
APPROVED KCL
FILE NAME 4028-819BJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

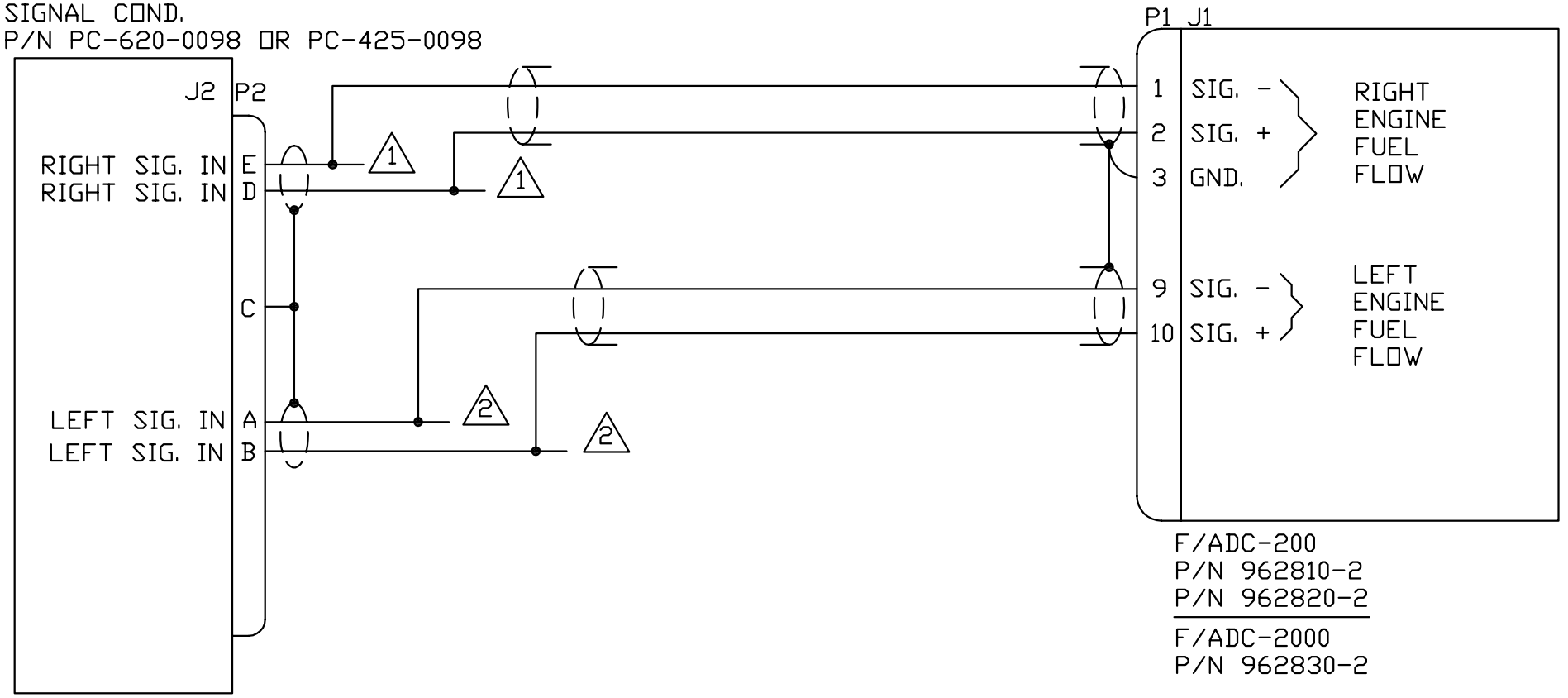
SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC 200, 2000 SINE FF TO MITSUBISHI MU-300 AND MODEL 400 BEECHJET

DRAWING NO. 4028-819 | SIZE A | P/N ——— | REV B

NOTES

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



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

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
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

