

SECTION IX
87-ACDCN
AC DC POWER SUPPLY OPTION

9-1 GENERAL INFORMATION

When the Universal AC and Low Voltage DC input Power Option is installed in an XL-DC series synchronized clock, the clock may be powered from the rear panel IEC power receptacle with the following input voltage ranges:

95 - 260 VAC
or
125 - 350 VDC

NOTE: The rear panel IEC power receptacle is used for both AC and high voltage DC inputs and is insensitive to polarity.

The clock may also be powered from the rear panel mounted terminal strip Primary input by the following voltage range:

9 -18 VDC

This power supply is negative ground, the user should connect the rear panel chassis ground to system ground.

9-2 DC POWER SUPPLY ADJUSTMENT

Pot R1 on the 86-308 DC-DC Power Supply Assembly trims the +5 VDC supply voltage. Connect a digital voltmeter to GND and to the back plane (86-300-2) pin P6-5. While the power supply is providing power to the clock, adjust R1 until the output voltage is 5.1 VDC.

9-3 POWER SUPPLY OPERATION

The clock's primary power source is from the Universal Input AC Power Supply when the external DC input voltage is less than 9 VDC or not present.

Under AC power the Universal AC Power Supply provides 12 VDC to the 86-308 DC-DC converter assembly.

The 86-308 Assembly provides regulated +5 VDC, +12 VDC, and -12 VDC to the Backplane Bus Assembly for distribution to all circuits. The 86-308 power supply assembly consists of voltage steering diodes, filter capacitors, and a DC-DC converter.

Under DC power the 9-18 VDC input provides power to the 86-308 DC-DC converter assembly. The 86-308 Assembly provides regulated +5 VDC, +12 VDC, and -12 VDC to the Backplane Bus Assembly for distribution to all circuits.

9-4 INSTALLATION

No installation is required for this option. This power supply option is factory-installed.

9-5 MAINTENANCE AND TROUBLESHOOTING

The AC/DC Power Option has been designed to provide maintenance-free operation. Under normal use, it will require no calibration or adjustment. Adjustment procedures are provided for use after repair.

9-6 TROUBLESHOOTING

WARNING: Only a qualified electronics technician should attempt repairs. Exercise caution while working on or near these power supply assemblies.

The following are only general troubleshooting procedures. Since an apparent problem may be the result of operator error, the technician will need a thorough understanding of the normal operation of this option. Refer to the General Information section for a description of normal operation.

9-7 EQUIPMENT REQUIRED

1. Digital Voltmeter
2. Slot Screwdriver

9-8 SYMPTOMS

1. The unit operates on DC but not AC power.
2. The unit does not operate on either AC or DC power.

Before assuming a malfunction, first be certain that the 1A rear panel AC fuse has not blown. Verify that the AC power supply on-board fuse has not blown. Verify that the IEC power plug is securely in its receptacle.

After checking the previous causes, the AC Power Supply may be bad.

If the unit does not operate on DC power, verify that your power source and power cables are good and securely connected. Verify that the rear panel 3A DC fuse has not blown.

After checking the previous causes, the DC-DC Power Supply may be bad.

9-9 ADJUSTMENT PROCEDURES

Pot R1 on the 86-308 DC-DC Power Supply Assembly trims the +5 VDC supply voltage. Connect a digital voltmeter to test point TP1 (GND) and to J1 pin 2. While the power supply is providing power to the clock, adjust R1 until the output voltage is +5.1 VDC.

