Honeywell

SYSTEM INSTALLATION MANUAL

Global ®

AFIS ®

AIRBORNE FLIGHT INFORMATION SYSTEM

400-045500-0001 through -0006

400-045500-0130 / -0210 / -2010 / -0211 / -2011

42000-01-01, -02-02, -03-03, -04-03

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SECTION 1
GENERAL INFORMATION

SECTION 2
MECHANICAL INSTALLATION

SECTION 3
ELECTRICAL INSTALLATION

SECTION 4
AFIS CONFIGURATION AND CHECKOUT

SECTION 4
AFIS CONFIGURATION AND CHECKOUT (cont)

LIST OF ILLUSTRATIONS

LIST OF ILLUSTRATIONS (cont)

RECORD OF REVISIONS

REV. NO.	REVISION DATE	DATE INSERTED	BY	REV. NO.	REVISION DATE	DATE INSERTED	BY
1	03/01/88						
2	06/01/88						
3	04/01/89						
4	10/01/92						
5	05/94						
6	06/95						
7	01/98						
8	10/98						
9	03/2000						
10	05/2000						
11	03/2001						

RECORD OF REVISIONS (cont.)

REV. NO.	REVISION DATE	DATE INSERTED	BY	REV. NO.	REVISION DATE	DATE INSERTED	BY

SECTION 1
GENERAL INFORMATION

1.1 INTRODUCTION

This manual contains information relative to the physical, mechanical and electrical characteristics of the Global AFIS™ unit. General system installation information is also included.

1.2 EQUIPMENT DESCRIPTION

The Airborne Flight Information System (AFIS) consists of the following aircraft components: Data Management Unit, Antenna Switching Unit (optional), Data Transfer Unit (optional), Satellite Communication Unit (optional), High Power Amplifier/Low Noise Amplifier (optional), Satellite Antenna (optional), Configuration Module and ARNAV MFD5115 RPU (optional).

1.2.1 Data Management Unit (see Table 1-10)

The Data Management Unit (DMU) is a standard 1/2 ATR short unit. The DMU formats data received from the DTU, VHF network or Satellite network. The DMU formats data for sending to the ground from the aircraft using the VHF or Satellite network. The data is presented to the flight management system interfaced to the DMU for display on a CRT/CDU. The DMU incorporates a data quality VHF transceiver. The transceiver is tuned automatically by the DMU to use the appropriate VHF ground station for the purpose of transmitting data to and receiving data from the Global Data Center while in flight. The DMU can select between the VHF data network and a satellite network automatically if the DMU is connected to a satellite network. The DMU is capable of interfacing with one to six flight management systems. The DMU can be interfaced to two printers as well as two personal computers.

1.2.2 Antenna Switching Unit (44000-1)

The Antenna Switching Unit (ASU) is a small box that is required for those installations where the DMU VHF transceiver is to share an existing VHF communication antenna. The ASU contains switching circuitry which allows the DMU transceiver to share a common antenna with an external VHF communication transceiver. In receive mode both receivers are connected to the antenna. In transmit mode, only one of the transmitters is connected to the antenna at any one time. The ASU switches the transmit side of the antenna between the DMU data transmitter and the voice transmitter. Pressing the AFIS annunciator on the instrument panel switches the transmit side of the antenna to the DMU transmitter. Pressing the annunciator again or pressing the “push-to-talk” button on the VHF communication radio switches the transmit side of the antenna back to the voice transmitter.

1.2.3 Data Transfer Unit (15655-0101 or 15655-0201)

The Data Transfer Unit (DTU) is a 3.5 inch micro floppy disk unit. It can be mounted on 5.75 inch DZUS rails or bulkhead mounted with a tray. The DTU contains a microfloppy drive, drive electronics and control logic. The DTU is used to read AFIS flight plans and weather from a disk inserted in the DTU. The disk is read by the DTU and the data is transferred to the Data Management Unit. A ground-to-air transmitted AFIS flight plan can also be written to a disk by the DTU as the flight plan is received by the Data Management Unit. The DTU is optional. If a customer does not choose to load information from the disk then the DTU is not required.

1.2.4 Satellite Communication Unit (153-017311-01)

The Satellite Communication Unit (SCU) is an ATR rack mounted unit. The SCU incorporates a satellite transceiver and instructions for transmitting to and receiving from the satellite “C” network. The SCU also contains information which allows it to tune to the appropriate satellite operating region automatically and to the appropriate ground station. The SCU is optional. If a customer does not choose to use satellite “C” operation then the SCU is not required.

1.2.5 High Power Amplifier/Low Noise Amplifier (153-017310-01)

The High Power Amplifier/Low Noise Amplifier (HPA/LNA) amplifier is a bulkhead mounted unit. The HPA/LNA amplifies transmitted and received satellite “C” information while minimizing noise and is connected between the SCU and a Satellite antenna. The HPA/LNA is required if the SCU is installed.

1.2.6 Satellite Antenna (121-017537-01)

The Satellite Antenna is designed to meet Inmarsat system specifications for satellite “C” system operation and is required if the SCU and HPA/LNA are installed. The Satellite Antenna is connected to the HPA/LNA.

1.2.7 Configuration Module (31990-1)

The Configuration Module is mounted on the rack of the DMU. The Configuration module is a nonvolatile memory that provides to the DMU, at power up, items that are related to the customer aircraft such as tail number, aircraft basic operating weight, number of flight management systems and selectable features such as on-off reporting, on-ground position reporting available to the customer.

1.2.8 ARNAV MFD 5115 RPU (453-2530-08)

The ARNAV MFD 5115 RPU (Remote Processing Unit) is mounted in a frame assembly. The RPU supplies AFIS™ weather graphical data to the GNS-XLS. If a customer does not choose to use AFIS™ weather graphical data services then the RPU is not required.

1.3 TECHNICAL CHARACTERISTICS

1.3.1 UNIT SPECIFICATIONS

DATA MANAGEMENT UNIT (DMU)	
TSO COMPLIANCE:	See Environmental Qualification Appendix
PHYSICAL DIMENSIONS:	See Figure 2-1
TEMPERATURE:	-55° C to +55° C
ALTITUDE:	55,000 feet
WEIGHT:	
400-045500-0001,-0003,-0130,-0210,-0211	11.92 LBS. (5.89 KG.)
400-045500-0002,-0004	12.62 LBS. (6.23 KG.)
400-045500-0005,-2010,-2011	12.94 LBS. (6.39 KG.)
400-045500-0006	13.62 LBS. (6.73 KG.)
42000-01,02,03 (-) 01,02,03	11.90 LBS. (5.89 KG.)
42000-04-03	12.60 LBS. (6.22 KG.)
POWER REQUIREMENTS:	28 VDC 7.0 Amps Max - VHF Transmitter ON 2.0 Amps Max - VHF Transmitter OFF

SATELLITE COMMUNICATION UNIT (SCU)	
TSO COMPLIANCE:	FAA-PMA BEECH MODEL E-90
PHYSICAL DIMENSIONS:	See Figure 2-12
TEMPERATURE:	-25° C to +55° C
ALTITUDE:	25,000 feet above MSL
WEIGHT:	6.0 Lbs max (2.72 Kg)
POWER REQUIREMENTS:	27.5 VDC 6.7 Amps Max - Transmitter ON 1.0 Amps Max - Transmitter OFF

DATA TRANSFER UNIT (DTU)	
TSO COMPLIANCE:	See Environmental Qualification Appendix
PHYSICAL DIMENSIONS:	See Figure 2-5
TEMPERATURE:	-55° C to +55° C
ALTITUDE:	55,000 feet
WEIGHT:	3.0 Lbs max (1.36 Kg)
POWER REQUIREMENTS:	28 VDC 1.0 Amps Max

ANTENNA SWITCHING UNIT (ASU)	
TSO COMPLIANCE:	See Environmental Qualification Appendix
PHYSICAL DIMENSIONS:	See Figure 2-11
TEMPERATURE:	-55° C to +55° C
ALTITUDE:	55,000 feet
WEIGHT:	1.3 Lbs max (0.59 Kg)
POWER REQUIREMENTS:	28 VDC 0.8 Amps Max

HIGH POWER AMPLIFIER / LOW NOISE AMPLIFIER (HPA/LNA)	
TSO COMPLIANCE:	FAA-PMA BEECH MODEL E-90
PHYSICAL DIMENSIONS:	See Figure 2-14
TEMPERATURE:	-55° C to +70° C
ALTITUDE:	55,000 feet
HUMIDITY:	CAT B Noncondensing
VIBRATION:	Random Vibration CAT C
WEIGHT:	4.84 ± 0.44 Lbs (2.18 Kg)
POWER REQUIREMENTS:	
TX (through coax cable) RX (through coax cable)	26.5 - 30.0 VDC, 2.8 Amps Max 13 - 16 VDC, 0.05 Amps Max
FREQUENCY:	
TX BAND RX BAND	1626.5 - 1646.5 MHz 1530 -1545 MHz
VSWR:	3:1 maximum
INPUT POWER TX:	-3 to +20dBm (1626.5 - 1646.5 MHz)
OUTPUT POWER TX:	21 WATTS maximum
LNA GAIN:	42 - 49 dB

CONFIGURATION MODULE	
TSO COMPLIANCE:	See Environmental Qualification Appendix
PHYSICAL DIMENSIONS:	See Figure 2-4
TEMPERATURE:	-55° C to +55° C
ALTITUDE:	55,000 feet
WEIGHT:	0.102 Lbs (0.045 Kg) max
POWER REQUIREMENTS:	Supplied by DMU

LOW PROFILE JET BLADE ANTENNA	
TSO COMPLIANCE:	FAA-PMA Unit - Sensor Systems, Inc. PMA Holder
PHYSICAL DIMENSIONS:	See Figure 2-15
TEMPERATURE:	-54° C to +71° C
ALTITUDE:	55,000 feet
WEIGHT:	1.5 Lbs max (0.68 Kg)
POWER HANDLING:	60 WATTS CW
FREQUENCY:	
TX BAND RX BAND	1626.5 - 1660.5 MHz 1530 -1559 MHz
VSWR:	< 1.5: 1
POLARIZATION:	RHCP
IMPEDANCE:	50 ohms

REMOTE PROCESSING UNIT (RPU)	
TSO COMPLIANCE:	TSO Unit - ARNAV Systems Inc. TSO Holder
PHYSICAL DIMENSIONS:	
Height Width Depth	2.0 inches (50.8 mm) 6.25 inches (159 mm) 9.25 inches (235 mm)
TEMPERATURE:	-20° C to +70° C
ALTITUDE:	50,000 feet
WEIGHT:	2.5 Lbs (1.15 Kg)
POWER REQUIREMENTS:	27.5 Vdc at 750 mA

1.3.2 SYSTEM SPECIFICATIONS

The following pages of system characteristics provide details of the various interfaces for the AFIS.

1.3.2.1 Fuel Flow Input (ANALOG INPUT)

NOTE:

Fuel Flow information is only applicable to DMUs PN 42000-02-02, PN 42000-04-03, PN 400-045500-0002, PN 400-045500-0004, and PN 400-045500-0006.

1.3.2.1.1 J.E.T. Fuel Flow System

NOTE:

This interface is provided by a modification to 54-1158-01 module per J.E.T. SB number SB542-1158-7.

Source	LearJet volumetric flow rate transducer
Range	See Table 1-1
Accuracy	± 0.5% of volume
Scale Factor	Flow Rate = 28.125 x frequency Where: Flow Rate = Pounds Per Hour and Frequency = Hertz
Load	10K ohms minimum
Amplitude	+9 volts, ground referenced

J.E.T.	Range (PPH)	Accuracy	Scaling (PPH/V)	Output Impedance
Applicable to J.E.T. SB 542-1158-7	0 to 2500	± 0.5% of volume	28.125	10K Ohms

Table 1-1

1.3.2.1.2 ELDEC Mass Flow Fuel System

Source	ELDEC Mass Flow Transducer
Signal Type	Each sensor generates two AC signals. Flow rate information is contained in the phase difference between the two signals.
Range	150 to 2200 PPH
Amplitude	0.30 to 1.60 V P-P Drum Signal 0.30 to 1.60 V P-P Impeller Signal
Frequency	5.7 to 28 Hz
Phase Delay	0 to 55 msec
Scale Factor	See Table 1-2
Load	200K ohms minimum

ELDEC SENSOR MODEL NUMBER	TRANSMITTER SCALING (LB/HR/mS)
9-127-27 9-127-33 9-127-51 9-127-39	40
9-127-12	100
9-231-05	20

Table 1-2

1.3.2.1.3 ELDEC Mass Fuel Flow System

NOTE:

There are two types of indicator outputs: pulse width and DC voltage. Some of the indicators have both. If this is the case the pulse width output is preferred.

Pulse Width Output From Indicator

Source	ELDEC Fuel Flow Indicator
Type	Ground referenced voltage pulse flow rate is proportional to width.
Amplitude	VOL = 0 ± 2 Volts VOH = 12 ± 2 Volts
Indicator Output Impedance	15K ohms
Range/ Accuracy/ Impedance	See Table 1-3
Repetition Time	36 to 175 msec

DC Rate Output Indicator

Source	ELDEC Fuel Flow Indicator
Type	DC differential voltage proportions to fuel rate. The signal low is 5.1 ± 1.0 Volts above the power ground. A reference voltage of 6.2 ± 0.32 VDC is provided by ELDEC, but is unused by the GNS-500.
Signal Range	0.0 to 5.5 VDC differential
Indicator Output Impedance	5K ohms each leg
Scaling/ Range/ Accuracy	See Table 1-3

ELDEC Indicator Model No.	Aux Pulse Width	Aux DC Rate	Range PPH	Scaling Pulse PPH/mS	DC V/PPH	Accuracy Pulse	DC
9-328-01	YES	YES	0 to 2200	40	0.0025	± 2 lb/hr	± 2%
9-328-10	YES	YES	0 to 2200	40	0.0025	± 2 lb/hr	± 2%
9-328-13	YES	YES	0 to 3000	100	0.00167	± 2 lb/hr	± 2%
9-328-17	YES	N/A	0 to 2000	40	- - -	± 2 lb/hr	- - -
9-328-26	YES	- - -	0 to 4000	100	- - -	± 2 lb/hr	- - -
9-328-19	YES	YES	0 to 3300	100	0.00142	± 2 lb/hr	± 2%
9-328-20	YES	YES	0 to 4000	100	0.00143	± 2 lb/hr	± 2%
9-394-01	YES	TBD	TBD	100		± 2 lb/hr	± 2%
9-422-01	YES	N/A	0 to 10000	80		± 2 lb/hr	± 2%
9-464-02	YES	YES	0 to 1000	40	TBD	± 2 lb/hr	± 2%
9-464-06	YES	YES	0 to 1000	40	TBD	± 2 lb/hr	± 2%
9-464-09	N/A	YES	0 to 1200	- - -	TBD	± 2 lb/hr	± 2%
9-464-16	YES	YES	0 to 1000	40	- - -	± 2 lb/hr	± 2%
9-464-25	YES	YES	0 to 1200	40	.004166	± 2 lb/hr	± 2%
9-464-41	YES	YES	0 to 1200	40	.004166	± 2 lb/hr	± 2%

Table 1-3

1.3.2.1.4 AMETEK Indicator Fuel Flow

NOTE:

Flow rate is proportional to voltage

.

Source	Auxiliary flow rate output from AMETEK
Range	0 to 2400 PPH
Signal Type	0.5 to 5.5 VDC ground referenced
Scaling	Flow Rate = 480 (V_{sig} - 0.5) Where: Flow Rate = PPH, V_{sig} = Volts
Accuracy	± 50 mV

1.3.2.1.5. Gull Indicator Fuel Flow - Model 360-954-XXX

NOTE:

Flow rate is proportional to voltage

.

Source	Gull fuel flow indicator
Range	0 to 2000 PPH
Accuracy	± 3%
Signal Type	1.0 to 5.4 VDC differential
Scaling	Flow Rate = 500 (vsig - 1.0) Where: Flow Rate = PPH Vsig = VDC

1.3.2.1.6 General Electric 5v RMS AC Fuel Flow

NOTE:

Flow rate is proportional to RMS voltage.

Fuel flow - G.E. PN 8TJ64GBM-3

Source	Pick off type fuel flow transducer
Signal Type	Signal 0 to 5 VRMS, 400 Hz differential signal
Range	0 to 4000 PPH
Scaling	F = 800 (Vsig) Where: F = Flow in PPH, Vsig = VRMS
Reference	115 VRMS nominal, 400 Hz aircraft power

Fuel flow- G.E. PN 8TJ85GBA

Source	G.E. AC Fuel Flow Transmitter
Signal Type	Signal 0 to 5 VRMS, 400 Hz differential signal
Range	400 to 12,500 PPH
Motor Frequency	8 cycles per second
Scale Factor	F = 2400 (Vsig) Where: F = Flow in PPH, Vsig = VRMS
Reference	115 VRMS nominal, 400 Hz aircraft power

Fuel flow - G.E. PN 8TJ85GAT

Source	G.E. AC Fuel Flow Transmitter
Signal Type	Signal 0 to 5 VRMS, 400 Hz differential signal
Range	400 to 12,500 PPH
Motor Frequency	8 cycles per second
Scale Factor	F = 2400 (Vsig) Where: F = Flow in PPH, Vsig = VRMS
Reference	115 VRMS nominal, 400 Hz aircraft power

1.3.2.1.7 IDC Indicator Fuel Flow

NOTE:

Auxiliary fuel flow rate output from an IDC fuel flow indicator. Some models have pulse width outputs, DC voltage outputs or both. The use of the pulse width output is preferred.

Pulse Width Output Signal From Indicator
(Flow rate is proportional to pulse width.)

Type	Ground referenced voltage pulse
Amplitude	VOL = 0V, VOH = 5V
Output Impedance for Indicator	10K Ohm pull-up
Repetition Time	100 to 500 msec
Range/ Accuracy/ Scaling	See Table 1-4

DC Rate Output from Indicator

Type	DC Differential Voltage proportional to fuel rate
Signal Range	0 to 4.0 VDC
Output Impedance	200 Ohms on each leg
Range/ Accuracy/ Scaling	See Table 1-4

IDC Indicator Model No.	Aux Pulse Width	Aux DC Rate	Range PPH	Scaling Pulse PPH/mS	DC V/PPH	Accuracy
31653-003	YES	- - -	0 to 8000	80	- - -	± 20 PPH
31653-004	YES	- - -	0 to 8000	80	- - -	± 20 PPH
31653-013	YES	YES	0 to 8000	80	0.0005	± 20 PPH
31653-014	YES	YES	0 to 8000	80	0.0005	± 20 PPH
37804-001	YES	- - -	0 to 8000	80	- - -	± 20 PPH
37804-002	YES	- - -	0 to 8000	80	- - -	± 20 PPH
37804-011	YES	- - -	0 to 8000	80	- - -	± 20 PPH
37804-012	YES	- - -	0 to 8000	80	- - -	± 20 PPH
37804-101	YES	YES	0 to 8000	80	0.0005	± 20 PPH
37804-102	YES	YES	0 to 8000	80	0.0005	± 20 PPH

Table 1-4

1.3.2.1.8 RAGEN Data Systems Fuel Flow

NOTE:

RAGEN Data Systems also manufactures fuel systems formerly manufactured by Consolidated Airborne and Bendix. Flow rate is proportional to Voltage.

Source	Fuel Flow Rate Signal from fuel flow transducer
Signal Type	DC Voltage Output
Output Impedance	See Table 1-5
Range/ Accuracy/ Scaling	See Table 1-5

RAGEN Model	Range (PPH)	Accuracy	Scaling (PPH/V)	Output Impedance
3268-005	0 to 1800	TBD	283.688	TBD
3268-014	0 to 1800	TBD	283.114	TBD
3268-011	0 to 500	TBD	100.000	TBD

Table 1-5

1.3.2.1.9 Canadian Marconi Fuel Flow System

NOTE:

DC voltage output in which the voltage is proportional to the flow rate.

Source	Auxiliary Fuel Flow Rate Signal From Indicator
Signal Type	DC Voltage Output
Output Impedance	1K Ohms
Range/ Accuracy/ Scaling	See Table 1-6

Canadian Marconi Model No.	Range (PPH)	DC Scaling (PPH/V)	Accuracy
418-107-103	0 to 4500	900	±2%
418-107-104	0 to 4500	900	± 2%

Table 1-6

1.3.2.1.10 Aero Systems Fuel flow System

NOTE:

Signal frequency is proportional to fuel flow rate.

Source	Aero Systems Model DD-4000-004 Magneson Fuel Flow Signal Convertor. The DD-4000 converts G.E. Second Harmonic flow signals to a frequency proportional to fuel rate for a maximum of four engines
Signal Range	0 to 2500 Hz
Signal Levels	High side of signal switches between 7.5V and 15.0V whereas the low side is 7.5V above ground.
Output Impedance	2 Kohms pull up to +15V. Transistor switch to 7.5V.
Range/ Accuracy/ Scaling	See Table 1-7

Aero Systems Model No.	Range (PPH)	Scaling (PPH/Hz)	Remarks
DD-4000-004	0 to 2300	0.92	DD-4000-004 is only the convertor model number. The scaling, however is custom calibrated for each aircraft.
	0 to 3000	1.200	
	0 to 4000	1.600	
	0 to 8000	3.200	
	0 to 12000	4.800	
	0 to 14000	5.600	

Table 1-7

1.3.2.1.11 Intertechnique Fuel flow System

NOTE:

Flow rate is proportional to frequency; the fuel relative density signal is a 3 to 5 VDC signal proportional to the fuel specific gravity (relative density).

Source	Intertechnique totalizer amplifier indicator Models 723-161-1 and 723-161-2. The signals from the indicators are input to the totalizer.	
Range Reference	0 to 2000 PPH	
Scaling	Flow = [Vsig/5.0] x 34.506 x frequency Where: Flow is PPH, Vsig = Voltage of density signal and Freq = Frequency of rate signal	
Signal:	Frequency:	VOL = 0.7 ±TBD V VOH = 12.0 ±TBD V Pulse width = 2.5 ±TBD V Impedance Output = 270 ohms
	Density:	Range = 3 to 5.0 VDC Output Impedance = 3.9 Kohms

1.3.2.2 RS-422A Serial Data Input

1.3.2.2.1 Data Transfer Unit (DTU)

Data Type	Both transmit and receive data are two-wire, balanced voltage digital signals in accordance with EIA RS-422A electrical format.
Receive Logic Level	Logic 1: +2 to +6V differential Logic 0: -2 to -6V differential
Data Rate	22.5 KBS
Bit Stream Format	Asynchronous with 1 start bit, 8 bits of data and 2 stop bits between words.
Word Type	8 bit with no parity

1.3.2.2.2 Satellite Communications Unit (SCU)

NOTE:

The following information is only applicable to DMUs P/N 42000-03-03, 42000-04-03, 400-045500-0003, 400-045500-0004, 400-045500-0130, 400-045500-0210, 400-045500-0211, 400-045500-2010, and 400-045500-2011.

SAT 422 Receive

Data Type	Receive data is a two-wire balanced voltage digital signals in accordance with EIA RS-422A electrical format.
Receive Logic Level	Logic 1: +2 to +6V differential Logic 0: -2 to -6V differential
Data Rate	4800 bit per second
Bit Stream Format	Asynchronous with 1 start bit, 8 bits of data and 1 stop bit between words.
Word Type	8 bit with no parity

SAT 422 CONTROL IN

Data Type	CONTROL IN is a two-wire balanced voltage digital signal in accordance with EIA RS-422A electrical format.
CONTROL IN Logic Level	Logic 1: +2 to +6V differential Logic 0: -2 to -6V differential
Data Rate	Changes on software conditions, indicates the current state of the SCU for receiving data from DMU
Data Level	ON (high): SCU ready to receive data from DMU OFF (low): SCU not ready to receive data from DMU

1.3.2.3 ARINC 429 INPUT - (See Tables 1-8A and 1-8B)

NOTE:

The following information is only applicable to DMU PN 400-045500-XXXX.

Data Type	2 wire serial data meeting ARINC 429 characteristics
Logic State	Logic 1: > 5V differential, +6.5 to +13 V Logic 0: < 5V differential, -6.5 to -13 V NULL: 0 V differential
Data Rate	Changes on software conditions, indicates the current state of the SCU for receiving data from DMU
Format	32 bit word, including 1 parity bit Return-To-Zero (RZ) format with at least 4 nulls between words.

NAME	LABEL	DATA RATES
ISO Alphabet #5 Messages	357	SPECIAL
GMT	125	0.1 Sec
Baro Corrected Altitude	204	0.0625 Sec
True Airspeed	210	0.125 Sec
Static Air Temperature	213	0.5 Sec
DATE	260	1.0 Sec
Present Position Latitude	310	0.2 Sec
Present Position Longitude	311	0.2 Sec
Groundspeed	312	0.04 Sec
Wind Speed	315	0.1 Sec
Wind Direction	316	0.1 Sec

ARINC 429 Digital Input Navigational System
Table 1-8A

NOTE:

The following table is only applicable to DMUs PN 400-045500-0005, 400-045500-0006, 400-045500-2010, and 400-045500-2011.

NAME	LABEL	DATA RATES
ISO Alphabet #5 Messages	304	SPECIAL
SDU System Status	270	1.0 Sec

ARINC 429 Digital Input Satellite and SATFONE System
Table 1-8B

1.3.2.4 ANALOG OUTPUTS (DMU)

1.3.2.4.1 Valid Discretes DTU and DMU

Data Type	Indicates system is operating
Logic State	Ground (<10 ohms) indicates a valid output Open (>1M ohm) indicates an invalid output
Response Time	1.0 ± 0.5 seconds valid to invalid 2.5 ± 0.5 seconds invalid to valid
Current Load	250 mA

1.3.2.4.2. PTT Line

Ground (50 ohms or less between PTT line and DC ground) turns the transmitter ON. Open (50,000 ohms or more between PTT line and DC ground) turns the transmitter OFF.

1.3.2.4.3. AFIS Annunciator

NOTE:

The following information is only applicable to DMU PN 400-045500-XXXX installations using the Antenna Switching Unit.

Logic State	DMU J1 pin 42:	Ground (<10 ohms) indicates AFIS is Disabled Open (> 1 M ohm) indicates AFIS is Enabled
	DMU J1 pin 80:	Ground (<10 ohms) indicates AFIS is Enabled Open (> 1 M ohm) indicates AFIS is Disabled

Signal Type	Level
Current Capacity	.5 Amp Maximum

1.3.2.5 RS-422A SERIAL DIGITAL OUTPUTS (DMU)

1.3.2.5.1 Data Transfer Unit (DTU)

Data Type	Both transmit and receive data are two-wire balanced digital signals in accordance with EIA RS-422A electrical format.
Transmit Logic Level	Logic 1: +2V to +6V differential Logic 0: -2V to -6V differential
Data Rate	22.5 KBS
Bit Stream Format	Asynchronous with 1 start bit, 8 bits of data and 2 stop bits between words.
Word Type	8 bit with no parity

1.3.2.5.2 Satellite Communications Unit (SCU)

NOTE:

The following information is only applicable to DMUs PN 42000-03-03, 42000-04-03, 400-045500-0003, 400-045500-0004, 400-045500-0130, 400-045500-0210, 400-045500-0211, 400-045500-2010 and 400-045500-2011.

SAT 422 Transmit

Data Type	Transmit data is a two-wire balanced voltage digital signal in accordance with EIA RS-422A electrical format.
Transmit Logic Level	Logic 1: +2V to +6V differential Logic 0: -2V to -6V differential
Data Rate	4800 bits per second
Bit Stream Format	Asynchronous with 1 start bit, 8 bits of data and 1 stop bit between words.
Word Type	8 bit with no parity

SAT 422 CONTROL OUT

Data Type	CONTROL OUT is a two-wire balanced voltage digital signal in accordance with EIA RS-422A electrical format.
CONTROL OUT Logic Level	Logic 1: +2V to +6V differential Logic 0: -2V to -6V differential
Data Rate	Changes on software conditions, indicates the current state of the DMU for receiving data from SCU.
Data Level	ON (high): The DMU is ready to receive data from SCU OFF (low): The DMU is not ready to receive from SCU.

SAT NAV DATA 422 Transmit

Data Type	Transmit data is a two-wire balanced voltage digital signal in accordance with EIA RS-422A electrical format.
Transmit Logic Level	Logic 1: +2V to +6V differential Logic 0: -2V to -6V differential
Data Rate	4800 bits per second
Bit Stream Format	Asynchronous with 1 start bit, 8 bits of data and 1 stop bit between words. Stream of data appears once a second if satellite configured and present position information available.
Word Type	8 bit with no parity

1.3.2.6 ARINC 429 OUTPUTS (See tables 1-9A & B)

NOTE:

The following information is only applicable to DMU Part Number 400-045500-XXXX.

Data Type	2-wire serial data meeting electrical characteristics of ARINC 429
Logic State	Logic 1: + 10 ± 1 V differential balance to ground Logic 0: - 10 ± 1 V differential balance to ground NULL: ± 2.5 V differential
Data Rate	12.5 KBS
Format	32 bit word including 1 parity bit, Return-to-Zero (RZ) format with a least 4 nulls between words.

NAME	LABEL	DATA RATES
AFIS System Status	270	SPECIAL
AFIS Data Status	271	SPECIAL
Fuel Flow - Engine	347	0.1 Sec
ISO Alphabet #5 message	357	SPECIAL

ARINC 429 Digital Output
Table 1-9A

NOTE:

The following table is applicable to DMUs PN 400-045500-0005, 400-045500-0006, 400-045500-2010 and 400-045500-2011.

NAME	LABEL	DATA RATES
AFIS System Status	270	1.0 Sec
ISO Alphabet #5 message	307	SPECIAL

ARINC 429 Digital Output Satellite & SATFONE System
Table 1-9B

1.3.2.7 Printer Interface

NOTE:

Four signal lines are required between the AFIS DMU and the printer: Printer Serial Data Out, Printer Serial Data Return, Printer DTR (Data Terminal Ready) IN, and Printer DTR return.

1.3.2.7.1 Printer Serial Data Out

Electrical	RS-232C electrical characteristics. Two wire system.
Direction	Data from DMU to printer.
Signal Format	Asynchronous, serial transmission. 11 bit times comprised of 1 start bit, 8 data bits, and 2 stop bits. 8 data bits defined by ASCII character set. No parity bit
Order of Bit Transmission	First bit is start bit, followed by least significant data bit, followed by remaining 7 data bits, followed by 2 stop bits.
Data Rate	1200 bits per second
Data Stream	1 - 80 printable characters transmitted Carriage return (CR) and linefeed (LF) are transmitted following the last printable character.
File Structure	File contains 1 - 4000 printable characters (hexadecimal 20 - 7E), CR characters (hexadecimal 0D), and LF characters (hexadecimal 0A). Control character, ETX (hexadecimal 03), is sent as last character of a file transmission to indicate that the file is completed and can be used for printer buffer control.The printer may ignore the ETX character if buffer control is not needed. A CR and LF is transmitted at the beginning of each new file. The file is transmitted in groups of 80 characters or less with a CR character and a LF character following each group of 80 characters or less. The printer must be capable of printing 80 columns or have auto wrap so that the 80 characters can be printed without including the CR and LF characters until the end of the 80 character or less transmission.

Electrical	Return line associated with the Serial Data Out line.

1.3.2.7.3 Printer DTR In

Electrical	Discrete input with RS-232C electrical characteristics. Two wire system.	
Signal Format	Low Voltage Level:	Printer Inoperative Printer Paper out Printer power off Printer ribbon out Printer busy Any printer status that does not permit the printer to receive data
	High Voltage Level:	Printer operative and ready to receive data
	Direction:	Printer to DMU
Data Rate	Voltage level maintained at appropriate level as long as condition exists. DMU will not transmit serial data when Printer DTR In has low voltage.	

1.3.2.7.4 Printer DTR Return

Electrical	Return line associated with the Printer DTR in signal line.

1.3.2.8 Cabin Terminal Interface

NOTE:

Cabin Terminal Interface is only applicable to DMU Part Numbers 42000-03-03, 42000-04-03, 400-045500-0003, 400-045500-0004, 400-045500-0130, 400-045500-0210 and 400-045500-0211 when used with Satellite systems.

Six signal lines are required between the AFIS DMU and each cabin terminal: Cabin Data In, Cabin Data In return, Cabin Data out, Cabin Data Out return, Cabin Terminal Control In, Cabin Terminal Control In return.

1.3.2.8.1 Cabin Data In

Electrical	RS-232C electrical characteristics. Two wire system.
Direction	Data from Cabin Terminal to DMU.
Signal Format	Asynchronous, serial transmission. 11 bit times comprised of 1 start bit, 8 data bits, and 2 stop bits. 8 data bits defined by ASCII character set. No parity bit.
Order of Transmission	First bit is start bit, followed by 8 data bits, followed by 2 stop bits.
Data Rate	9600 bits per second
Data Stream	Defined by AFIS cabin terminal software
File Structure	Defined by AFIS cabin terminal software

1.3.2.8.2 Cabin Data In Return

Electrical	Return line associated with Cabin Data In signal line

1.3.2.8.3 Cabin Data Out

Electrical	RS-232C electrical characteristics. Two wire system.
Direction	Data from DMU to Cabin Terminal.
Signal Format	Asynchronous, serial transmission. 11 bit times comprised of 1 start bit, 8 data bits, and 2 stop bits. 8 data bits defined by ASCII character set. No parity bit.
Order of Transmission	First bit is start bit, followed by 8 data bits, followed by 2 stop bits
Data Rate	9600 bits per second
Data Stream	Defined by AFIS cabin terminal software.
File Structure	Defined by AFIS cabin terminal software.

1.3.2.8.4 Cabin Data Out Return

Electrical	Return line associated with Cabin Data Out signal line

1.3.2.8.5 Cabin Terminal Control In

Electrical		Discrete input with RS-232C electrical characteristics. Two wire system.
Signal Format	Low Voltage Level:	Cabin Terminal Inoperative Cabin Terminal power off Cabin Terminal not running AFIS cabin software.
	High Voltage Level:	Cabin Terminal operative and running AFIS cabin terminal software.
	Direction:	Cabin Terminal to DMU
Data Rate		Voltage level maintained at appropriate level as long as condition exists. DMU will not transmit serial data when Cabin Handshake has low voltage.

1.3.2.8.6 Cabin Terminal Control In Return

Electrical	Return line associated with the Cabin Handshake In (DTR) signal line.

1.3.2.9 DISCRETE INPUTS

NOTE:

The following information is only applicable to DMUs PN 400-045500-XXXX configured for Special Features item #5 ACARS reports.

1.3.2.9.1 Brake Release

Data Type	Logic Input
Logic State	The OPEN condition is defined as a resistance to DC ground from the AFIS DMU connector of 100,000 ohms or more, or a DC level greater then 12 volts and not more than 36 volts. The CLOSED condition is defined as a DC ground, zero ± 2 volts with a maximum current of 2 ma.
Logic Format	Atlantic Coast Airlines An OPEN condition indicates the brakes are set. A CLOSED condition indicates the brakes are released. Mesaba Airlines An OPEN condition indicates brakes are released. A CLOSED condition indicates brakes are set.

1.3.2.9.2 Oil Pressure

Data Type	Logic Input
Logic State	The OPEN condition is defined as a resistance to DC ground from the AFIS DMU connector of 100,000 ohms or more, or a DC level greater then 12 volts and not more than 36 volts. The CLOSED condition is defined as a DC ground, zero ± 2 volts with a maximum current of 2 ma.
Logic Format	An OPEN condition indicates there is oil pressure A CLOSED condition indicates there is no oil pressure.

1.3.2.9.3 Weight On Wheels

Data Type	Logic Input
Logic State	The OPEN condition is defined as a resistance to DC ground from the AFIS DMU connector of 100,000 ohms or more, or a DC level greater then 12 volts and not more than 36 volts. The CLOSED condition is defined as a DC ground, zero ± 2 volts with a maximum current of 2 ma.
Logic Format	An OPEN condition indicates the aircraft is in the air. A CLOSED condition indicates the aircraft is on the ground.

1.3.2.9.4 Engine Stop Switch

Data Type	Logic Input
Logic State	The OPEN condition is defined as a resistance to DC ground from the AFIS DMU connector of 100,000 ohms or more, or a DC level greater then 12 volts and not more than 36 volts. The CLOSED condition is defined as a DC ground, zero ± 2 volts with a maximum current of 2 ma.
Logic Format	An OPEN condition indicates normal engine operation. A CLOSED condition held for at least 2 seconds indicates the engine is shut down.

1.3.2.9.5 Door Switch

Data Type	Logic Input
Logic State	The OPEN condition is defined as a resistance to DC ground from the AFIS DMU connector of 100,000 ohms or more, or a DC level greater than 12 volts and not more than 36 volts. The CLOSED condition is defined as a DC ground, zero ± 2 volts with a maximum current of 2 ma.
Logic Format	An OPEN condition indicates the door is closed. A CLOSED condition indicates the door is open.

1.4 UNITS AND ACCESSORIES SUPPLIED

1.4.1 DATA MANAGEMENT UNIT

The Data Management Unit (DMU) is available in the following variations.

PN 400-045500-0003 which is the standard DMU and supports VHF and AERO-C (SATAFIS) data communications.

PN 400-045500-0005 which supports aeronautical 741 satellite data communications (e.g. Honeywell/Racal) as well as VHF data communications.

PN 400-045500-0130 which supports regional airline data entry, displays and VHF Communications and AERO-C (SATAFIS) data communications.

PN 400-045500-0210 which supports WX Graphics capability on GNS-XLS and supports VHF and AERO-C (SATAFIS) data communications.

PN 400-045500-2010 which supports WX Graphics capability on GNS-XLS and supports AERO-H (741) satellite data communications (e.g. Honeywell/Racal) as well as VHF data communications.

PN 400-045500-0211 which supports Dual GNS-XLS WX Graphics capability, as well as, NZ 2000 WX Graphics and supports VHF, AERO-C (SATAFIS) data communications.

PN 400-045500-2011 which supports Dual GNX-XLS WX Graphics capability, as well as, NZ 2000 WX Graphics and supports VHF, AERO-C (SATAFIS), AERO H/H+, AERO I (ARINC741) satellite data communications. Supports Honeywell Aircraft Condition Monitoring System (ACMS) which is a part of the Honeywell Flight Data Acquisition Management System (FDAMS)

Other DMUs no longer manufactured:

PN 400-045500-0001 supports VHF data communication only.

PN 400-045500-0002 support VHF data communication only and has fuel flow information to be used with a GNS 500 navigational system.

PN 400-045500-0004 supports VHF and aeronautical-'C' data communications and has fuel flow information to be used with a GNS-500 navigational system.

PN 400-045500-0006 supports aeronautical 741 satellite data communications, VHF data communications and fuel flow information to be used with a GNS-500 navigational systems.

PN 42000-01-01 supports VHF data communication only and can only be used with GNS 500 and 1000 flight management systems.

PN 42000-02-02 supports VHF data communication only, has fuel flow information to be used with a GNS 500 navigational system and can only be used with GNS 500 and 1000 flight management systems.

PN 42000-03-03 supports VHF and aeronautical 'C' data communications. This DMU can only be used with GNS flight management systems.

PN 42000-04-03 supports VHF, aeronautical 'C' data communications and has fuel flow information to be used with a GNS 500 navigational system. This DMU can only be used with GNS flight management systems.

1.4.2 FLIGHT PLANNING SERVICE

Flight Planning Service includes planning and pre-departure clearance service. Services include weather briefing, flight plan creation and filing, pre-departure delivery and arrival/departure reservations.

Details on subscription fees and specifically what other capabilities are available can be obtained by contacting the Global Data Center, telephone number 1-888-634-3330.

The following page (figure 1-1) contains a copy of the AFIS Graphics Service and Database Application. After printing off a copy, complete all entries and fax to the number shown on the form.

Honeywell

AFIS GRAPHICS SERVICE AND DATABASE APPLICATION

Honeywell International
15001 NE 36th Street, M/S B17C
Redmond, WA 98052
Tel: (425) 885-8100

Date To Begin This Service: _____

Please Complete All Entries and Fax to (425) 885-8930

Company name: _____ Phone: _____
Contact name: _____ FAX: _____
E-mail Address: _____

Aircraft Type: _____ Serial #:_____
Tail Number: _____

RPU Serial #: _____

Address to Ship AFIS Graphics RPU Database Card:

BILL TO ADDRESS:	SHIP TO ADDRESS:
_____	_____
_____	_____
_____	_____
_____	_____
ATTN: _____	ATTN: _____

Figure 1-1

THIS PAGE IS RESERVED

1.4.3 DMU CONFIGURATION MATRIX

OPTIONS	DMU 42000-XXXX				DMU 400-045500-XXXX										
	-01-01	-02-02	-03-03	-04-03	-0001	-0002	-0003	-0004	-0005	-0006	-0130	-0210	-2010	-0211	-2011
67 PIN CONNECTOR	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
106 PIN CONNECTOR	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
FUEL FLOW	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	NO	NO	NO	NO
COLOR CDU DISPLAY	NO	NO	YES	YES	MOD4	MOD4	YES	YES	YES	YES	YES	YES	YES	YES	YES
10 LINE MONO CDU	NO	NO	YES	YES	MOD4	MOD4	YES	YES	YES	YES	YES	YES	YES	YES	YES
GLOBAL SCU SAT SYSTEM	NO	NO	YES	YES	NO	NO	YES	YES	YES	NO	YES	YES	YES	YES	YES
ARINC 429 FMS INTERFACE	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
TRIPLE PORT DTU PN 15655-X	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
DTU PN 43000-01-01-X	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
OTHER MFG. SAT SYSTEMS	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	YES	NO	YES
ARINC 739 FMS INTERFACE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
FDAMS INTERFACE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES

Table 1-10

1.5 ACCESSORIES REQUIRED

1.5.1 DMU INSTALLATION KIT

The DMU Installation Kit PN 149-017305-6850 is required to install DMU PN 400-045500-XXXX.

1/2 ATR Short Tray	PN 42701-1	Qty 1 ea
DMU Connector	PN 129-214251-01	Qty 1 ea

The DMU Installation Kit PN 149-017301-5970 is required to install DMU PN 42000-XX-XX.

1/2 ATR Short Tray	PN 42701-1	Qty 1 ea
DMU Connector	PN 42770-1	Qty 1 ea

1.5.2 CONFIGURATION MODULE UNIT

The Configuration Module Unit is to be mounted on the rear of the 1/2 ATR Short Tray.

Configuration module	PN 31990-1	Qty 1 ea

1.5.3 VHF ANTENNA

If the VHF antenna is to be shared with another VHF radio then the optional Antenna Switching Unit (ASU) is required.

1.6 OPTIONAL ACCESSORIES

1.6.1 DATA TRANSFER UNIT

The Data Transfer Unit (DTU) is required if flight plan or weather information is to be loaded into the DMU via a disk from the AFISCOM system. The DTU is available in the following variations:

Triple Port DTU which is used to provide data base information to GWS flight management systems and data information to DMU:

Triple Port DTU	PN 15655-0101	(Gray)
Triple Port DTU	PN 15655-0201	(Black)

Single Port DTU (no longer manufactured) supplies data information to DMU:

PN 43000-01-01-1	Gray	+8 VDC / +12 VDC
PN 43000-01-01-2	Black	+8 VDC / +12 VDC
PN 43000-01-01-3	Gray	+28 VDC
PN 43000-01-01-4	Black	+28 VDC
PN 43000-01-01-5	Gray	+8 VDC / +12 VDC
PN 43000-01-01-6	Black	+8 VDC / +12 VDC
PN 43000-01-01-7	Gray	+28 VDC
PN 43000-01-01-8	Black	+28 VDC

1.6.1.1 DTU INSTALLATION KIT

The DTU installation kit is required if DTU is installed. Select one of the following options:

DTU Installation Kit, Grey, for DTU PN 43000-01-01-X
PN 149-017302-5983 (kit no longer available from Honeywell)

DTU Connector	PN 12893-1	Qty 1 ea
Grey with Tray	PN 43010-1	Qty 1 ea

DTU Installation Kit, Black, for DTU PN 43000-01-01-X
PN 149-017302-5984 (kit no longer available from Honeywell)

DTU Connector	PN 12893-1	Qty 1 ea
Black with Tray	PN 43010-2	Qty 1 ea

Triple Port DTU Installation Kit PN 129-215678-01

DTU Connector	PN 129-215678-01	Qty 1 ea

1.6.2 ANTENNA SWITCHING UNIT

The ANTENNA SWITCHING UNIT (ASU) is required if a VHF antenna is going to be shared between the DMU and another VHF communication radio.

Antenna Switching Unit	PN 44000-1

If an ASU is being installed, the Antenna Switching Unit Installation Kit is required:

ASU Installation Kit PN 149-017303-5990

ASU Connector	PN 12893-2	Qty 1 ea

1.6.3 SATELLITE SYSTEM (SATAFIS)

If the aeronautical “C” satellite system, SATAFIS, is to be installed the following equipment is required:

EQUIPMENT	PART NUMBER
Satellite Communication Unit (SCU)	153-017311-01
High Power Amplifier/Low Noise Amplifier (HPA/LNA)	153-017310-01
Low Profile Jet Blade Antenna	121-017537-01
Jet Blade Antenna (no longer manufactured)	121-017308-01

SCU Installation Kit - PN 149-017536-0001

Mounting Tray	PN 300-317337-01	Qty 1 ea
SCU Connector	PN 129-217338-01	Qty 1 ea
Coaxial Cable Adapter	PN 123-117429-01	Qty 1 ea

1.6.4 PRINTER

Details on specifically what printer will operate with the DMU and other requirements can be obtained by contacting the Global Data Center.

1.6.5 CABIN PERSONAL COMPUTER

Details on specifically what Personal Computer is supported with the DMU and other requirements can be obtained by contacting the Global Data Center.