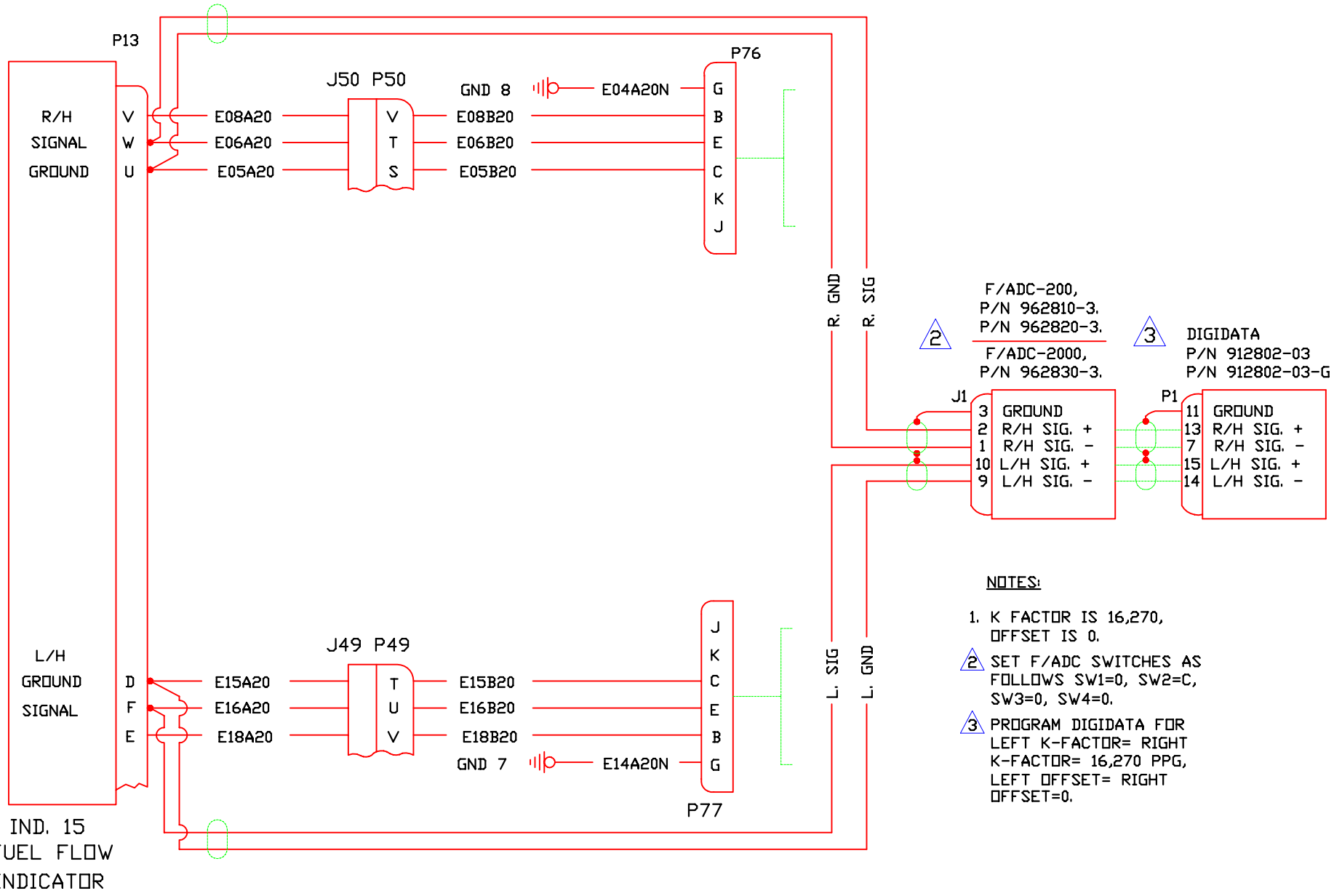
DO NOT SCALE

DRAWING DATE 12/17/97
DRAFTER DMD
APPROVED KCL
FILE NAME 4028-909BJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING:
F/ADC-200(2000) TO MITSUBISHI MU-2 W/FOXBORO PC-620 SYSTEM

DRAWING NO. 4028-909 | SIZE A | P/N | REV B



NOTES:

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

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

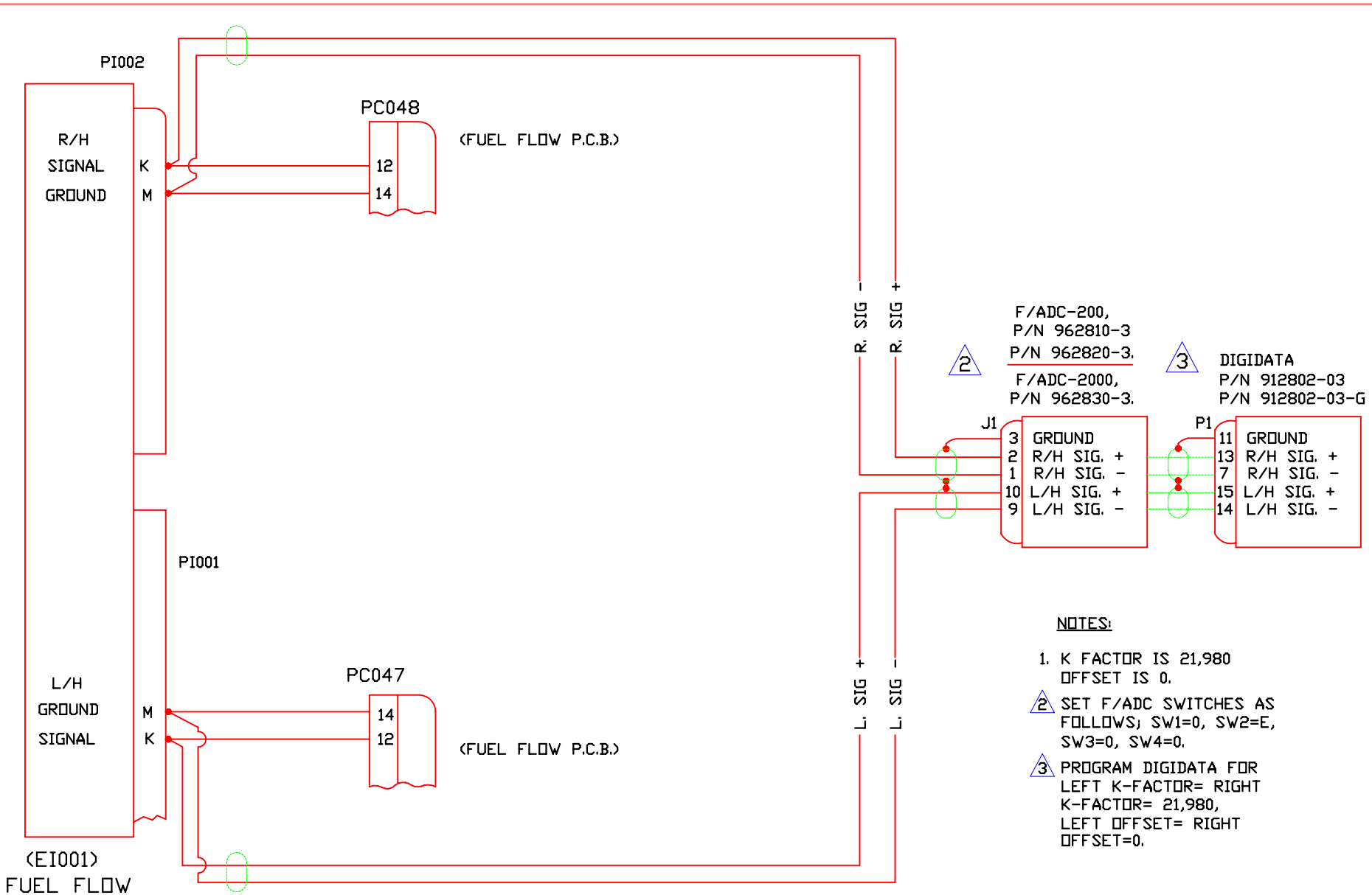
NOT TO SCALE

DRAWING DATE 3/24/98
DRAFTER SRB
APPROVED KCL
FILE NAME 4028-936AJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC200, 2000 OR DIGIDATA WITH DC FF TO CESSNA CITATION 500, 501, 550, S550, 551, 552.

