

Honeywell

INSTALLATION MANUAL

BENDIX/KING[®]

KTR 908

VHF COMM TRANSRECEIVER

KFS 598/598A

VHF COMM CONTROL UNITS

MANUAL NUMBER 006-00197-0008

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SECTION I GENERAL INFORMATION

1.1 INTRODUCTION

This manual contains information relative to the physical, mechanical and electrical characteristics of the Bendix/King Gold Crown KTR 908 VHF Communications Transceiver, and the KFS 598 and KFS 598A Control Units. Installation and operating procedures are also included.

1.2 EQUIPMENT DESCRIPTION

The KTR 908 with either a KFS 598 or KFS 598A Control Unit comprises a complete system which will provide two way voice communications from 118.000 MHz to 135.975 MHz in 25 kHz increments. Operation from 118.000 MHz to 136.975 MHz or 118.000 MHz to 151.975 MHz is possible with the appropriate version KTR 908 and control unit.

Mechanical type control units manufactured by Gables Engineering, Coral Gables, Florida, may be used in lieu of the KFS 598 or KFS 598A.

The KTR 908 is an all solid state design which allows rigid mounting in any position. Frequency and mode information is communicated with the control unit via a Honeywell format serial data bus.

Various versions available offer 25 kHz or 50 kHz receiver selectivity, extended frequency operation from 118.000 MHz to 151.975 MHz, SELCAL/DF output, and a low power transmitter option. Refer to section [1.4.1 KTR 908 VHF COMMUNICATIONS TRANSCEIVER](#) for specific options available to each version of the KTR 908.

Both the KFS 598 and KFS 598A Control Units may be panel or console mounted and feature gas discharge displays with automatic dimming. The KFS 598 is the standard control unit and features Active/Standby frequency selection in which channeling is accomplished by changing the frequency displayed in the standby window and then transferring this frequency into the Active window via a transfer button on the control unit front panel or an optional remote transfer button.

Optional features available in the KFS 598 are version dependent. Refer to section [1.4.2 KFS 598 CONTROL UNIT](#) for specific options available to each version of the KFS 598. Generally, these options are as follows:

- Extended Frequency option which allows operation from 118.000 MHz to 151.975 MHz when used with compatible version KTR 908.
- Black or gray bezel.
- 5 Vdc or 28 Vdc bezel lighting.
- Diffused or non-diffused display lens.
- Available with or without volume control.
- Available with or without ON/OFF switch.
- Available with 500 ohm volume control compatible with audio systems in certain Beech King Air installations.

The KFS 598A is an optional control unit which offers all the features and options available in the KFS 598 and may be used, depending on version, in a tandem Master/Slave control unit configuration or as an integral part of a Frequency Management System. Refer to section [1.4.3 KFS 598A CONTROL UNIT](#) for specific options available to each version of the KFS 598A.

Generally, features common to all versions of the KFS 598A which are not available in the KFS 598 include:

- Pre-programmable frequencies which may be later recalled for use by channel number.
- Remote channeling capability which allows the system to step through previously programmed channels via a remote channel button.
- Direct channeling of frequency displayed in Active window.
- Civil or Military operating modes.
- Display dimmer override.

1.3 TECHNICAL CHARACTERISTICS

1.3.1 KTR 908 TRANSCEIVER

TSO COMPLIANCE:	TSO C37b, and C38b
SOFTWARE CERTIFICATION CATEGORY:	RTCA DO-160A Env Cat
ENVIRONMENTAL CERTIFICATION:	A2D2/A/MNO/EXXXSZ/AB/A/AB/A
APPLICABLE DOCUMENTS: 064-1023-00/02/04/06/08/10/12/14: 064-1023-01/03/05/07/09/11/13/15: 064-1023-00/01/02/03/04/05/06/07: 064-1023-08/09/10/11/12/13/14/15:	RTCA DO-156 Class C and D RTCA DO-156 Class A and B RTCA DO-157 Class 3 RTCA DO-157 Class 4
NON TSO'D FUNCTIONS:	None
ICAO ANNEX 10 FM INTERFERENCE IMMUNITY:	ICAO Modified (MOD 3) units meet the Intermodulation and Desense criteria of DO-186 Paragraph 2.2.10 Intermodulation Paragraph 2.2.11 Desensitization ICAO Annex 10 Paragraph 4.7.3.1 Intermodulation Paragraph 4.7.3.2 Desensitization
PHYSICAL DIMENSIONS:	See FIGURE 2-8 KTR 908 INSTALLATION
WEIGHT	See FIGURE 2-8 KTR 908 INSTALLATION
TEMPERATURE RANGE:	-55°C to +70°C
ALTITUDE:	55,000 Feet
POWER REQUIREMENTS: Receive: Transmit:	27.5 Vdc at 0.4 A max 27.5 Vdc at 9.0 A max
FREQUENCY RANGE: (Version dependent, see 1.4.1 KTR 908 VHF COMMUNICATIONS TRANSCEIVER.)	118.000 MHz to 136.975 MHz in 25 kHz increments OR 118.000 MHz to 151.975 MHz in 25 kHz increments

1.3.2 KTR 908 TRANSMITTER

POWER OUTPUT: (Version dependent, see 1.4.1 KTR 908 VHF COMMUNICATIONS TRANSCEIVER)	
20 Watt TX:	20 watts minimum, 26 watts maximum from 118.000 MHz to 136.975 MHz 16 watts minimum from 136.000 to 151.975 MHz
10 Watt TX:	8 watts minimum, 12 watts maximum for all frequencies
DUTY CYCLE:	1:4 (1 min transmit - 4 min receive)
MODULATION CAPABILITY:	No less than 85% and no more than 98%
SIDETONE OUTPUT:	Up to 100 mW into 500 ohm load (adjustable)
HARMONIC CONTENT:	Greater than 60 dB down from carrier level
SPURIOUS OUTPUTS:	No less than 60 dB below carrier level
MICROPHONE:	Dynamic with transistorized preamp or carbon. Must provide no less than 120 mVrms into 100 ohm load

1.3.3 KTR 908 RECEIVER

SENSITIVITY:	2 μ V (hard) for no less than 6 dB signal plus noise-to-noise with 1000 Hz, 30% modulated (with compressor disabled)
SELECTIVITY: (Version dependent, see 1.4.1 KTR 908 VHF COMMUNICATIONS TRANSCEIVER)	
6 dB bandwidth	No less than 20.6 kHz with no less than 10.0 kHz on each side
60 dB bandwidth	No more than 39.2 kHz with no more than 20.0 kHz on each side
6 dB bandwidth	OR No less than 30 kHz with no less than 14.5 kHz on each side
60 dB bandwidth	No more than 40 kHz on each side
AUDIO OUTPUT:	No less than 100 mW into 500 ohm load

1.3.3 KTR 908 RECEIVER (cont).

AUDIO RESPONSE:	No more than 6 dB variation from 350 Hz to 2500 Hz
SELCAL/DF OUTPUT:	0.25 to 0.50 Vrms (no load) with 100 μV input modulated 1000 Hz at 30%
AGC CHARACTERISTICS:	5 μV to 200 mV for 3 dB Audio Level Change
SQUELCH:	Automatic squelch (internally adjustable carrier to noise) with manual disable and carrier squelch override
SPURIOUS RESPONSES AND CROSS MODULATION PRODUCTS:	At least 80 dB down

1.3.4 KFS 598 CONTROL UNIT

TSO COMPLIANCE:	TSO C37b, C38b
SOFTWARE CERTIFICATION CATEGORY:	RTCA DO-160A Env Cat
ENVIRONMENTAL CERTIFICATION:	A1D1/A/KPS/XXXXSZXA/AB/A
NON TSO'D FUNCTIONS:	None
PHYSICAL DIMENSIONS:	See FIGURE 2-9 KFS 598 INSTALLATION
WEIGHT	See FIGURE 2-9 KFS 598 INSTALLATION
TEMPERATURE RANGE:	-20° to +55° C
FREQUENCY CONTROL RANGE: (Version dependent, see 1.4.2 KFS 598 CONTROL UNIT)	118.000 MHz to 135.975 MHz in 25 kHz increments OR 118.000 MHz to 136.975 MHz in 25 kHz increments OR 118.000 MHz to 151.975 MHz in 25 kHz increments
POWER REQUIREMENTS: NOTE: All power supplied by KTR 908	+ 10 ± 0.5 Vdc at 155 mA max - 26 ± 1.0 Vdc at 6 mA max +185 ± 7.0 Vdc at 6.2 mA max
LIGHTING: (Version dependent, see 1.4.2 KFS 598 CONTROL UNIT)	5 Vdc at 200 mA max 28 Vdc at 50 mA max
CONTROL PIN CHARACTERISTICS: Remote Transfer (P5981 Pin 2): PTT (P5981 Pin 3): Squelch Test (P5981 Pin 25):	Active state = Signal Ground Inactive state = Open Active state = LO (No more than 3.0 Vdc) Inactive state = Open Active state = LO (No more than 0.5 Vdc) Inactive state = HI (No more than 9.0 Vdc)

1.3.5 KFS 598A CONTROL UNIT

TSO COMPLIANCE:	TSO C37c AND C38c
SOFTWARE CERTIFICATION CATEGORY:	RTCA DO-160A Env Cat
ENVIRONMENTAL CERTIFICATION:	A1D1/A/KPS/XXXXXSZXA/AB/A
NON TSO'D FUNCTIONS:	None
PHYSICAL DIMENSIONS:	See FIGURE 2-10 KFS 598A INSTALLATION
WEIGHT	See FIGURE 2-10 KFS 598A INSTALLATION
TEMPERATURE RANGE:	-20°C to +55°C
FREQUENCY CONTROL RANGE: (Version dependent, see 1.4.3 KFS 598A CONTROL UNIT)	118.000 to 135.975 MHz in 25 kHz increments OR 118.000 MHz to 136.975 MHz in 25 kHz increments OR 118.000 MHz to 151.975 MHz in 25 kHz increments
POWER REQUIREMENTS: NOTE: All power is supplied by the KTR 908	+ 10 ± 0.5 Vdc at 450 mA max - 26 ± 1.0 Vdc at 6 mA max +185 ± 7.0 Vdc at 6.2 mA max
LIGHTING: (Version dependent, see 1.4.3 KFS 598A CONTROL UNIT)	5 Vdc at 200 mA max OR 28 Vdc at 50 mA OR 115 Vac, 400 Hz at 500 mA max (Display) 115 Vac, 400 Hz at 1 A max (Nomenclature) 27.5 Vdc at 500 mA max (LCD heater)
CONTROL PIN CHARACTERISTICS:	
Program Secure (P5981 Pin 1):	Active state = Signal Ground Inactive state = Open
Remote Transfer (P5981 Pin 2):	Active state = Signal Ground Inactive state = Open
PTT (P5981 Pin 3):	Active state = LO (No more than 3.0 Vdc) Inactive state = Open
Auto Dim Override (5981 Pin 13):	Active state = LO (No more than 0.5 Vdc) Inactive state = Open
Mic Key In (P5981 Pin 21):	Active state = LO (No more than 3.0 Vdc) Inactive state = Open
Squelch Test (P5981 Pin 25):	Active state = LO (No more than 0.5 Vdc) Inactive state = Open

1.3.5 KFS 598A CONTROL UNIT (cont).

CONTROL PIN CHARACTERISTICS (cont):	
Master/Slave (P5982 Pin 3):	Signal Ground = Master Unit Open = Slave Unit
Remote Channel (P5982 Pin 4):	Active state = Signal Ground Inactive state = Open
Civil/Military (P5982 Pin 7):	Signal Ground = Military Mode Open = Civil Mode
Control Disable (P5982 Pin 8):	Active state = Signal Ground Inactive state = Open

1.3.6 TSO CLASSIFICATIONS

RTCA DO-160A Environmental Categories:

	KTR 908	KFS 598	KFS 598A
Temperature and Altitude	A2D2	A1D1	A1D1
Humidity	A	A	A
Vibration	MN0	KPS	KPS
Explosion	E	X	X
Waterproofness	X	X	X
Hydraulic Fluid	X	X	X
Sand and Dust	X	X	X
Fungus Resistance	X	X	X
Salt Spray	S	S	S
Magnetic Effect	Z	Z	Z
Power Input	AB	X	X
Voltage Spike	A	A	A
Audio Freq Conducted Susceptibility	AB	AB	AB
Electromagnetic Compatibility	A	A	A

1.4 UNITS AND ACCESSORIES SUPPLIED

1.4.1 KTR 908 VHF COMMUNICATIONS TRANSCEIVER

The technical characteristics of the KTR 908 P/N 064-1023-XX described in Section [1.3 TECHNICAL CHARACTERISTICS](#) include some optional, version dependent characteristics. The table below lists the optional characteristics available with each version:

VERSION	25 kHz SELECT	50 kHz SELECT	118 to 136.975 MHz	118 to 151.975 MHz	20 WATT TX	10 WATT TX	SELCAL/DF OUTPUT
-00	X	-	X	-	X	-	-
-01	-	X	X	-	X	-	-
-02	X	-	-	X	X	-	-
-03	-	X	-	X	X	-	-
-04	X	-	X	-	X	-	X
-05	-	X	X	-	X	-	X
-06	X	-	-	X	X	-	X
-07	-	X	-	X	X	-	X
-08	X	-	X	-	-	X	-
-09	-	X	X	-	-	X	-
-10	X	-	-	X	-	X	-
-11	-	X	-	X	-	X	-
-12	X	-	X	-	-	X	X
-13	-	X	X	-	-	X	X
-14	X	-	-	X	-	X	X
-15	-	X	-	X	-	X	X

TABLE 1-1 KTR 908 OPTIONAL CHARACTERISTICS

1.4.2 KFS 598 CONTROL UNIT

The KFS 598 P/N 071-1215-XX is the standard control unit for the KTR 908. The technical characteristics of the KFS 598 described in Section [1.3 TECHNICAL CHARACTERISTICS](#) include some optional, version dependent characteristics.

