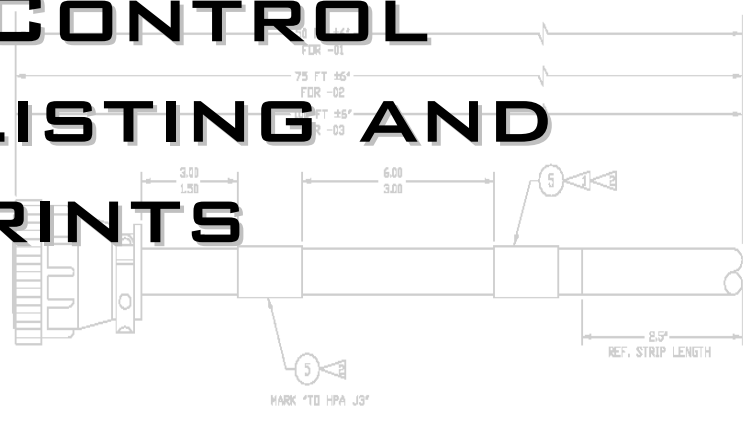


REVISIONS		DATE	APPROVED
ZONE	LTR	DESCRIPTION	
A		ENGINEERING RELEASE	
B		ADDED -03 VERSION PER EDD #3635	11/21/95TJM/12/1/95
C		DELETED WIRES 21 & 22, EDD #3965	8/4/97TSGDCR/15/97
D		ADDED 25' DIM PER EDD #4155	9/15/99TSGDCR/16/99
E		REVISED PER EDD # 4377	11/21/99TJM/11/21/99

WIRE LIST										
WIRE NO.	P/L ITEM NO.	AVG. COLOR	FRON. REF. DES.	TERM. (P/L) ITEM NO.	ID. REF. DES.	TERM. (P/L) ITEM NO.	REMARKS			
1							CONTROLLER			
2							CONTROLLER			
3		RED	P3 - 3 -				BIAS VOLTAGE PAIR 2			
4							BIAS VOLTAGE PAIR 3			
5							BIAS CURRENT PAIR 3			
6							BIAS CURRENT PAIR 3			
7		RED	P3 - 7 -				CROWBAR READY PAIR 4			
8							CROWBAR READY PAIR 4			
9		RED	P3 - 8 -				CROWBAR READY PAIR 4			
10							CROWBAR TRIGGER PAIR 5			
11		RED	P3 - 12 -				CROWBAR FIRED PAIR 5			
12		BLK	P3 - 13 -				CROWBAR FIRED PAIR 5			
13		RED	P3 - 14 -				HV BEAM ON PAIR 7			
14		BLK	P3 - 15 -				HV BEAM ON PAIR 7			
15		RED	P3 - 16 -				AMP REVERSE PWR PAIR 8			
16		BLK	P3 - 17 -				AMP REVERSE PWR PAIR 8			
17		RED	P3 - 18 -				AMP FORWARD PWR PAIR 9			
18		BLK	P3 - 19 -				AMP FORWARD PWR PAIR 9			
19		RED	P3 - 23 -				HV BEAM ON/OFF + PAIR 10			
20		BLK	P3 - 24 -				HV BEAM ON/OFF PAIR 10			
21		RED	P3 - 20 -				RF SYSTEM INTERLOCK PAIR 11			
22		BLK	P3 - 21 -				RF SYSTEM INTERLOCK PAIR 11			
23		RED	P3 - 27 -				HV CONNECT/ISOLATE PAIR 12			
24		BLK	P3 - 28 -				HV CONNECT/ISOLATE PAIR 12			
25		DRAIN	- -				GND AT TB			CABLE GND

# REMOTE CONTROL PINOUT LISTING AND CABLE PRINTS



- NOTES:**
- MARK P/N, VERSION & CURRENT REVISION LEVEL.
  - NOMENCLATURE TO BE 12 PT HELVETICA MEDIUM, BLACK CHARACTERS ON WHITE TAPE.
3. P3 1-19 ARE STATUS, 23-28 ARE CONTROL.

# DCX NON-MILLENNIUM WITH LED & PUSH BUTTON SYSTEM CONTROLLER

QTY	DESCRIPTION	NO.		
2	2	5	600880-01	LABEL, PIN FEED 1" X 14"
1	1	4	600080-01	CLAMP, CABLE SHELL SIZE 23
1	1	3	600090-01	CONN. PLUG P3-07 RSC
1	1	2	600090-02	PIN FEED 1" X 14"
1	1	1	606150-01	CABLE, PROCESS CTRL 15PR 22AVG

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MATERIAL	SEC P/L	DRWN	T SHEAFFER	9/27/95
DATE	HR	ENGR	E JUDD	10/2/95
MANUAL DWP	~	ENGR	V MICHEL	10/24/95
CIDK	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPD	HSB	10/4/95
USED ON	TOLERANCES	APPD	D JOHNSON	10/4/95
APPLICATION	FRACTIONS 1/32	REMOVE BURRS AND SHARP EDGES		
	2 PLACE DECIMALS .03 (L3)	YES <input type="checkbox"/> NO <input type="checkbox"/>		
	3 PLACE DECIMALS .010 (L25)			
	ANGLES 1/2°			

**COMARK**  
a THOMSON company

SOUTH-WICK, MASSACHUSETTS

**CABLE ASSEMBLY, REMOTE, HPA, P3**

SIZE	CODE IDENT	DRAWING NO	REV.
C		407755	E

SCALE: FULL JOB NO: SHEET 1 OF 1

E 407755



Remote Control Pinout Listing and Cable Prints  
DCX Non-Millennium (With LED & Push Button System Controller)

Table of Contents

452776-01	Remote Control, Pinout Listing
409408	Cable Assembly, Remote, Exciter P30
407753	Cable Assembly, Remote, HPA P1
407754	Cable Assembly, Remote, HPA P2
407755	Cable Assembly, Remote, HPA P3

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**Note:** Cable lengths are not shown in the chart and are as follows:  
-01 (50-feet), -02 (75-feet), -03 (100-feet)

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# REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	ENGINEERING RELEASE		
	B	SHEET 3 J20-25 WAS J20-15, J20-26 WAS J20-16. ECO #4206	1/18/99TS	GDC1/18/99
	C	REVISED PER ECO #4320	8/24/99TS	GDC8/27/99
	D	REVISED PER ECO #4554	11/28/00TB	GDC11/28/00