DRAWING NO. 4028-936
SIZE A
P/N ———
REV A



NOTES:

1. K FACTOR IS 21,980
   OFFSET IS 0.
2. SET F/ADC SWITCHES AS FOLLOWS; SW1=0, SW2=E, SW3=0, SW4=0.
3. PROGRAM DIGIDATA FOR LEFT K-FACTOR= RIGHT K-FACTOR= 21,980, LEFT OFFSET= RIGHT OFFSET=0.

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

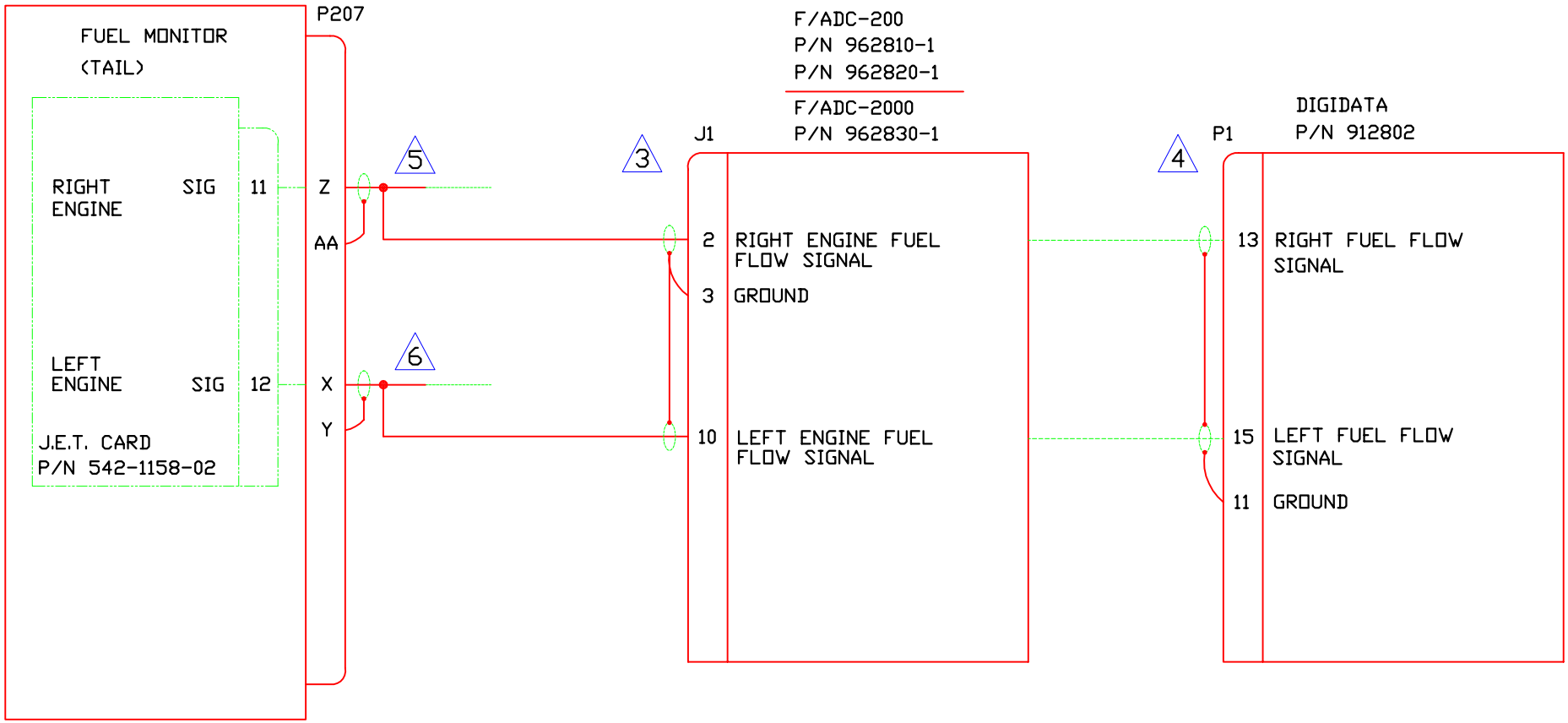
NOT TO SCALE

DRAWING DATE 3/24/98
DRAFTER SRB
APPROVED KCL
FILE NAME 4028-937AJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC200, 2000 OR DIGIDATA WITH DC FF TO CESSNA CITATION 525 JET

DRAWING NO. 4028-937 | SIZE A | P/N ——— | REV A



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.