NOTE:

Versions 071-1215-00 through 071-1215-23 are no longer available through the factory.

The following table lists the optional characteristics available with each version:

VERSION	118 to 135.975 MHz	118 to 136.975 MHz	118 to 151.975 MHz	BEZEL	LIGHT	DIFF LENS	NON- DIFF LENS	CONTROLS
-24	X	-	-	BLK	5V	X	-	VOL/ON/OFF/TEST
-25	X	-	-	BLK	28V	X	-	VOL/ON/OFF/TEST
-26	X	-	-	GRY	5V	X	-	VOL/ON/OFF/TEST
-27	X	-	-	GRY	28V	X	-	VOL/ON/OFF/TEST
-29	X	-	-	BLK	5V	X	-	TEST
-30	X	-	-	BLK	28V	X	-	TEST
-31	X	-	-	GRY	5V	X	-	TEST
-32	X	-	-	GRY	28V	X	-	TEST
-34	X	-	-	BLK	5V	X	-	ON/OFF/TEST
-35	X	-	-	BLK	28V	X	-	ON/OFF/TEST
-36	X	-	-	GRY	5V	X	-	ON/OFF/TEST
-37	X	-	-	GRY	28V	X	-	ON/OFF/TEST
-38	-	-	X	BLK	28V	-	X	VOL/ON/OFF/TEST
-39	-	-	X	BLK	5V	X	-	VOL/ON/OFF/TEST
-40	X	-	-	BLK	28V	-	X	VOL/ON/OFF/TEST
-41	X	-	-	BLK	28V	X	-	ON/OFF/TEST/VOL*
-42	-	-	X	BLK	28V	X	-	ON/OFF/TEST
-43	-	-	X	BLK	28V	X	-	VOL/ON/OFF/TEST
-44	-	-	X	BLK	28V	X	-	ON/OFF/TEST/VOL*
-45	-	-	X	GRY	5V	X	-	TEST
-54	-	X	-	BLK	5V	X	-	VOL/ON/OFF/TEST
-55	-	X	-	BLK	28V	X	-	VOL/ON/OFF/TEST
-56	-	X	-	GRY	5V	X	-	VOL/ON/OFF/TEST
-57	-	X	-	GRY	28V	X	-	VOL/ON/OFF/TEST
-59	-	X	-	BLK	5V	X	-	TEST
-60	-	X	-	BLK	28V	X	-	TEST
-61	-	X	-	GRY	5V	X	-	TEST
-62	-	X	-	GRY	28V	X	-	TEST
-64	-	X	-	BLK	5V	X	-	ON/OFF/TEST
-65	-	X	-	BLK	28V	X	-	ON/OFF/TEST
-66	-	X	-	GRY	5V	X	-	ON/OFF/TEST
-67	-	X	-	GRY	28V	X	-	ON/OFF/TEST
-70	-	X	-	BLK	28V	-	X	VOL/ON/OFF/TEST
-71	-	X	-	BLK	28V	X	-	ON/OFF/TEST/VOL*

* 500 ohm volume

TABLE 1-2 KFS 598 OPTIONAL CHARACTERISTICS

1.4.3 KFS 598A CONTROL UNIT

The KFS 598A P/N 071-1282-XX is an optional replacement for the KFS 598 in single control unit installations, and is required for tandem control unit installations or Frequency Management applications.

Note:

Versions -41 and -44 are not recommended for tandem installations. Versions 071-1282-00 through 071-1282-23 are no longer available through the factory.

The technical characteristics of the KFS 598A described in Section **1.3 TECHNICAL CHARACTERISTICS** include some optional, version dependent characteristics. The table below lists the optional characteristics available with each version:

VERSION	118 to 135.975 MHz	118 to 136.975 MHz	118 to 151.975 MHz	BEZEL	LIGHT	DIFF LENS	NON-DIFF LENS	CONTROLS
-24	X	-	-	BLK	5V	X	-	VOL/ON/OFF/TEST
-25	X	-	-	BLK	28V	X	-	VOL/ON/OFF/TEST
-26	X	-	-	GRY	5V	X	-	VOL/ON/OFF/TEST
-27	X	-	-	GRY	28V	X	-	VOL/ON/OFF/TEST
-29	X	-	-	BLK	5V	X	-	TEST
-30	X	-	-	BLK	28V	X	-	TEST
-31	X	-	-	GRY	5V	X	-	TEST
-32	X	-	-	GRY	28V	X	-	TEST
-34	X	-	-	BLK	5V	X	-	ON/OFF/TEST
-35	X	-	-	BLK	28V	X	-	ON/OFF/TEST
-36	X	-	-	GRY	5V	X	-	ON/OFF/TEST
-37	X	-	-	GRY	28V	X	-	ON/OFF/TEST
-38	-	-	X	BLK	28V	-	X	VOL/ON/OFF/TEST
-39	-	-	X	BLK	5V	X	-	VOL/ON/OFF/TEST
-40	X	-	-	BLK	28V	-	X	VOL/ON/OFF/TEST
-41	X	-	-	BLK	28V	X	-	ON/OFF/TEST/VOL*
-42	-	-	X	BLK	28V	X	-	ON/OFF/TEST
-43	-	-	X	BLK	28V	X	-	VOL/ON/OFF/TEST
-44	-	-	X	BLK	28V	X	-	ON/OFF/TEST/VOL*
-45	-	-	X	GRY	5V	X	-	TEST

* 500 ohm volume

**TABLE 1-3 KFS 598A OPTIONAL CHARACTERISTICS
(Sheet 1 of 2)**

VERSION	118 to 135.975 MHz	118 to 136.975 MHz	118 to 151.975 MHz	BEZEL	LIGHT	DIFF LENS	NON- DIFF LENS	CONTROLS
-64	-	X	-	BLK	5V	X	-	VOL/ON/OFF/TEST
-65	-	X	-	BLK	28V	X	-	VOL/ON/OFF/TEST
-66	-	X	-	GRY	5V	X	-	VOL/ON/OFF/TEST
-67	-	X	-	GRY	28V	X	-	VOL/ON/OFF/TEST
-69	-	X	-	BLK	5V	X	-	TEST
-70	-	X	-	BLK	28V	X	-	TEST
-71	-	X	-	GRY	5V	X	-	TEST
-72	-	X	-	GRY	28V	X	-	TEST
-74	-	X	-	BLK	5V	X	-	ON/OFF/TEST
-75	-	X	-	BLK	28V	X	-	ON/OFF/TEST
-76	-	X	-	GRY	5V	X	-	ON/OFF/TEST
-77	-	X	-	GRY	28V	X	-	ON/OFF/TEST
-80	-	X	-	BLK	28V	-	X	VOL/ON/OFF/TEST
-81	-	-	X	BLK	28V	X	-	ON/OFF/TEST/VOL*

* 500 ohm volume

**TABLE 1-3 KFS 598A OPTIONAL CHARACTERISTICS
(Sheet 2 of 2)**

1.4.4 KTR 908 INSTALLATION KIT

The KTR 908 Installation Kit (P/N 050-01800-0001) is available with the crimp type connector pins. Previously the kit was also available with the solder type connectors. (P/N 050-01800-0000). However, this type is now obsolete and replaced by the crimp type connectors.

Listings for both the solder and crimp type kits are given below. Kit identification and contents are as follows:

CRIMP TYPE 050-01800-0001

050-01800-0001 INSTL KIT CRMP Rev. 1

SYMBOL	PART NUMBER	FIND NO	DESCRIPTION	UM	-0001
	030-00005-0000		CONN BNC UG 88C/	EA	1.00
	030-01157-0011		SOCKET CRMP 20G	EA	20.00
	030-01173-0000		CONN SUB-D HSG 25S	EA	1.00
	030-01186-0000		CONTACT SKT CRIMP	EA	4.00
	030-01188-0000		PIN POLRZTN FEMALE	EA	1.00
	030-02351-0002		HOOD/LVR ASSY ST E	EA	1.00
	071-04022-0001		RACK ASSY	EA	1.00

SOLDER TYPE 050-01800-0000 (OBSOLETE)

050-01800-0000 INSTL KIT SLDR Rev. AA

SYMBOL	PART NUMBER	FIND NO	DESCRIPTION	UM	-0000
	030-00005-0000		CONN BNC UG 88C/	EA	1.00
	030-01157-0011		SOCKET CRMP 20G	EA	20.00
	030-01173-0000		CONN SUB-D HSG 25S	EA	1.00
	030-01186-0000		CONTACT SKT CRIMP	EA	4.00
	030-01188-0000		PIN POLRZTN FEMALE	EA	1.00
	030-02351-0002		HOOD/LVR ASSY ST E	EA	1.00
	071-04022-0001		RACK ASSY	EA	1.00

1.4.5 KFS 598 INSTALLATION KIT

The KFS 598 Installation Kit (P/N 050-01830-0001) is available with crimp type connector pins. Previously, the kit was also available with solder type connectors (P/N 050-01830-0000). However, this type is now obsolete and replaceable by the crimp type connectors.

Listings for both the solder and crimp type kits are given below. Kit identification and contents are as follows:

CRIMP TYPE 050-1830-0001

050-01830-0001 INSTL KIT CRMP Rev. 3

SYMBOL	PART NUMBER	FIND NO	DESCRIPTION	UM	-0001
	030-01157-0011		SOCKET CRMP 20G	EA	28.00
	030-01174-0000		CONN, D-SUB, RECPT	EA	1.00
	030-01188-0000		PIN POLRZTN FEMALE	EA	1.00
	030-01222-0000		CONN, D-SUB, HOOD,	EA	1.00
	092-00052-0002		NUT ANCHOR 6-32	EA	2.00

SOLDER TYPE 050-1830-0000 (OBSOLETE)

050-01830-0000 INSTL KIT SLDR Rev. 1

SYMBOL	PART NUMBER	FIND NO	DESCRIPTION	UM	-0000
	030-02358-0006		CONN SUB-D PC 29S	EA	1.00
	092-00052-0002		NUT ANCHOR 6-32	EA	2.00

1.4.6 KFS 598A INSTALLATION KIT

The KFS 598A Installation Kit (P/N 050-02091-0001) is available with crimp type connector pins. Two kits will be required for tandem installations.

Previously the kit was also available with solder type connectors (P/N 050-02091-0000). However, this type is now obsolete and replaceable by the crimp type connectors.

Listings for both the solder and crimp type kits are given below. Kit identification and contents are as follows:

CRIMP TYPE 050-02091-0001

050-02091-0001 INSTALLATION KIT Rev. 0

SYMBOL	PART NUMBER	FIND NO	DESCRIPTION	UM	-0001
	030-01157-0011		SOCKET CRMP 20G	EA	36.00
	030-01171-0000		CONN SUB-D HSG 9S	EA	1.00
	030-01174-0000		CONN, D-SUB, RECPT	EA	1.00
	030-01188-0000		PIN POLRZTN FEMALE	EA	2.00
	030-01222-0000		CONN, D-SUB, HOOD,	EA	1.00
	030-02351-0000		HOOD/LVR ASSY ST E	EA	1.00
	092-00052-0002		NUT ANCHOR 6-32	EA	2.00

SOLDER TYPE 050-02091-0000 (OBSOLETE)

050-02091-0000 INSTALLATION KIT 0

SYMBOL	PART NUMBER	FIND NO	DESCRIPTION	UM	-0000
	030-02346-0011		CONN SUB-D CA 9S	EA	1.00
	030-02351-0000		HOOD/LVR ASSY ST E	EA	1.00
	030-02358-0006		CONN SUB-D PC 29S	EA	1.00
	092-00052-0002		NUT ANCHOR 6-32	EA	2.00

1.5 ACCESSORIES REQUIRED, BUT NOT SUPPLIED

- A. Microphone.
- B. Broadband Communications Antenna (50ohm) with coaxial cable.

1.6 TOOLS REQUIRED, BUT NOT SUPPLIED

A special crimping tool and positioner and an insertion/extraction tool are needed when using crimp style connectors in KTR 908, KFS 598, or KFS 598A installations. Refer to [FIGURE 2-1 CRIMPING AND INSERTION/EXTRACTION TOOLS](#) for these tools and their part numbers.

1.7 LICENSE REQUIREMENTS

The Federal Communications Commission requires that the operator of the transmitter of this equipment hold a restricted radio telephone operators permit (FCC Form 753) or higher class license.

A permit may be obtained by a U.S. citizen from the nearest field office of the FCC; no examination is required.

An Aircraft Station License is required for this equipment. Forms (FCC Form 404, New Aircraft Station License, or FCC Form 405A, Renewal of Aircraft Station License) can be obtained from your nearest FCC Field Office.

This equipment has been type accepted by the FCC and entered on their list of type accepted equipment as Bendix/King KTR 908 and must be identified as Bendix/King KTR 908 on your FCC Form 404, Aircraft Radio Station License Application.

CAUTION:

THE VHF TRANSMITTER IN THIS EQUIPMENT IS GUARANTEED TO MEET FEDERAL COMMUNICATIONS COMMISSION ACCEPTANCE OVER THE OPERATING TEMPERATURE RANGE ONLY WHEN A BENDIX/KING CRYSTAL IS USED IN THE STABILIZED MASTER OSCILLATOR. USE OF OTHER THAN BENDIX/KING CRYSTALS IS CONSIDERED AN UNAUTHORIZED MODIFICATION, AND WILL VOID THE WARRANTY.