			ITEM NO.	PART NO.	DESCRIPTION
QTY / VERSION			PARTS LIST		
MATERIAL			DRWN	TRACEY SHEAFFER	10/21/98
			CHKD	G DeICAMPO	11/18/98
FINISH			ENGR	S KALIS	11/19/98
			ENGR	JOHN PLESS	11/23/98
CAD FILE 452776D.DOC			APPD	S WARNER	11/23/98
			APPD	T JERARD	11/24/98
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES FRACTIONS 2 PLACE DECIMALS 3 PLACE DECIMALS ANGLES			REMOVE BURRS AND SHARP EDGES YES <input type="checkbox"/> NO <input type="checkbox"/>		SIZE A
			NEXT ASS'Y		CODE I.D.
			SCALE NONE		JOB No.
					SHEET 1 OF 7



**Comark Division**  
Southwick, Massachusetts

## DCX REMOTE CONTROL CONNECTOR PINOUT LISTING

# Remote Control, Indication and Measurements

## DCX Transmitter Range :

### System Controls

	Description	Connection	Location	Input
**	Transmitter ON	IN-00	1	1
**	Transmitter Off	IN-01	1	1
	Transmitter Standby	IN-02	1	1
	RF switch pattern A	IN-03	1	1
	RF switch pattern B	IN-04	1	1
	RF switch pattern C	IN-05	1	1
	RF switch pattern D	IN-06	1	1
	RF switch pattern E	IN-07	1	1
	Exciter select	IN-08	1	1
	Not used	IN-09	1	1
	Not used	IN-10	1	1
	Not used	IN-11	1	1
	System/HPA fault reset	IN-12	1	1
	HPA auto restart reset	IN-13	1	1
	RF off	IN-14	1	1
**	Failsafe interlock from remote control	IN-15	1	1
	Raise power exciter 1	J30-15	2	3
	Lower power exciter 1	J30-16	2	3
	APC disable exciter 1	J30-17	2	5
	Save Correction – exc 1	J30-18	2	3
	Command Common Exciter 1	J30-19	2	2
	Flat Filter ALE – exc 1	J30-20	2	5
	Adaptive Correction – exc 1	J30-21	2	5
	Load Linear LUT – exc 1	J30-22	2	5
	+24 VDC output	J30-23	2	4
	Interlock input (+24VDC)	J30-24	2	4
	Re-Correct LUT and ALE – exc 1	J30-26	2	3
	Raise Power exciter 2	J30-27	2	3
	Lower Power exciter 2	J30-28	2	3
	APC Disable exciter 2	J30-29	2	5
	Save Correction – exc 2	J30-30	2	3
	Command Common Exciter 2	J30-31	2	2
	Flat Filter ALE – exc 2	J30-32	2	5
	Adaptive Correction – exc 2	J30-33	2	5
	Re-Correct LUT and ALE – exc 2	J30-34	2	3
	Load Linear LUT – exc 2	J30-35	2	5

Location 1 = Transmitter Remote Control I/O Block on 451931-01 Remote Control I/O Panel Assy.  
 Location 2 = J30 on connector plate assembly at the top of the exciter cabinet  
 Input 1 = 10- 30VDC (11 mA @ 30V, 2.5 mA @ 10V) = Active State (24V typ)  
 Off state maximum voltage 5 VDC  
 Input impedance 3.4k Ohms  
 Input 2 = Closed Contact Connection to command for input #3. Tied to GND internal to exciter cabinet at A14TB1.  
 Input 3 = Momentary connection to command common (input #2) activates input.  
 Input 4 = External interlock – short circuit required - open for fault.  
 Input 5 = Latched connection to command common (input #2) activates input.  
 Input 6 = Latched connection to command common (input #4) activates input.

\*\* These items are the minimum required per Comark recommendation and/or FCC requirement.

## Remote Control, Indication and Measurements

### DCX Transmitter Range :

### System Status

	Description	Connection	Location	Output
	Status Normal :			
**	Transmitter On	OUT-00	1	1
**	Transmitter Off	OUT-01	1	1
	Transmitter Standby	OUT-02	1	1
	RF Switch pattern A	OUT-03	1	1
	RF Switch pattern B	OUT-04	1	1
	RF Switch pattern C	OUT-05	1	1
	RF Switch pattern D	OUT-06	1	1
	RF Switch pattern E	OUT-07	1	1
	Exciter "A" Selected	OUT-08	1	1
	System VSWR fault Status	OUT-09	1	1
	Combiner/CIF Load cooling fault	OUT-10	1	1
	Cooling pump fault	OUT-11	1	1
	AGC fault	OUT-12	1	1
	HPA Ready	OUT-13	1	1
	RF Off	OUT-14	1	1
	Driver Fault	OUT-15	1	1
	Transport Stream Presence - Exc 1	J30-13	2	2
	Transport Stream Presence - Exc 1	J30-19	2	2
	Transport Stream Presence - Exc 2	J30-25	2	2
	Transport Stream Presence - Exc 2	J30-31	2	2

Location 1 = Transmitter Remote Control I/O Block on 451931-01 Remote Control I/O Panel Assy  
 Location 2 = J30 on connector plate assembly at the top of exciter cabinet.  
  
 Output 1 = 24 V DC. Maximum current 0.5A @ 30°C = Active State  
 Maximum surge current = 3A for 50 mS.  
 Output 2 = Contact closure between pins indicated. Open on fault

\*\* These items are the minimum required per Comark recommendation and/or FCC requirement

## Remote Control, Indication and Measurements

### DCX Transmitter Range :

### HPA Fault Status - (All Status is per HPA)

Description	Connection	Location	Normal Indication given by ;
Fault Status:			
3 Phase voltage	J2-1	2	1
3 Phase voltage	J2-2	2	
Filament voltage	J2-3	2	1
Filament voltage	J2-4	2	
Full filament current	J2-6	2	1
Full filament current	J2-7	2	
Collector coolant flow	J2-10	2	1
Collector coolant flow	J2-11	2	
Collector temperature	J2-12	2	1
Collector temperature	J2-13	2	
Focus current	J2-14	2	1
Focus current	J2-15	2	
Ion current	J2-16	2	1
Ion current	J2-17	2	
Cabinet Interlocks	J2-18	2	1
Cabinet Interlocks	J2-19	2	
Ground probe interlock	J2-20	2	1
Ground probe interlock	J2-21	2	
Arc Detector # 1	J2-23	2	1
Arc Detector # 1	J2-24	2	
Arc Detector # 2	J2-25	2	1
Arc Detector # 2	J2-26	2	
Arc detector interlock	J2-27	2	1
Arc detector interlock	J2-28	2	
Beam current	J2-29	2	1
Beam current	J2-30	2	
Body current	J2-31	2	1
Body current	J2-32	2	
Cabinet airflow	J2-34	2	1
Cabinet airflow	J2-35	2	
Cavity airflow	J2-36	2	1
Cavity airflow	J2-37	2	