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

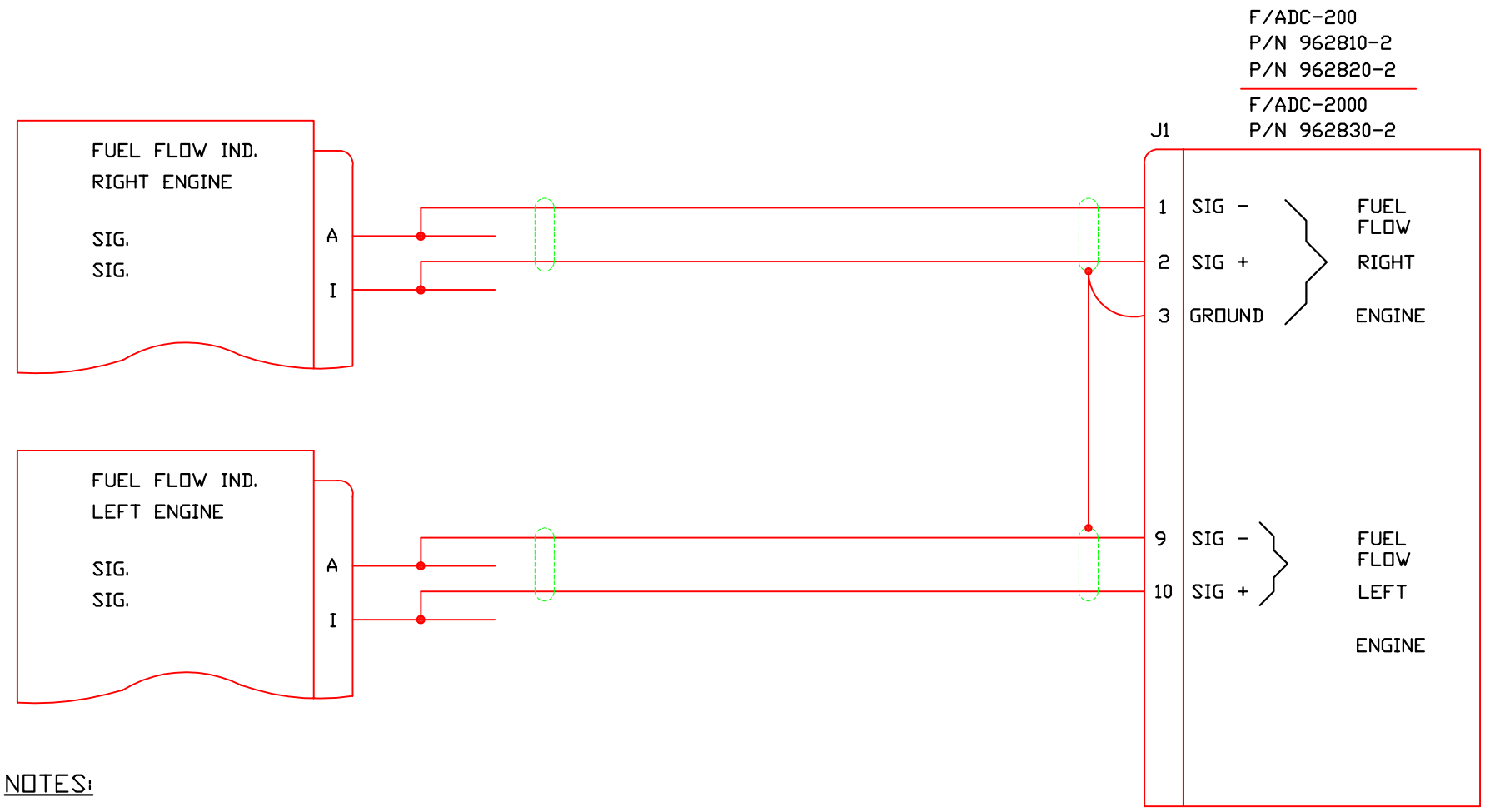
NOT TO SCALE

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



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.

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

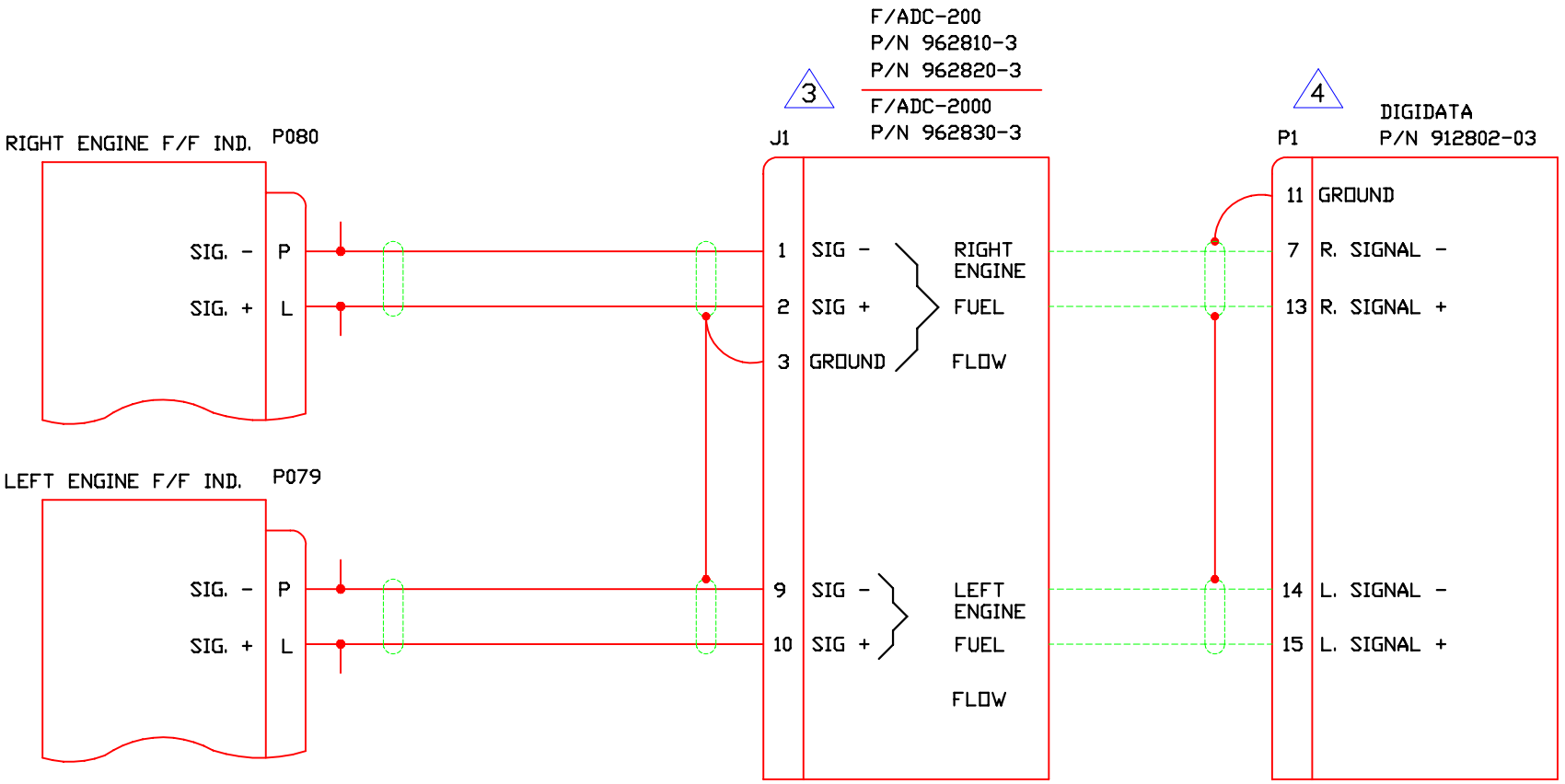
NOT TO SCALE

DRAWING DATE 3/24/98
DRAFTER SRB
APPROVED KCL
FILE NAME 4028-939AJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC-200, 2000 WITH SINE FF TO ROCKWELL COMMANDER 690 AND 695

DRAWING NO. 4028-939 | SIZE A | P/N ——— | REV A



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.