1.8 CONTINUED AIRWORTHINESS INSTRUCTIONS

1.8.1 EQUIPMENT

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 its 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.

1.8.2 WIRES/COAX CABLES

During on-condition or regularly scheduled maintenance, inspect the wires and coax cables following the guidelines listed in AC 43,13-1 Chapter 15 as necessary.

THIS PAGE IS RESERVED

SECTION II INSTALLATION

2.1 GENERAL

This section contains suggestions and factors to consider before installing the KTR 908, the KFS 598, and the KFS 598A. Close adherence to these suggestions will assure a more satisfactory performance from the equipment.

The conditions and test required for the TSO and MOPS approval of this article are minimum performance standards. It is the responsibility of those installing this article either on or with a specified type or class of aircraft to determine that the aircraft installation conditions are within the TSO and MOPS standards. These articles must have separate approval for installation in an aircraft. Any features in this equipment outside the requirements of this applicable TSO and MOPS must be evaluated and approved as part of the installation approval. The article may be installed only if performed under 14 CFR part 43 or the applicable airworthiness requirements.

2.2 UNPACKING AND INSPECTING EQUIPMENT

Exercise extreme care when unpacking the equipment. Make a visual inspection of the unit for evidence of damage incurred during shipment. If a claim for damage is to be made, save the shipping container to substantiate the claim. The claim should be promptly filed with the transportation company. It would be advisable to retain the container and packaging material after all equipment has been removed in the event that equipment storage or reshipment should become necessary.

2.3 EQUIPMENT INSTALLATION

The KTR 908 installation will conform to standards designated by the customer, installing agency, and existing conditions as to the unit location and type of installation. However, the following suggestions should be considered before installing the KTR 908/KFS 598/KFS 598A. Close adherence to these suggestions will assure a more satisfactory performance from the equipment.

2.3.1 COOLING CONSIDERATIONS

The greatest single contributor to increased reliability of all modern day avionics is to limit the maximum operating temperature of the individual units whether panel mounted or remote mounted. While modern day circuit designs consume far less electrical energy, the watts per cubic inch dissipated within the avionics units still remains much the same due to high density packaging techniques utilized. Consequently, the importance of providing avionics cooling is essential to the life span of the unit.

While each individual unit may or may not require forced air cooling, the combined heat load of several units operating in a typical avionics location will significantly degrade the reliability of the avionics if provisions for cooling are not incorporated in the initial installation. Failure to provide cooling will certainly lead to increased avionics maintenance costs and may void the Bendix/King warranty.

2.3.2 KTR 908 MECHANICAL INSTALLATION

- A. Select the KTR 908 location. The unit can be rigidly mounted. Allow at least one inch of free air space around the top and rear of the unit and one-half inch along each side. Allow adequate space for installation of cables and connectors.
- B. Refer to [FIGURE 2-8 KTR 908 INSTALLATION](#) for the KTR 908 mounting dimensions.
- C. Mark, punch, and drill the mounting holes. Care must be taken to avoid damage to adjacent equipment or cables.
- D. Secure the mounting rack firmly in place.
- E. Secure the KTR 908 to the mounting rack.

2.3.3 KTR 908 CABLE HARNESS AND CONNECTOR ASSEMBLY

- A. The installing agency will supply and fabricate all external cables. The connectors and hardware required are supplied in the Bendix/King Installation Kit P/N 050-01800-0000/0001. [FIGURE 2-6 BNC CABLE ASSEMBLY](#) illustrates the specific aspects of constructing the RF connector and [FIGURE 2-7 "SUB-MIN D" CONNECTOR ASSEMBLIES](#) illustrates wiring connector housing(s).
- B. The length and routing of the external cables must be carefully studied and planned before attempting actual installation. Avoid sharp bends and placing the cables too near the aircraft control cables.
- C. Use [FIGURE 2-2 KTR 908 CONNECTOR J9081 PINOUT DIAGRAM](#) to become familiar with the pin locations on the plugs for the fabrication of the external cables.
- D. Connect the external wiring to the KTR 908 and associated equipment using the applicable interconnect drawings, see [FIGURE 2-11 KTR 908/KFS 598 INTERCONNECT](#), [FIGURE 2-12 KTR 908/KFS 598A INTERCONNECT](#), [FIGURE 2-13 KTR 908/KFS 598A TANDEM INTERCONNECT](#), or [FIGURE 2-14 KTR 908/KFS 598A REPEATER INTERCONNECT](#).

2.3.4 KFS 598/KFS 598A MECHANICAL INSTALLATION

- A. Select the KFS 598/KFS 598A location. Insure that the unit will be easily accessible and clearly visible to the pilot.
- B. For mounting dimensions, refer to [FIGURE 2-9 KFS 598 INSTALLATION](#) or [FIGURE 2-10 KFS 598A INSTALLATION](#). Punch and drill the necessary mounting holes.
- C. Install the control unit.

2.3.5 KFS 598/598A CABLE HARNESS AND CONNECTOR ASSEMBLY

- A. The installing agency will supply and fabricate the external cable. The connectors and hardware required are supplied in Bendix/King Installation Kit P/N 050-01830-0000/0001 for the KFS 598 and 050-02091-0000/0001 for KFS 598A. See [FIGURE 2-7 "SUB-MIN D" CONNECTOR ASSEMBLIES](#) for the specific aspects of constructing the wiring connector housing.
- B. The length and routing of the external cables must be carefully studied and planned before attempting actual installation. Avoid sharp bends and placing the cables too near the aircraft control cables.
- C. See [FIGURE 2-3 KFS 598 CONNECTOR J5981 PINOUT DIAGRAM](#) and [FIGURE 2-4 KFS 598A CONNECTOR J598A1 PINOUT DIAGRAM](#) to become familiar with the pin locations on the plugs for the fabrication of the external cables.
- D. Connect the external wiring to the KFS 598/KFS 598A and associated equipment using the applicable interconnect drawings, see [FIGURE 2-11 KTR 908/KFS 598 INTERCONNECT](#), [FIGURE 2-12 KTR 908/KFS 598A INTERCONNECT](#), [FIGURE 2-13 KTR 908/KFS 598A TANDEM INTERCONNECT](#), or [FIGURE 2-14 KTR 908/KFS 598A REPEATER INTERCONNECT](#).

2.3.6 KFS 598A CONTROL PIN FUNCTIONS

2.3.6.1 Control Disable (P5982-P8)

The front panel and remote controls are nonfunctional when this pin is grounded. The transceiver remains tuned to the frequency in use prior to disabling.

2.3.6.2 Remote Channel (P5982-P4)

Grounding this pin places the unit in channel mode and increments the channel number from the previous channel number used.

2.3.6.3 Program Secure (P5981-P1)

After a channel has been Program Secured, that channel may not be reprogrammed until it has been Un-program Secured. The process involves grounding and ungrounding Pin 1 of the 29 pin rear connector.

When Program or Un-program Securing any channels in a tandem installation, the following procedure must be followed to insure proper operation.

- A. Remove either unit from aircraft.
- B. Refer to Section V of the KFS 598A Maintenance Manual for Program Secure procedure.
- C. Before replacing the unit in the aircraft, verify that the remaining unit is in **FREQUENCY MODE**.
- D. Reinstall Program Secured unit and apply power.
- E. Operating only the newly Program Secured unit, place the units in Program mode by holding the CHAN button for two seconds. Turn either tuning knob to display all nine channels. Do not remove power for at least three (3) seconds. The unit that remained in the aircraft will now be Program Secured, also.

2.3.6.4 Master/Slave (P5982-P3)

Grounding this pin designates the control unit as the Master unit in a tandem installation. An open pin designates the Slave unit.

2.3.6.5 Automatic Dim Override (P5981-P13)

Grounding this pin disables the automatic display dimmer. Display brightness will go to maximum intensity.

2.3.6.6 Civil/Military Mode Select (P5982-P7)

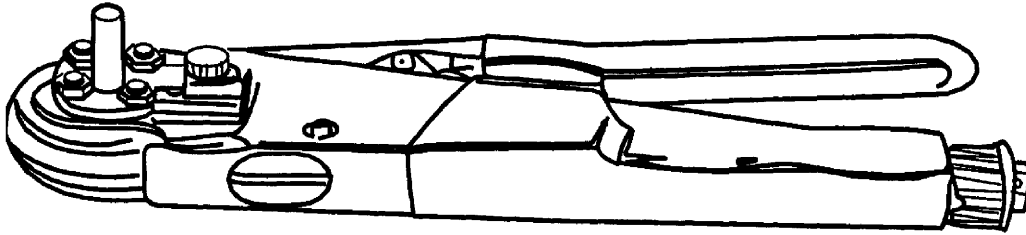
Grounding this pin enables Military Mode operation. Opening this pin will allow the control unit to operate in the Civil Mode.

2.3.6.7 Frequency Management COMM Unit Designation (P5982-P5 and P6)

When one to three communications systems are installed as part of a system with frequency management capabilities, such as the Bendix/King KNS 660, each control head must be designated as either COMM1, COMM2, or COMM3.

The COMM unit number designation is set by grounding or leaving open P5982-P5 and P6 in the proper combination as listed below. The control unit communicates on the frequency management data bus using labels which correspond to the unit number designation. When both P5698-P5 and P6 are left open, the control head is configured for tandem operation.

P5982 -P5	P5982 -P6	COMM UNIT NUMBER DESIGNATION
GROUND	GROUND	COMM1
OPEN	GROUND	COMM2
GROUND	OPEN	COMM3
OPEN	OPEN	TANDEM OPERATION

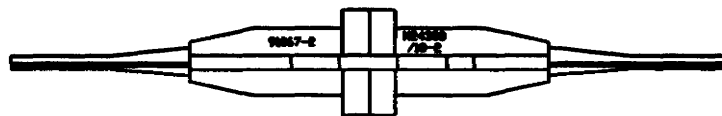


CRIMPING TOOL

HONEYWELL P/N: 005-02012-0021
MIL SPEC P/N: M22520/2-01
POSITRONICS P/N: 9507-000
DANIELS (DMC) P/N: AFM8
ASTRO (BUCHANAN) P/N 612118

POSITIONER

HONEYWELL P/N: 005-02012-0023
POSITRONICS: P/N 9502-11 (18 AWG)
POSITRONICS: P/N 9502-10 (20-32 AWG)
DANIELS (DMC) P/N: K774 (18 AWG)
DANIELS (DMC) P/N: K694 (20-32 AWG)
ASTRO (BUCHANAN) P/N 612513



INSERTION/EXTRACTION TOOL

HONEYWELL P/N: 005-02012-0025
MIL SPEC P/N: M81969/1-02
(SUPERCEDES MIL SPEC P/N: M24308/18-2)
ORDER FROM POSITRONICS, DANIELS, OR ASTRO BY MIL SPEC P/N

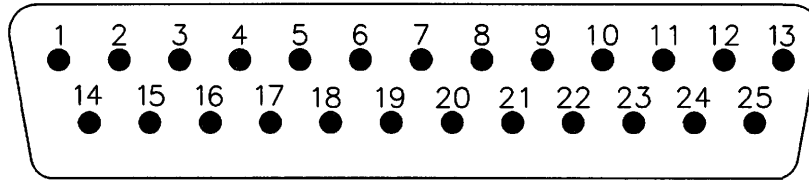
Vendor Ordering Information:

Astro Tool Company
21615 SW TV Hwy, Beaverton, OR 97006
(503) 642-9853 * Fax: 503-591-7766 * Email: sales@astrotool.com

Daniels Manufacturing Company (DMC)
526 Thorpe Road, Orlando, FL 32824-8133 USA
Tel: 407-855-6161 * Fax: 407-855-6884 * Email: dmc@dmctools.com

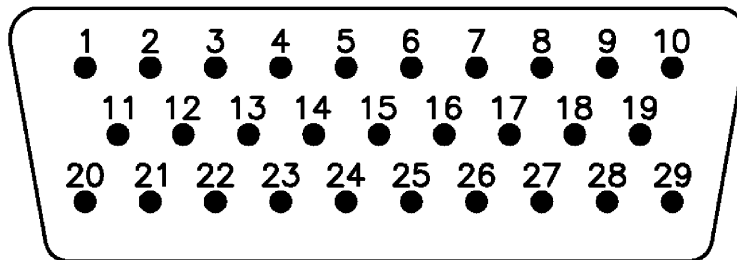
Positronics Industries, Inc.
423 N. Campbell Ave P.O. Box 8247, Springfield, MO 65801
Tel: 800-641-4054 * Fax: 417-866-4115 * Email: info@connectpositronics.com