Location 1 = Transmitter Remote Control I/O Block on 451931-01 Remote Control I/O Panel Assy

Location 2 = High power amplifier connector plate assembly

1 - Indication given by dry relay contact. Maximum current 500mADC, maximum voltage 110 V DC/AC, maximum 30W resistive. Closed Contacts = Normal Status

Open Contacts = Fault

## Remote Control, Indication and Measurements

### DCX Transmitter Range :

### HPA Fault Status - (All Status is per HPA)

Description	Connection	Location	Normal Indication given by ;
Fault status:			
HV Controller/Soft start interlock	J3-1	2	1
HV Controller/Soft start interlock	J3-2	2	
Bias voltage	J3-3	2	1
Bias voltage	J3-4	2	
Bias current	J3-5	2	1
Bias current	J3-6	2	
Crowbar ready	J3-7	2	1
Crowbar ready	J3-8	2	
Crowbar triggered	J3-10	2	1
Crowbar triggered	J3-11	2	
Crowbar fired	J3-12	2	1
Crowbar fired	J3-13	2	
HV Beam On	J3-14	2	1
HV Beam On	J3-15	2	
Amplifier reverse power high	J3-16	2	1
Amplifier reverse power high	J3-17	2	
Amplifier forward power high	J3-18	2	1
Amplifier forward power high	J3-19	2	

Location 1 = Transmitter Remote Control I/O Block on 451931-01 Remote Control I/O Panel Assy

Location 2 = High power amplifier connector plate assembly

1 - Indication given by dry relay contact. Maximum current 500mADC, maximum voltage 110 V DC/AC, maximum 30 W resistive. Closed Contacts = Normal Status  
Open Contacts = Fault

# Remote Control, Indication and Measurements

## DCX Transmitter Range :

### Metering - (All Metering on J1 is per HPA)

Description	Connection	Location	Output
Filament voltage (+)	J1-1	2	1
Filament voltage	J1-2	2	
Filament current (+)	J1-3	2	1
Filament current	J1-4	2	
Grid current (+)	J1-5	2	2
Grid current	J1-6	2	
Bias voltage (+)	J1-7	2	1
Bias voltage	J1-8	2	
Ion current (+)	J1-10	2	1
Ion current	J1-11	2	
Ion voltage (+)	J1-12	2	1
Ion voltage	J1-13	2	
** Beam current (+)	J1-14	2	1
** Beam current	J1-15	2	
Focus current (+)	J1-18	2	1
Focus current	J1-19	2	
Drive Power (+)	J1-23	2	1
Drive Power	J1-24	2	
Body current (+)	J1-25	2	1
Body current	J1-26	2	
** Beam voltage (+)	J1-27	2	1
** Beam voltage	J1-28	2	
Reverse power (+)	J1-29	2	1
Reverse power	J1-30	2	
Forward power (+)	J1-31	2	1
Forward power	J1-32	2	
** System forward (+)	J30-1	3	1
** System forward (-)	J30-2	3	1
System reverse (+)	J30-3	3	1
System reverse (-)	J30-4	3	1
Final Combiner Reject (+)	J30-5	3	1
Final Combiner Reject (-)	J30-6	3	1

\*\* These items are the minimum required per Comark recommendation and/or FCC requirement.

(continued)



# Remote Control, Indication and Measurements

## DCX Transmitter Range :

### Metering - (continued)

Description	Connection	Location	Output
V1 & V2 Combiner Forward (+)	J30-7	3	1
V1 & V2 Combiner Forward (-)	J30-8	3	1
V3 & V4 Combiner Forward (+)	J30-9	3	1
V3 & V4 Combiner Forward (-)	J30-10	3	1

Location 1 = Transmitter Remote Control I/O Block on 451931-01 Remote Control I/O Panel Assy

Location 2 = High power amplifier connector plate assembly

Location 3 = J30 on connector plate in exciter cabinet

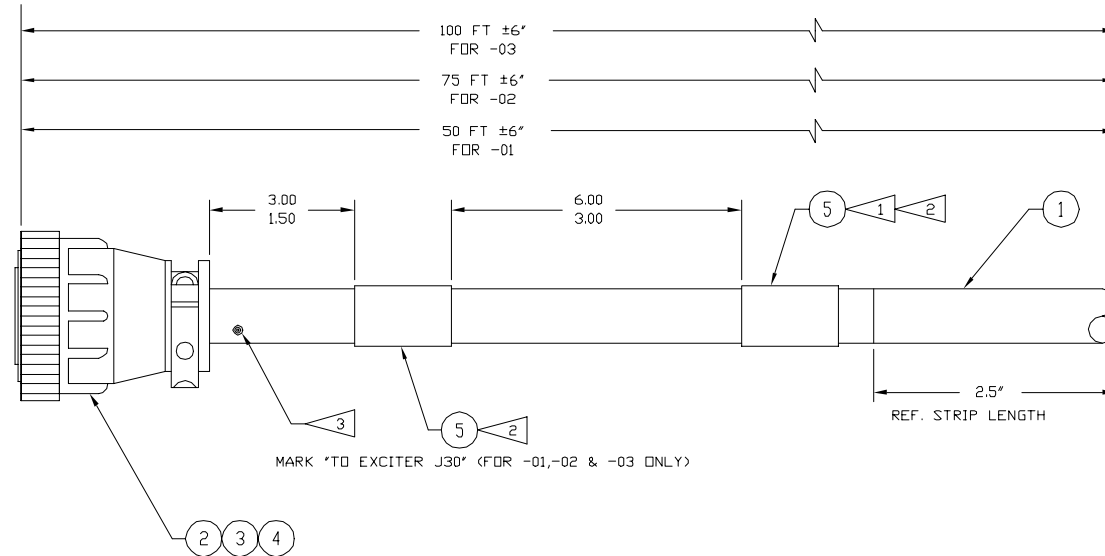
Output 1 = Approximately 5 VDC into high impedance or 1 mA for full scale deflection.