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

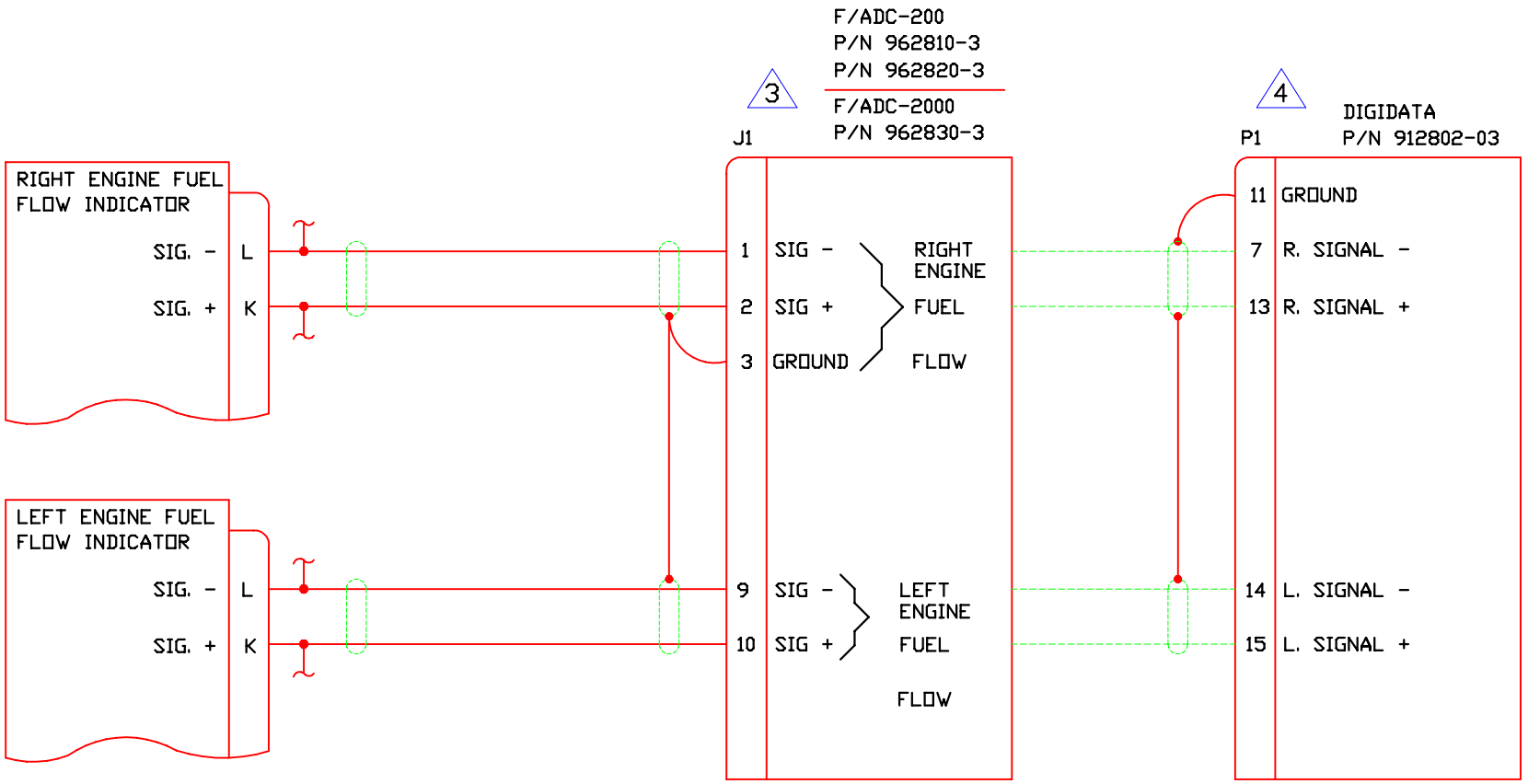
NOT TO SCALE

DRAWING DATE 3/24/98
DRAFTER SRB
APPROVED KCL
FILE NAME 4028-940AJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC-200, 2000 OR DIGIDATA WITH DC FF TO RAYTHEON BEECHJET 400A AIRCRAFT

DRAWING NO. 4028-940 | SIZE A | P/N ——— | REV A



NOTES:

1. FOR AIRCRAFT WITH THE FOLLOWING INDICATOR/TRANSMITTERS;
   A. INDICATOR PART NO. (RAGEN) 1291-2
   B. 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.