FIGURE 2-1 CRIMPING AND INSERTION/EXTRACTION TOOLS



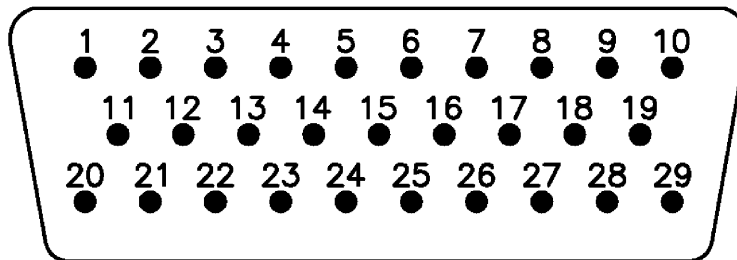
PIN	I/O	SIGNAL NAME
1	I	SQUELCH TEST
2	I	ATE SQ TEST OR COMP TEST
3	I	MIC KEY
4	I	PTT
5	I	VOLUME CONTROL
6	I	MIC AUDIO
7		POLARIZING PIN
8	I	+27.5 VDC A/C POWER INPUT
9	0	-26VDC OUTPUT
10	0	+10VDC OUTPUT
11	0	DETECTOR OUT
12		NOT CONNECTED
13	0	+185VDC OUTPUT
14	I	DATA STROBE
15	I	CLOCK BUS
16	I	DATA BUS
17	I	IF AGC
18	I	RF AGC
19	0	AUDIO LO OUTPUT
20	0	AUDIO HI OUTPUT
21	I	+27.5VDC A/C POWER INPUT
22		GROUND
23		A/C GROUND
24		A/C GROUND
25	I	ON/OFF CONTROL

FIGURE 2-2 KTR 908 CONNECTOR J9081 PINOUT DIAGRAM



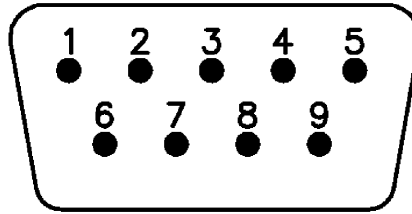
PIN	I/O	SIGNAL NAME
1		N/C
2	I	REMOTE TRANSFER SWITCH
3	I	PTT
4	O	SERIAL DATA CLOCK
5	O	SERIAL DATA
6	O	COMM STROBE
7	I	-26VDC INPUT
8	I	+10VDC INPUT
9	I	+10VDC INPUT
10	I	+185VDC INPUT
11		N/C
12		N/C
13		N/C
14		N/C
15		N/C
16		N/C
17	I	27V PANEL LIGHTING
18	I	5V PANEL LIGHTING
19		PANEL LIGHT GROUND
20		N/C
21		N/C
22		N/C
23		POLARIZING PIN
24		N/C
25	O	SQUELCH TEST
26		SIGNAL REFERENCE GROUND
27		SIGNAL REFERENCE GROUND
28	O	ON/RESET
29	O	REMOTE VOLUME CONTROL

FIGURE 2-3 KFS 598 CONNECTOR J5981 PINOUT DIAGRAM



PIN	I/O	SIGNAL NAME
1	I	PROGRAM SECURE
2	I	REMOTE TRANSFER SWITCH
3	I	PTT
4	O	SERIAL DATA CLOCK
5	O	SERIAL DATA
6	O	COMM STROBE
7	I	-26VDC INPUT
8	I	+10VDC INPUT
9	I	+10VDC INPUT
10	I	+185VDC INPUT
11	I	AUDIO HI INPUT
12		N/C
13		N.C
14		N/C
15	O	MIC KEY OUTPUT
16	O	AUDIO HI OUTPUT
17		N.C
18		N.C
19		N.C
20	I	AUDIO LO INPUT
21	I	MIC KEY INPUT
22	O	AUDIO LO OUTPUT
23		POLARIZING PIN
24		N/C
25	O	SQUELCH TEST
26		SIGNAL REFERENCE GROUND
27		SIGNAL REFERENCE GROUND
28	O	ON/RESET
29	O	REMOTE VOLUME CONTROL

FIGURE 2-4 KFS 598A CONNECTOR J598A1 PINOUT DIAGRAM



PIN	I/O	SIGNAL NAME
1	I	429 DATA BUS LINE A
2	I	429 DATA BUS LINE B
3	I	MASTER/SLAVE
4	I	REMOTE CHANNEL COMM
5	I	COMM UNIT 2
6	I	COMM UNIT 1
7	I	CIVIL/MILITARY
8	I	CONTROL DISABLE
9		POLARIZING PIN

FIGURE 2-5 KFS 598A CONNECTOR J598A2 PINOUT DIAGRAM

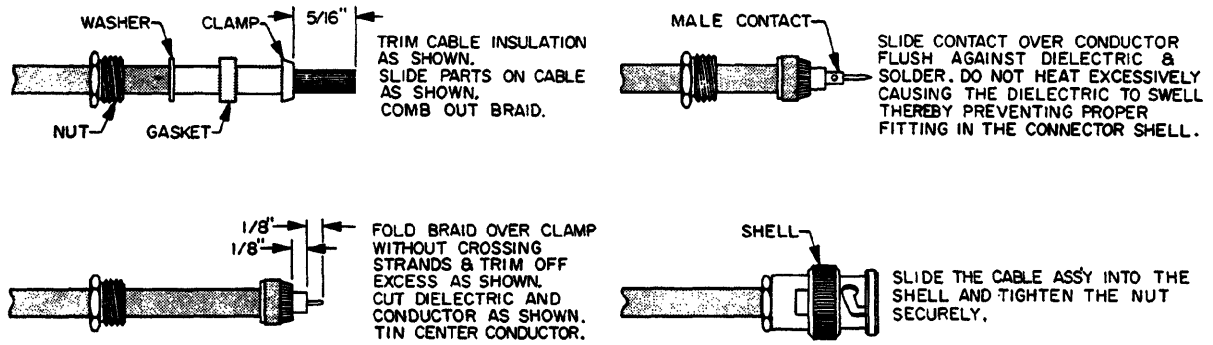


FIGURE 2-6 BNC CABLE ASSEMBLY

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2.4 POST INSTALLATION CHECK

A flight test is recommended after the installation is completed to insure satisfactory performance of the equipment in its normal environment. Check all aircraft control movements to be sure no electrical cables interfere with their operation.

To check the communications transceiver, maintain an appropriate altitude and contact a ground station facility at a range of at least fifty nautical miles. Contact a ground station close in. Pull the volume control knob out to defeat the automatic squelch feature and listen for any unusual electrical noise which would reduce the COMM receiver sensitivity by increasing the squelch threshold.

If possible, verify the communications capability on both the high and low end of the VHF COMM band.

CAUTION:

AS AN ADDED PRECAUTION BEFORE THE FLIGHT, CHECK THE ANTENNA. VSWR SHOULD BE CHECKED WITH AN IN-LINE TYPE WATTMETER INSERTED IN THE CO-AXIAL TRANSMISSION LINE BETWEEN THE TRANSCEIVER AND THE ANTENNA. ANY PROBLEM WITH THE ANTENNA INSTALLATION WILL MOST LIKELY BE SEEN AS A HIGH REFLECTED POWER. A VSWR OF 3:1 WILL RESULT IN A 25% LOSS IN POWER.

2.4.1 KFS 598A VERIFICATION TEST

- A. Verify that turning on the unit (or either unit in a tandem installation) causes the display(s) to light, and that the volume control changes the audio level(s).
- B. Verify that pressing the PUSH TST button will alternate the radio between squelched and unsquelched states.
- C. Vary ambient light on display by placing a finger over the photocell and verify that display darkens.
- D. Depress and hold Transfer button for longer than 2 seconds. The Standby frequency will blank and the tuning knobs will then tune the Active frequency.
- E. Press the CHAN button and verify that the unit(s) enter the Channel mode and display CH and the channel number and frequency.
- F. Press the CHAN button and verify that the unit(s) enter the Channel mode and display CH, the channel number, and the frequency. The tuning knobs will increment or decrement the channel number only to channels with a programmed frequency. If none are programmed, the unit(s) will default to Channel 1 and display dashes in the SBY window for approximately 5 seconds after which the control head reverts to Frequency mode.
- G. Press the CHAN button and hold for longer than 2 seconds. Verify that unit(s) enter the Program mode and display a P and a flashing channel number.

NOTE:

An unprogrammed channel will display dashes in the SBY window.

The tuning knobs will change the channel number to 1 thru 9. Press the Transfer button momentarily and verify that the channel number stops flashing and the frequency flashes. The tuning knobs will increment or decrement the channel frequency.

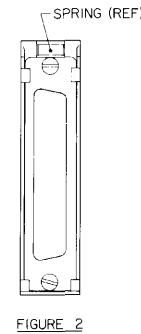
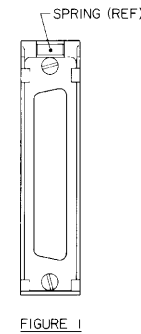
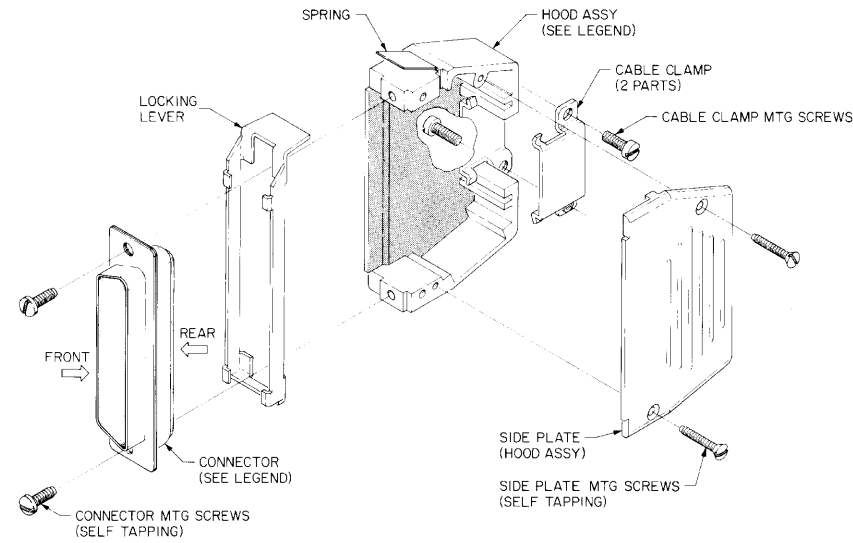
Pressing the Transfer button again will cause the frequency to stop flashing if it is valid and the channel number to flash again.

Pressing the CHAN button will return the control unit(s) to the mode from which Program Mode was entered if the CIVIL/MIL pin on the rear connector is grounded (MIL Mode). If the CIVIL/MIL pin on the rear connector is left open (CIVIL Mode), the control head will always return to Frequency Mode.

NOTE:

If no action is taken for 20 seconds while in program mode, the unit(s) will return to their previous mode.

- H. Verify that when turning the unit(s) on while the Transfer button is depressed that the unit comes up in Active Entry and displays 120.00 MHz.

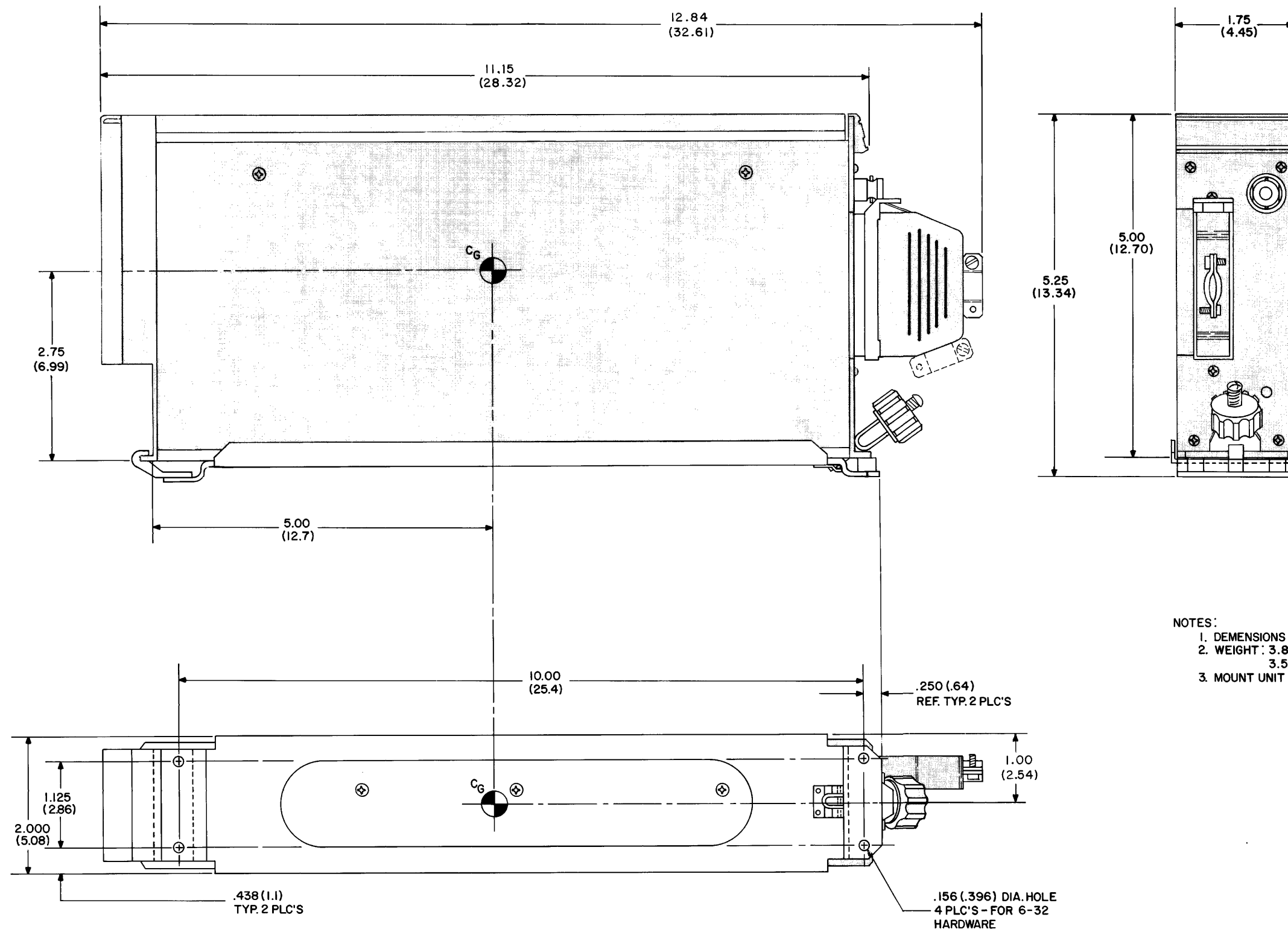


NOTE:
 1. AFTER WIRES ARE INSTALLED, ELECTRICAL CONNECTIONS ON THE REAR OF THE CONNECTOR MUST BE PROTECTED FROM THE EFFECTS OF SALT WATER IF THE INSTALLATION IS TO MEET PARA. 14, CAT. "S" OF RTCA DO-160A.
 PCIOI (KPN 016-1072-00 SPRAY OR KPN 016-1126-00 LIQUID) MAY BE USED FOR THIS PURPOSE.