Output 2 = Approximately 5 VDC into high impedance or 1 mA for full scale deflection with 2.5 VDC, or .5 mA for "zero center".

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	ENGINEERING RELEASE	10/27/99	J YDRK
	B	W/L, P30 WAS P20. MARK 'TD EXC J30' WAS J20. 3/23/01TB TITLE, P30 WAS P20, P19. ECD #4607		GDC3/27/01

VERSIONS -01,-02 & -03 ONLY

WIRE LIST									
WIRE NO.	P/L ITEM NO.	AWG. COLOR	FROM REF. DES.	TERM POS	TERM (P/L) ITEM NO.	TO REF. DES.	TERM POS	TERM (P/L) ITEM NO.	REMARKS
			EXC			REMOTE			2 TUBE OR MORE DCX EXCITER
1	RED PAIR 1		P30 - 1 -			- -			SYSTEM FORWARD + PAIR 1
2	BLK PAIR 1		P30 - 2 -			- -			SYSTEM FORWARD - PAIR 1
3	RED PAIR 2		P30 - 3 -			- -			SYSTEM REVERSE + PAIR 2
4	BLK PAIR 2		P30 - 4 -			- -			SYSTEM REVERSE - PAIR 2
5	RED PAIR 3		P30 - 5 -			- -			FINAL COMB. REJ. (+) PAIR 3
6	BLK PAIR 3		P30 - 6 -			- -			FINAL COMB. REJ. (-) PAIR 3
7	RED PAIR 4		P30 - 26 -			- -			RECORRECT LUT & ALE PAIR 4 EXC 1
8	BLK PAIR 4		P30 - 34 -			- -			RECORRECT LUT & ALE PAIR 4 EXC 2
9	RED PAIR 5		P30 - 18 -			- -			SAVE CORRECTION EXC 1 PAIR 5
10	BLK PAIR 5		P30 - 17 -			- -			APC DISABLE EXC 1 PAIR 5
11	RED PAIR 6		P30 - 15 -			- -			RAISE PWR EXC 1 PAIR 6
12	BLK PAIR 6		P30 - 16 -			- -			LOWER PWR EXC 1 PAIR 6
13	RED PAIR 7		P30 - 30 -			- -			SAVE CORRECTION PAIR 7 EXC 2
14	BLK PAIR 7		P30 - 29 -			- -			APC DISABLE EXC 2 PAIR 7
15	RED PAIR 8		P30 - 27 -			- -			RAISE PWR EXC 2 PAIR 8
16	BLK PAIR 8		P30 - 28 -			- -			LOWER PWR EXC 2 PAIR 8
17	RED PAIR 9		P30 - 23 -			- -			+24VDC OUTPUT PAIR 9
18	BLK PAIR 9		P30 - 24 -			- -			INTERLOCK IN +24V PAIR 9
19	RED PAIR 10		P30 - 7 -			- -			V1&V2 COMB FWD + PAIR 10
20	BLK PAIR 10		P30 - 8 -			- -			V1&V2 COMB FWD - PAIR 10
21	RED PAIR 11		P30 - 9 -			- -			V3&V4 COMB FWD + PAIR 11
22	BLK PAIR 11		P30 - 10 -			- -			V3&V4 COMB FWD - PAIR 11
23	RED PAIR 12		P30 - 20 -			- -			FLAT FILTER ALE PAIR 12 EXC 1
24	BLK PAIR 12		P30 - 32 -			- -			FLAT FILTER ALE PAIR 12 EXC 2
25	RED PAIR 13		P30 - 19 -			- -			COMMAND COMMON PAIR 13 EXC 1
26	BLK PAIR 13		P30 - 31 -			- -			COMMAND COMMON PAIR 13 EXC 2
27	RED PAIR 14		P30 - 13 -			- -			TRANSPORT STREAM PAIR 14 EXC 1
28	BLK PAIR 14		P30 - 25 -			- -			TRANSPORT STREAM PAIR 14 EXC 2
29	RED PAIR 15		P30 - 21 -			- -			ADAPTIVE CORRECTION PAIR 15 EXC 1
30	BLK PAIR 15		P30 - 33 -			- -			ADAPTIVE CORRECTION PAIR 15 EXC 2
31	RED PAIR 16		P30 - 22 -			- -			LOAD LINEAR LUT PAIR 16 EXC 1
32	BLK PAIR 16		P30 - 35 -			- -			LOAD LINEAR LUT PAIR 16 EXC 2



MARK 'TD EXCITER J30' (FDR -01,-02 & -03 ONLY)

NOTES:

- 1 MARK P/N, VERSION, CURRENT REVISION LEVEL, & VENDOR I.D. (IF APPLICABLE)
- 2 NOMENCLATURE TO BE 12 PT HELVETICA MEDIUM. BLACK CHARACTERS ON WHITE TAPE.
- 3 CUT UNUSED CONDUCTORS AND DRAIN WIRES FLUSH WITH JACKET.