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

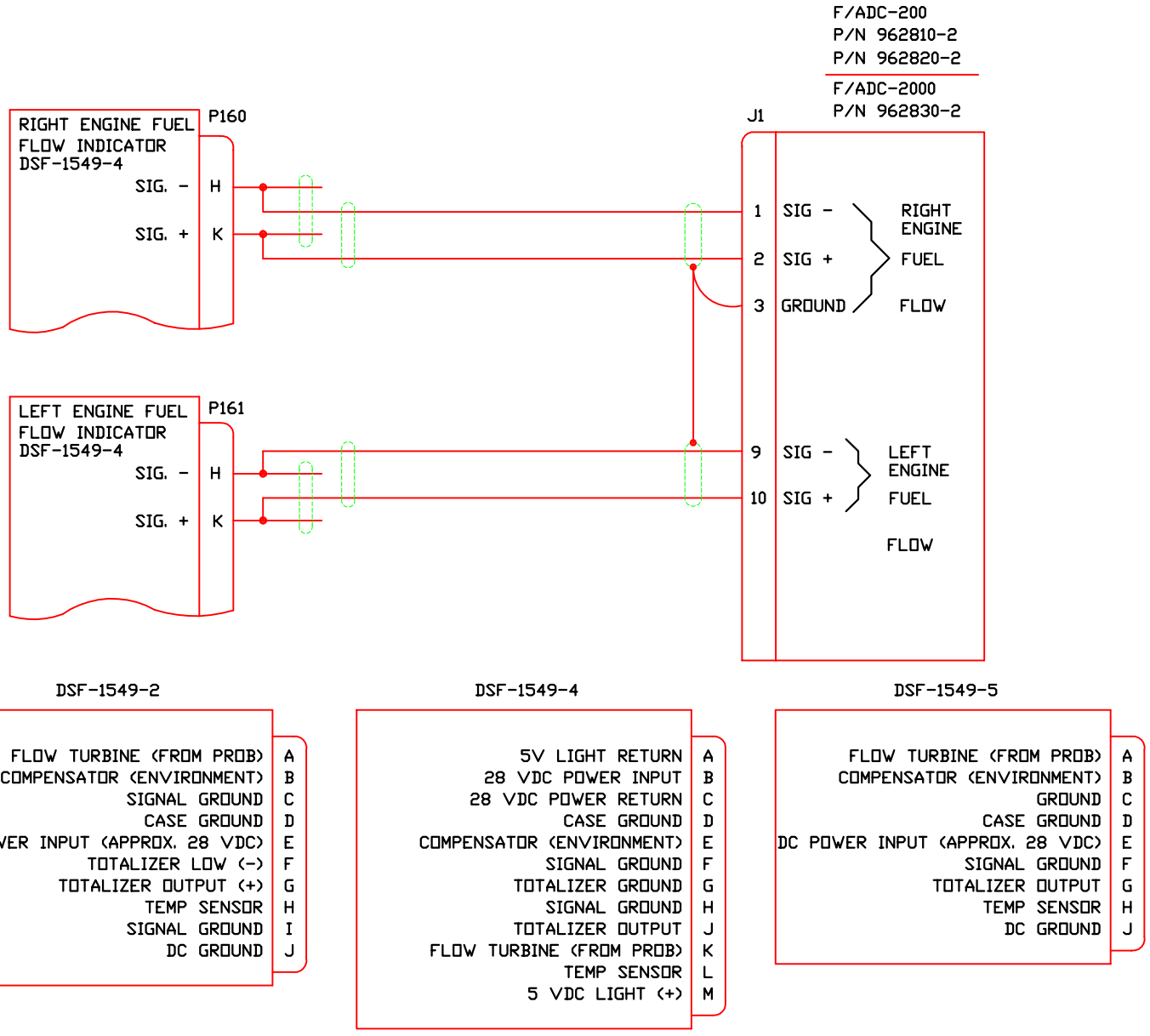
NOT TO SCALE

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



NOTES:

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

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

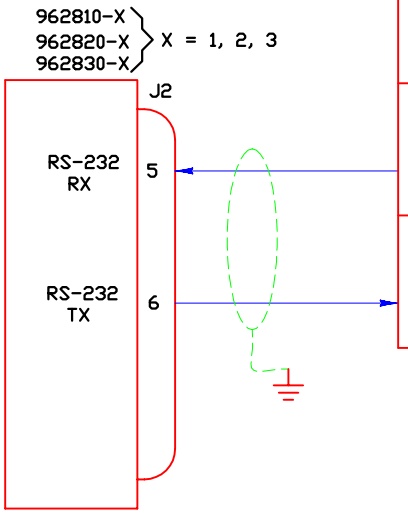
NOT TO SCALE

DRAWING DATE 3/25/98
DRAFTER SRB
APPROVED KCL
FILE NAME 4028-942AJ.DWG
DIRECTORY 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



CNX 80	GARMIN 430, 530	BENDIX/ KING KLN90 KLN90B	BENDIX/ KING KLN89	GARMIN 150, 155, 155XL, 165, 250, 250XL 300, 300XL	LNS 6000	BENDIX/ KING KLN 900	FOSTER 7000	IIMORROW 360	IIMORROW NMS2001	IIMORROW 820	IIMORROW GX 50, 60	ARNAV FMS7000, R5000 STAR5000	MAGELLAN SKYNAV 5000 A	MAGELLAN SKYNAV 5000 B	IIMORROW GX 55
TX 22	TX 56	TX 13	TX 2	TX 24	TX 25	TX 6	TX A	TX 8/1	TX (SOFTWARE SELECT) 19/37	TX 6	TX 5	TX 3	TX 12	TX 25	TX 6
RX 21	RX 57	RX 36	RX 1	RX 17	RX 26	RX 38	RX R	RX 20/14	RX 21/38	RX 7	RX 4	RX 4	RX 11	RX 23	RX 7

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
0501/006	C	1/17/05	PAB	ZK	ADDED CNX 80
0211/047	B	2/7/03	PAB	BAL	DEL PIN 9; ADDED GND
0009/006	A	9/6/00	PAB	EDJ	ADD GARMIN 430/530 GPS
9803/025	-	3/26/98	SRB	KCL	BASELINE RELEASE