1.7 LICENSE REQUIREMENTS

1.7.1 VHF RADIO

Aircraft must have proper VHF radio license to operate on frequencies between 128.000 Mhz to 132.000 Mhz for DMU.

1.7.2 INMARSAT SATELLITE APPROVAL

Aircraft must be registered with INMARSAT for use of the SATAFIS system if installed. INMARSAT approval is coordinated through the Honeywell Global Data Center.

1.7.3 ARNAV RPU INSTALLATION KIT

The ARNAV RPU installation kit, PN 453-0083, is required to install the ARNAV MFD 5115 RPU, PN 453-2503-08. Assemble tray per sheet 1 of Figure 2-16.

DESCRIPTION	ARNAV PART NUMBER	QTY
RPU Rear Panel Assembly	452-0116	1
Shield Plate	402-1277	1
RPU Frame (marked with kit assy, PN 453-0083	402-1276	1
Washer, Flat #4 x 1/4 SS	246-0004	1
Screw, PHP 4-40 x 1/4 SS	201-0404	7
Screw, PHP 3-48 x 3/8 STL	201-0306	2
Base, Cable Tie	182-1032	1
Receptacle, Panel 24 pin	150-1151	1
Screw, 6-32 x 1/2 PH Slot SS	207-0602	8

1.8 INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

The instructions for continued airworthiness given in the TC or STC approvals for this product supplements or supersedes the instructions for continued airworthiness in this manual. Most Honeywell products are designed and manufactured to allow "on condition maintenance." On condition maintenance is described as follows; There are no periodic service requirements necessary to maintain continued airworthiness. No maintenance is required until the equipment does not properly perform it's intended function. When service is required, a complete performance test should be accomplished following any repair action. Consult the appropriate unit Maintenance/Overhaul Manual for complete performance test information.

SECTION 2
INSTALLATION

2.0 INTRODUCTION

The component sizes, centers of gravity, tray dimensions and installation locations are shown in Figures 2-1 through 2-15.

NOTE:

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

2.1 UNPACKING AND INSPECTING EQUIPMENT

Exercise extreme caution when unpacking equipment. Perform a visual inspection of the unit for evidence of physical damage incurred during shipment. If a damage claim must be filed, save the shipping container and all packing materials to substantiate your claim. The claim should be filed as soon as possible. The shipping container and packing materials should be retained in the event that storage or re-shipment of the equipment is necessary.

2.2 GENERAL INSTALLATION REQUIREMENTS

(a) For GNS-1000 Installations: The maximum recommended cable length between the DMU and Flight Management Computer (FMC) is 50 feet. Do not bundle DMU/FMC data lines or antenna cables with any power cables.

(b) For GNS-500A Installations: The maximum recommended cable length between the DMU and Control Display Unit (CDU) is 50 feet. Do not bundle DMU/CDU data lines or antenna cables with any power cables.

(c) For GNS-X, GNS-XLS, GNS-XL, GNS-XES flight management systems Installations: The maximum cable length between the DMU and the flight management systems is 50 feet. Do not bundle DMU/flight management systems data lines or antenna cables with any power cables.

(d) The maximum recommended cable length between the DMU and DTU is 50 feet. Do not bundle DMU/DTU data lines or antenna cables with any power cables.

(e) The maximum recommended cable length between the DMU and SCU is 100 feet. Do not bundle DMU/SCU data lines or antenna cables with any power cables.

(f) The maximum cable length between the Jet Blade antenna and HPA/LNA is 10 feet, refer to Figure 3-31, Table 1. The maximum cable length between Low Profile Jet Blade antenna and HPA/LNA is 10 feet, refer to Figure 3-31, Table 1.

(g) The maximum cable length between the SCU and HPA/LNA is determined by the type of cable used. Refer to Table 2 in Figure 3-31 for cable length information.

(h) The DMU has heat removed by conduction: make sure the unit is installed in a location where the ambient temperatures are -67° F to +131° F (-55° C to +55° C).

(i) The DTU should be mounted within the pressure vessel in a temperature controlled environment of +5° F to +131° F (-15° C to +55° C).

(j) Mount SCU tray to provide good electrical bonding to airframe ground. Lightning strike protection, RF susceptibility and emission characteristics are dependent on good electrical grounding of the tray and cable shield returns.

(k) The SCU should be mounted within the pressure vessel in a temperature controlled environment of -13° F to +131° F (-25° C to +55° C).

2.3 DATA MANAGEMENT UNIT (DMU) INSTALLATION

(a) See Figures 2-1 and 2-2.

(b) Mount DMU 1/2 ATR short tray.

(c) Install DMU in tray.

2.4 DATA TRANSFER UNIT (DTU)

(a) See Figures 2-5 through 2-10.

(b) Mount DTU in aircraft cockpit in a location easily accessible to pilot.

(c) Two mounting provisions are available; DZUS or tray mounting.

NOTE:

The DTU uses AUL-SPEC Dzus fasteners as standard mounting provisions. However, for aircraft not equipped with these fastener strips see Figure 2-9.

2.5 CONFIGURATION MODULE IN DATA MANAGEMENT UNIT (DMU) TRAY

(a) For ease of assembly it is recommended that the DMU be wired to the configuration module per Section 3, ELECTRICAL INSTALLATION prior to installing configuration module. The wires are to be soldered to the tray pins.

NOTE:

The location and number of the configuration module pins are stamped on the tray for reference during wiring.

(b) Remove configuration module from packing, be sure not to bend pins of module.

(c) Place module on tray as shown in Figures 2-2 and 2-3 aligning pins with holes in tray. Tighten screws once module is fitted properly. Do not force seating of module.

2.6 SATELLITE COMMUNICATION UNIT (SCU)

(a) See Figures 2-12 and 2-13.

(b) Mount 1/4 ATR short rack per Paragraph 2.2.

(c) Install SCU in rack and secure hold down mechanism.

2.7 HIGH POWER AMPLIFIER/LOW NOISE AMPLIFIER INSTALLATION (HPA/LNA)

(a) See Figure 2-14.

(b) The HPA/LNA should be mounted in an area that ensures optimum antenna placement. Coax lengths should be within maximum length limits per Figure 3-31 Table 2.

(c) The HPA/LNA should be well bonded to the aircraft skin per Paragraph 2.8.1.

2.8 ANTENNA INSTALLATION

2.8.1 Bonding Checklist

(a) The recommended bonding jumper for DC and low frequency AC (50 kHz) is braided wire. For radio frequencies greater than 50 khz use a flat metal strap with a length to width ratio of 1. For brass and copper alloys the strap should be 0.025 inch thick. For aluminum alloys the strap should be 0.040 inch thick.

(b) Periodic inspections should be made of aircraft bonding devices since they are subject to wear and breakage.

(c) After major modification, painting, or repairs, inspect control surfaces, inspection plates, and drain masts to assure that proper metal-to-metal contact is maintained.

2.8.2 Low Profile Jet Blade Antenna Installation (See Figure 2-15)

(a) The Jet Blade antenna should be mounted on the center line of the aircraft on the aircraft skin which is horizontal during enroute flight.

(b) The antenna should be mounted on the top of the aircraft, over the cockpit or on top of the tail of the aircraft.

NOTE:

This location reduces the possibility of obstructing satellite signals because of shadowing.

(c) The antenna should be mounted as far as possible from other radiating devices (3 feet minimum VHF comms, HF comms, etc.).

(d) The antenna should be well bonded to the aircraft skin per Paragraph 2.8.1 (a).

(e) The antenna should be sealed to the aircraft to prevent corrosion from forming between the skin of the aircraft and the antenna.

2.9 ARNAV RPU INSTALLATION

2.9.1 Installation Kit

An ARNAV MFD 5115 Installation Kit P/N 453-0083 is required to install the ARNAV MFD 5115 RPU.

2.9.2 Installation Guide

See figures 2-16 and 2-17.

2.9.3 Cooling Considerations

It is highly recommended to use forced air cooling. A duct port is provided on the install tray. Make sure that the unit is installed in a location where the ambient temperature is between -20° C and +70° C.

2.9.4 Installation Considerations

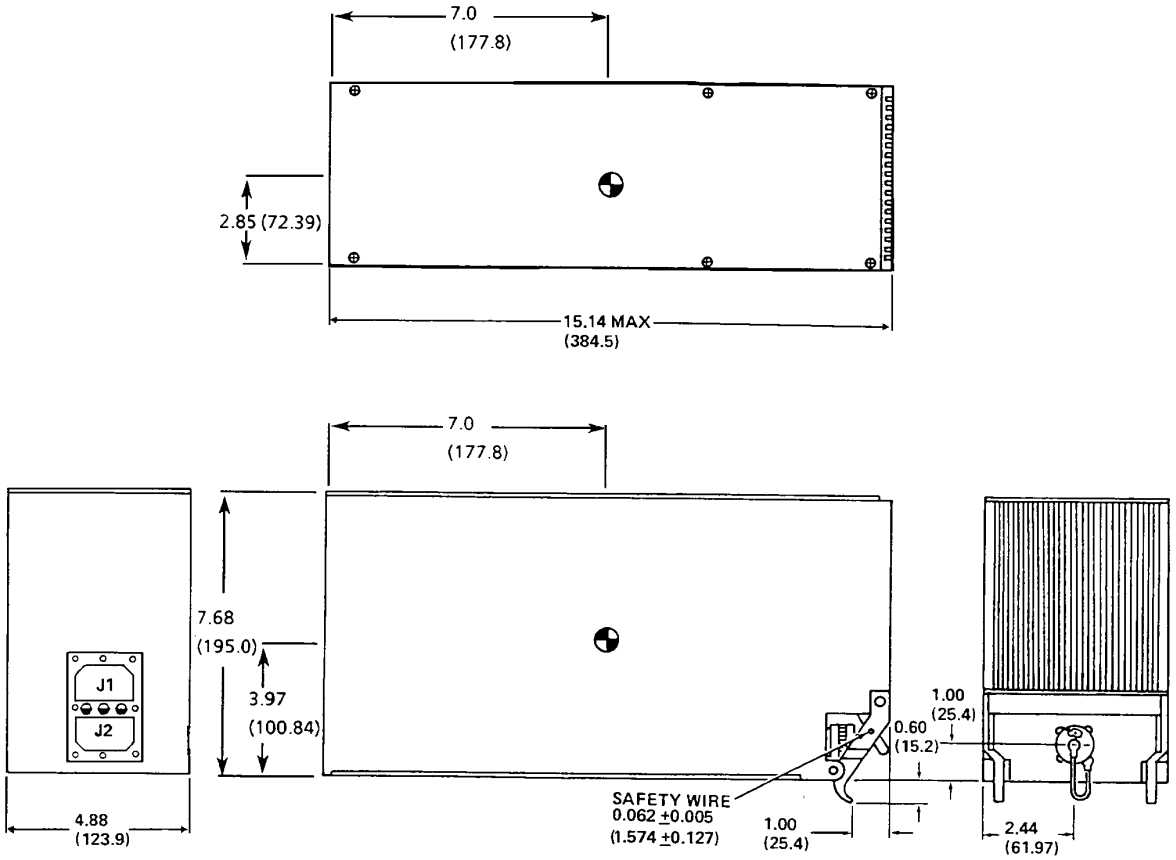
Wiring length between the RPU and the GNS-XLS CDU should be no more than 15 feet. Wiring between the RPU and the DMU is unlimited.

Must be mounted inside the pressure vessel.

Should have access to front, to facilitate changing of the database PCMCIA card.

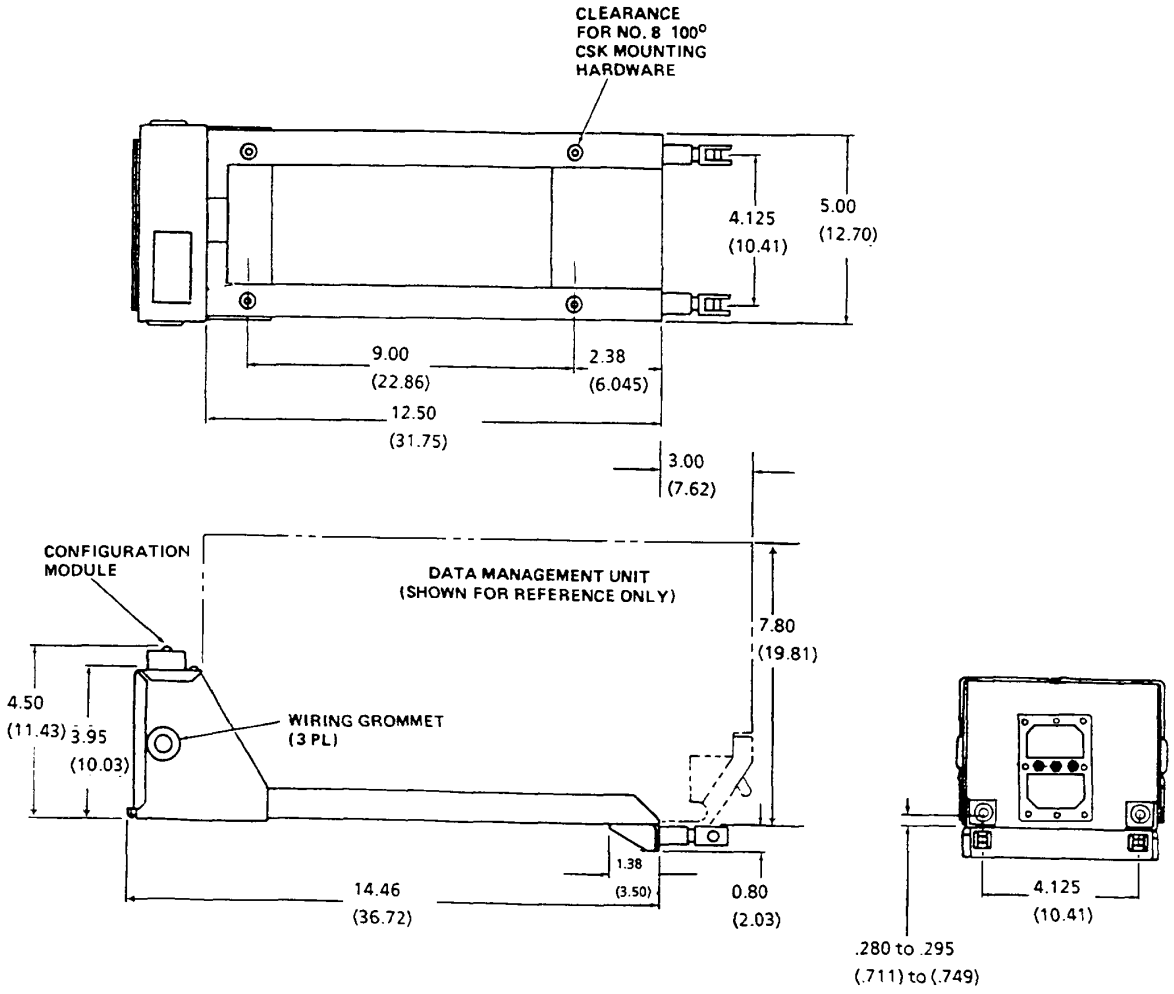
2.9.5 Database Card

To begin database service and receive the database card, please complete the form in figure 1-1 and fax it to (602) 436-1501.



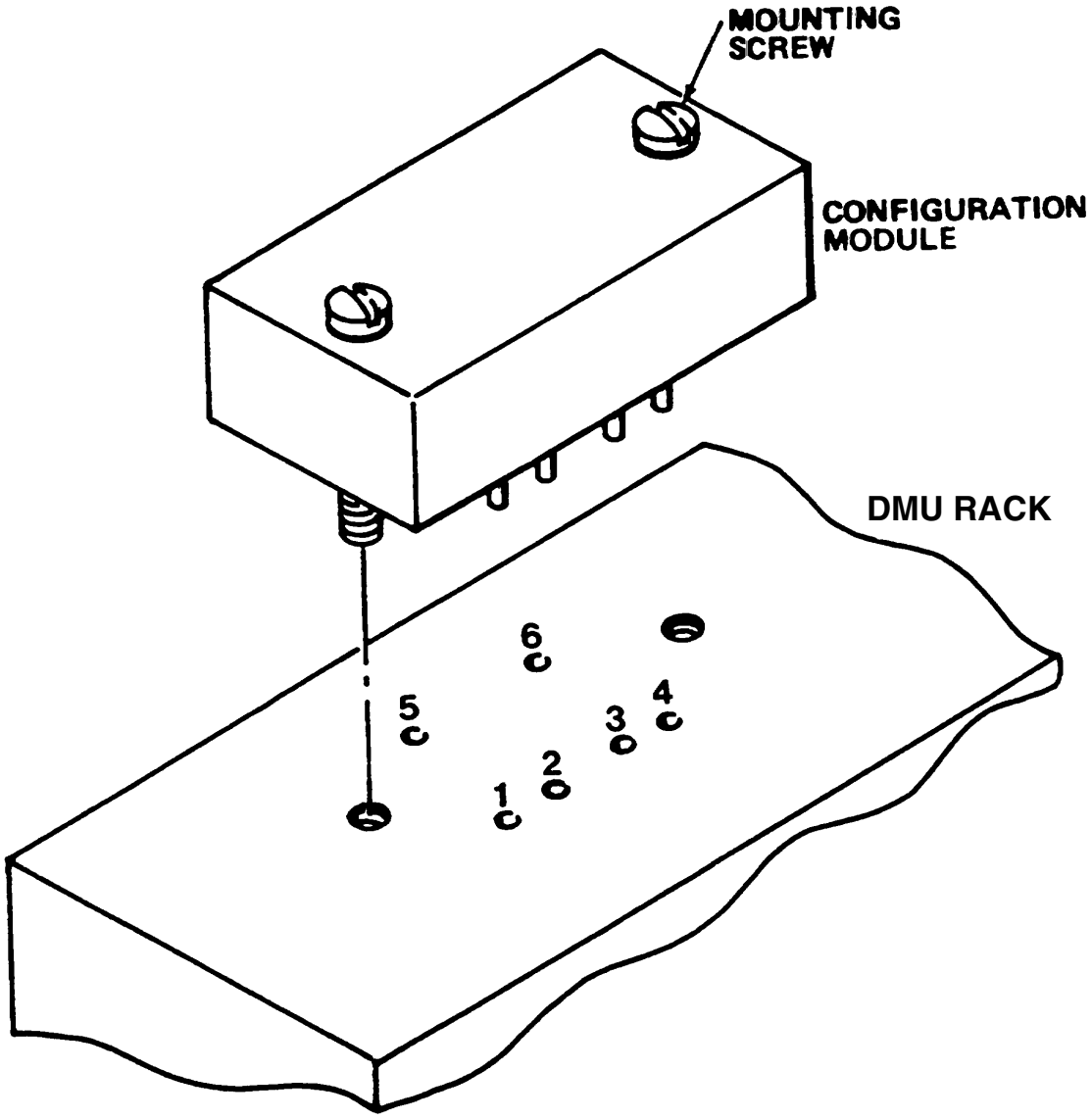
NOTE: All dimensions are in inches (millimeters).

DATA MANAGEMENT UNIT (DMU) PN 42000-XX-XX OR PN 400-045500-XXXX
Figure 2-1



Note: All dimensions are in inches (centimeters).

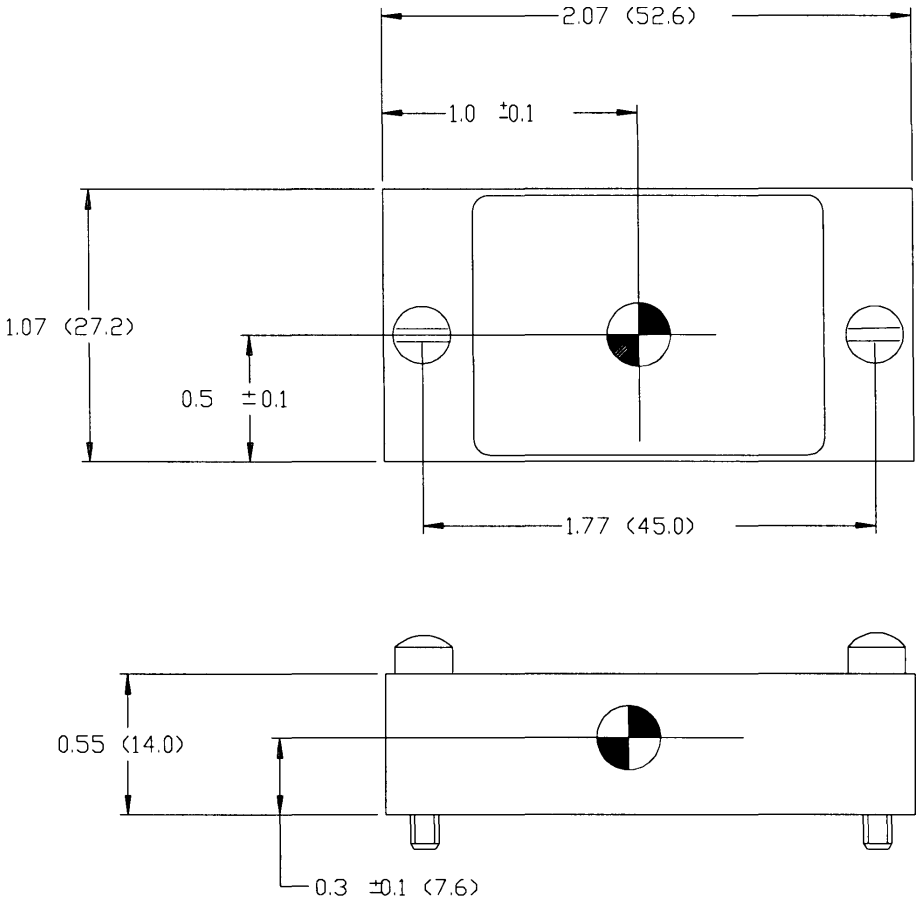
DMU TRAY PN 42701-1
Figure 2-2



NOTE:

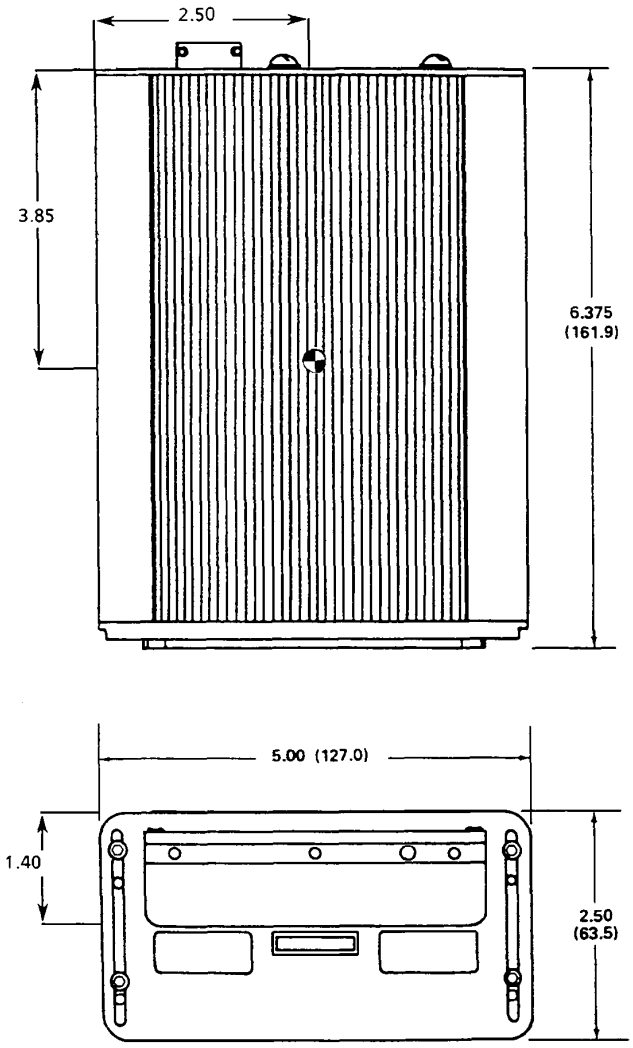
1. Weight 0.102 lbs. (0.045 Kg) max.

Configuration Module Mounting Provision P/N 31990-1
Figure 2-3



DIMENSIONS ARE IN INCHES (mm).
WEIGHT 0.102 LBS (0.045 kg.) MAX.

Configuration Module Outline and Mounting P/N 31990-1
Figure 2-4



NOTE:
All dimensions are in inches (millimeters).

DATA TRANSFER UNIT (DTU) PN 43000-01-01-X
Figure 2-5

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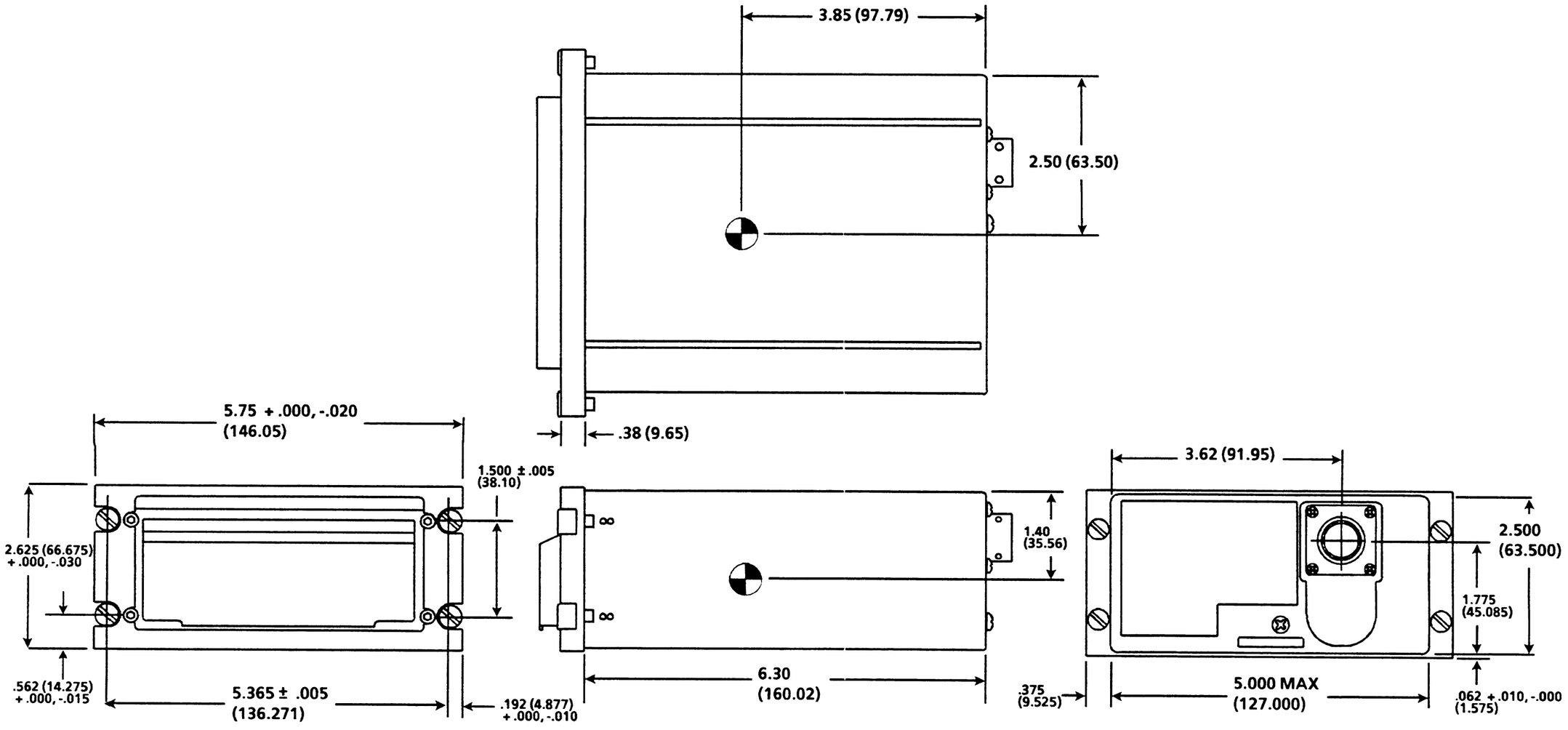
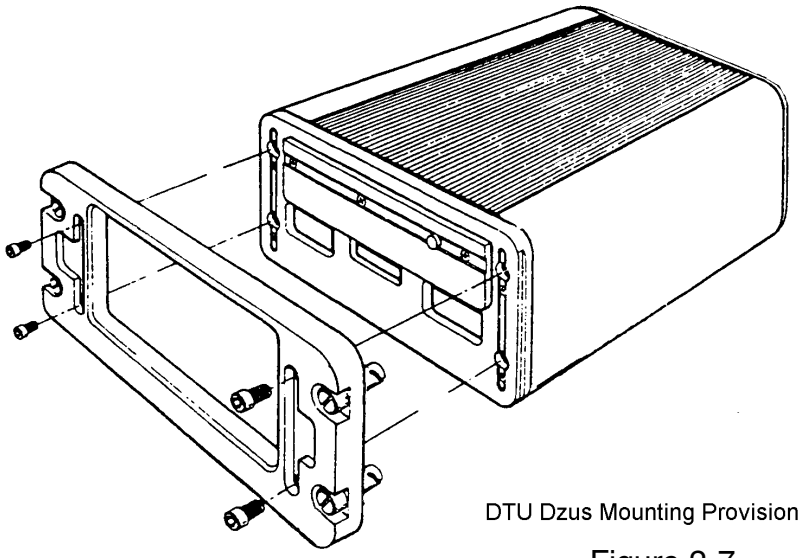


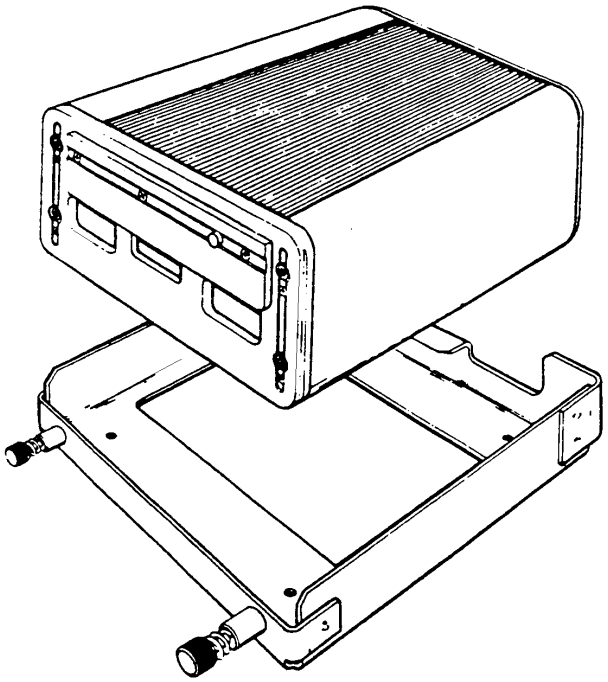
NOTES:
1. All dimensions are in inches (millimeters).

Triple Port DTU PN 15655-XXXX
Figure 2-6



DTU Dzus Mounting Provision

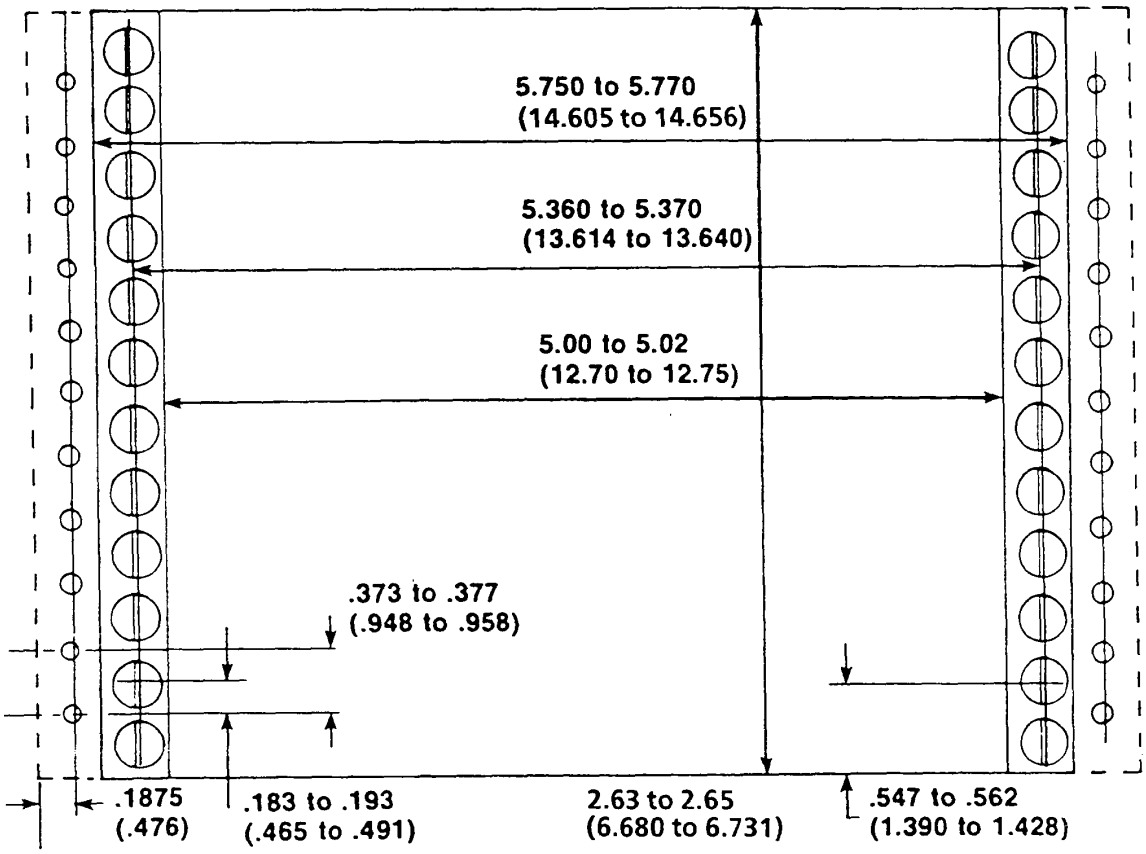
Figure 2-7



NOTE:

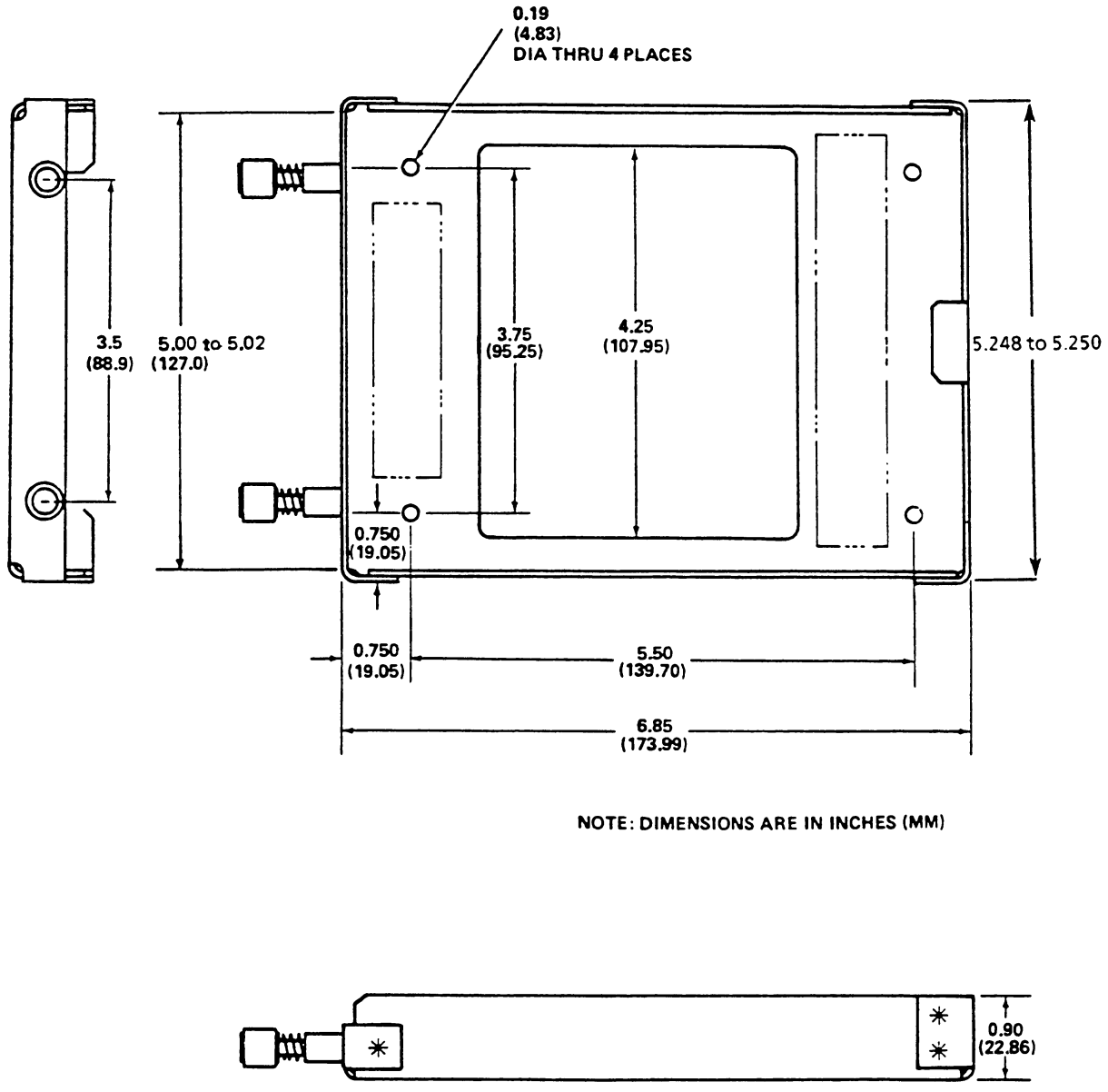
Figures 2-7 and 2-8 are provided for DTU mounting reference only.

DTU TRAY MOUNTING
Figure 2-8



NOTE: All dimensions are in inches (centimeters).

DTU INSTRUMENT PANEL MOUNTING PROVISION
Figure 2-9



DTU TRAY PN 43010-X
Figure 2-10

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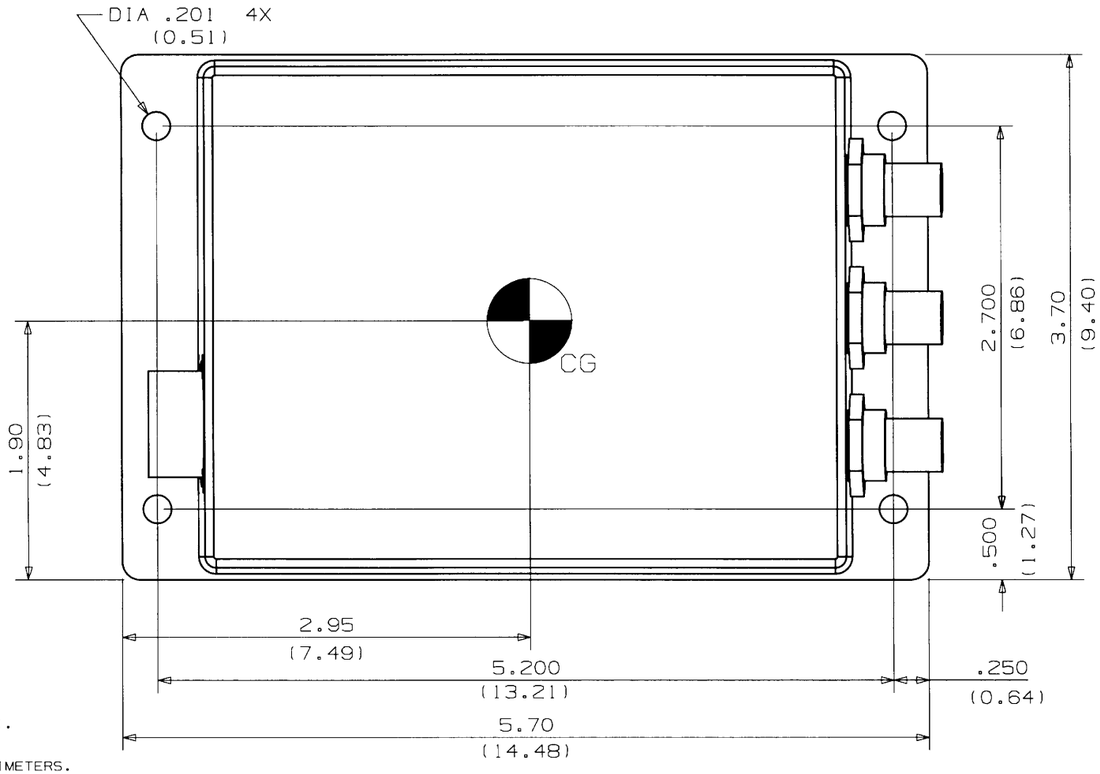
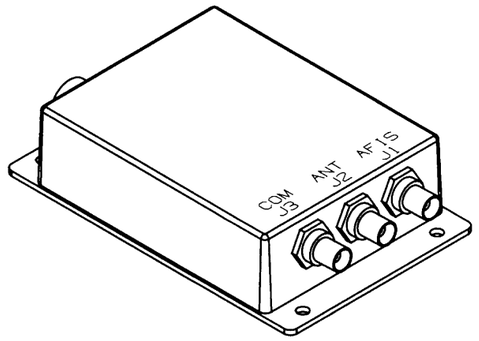
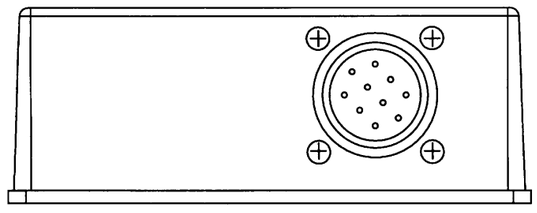
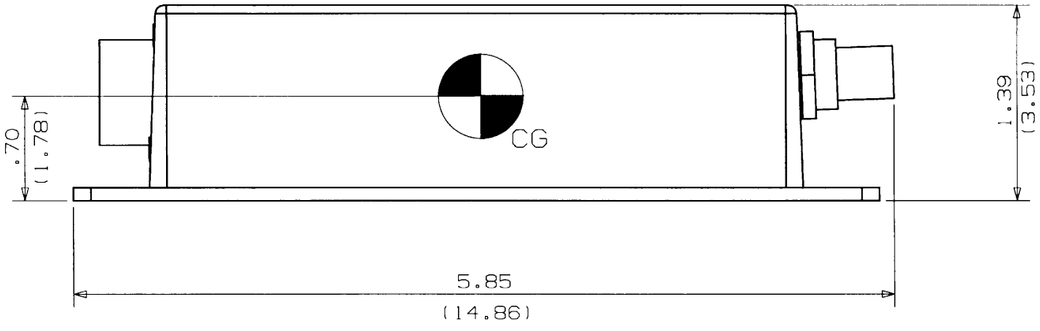


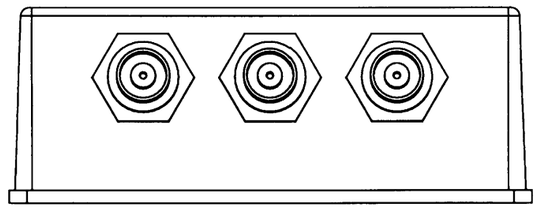


NOTES:

1. NOMINAL WEIGHT - 1.3 POUNDS (0.59 KILOGRAMS).
2. DIMENSIONS IN PARENTHESIS ( ) ARE VALUES IN CENTIMETERS.







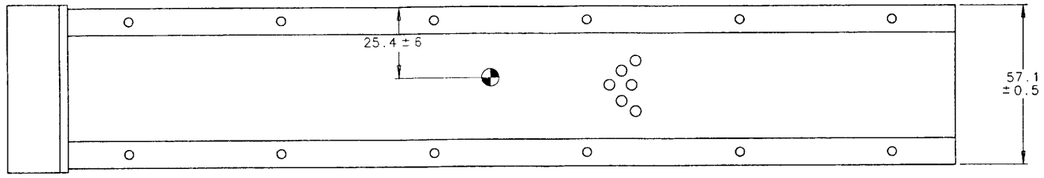
ANTENNA SWITCHING UNIT (ASU) PN 44000-1
DWG. NO. 155-06047-0000
Figure 2-11

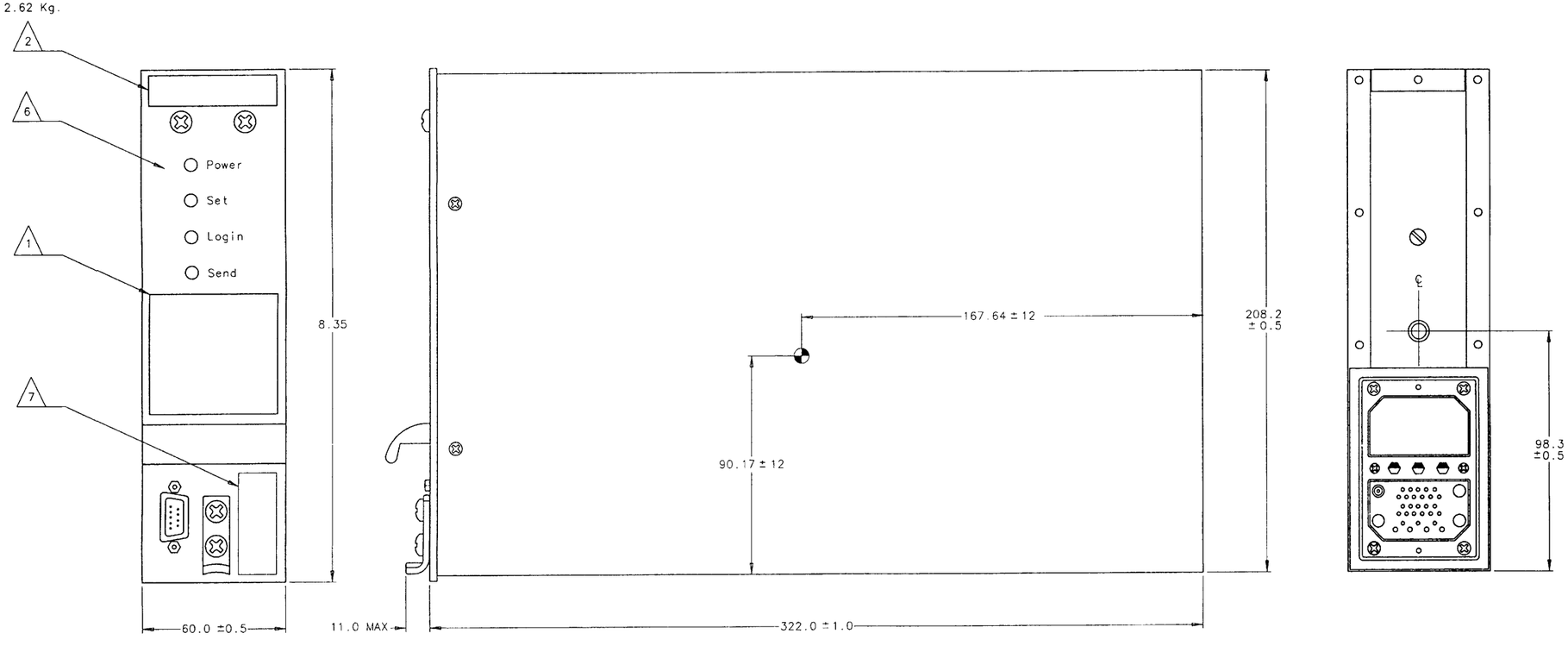
NOTES:

1. AFFIX ALLIEDSIGNAL AVIONICS INC. LABEL P/N 156-017317-01. TO BE INSTALLED BY ALLIEDSIGNAL AVIONICS INC.
2. AFFIX ALLIEDSIGNAL AVIONICS INC. LABEL P/N 156-017408-01. TO BE INSTALLED BY ALLIEDSIGNAL AVIONICS INC.
3. DIMENSIONS ARE IN MILIMETERS.
4. FINISH PER PCS-109, EXCEPT FRONT PANEL AND BOTTOM OF UNIT. BOTTOM OF UNIT TO HAVE ALINE 1500 OR 1200 FINISH.
5. APPROVED VENDOR:
   THRANE & THRANE A/S
   TOBAKSVEGEN 23 DK-2860
   SOEBORG, DENMARK

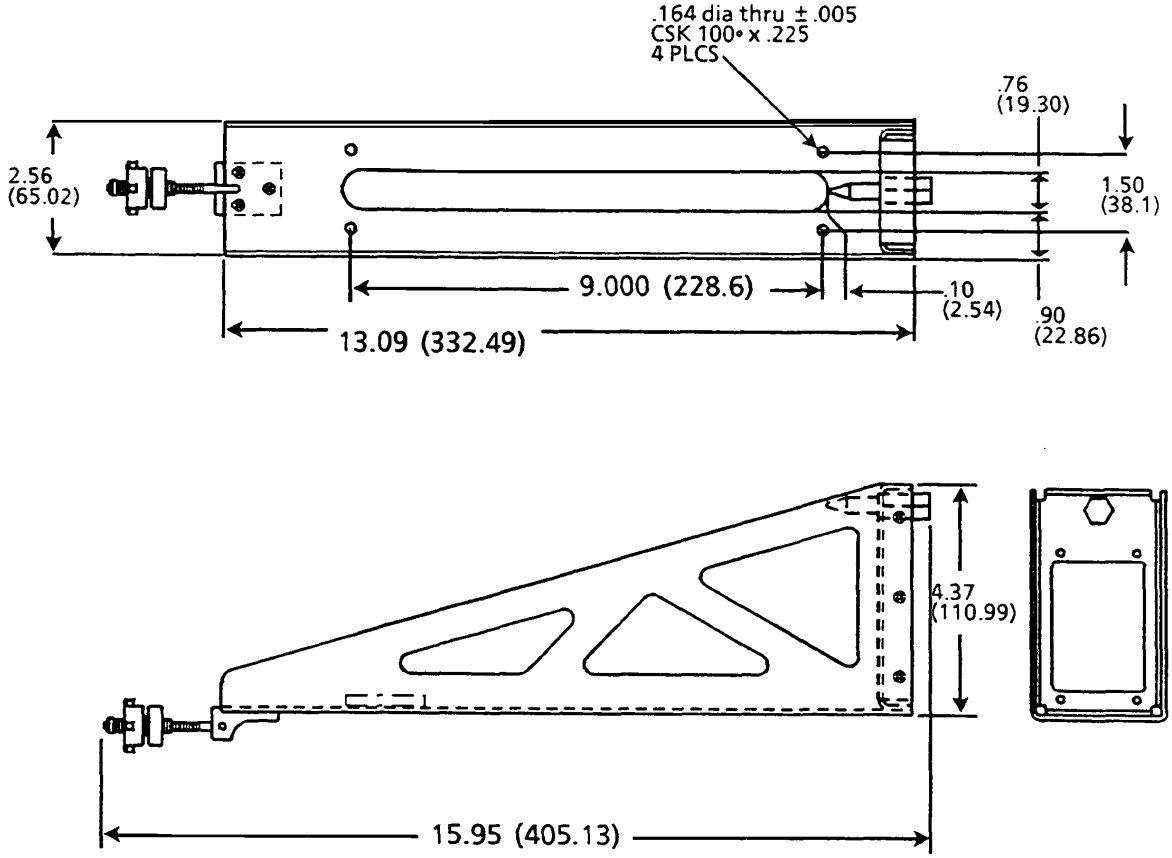
MODEL NO.	P/N	OPTION	GWS P/N
TT-3024A	403024-001/E	—	153-017311-01
TT-3024A	403024-001/E	—	153-017311-02
	AND 403024-105	005	

6. FINISH PER PCS-109 TO NO TEXTURE REQUIRED.
7. THRANE & THRANE LABEL.
8. TEST AT ALLIEDSIGNAL AVIONICS INC. PER TEST PROCEDURE 650-017311.
9. NOMINAL WEIGHT: 2.62 Kg.