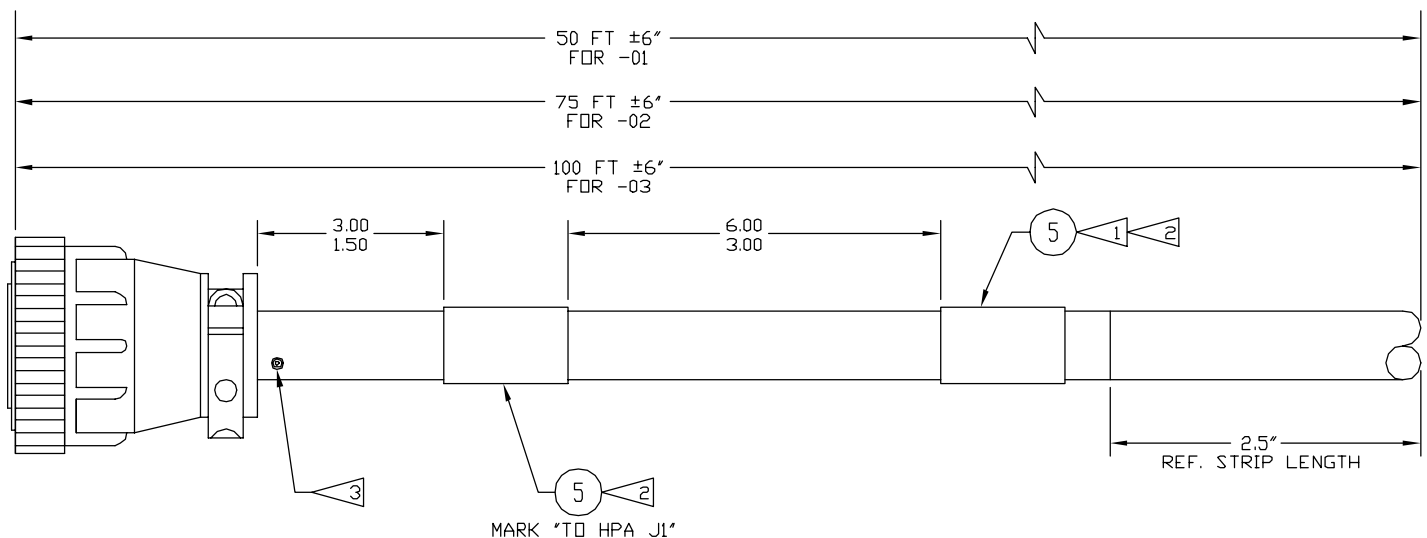
QTY/VERSION	PART NO.	DESCRIPTION			
2	2	2	5	605858-01	LABEL, PIN FEED 1" X 1.4'
1	1	1	4	600088-01	CLAMP, CABLE SHELL SIZE 23
1	1	1	3	600089-01	CONN, 37 PIN PLUG
32	32	32	2	601252-01	SOCKET, CONTACT #66592-2
100FT	75FT	50FT	1	606333-01	CABLE, PROCESS CTRL 19PR 22AWG
-03	-02	-01	ITEM	PART NO.	DESCRIPTION

<p>ALL DIMENSIONS IN BRACKETS ([XX.X]) ARE MILLIMETERS.</p> <p>PROJECTION</p>	MATERIAL	SEE PARTS LIST	DRWN	JR NOVAR	10/27/99	<p><b>THOMCAST COMMUNICATIONS, Inc.</b> Comark Division Southwick, Massachusetts</p>					
	FINISH	~	CHKD	G DELCAMPD	10/27/99						
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES</p> <p>TOLERANCES ±</p> <p>FRACTIONS 1/32</p> <p>2 PLACE DECIMALS .03 [0.8]</p> <p>3 PLACE DECIMALS .010 [0.25]</p> <p>ANGLES 1/2°</p>	CAD FILE#	409408B1	HR	DM	ENGR	J YDRK	10/27/99	<p>CABLE ASSEMBLY, REMOTE, DCX EXCITER P30</p>			
	MANUAL DWG#	~	ENGR	T STONE	10/27/99						
APPLICATION	DCX	NEXT ASSY.	USED ON	APPD	H S B	10/27/99	SIZE	D	CODE IDENT	DRAWING NO	REV.
				APPD	D TOUGAS	10/27/99			409408	B	
				REMOVE BURRS AND SHARP EDGES			SCALE	FULL	JOB NO:	SHEET	1 OF 1

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		ENGINEERING RELEASE		
B		ADDED -03 VERSION PER ECD #3635	11/21/95TS	JM11/21/95
C		REVISED WIRE #9&10 REMARKS. ECD #3654	1/18/96 TS	GDC 1/22/96
D		REVISED PER ECD #3694	3/7/96TS	GDC3/13/96
E		REVISED PER ECD #3932	6/13/97TS	GDC6/13/97
F		ADDED 2.5" DIM PER ECD #4155.	9/15/98TS	GDC9/16/98
NRC		NOTE 4 ADDED NOT APPLICABLE ON DCX SYSTEMS	1/20/99TS	GDC1/20/99

WIRE LIST						
WIRE NO.	P/L ITEM NO.	AWG, COLOR	FROM		TERM (P/L) ITEM NO.	REMARKS
			REF. DES.	TERM.		
			HPA			REMOTE METERING
1	RED PAIR 1	P1 - 1 -				HEATER VOLTAGE + PAIR 1
2	BLK PAIR 1	P1 - 2 -				HEATER VOLTAGE - PAIR 1
3	RED PAIR 2	P1 - 3 -				HEATER CURRENT + PAIR 2
4	BLK PAIR 2	P1 - 4 -				HEATER CURRENT - PAIR 2
5	RED PAIR 3	P1 - 5 -				GRID CURRENT + PAIR 3
6	BLK PAIR 3	P1 - 6 -				GRID CURRENT - PAIR 3
7	RED PAIR 4	P1 - 7 -				BIAS VOLTAGE + PAIR 4
8	BLK PAIR 4	P1 - 8 -				BIAS VOLTAGE - PAIR 4
9	RED PAIR 5	P1 - 10 -				ION CURRENT + PAIR 5
10	BLK PAIR 5	P1 - 11 -				ION CURRENT - PAIR 5
11	RED PAIR 6	P1 - 12 -				ION VOLTAGE + PAIR 6
12	BLK PAIR 6	P1 - 13 -				ION VOLTAGE - PAIR 6
13	RED PAIR 7	P1 - 14 -				BEAM CURRENT + PAIR 7
14	BLK PAIR 7	P1 - 15 -				BEAM CURRENT - PAIR 7
15	RED PAIR 8	P1 - 18 -				FOCUS CURRENT + PAIR 8
16	BLK PAIR 8	P1 - 19 -				FOCUS CURRENT - PAIR 8
17	RED PAIR 9	P1 - 23 -				DRIVE POWER + PAIR 9
18	BLK PAIR 9	P1 - 24 -				DRIVE POWER - PAIR 9
19	RED PAIR 10	P1 - 25 -				BODY CURRENT + PAIR 10
20	BLK PAIR 10	P1 - 26 -				BODY CURRENT - PAIR 10
21	RED PAIR 11	P1 - 27 -				BEAM VOLTAGE + PAIR 11
22	BLK PAIR 11	P1 - 28 -				BEAM VOLTAGE - PAIR 11
23	RED PAIR 12	P1 - 29 -				REVERSE POWER + PAIR 12
24	BLK PAIR 12	P1 - 30 -				REVERSE POWER - PAIR 12
25	RED PAIR 13	P1 - 31 -				FORWARD POWER + PAIR 13
26	BLK PAIR 13	P1 - 32 -				FORWARD POWER - PAIR 13
27	RED PAIR 14	P1 - 33 -				AURAL FWD POWER+ PAIR 14
28	BLK PAIR 14	P1 - 34 -				AURAL FWD POWER- PAIR 14
29	DRAIN	- -			GND AT TB	CABLE GND