LEGEND								
KING UNIT	CONNECTOR (KING PN)	NO. OF CONTACTS	KEY PIN LOCATION	HOOD AND LEVER ASSY- STRAIGHT ENTRY (KPN)	HOOD AND LEVER ASSY- SIDE ENTRY (KPN)	CONTACT TYPE		CONNECTOR ORIENTATION TO HOOD ASSY
						CRIMP	SOLDER	
KTR 908	030-2348-09	25	7	030-2351-02	030-2351-07		X	(SEE FIG.1)
"	030-1173-00	25	7	"	"	X		"
KDF 806	030-2350-01	50	5	030-2351-04	030-2351-09		X	(SEE FIG.1)
"	030-1176-00	50	5	"	"	X		"
KXP 756	030-2347-03	15	13	030-2351-01	030-2351-06		X	(SEE FIG.2)
"	030-1172-00	15	13	"	"	X		"
KNR 634	030-2349-05	37	36	030-2351-03	030-2351-08		X	(SEE FIG.2)
"	030-1175-00	37	36	"	"	X		"
KNR 634	030-2350-14	50	8	030-2351-04	030-2351-09		X	(SEE FIG.1)
"	030-1176-00	50	8	"	"	X		"
KFS 598	030-2358-06	29	23	030-1222-00			X	(SEE FIG.1)
"	030-1174-00	29	23	"	"	X		"
KFS 586	030-2358-10	29	21	030-1222-00			X	(SEE FIG.1)
"	030-1174-00	29	21	"	"	X		"
KFS 576	030-2358-08	29	22	030-1222-00			X	(SEE FIG.1)
"	030-1174-00	29	22	"	"	X		"
KFS 564	030-2358-04	29	24	030-1222-00			X	(SEE FIG.1)
"	030-1174-00	29	24	"	"	X		"
KTU 709	030-2348-07	25	15	030-2351-02	030-2351-07		X	(SEE FIG.2)
"	030-1173-00	25	15	"	"	X		"
KDF 573	030-2350-03	50	9	030-2351-04	030-2351-09		X	(SEE FIG.1)
"	030-1176-00	50	9	"	"	X		"
KDF 574	030-2350-01	50	5	030-2351-04	030-2351-09		X	(SEE FIG.1)
"	030-1176-00	50	5	"	"	X		"
KDI 572	030-2350-05	50	23	030-2351-04	030-2351-09		X	(SEE FIG.1)
"	030-1176-00	50	23	"	"	X		"
KNI 582	030-2350-07	50	25	"	"		X	(SEE FIG.1)
"	030-1176-00	50	25	"	"	X		"
KFS 579 A	030-2358-14	29	25	030-1222-00			X	(SEE FIG.1)
"	030-1174-00	29	25	"	"	X		"
"	030-2346-05	9	5	030-2351-00			X	(SEE FIG.2)
"	030-1171-00	9	5	"	"	X		"
KFS 521A	030-2358-16	29	6	030-1222-00			X	(SEE FIG.1)
"	030-1174-00	29	6	"	"	X		"

LEGEND								
KING UNIT	CONNECTOR (KING PN)	NO. OF CONTACTS	KEY PIN LOCATION	HOOD AND LEVER ASSY- STRAIGHT ENTRY (KPN)	HOOD AND LEVER ASSY- SIDE ENTRY (KPN)	CONTACT TYPE		CONNECTOR ORIENTATION TO HOOD ASSY
						CRIMP	SOLDER	
KDM 706	030-2348-01	25	6	030-2351-02	030-2351-07		X	(SEE FIG.2)
"	030-1173-00	25	6	030-2351-02	030-2351-07	X		"
KDM 706 A	030-2350-27	50	41	030-2351-04	030-2351-09		X	(SEE FIG.2)
"	030-1176-00	50	41	"	"	X		"
KCU 951	030-2350-10	50	14	030-2351-04	030-2351-09		X	(SEE FIG.1)
"	030-1176-00	50	14	030-2351-04	030-2351-09	X		"
KTR 953	030-2350-12	50	24	030-2351-04	030-2351-09		X	(SEE FIG.2)
"	030-1176-00	50	24	030-2351-04	030-2351-09	X		"
KA 44 B	030-2346-01	9	NONE	030-2351-00			X	(SEE FIG.1)
"	030-1171-00	9	NONE	030-2351-00		X		"
KFS 594	030-2358-12	29	20	030-1222-00			X	(SEE FIG.1)
"	030-1174-00	29	20	030-1222-00		X		"
KA 594	030-2347-09	15	NONE	030-2351-01			X	(SEE FIG.2)
"	030-1159-00	15	NONE	"	"	X		(SEE FIG.2)
"	030-2350-25	50	44	030-2351-04			X	(SEE FIG.1)
"	030-1176-00	50	44	"	"	X		(SEE FIG.1)
KFS 598 A	030-2358-06	29	23	030-1222-00			X	(SEE FIG.1)
"	030-1179-00	29	23	"	"	X		"
"	030-2346-11	9	9	030-2351-00			X	(SEE FIG.2)
"	030-1171-00	9	9	"	"	X		(SEE FIG.2)
KFS 586 A	030-2358-10	29	21	030-1222-00			X	(SEE FIG.1)
"	030-1174-00	29	21	030-1222-00		X		(SEE FIG.1)
KFS 576 A	030-2358-08	29	22	030-1222-00			X	(SEE FIG.1)
"	030-1174-00	29	22	"	"	X		"
"	030-2346-09	9	8	030-2351-00			X	(SEE FIG.2)
"	030-1171-00	9	8	"	"	X		"
KFS 564 A	030-2358-04	29	24	030-1222-00			X	(SEE FIG.1)
"	030-1174-00	29	24	"	"	X		"
"	030-2346-03	9	4	030-2351-00			X	(SEE FIG.2)
"	030-1171-00	9	4	"	"	X		"
KDI 573B	030-2348-07	25	15	030-2351-02			X	(SEE FIG.2)
"	030-2578-00	25	15	"	"	X		"

FIGURE 2-7 "SUB-MIN D" CONNECTOR ASSEMBLIES (Dwg. No. 155-05389-0000, R-5)



- NOTES:
1. DIMENSIONS IN PARENTHESES ARE IN CENTIMETERS.
 2. WEIGHT : 3.8 LBS. (1.73 Kg) MOUNTING AND CONNECTORS.
3.5 LBS. (1.59 Kg) UNIT ONLY.
 3. MOUNT UNIT RIGID IN ANY POSITIONS.

FIGURE 2-8 KTR 908 INSTALLATION
(Dwg No 155-05360-0000, R-0)

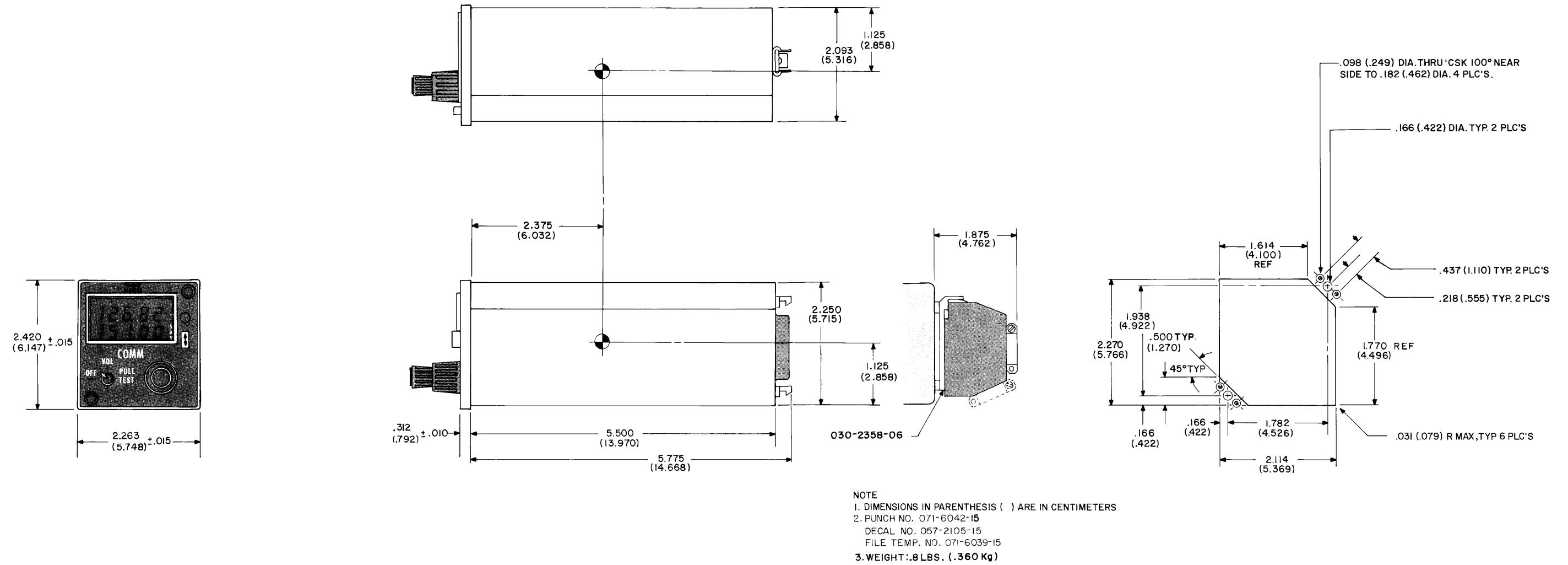


FIGURE 2-9 KFS 598 INSTALLATION
(Dwg No 155-05361-0000, R-3)

UNIT	B/M	WEIGHT	CENTER OF GRAVITY			CONNECTOR	
			-X-	-Y-	-Z-	9-PIN	29-PIN
KFS 564A	071-1283-XX	1.1 LBS./5 KG.	2.750 (6.985)	1.150 (2.921)	1.000 (2.540)	YES	YES
KFS 579A NAV/TAC	071-1291-XX	1.1 LBS./5 KG.	2.750 (6.985)	1.150 (2.921)	1.000 (2.540)	YES	YES
KFS 579A TACAN	071-1281-XX	1.1 LBS./5 KG.	2.750 (6.985)	1.150 (2.921)	1.000 (2.540)	YES	YES
KFS 586A	071-1284-XX	1.0 LBS./454 KG.	2.600 (6.604)	1.150 (2.921)	1.100 (2.794)	NO	YES
KFS 598A	071-1282-XX	1.1 LBS./5 KG.	2.750 (6.985)	1.150 (2.921)	1.000 (2.540)	YES	YES
KFS 521A	071-1437-XX	0.925 LBS./42 KG.	2.500 (6.350)	1.100 (2.794)	1.000 (2.540)	NO	YES

NOTES:

- 1.) MOUNTING PATTERN FOR CONTROL HEADS WITH ANCHOR-NUTS. (KING PART NO. 092-0052-02)
- 2.) SEE INSTALLATION KIT FOR KING PART NUMBER OF CONNECTOR.
- 3.) DIMENSIONS IN PARENTHESIS ARE IN CENTIMETERS.
- 4.) PUNCH NO. : 071-6042-15
- 5.) DECAL NO. : 057-2105-15
- 6.) FILE TEMPLATE NO. : 071-6039-15