SATELLITE COMMUNICATION UNIT (SCU)
DWG. NO. 153-017311-01 REV AA
Figure 2-12



NOTE: All dimensions are in inches (millimeters).

SCU TRAY PN 300-317337-01
Figure 2-13

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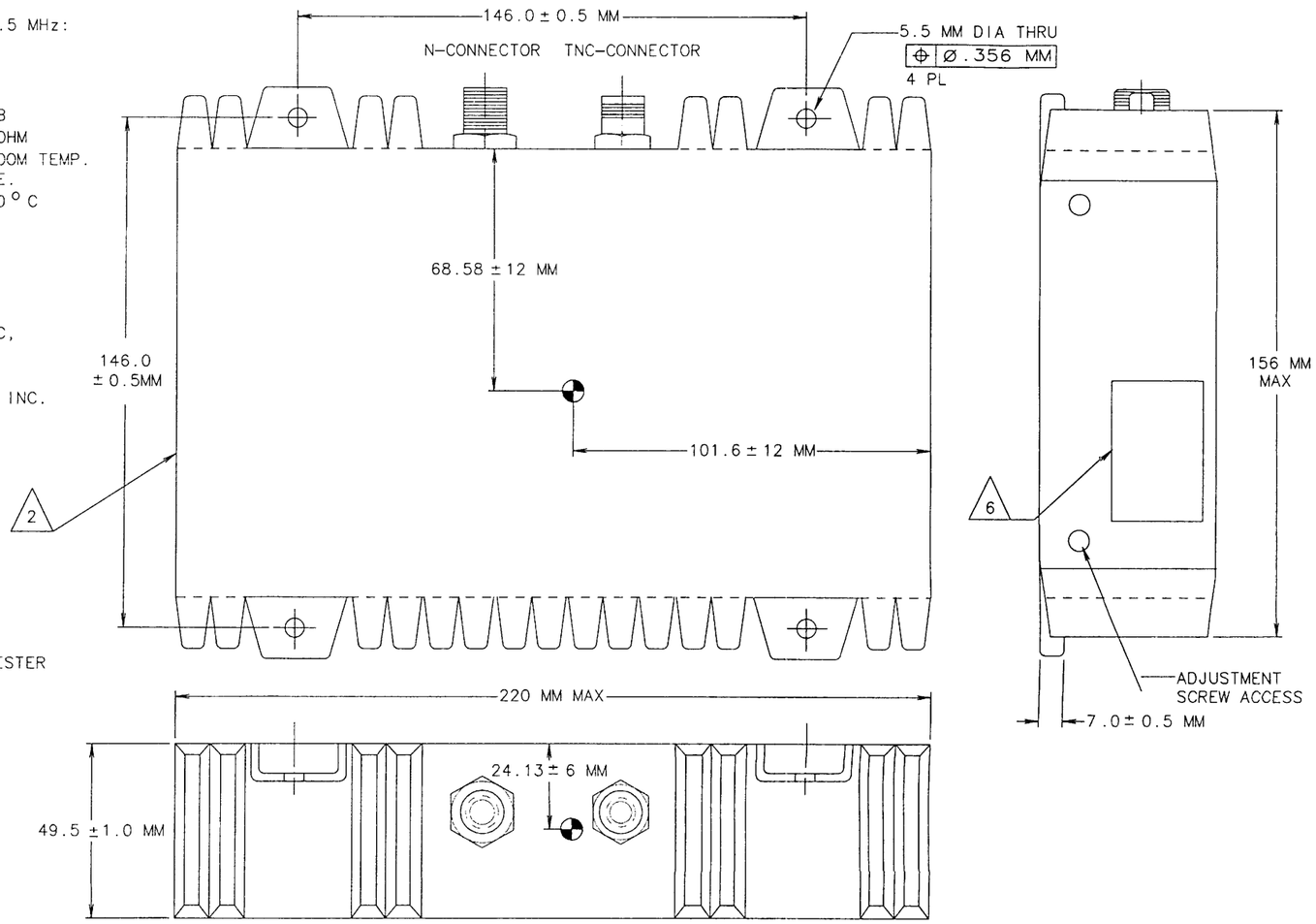
NOTES:

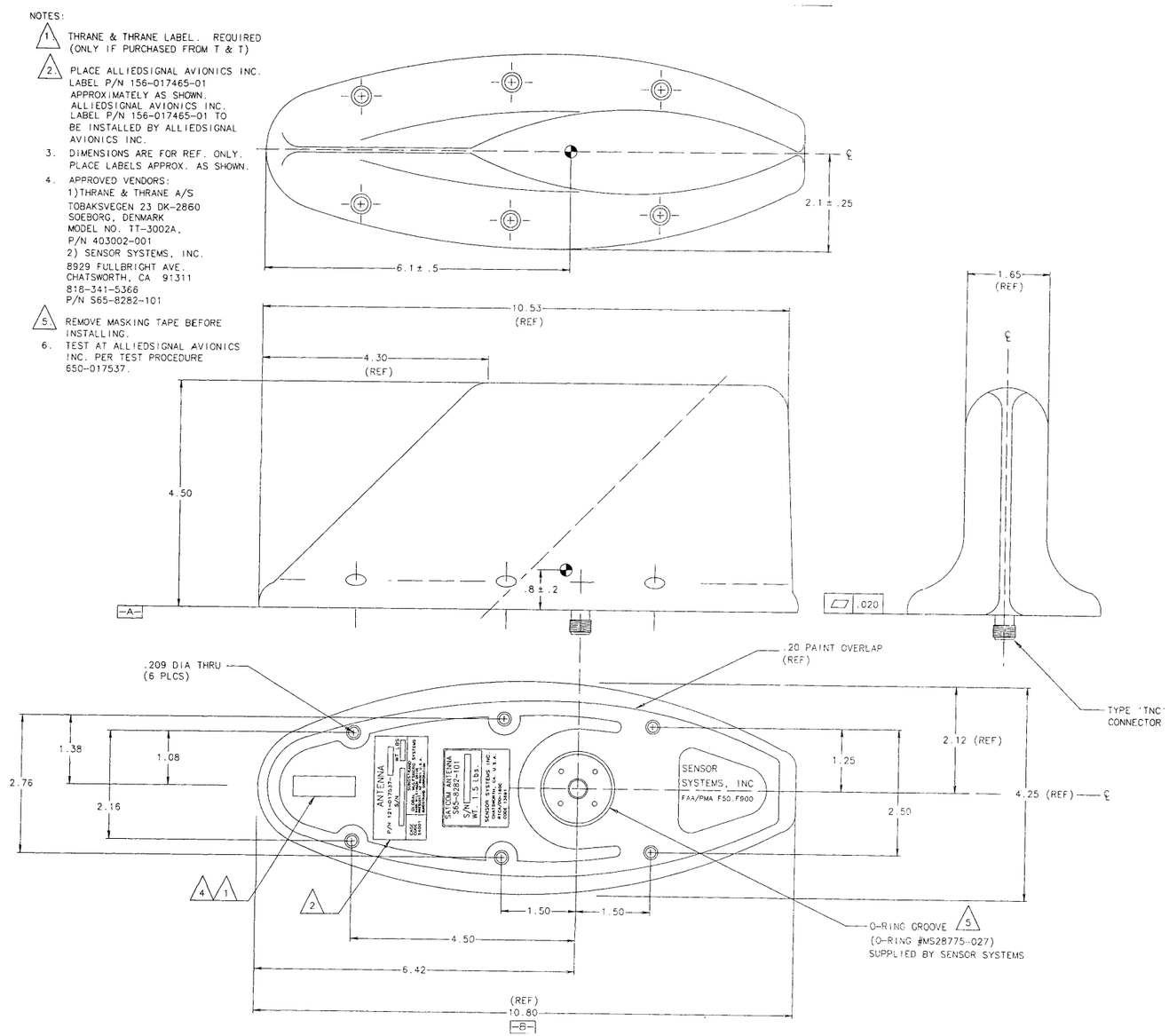
1. SPECIFICATIONS:
   - 1.1 TX FREQUENCY BAND: 1626.5 – 1646.5 MHz
   - 1.2 RX FREQUENCY BAND: 1530 – 1545 MHz
   - 1.3 POWER SUPPLY TX (THROUGH COAX CABLE): 26.5 – 30 VDC 2.8 AMP MAX
   - 1.4 POWER SUPPLY RX (THROUGH COAX CABLE): 13 – 16 VDC .05 AMP
   - 1.5 INPUT POWER LEVEL TX, 1626.5 – 1646.5 MHz: –1 dBM TO + 23 dBM
   - 1.6 OUTPUT POWER TX: 21 W MAX
   - 1.7 MAX ANTENNA ELEMENT VSWR: 3:1
   - 1.8 MAX XCVR CABLE INSERTION LOSS: 19dB
   - 1.9 MAX XCVR CABLE DC RESISTANCE: 0.7 OHM
   - 1.10 INPUT NOISE FIGURE: 1.7 dB MAX @ ROOM TEMP.
   - 1.11 LNA GAIN: 40 MIN @ ROOM TEMPERATURE.
   - 1.12 TEMPERATURE OPERATIONAL: –55° TO +70° C
   - 1.13 WEIGHT: 4.84 LBS ±.44 LBS
   - 1.14 ENVIROMENTAL SPEC RTCA DO 160C: D2–BB(CLMY)(E1) XXXXXAAAAAVAKXX
   - 1.15 ALTITUDE: 55,000 FT CAT D2.
   - 1.16 HUMIDITY: CAT B NONE CONDENSING
   - 1.17 VIBRATION: RANDOM VIBRATION DO 160C, FIGURE 8–1, CATEGORY C
2. ATTACH LABEL 156–017316–01 TO BE INSTALLED BY ALLIEDSIGNAL AVIONICS INC.
3. DIMENSIONS FOR REFERENCE ONLY.
4. APPROVED VENDOR:
   THRANE & THRANE A/S
   TOBAKSVEGEN 23 DK–2860
   SOEBORG, DENMARK
   MODEL NO. TT–3001E P/N 403001–005
5. TEST AT ALLIEDSIGNAL AVIONICS INC. PER TEST PROCEDURE 650–017310.
6. RESERVED FOR THRANE & THRANE LABEL.
7. BOTTOM PLATE: ALINE 12005 FINISH.
8. OUTSIDE PAINT: INFRASOL TOPCOAT + EPOXYESTER PRIMER 2K – WASH FILLER.



HIGH POWER AMPLIFIER/LOW NOISE AMPLIFIER (HPA/LNA)
DWG. NO. 153-017310-01 REV AA
Figure 2-14

NOTES:

1. THRANE & THRANE LABEL. REQUIRED (ONLY IF PURCHASED FROM T & T)
2. PLACE ALLIEDSIGNAL AVIONICS INC. LABEL P/N 156-017465-01 APPROXIMATELY AS SHOWN. ALLIEDSIGNAL AVIONICS INC. LABEL P/N 156-017465-01 TO BE INSTALLED BY ALLIEDSIGNAL AVIONICS INC.
3. DIMENSIONS ARE FOR REF. ONLY. PLACE LABELS APPROX. AS SHOWN.
4. APPROVED VENDORS:
   1)THRANE & THRANE A/S
   TOBAKSVEGEN 23 DK-2860
   SOEBORG, DENMARK
   MODEL NO. TT-3002A,
   P/N 403002-001
   2) SENSOR SYSTEMS, INC.
   8929 FULLBRIGHT AVE.
   CHATSWORTH, CA 91311
   818-341-5366
   P/N S65-8282-101
5. REMOVE MASKING TAPE BEFORE INSTALLING.
6. TEST AT ALLIEDSIGNAL AVIONICS INC. PER TEST PROCEDURE 650-017537.



SPECIFICATIONS

ELECTRICAL

FREQUENCY	RECEIVE	1530-1559 MHz
	TRANSMIT	1626.5-1660.5 MHz
VSWR		≤ 1.5 : 1
IMPEDANCE		50 OHMS
POLARIZATION		RHCP
POWER HANDLING		60 WATTS CW
GAIN		≥ -2 dBic @ $-20^\circ \leq \Theta \leq +20^\circ$
		≥ 0 dBic @ $+20^\circ \leq \Theta \leq +78^\circ$
		≥ 0 dBic @ $-20^\circ \geq \Theta \geq -78^\circ$
		0 = ZENITH
AXIAL RATIO		6 dBic MAX @ $-45^\circ \leq \Theta \leq +45^\circ$
		20 dBic MAX @ $+45^\circ \leq \Theta \leq +78^\circ$
		20 dBic MAX @ $-45^\circ \geq \Theta \geq -78^\circ$
LIGHTNING		DC GROUND

MECHANICAL

WEIGHT	1.5 POUNDS
HEIGHT	4.50 INCHES
LENGTH	10.80 INCHES
WIDTH	3.86 INCHES
FINISH	SKYDROL RESISTANT POLYURETHANE ENAMEL
	COLOR: WHITE POLYURETHANE
	BASE IRIDITE PER MIL-C-5541
MATERIAL	ALUMINUM ALLOY 6061-T6
	GLASS REINFORCED THERMOPLAST
CONNECTOR	TYPE "TNIC" FEMALE
DRAG	1.1 LBS. @ 35,000 FT. @ MACH .85

ENVIRONMENTAL

TEMPERATURE	-54°C (-65°F) TO +71°C (+160°F)
ALTITUDE	55,000 FEET
VIBRATION	10 G's

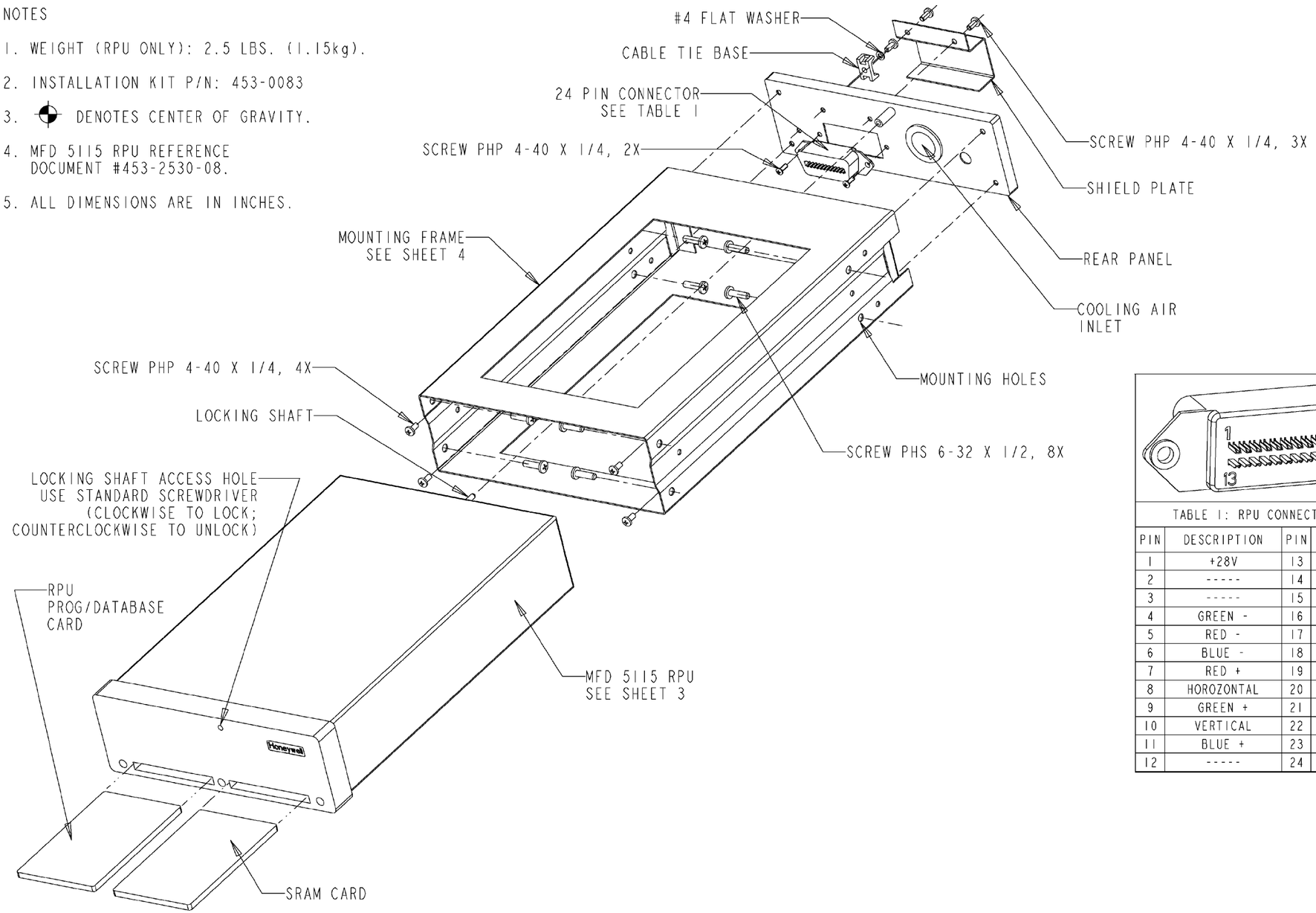
FEDERAL AND MILITARY

DESIGNED TO:	MIL-C-5541D
	MIL-E-5400T
	MIL-STD-810D
	FED-STD-595B
	DO-160C

LOW PROFILE JET BLADE ANTENNA
DWG. NO. 153-017537-01 REV AA
Figure 2-15

NOTES

1. WEIGHT (RPU ONLY): 2.5 LBS. (1.15kg).
2. INSTALLATION KIT P/N: 453-0083
3. ⌖ DENOTES CENTER OF GRAVITY.
4. MFD 5115 RPU REFERENCE DOCUMENT #453-2530-08.
5. ALL DIMENSIONS ARE IN INCHES.



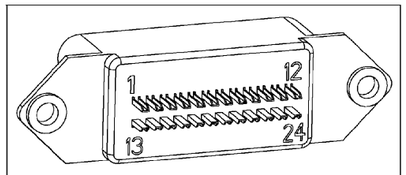
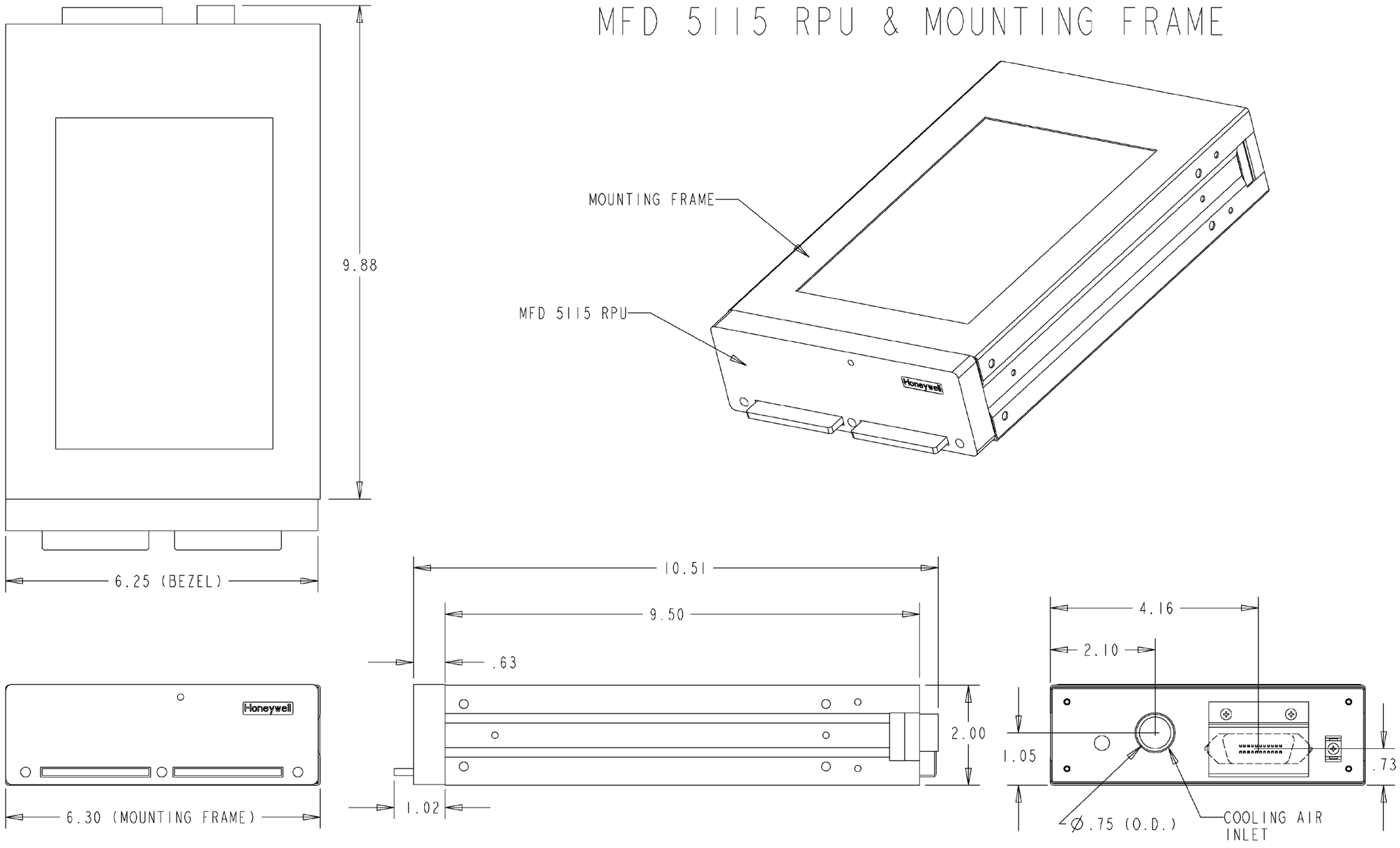


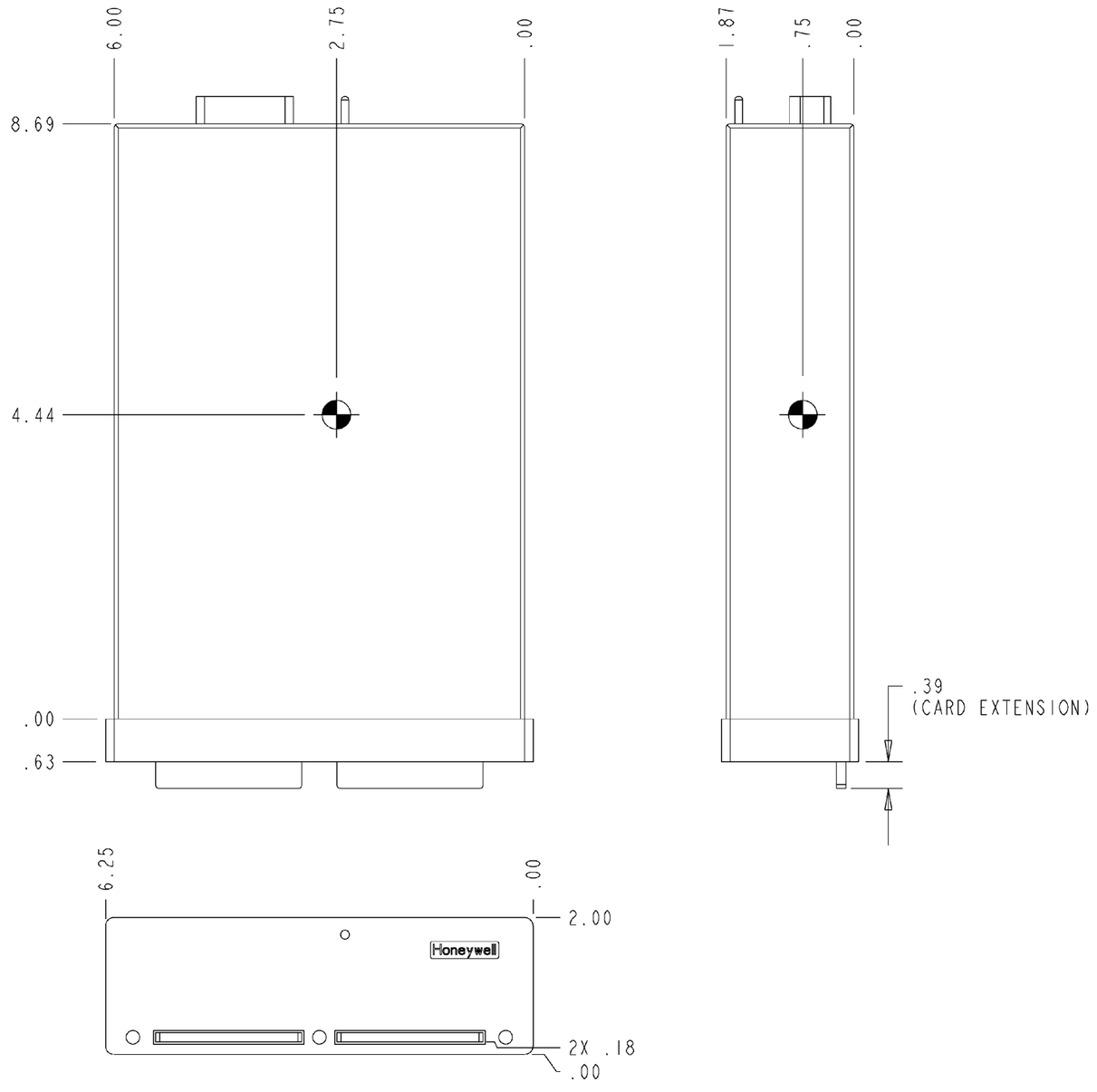
TABLE 1: RPU CONNECTOR SIGNALS

PIN	DESCRIPTION	PIN	DESCRIPTION
1	+28V	13	SYNC GND
2	-----	14	RS-232 RX 1
3	-----	15	RS-232 TX 1
4	GREEN -	16	FMS TX (L)
5	RED -	17	FMS RX (L)
6	BLUE -	18	GROUND
7	RED +	19	-----
8	HOROZONTAL	20	-----
9	GREEN +	21	-----
10	VERTICAL	22	FMS TX (H)
11	BLUE +	23	FMS RX (H)
12	-----	24	GROUND

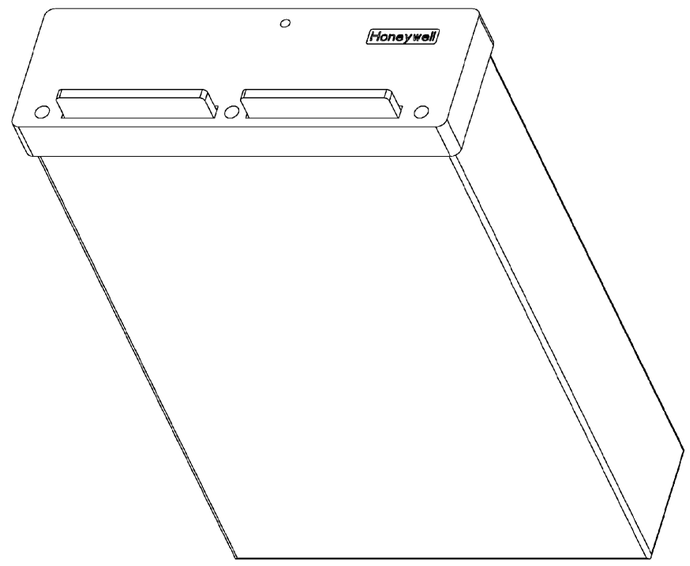
MFD 5115 RPU
DWG. NO. 155-05453-0000, REV A, Sheet 1 of 4
Figure 2-16



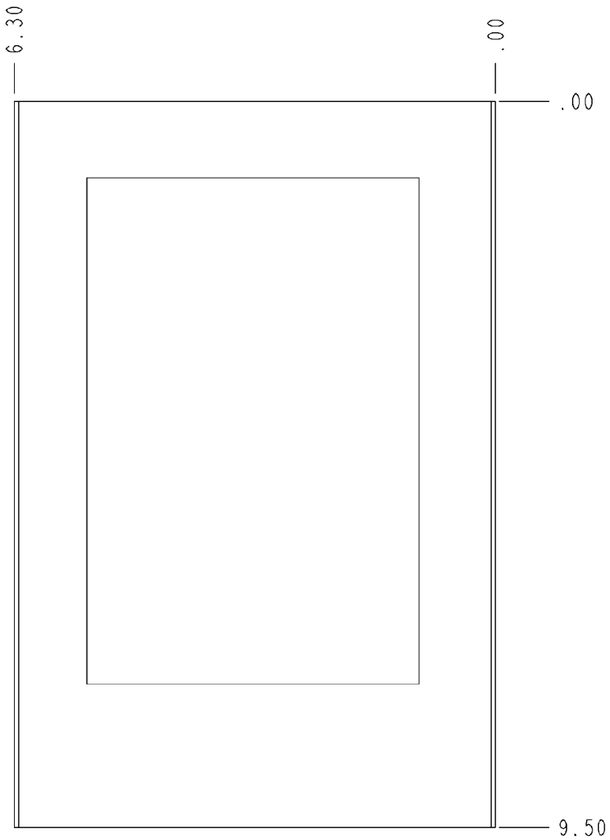
MFD 5115 RPU
DWG. NO. 155-05453-0000, REV A, Sheet 2 of 4
Figure 2-16

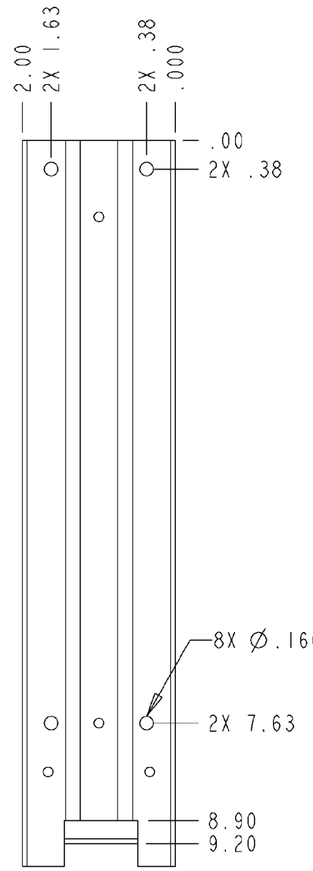


MFD 5115 RPU
P/N: 453-2530-08

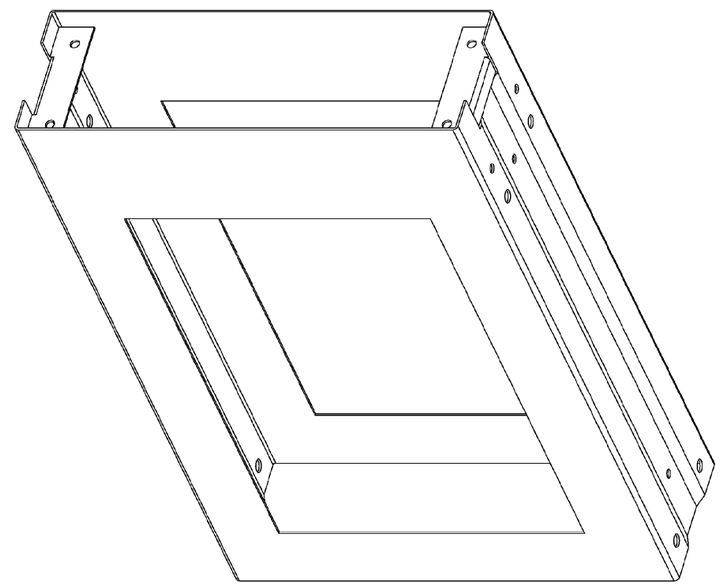


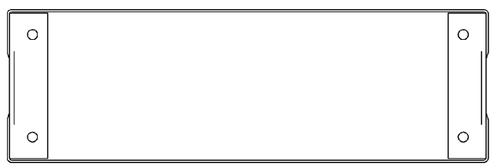
MFD 5115 RPU
DWG. NO. 155-05453-0000, REV A, Sheet 3 of 4
Figure 2-16





MOUNTING FRAME
P/N: 402-1276





MFD 5115 RPU
DWG. NO. 155-05453-0000, REV A, Sheet 4 of 4
Figure 2-16

SECTION 3
ELECTRICAL INSTALLATION

3.0 GENERAL

The basic system interconnect wiring is shown in Figure 3-1 through Figure 3-31 and the connectors for each system component are shown in Figures 3-32 through 3-43.

Transmitter designation applies to the signal function for that unit. Example, a DMU transmitter (H) and (L) will connect to a DTU receiver (H) and (L).

All signal and power shields are to be grounded at one end, preferably at the point of origination and shield continuity shall be maintained through bulkhead disconnects.

All digital data shields are to be grounded at both ends and shield continuity shall be maintained through bulkhead disconnects.

NOTE:

This equipment has been designed to be installed in aircraft locations where it is not subjected to falling water (generally the result of condensation), rain, or sprayed water in the course of normal aircraft operations.

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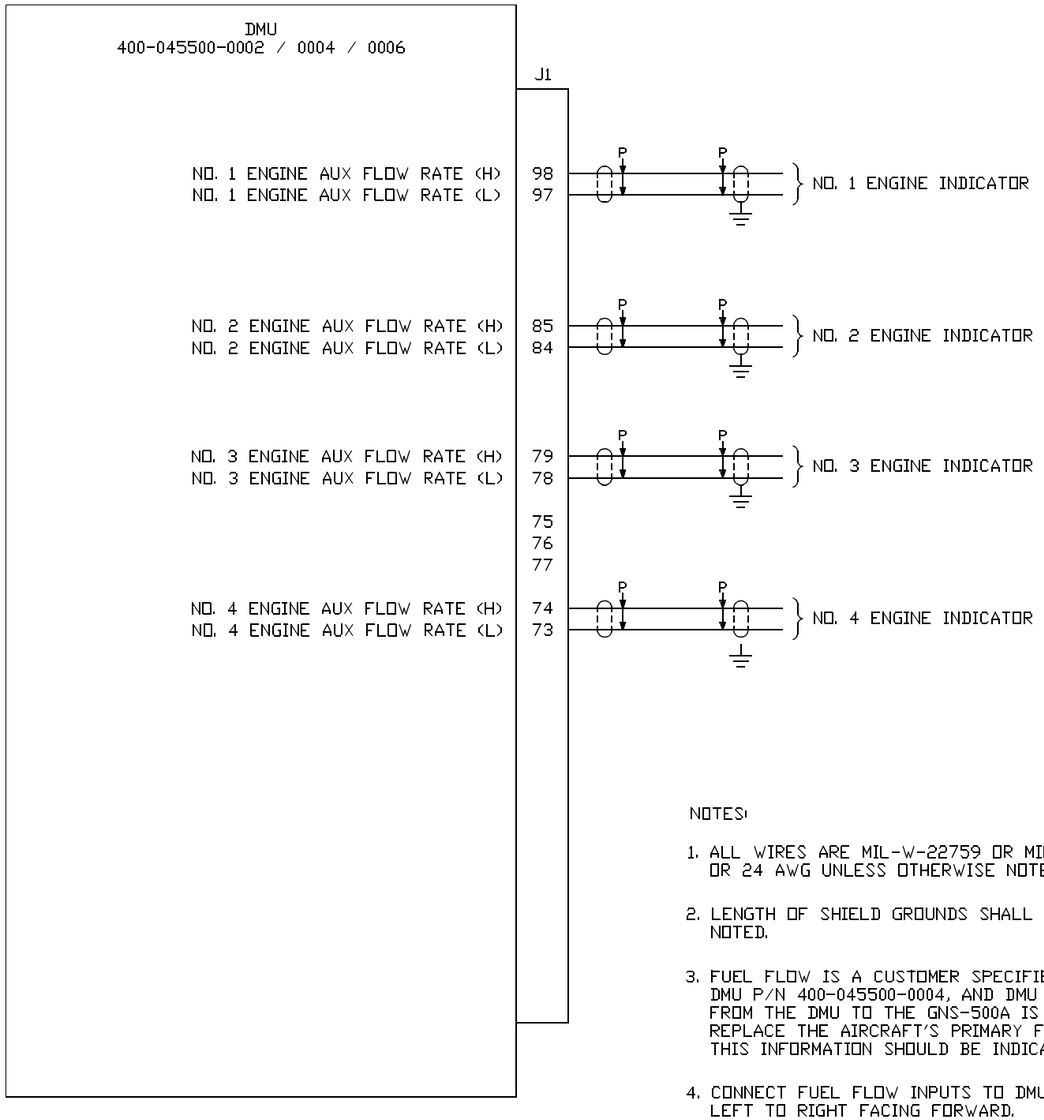


NOTES:

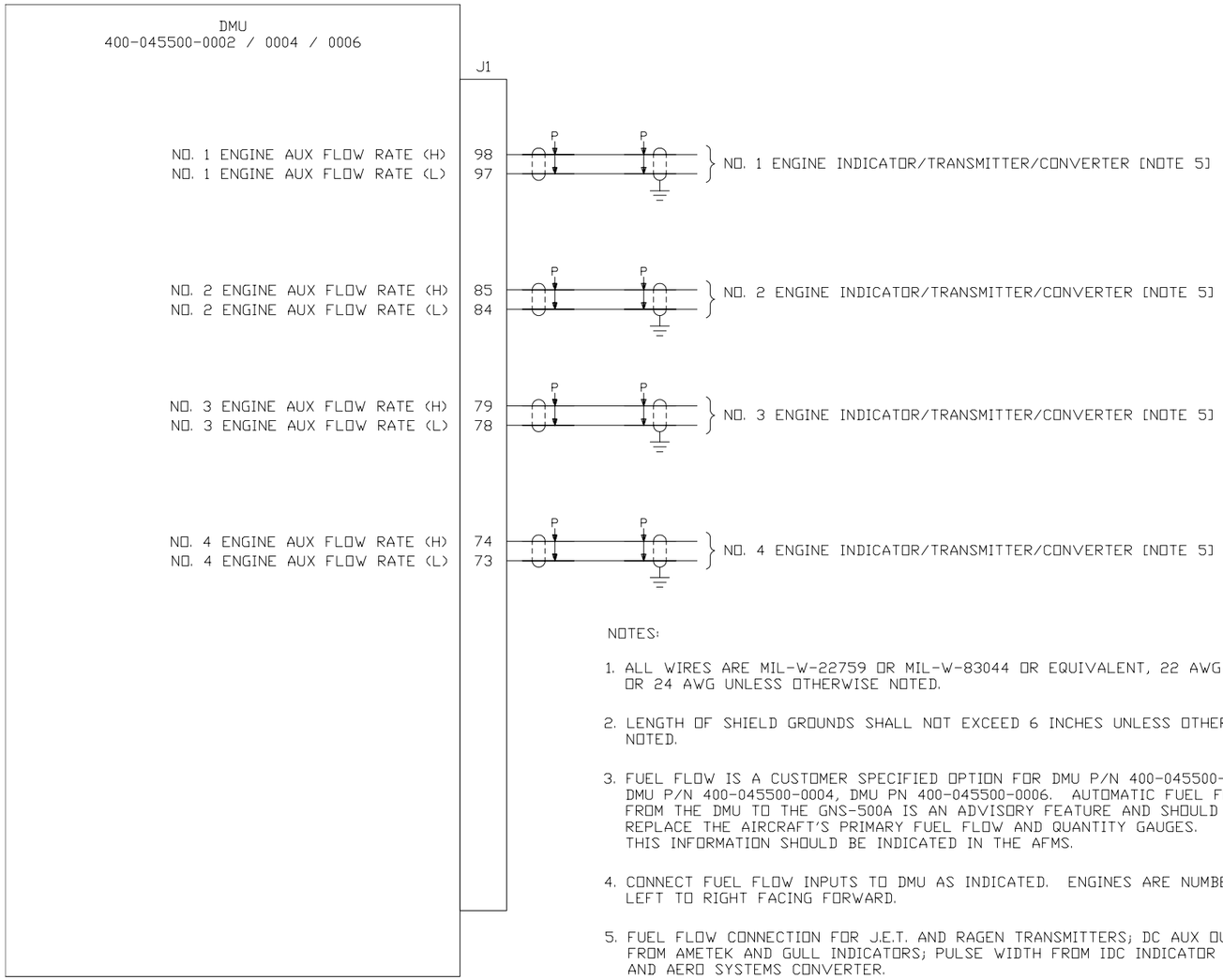
1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

3. FUEL FLOW IS A CUSTOMER SPECIFIED OPTION FOR DMU P/N 400-045500-0002, DMU P/N 400-045500-0004, AND DMU PN 400-045500-0006. AUTOMATIC FUEL FLOW FROM THE DMU TO THE GNS-500A IS AN ADVISORY FEATURE AND SHOULD NOT REPLACE THE AIRCRAFT'S PRIMARY FUEL FLOW AND QUANTITY GAUGES. THIS INFORMATION SHOULD BE INDICATED IN THE AFMS.