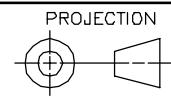


NOTES:

- 1 MARK P/N, VERSION & CURRENT REVISION LEVEL.
- 2 NOMENCLATURE TO BE 12 PT HELVETICA MEDIUM. BLACK CHARACTERS ON WHITE TAPE.
- 3 CUT UNUSED CONDUCTORS AND DRAIN WIRES FLUSH WITH JACKET.
- 4 AURAL FORWARD POWER METERING IS AVAILABLE AT J1 ON CXIC SINGLE TUBE SYSTEMS ONLY. IT IS AVAILABLE OFF THE EXCITER CABINET ON ALL OTHER SYSTEMS. (NOT APPLICABLE ON DCX SYSTEMS)

QTY/VERSION	ITEM	PART NO.	DESCRIPTION		
2	2	2	5	605858-01	LABEL, PIN FEED 1" X 1.4"
1	1	1	4	600088-01	CLAMP, CABLE SHELL SIZE 23
1	1	1	3	600089-01	CONN, 37 PIN PLUG
28	28	28	2	601252-01	SOCKET, CONTACT #66592-2
100FT	75FT	50FT	1	606333-01	CABLE, PROCESS CTRL 19PR 22AWG
-03	-02	-01	ITEM	PART NO.	DESCRIPTION

ALL DIMENSIONS IN BRACKETS ((XX.X)) ARE MILLIMETERS.



4

4

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MATERIAL	SEE P/L	DRWN	T SHEAFFER	9/27/95
FINISH	~	CHKD	G DeICAMPD	9/27/95
CAD FILE#	407753F1	HR	TS	
MANUAL DWG#	~	ENGR	E JUDD	10/2/95
		ENGR	W MICHEL	10/94/95
		APPD	HSB	10/4/95
		APPD	D JOHNSON	10/4/95
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		REMOVE BURRS AND SHARP EDGES		
TOLERANCES ±		YES	<input checked="" type="checkbox"/>	NO
FRACTIONS 1/32				
2 PLACE DECIMALS .03 [.8]				
3 PLACE DECIMALS .010 [.25]				
ANGLES 1/2°				

**COMARK**  
a THOMCAST company

SOUTHWICK, MASSACHUSETTS

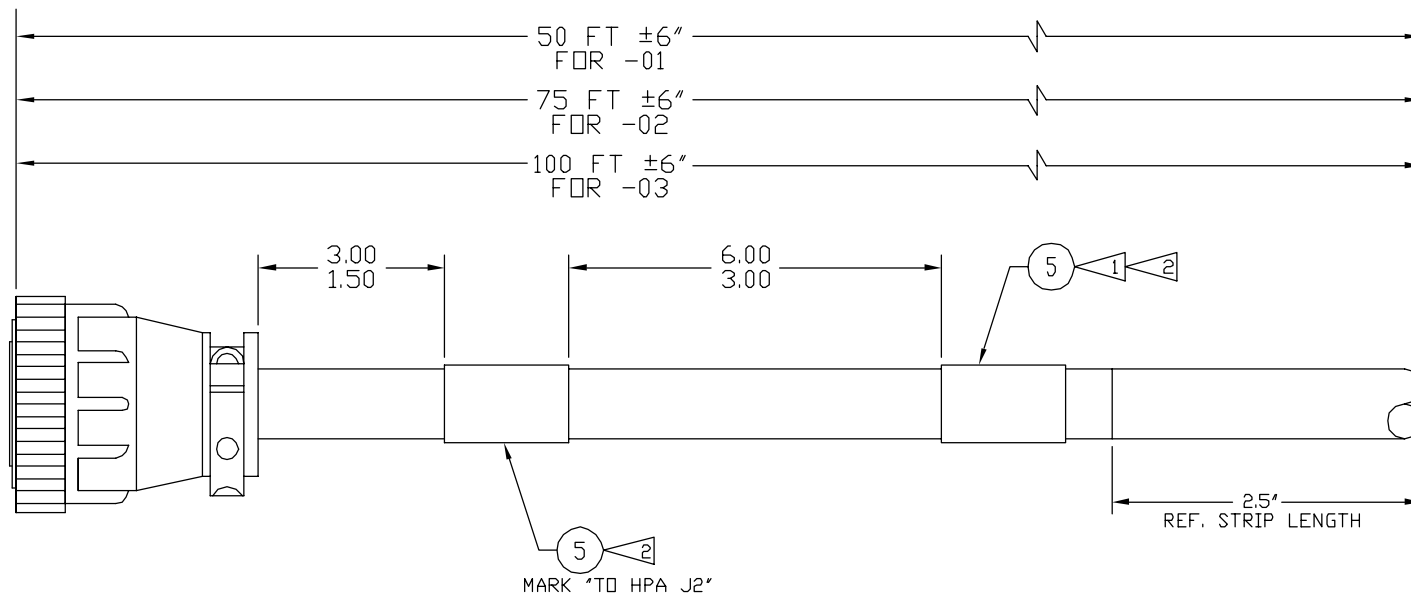
CABLE ASSEMBLY,  
REMOTE, HPA P1

SIZE	CODE IDENT	DRAWING NO	REV.
C		407753	F
SCALE	FULL	JOB NO:	SHEET 1 OF 1

C 407753 F

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	ENGINEERING RELEASE		
	B	ADDED -03 VERSION PER ECD #3635	11/21/95TS	JM11/21/95
	C	ADDED 2.5' DIM PER ECD #4155.	9/15/98TS	GDC9/16/98