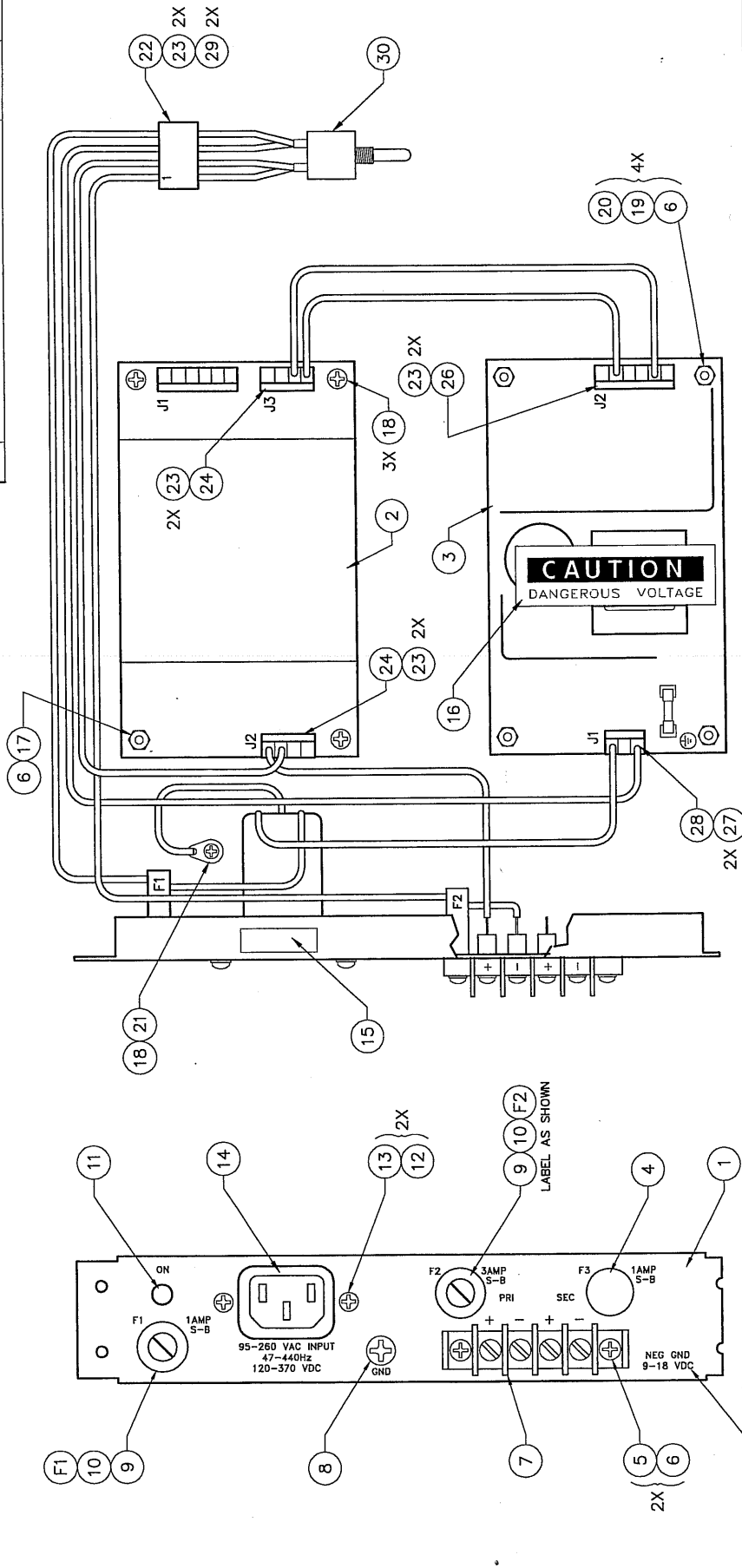
9-10 AC POWER SUPPLY ADJUSTMENT

Connect a DC voltmeter to 86-308 C1 (+) and C1 (-). Plug in AC power and turn on the front panel power switch. Set the voltage adjust pot on the AC Power Supply (if necessary) to produce 12, ± 1 VDC.

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REVISIONS

REV	DESCRIPTION	DATE	APPROVED
A	ADDED ITEMS 29 AND WIRE 18 AWG(RED)	11/15/96	DR/MK
B	ITEM 18 WAS QTY 8 & ITEM 6 WAS QTY 3	6/12/97	