4. CONNECT FUEL FLOW INPUTS TO DMU AS INDICATED. ENGINES ARE NUMBERED LEFT TO RIGHT FACING FORWARD.

DMU FUEL FLOW WIRING USING ELDEC INDICATOR
Dwg. No. 155-01712-4001 Rev 0
Figure 3-1



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

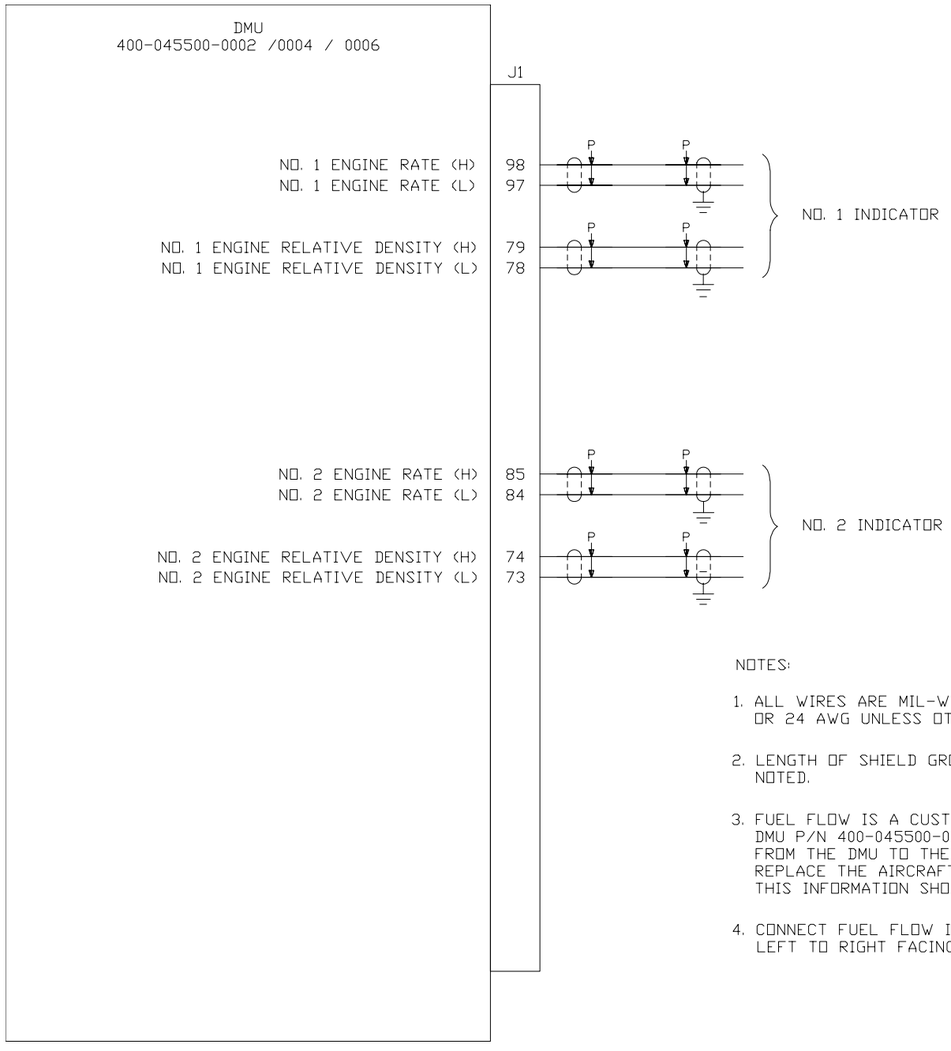
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

3. FUEL FLOW IS A CUSTOMER SPECIFIED OPTION FOR DMU P/N 400-045500-0002, DMU P/N 400-045500-0004, DMU PN 400-045500-0006. AUTOMATIC FUEL FLOW FROM THE DMU TO THE GNS-500A IS AN ADVISORY FEATURE AND SHOULD NOT REPLACE THE AIRCRAFT'S PRIMARY FUEL FLOW AND QUANTITY GAUGES. THIS INFORMATION SHOULD BE INDICATED IN THE AFMS.

4. CONNECT FUEL FLOW INPUTS TO DMU AS INDICATED. ENGINES ARE NUMBERED LEFT TO RIGHT FACING FORWARD.

5. FUEL FLOW CONNECTION FOR J.E.T. AND RAGEN TRANSMITTERS; DC AUX OUTPUT FROM AMETEK AND GULL INDICATORS; PULSE WIDTH FROM IDC INDICATOR AND AERO SYSTEMS CONVERTER.

DMU FUEL FLOW WIRING FOR VARIOUS INDICATORS (see note 5)
Dwg. No. 155-01712-4002 Rev A
Figure 3-2



NOTES:

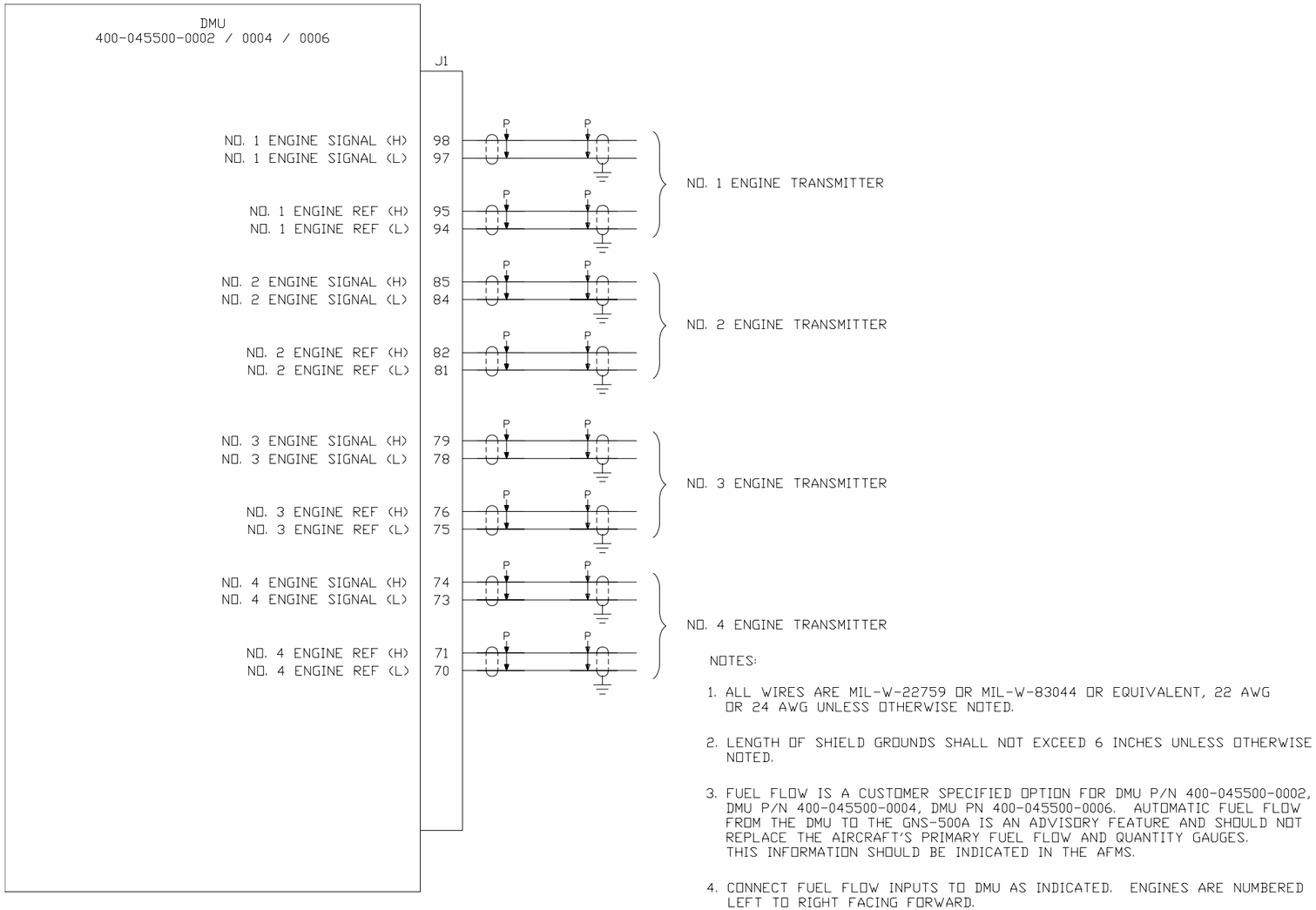
1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

3. FUEL FLOW IS A CUSTOMER SPECIFIED OPTION FOR DMU P/N 400-045500-0002, DMU P/N 400-045500-0004, DMU PN 400-045500-0006. AUTOMATIC FUEL FLOW FROM THE DMU TO THE GNS-500A IS AN ADVISORY FEATURE AND SHOULD NOT REPLACE THE AIRCRAFT'S PRIMARY FUEL FLOW AND QUANTITY GAUGES. THIS INFORMATION SHOULD BE INDICATED IN THE AFMS.

4. CONNECT FUEL FLOW INPUTS TO DMU AS INDICATED. ENGINES ARE NUMBERED LEFT TO RIGHT FACING FORWARD.

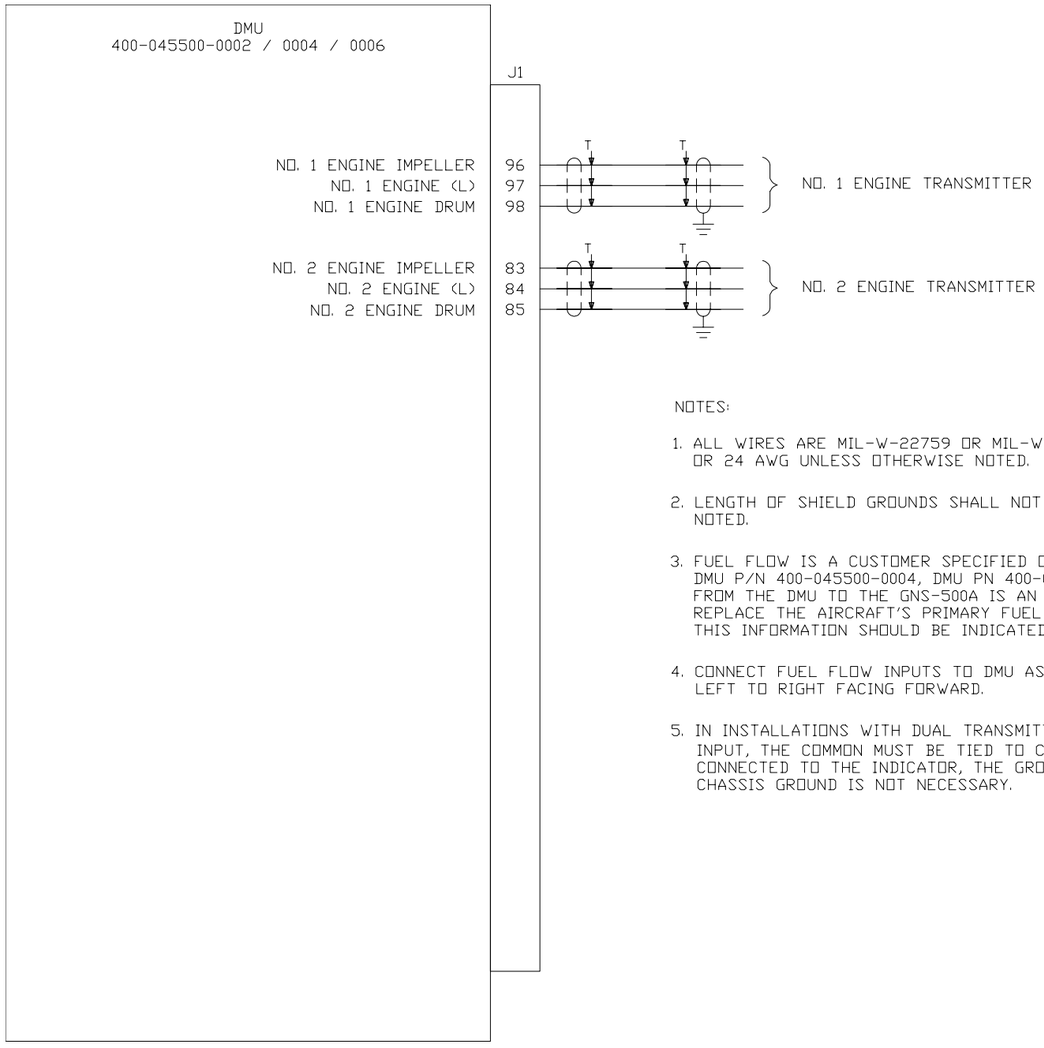
DMU FUEL FLOW INTERTECHNIQUE
Dwg. No. 155-01712-4003 Rev A
Figure 3-3



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. FUEL FLOW IS A CUSTOMER SPECIFIED OPTION FOR DMU P/N 400-045500-0002, DMU P/N 400-045500-0004, DMU PN 400-045500-0006. AUTOMATIC FUEL FLOW FROM THE DMU TO THE GNS-500A IS AN ADVISORY FEATURE AND SHOULD NOT REPLACE THE AIRCRAFT'S PRIMARY FUEL FLOW AND QUANTITY GAUGES. THIS INFORMATION SHOULD BE INDICATED IN THE AFMS.
4. CONNECT FUEL FLOW INPUTS TO DMU AS INDICATED. ENGINES ARE NUMBERED LEFT TO RIGHT FACING FORWARD.

DMU FUEL FLOW GE 5 VRMS AC
Dwg. No. 155-01712-4004 Rev A
Figure 3-4



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

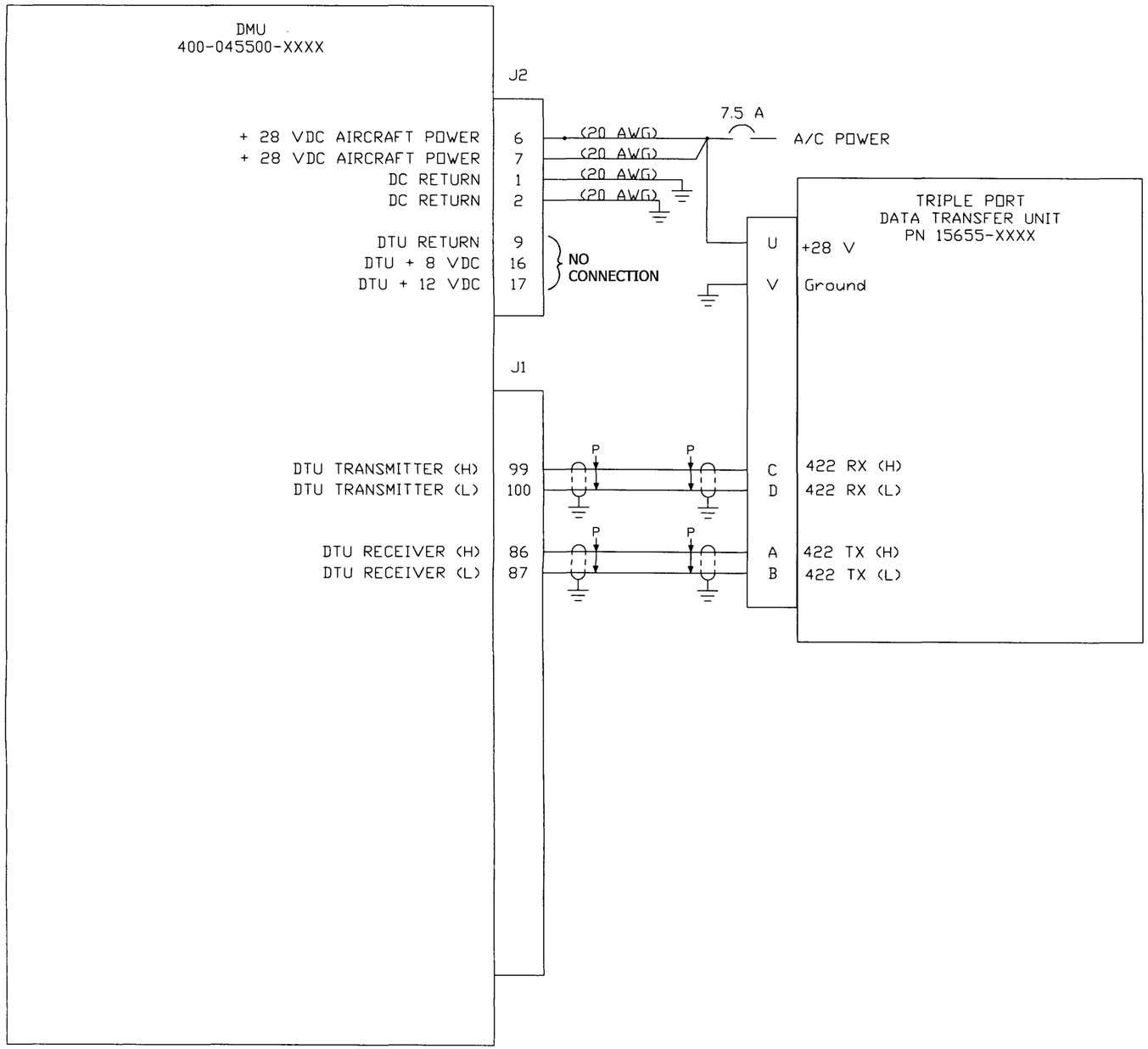
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

3. FUEL FLOW IS A CUSTOMER SPECIFIED OPTION FOR DMU P/N 400-045500-0002, DMU P/N 400-045500-0004, DMU PN 400-045500-0006. AUTOMATIC FUEL FLOW FROM THE DMU TO THE GNS-500A IS AN ADVISORY FEATURE AND SHOULD NOT REPLACE THE AIRCRAFT'S PRIMARY FUEL FLOW AND QUANTITY GAUGES. THIS INFORMATION SHOULD BE INDICATED IN THE AFMS.

4. CONNECT FUEL FLOW INPUTS TO DMU AS INDICATED. ENGINES ARE NUMBERED LEFT TO RIGHT FACING FORWARD.

5. IN INSTALLATIONS WITH DUAL TRANSMITTERS AND ONE IS USED FOR THE DMU INPUT, THE COMMON MUST BE TIED TO CHASSIS GROUND. IF THE COMMON IS CONNECTED TO THE INDICATOR, THE GROUND IS INTERNALLY PROVIDED AND THE CHASSIS GROUND IS NOT NECESSARY.

DMU FUEL FLOW Eldec Transmitter As Source
Dwg. No. 155-01712-4005 Rev A
Figure 3-5

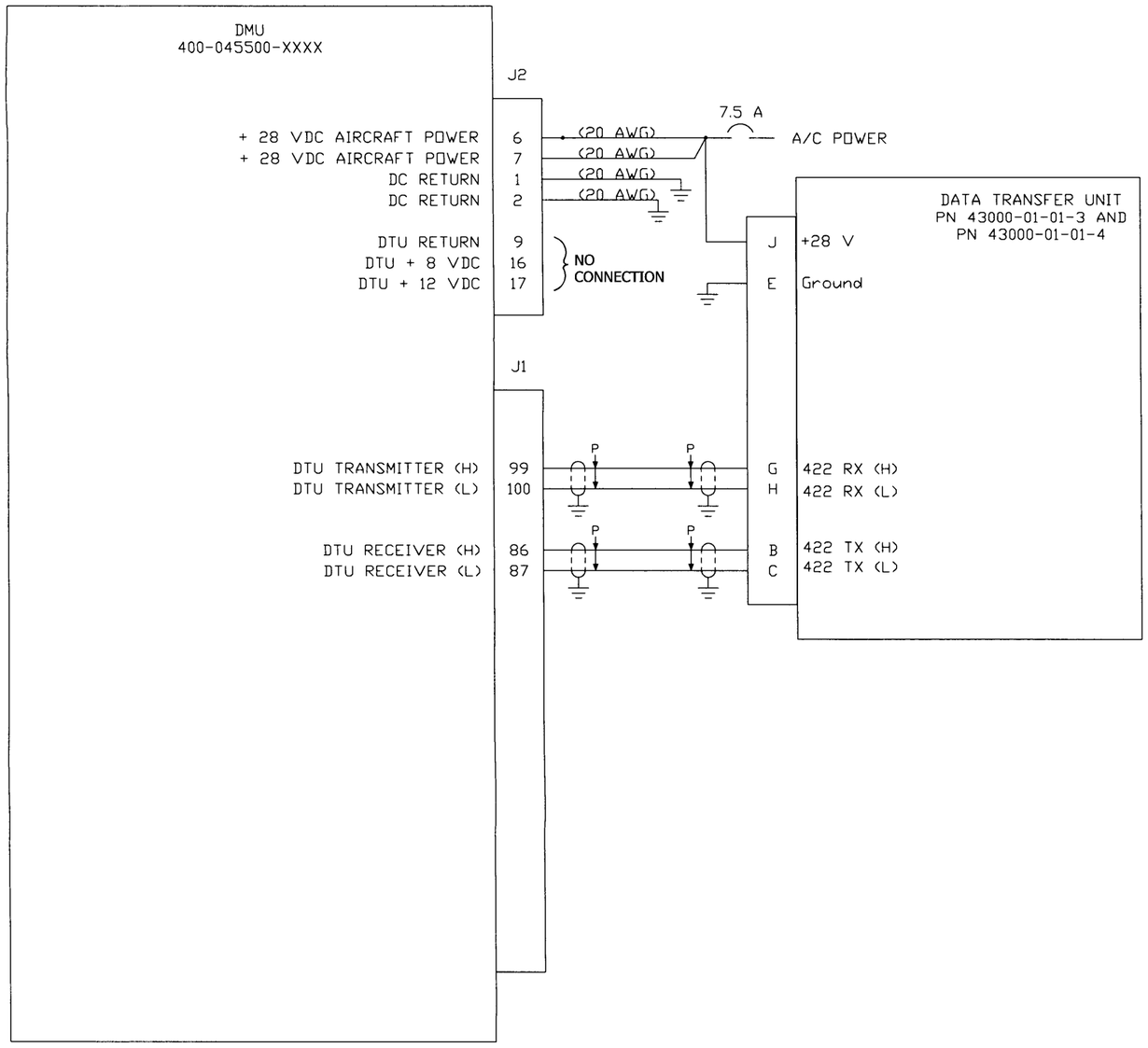


DMU TO TRIPLE PORT DTU
Dwg. No. 155-01712-4006 Rev 0
Figure 3-6

NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

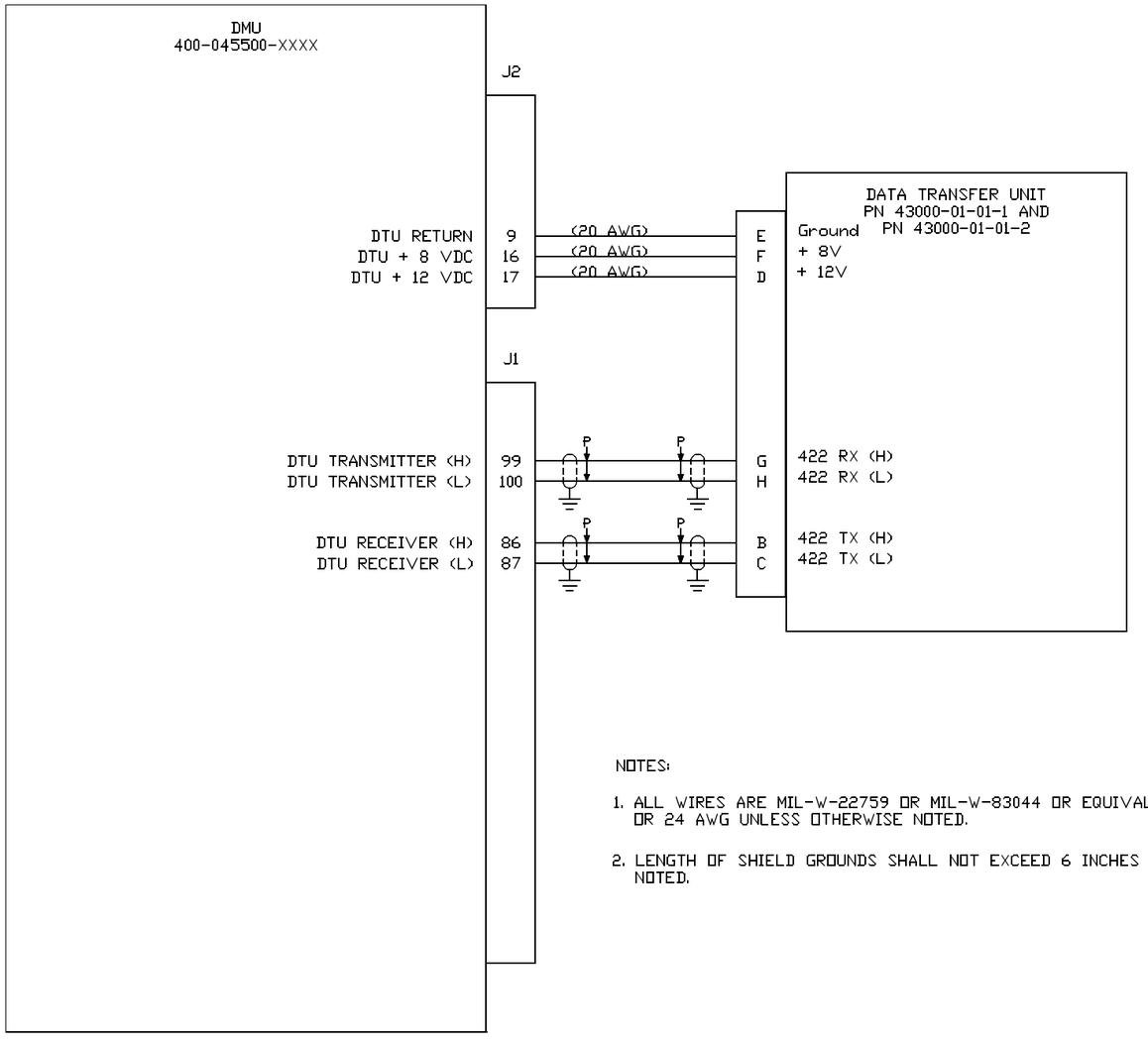
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.



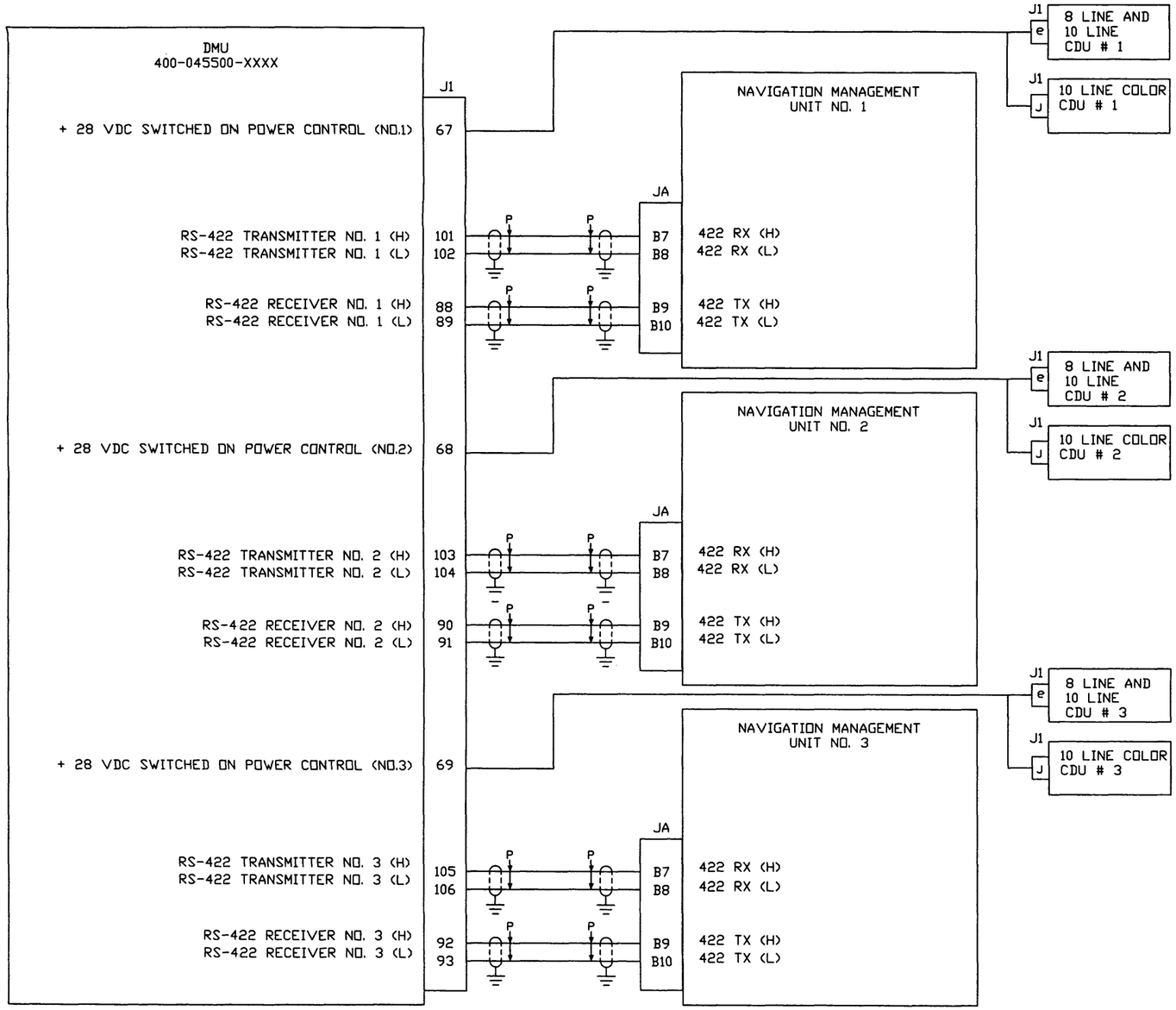
NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

DMU TO DTU PN 43000-01-01-3 and PN 43000-01-01-4
Dwg. No. 155-01712-4007 Rev A
Figure 3-7



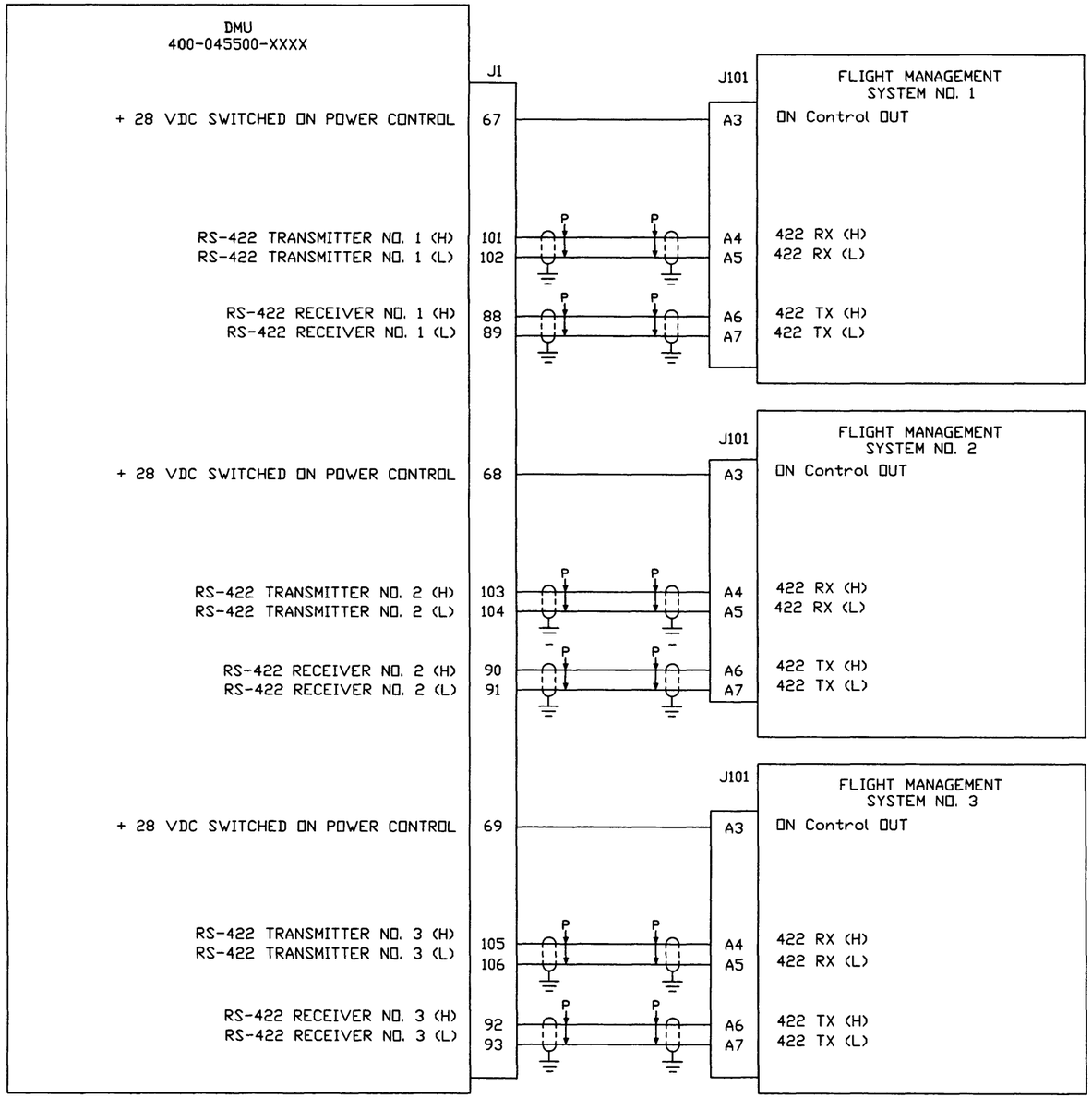
DMU TO DTU PN 43000-01-01-1 and PN 43000-01-01-2
Dwg. No. 155-01712-4008 Rev 0
Figure 3-8



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

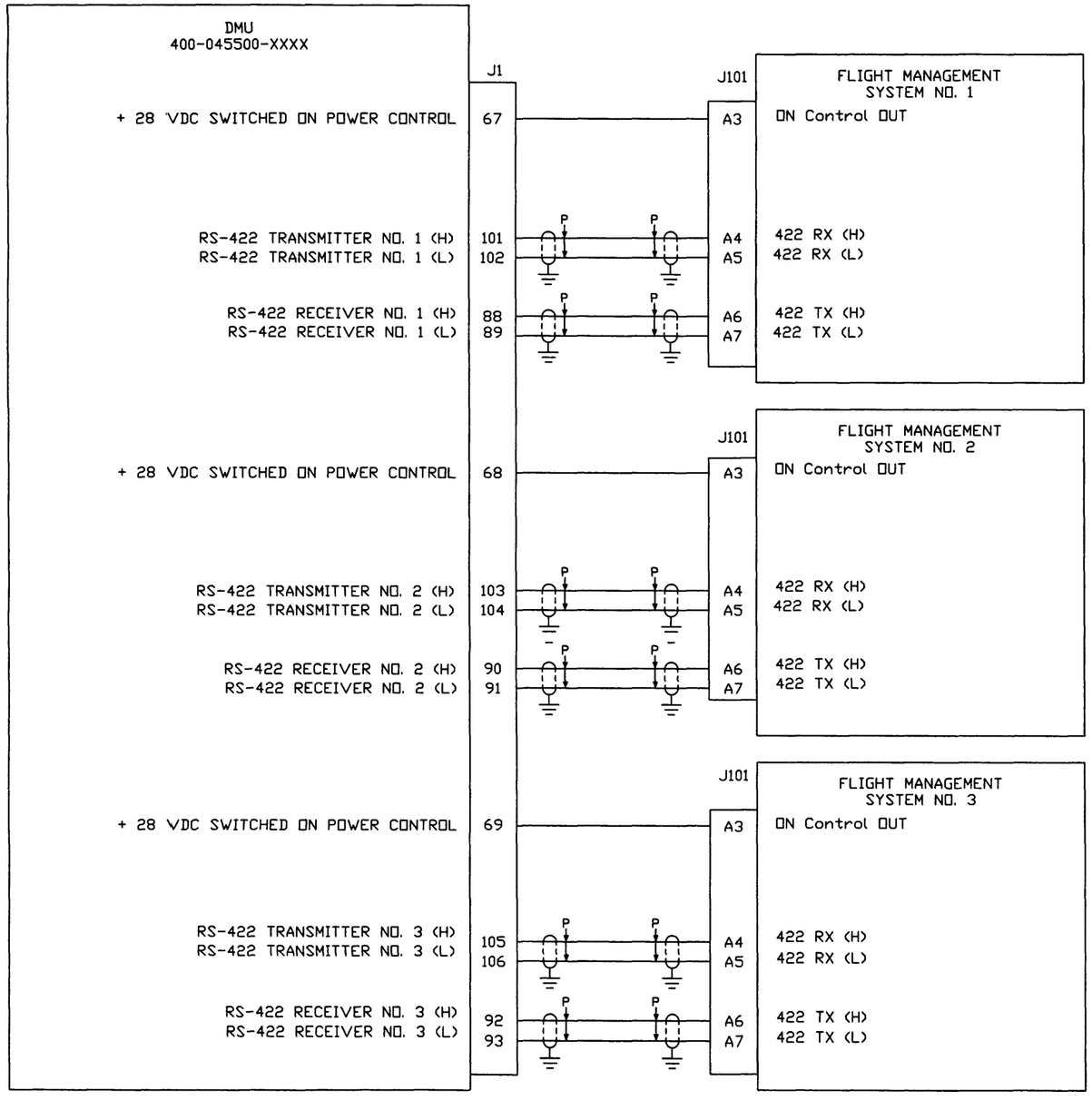
DMU TO NMU GNS-X
Dwg. No. 155-01712-4009 Rev C
Figure 3-9 (Sheet 1 of 7)



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

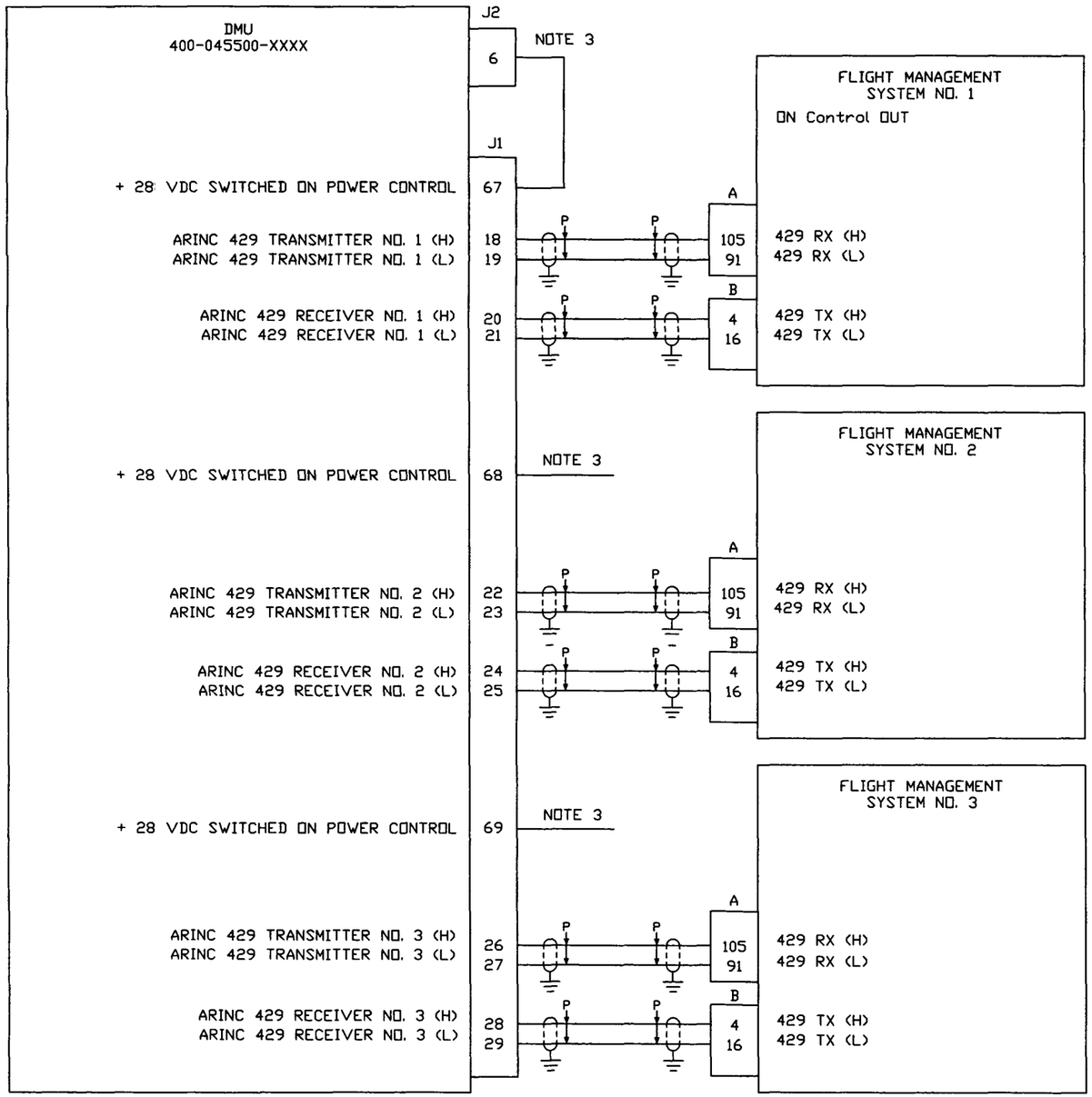
DMU TO GNS-XLS
Dwg. No. 155-01712-4009 Rev C
Figure 3-9 (Sheet 2 of 7)



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

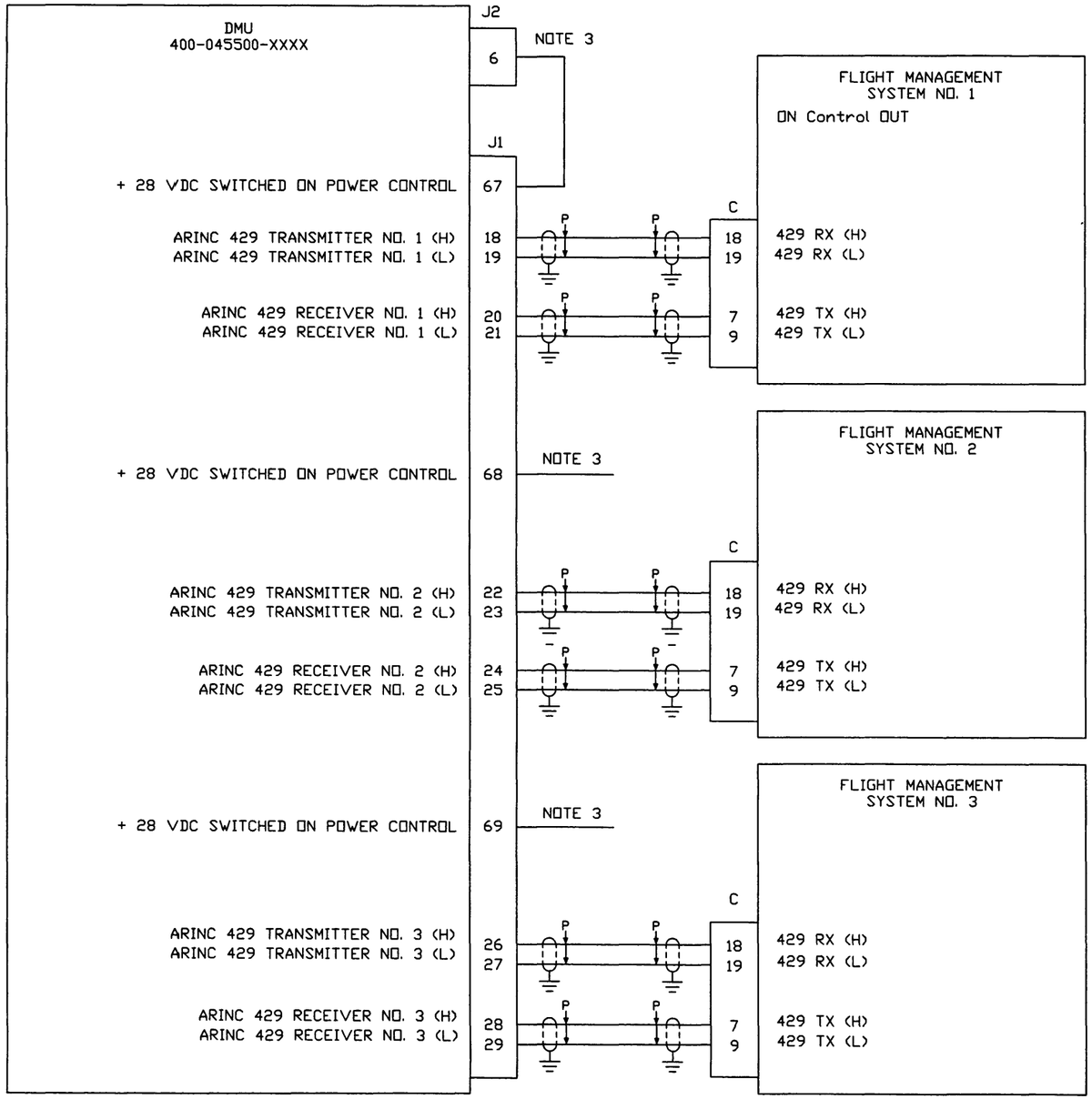
DMU TO GNS XL
Dwg. No. 155-01712-4009 Rev C
Figure 3-9 (Sheet 3 of 7)



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. PIN J1-67, J1-68 OR J1-69 MUST BE JUMPERED TO + 28 VDC A/C POWER PIN TO ALLOW DMU TO TURN ON WITHOUT AN INSTALLED GLOBAL SYSTEM.
4. SEE APPLICABLE MANUFACTURER INSTALLATION MANUAL FOR DETAILED PIN ASSIGNMENTS.