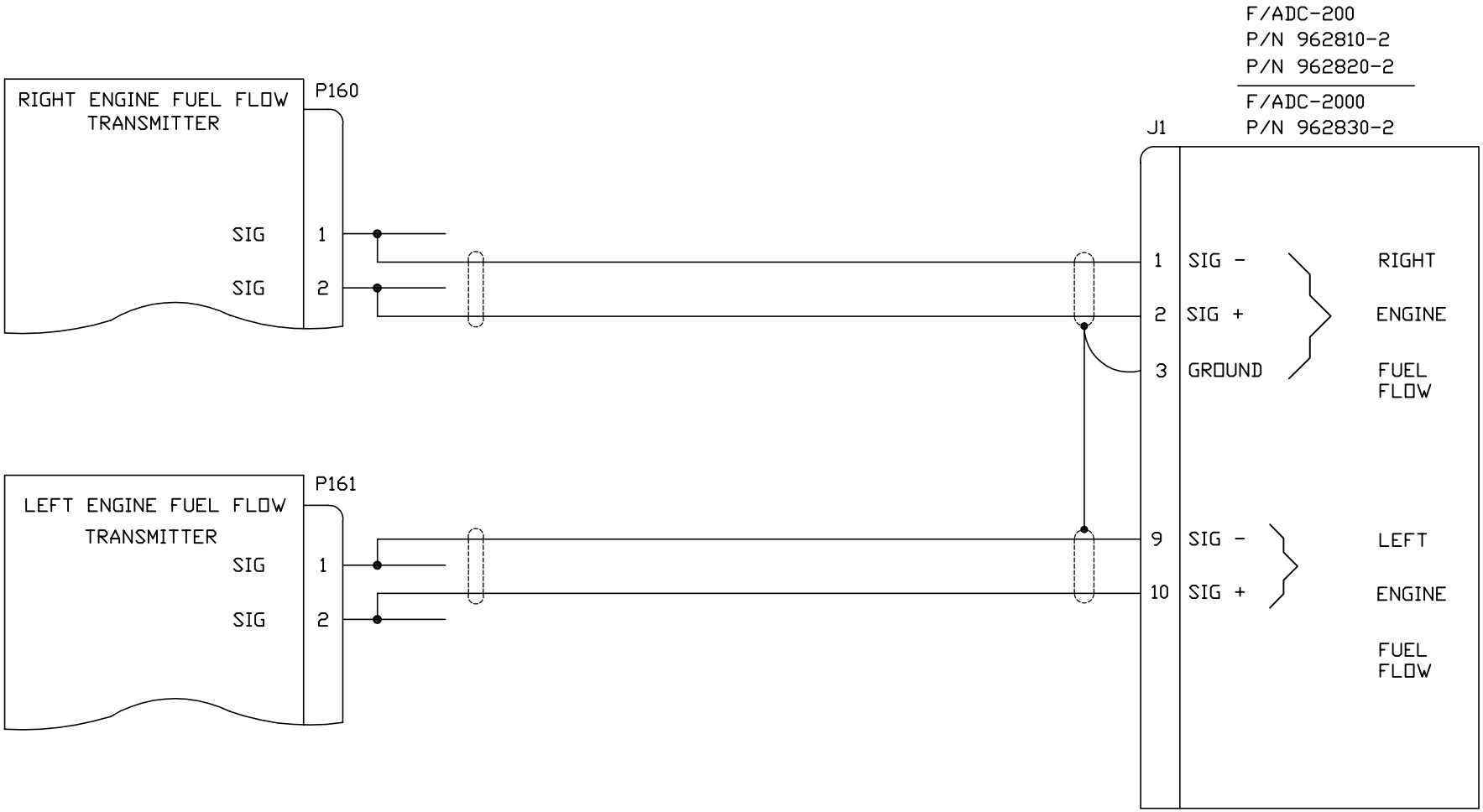
NOT TO SCALE

DRAWING DATE 3/25/98
DRAFTER SRB
APPROVED PAB
FILE NAME 4028-943CJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC-200, 2000
TO NAV RECEIVERS W/RS-232

DRAWING NO. 4028-943
SIZE A
P/N ———
REV C



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.

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

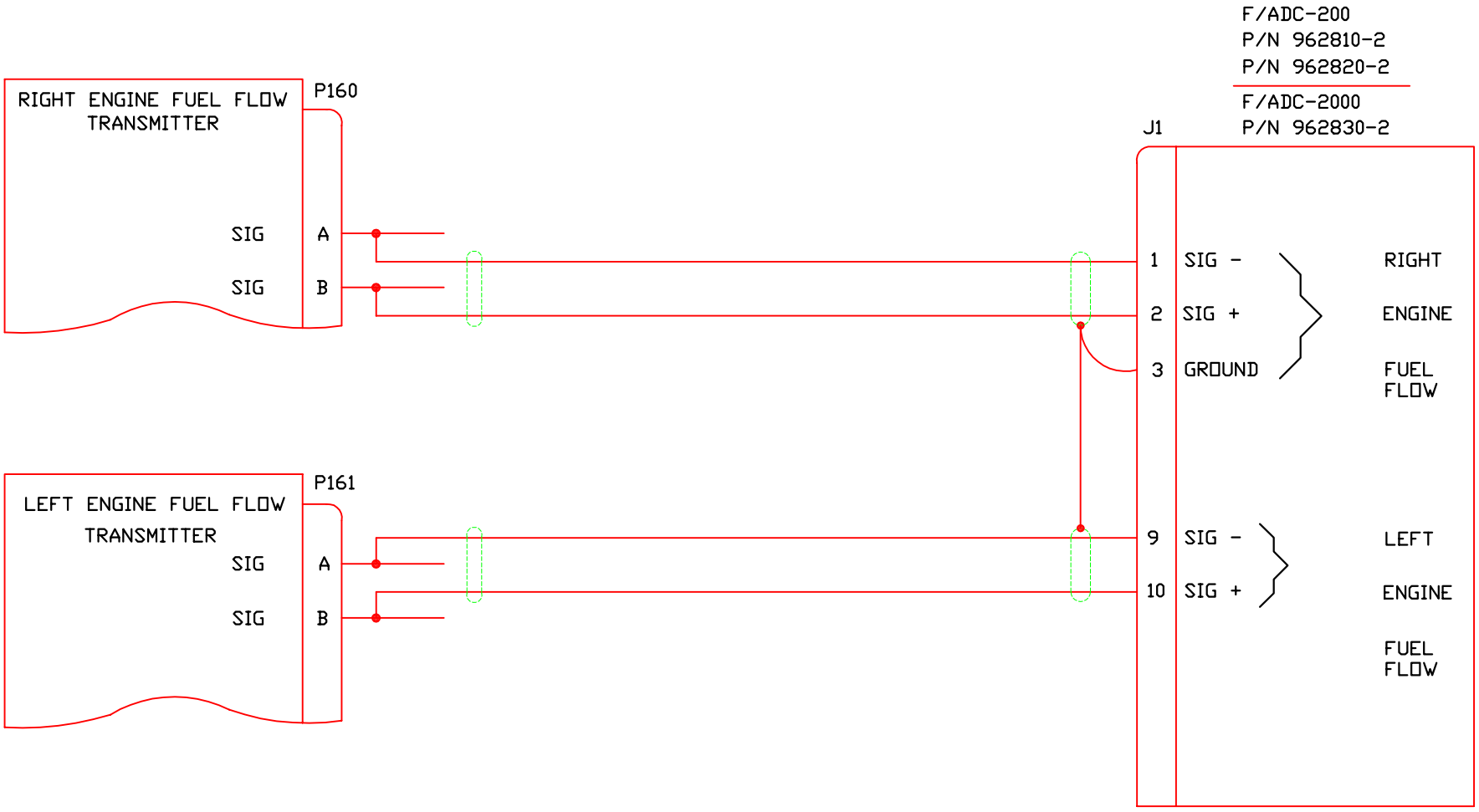
NOT TO SCALE

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



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.