WIRE LIST								
WIRE NO.	P/L ITEM NO.	AWG, COLOR	FROM		TERM (P/L) ITEM NO.	TO		REMARKS
			REF. DES.	TERM.		REF. DES.	TERM.	
				HPA		REMOTE STATUS		
1		RED PAIR 1	P2	- 1 -				3 PHASE MONITOR PAIR 1
2		BLK PAIR 1	P2	- 2 -				3 PHASE MONITOR PAIR 1
3		RED PAIR 2	P2	- 3 -				HEATER VOLTAGE PAIR 2
4		BLK PAIR 2	P2	- 4 -				HEATER VOLTAGE PAIR 2
5		RED PAIR 3	P2	- 6 -				FULL HEATER CURRENT PAIR 3
6		BLK PAIR 3	P2	- 7 -				FULL HEATER CURRENT PAIR 3
7		RED PAIR 4	P2	- 8 -				BACKGROUND HEAT PAIR 4
8		BLK PAIR 4	P2	- 9 -				BACKGROUND HEAT PAIR 4
9		RED PAIR 5	P2	- 10 -				COLLECTOR COOLING PAIR 5
10		BLK PAIR 5	P2	- 11 -				COLLECTOR COOLING PAIR 5
11		RED PAIR 6	P2	- 12 -				COLLECTOR TEMP PAIR 6
12		BLK PAIR 6	P2	- 13 -				COLLECTOR TEMP PAIR 6
13		RED PAIR 7	P2	- 14 -				FOCUS CURRENT PAIR 7
14		BLK PAIR 7	P2	- 15 -				FOCUS CURRENT PAIR 7
15	1	RED PAIR 8	P2	- 16 -				ION CURRENT PAIR 8
16		BLK PAIR 8	P2	- 17 -				ION CURRENT PAIR 8
17		RED PAIR 9	P2	- 18 -				CABINET INTERLOCK PAIR 9
18		BLK PAIR 9	P2	- 19 -				CABINET INTERLOCK PAIR 9
19		RED PAIR 10	P2	- 20 -				HV/LV INTERLOCK PAIR 10
20		BLK PAIR 10	P2	- 21 -				HV/LV INTERLOCK PAIR 10
21		RED PAIR 11	P2	- 23 -				CAVITY ARC #1 PAIR 11
22		BLK PAIR 11	P2	- 24 -				CAVITY ARC #1 PAIR 11
23		RED PAIR 12	P2	- 25 -				CAVITY ARC #2 PAIR 12
24		BLK PAIR 12	P2	- 26 -				CAVITY ARC #2 PAIR 12
25		RED PAIR 13	P2	- 27 -				CAV ARC DET INTLK PAIR 13
26		BLK PAIR 13	P2	- 28 -				CAV ARC DET INTLK PAIR 13
27		RED PAIR 14	P2	- 29 -				BEAM CURRENT PAIR 14
28		BLK PAIR 14	P2	- 30 -				BEAM CURRENT PAIR 14
29		RED PAIR 15	P2	- 31 -				BODY CURRENT PAIR 15
30		BLK PAIR 15	P2	- 32 -				BODY CURRENT PAIR 15
31		RED PAIR 16	P2	- 34 -				CABINET COOLING PAIR 16
32		BLK PAIR 16	P2	- 35 -				CABINET COOLING PAIR 16
33		RED PAIR 17	P2	- 36 -				CAVITY COOLING PAIR 17
34		BLK PAIR 17	P2	- 37 -				CAVITY COOLING PAIR 17
35		DRAIN		- -		GND AT TB		CABLE GND

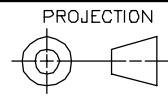


NOTES:

- 1 MARK P/N, VERSION & CURRENT REVISION LEVEL.
- 2 NOMENCLATURE TO BE 12 PT HELVETICA MEDIUM. BLACK CHARACTERS ON WHITE TAPE.

QTY/VERSION	PART NO.	DESCRIPTION			
2	2	2	5	605858-01	LABEL, PIN FEED 1' X 14'
1	1	1	4	600088-01	CLAMP, CABLE SHELL SIZE 23
1	1	1	3	600092-01	CONN, PLUG 23-37 RSC
34	34	34	2	601251-01	PIN, CONTACT #66591-2
100FT	75FT	50FT	1	606151-01	CABLE, PROCESS CTRL 19PR 22AWG
-03	-02	-01	ITEM	PART NO.	DESCRIPTION

ALL DIMENSIONS IN BRACKETS ((XX.X)) ARE MILLIMETERS.



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MATERIAL	SEE P/L	DRWN	T SHEAFFER	9/27/95
FINISH	~	CHKD	G DeICAMPD	9/27/95
CAD FILE#	407754C1	HR	TS	
MANUAL DWG#	~	ENGR	E JUDD	10/2/95
		ENGR	W MICHEL	10/94/95
		APPD	HSB	10/4/95
		APPD	D JOHNSON	10/4/95
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
		TOLERANCES ±		
		FRACTIONS 1/32		
		2 PLACE DECIMALS .03 [.8]		
		3 PLACE DECIMALS .010 [.25]		
		ANGLES 1/2°		
	UIOX	REMOVE BURRS AND SHARP EDGES		
	NEXT ASS'Y.	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
	USED ON			
	APPLICATION			