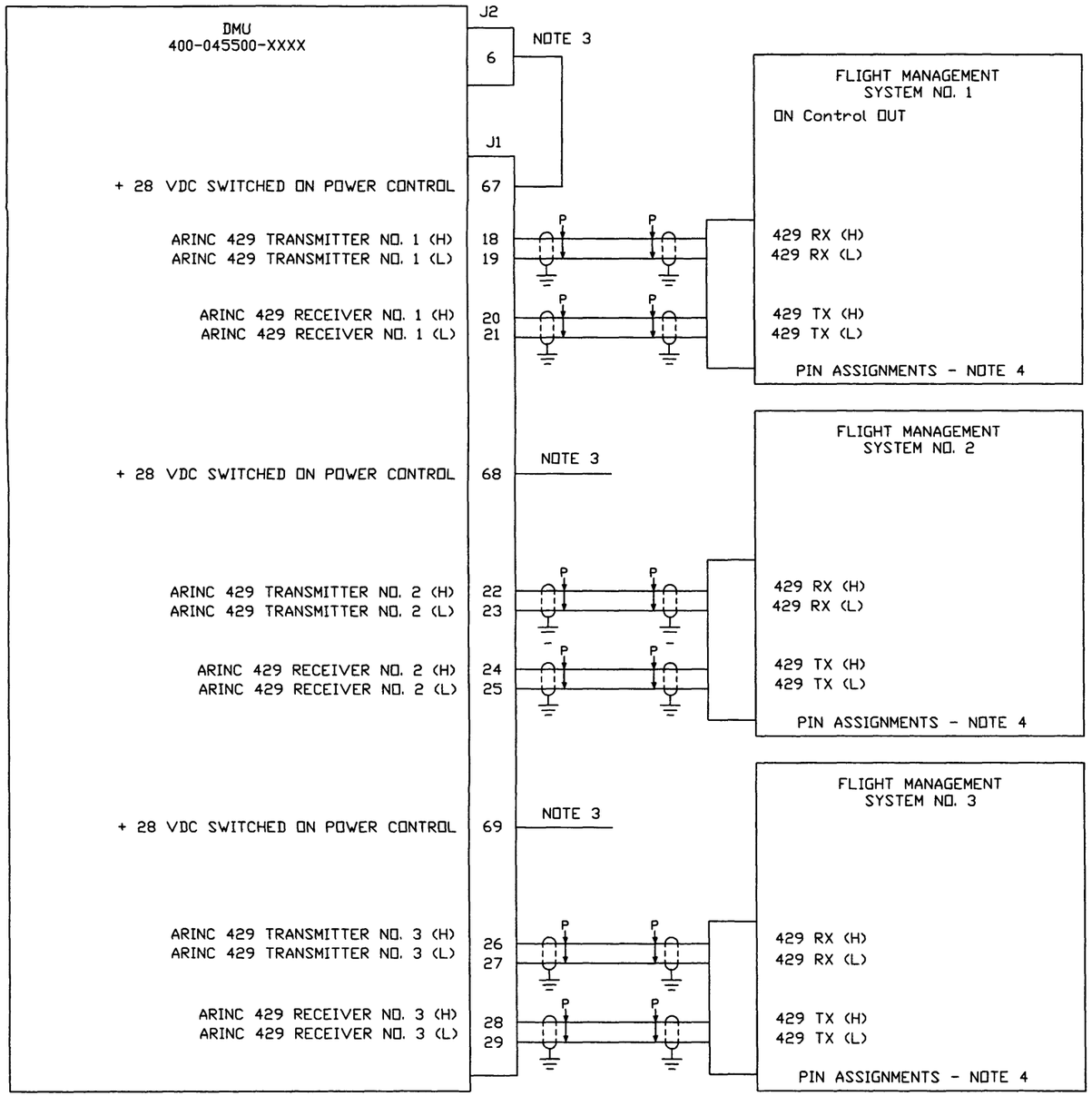
DMU TO Honeywell FMS NZ-2000
Dwg. No. 155-01712-4009 Rev C
Figure 3-9 (Sheet 4 of 7)



DMU TO Honeywell FMS IAC (F-900 EX)
Dwg. No. 155-01712-4009 Rev C
Figure 3-9 (Sheet 5 of 7)

NOTES:

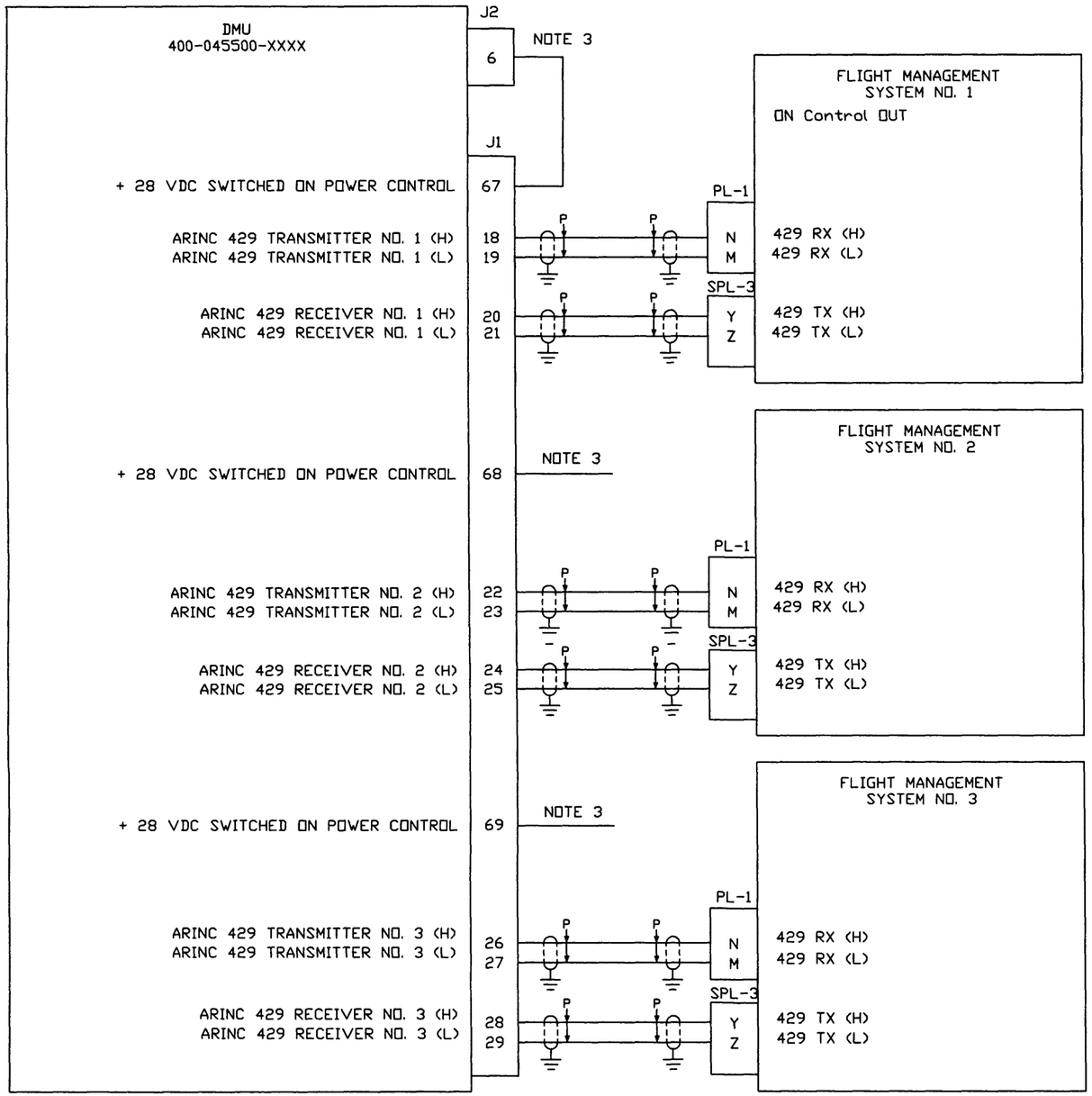
1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. PIN J1-67, J1-68 OR J1-69 MUST BE JUMPERED TO + 28 VDC A/C POWER PIN TO ALLOW DMU TO TURN ON WITHOUT AN INSTALLED GLOBAL SYSTEM.
4. SEE APPLICABLE MANUFACTURER INSTALLATION MANUAL FOR DETAILED PIN ASSIGNMENTS.



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. PIN J1-67, J1-68 OR J1-69 MUST BE JUMPERED TO + 28 VDC A/C POWER PIN TO ALLOW DMU TO TURN ON WITHOUT AN INSTALLED GLOBAL SYSTEM.
4. SEE APPLICABLE MANUFACTURER INSTALLATION MANUAL FOR DETAILED PIN ASSIGNMENTS.

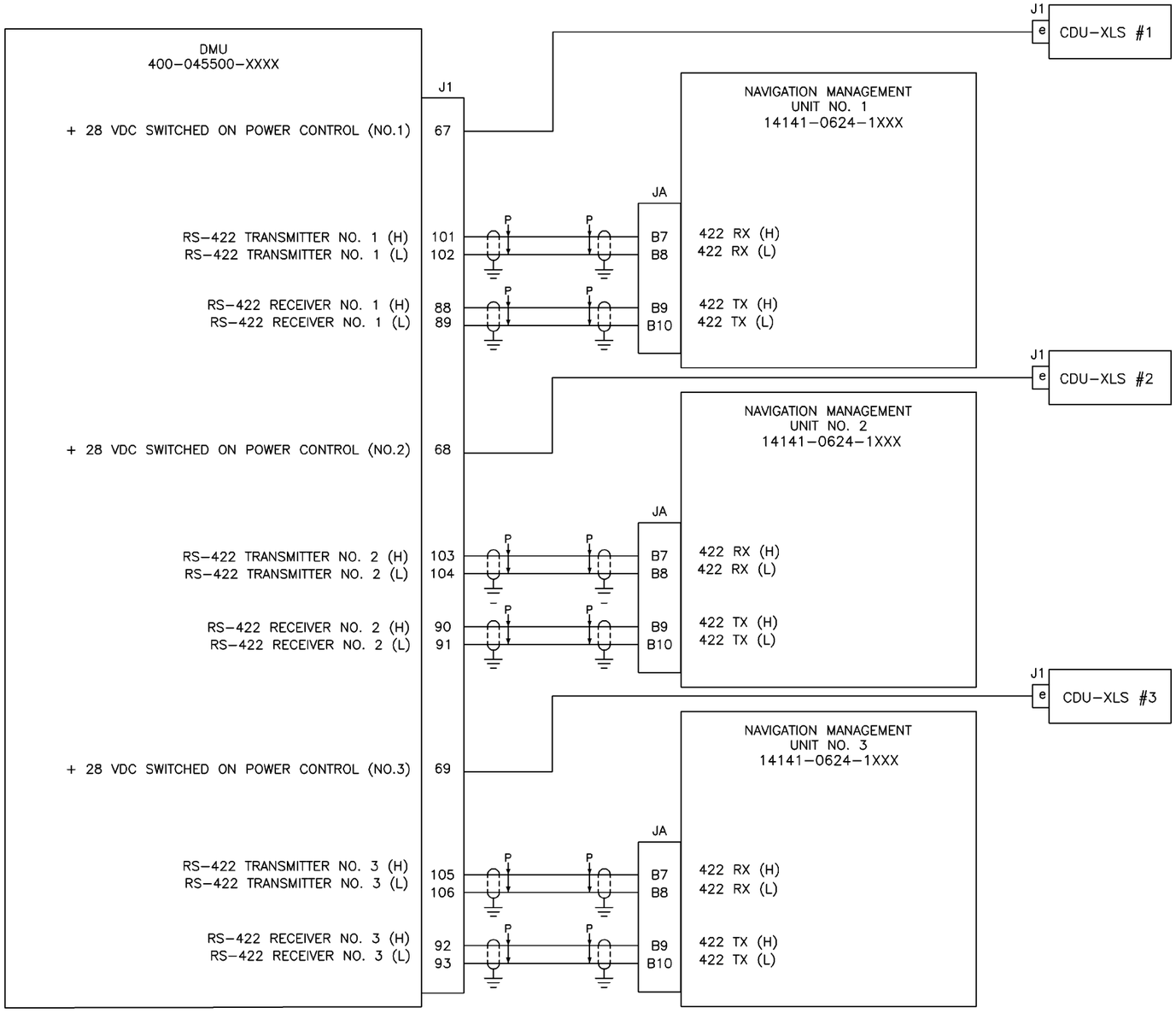
DMU TO COLLINS FMS
Dwg. No. 155-01712-4009 Rev C
Figure 3-9 (Sheet 6 of 7)



DMU TO UNIVERSAL FMC UNS-1C
Dwg. No. 155-01712-4009 Rev C
Figure 3-9 (Sheet 7 of 7)

NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. PIN J1-67, J1-68 OR J1-69 MUST BE JUMPERED TO + 28 VDC A/C POWER PIN TO ALLOW DMU TO TURN ON WITHOUT AN INSTALLED GLOBAL SYSTEM.
4. SEE APPLICABLE MANUFACTURER INSTALLATION MANUAL FOR DETAILED PIN ASSIGNMENTS.

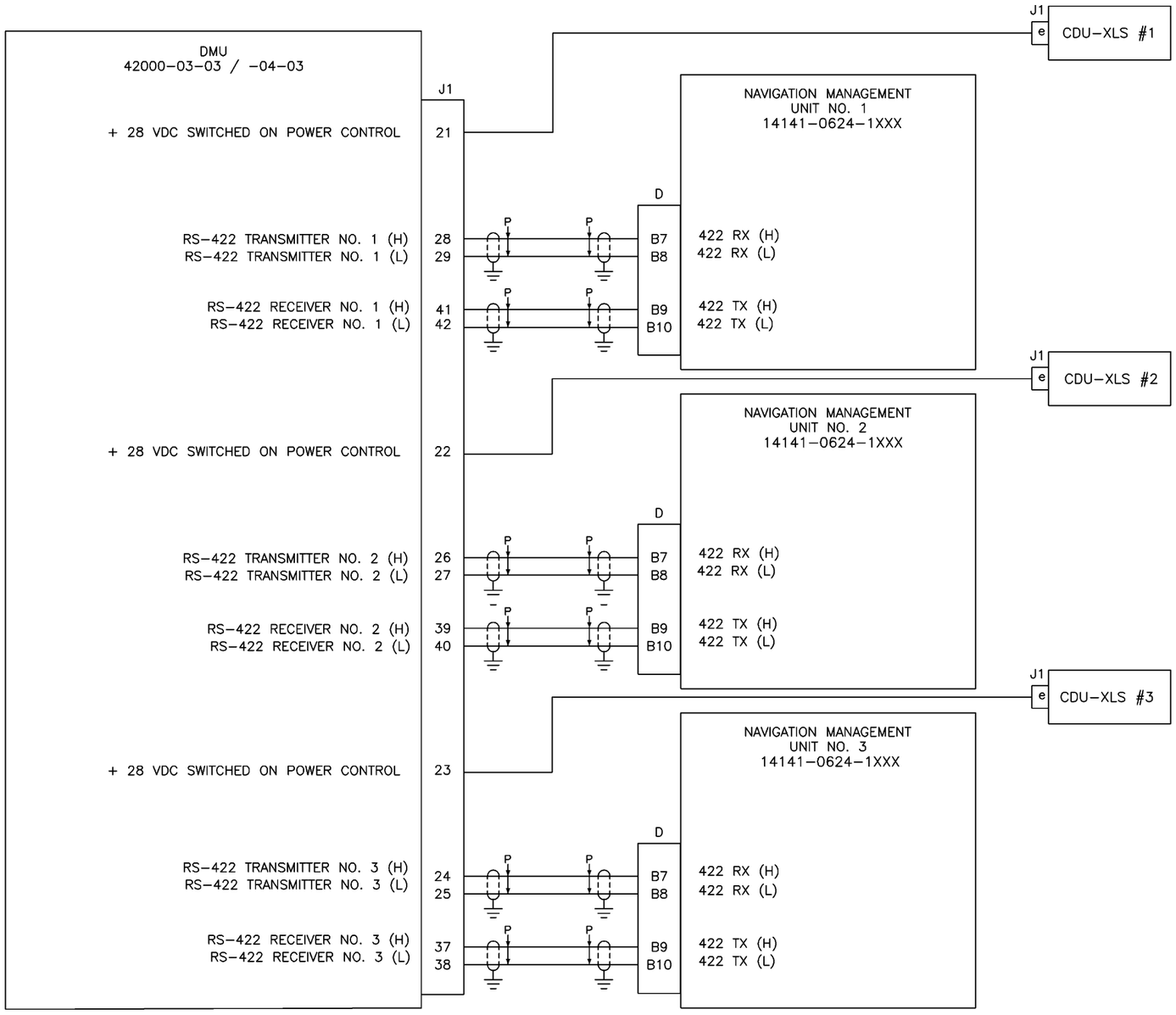


CDU-XLS TO AFIS INTERFACE
Dwg. No. 155-01657-0000 Rev -
Figure 3-9A (Sheet 1 of 2)

NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

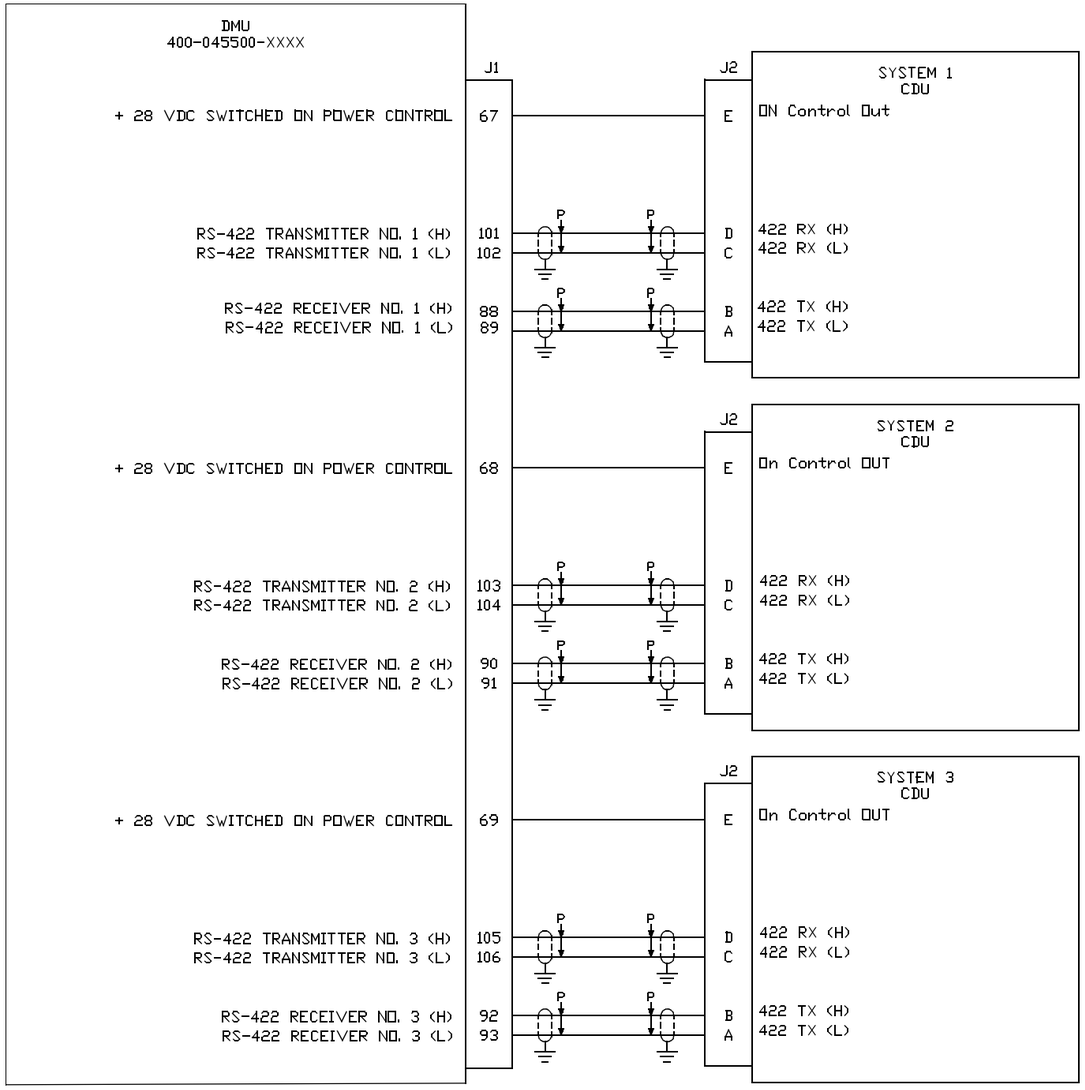
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

CDU-XLS TO AFIS INTERFACE
Dwg. No. 155-01657-0000 Rev -
Figure 3-9A (Sheet 2 of 2)

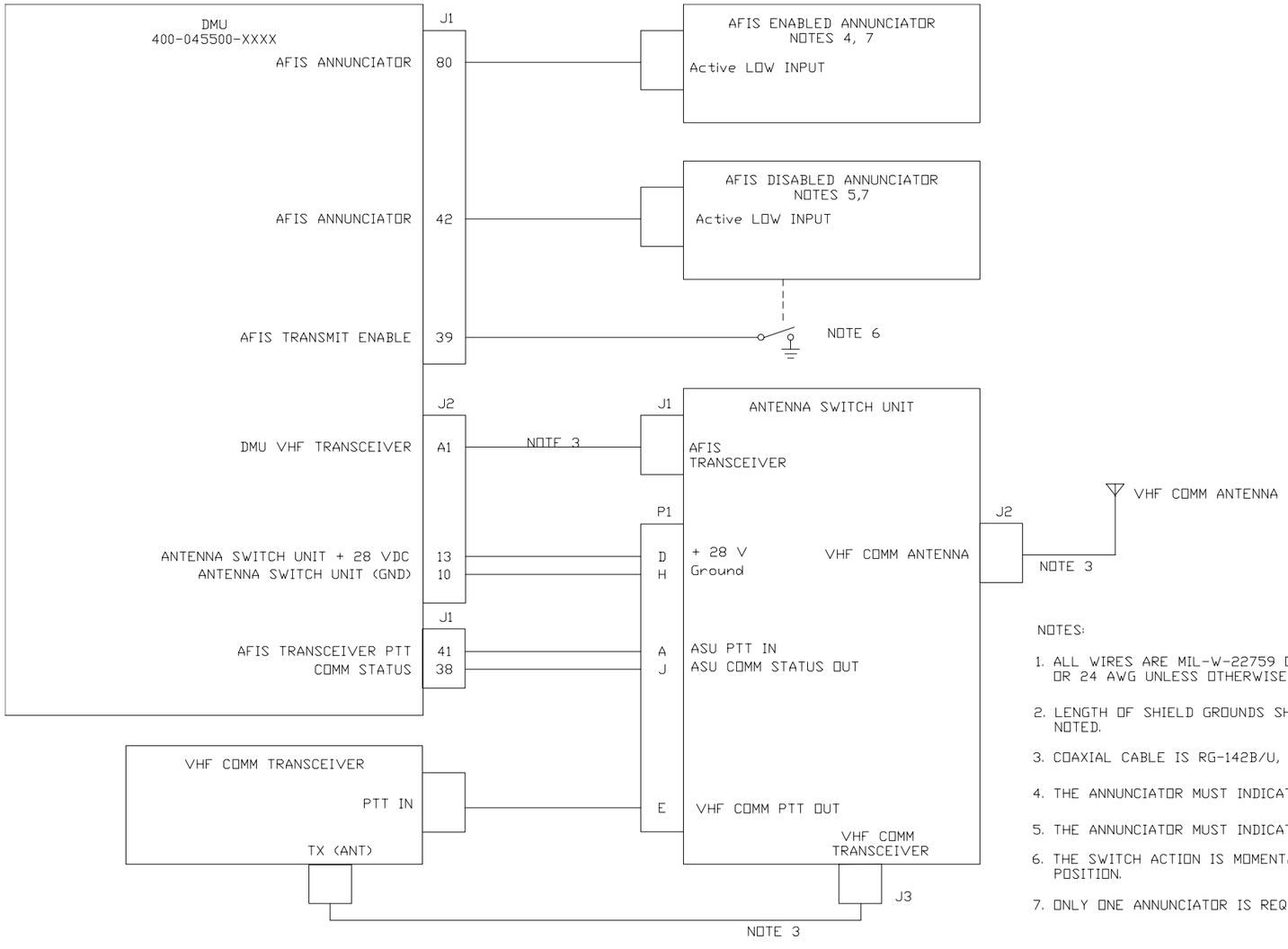


NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

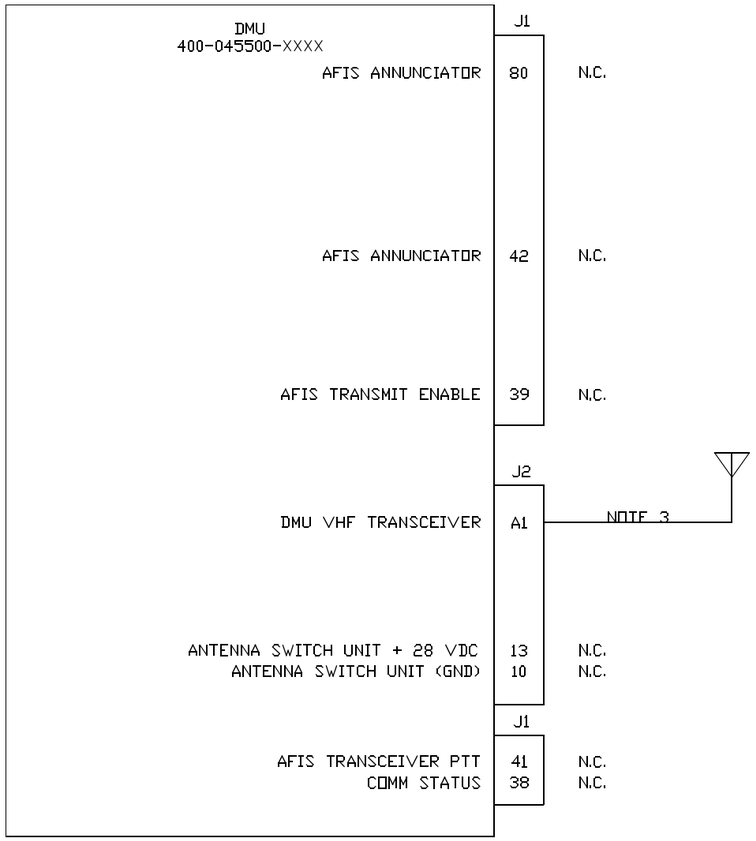
DMU TO FMC GNS-500A SERIES 4/5
Dwg. No. 155-01712-4010 Rev 0
Figure 3-10



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. COAXIAL CABLE IS RG-142B/U, OR EQUIVALENT.
4. THE ANNUNCIATOR MUST INDICATE THAT THE AFIS IS DISABLED.
5. THE ANNUNCIATOR MUST INDICATE THAT THE AFIS IS ENABLED.
6. THE SWITCH ACTION IS MOMENTARY AND IS SHOWN IN THE NORMAL (AFIS DISABLED) POSITION.
7. ONLY ONE ANNUNCIATOR IS REQUIRED.

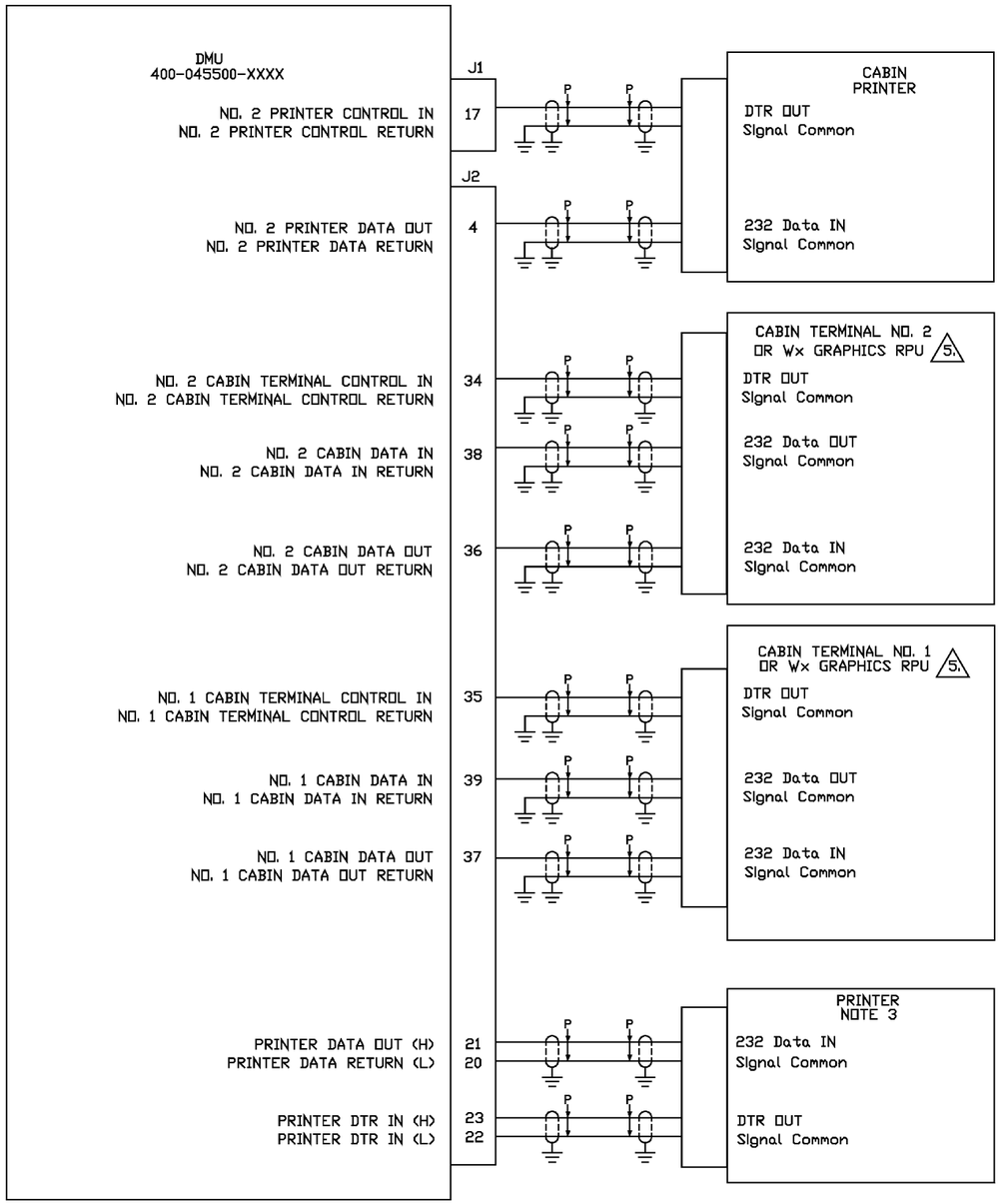
DMU TO SWITCHED AFIS ANTENNA
Dwg. No. 155-01712-4011 Rev A
Figure 3-11



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. COAXIAL CABLE IS RG-142B/U.

DMU TO DEDICATED AFIS ANTENNA
Dwg. No. 155-01712-4012 Rev 0
Figure 3-12

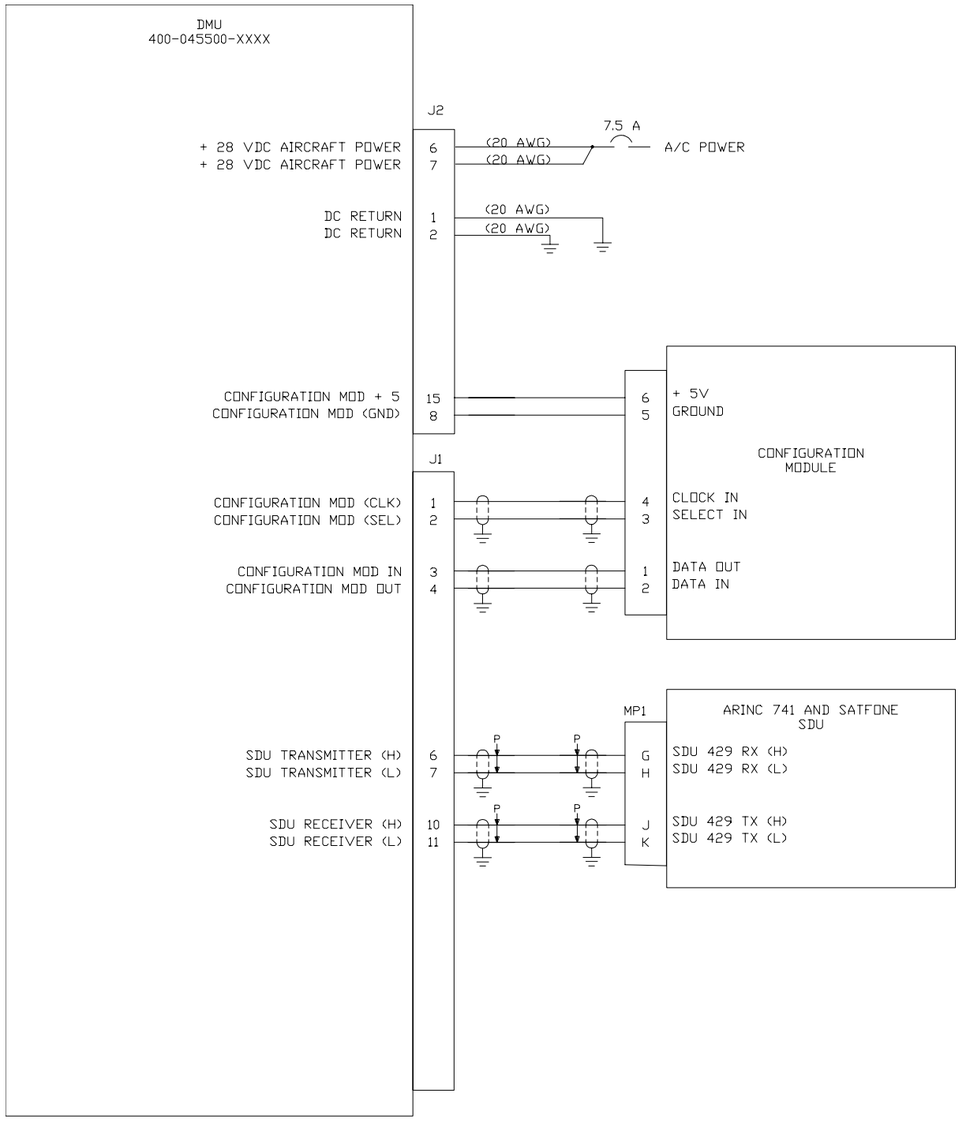


NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. SHIELD AND CONDUCTOR GROUNDS TO BE WITHIN 12 INCHES OF DMU.
3. THIS PRINTER INTERFACE INFORMATION IS ONLY APPLICABLE TO DMU PN 400-045500-XXXX MOD 2 AND SUBSEQUENT.
4. CONNECTOR TYPES FOR PRINTER AND CABIN COMPUTER/TERMINAL MUST MATCH THE DEVICE.

5. ONLY ONE CABIN TERMINAL CAN BE CONNECTED AT A TIME TO AN ARNAV RPU INSTALLATION.

DMU TO PRINTERS AND TERMINALS
Dwg. No. 155-01712-4013 Rev A
Figure 3-13

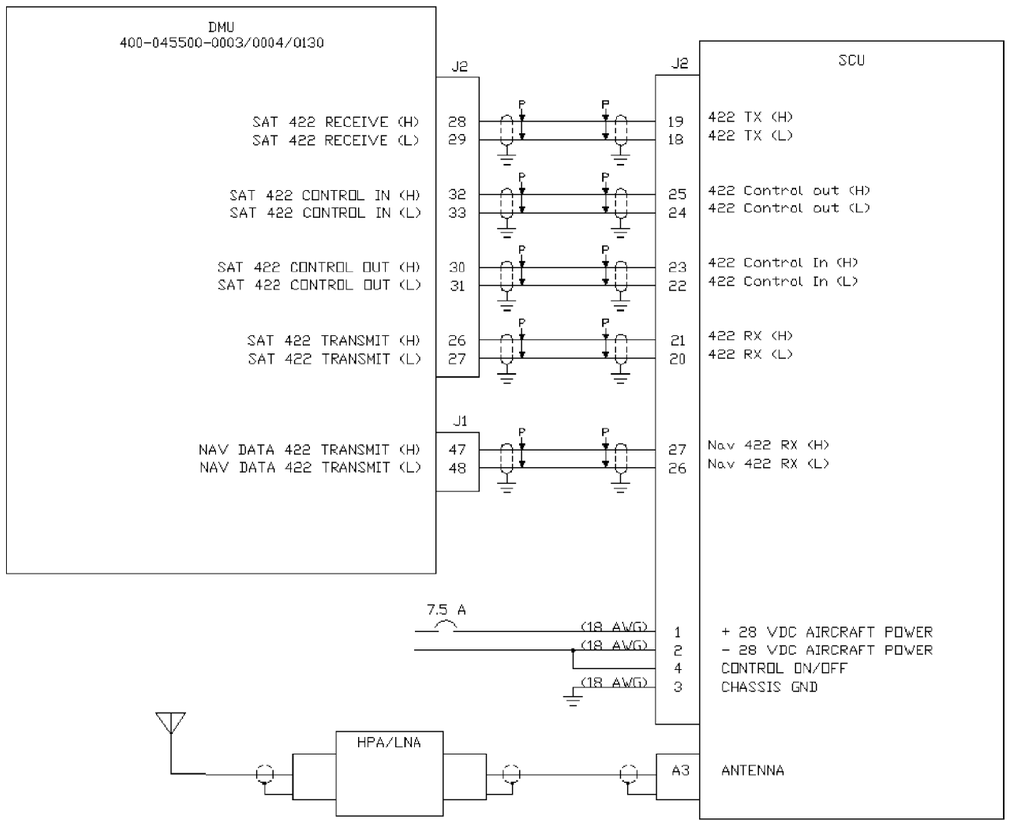


NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

DMU TO CONFIGURATION MODULE AND SATFONE SYSTEM
Dwg. No. 155-01712-4014 Rev B
Figure 3-14



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

3. TABLE 1 PROVIDES THE MANUFACTURERS SPECIFICATIONS FOR THE COAXIAL CABLE BETWEEN THE SDCS ANTENNA AND THE HPA/LNA.

4. TABLE 2 PROVIDES THE MANUFACTURERS SPECIFICATIONS FOR THE COAXIAL CABLE BETWEEN THE SCU AND THE HPA/LNA. FOR THIS CABLE, TOTAL DC RESISTANCE IS NOT TO EXCEED 0.08 OHM, LESS THAN 16 DB INSERTION LOSS AT 1.6 GHZ.