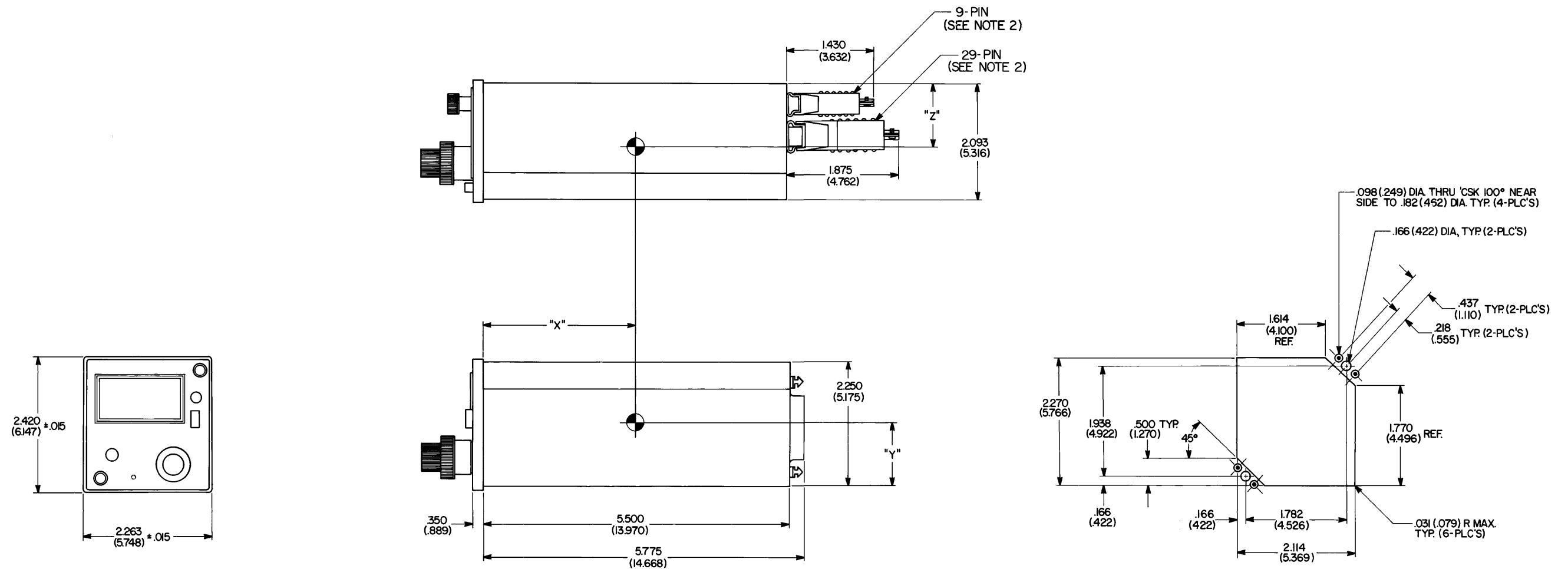


FIGURE 2-10 KFS 598A INSTALLATION
(Dwg No 155-05563-0000, R-2)

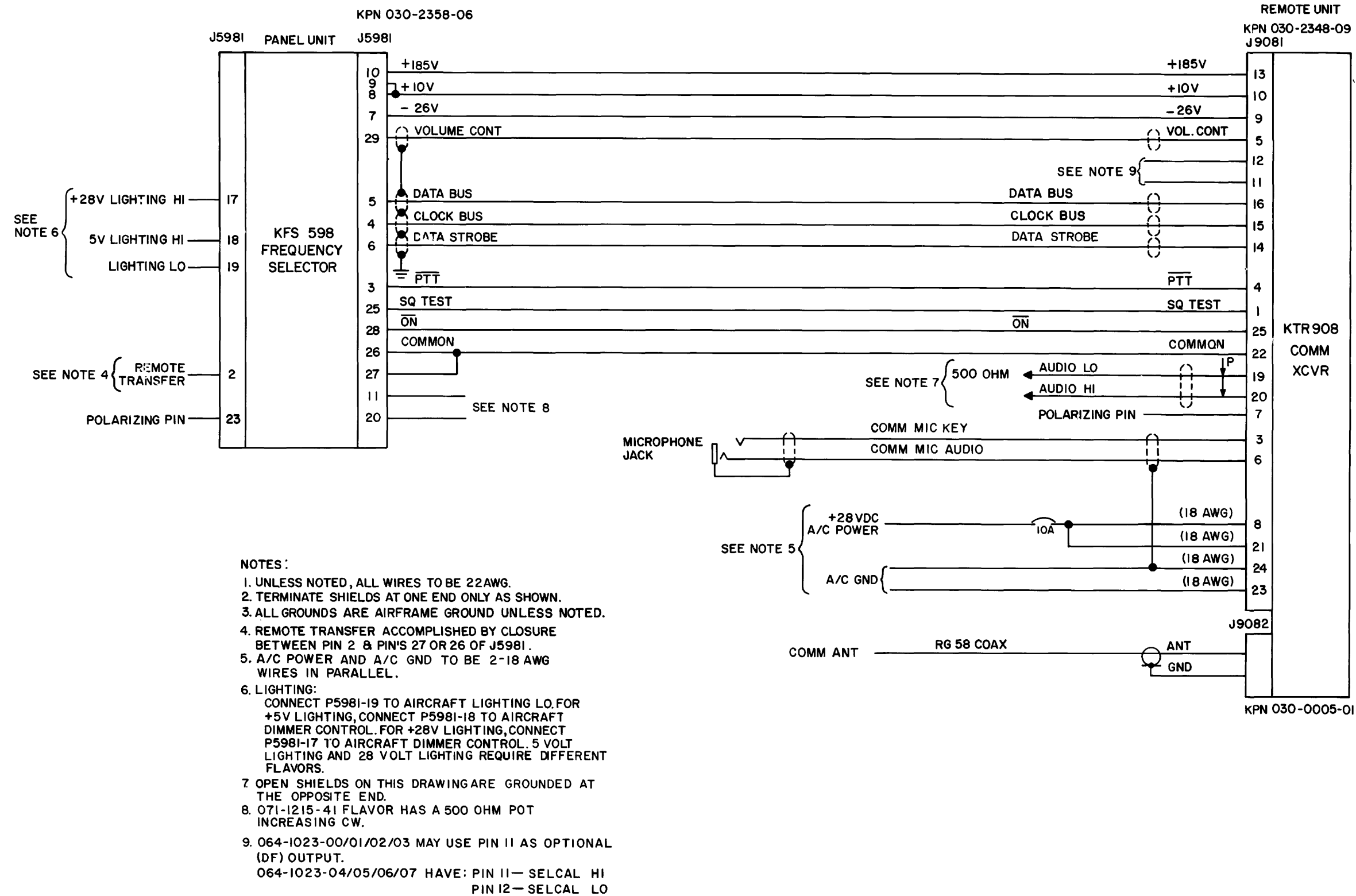


FIGURE 2-11 KTR 908/KFS 598 INTERCONNECT
(Dwg No 155-01372-0000, R-6)

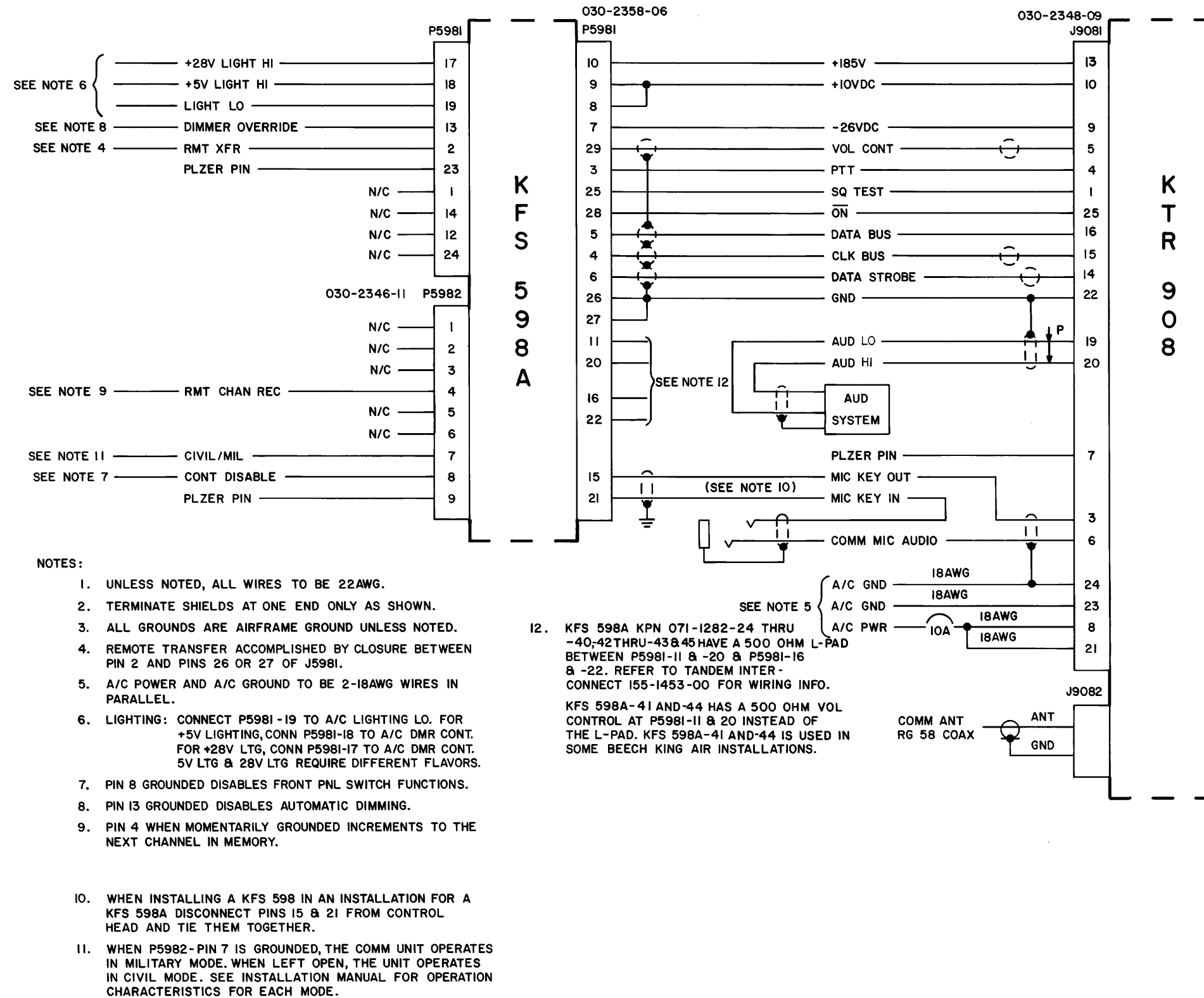


FIGURE 2-12 KTR 908/KFS 598A INTERCONNECT
(Dwg No 155-01454-0000, R-7)

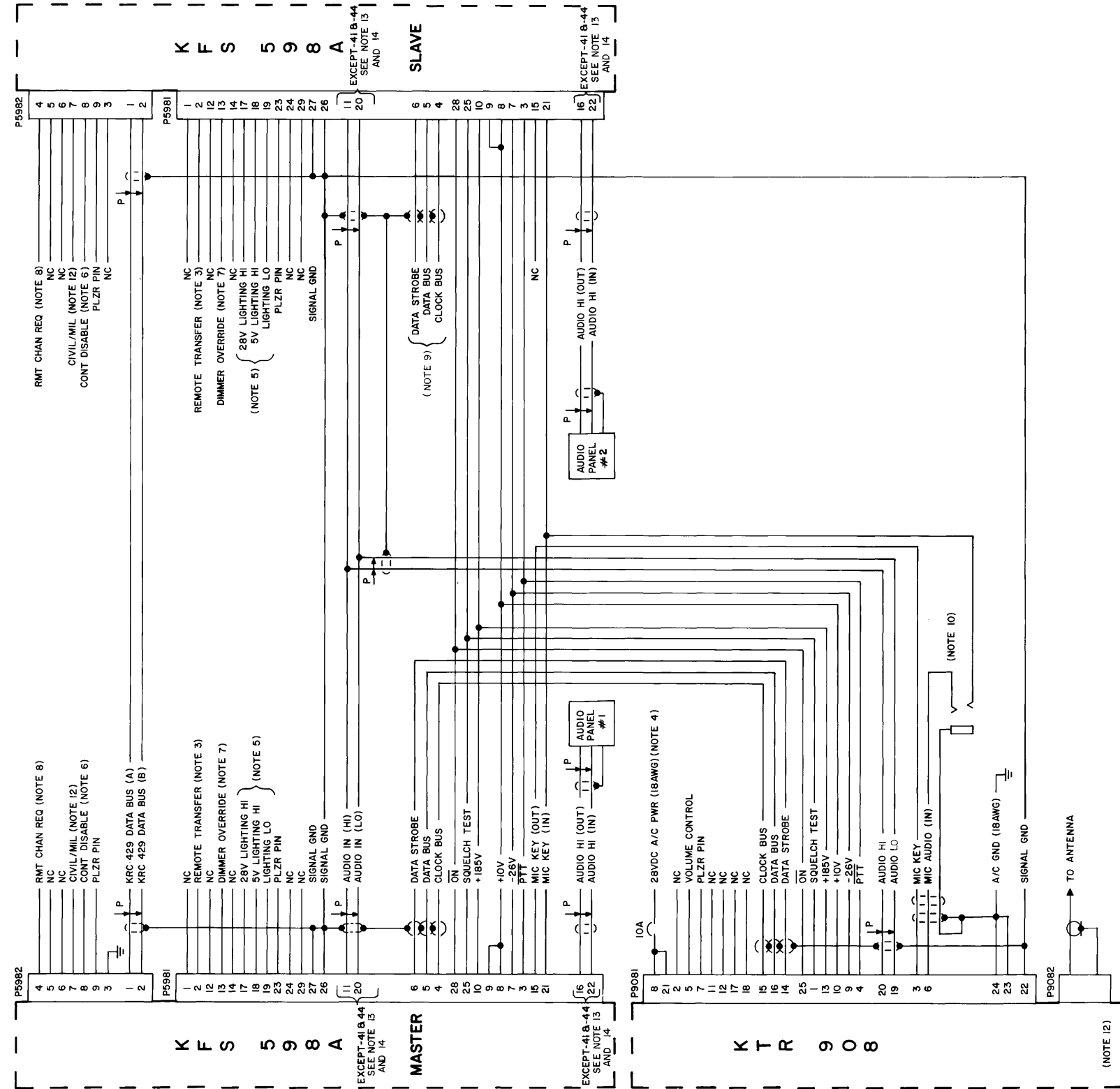
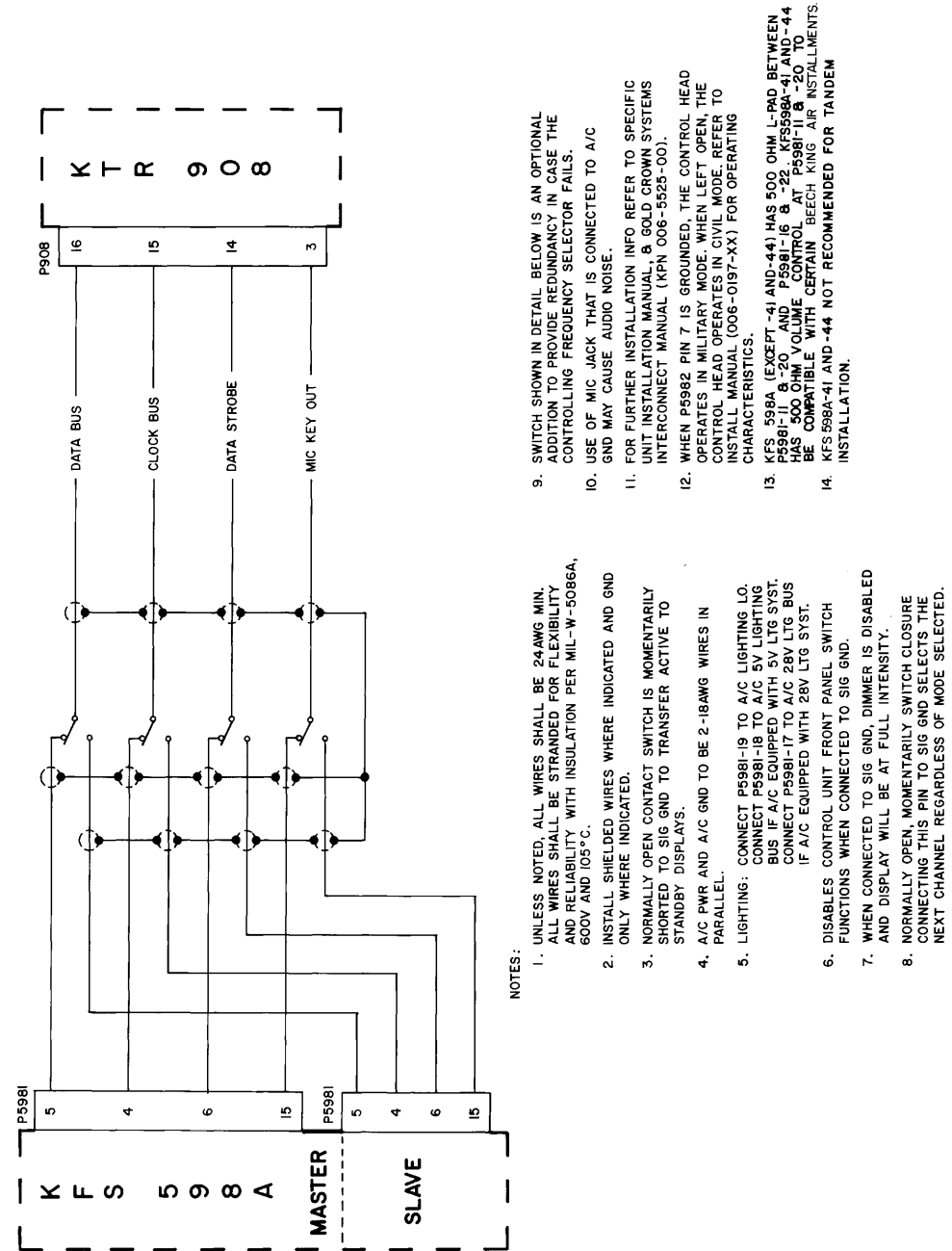