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

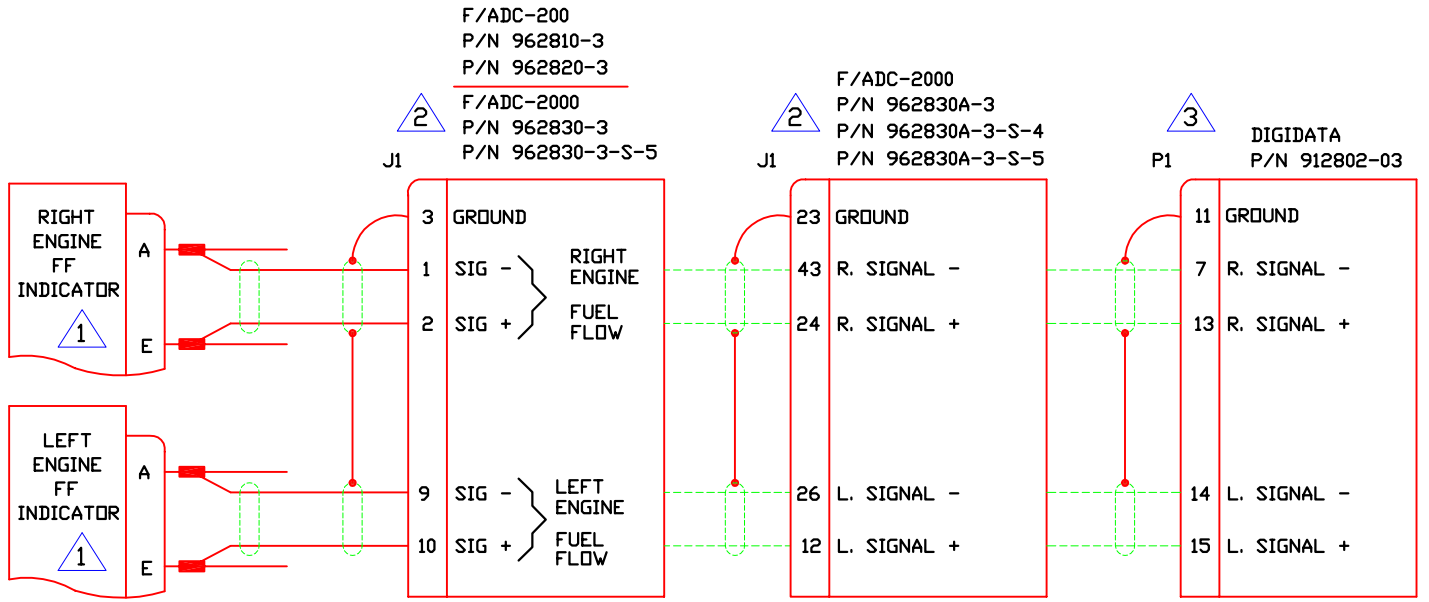
NOT TO SCALE

DRAWING DATE 3/26/98
DRAFTER SRB
APPROVED KCL
FILE NAME 4028-950AJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC-200, 2000 TO AEROSPATIALE AS332 SUPER PUMA

DRAWING NO. 4028-950 | SIZE A | P/N ——— | REV A



RAGEN P/N 3265013-0601

	J1
FLOW SIGNAL FROM FLOWMETER	E
FLOW SIGNAL TO TOTALIZER	G
INTERNAL TEST POINT	J
+28 VDC INPUT	B
REF SUPPLY TO TOTALIZER	F
REF SUPPLY TO FLOWMETER	C
28 VDC RETURN	A
INTERNAL TEST POINT	D
SIGNAL RETURN TO TOTALIZER	H
CASE GROUND	K

RAGEN P/N 3265013-0801

	J1
FLOW SIGNAL FROM FLOWMETER	E
FLOW SIGNAL TO TOTALIZER	G
ALT FLOW SIGNAL TO TOTALIZER	J
+28 VDC INPUT	B
REF SUPPLY TO TOTALIZER	F
REF SUPPLY TO FLOWMETER	C
28 VDC RETURN	A
SIGNAL RETURN FROM FLOWMETER	D
SIGNAL RETURN TO TOTALIZER	H
CASE GROUND	K

RAGEN P/N 3265013-1201

	J1
FLOW SIGNAL FROM FLOWMETER	E
FLOW SIGNAL TO TOTALIZER	G
ALT FLOW SIGNAL TO TOTALIZER	J
+28 VDC INPUT	B
REF SUPPLY TO TOTALIZER	F
REF SUPPLY TO FLOWMETER	C
28 VDC RETURN	A
SIGNAL RETURN FROM FLOWMETER	D
SIGNAL RETURN TO TOTALIZER	H
CASE GROUND	K

NOTES:

1. 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.
2. SET AIRDATA SWITCHES AS FOLLOWS; SW1 = 1, SW2 = 1, SW3 = 0, SW4 = 0.
3. PROGRAM DIGIDATA FOR LEFT K-FACTOR = RIGHT K-FACTOR = 46,160
   PPG, LEFT OFFSET = RIGHT OFFSET = 0.

ECO #	REV.	DATE	BY	APP'D	DESCRIPTION
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

NOT TO SCALE

DRAWING DATE 8/7/98
DRAFTER DMD
APPROVED KCL
FILE NAME 4028-A29CJ.DWG
DIRECTORY 4028
SHEET 1 OF 1

SHADIN MINNEAPOLIS, MN 55426

INSTALLATION WIRING, F/ADC-200, 2000
OR DIGIDATA WITH DC FF PIPER
CHEYENNE PA31T

DRAWING NO. 4028-A29 | SIZE A | P/N ——— | REV C