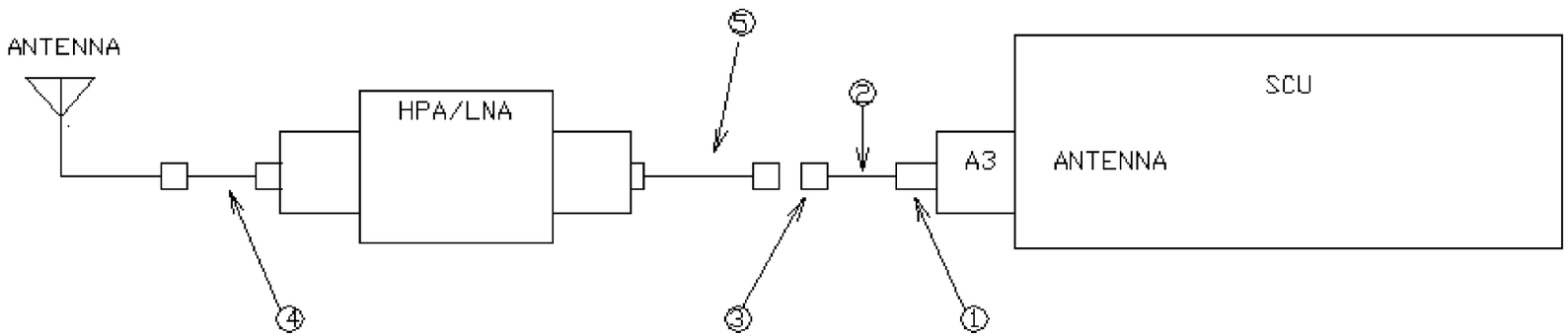
DMU TO SCU
Dwg. No. 155-01712-4015 Rev B
Figure 3-15 (Sheet 1 of 2)

TABLE 1
ANTENNA TO HPA/LNA

CABLE	OHMS/ 100 FT	ATTENUATION DB/100 FT	OVERALL DIAMETER	TNC CONNECTOR	MAX CABLE LENGTH
PIC S22089	8 AWG 0.063	@1.0 GHZ, 3.8 @1.5 GHZ, 4.8	0.435	190408 [1] 190409 [2]	10 FT
ECS 310801	0.0543	@1.0 GHZ, 3.8 @2.0 GHZ, 5.6	0.425	CTS 022 [1] CTR 022 [2]	10 FT
[1] STRAIGHT CONNECTOR [2] RIGHT ANGLE CONNECTOR					

TABLE 2
SCU TO HPA/LNA

CABLE	OHMS/ 100 FT	ATTENUATION DB/100 FT	OVERALL DIAMETER	"N" CONNECTOR	MAX CABLE LENGTH
PIC S33141	14 AWG 0.2525	@1.0 GHZ, 7.2 @1.5 GHZ, 8.6	0.270	190310 [1] 190311 [2]	30 FT
PIC S22089	8 AWG 0.063	@1.0 GHZ, 3.8 @1.5 GHZ, 4.8	0.435	190410 [1] 190411 [2]	100 FT
ECS 3C142B	0.75	@1.0 GHZ, 14.6 @3.0 GHZ, 27.2	0.195	CNS 722 [1] CNR 722 [2]	10 FT
ECS 311201	0.18	@1.0 GHZ, 5.89 @2.0 GHZ, 8.97	0.320	CNS 122 [1] CNR 122 [2]	50 FT
ECS 311601	0.377 (0.410)	@1.0 GHZ, 9.1 @3.0 GHZ, 14.0 @5.0 GHZ, 19.8	0.230	CNS 922 [1] CNR 922 [2]	20 FT
ECS 310810	0.0543	@1.0 GHZ, 3.8 @2.0 GHZ, 5.6	0.425	CNS 022 [1] CNR 022 [2]	100 FT
ECS 331201	0.17	@1.0 GHZ, 7.5 @3.0 GHZ, 13.3	0.390	CNS 822 [1] CNR 822 [2]	50 FT
ECS 311101	0.131	@1.0 GHZ, 4.86	0.332	CNS 122 [1] CNR 122 [2]	60 FT
ECS 311501	0.298	@1.0 GHZ, 7.0	0.244	CNS 922 [1] CNR 922 [2]	25 FT
ECS 711201	0.169	@1.0 GHZ, 5.8 @5.0 GHZ, 13.2	0.317	CNS 122 [1] CNR 122 [2]	50 FT
ECS 711601	0.410	@1.0 GHZ, 8.5 @5.0 GHZ, 19.8	0.225	CNS 122 [1] CNR 122 [2]	20 FT
ECS 712001	0.853	@1.0 GHZ, 11.5	0.195	CNS 722 [1] CNR 722 [2]	9 FT
[1] STRAIGHT CONNECTOR [2] RIGHT ANGLE CONNECTOR					

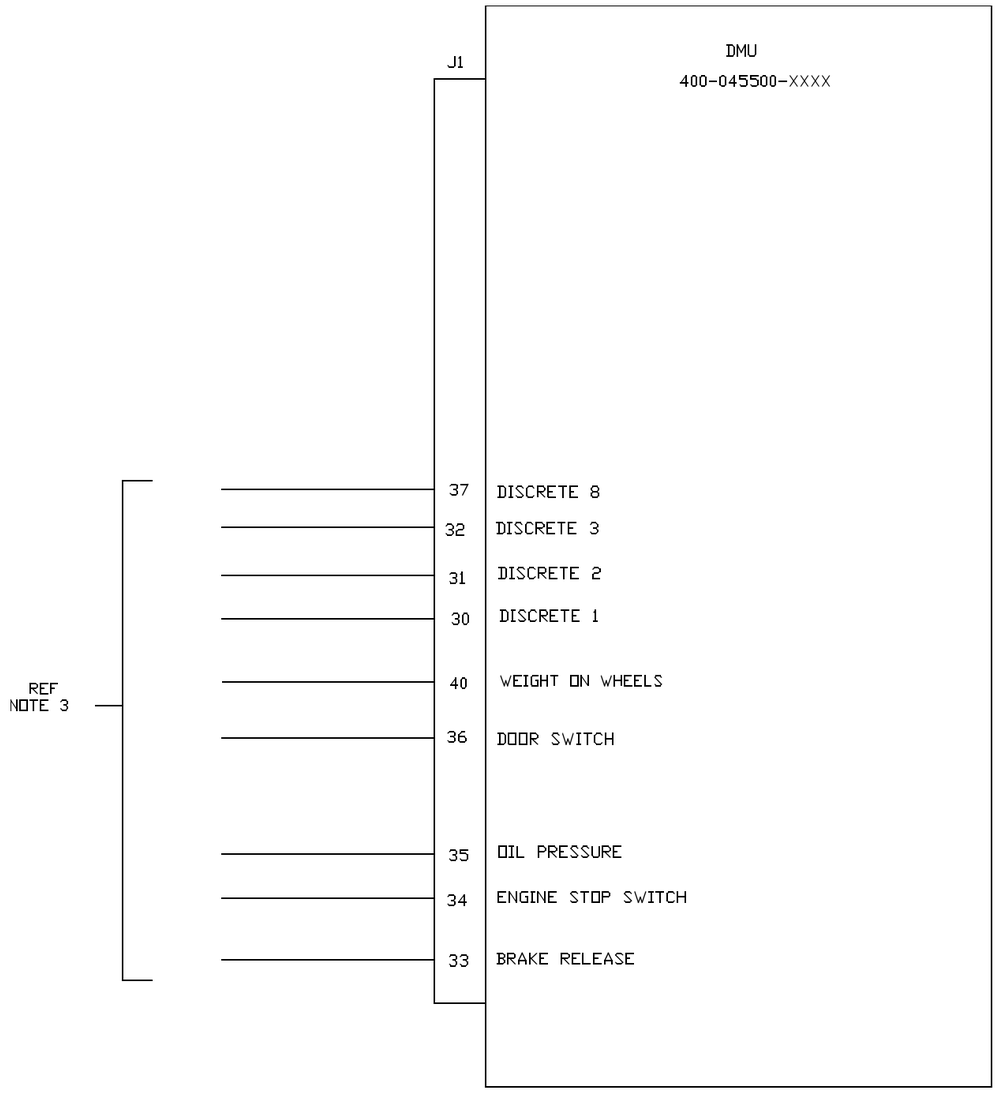


ITEM	DESCRIPTION	PART NUMBER
①	RF INSERT	ECS 225791-2
②	RG-142 COAXIAL CABLE	ECS 3C142B
③	"N" CONNECTOR	ECS BN3722
④	"T" CONNECTOR/CABLE	REF TABLE 1
⑤	"N" CONNECTOR/CABLE	REF TABLE 2

NOTES:

1. ITEMS ①, ② AND ③ AVAILABLE AS AN ASSEMBLY P/N 123-117429-01.

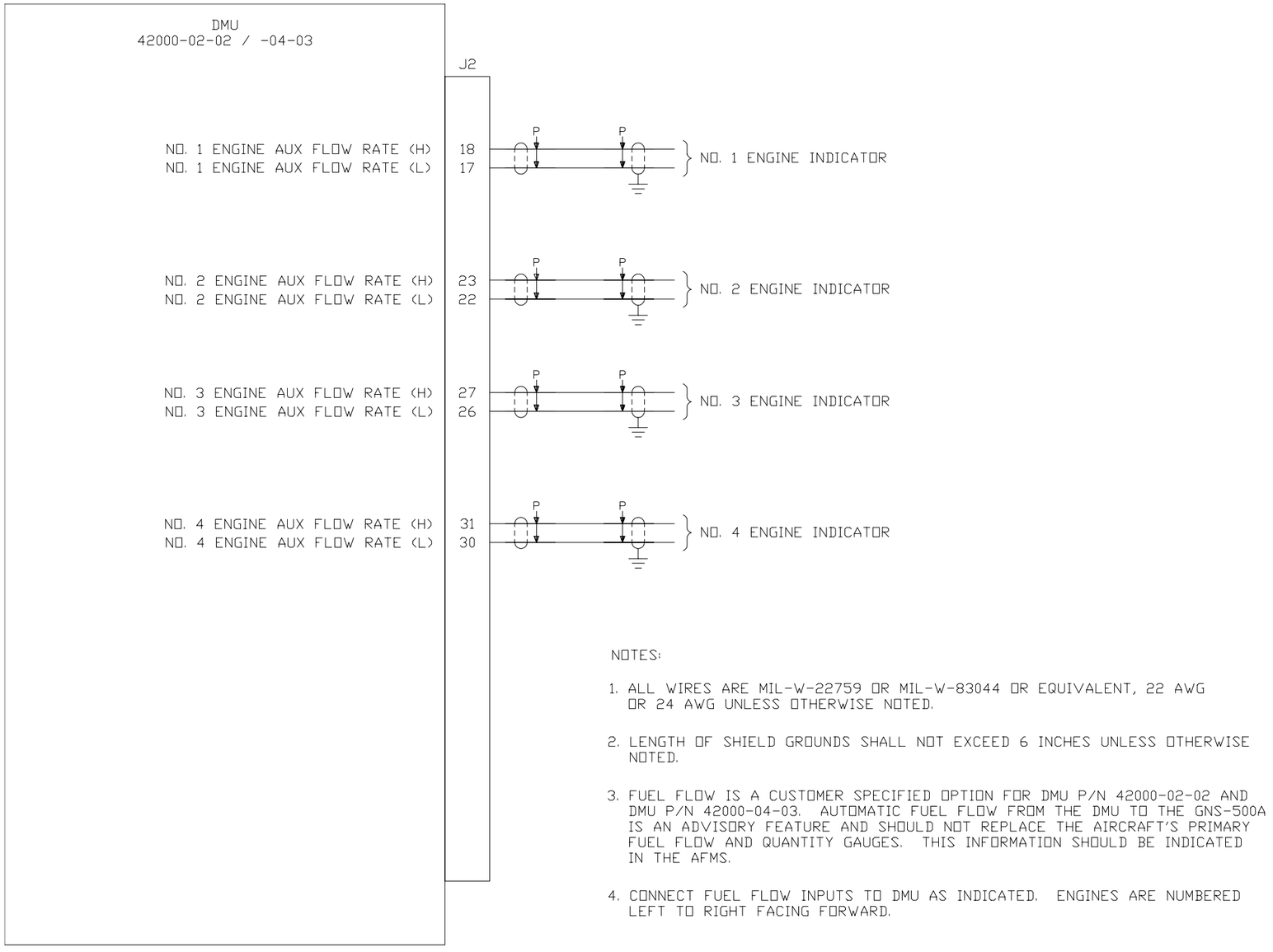
DMU TO SCU
Dwg. No. 155-01712-4015 Rev B
Figure 3-15 (Sheet 2 of 2)



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE
3. SEE APPLICABLE CUSTOMER INSTALLATION INFORMATION FOR SPECIFIC CONNECTIONS.

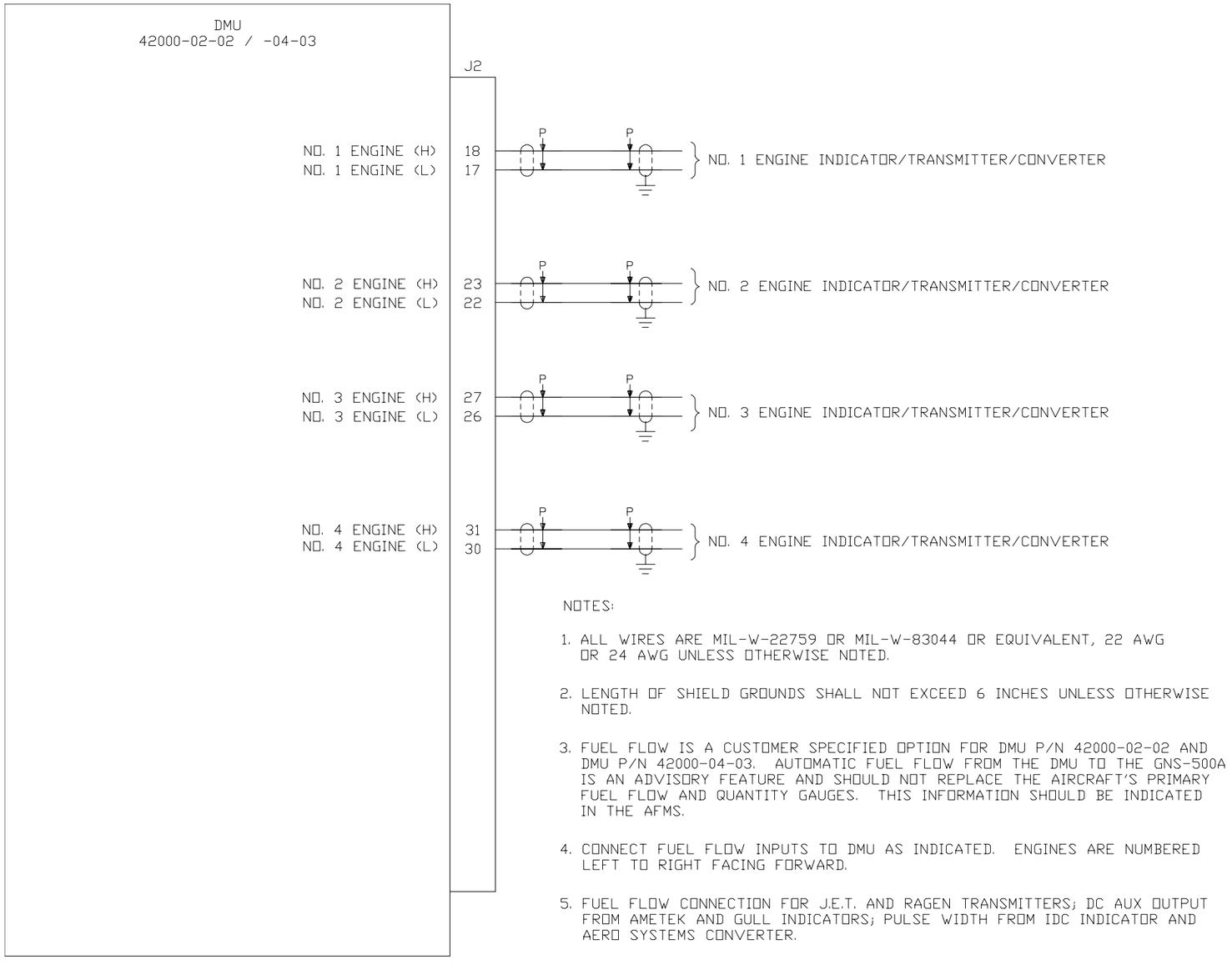
DISCRETE WIRING
Dwg. No. 155-01712-4016 Rev 0
Figure 3-16



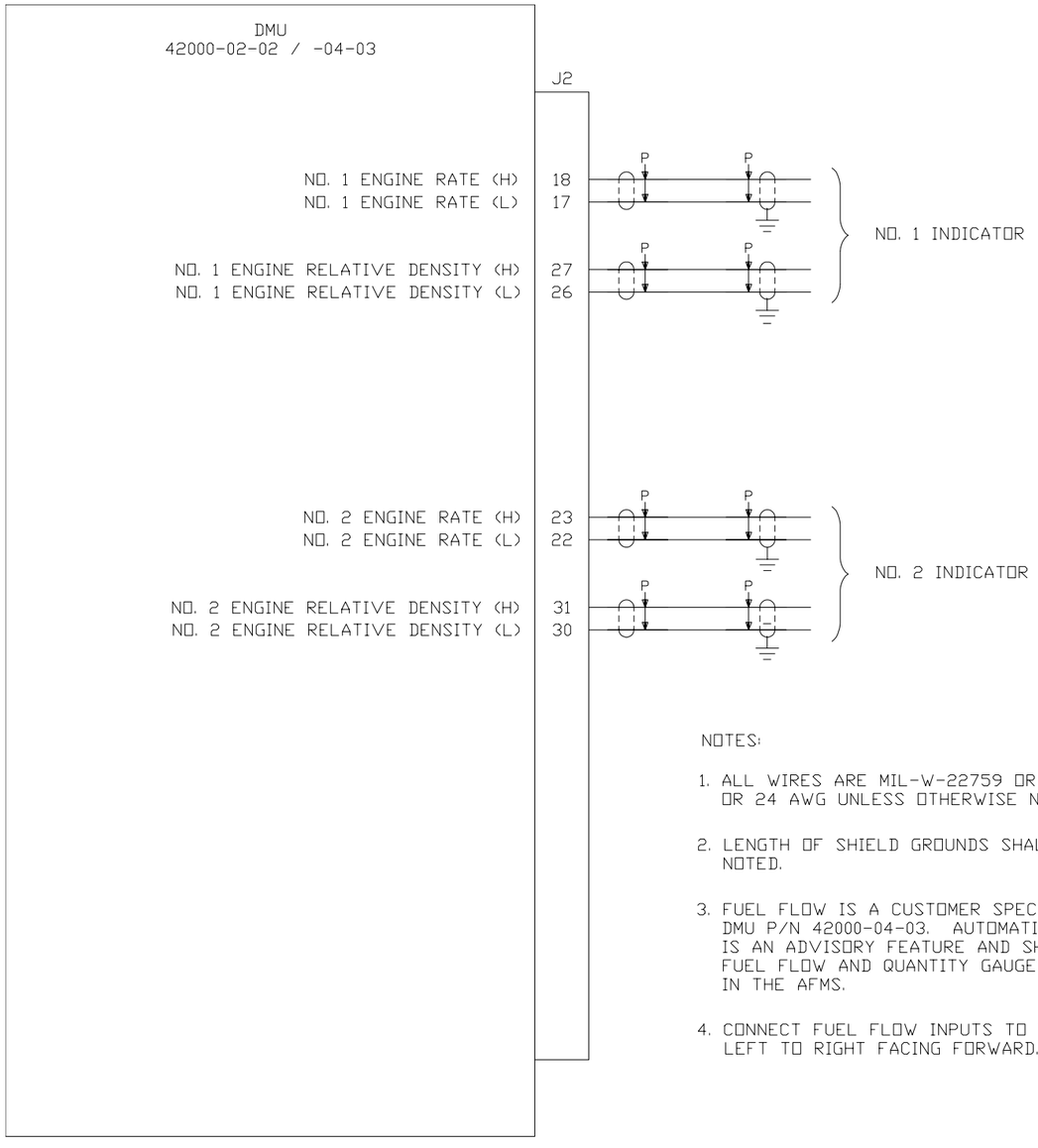
NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. FUEL FLOW IS A CUSTOMER SPECIFIED OPTION FOR DMU P/N 42000-02-02 AND DMU P/N 42000-04-03. AUTOMATIC FUEL FLOW FROM THE DMU TO THE GNS-500A IS AN ADVISORY FEATURE AND SHOULD NOT REPLACE THE AIRCRAFT'S PRIMARY FUEL FLOW AND QUANTITY GAUGES. THIS INFORMATION SHOULD BE INDICATED IN THE AFMS.
4. CONNECT FUEL FLOW INPUTS TO DMU AS INDICATED. ENGINES ARE NUMBERED LEFT TO RIGHT FACING FORWARD.

DMU FUEL FLOW WIRING USING ELDEC INDICATOR
Dwg. No. 155-01711-0001 Rev A
Figure 3-17



DMU FUEL FLOW WIRING For Various Indicators (see note 5)
Dwg. No. 155-01711-0002 Rev A
Figure 3-18



NOTES:

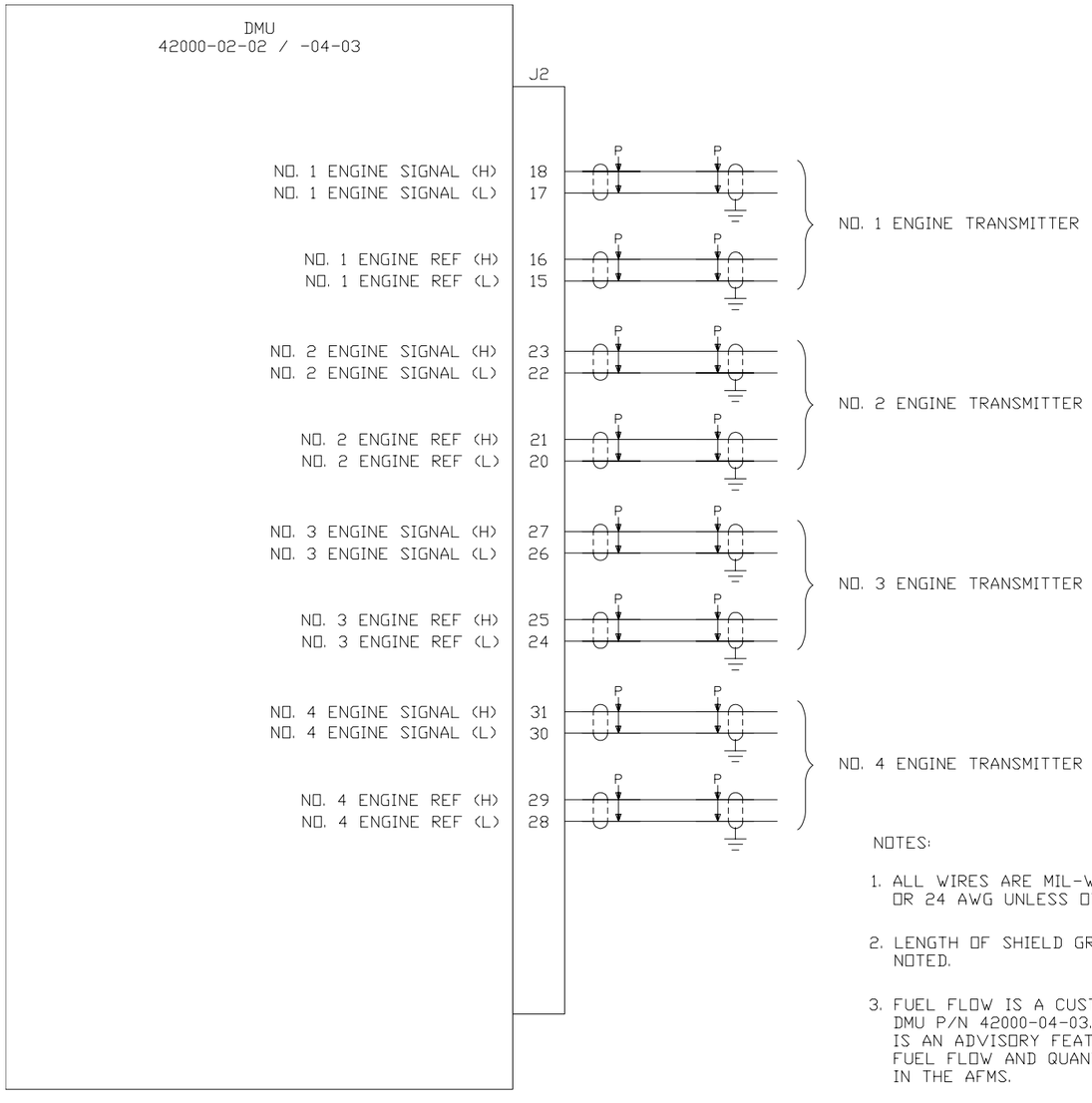
1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

3. FUEL FLOW IS A CUSTOMER SPECIFIED OPTION FOR DMU P/N 42000-02-02 AND DMU P/N 42000-04-03. AUTOMATIC FUEL FLOW FROM THE DMU TO THE GNS-500A IS AN ADVISORY FEATURE AND SHOULD NOT REPLACE THE AIRCRAFT'S PRIMARY FUEL FLOW AND QUANTITY GAUGES. THIS INFORMATION SHOULD BE INDICATED IN THE AFMS.

4. CONNECT FUEL FLOW INPUTS TO DMU AS INDICATED. ENGINES ARE NUMBERED LEFT TO RIGHT FACING FORWARD.

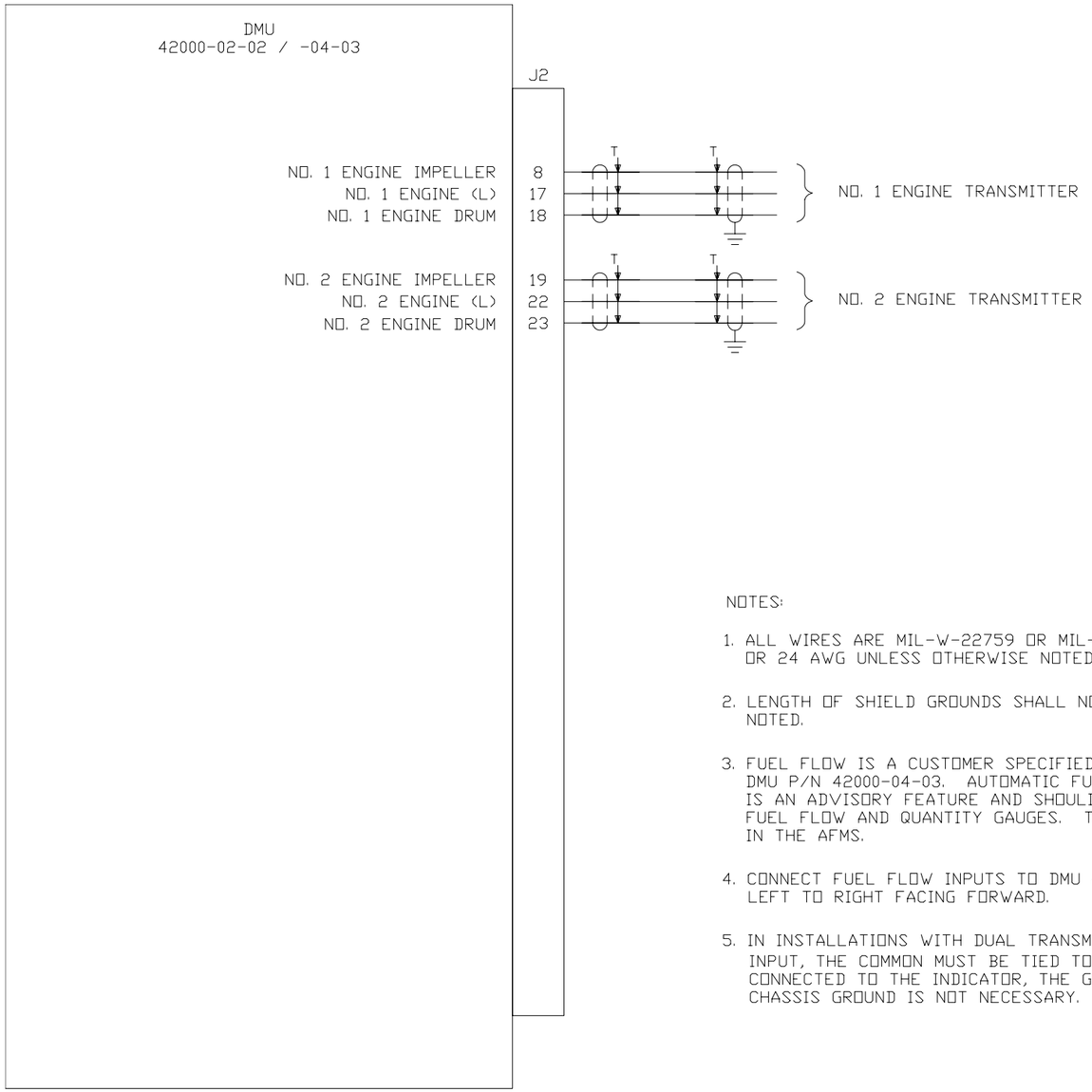
DMU FUEL FLOW INTERTECHNIQUE
Dwg. No. 155-01711-0003 Rev A
Figure 3-19



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. FUEL FLOW IS A CUSTOMER SPECIFIED OPTION FOR DMU P/N 42000-02-02 AND DMU P/N 42000-04-03. AUTOMATIC FUEL FLOW FROM THE DMU TO THE GNS-500A IS AN ADVISORY FEATURE AND SHOULD NOT REPLACE THE AIRCRAFT'S PRIMARY FUEL FLOW AND QUANTITY GAUGES. THIS INFORMATION SHOULD BE INDICATED IN THE AFMS.
4. CONNECT FUEL FLOW INPUTS TO DMU AS INDICATED. ENGINES ARE NUMBERED LEFT TO RIGHT FACING FORWARD.

DMU FUEL FLOW GE 5 VRMS AC
Dwg. No. 155-01711-0004 Rev A
Figure 3-20



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

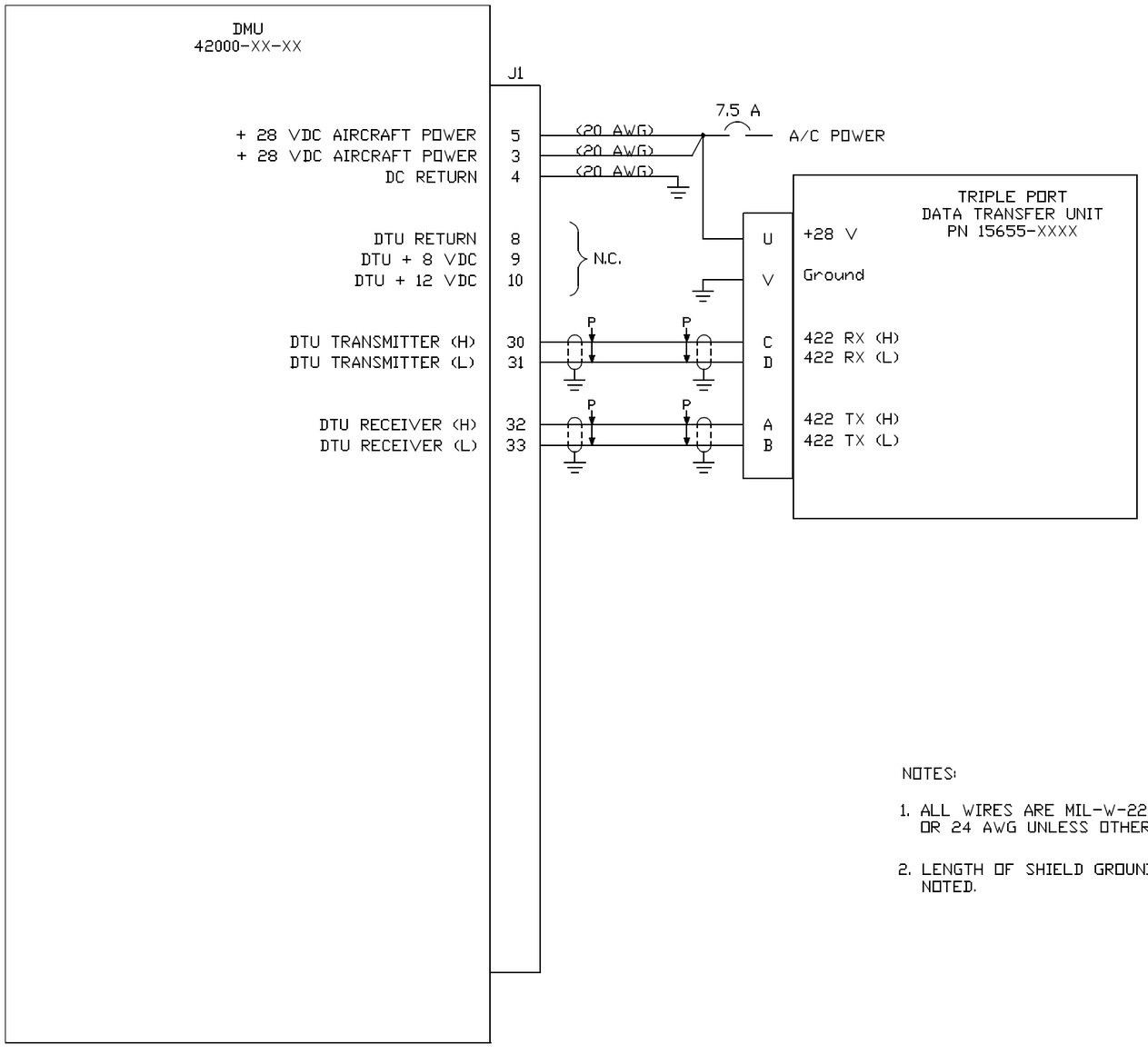
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

3. FUEL FLOW IS A CUSTOMER SPECIFIED OPTION FOR DMU P/N 42000-02-02 AND DMU P/N 42000-04-03. AUTOMATIC FUEL FLOW FROM THE DMU TO THE GNS-500A IS AN ADVISORY FEATURE AND SHOULD NOT REPLACE THE AIRCRAFT'S PRIMARY FUEL FLOW AND QUANTITY GAUGES. THIS INFORMATION SHOULD BE INDICATED IN THE AFMS.

4. CONNECT FUEL FLOW INPUTS TO DMU AS INDICATED. ENGINES ARE NUMBERED LEFT TO RIGHT FACING FORWARD.

5. IN INSTALLATIONS WITH DUAL TRANSMITTERS AND ONE IS USED FOR THE DMU INPUT, THE COMMON MUST BE TIED TO CHASSIS GROUND. IF THE COMMON IS CONNECTED TO THE INDICATOR, THE GROUND IS INTERNALLY PROVIDED AND THE CHASSIS GROUND IS NOT NECESSARY.

DMU FUEL FLOW ELDEC TRANSMITTER AS SOURCE
Dwg. No. 155-01711-0005 Rev A
Figure 3-21

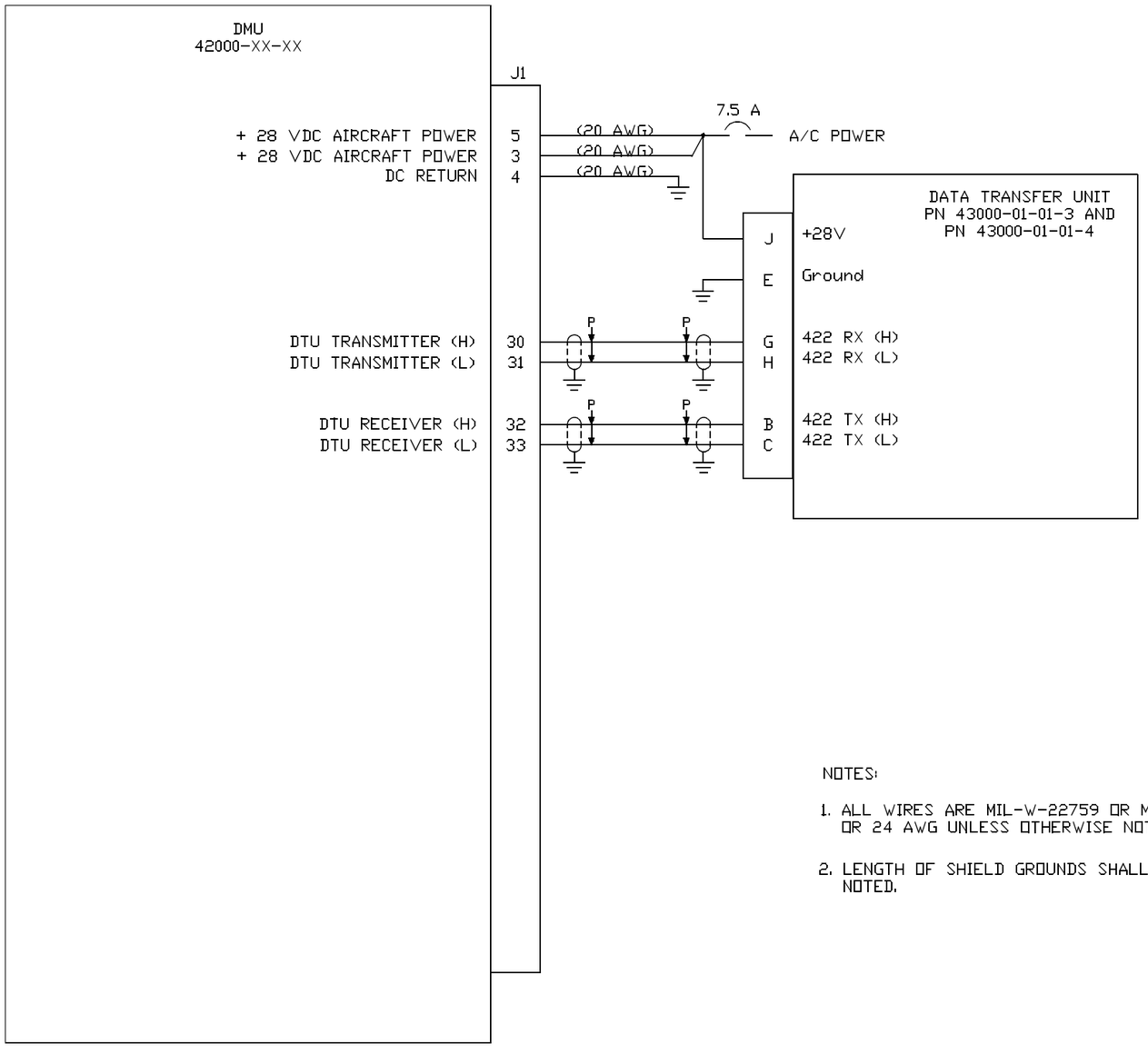


NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

DMU TO TRIPLE PORT DTU PN 15655-XXXX
Dwg. No. 155-01711-0006 Rev 0
Figure 3-22

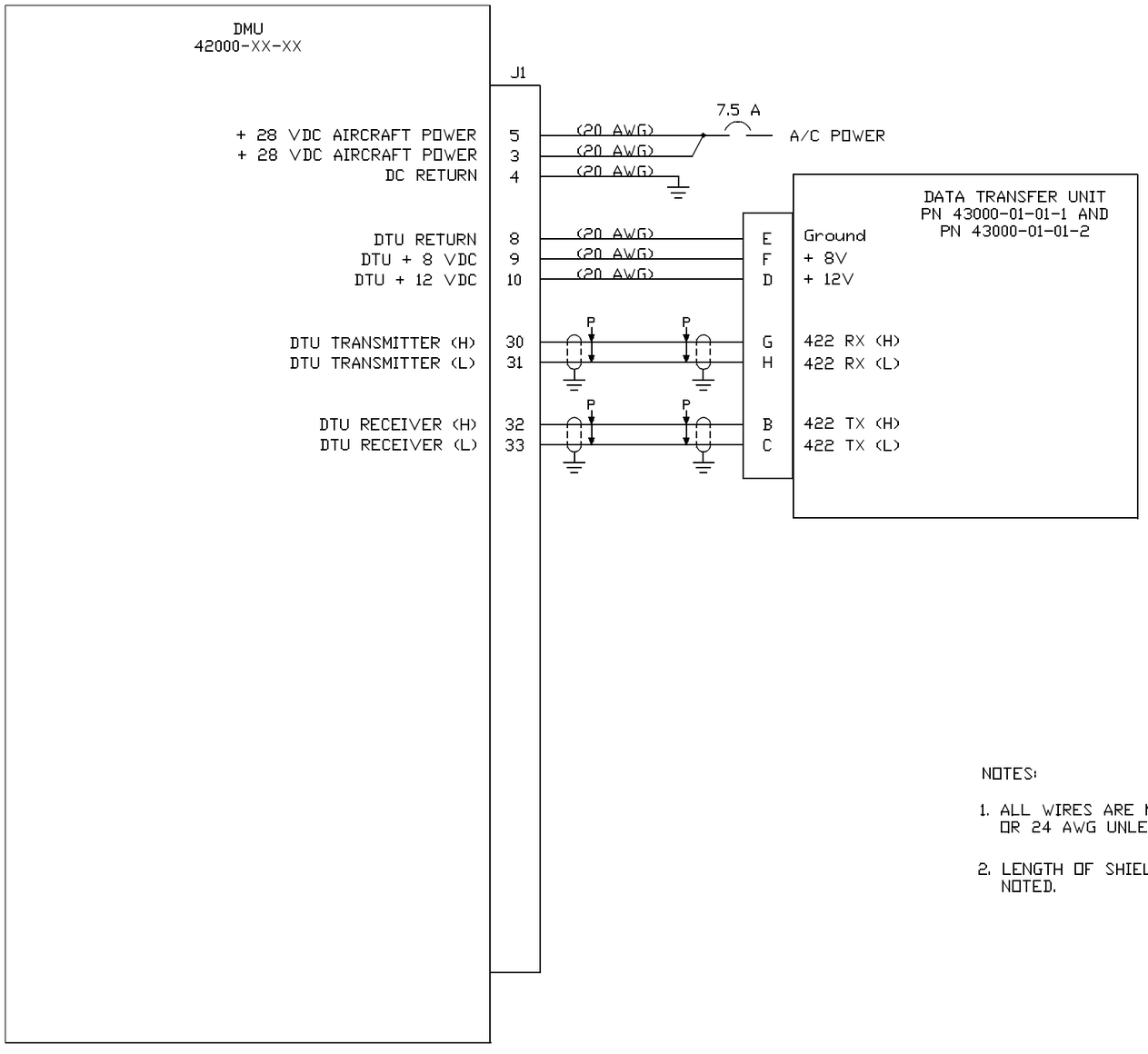


NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

Dwg. No. 155-01711-0007 Rev 0
DMU TO DTU PN 43000-01-01-3 AND PN 43000-01-01-4
Figure 3-23

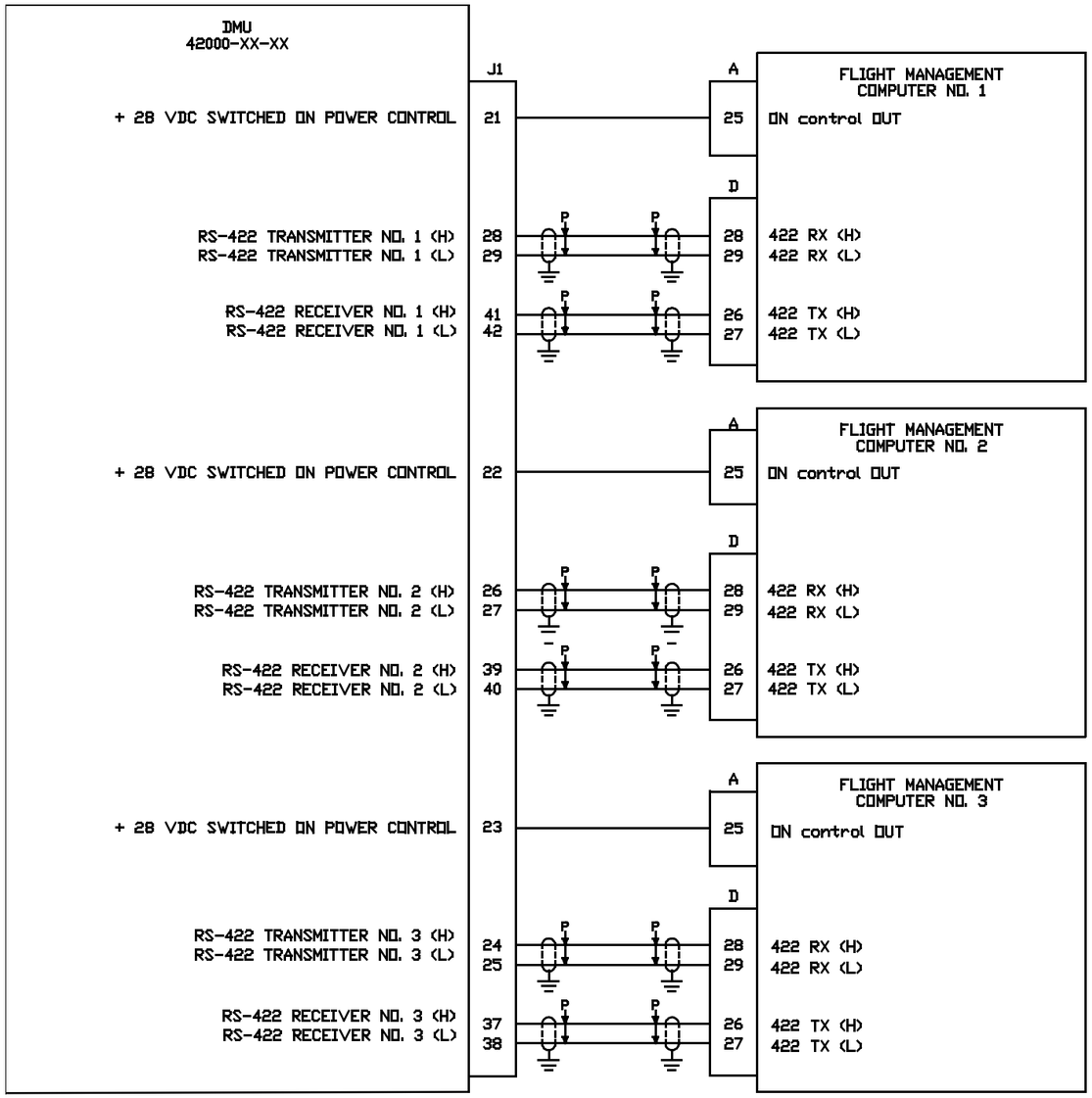


NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

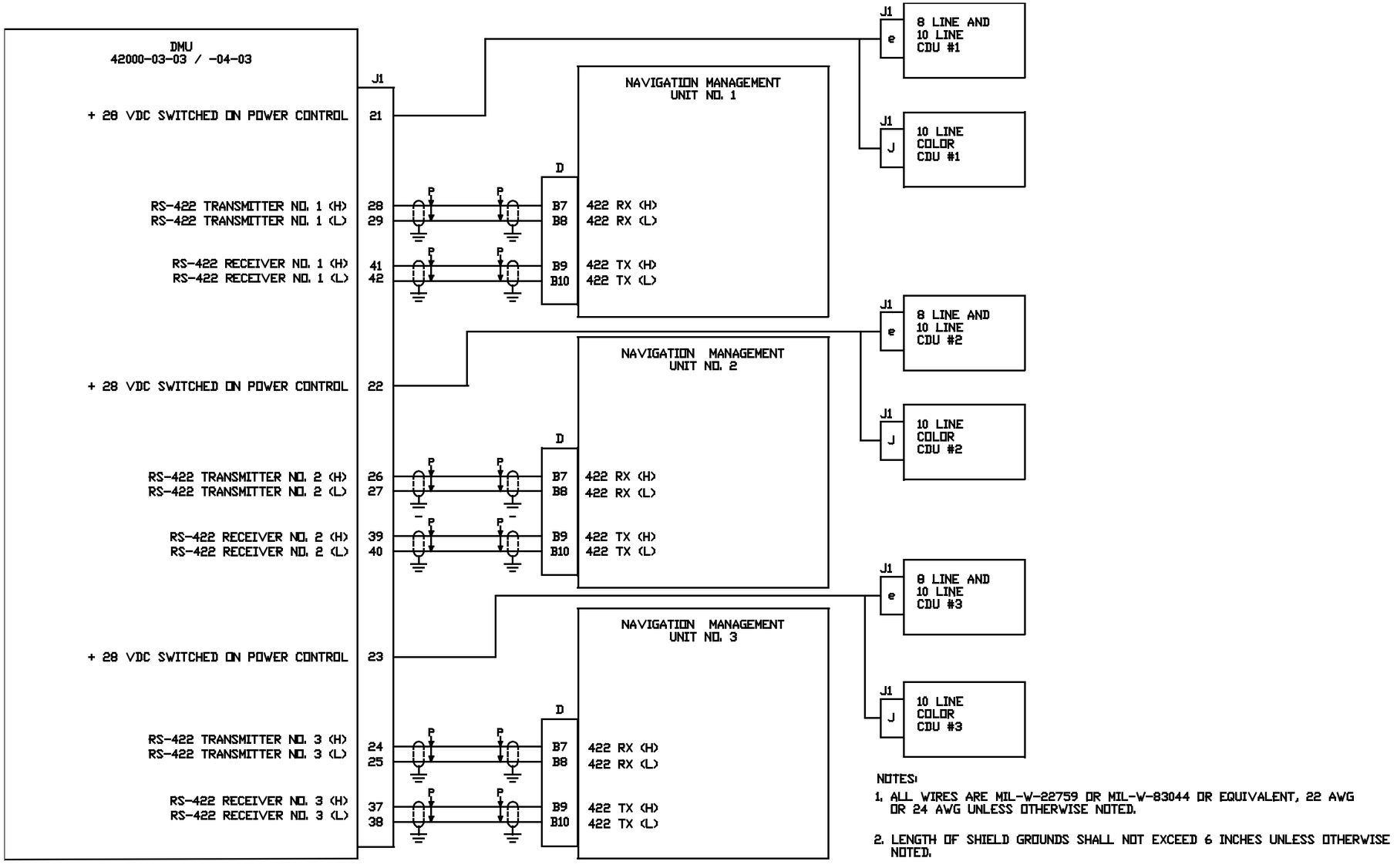
Dwg. No. 155-01711-0008 Rev 0
DMU TO DTU PN 43000-01-01-1 AND PN 43000-01-01-2
Figure 3-24