FIGURE 2-13 KTR 908/KFS 598A TANDEM INTERCONNECT
(Dwg No 155-01453-0000, R-AA)



- NOTES:
1. UNLESS NOTED, ALL WIRES SHALL BE 24AWG MIN. AND WIRES SHALL BE STRANDED FOR FLEXIBILITY AND RELIABILITY WITH INSULATION PER MIL-W-5086A, 600V AND 105°C.
 2. INSTALL SHIELDED WIRES WHERE INDICATED AND GND ONLY WHERE INDICATED.
 3. NORMALLY OPEN CONTACT SWITCH IS MOMENTARILY SHORTED TO SIG GND TO TRANSFER ACTIVE TO STANDBY DISPLAYS.
 4. A/C PWR AND A/C GND TO BE 2-18AWG WIRES IN PARALLEL.
 5. LIGHTING: CONNECT P5981-19 TO A/C LIGHTING LO. CONNECT P5981-18 TO A/C 5V LIGHTING BUS IF A/C EQUIPPED WITH 5V LTG SYST. CONNECT P5981-17 TO A/C 28V LTG BUS IF A/C EQUIPPED WITH 28V LTG SYST.
 6. DISABLES CONTROL UNIT FRONT PANEL SWITCH FUNCTIONS WHEN CONNECTED TO SIG GND.
 7. WHEN CONNECTED TO SIG GND, DIMMER IS DISABLED AND DISPLAY WILL BE AT FULL INTENSITY.
 8. NORMALLY OPEN, MOMENTARILY SWITCH CLOSURE CONNECTING THIS PIN TO SIG GND SELECTS THE NEXT CHANNEL REGARDLESS OF MODE SELECTED.
 9. SWITCH SHOWN IN DETAIL BELOW IS AN OPTIONAL ADDITION TO PROVIDE REDUNDANCY IN CASE THE CONTROLLING FREQUENCY SELECTOR FAILS.
 10. USE OF MIC JACK THAT IS CONNECTED TO A/C GND MAY CAUSE AUDIO NOISE.
 11. FOR FURTHER INSTALLATION INFO REFER TO SPECIFIC UNIT INSTALLATION MANUAL, & GOLD CROWN SYSTEMS INTERCONNECT MANUAL (KPN 006-5525-00).
 12. WHEN P5982 PIN 7 IS GROUNDED, THE CONTROL HEAD OPERATES IN MILITARY MODE. WHEN LEFT OPEN, THE CONTROL HEAD OPERATES IN CIVIL MODE. REFER TO INSTALL MANUAL (006-0197-XX) FOR OPERATING CHARACTERISTICS.
 13. KFS 598A (EXCEPT -41 AND -44) HAS 500 OHM L-PAD BETWEEN P5981-18 AND P5981-19. KFS 598A-41 AND -44 HAS 500 OHM VOLUME CONTROL AT P5981-18 AND -44 BE COMPATIBLE WITH CERTAIN BEECH KING AIR INSTALLMENTS.
 14. KFS 598A-41 AND -44 NOT RECOMMENDED FOR TANDEM INSTALLATION.

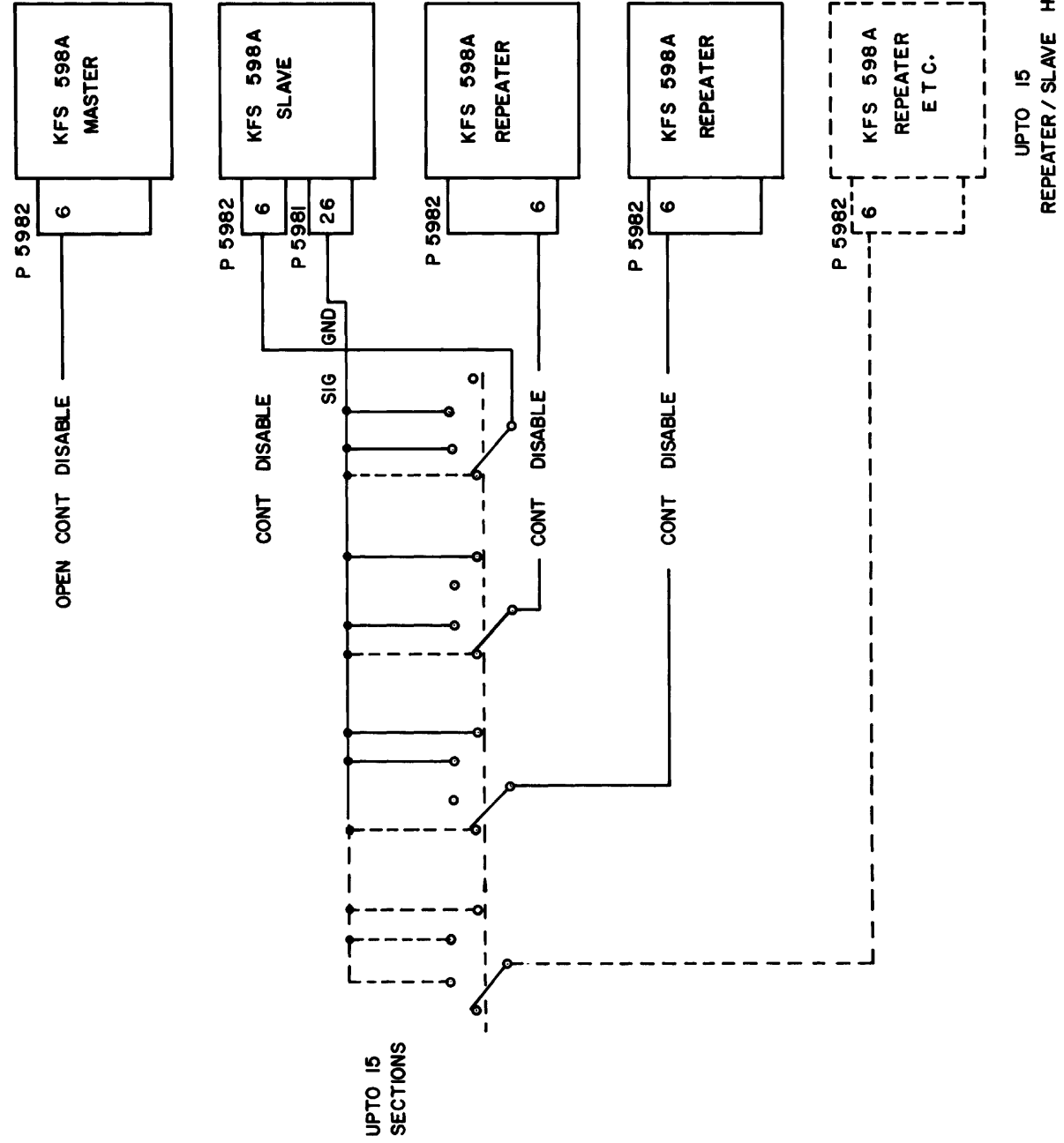


FIG 3 (SEE NOTE 15)

NOTES:-

1. UNLESS NOTED, ALL WIRES SHALL BE 24 AWG MIN. ALL WIRES SHALL BE STRANDED FOR FLEXIBILITY AND RELIABILITY WITH INSULATION PER MIL-P-5086A, 600V AND 105°C.
2. INSTALL SHIELDED WIRES WHERE INDICATED AND GROUND ONLY WHERE INDICATED.
3. NORMALLY OPEN CONTACT SWITCH IS MOMENTARILY SHORTED TO SIGNAL GROUND TO TRANSFER ACTIVE TO STANDBY DISPLAYS.
4. A/C PHR AND A/C GND TO BE 2-18AWG WIRES IN PARALLEL.
5. LIGHTING:
CONNECT P5981-19 TO A/C LIGHTING LO.
CONNECT P5981-18 TO A/C 5V LIGHTING BUS IF A/C EQUIPPED WITH 5V LIGHTING SYSTEM.
CONNECT P5981-17 TO A/C 28V LIGHTING BUS IF A/C EQUIPPED WITH 28V LIGHTING SYSTEM.
6. MASTER CONTROL UNIT ONLY. CONTROL DISABLE DISABLES UNIT FRONT PANEL SWITCH FUNCTIONS WHEN CONNECTED TO SIGNAL GROUND.
7. WHEN CONNECTED TO SIGNAL GROUND, DIMMER IS DISABLED AND DISPLAY WILL BE AT FULL INTENSITY.
8. NORMALLY OPEN, MOMENTARY SWITCH CLOSURE CONNECTING THIS PIN TO SIGNAL GROUND SELECTS THE NEXT CHANNEL REGARDLESS OF MODE SELECTED.
9. SWITCH SHOWN IN FIGURE 2 IS AN OPTIONAL ADDITION TO PROVIDE REDUNDANCY IN CASE THE CONTROLLING FREQUENCY SELECTOR FAILS.
10. USE OF MIC JACK THAT IS CONNECTED TO A/C GROUND MAY CAUSE AUDIO NOISE.
11. FOR FURTHER INSTALLATION INFO REFER TO SPECIFIC UNIT INSTALLATION MANUAL AND GOLD CROWN SYSTEMS INTERCONNECT MANUAL (KPN 006-5525-00).
12. WHEN P5982 PIN 7 IS GROUND, THE CONTROL HEAD OPERATES IN MILITARY MODE. WHEN LEFT OPEN, THE CONTROL HEAD OPERATES IN CIVIL MODE. REFER TO INSTALLATION MANUAL (KPN 006-0197-XX) FOR OPERATING INSTRUCTIONS. PIN 7 ON ALL CONTROL HEADS MUST BE AT THE SAME LEVEL.
13. KFS 598A (EXCEPT -41) HAS 500 OHM L-PAD BETWEEN P5981-11 & -20 AND P5981-16 & -22. KFS 598A-41 ONLY HAS 500 OHM VOLUME CONTROL AT P5981-11 & -20 TO BE COMPATIBLE WITH CERTAIN BEECH KING AIR INSTALLATIONS.
14. KFS 598A-41 NOT RECOMMENDED FOR TANDER INSTALLATIONS.
15. CONTROL DISABLE CONNECTED TO SIGNAL GROUND DISABLES FRONT PANEL CONTROLS AND MAKES UNIT OPERATE AS A REPEATER. CONTROL DISABLE OPEN MAKE UNIT OPERATE AS A SLAVE. INSTALL OPTIONAL SWITCH TO SWITCH THE UNIT THAT WILL BE SLAVE AND WHICH UNITS WILL BE REPEATER. THE SWITCH CAN BE EXPANDED TO ALLOW SELECTION OF ALL REPEATERS AS SLAVES. REFER TO FIGURE 3.
16. IF MORE THAN TWO CONTROL HEADS ARE USED IN A SYSTEM A KA 25A IS RECOMMENDED IN ORDER TO PROVIDE ADEQUATE VOLUME. REFER TO FIGURE 1.
17. THIS SYSTEM CAN BE EXPANDED TO INCLUDE A TOTAL OF 16 CONTROL HEADS (MASTER + 15). EACH ADDITIONAL REPEATER CONTROL HEAD SHOULD BE CONNECTED PER REPEATER CONTROL HEAD INTERCONNECT AND FIGURES 1 AND 3. EACH ADDITIONAL CONTROL WILL NEED 1/2 OF A KA 579A-00 OR -02 OR 1 KA 579A-01 OR -05 TO SUPPLY POWER.