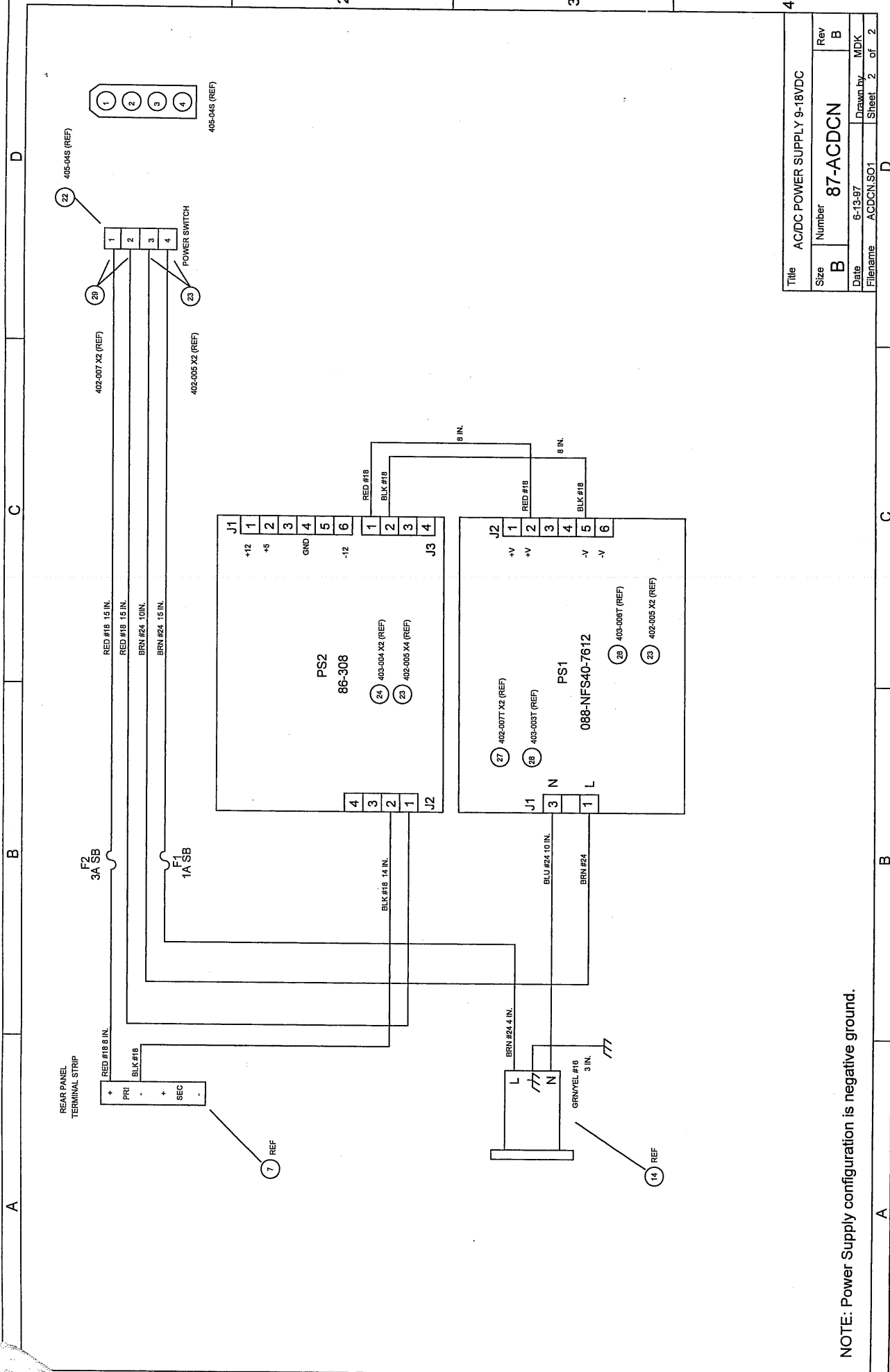


TrueTime
 2835 DUKE CT. SANTA ROSA CA 95407

POWER SUPPLY AC/DC
9-18 V NEG GND, XL-DC

UNLESS OTHERWISE SPECIFIED	CONTRACT NO.
DIMENSIONS ARE IN INCHES	
TOLERANCES ARE:	
FRACTIONS ±	
DECIMALS ±	
ANGLES ±	
XX±.015	
XX±.010	
XX±.005	
ALL THREADS TO BE CLASS 2 PER ANSI Y14-6	
MACH COP-ODS TO O.D. OR CHAM	
SH MATL-DEBURR & BREAK EDGES .015 MAX R	
DIM. AND TOL. APPLY EN. TREAT.	
MATERIAL	
FINISH	
FILENAME: \87\ACDCN	
DATE: 06-12-97	
APPROVALS	DATE
DRAWN BY SEIFERT	11/95
CHECKED BY	
APPROVED BY MK	6/97
NEXT ASSY	
SIZE	CODE IDENT NO.
B	87-ACDCN
SCALE NONE	REV B
	SHEET 1 OF 2

1. SEE SHEET 2 FOR WIRING.
 NOTES: UNLESS OTHERWISE SPECIFIED.



Title		AC/DC POWER SUPPLY 9-18VDC	
Size	Number	Rev	
B	87-ACDCN	B	
Date	6-13-97	Drawn by	MDK
Filename	ACDCN.S01	Sheet	2 of 2

NOTE: Power Supply configuration is negative ground.