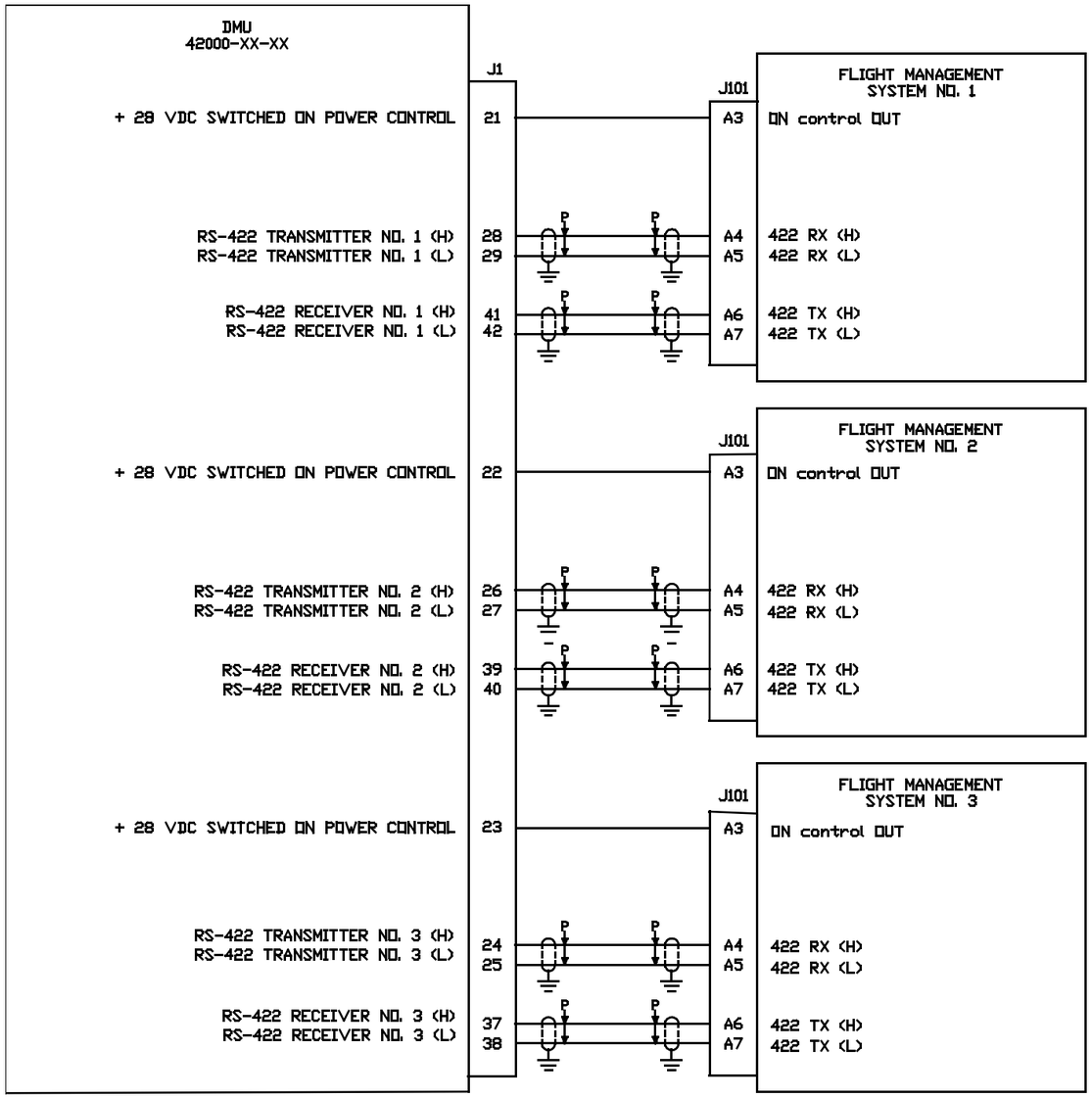
NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

DMU TO FMC GNS-1000
Dwg. No. 155-01711-0009 Rev B
Figure 3-25 (Sheet 1 of 4)



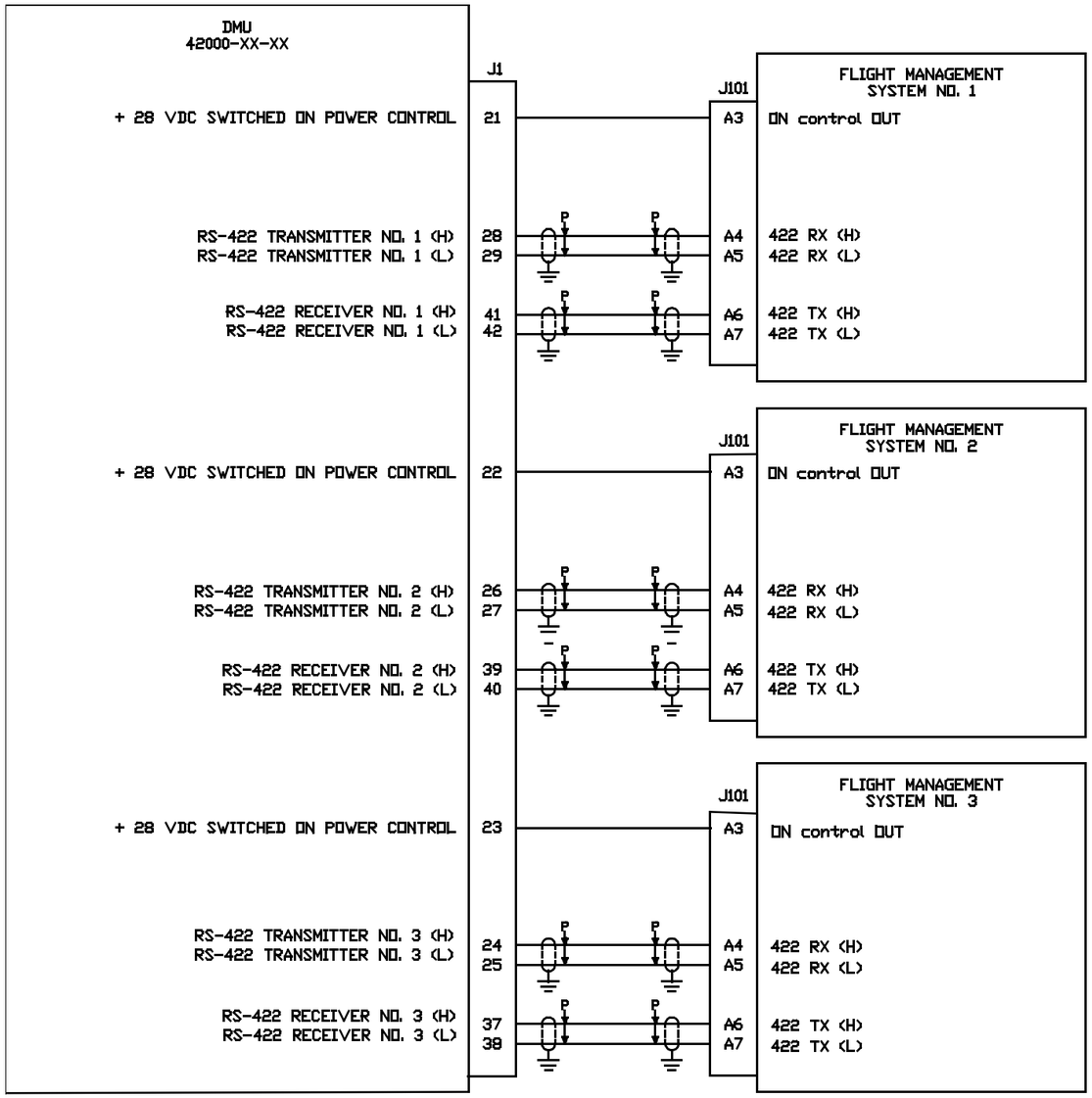
DMU TO NMU GNS-X
Dwg. No. 155-01711-0009 Rev B
Figure 3-25 (Sheet 2 of 4)



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

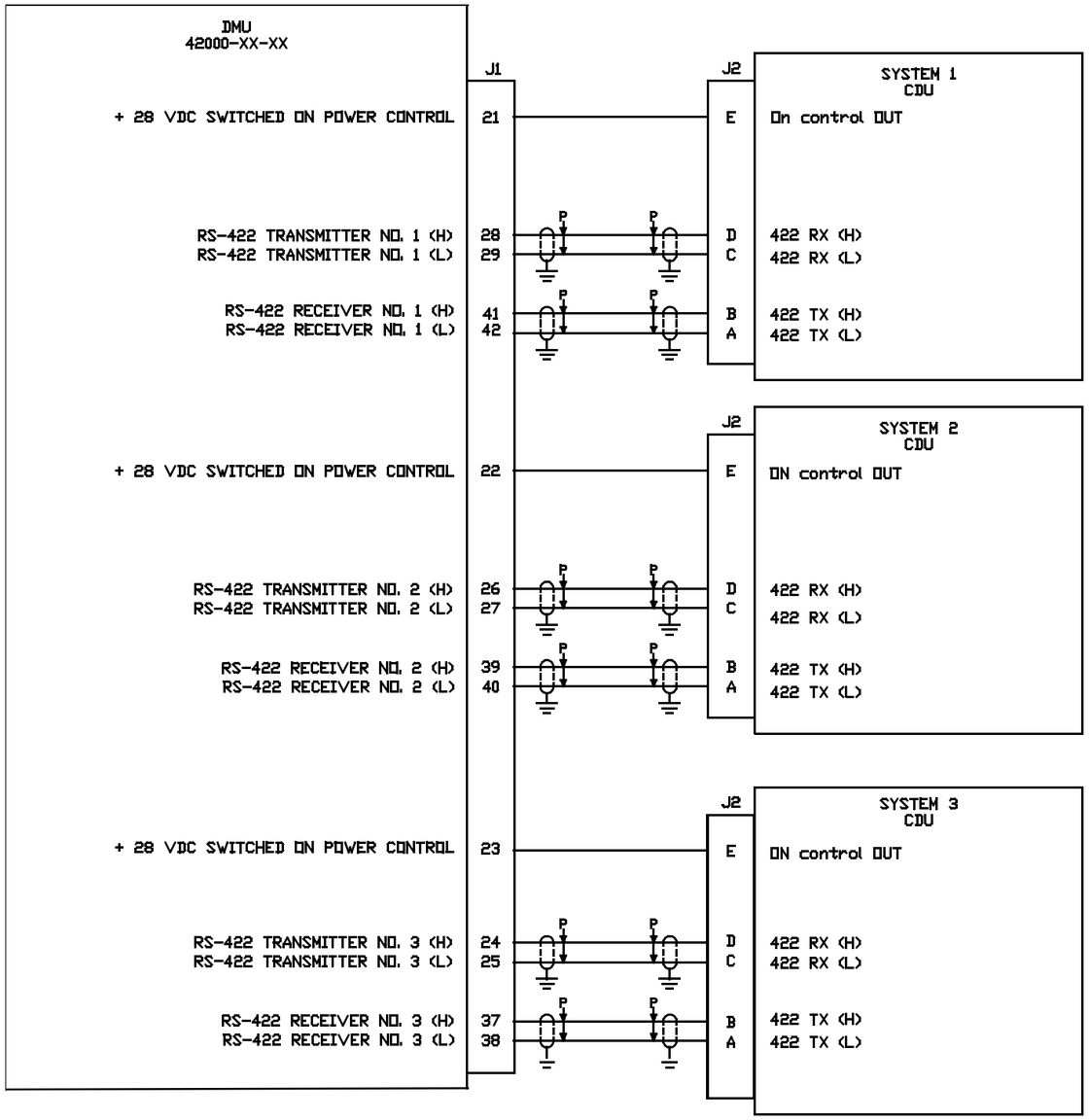
DMU TO GNS-XLS
Dwg. No. 155-01711-0009 Rev B
Figure 3-25 (Sheet 3 of 4)



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

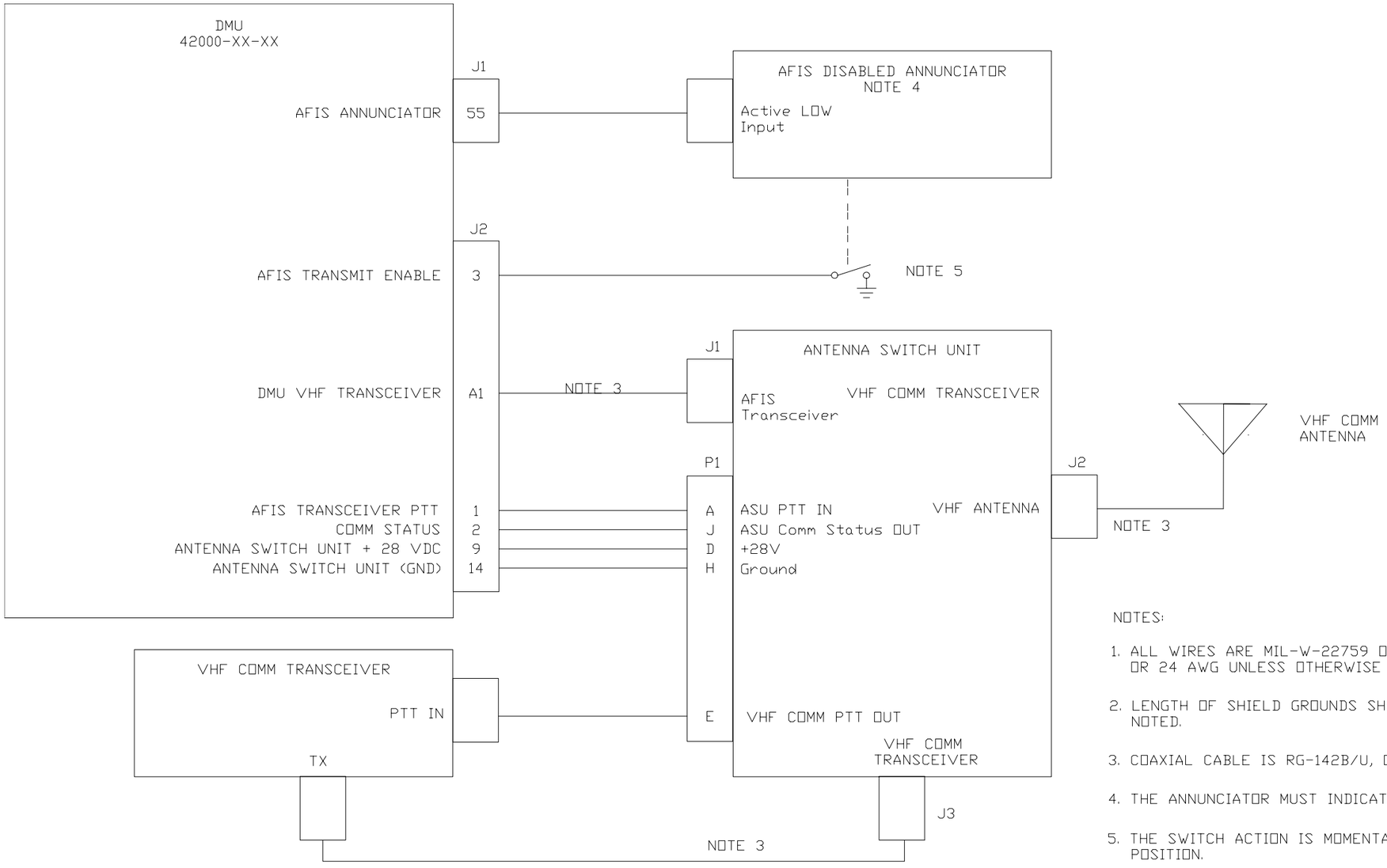
DMU TO GNS-XL
Dwg. No. 155-01711-0009 Rev B
Figure 3-25 (Sheet 4 of 4)



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

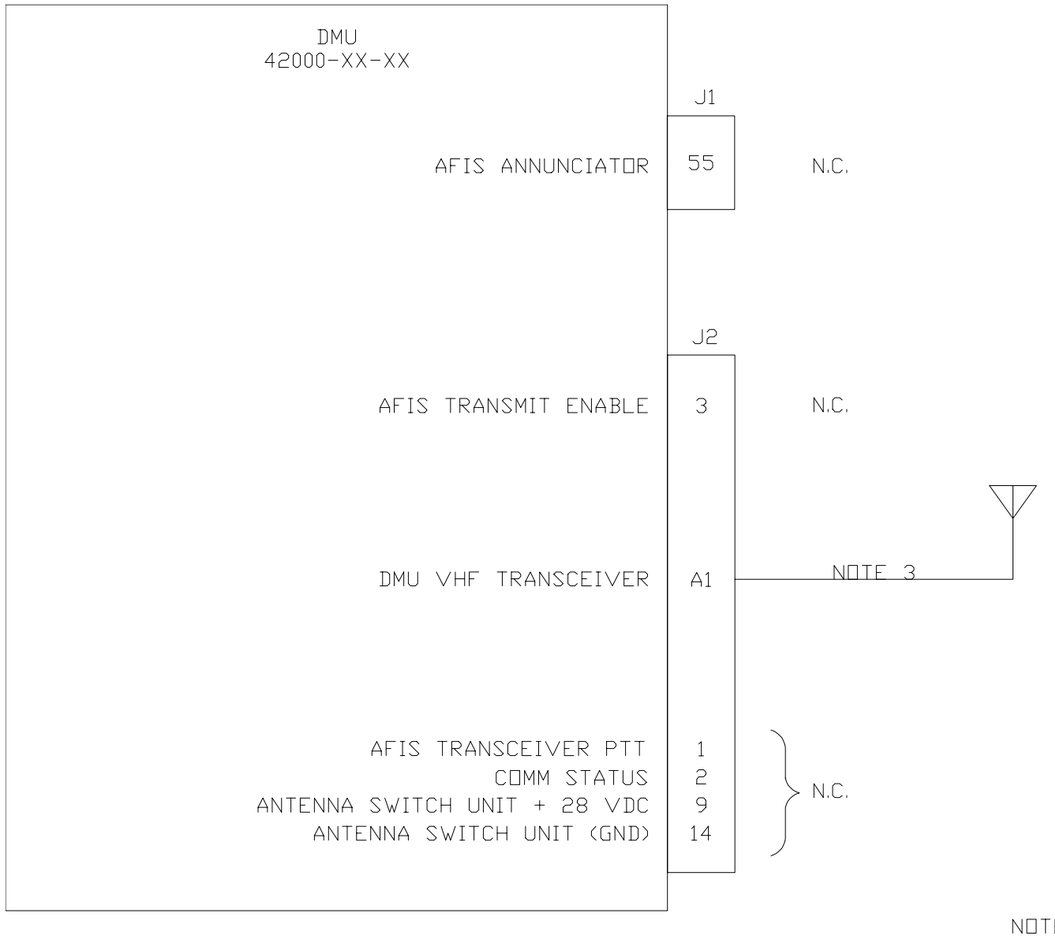
DMU TO GNS-500A SERIES 4
Dwg. No. 155-01711-0010 Rev B
Figure 3-26



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. COAXIAL CABLE IS RG-142B/U, OR EQUIVALENT.
4. THE ANNUNCIATOR MUST INDICATE THAT THE AFIS IS DISABLED.
5. THE SWITCH ACTION IS MOMENTARY AND IS SHOWN IN THE NORMAL (AFIS DISABLED) POSITION.

DMU TO SWITCHED AFIS ANTENNA
Dwg. No. 155-01711-0011 Rev A
Figure 3-27



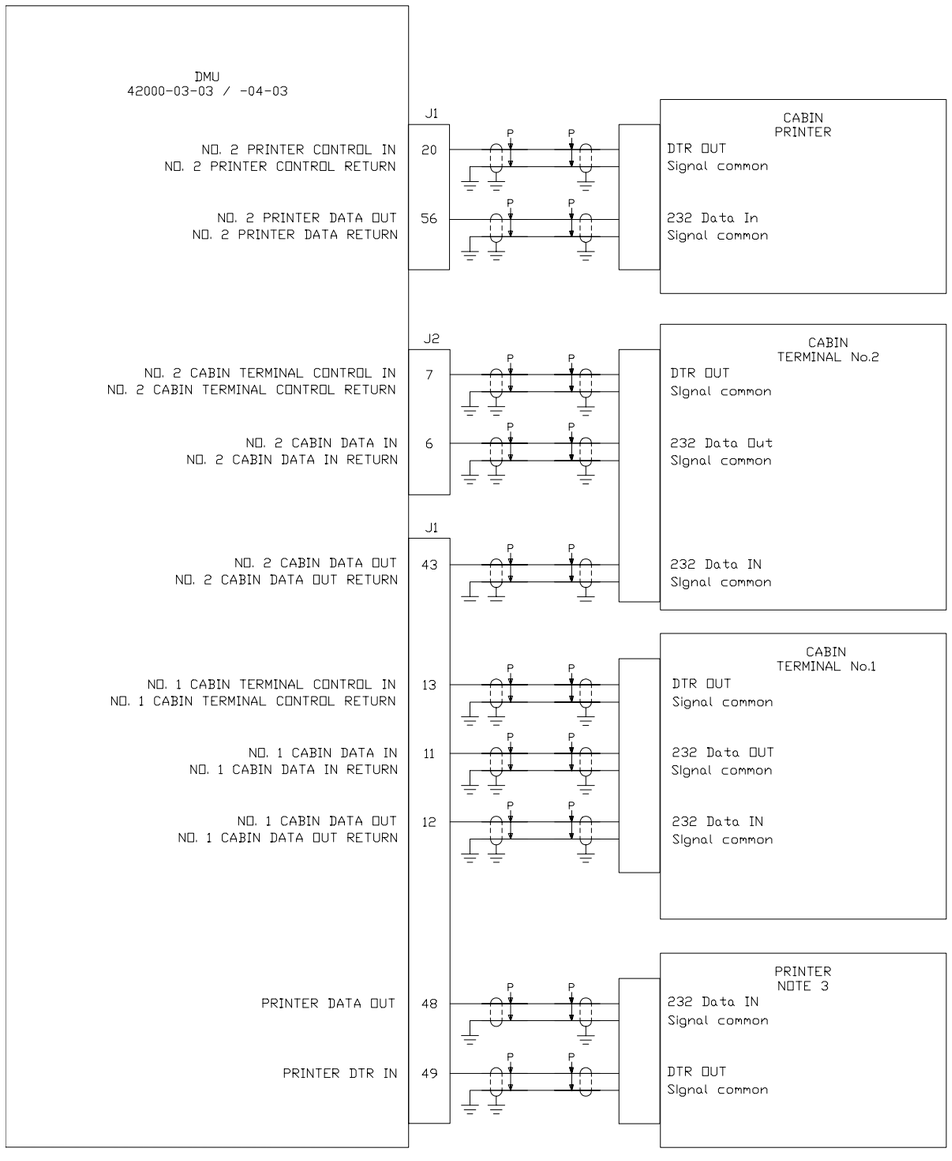
NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.

3. COAXIAL CABLE IS RG-142B/U, OR EQUIVALENT.

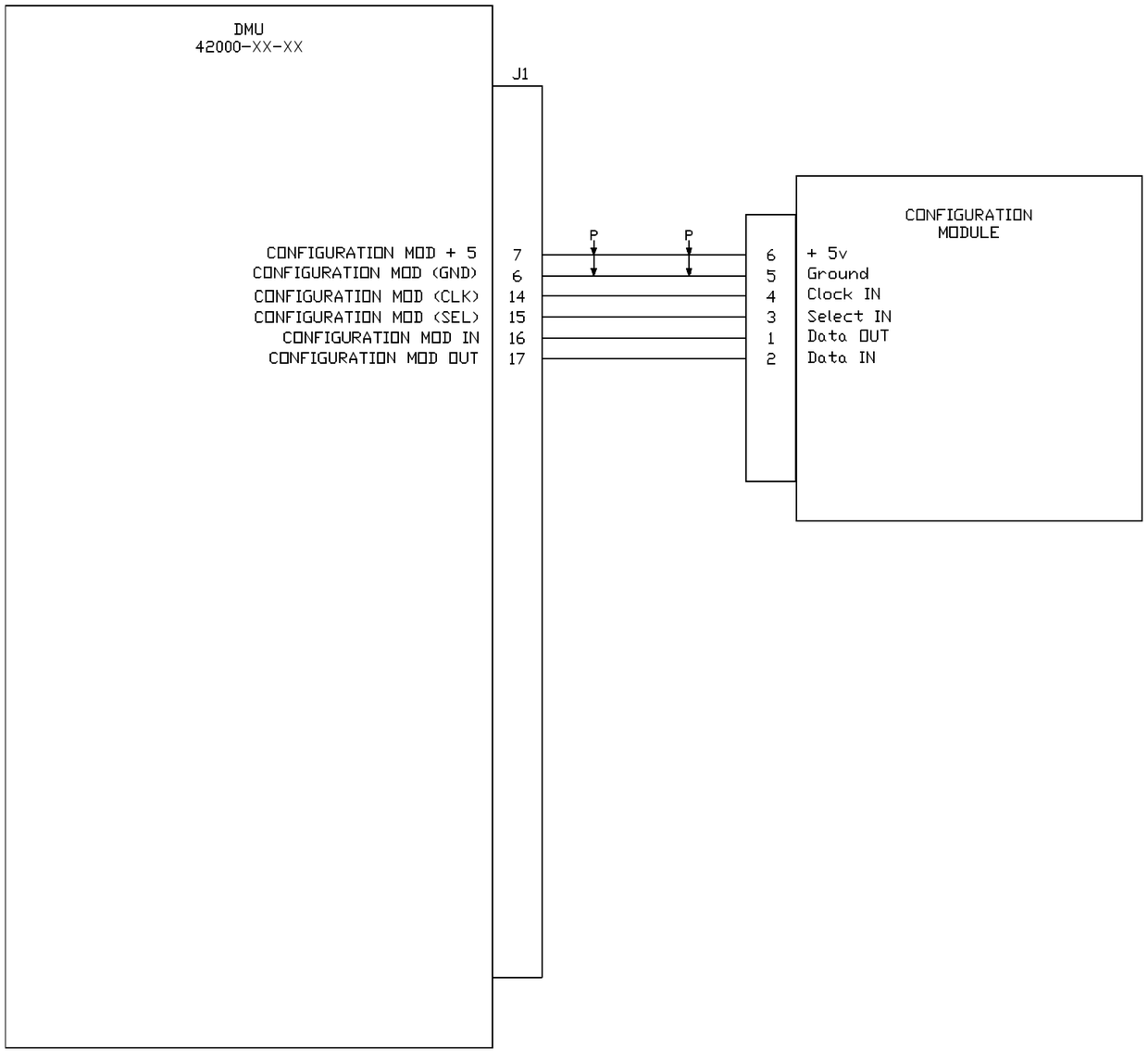
DMU TO DEDICATED AFIS ANTENNA
Dwg. No. 155-01711-0012 Rev A
Figure 3-28



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. THIS PRINTER INTERFACE INFORMATION IS ONLY APPLICABLE TO DMU PN 42000-03-03 AND DMU PN 42000-04-03.
4. CONNECTOR TYPES FOR PRINTER AND CABIN COMPUTER/TERMINAL MUST MATCH THE DEVICE.
5. SHIELD AND CONDUCTOR GROUNDS TO BE WITHIN 12 INCHES OF DMU.

DMU TO PRINTERS AND TERMINALS
Dwg. No. 155-01711-0013 Rev A
Figure 3-29

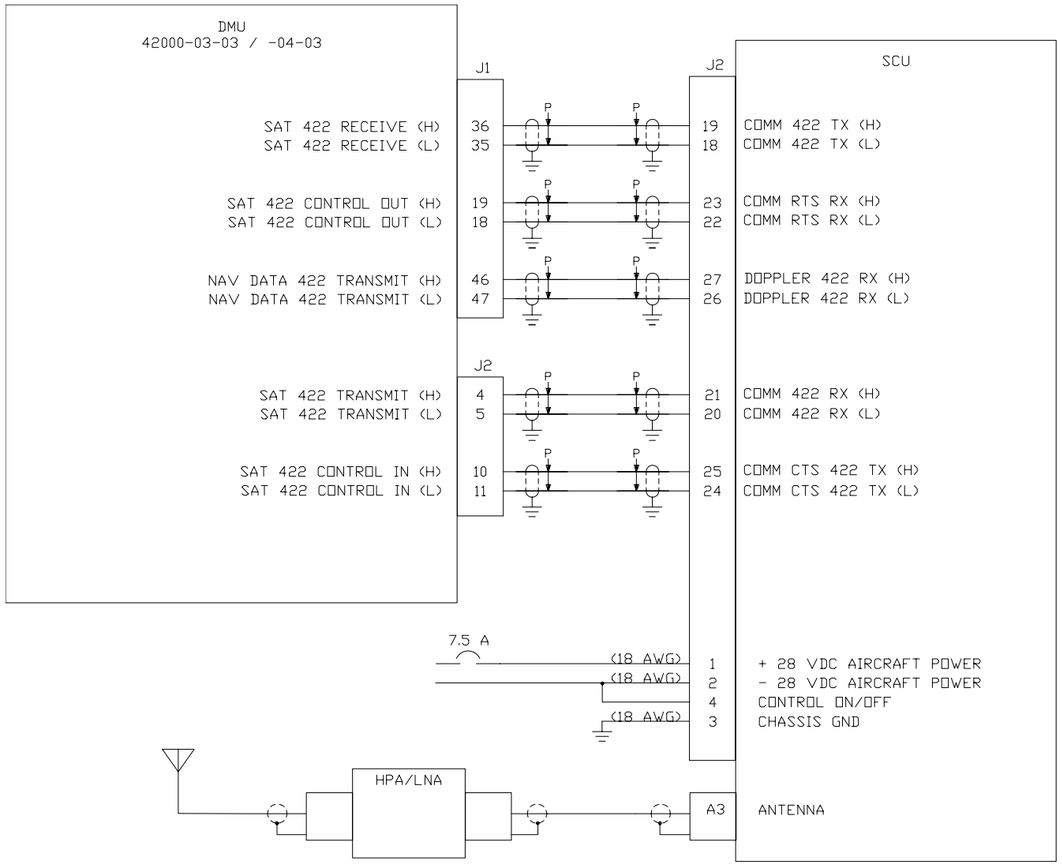


DMU TO CONFIGURATION MODULE
Dwg. No. 155-01711-0014 Rev 0
Figure 3-30

NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.

2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.



NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. TABLE 1 PROVIDES THE MANUFACTURERS SPECIFICATIONS FOR THE COAXIAL CABLE BETWEEN THE SDCS ANTENNA AND THE HPA/LNA.
4. TABLE 2 PROVIDES THE MANUFACTURERS SPECIFICATIONS FOR THE COAXIAL CABLE BETWEEN THE SCU AND THE HPA/LNA. FOR THIS CABLE, TOTAL DC RESISTANCE IS NOT TO EXCEED 0.08 OHM; LESS THAN 16 DB INSERTION LOSS AT 1.6 GHZ.

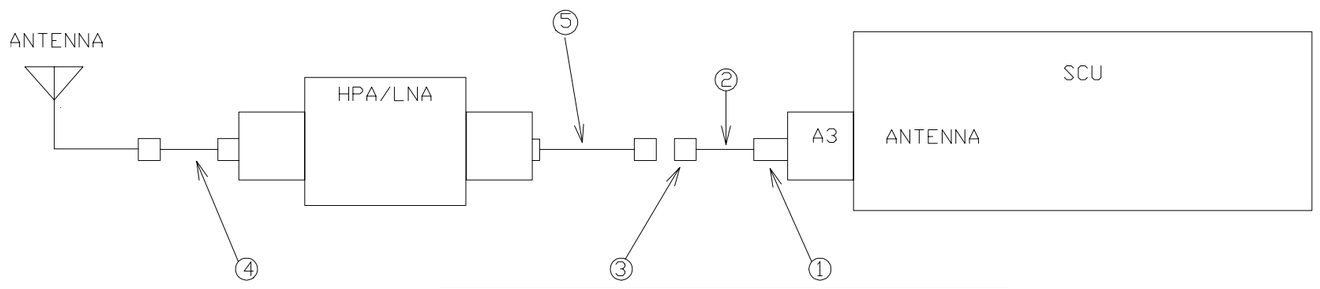
TABLE 1
ANTENNA TO HPA/LNA

CABLE	OHMS/ 100 FT	ATTENUATION DB/100 FT	OVERALL DIAMETER	TNC CONNECTOR	MAX CABLE LENGTH
PIC S22089	8 AWG 0.063	@1.0 GHZ, 3.8 @1.5 GHZ, 4.8	0.435	190408 [1] 190409 [2]	10 FT
ECS 310801	0.0543	@1.0 GHZ, 3.8 @2.0 GHZ, 5.6	0.425	CTS 022 [1] CTR 022 [2]	10 FT
[1] STRAIGHT CONNECTOR [2] RIGHT ANGLE CONNECTOR					

TABLE 2
SCU TO HPA/LNA

CABLE	OHMS/ 100 FT	ATTENUATION DB/100 FT	OVERALL DIAMETER	"N" CONNECTOR	MAX CABLE LENGTH
PIC S33141	14 AWG 0.2525	@1.0 GHZ, 7.2 @1.5 GHZ, 8.6	0.270	190310 [1] 190311 [2]	30 FT
PIC S22089	8 AWG 0.063	@1.0 GHZ, 3.8 @1.5 GHZ, 4.8	0.435	190410 [1] 190411 [2]	100 FT
ECS 3C142B	0.75	@1.0 GHZ, 14.6 @3.0 GHZ, 27.2	0.195	CNS 722 [1] CNR 722 [2]	10 FT
ECS 311201	0.18	@1.0 GHZ, 5.89 @2.0 GHZ, 8.97	0.320	CNS 122 [1] CNR 122 [2]	50 FT
ECS 311601	0.377 (0.410)	@1.0 GHZ, 9.1 @3.0 GHZ, 14.0 @5.0 GHZ, 19.8	0.230	CNS 922 [1] CNR 922 [2]	20 FT
ECS 310810	0.0543	@1.0 GHZ, 3.8 @2.0 GHZ, 5.6	0.425	CNS 022 [1] CNR 022 [2]	100 FT
ECS 331201	0.17	@1.0 GHZ, 7.5 @3.0 GHZ, 13.3	0.390	CNS 822 [1] CNR 822 [2]	50 FT
ECS 311101	0.131	@1.0 GHZ, 4.86	0.332	CNS 122 [1] CNR 122 [2]	60 FT
ECS 311501	0.298	@1.0 GHZ, 7.0	0.244	CNS 922 [1] CNR 922 [2]	25 FT
ECS 711201	0.169	@1.0 GHZ, 5.8 @5.0 GHZ, 13.2	0.317	CNS 122 [1] CNR 122 [2]	50 FT
ECS 711601	0.410	@1.0 GHZ, 8.5 @5.0 GHZ, 19.8	0.225	CNS 122 [1] CNR 122 [2]	20 FT
ECS 712001	0.853	@1.0 GHZ, 11.5	0.195	CNS 722 [1] CNR 722 [2]	9 FT
[1] STRAIGHT CONNECTOR [2] RIGHT ANGLE CONNECTOR					

Dwg. No. 155-01711-0015 Rev A
DMU TO SCU
Figure 3-31 (Sheet 1 of 2)

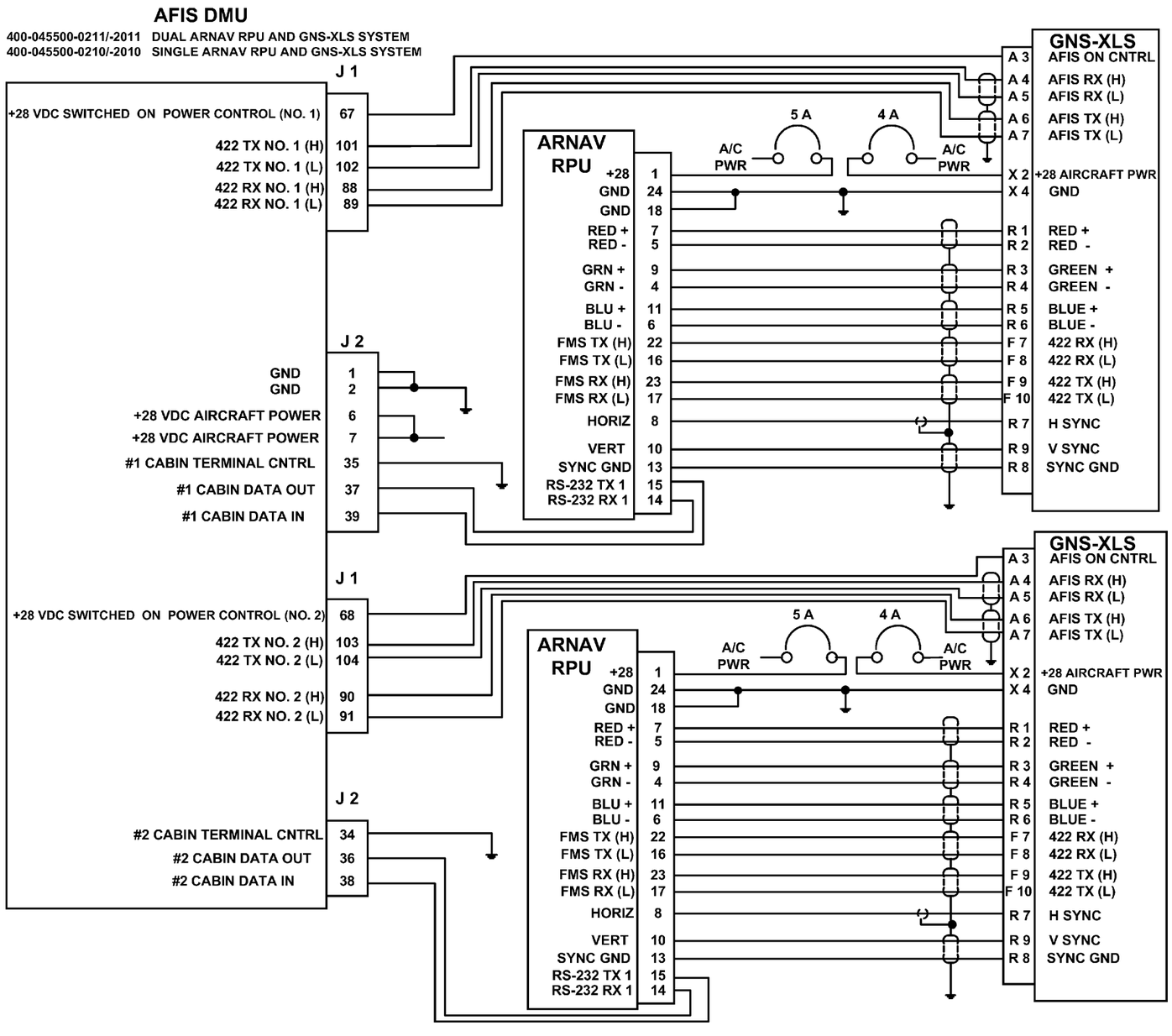


ITEM	DESCRIPTION	PART NUMBER
①	RF INSERT	ECS 225791-2
②	RG-142 COAXIAL CABLE	ECS 3C142B
③	"N" CONNECTOR	ECS BN3722
④	"T" CONNECTOR/CABLE	REF TABLE 1
⑤	"N" CONNECTOR/CABLE	REF TABLE 2

NOTES:

1. ITEMS ①, ② AND ③ AVAILABLE AS AN ASSEMBLY PN 123-117429-01.

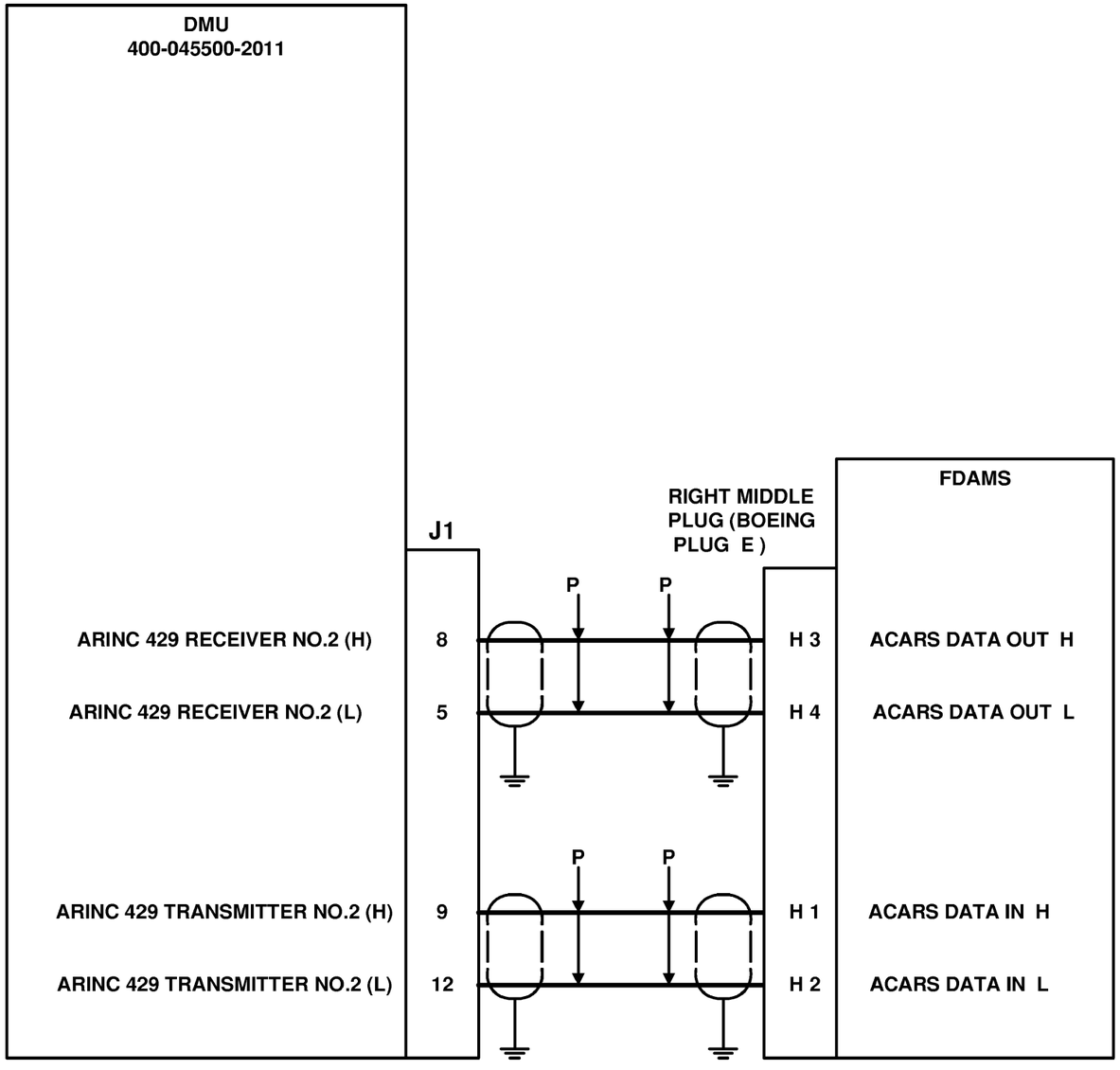
DMU TO SCU
Dwg. No. 155-01711-0015 Rev A
Figure 3-31 (Sheet 2 of 2)



NOTES:

1. WIRING LENGTH BETWEEN ARNAV RPU AND GNS-XLS SHOULD BE NO MORE THAN 15 FEET.
2. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22 AWG UNLESS OTHERWISE NOTED.
3. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWIES NOTED.
4. FOR SINGLE ARNAV AND GNS-XLS SYSTEM USE #1 CABIN DATA. IF #1 CABIN IS CURRENTLY IN USE USE #2 CABIN.