FIGURE 2-14 KTR 908/KFS 598A REPEATER INTERCONNECT
(Dwg No 155-01536-0000, R-AA, Sheet 2 of 2)

SECTION III OPERATION

3.1 GENERAL

3.1.1 KFS 598 OPERATING PROCEDURES

Rotate the VOL control knob clockwise from the OFF position. To override the automatic squelch pull the VOL knob out and rotate the VOL control for desired listening level on the noise being produced by the receiver.

Push the VOL knob back in to activate the automatic squelch.

Select the desired operating frequency in the Standby display by rotating the increment/decrement knobs either clockwise or counterclockwise. A clockwise rotation will increment the frequency while a counterclockwise rotation will decrement the frequency.

The larger knob will change the MHz portion of the standby display. At one band-edge (118 MHz or 135.975 MHz [expanded versions 136.975 MHz or 151.975 MHz]) the following 1 MHz change will wrap around to the other band edge.

The outside knob will change the kHz portion of the standby display. It will change in steps of 50 kHz when the knob is pushed in and 25 kHz when the knob is pulled out. The wrap around band edge is also utilized when incrementing or decrementing the kHz portion of the standby display.

To tune the radio to the desired operating frequency, the frequency must first be entered into the Standby display, and then the transfer button must be pushed. This will trade the contents of the Active and Standby display.

The transceiver is always tuned to the frequency appearing in the Active display. It is therefore possible to have two different frequencies available, one in use and one stored in the Standby display.

During the transmit operation, a TX will appear between the Active and the Standby displays, signifying that the transceiver is in the Transmit mode of operation.

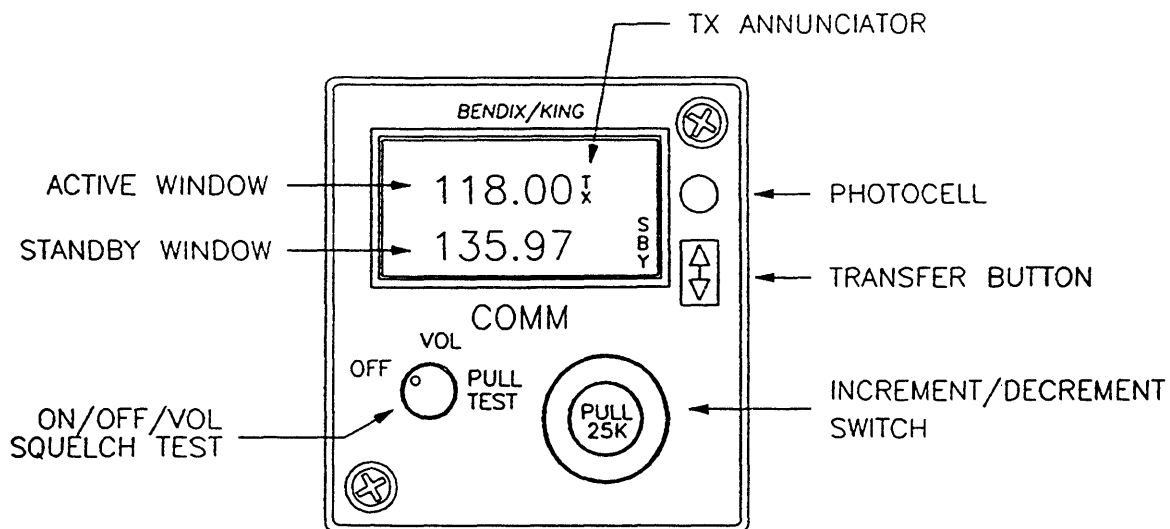


FIGURE 3-1 KFS 598 CONTROL FUNCTIONS

3.1.2 KFS 598A OPERATING PROCEDURES

Rotate the VOL control knob clockwise from the OFF position. A momentary unsquelched state will occur. To override the automatic squelch state, push the PUSH TST knob. To return to the squelched state push the PUSH TST knob once again.

When the mic is keyed, the TX annunciator will light just right of the active display. If the mic key is held down for more than 1-1/2 minutes, the key line to the KTR 908 will be disabled. The total display will then flash as long as the mic key is depressed.

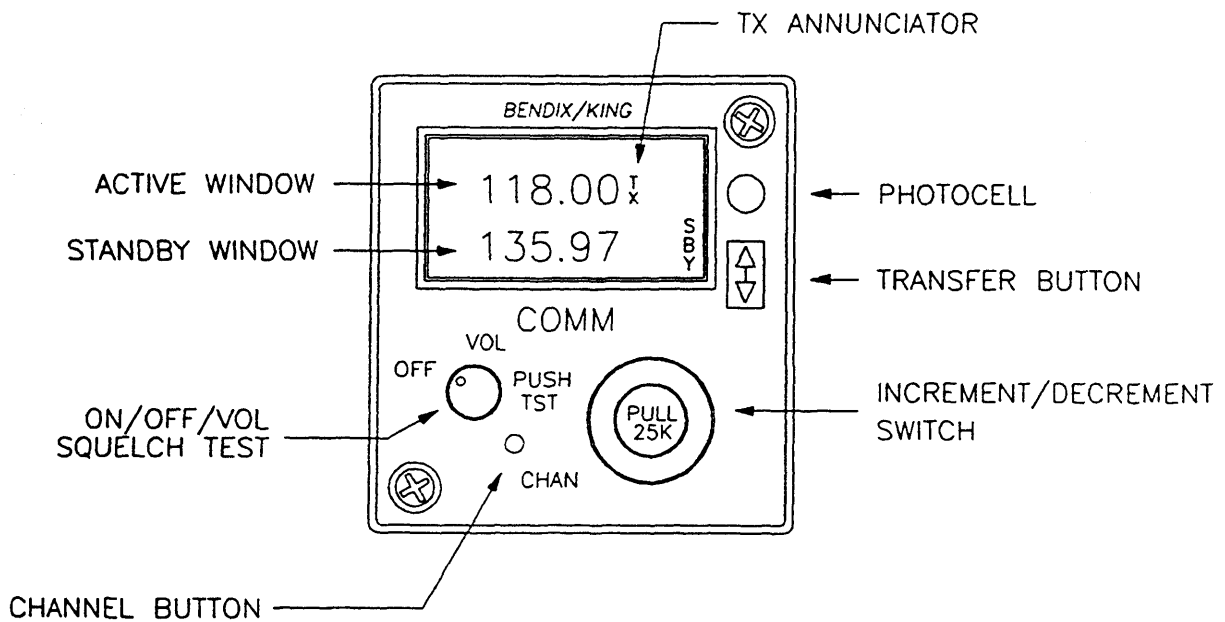


FIGURE 3-2 KFS 598A CONTROL FUNCTIONS

3.1.3 FREQUENCY MODE

3.1.3.1 Standby Entry

Frequency selection is accomplished in the Standby Entry mode by changing the frequency displayed in the Standby window of the display with the tuning knobs, and then transferring the selected frequency into the Active window by pressing the Transfer button.

The larger tuning knob will increment or decrement the MHz portion of the display in 1 MHz steps with rollover at each band edge (118 MHz on the low end and either 135, 136, or 151 MHz on the high end).

The smaller tuning knob will increment or decrement the kHz portion of the display in 50 kHz steps with the knob pushed in or in 25 kHz steps with the knob pulled out. Rollover to the opposite band edge occurs at 000 and 975 kHz.

While in the Standby Entry mode, the transceiver remains tuned to the frequency displayed in the Active window at all times.

3.1.3.2 Active Entry

The Active Entry mode is entered from Standby Entry Frequency mode or Channel mode by pushing the Transfer button for longer than 2 seconds. The tuning knobs operate as in Standby Entry, but will change the Active frequency, rather than the Standby frequency. The radio will be tuned to the Active frequency.

Momentarily pushing the Transfer button returns the control head to Standby Entry. The Standby frequency prior to Active Entry mode remains unchanged.

3.1.4 CIVIL OPERATION (J5982-P7 open)

3.1.4.1 Channel Mode

- A. Momentarily pressing the CHAN button while in Frequency mode puts the unit in Channel mode. The unit remains tuned to the last active frequency displayed before entering Channel mode.

The last used channel number is displayed unless no channels have been programmed, in which case the unit defaults to Channel 1 and dashes are displayed in the Standby window.

Turning either tuning knob changes the channel number and corresponding frequency. The channels will only increment and decrement to channels that have been programmed.

If there has been no activity for five seconds the unit will return to Frequency mode and the channel frequency is placed in the Standby window. Pressing the CHAN button before the 5 second delay is completed will return the unit to Frequency mode and the status of Frequency mode prior to entering Channel mode remains the same.

- B. When in Channel mode, pressing the Transfer button will return the unit to Frequency mode. The channel frequency will become the new Active frequency and the last Active frequency will become the new Standby frequency.

If the unit was in Active Entry mode prior to entering Channel mode, pressing the Transfer button or allowing the unit to time out will bring it back to Standby Entry.

3.1.4.2 Program Mode

- A. Program mode is selected by pressing and holding the CHAN button for longer than two seconds. The unit tunes the KTR 908 to last active frequency displayed before entering Program mode and the last used Channel number is displayed when Program mode is entered.

The Channel number flashes and turning either tuning knob changes the Channel number. When the Channel number is flashing, pressing the Transfer button will cause the Channel number to stop flashing and cause the frequency to flash, unless the channel is Program Secured.

The tuning knobs then work as in Frequency mode, except between rollover points 118.XX to 135.XX/136.XX and 135.XX/136.XX to 118.XX, or 118.XX to 151.XX and 151.XX to 118.XX for extended frequency range, dashes are displayed to unprogram the channel.

When the frequency is flashing, pressing the Transfer button will cause the frequency to stop flashing and the Channel number to flash.

- B. If no activity has occurred for 20 seconds the unit returns to Frequency mode. The unit can also be returned to Frequency mode from Program mode by pressing the CHAN button.

Returning to Frequency mode will not change the Active or Standby frequencies from what they were prior to entering Program mode.

3.1.5 MILITARY OPERATION (J5982-P7 grounded)

3.1.5.1 Channel Mode

- A. Pressing the CHAN button momentarily while in one of the Frequency modes puts the unit in Channel mode. The last channel used is the Channel number displayed. The unit tunes the KTR 908 to the frequency in the Standby window.

If no channels are programmed, the unit will display CH 1 and dashes in the Standby window for five seconds, and will tune the KTR 908 to the last Active frequency.

Either tuning knob will change the Channel number and the corresponding channel frequency. The unit will only channel to channel numbers with a frequency programmed.

Holding the Transfer button for two seconds selects the Active Entry mode.

NOTE:

The channel mode does not time out as in civil operation.

- B. Pressing the CHAN button momentarily will return the unit to Frequency mode and the status remains what it was prior to entering Channel mode.

3.1.5.2 Program Mode

- A. Pressing and holding the CHAN button for longer than 2 seconds brings the unit into Program mode. The last used channel number is displayed and flashes. The transceiver tunes the frequency in the Standby window.

When the channel number is flashing, the tuning knobs will change the channel number. An unprogrammed channel will display dashes in the Standby window, in which case the transceiver will tune the last valid Active frequency.

- B. Pressing the Transfer button causes the channel number to stop flashing and the frequency to flash. The tuning knobs will then operate as in the frequency mode.

Pressing the Transfer button will again cause the Channel number to flash and the frequency to stop flashing.

- C. In frequency rollover or rollunder, dashes will be displayed before rolling to the lowest or highest frequency respectively. Leaving dashes in the display unprograms the channel when leaving Program mode.

- D. The unit returns to Frequency mode by momentarily pressing the CHAN button or if no activity has occurred for 20 seconds. The Frequency mode status prior to Channel or Program mode is resumed. The transceiver will be tuned to the frequency in the Active display.

3.1.6 DEFAULT MODE

Turning the units on while holding the Transfer button down will bring the unit on in Active Entry and load 120.00 MHz as the Active frequency.

3.1.7 REMOTE TRANSFER

Operates identically as front panel Transfer button with the exception that holding the Remote Transfer button for two seconds does not place unit in Active Entry.

3.1.8 REMOTE CHANNEL

Pressing the Remote Channel button will cause the system to enter the Channel mode of operation and will increment the channel from the previous channel number used.

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