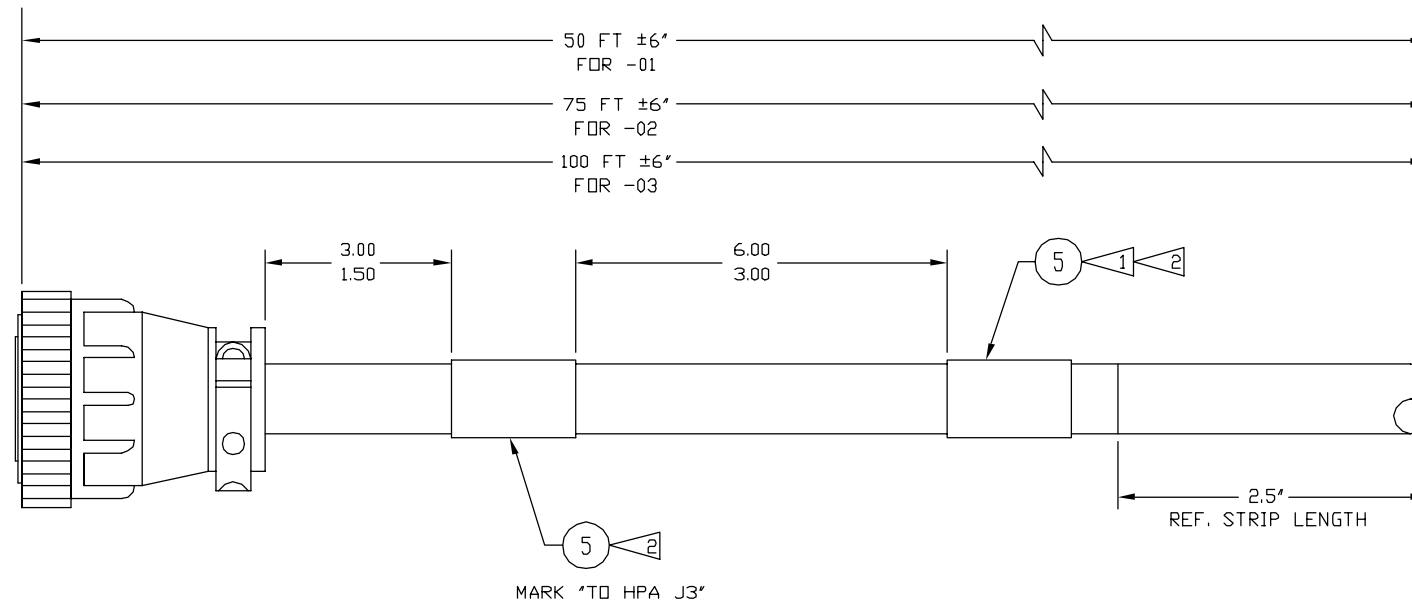
CABLE ASSEMBLY, REMOTE, HPA, P2

SIZE	CODE IDENT	DRAWING NO	REV.
C		407754	C
SCALE	FULL	JOB NO:	SHEET 1 OF 1

C 407754

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	ENGINEERING RELEASE		
	B	ADDED -03 VERSION PER ECD #3635	11/21/95TS	JM11/21/95
	C	DELETED WIRES 21 & 22. ECD #3965	8/4/97TS	GDC8/15/97
	D	ADDED 2.5' DIM PER ECD #4155.	9/15/98TS	GDC9/16/98
	E	REVISED PER ECD # 4377	11/11/99BF	JM11/11/99

WIRE LIST									
WIRE NO.	P/L ITEM NO.	AWG, COLOR	FROM			TO			REMARKS
			REF. DES.	TERM.	POS	REF. DES.	TERM.	POS	
			HPA			REMOTE			
1	RED PAIR 1		P3 - 1 -			- -			HV CONTROLLER PAIR 1
2	BLK PAIR 1		P3 - 2 -			- -			HV CONTROLLER PAIR 1
3	RED PAIR 2		P3 - 3 -			- -			BIAS VOLTAGE PAIR 2
4	BLK PAIR 2		P3 - 4 -			- -			BIAS VOLTAGE PAIR 2
5	RED PAIR 3		P3 - 5 -			- -			BIAS CURRENT PAIR 3
6	BLK PAIR 3		P3 - 6 -			- -			BIAS CURRENT PAIR 3
7	RED PAIR 4		P3 - 7 -			- -			CROWBAR READY PAIR 4
8	BLK PAIR 4		P3 - 8 -			- -			CROWBAR READY PAIR 4
9	RED PAIR 5		P3 - 10 -			- -			CROWBAR TRIGGERED PAIR 5
10	BLK PAIR 5		P3 - 11 -			- -			CROWBAR TRIGGERED PAIR 5
11	RED PAIR 6		P3 - 12 -			- -			CROWBAR FIRED PAIR 6
12	BLK PAIR 6		P3 - 13 -			- -			CROWBAR FIRED PAIR 6
13	RED PAIR 7		P3 - 14 -			- -			HV BEAM ON PAIR 7
14	BLK PAIR 7		P3 - 15 -			- -			HV BEAM ON PAIR 7
15	RED PAIR 8		P3 - 16 -			- -			AMP REVERSE PWR PAIR 8
16	BLK PAIR 8		P3 - 17 -			- -			AMP REVERSE PWR PAIR 8
17	RED PAIR 9		P3 - 18 -			- -			AMP FORWARD PWR PAIR 9
18	BLK PAIR 9		P3 - 19 -			- -			AMP FORWARD PWR PAIR 9
19	RED PAIR 10		P3 - 23 -			- -			HV BEAM ON/OFF + PAIR 10
20	BLK PAIR 10		P3 - 24 -			- -			HV BEAM ON/OFF PAIR 10
21	RED PAIR 11		P3 - 20 -			- -			RF SYSTEM INTERLOCK PAIR 11
22	BLK PAIR 11		P3 - 21 -			- -			RF SYSTEM INTERLOCK PAIR 11
23	RED PAIR 12		P3 - 27 -			- -			HV CONNECT/ISOLATE PAIR 12
24	BLK PAIR 12		P3 - 28 -			- -			HV CONNECT/ISOLATE PAIR 12
25	DRAIN		- -			GND AT TB			CABLE GND



NOTES:

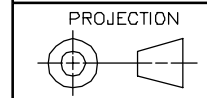
1 MARK P/N, VERSION & CURRENT REVISION LEVEL.

2 NOMENCLATURE TO BE 12 PT HELVETICA MEDIUM. BLACK CHARACTERS ON WHITE TAPE.

3. P3 1-19 ARE STATUS, 23-28 ARE CONTROL.

QTY/VERSION	ITEM	PART NO.	DESCRIPTION		
2	2	2	5	605858-01	LABEL, PIN FEED 1' X 14'
1	1	1	4	600088-01	CLAMP, CABLE SHELL SIZE 23
1	1	1	3	600092-01	CONN, PLUG 23-37 RSC
22	22	22	2	601251-01	PIN, CONTACT #66591-2
100FT	75FT	50FT	1	606150-01	CABLE, PROCESS CTRL 15PR 22AWG
-03	-02	-01	ITEM	PART NO.	DESCRIPTION

ALL DIMENSIONS IN BRACKETS ((XX.X)) ARE MILLIMETERS.



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MATERIAL	SEE P/L
FINISH	~
CAD FILE#	407755E1 HR TS
MANUAL DWG#	~
CIDX	
UIDX	
APPLICATION	USED ON

DRWN	T SHEAFFER	9/27/95
CHKD	G DeICAMPD	9/27/95
ENGR	E JUDD	10/2/95
ENGR	W MICHEL	10/94/95
APPD	HSB	10/4/95
APPD	D JOHNSON	10/4/95
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ± FRACTIONS 1/32 2 PLACE DECIMALS .03 [.8] 3 PLACE DECIMALS .010 [.25] ANGLES 1/2°		
REMOVE BURRS AND SHARP EDGES YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		



CABLE ASSEMBLY, REMOTE, HPA, P3

SIZE	CODE IDENT	DRAWING NO	REV.
C		407755	E
SCALE	FULL	JOB NO:	SHEET 1 OF 1

C 407755



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