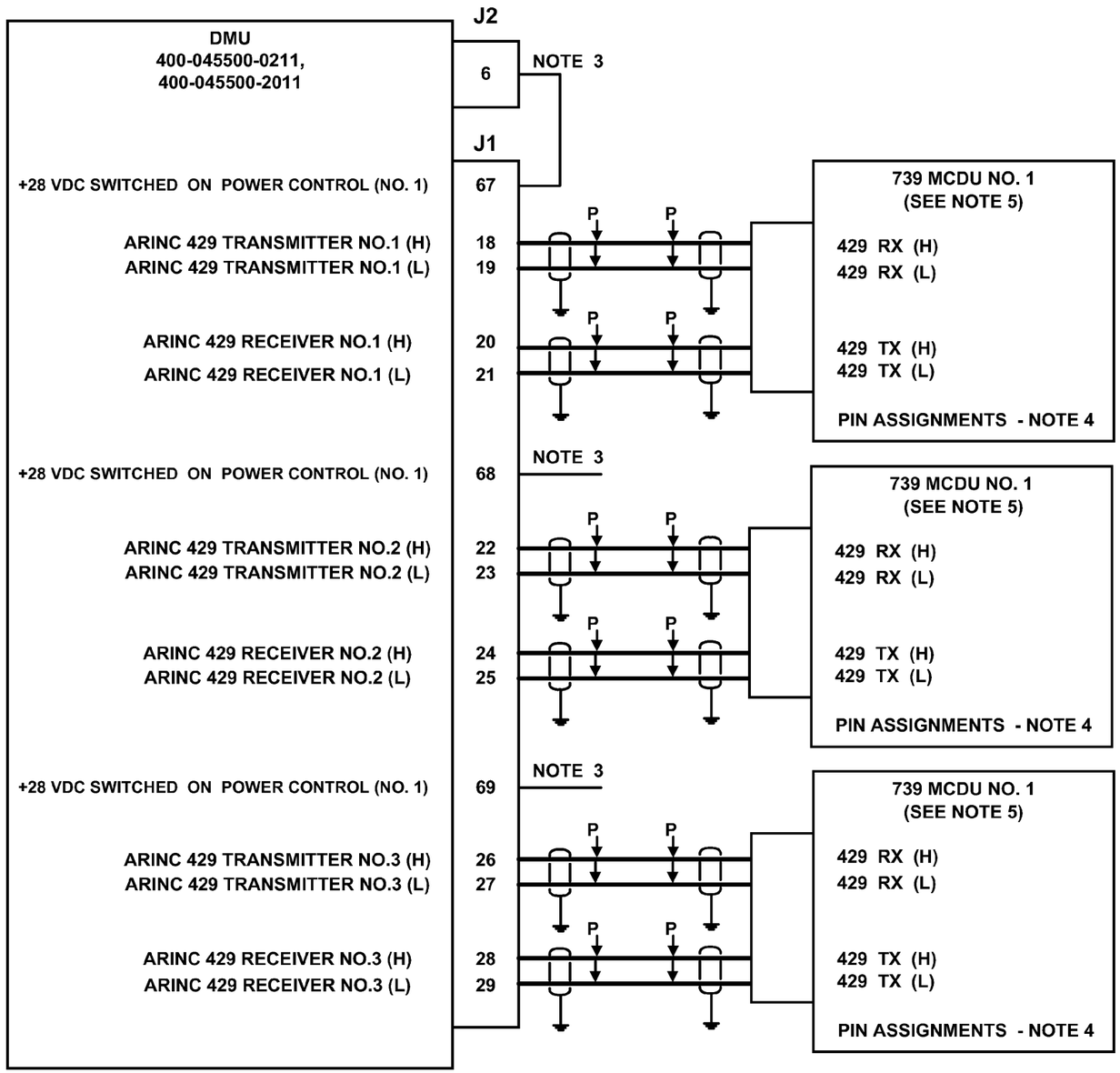
DMU TO ARNAV RPU AND GNS-XLS WIRING DIAGRAM
DWG NO. 155-01712-4017, Rev. C
Figure 3-32



DMU TO FLIGHT DATA ACQUISITION AND MANAGEMENT SYSTEM (FDAMS)
DWG NO. 155-01712-4018
Figure 3-32A

NOTES:

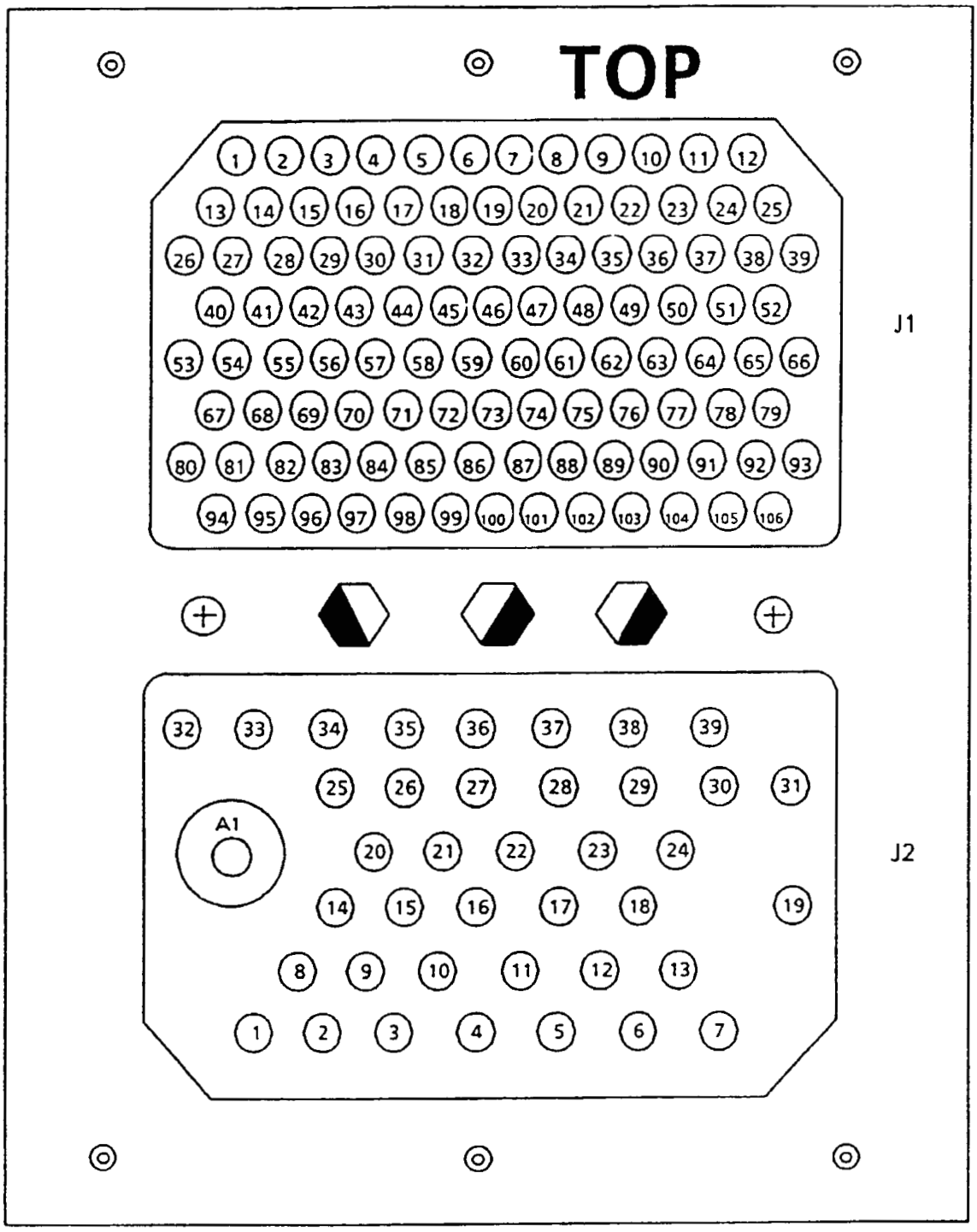
1. **ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22AWG OR 24 AWG UNLESS OTHERWISE NOTED.**
2. **LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.**
3. **SEE HONEYWELL FDAMS PRODUCT SPECIFICATION MANUAL FOR DETAILED PIN ASSIGNMENTS.**



DMU TO 739 MCDU
DWG NO. 155-01712-4019 R-
Figure 3-32B

NOTES:

1. ALL WIRES ARE MIL-W-22759 OR MIL-W-83044 OR EQUIVALENT, 22AWG OR 24 AWG UNLESS OTHERWISE NOTED.
2. LENGTH OF SHIELD GROUNDS SHALL NOT EXCEED 6 INCHES UNLESS OTHERWISE NOTED.
3. PIN J1-67, J1-68 OR J1-69 MUST BE JUMPERED TO + 28 VDC A/C POWER PIN TO ALLOW DMU TO TURN ON WITHOUT AN INSTALLED GLOBAL SYSTEM
4. SEE APPLICABLE MANUFACTURER INSTALLATION MANUAL FOR DETAILED PIN ASSIGNMENTS.
5. CURRENTLY THE AFIS DMU SUPPORTS ONLY ONE 739 MCDU. OPTIONAL INSTALLATION PORTS ARE SHOWN.



DMU Unit Connector PN 400-045500-XXXX
Figure 3-33 (Sheet 1 of 3)

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PIN	SIGNAL NAME	PIN	SIGNAL NAME	PIN	SIGNAL NAME	PIN	SIGNAL NAME	PIN	SIGNAL NAME
1	Config MOD CLK	23	429 TX No.2 (L)	45	Spare	67	+28V Switched ON	86	DTU RX (H)
2	Config MOD SEL.	24	429 RX No.2 (H)	46	Spare		POWER CONTROL	87	DTU RX (L)
3	Config MOD DATA IN	25	429 RX No.2 (L)	47	422 NAV SAT TX (H)	68	+28V Switched ON	88	422 RX No.1 (H)
4	Config MOD DATA OUT	26	429 TX No.3 (H)	48	422 NAV SAT TX (L)		POWER CONTROL	89	422 RX No.1 (L)
5	429 ACMS RX - 2(L)	27	429 TX No.3 (L)	49	Spare	69	+28V Switched ON	90	422 RX No.2 (H)
6	429 SDU TX (H)	28	429 RX No.3 (H)	50	Spare		POWER CONTROL	91	422 RX No.2 (L)
7	429 SDU TX (L)	29	429 RX No.3 (L)	51	Spare	70	No. 4 Engine	92	422 RX No.3 (H)
8	429 ACMS RX - 2(H)	30	Discrete 1	52	Spare	71	No. 4 Engine	93	422 RX No.3 (L)
9	429 ACMS TX - 2(H)	31	Discrete 2	53	Spare	72	No. 4 Engine	94	No. 1 Engine
10	429 SDU RX (H)	32	Discrete 3	54	Spare	73	No. 4 Engine	95	No. 1 Engine
11	429 SDU RX (L)	33	Discrete Brake Release	55	Spare	74	No. 4 Engine	96	No. 1 Engine
12	429 ACMS TX - 2(L)	34	Discrete Engine Stop SW	56	Spare	75	No. 3 Engine	97	No. 1 Engine
13	Spare	35	Discrete Oil Pressure	57	Spare	76	No. 3 Engine	98	No. 1 Engine
14	Spare	36	Door Closure	58	Spare	77	No. 3 Engine	99	DTU TX (H)
15	Spare	37	Discrete 8	59	Spare	78	No. 3 Engine	100	DTU TX (L)
16	Spare	38	Discrete COMM Status	60	Spare	79	No. 3 Engine	101	422 TX No.1 (H)
17	#2 Printer Control IN	39	AFIS Transmit Enable	61	Spare	80	AFIS ANNUNCIATOR	102	422 TX No.1 (L)
18	429 TX No.1 (H)	40	Discrete Weight on Wheels	62	Spare	81	No. 2 Engine	103	422 TX No.2 (H)
19	429 TX No.1 (L)	41	ASU PTT	63	Spare	82	No. 2 Engine	104	422 TX No.2 (L)
20	429 RX No.1 (H)	42	AFIS Annunciator	64	Spare	83	No. 2 Engine	105	422 TX No.3 (H)
21	429 RX No.1 (L)	43	Spare	65	Spare	84	No. 2 Engine	106	422 TX No.3 (L)
22	429 TX No.2 (H)	44	Spare	66	Spare	85	No. 2 Engine		

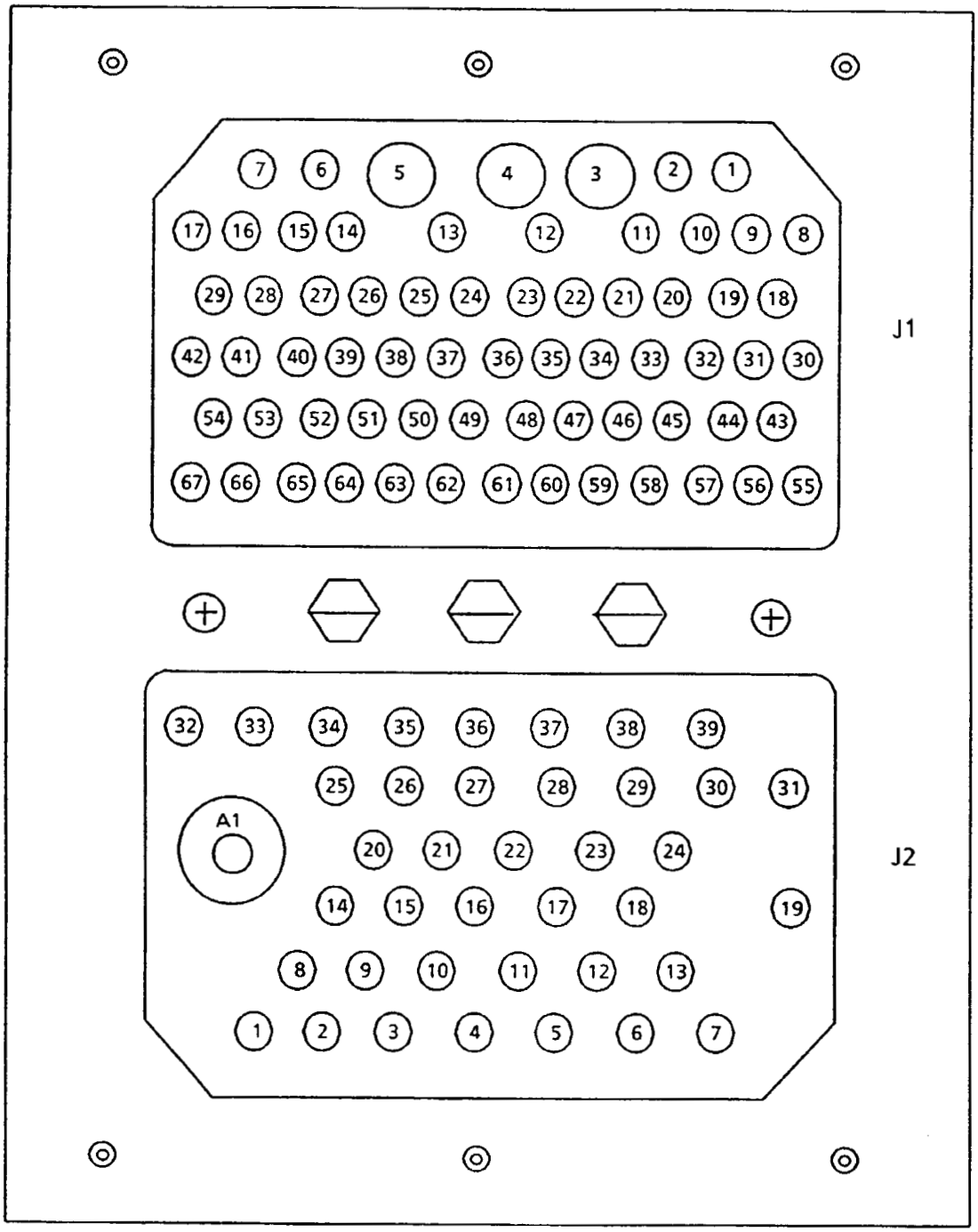
DMU CONNECTOR J1 PN 400-045500-XXXX
Figure 3-33 (Sheet 2 of 3)

PIN	SIGNAL NAME	PIN	SIGNAL NAME
A1	DMU VHF TRANSCEIVER (ANT.)	20	PRINTER DATA RETURN (L)
1	DC RETURN	21	PRINTER DATA OUT (H)
2	DC RETURN	22	PRINTER DTR RETURN(L)
3	SPARE	23	PRINTER DTR IN (H)
4	#2 PRINTER DATA OUT	24	SPARE
5	SPARE	25	SPARE
6	+ 28V AIRCRAFT POWER	26	422 SAT TX (H)
7	+ 28V AIRCRAFT POWER	27	422 SAT TX (L)
8	CONFIG MOD GROUND	28	422 SAT RX (H)
9	DTU DC RETURN	29	422 SAT RX (L)
10	ANTENNA SWITCH UNIT (GND)	30	422 SAT CONTROL OUT (H)
11	SPARE	31	422 SAT CONTROL OUT (L)
12	SPARE	32	422 SAT CONTROL IN (H)
13	+ 28V ANTENNA SWITCH UNIT	33	422 SAT CONTROL IN (L)
14	+ 28V SHIELD	34	#2 CABIN TERMINAL CNTL IN / GND FOR GRAPHICS
15	+ 5V FOR CONFIG MOD	35	#1 CABIN TERMINAL CNTL IN / GND FOR GRAPHICS
16	+ 8VDC DTU FILTERED	36	#2 CABIN DATA / ARNAV RPU OUT
17	+ 12VDC DTU FILTERED	37	#1 CABIN DATA / ARNAV RPU OUT
18	SPARE	38	#2 CABIN DATA / ARNAV RPU IN
19	SPARE	39	#1 CABIN DATA / ARNAV RPU IN

NOTE

Printer and Cabin Terminal lines are RS232. “IN” and “OUT” are in respect to the DMU

DMU Connector J2 PN 400-045500-XXXX
Figure 3-33 (Sheet 3 of 3)



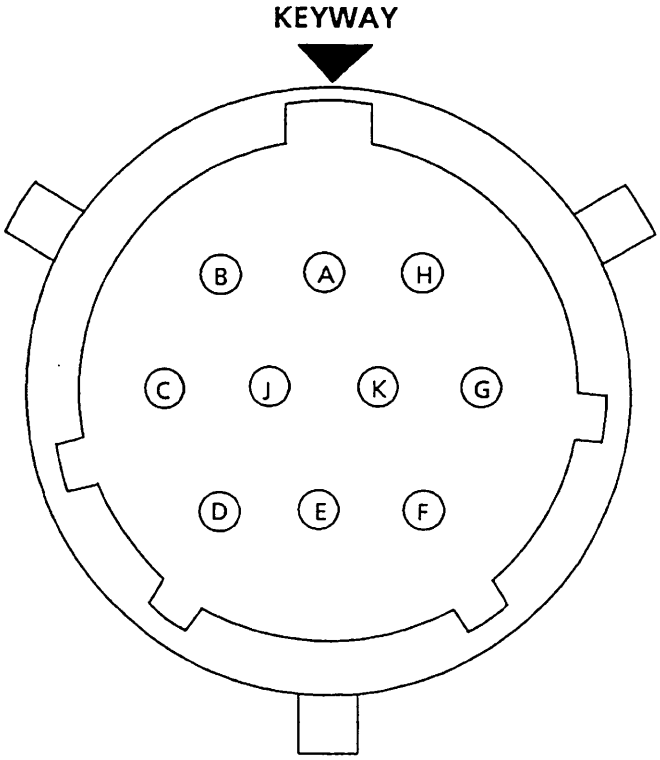
DMU Connector PN 42000-XX-XX
Figure 3-34 (Sheet 1 of 3)

PIN	SIGNAL NAME	PIN	SIGNAL NAME
1	NC	35	422 SAT RX (L)
2	Spare	36	422 SAT RX (H)
3	+ 28V AIRCRAFT Power	37	422 No.3 RX (H)
4	DC RETURN	38	422 No.3 RX (L)
5	+28V AIRCRAFT Power	39	422 No.2 RX (H)
6	Conf. MOD (Ground)	40	422 No.2 RX (HL
7	Conf. MOD + 5VDC	41	422 No.1 RX (H)
8	DTU Return	42	422 No.1 RX (L)
9	DTU +8VDC	43	#2 Cabin Data OUT
10	DTU +12VDC	44	NC
11	#1 Cabin Data IN	45	NC
12	#1 Cabin Data OUT	46	NAV Data TX (H)
13	#1 Cabin Terminal Control IN	47	NAV Data TX (L)
14	Config. MOD CLK	48	Printer Data Out RS 232
15	Config. MOD SEL	49	Printer CNTL IN RS 232
16	Config. MOD IN	50	SPARE 429 TX (H)
17	Config. MOD OUT	51	SPARE 429 TX (L)
18	422 SAT Cntl OUT (L)	52	NC
19	422 SAT Cntl OUT (H)	53	VHF AUDIO IN (H)
20	#2 Printer CNTL IN	54	VHF AUDIO IN (L)
21	ON Control No.1	55	AFIS ANNUNCIATOR
22	ON Control No.2	56	#2 Printer Data OUT
23	ON Control No.3	57	NC
24	422 No.3 TX (H)	58	NC
25	422 No.3 TX (L)	59	SPARE 422 RX (H)
26	422 No.2 TX (H)	60	SPARE 422 RX (L)
27	422 No.2 TX (L)	61	VHF Audio OUT (H)
28	422 No.1 TX (H)	62	VHF Audio OUT (L)
29	422 No.1 TX (L)	63	SPARE 429 RX (H)
30	DTU Transmit (H)	64	SPARE 429 RX (L)
31	DTU Transmit (L)	65	NC
32	DTU RCVR (H)	66	NC
33	DTU RCVR (L)	67	NC
34	WEIGHT ON GEAR		

DMU CONNECTOR J1 PN 42000-XX-XX
Figure 3-34 (Sheet 2 of 3)

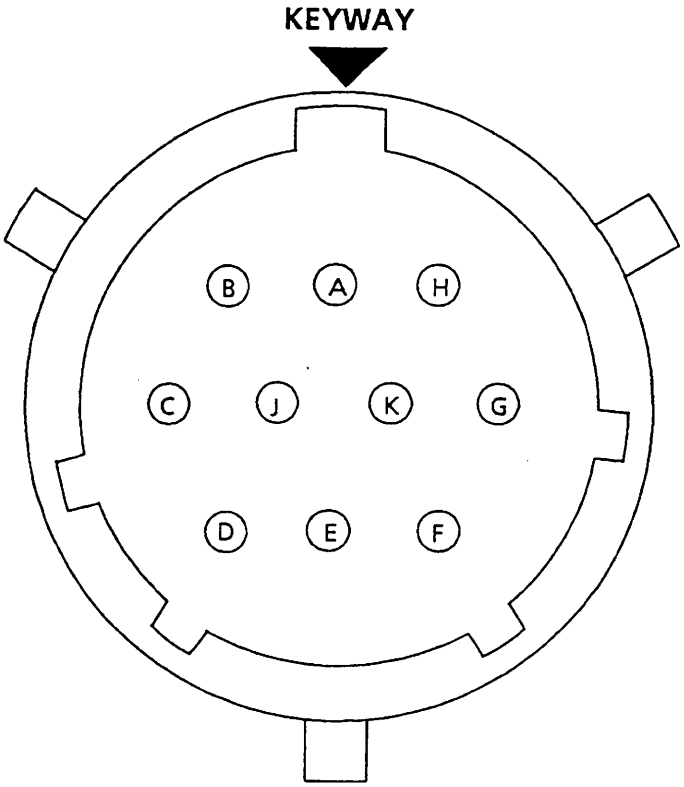
PIN	SIGNAL NAME	PIN	SIGNAL NAME
A1	DMU VHF TRANSCEIVER	20	Fuel Flow ENGINE 2
1	AFIS TRANSCIEVER PTT	21	Fuel Flow ENGINE 2
2	PTT STATUS	22	Fuel Flow ENGINE 2
3	AFIS TRANSMIT ENABLE	23	Fuel Flow ENGINE 2
4	SAT 422 TX (H)	24	Fuel Flow ENGINE 3
5	SAT 422 TX (L)	25	Fuel Flow ENGINE 3
6	#2 Cabin Data IN	26	Fuel Flow ENGINE 3
7	#2 Cabin Terminal Control IN	27	Fuel Flow ENGINE 3
8	Fuel Flow Engine 1	28	Fuel Flow ENGINE 4
9	Antenna Switch Unit +28 VDC	29	Fuel Flow ENGINE 4
10	SAT 422 Control IN (H)	30	Fuel Flow ENGINE 4
11	SAT 422 Control IN (L)	31	Fuel Flow ENGINE 4
12	SPARE 422 RX (H)	32	NC
13	SPARE 422 RX (L)	33	NC
14	Antenna Switch Unit GROUND	34	NC
15	Fuel Flow ENGINE 1	35	NC
16	Fuel Flow ENGINE 1	36	NC
17	Fuel Flow ENGINE 1	37	NC
18	Fuel Flow ENGINE 1	38	NC
19	Fuel Flow ENGINE 2	39	NC

DMU Connector J2 PN 42000-XX-XX
Figure 3-34 (Sheet 3 of 3)



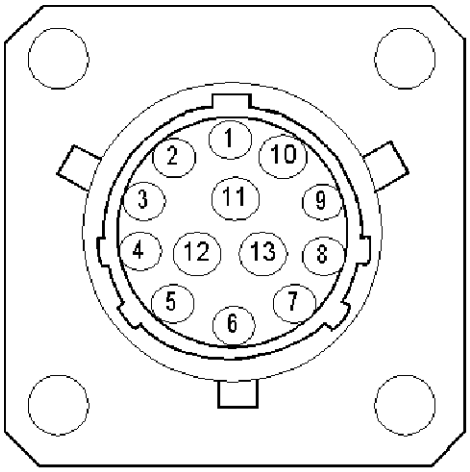
PIN	SIGNAL NAME
A	SPARE
B	DTU TRANSMIT (H)
C	DTU TRANSMIT (L)
D	+ 12 VDC POWER
E	DC RETURN
F	+ 8 VDC POWER
G	DTU RECEIVE (H)
H	DTU RECEIVE (L)
J	SPARE
K	SPARE

DTU CONNECTOR PIN ASSIGNMENT
PN 43000-01-01-1 AND PN 43000-01-01-2
Figure 3-35



PIN	SIGNAL NAME
A	CONFIGURATION DEFINE
B	DTU TRANSMIT (H)
C	DTU TRANSMIT (L)
D	SPARE
E	DC RETURN
F	CONFIGURATION DEFINE
G	DTU RECEIVE (H)
H	DTU RECEIVE (L)
J	28 VDC FILTERED PWR
K	SPARE

DTU CONNECTOR PIN ASSIGNMENT
PN 43000-01-01-3 AND PN 43000-01-01-4
Figure 3-36

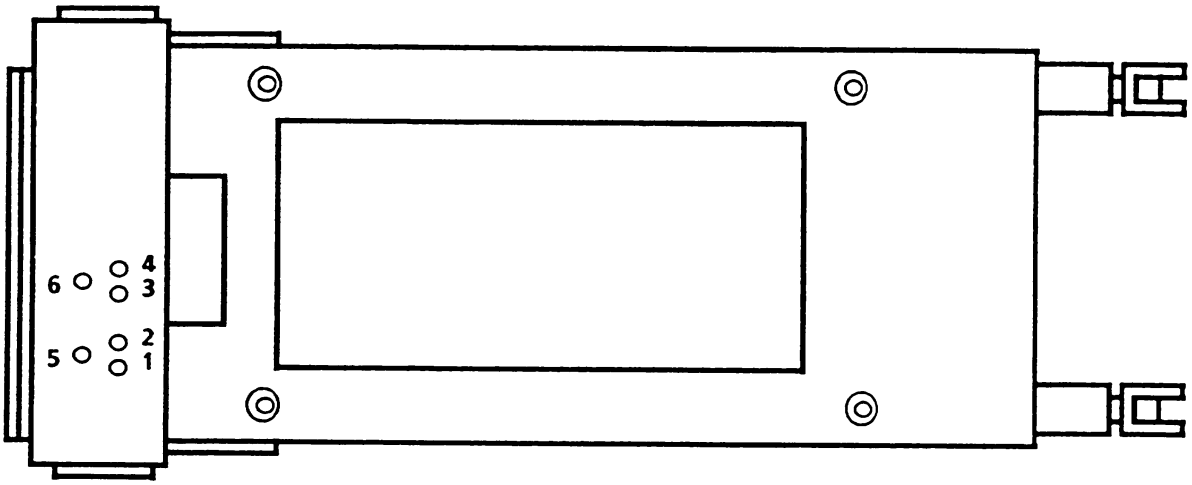


DMU FRONT CONNECTOR J102
PIN ASSIGNMENT

PIN	SIGNAL NAME
1	GND
2	RS 232 IN
3	RS 232 OUT
4	NO CONNECTION
5	+ 5VDC
6	NO CONNECTION
7	+ 15VDC
8	NO CONNECTION
9	- 12VDC
10	NO CONNECTION
11	+ 12VDC
12	NO CONNECTION
13	SYSTEM VALID

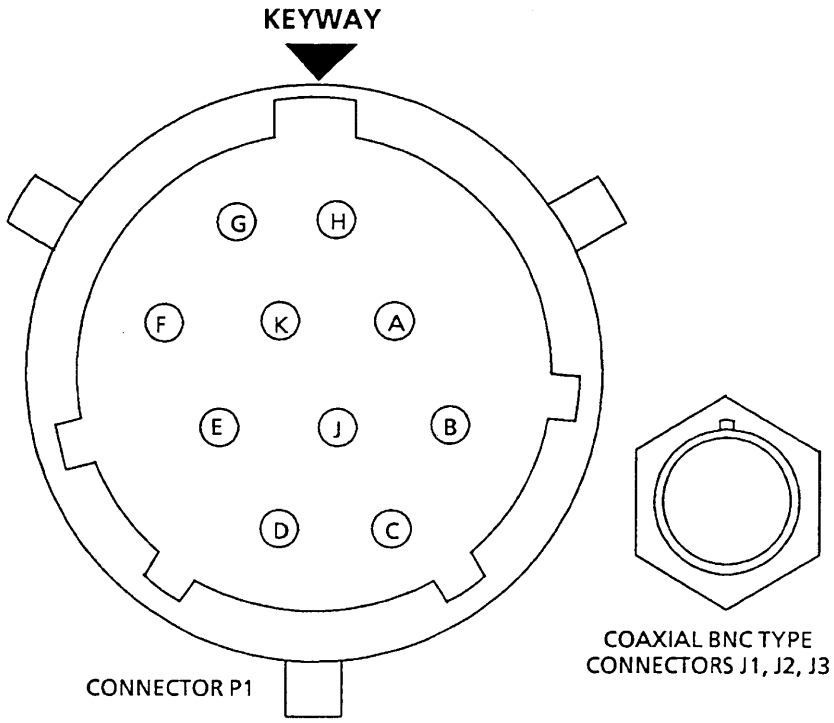
DMU J102 PIN ASSIGNMENT
Figure 3-37

I



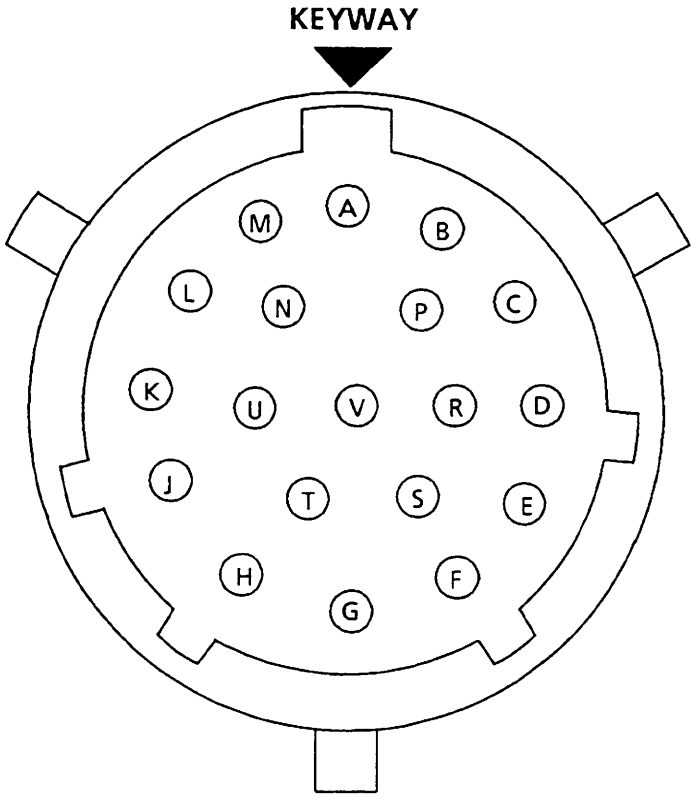
PIN	SIGNAL NAME
1	CONFIGURATION MOD DATA IN
2	CONFIGURATION MOD DATA OUT
3	CONFIGURATION MOD SEL
4	CONFIGURATION MOD CLK
5	CONFIGURATION MOD (GND)
6	CONFIGURATION MOD (+ 5 VDC)

CONFIGURATION MODULE CONNECTION
Figure 3-38



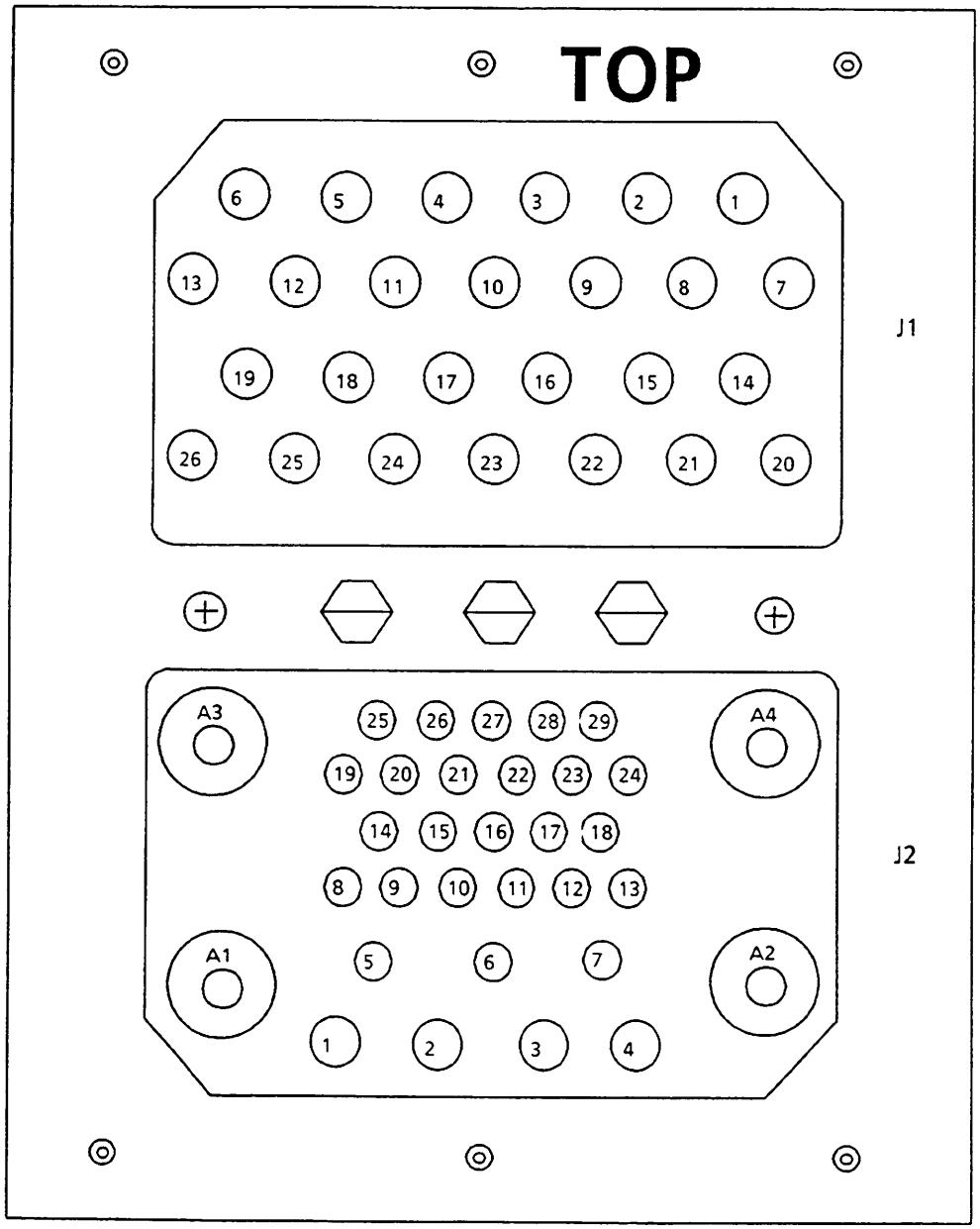
PIN		SIGNAL NAME
P1	A	AFIS Transceiver PTT
	B	NC
	C	NC
	D	+ 28 VDC Antenna Switch Unit
	E	VHF Comm PTT
	F	NC
	G	NC
	H	GND Antenna Switch Unit
	J	Comm Status
	K	NC
BNC CONNECTOR		
	J1	DMU VHF Transceiver
	J2	VHF Antenna
	J3	VHF Comm Transceiver

ANTENNA SWITCHING UNIT PIN ASSIGNMENT
Figure 3-39



PIN	SIGNAL NAME	PIN	SIGNAL NAME
A	NO. 1 TRANSMIT (H)	L	NO. 3 TRANSMIT (H)
B	NO. 1 TRANSMIT (L)	M	NO. 3 TRANSMIT (L)
C	NO. 1 RECEIVE (H)	N	NO. 3 RECEIVE (H)
D	NO. 1 RECEIVE (L)	P	NO. 3 RECEIVE (L)
E	NO CONNECTION	R	CONFIG ENABLE NO. 1
F	NO. 2 TRANSMIT (H)	S	CONFIG ENABLE NO. 2
G	NO. 2 TRANSMIT (L)	T	CONFIG ENABLE NO. 3
H	NO. 2 RECEIVE (H)	U	28 VDC A/C POWER
J	NO. 2 RECEIVE (L)	V	28 VDC RETURN
K	NO CONNECTION		

TRIPLE PORT DTU CONNECTOR PIN ASSIGNMENT PN 15655-0X01
Figure 3-40



SCU UNIT CONNECTOR
Figure 3-41 (Sheet 1 of 2)

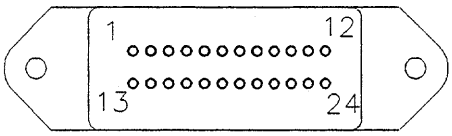
PIN	SIGNAL NAME	PIN	SIGNAL NAME
1	SPARE	14	SPARE
2	SPARE	15	SPARE
3	SPARE	16	SPARE
4	SPARE	17	SPARE
5	SPARE	18	SPARE
6	SPARE	19	SPARE
7	SPARE	20	SPARE
8	SPARE	21	SPARE
9	SPARE	22	SPARE
10	SPARE	23	SPARE
11	SPARE	24	SPARE
12	SPARE	25	SPARE
13	SPARE	26	SPARE

SCU Connector J1

PIN	SIGNAL NAME	PIN	SIGNAL NAME	PIN	SIGNAL NAME
1	+ 28VDC AIRCRAFT POWER	12	SPARE	23	CONTROL IN (L)
2	- 28VDC AIRCRAFT POWER	13	SPARE	24	CONTROL OUT (L)
3	Chassis Ground	14	SPARE	25	CONTROL OUT (H)
4	Control ON/OFF	15	SPARE	26	NAV Data (L)
5	SPARE	16	SPARE	27	NAV Data (H)
6	SPARE	17	SPARE	28	SPARE
7	SPARE	18	Data Transmit (L)	29	SPARE
8	SPARE	19	Data Transmit (H)		
9	SPARE	20	Data Receive (L)	A1	SPARE
10	SPARE	21	Data Receive (H)	A2	SPARE
11	SPARE	22	CONTROL IN (H)	A3	ANTENNA
				A4	SPARE

SCU Connector J2

Figure 3-41 (Sheet 2 of 2)



CONNECTOR VIEW FROM BACK

Remote Processor Unit (RPU) Mating Connector
ARNAV P/N 150-1151
Figure 3-42 (Sheet 1 of 2)

PIN	SIGNAL NAME	PIN	SIGNAL NAME
1	+28 VDC	13	SYNC GND
2	(no connection)	14	RS-232 RX1
3	(no connection)	15	RS-232 TX1
4	GRN -	16	FMS TX (L)
5	RED -	17	FMS RX (L)
6	BLUE -	18	GND
7	RED +	19	(no connection)
8	HORIZ	20	(no connection)
9	GRN +	21	(no connection)
10	VERT	22	FMS TX (H)
11	BLUE +	23	FMS RX (H)
12	(no connection)	24	GND

Remote Processor Unit (RPU) Mating Connector
ARNAV P/N 150-1151
Figure 3-42 (Sheet 2 of 2)

AFIS COMPONENT	UNIT CONNECTOR	MATING CONNECTOR
DATA TRANSFER UNIT	BURNDY BT02A-12-10P BENDIX PT02A-12-10P	(Global P/N 12893-1) BURNDY L12TF-10S-6NA BENDIX PT06AC-12-10S ITT KPT061312-10S
TRIPLE PORT DTU	ITT KPT02A14-19P BURNDY BT02A-14-19P MIL-C-26482 MS3110E1419P	(Global P/N 129-215678-01)[1] ITT KPT06F14-19S BENDIX PT06CE-14-19S
DATA MANAGEMENT UNIT P/N 400-045500-XXXX	ITT DPX2NA -A106S40W1MP-34B-0144 VENDOR PN FOR RF INSERT 249-2073-001	(Global P/N 129-214251-01)[1] ITT DPX2NA-A106P40W1MS-33B-0044 ITT PN FOR RF INSERT 249-2078-001
P/N 42000-XX-XX	ITT DPX2NA67MP40W1MP-34B-01 VENDOR PN FOR RF INSERT 249-2073-001	(Global P/N 42770-1) ITT DPX2NA67MS40W1MS-33B-00 ITT PN FOR RF INSERT 249-2078-001
ANTENNA SWITCH UNIT P1	BURNDY BT02A-12-10PW	BURNDY L12TF-10S-6WA BT06AC12-10SW Global PN 12893-2
J1,J2,J3	KINGS KC-19-154	KINGS KC-59-123
SATELLITE COMMUNICATIONS UNIT		(Global P/N 129-217338-01)[1] AMP R2P26S33C4S0001(200)
AMPLIFIER (HPA/LNA)	TNC TYPE WITH ECS 310801 N TYPE WITH RG 142	(Global P/N 129-017353-01 Straight)[1] ECS CTS 022 (Global P/N 129-017353-02 Right Angle)[1] ECS CTR 022 (Global P/N 129-017354-01 Straight)[1] ECS CTS 722 (Global P/N 129-017354-02 Right Angle)[1] ECS CTR 722

Connectors Used
Figure 3-43 (Sheet 1 of 2)

AFIS COMPONENT	UNIT CONNECTOR	MATING CONNECTOR
JET BLADE ANTENNA	TNC TYPE WITH ECS 310801	(Global P/N 129-017353-01 Straight)[1] ECS CTS 022 (Global P/N 129-017353-02 Right Angle)[1] ECS CTR 022
LOW PROFILE JET BLADE ANTENNA	TNC TYPE WITH ECS 310801	(Global P/N 129-017353-01 Straight)[1] ECS CTS 022 (Global P/N 129-017353-02 Right Angle)[1] ECS CTR 022
ARNAV REMOTE PROCESSOR UNIT	CENTRONICS STYPE D SUB	ARNAV P/N 150-1151[1] AMPHENOL 57-20240

1 Mating connectors with Global part numbers are the only connectors supplied by Honeywell.

Connectors Used
Figure 3-43 (Sheet 2 of 2)

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3.1 AFIS WX Display

AFIS DMU PN 400-045500-0210 or 400-045500-2010 are required to allow graphical weather to be displayed. An ARNAV MFD 5115 RPU will be required to create the graphical images.

AFIS DMU PN 400-045500-0211 or 400-045500-2011 is required for Dual GNS-XLS graphical weather display. An ARNAV MFD 5115 RPU will be required for each GNS-XLS to create the graphical images.

AFIS DMU PN 400-045500-0003 or 400-045500-0005 will require software modification to allow graphical weather to be displayed.

AFIS DMU PN 400-045500-0210 or 400-045500-2010 will require software modification to allow Dual GNS-XLS graphical weather display.

Wiring between the GNS-XLS and AFIS DMU remains as defined in the present AFIS Installation Manual.

Additional GNS-XLS pins for the AFIS weather graphics are as follows:

GNS-XLS TO RPU			
J101-F7	WX RS422 Receive HI	J101-R4	RGB Green LO
J101-F8	WX RS422 Receive LO	J101-R5	RGB Blue HI
J101-F9	WX RS422 Transmit HI	J101-R6	RGB Blue LO
J101-F10	WX RS422 Transmit LO	J101-R7	RGB Horizontal Sync
J101-R1	RGB Red HI	J101-R8	RGB Video Ground
J101-R2	RGB Red LO	J101-R9	RGB Vertical Sync
J101-R3	RGB Green HI		

AFIS DMU pins for the weather graphics are as follows:

FROM DMU:		TO RPU:	
OPTION #1			
J2-37	#1 CABIN DATA / ARNAV RPU OUT	14	RX RS232
J2-39	#1 CABIN DATA / ARNAV RPU IN	15	TX RS232
J2-35	#1 CABIN TERMINAL CNTL IN (CTS ACTIVE LOW)		JUMPER TO CHASSIS GROUND

OPTION #2			
J2-36	#2 CABIN DATA / ARNAV RPU OUT	14	RX RS232
J2-38	#2 CABIN DATA / ARNAV RPU IN	15	TX RS232
J2-34	#2 CABIN TERMINAL CNTL IN (CTS ACTIVE LOW)		JUMPER TO CHASSIS GROUND

SECTION 4
AFIS CONFIGURATION AND CHECKOUT

4.0 GENERAL

This section contains instructions for configuring the AFIS Configuration Module on GNS-500A, GNS-1000, GNS-X, GNS-XES, GNS-XL or GNS-XLS systems that contain DMU P/N 42000-XX-XX or DMU P/N 400-045500-XXXX. There are four different procedures for various configurations. Select the procedure that pertains to the specific aircraft installation.

4.0.1 Special Equipment and Materials

ITEM	USE
TEST CONNECTOR HONEYWELL P/N 12870-1 MB926T10F35P-19 BY MATRIX KJ6F10N-35PN BY CANNON MS27473T10 A 35P	CONNECTED TO J102 ON FRONT OF DMU, ALLOWS ACCESS TO CONFIGURATION PROGRAM FEATURE. PIN 2 IS JUMPERED TO PIN 3.

4.0.2 General

The test connector Honeywell P/N 12870-1 must be connected to the DMU in order to write to the configuration module.

During the Configuration Module Programming Procedure, consult table 4-1for appropriate aircraft type.

NOTE:

FOR AIRCRAFT NOT LISTED, CONTACT GLOBAL DATA CENTER FOR GLOBAL TYPE DESIGNATOR.

MANUFACTURER	MODEL	GLOBAL TYPE DESIGNATOR
AVIONS MARCEL	MYSTERE FALCON 10	FA10
DASSAULT	MYSTERE FALCON 20 MODEL C	DA20C
	MYSTERE FALCON 20 MODEL D	DA20D
	MYSTERE FALCON 20 MODEL F	FA20F
	MYSTERE FALCON 20 RETROFIT	DA20RF
	MYSTERE FALCON 50	FA50
	MYSTERE FALCON 50 (SB F50-0161)	FA50H
	MYSTERE FALCON 100	FA100
	MYSTERE FALCON 100 (SB F10-0052)	FA100A
	MYSTERE FALCON 200	FA200
	MYSTERE FALCON 900	FA900

TABLE 4-1 (Sheet 1 of 3)