MAX * BILL OF MATERIALS * SINGLE-LEVEL EXPLOSION BY PART IDENTIFIER W/REFERENCE

PART IDENTIFIER	DESCRIPTION 1	DESCRIPTION 2	EFF DATE	ECN #	QTY/ASSY	REV UOM LVL	REFERENCE DESCRIPTION
87-ACDCN	AC/DC SUPPLY 9-18VDC					EA	
0000-APPROVAL	PARTS LIST APPROVAL		0000		1.0000	EA	<i>80 5/98</i>
0000-PL	PARTS LIST REV LEVEL		0000		1.0000	EA	REV B (03-13-98)
0000-PRINT	REFERENCE PRINT		0000		1.0000	EA	87-ACDCN REV B
088-NFS40-7612	POWER SUPPLY +12V 3A	COMP PRODUCTS NFS40-7612	0000		1.0000	EA	03 (PS1)
218-605	PLATE, AC PWR SUPPLY	FAB/SCREEN	0000		1.0000	EA	01
238-004-003	SCREW PH PN SEP 4-40X3/8		0000		2.0000	EA	13
238-006-002	SCREW PH PN SEP 6-32X1/4	INT SEP(STAINLESS STEEL)	0000		4.0000	EA	18
240-006-006	SCREW PH PN SS 6-32X3/4	SCREW PAN	0000		2.0000	EA	05
240-010-003	SCREW PH BH SS 10-32X3/8	SCREW	0000		1.0000	EA	08
241-006-002	SCREW PH FH SS 6-32X1/4	BUY/USE ONLY 100 DEGREE	0000		4.0000	EA	19
251-004	NUT KEP SS 4-40	KEPNUT	0000		2.0000	EA	12
251-006	NUT KEP SS 6-32 .250 HEX	KEPNUT SMALL PATTERN	0000		7.0000	EA	06
255-006-003	SPACER 6-32X3/8X1/4	HH SMITH 8422	0000		4.0000	EA	20
256-006	LUG SOLDER #6CLR .138 DIA	HH SMITH 1412-6	0000		1.0000	EA	21
270-006-002	SPACER #6 X 1/4	HH SMITH 4155 OR 2130	0000		1.0000	EA	17
274-003	PLUG HOLE .250 INCH METAL	H.H. SMITH 650	0000		1.0000	EA	11
274-009	PLUG HOLE NYL BLK 1/2 IN.	AROW HEY-2643	0000		1.0000	EA	04
315-016-189UL	WIRE 16 AWG GR/YLW UL1015	BELDEN 8917-189	0000		0.5000	FT	3 IN. SEE WIRING
315-018-002UL	WIRE 18 AWG RED UL1015	BELDEN 8918-2	0000		4.0000	FT	46 IN. SEE WIRING
315-018-010UL	WIRE 18 AWG BLACK UL1015	BELDEN 8918-10	0000		2.0000	FT	22 IN. SEE WIRING
315-024-001UL	WIRE 24 AWG BROWN UL1015	BELDEN 9924-1	0000		2.5000	FT	29 IN. SEE WIRING
315-024-006UL	WIRE 24 AWG BLUE UL1015	BELDEN 9924-6	0000		1.0000	FT	10 IN. SEE WIRING
342-001	SOCKET POWER & LINE FLTR	CORCOM 6EF1	0000		1.0000	EA	14
363-1.0SB	FUSE 3AG 1A SB #313001	LITTELFUSE 313001	0000		1.0000	EA	F1
363-3.0SB	FUSE, 3A 3AG SLO BLO	LITTELFUSE 313003	0000		1.0000	EA	F2
365-005	FUSE HOLDER	SCHURTER FEU031.1653	0000		2.0000	EA	09
365-007	FUSE CARRIER	SCHURTER FEK 031.1666	0000		2.0000	EA	10
373-004	BARRIER STRIP 4 TERM	BEAU 72204	0000		1.0000	EA	07
373-004CVR	BARRIER STRIP COVER	BEAU/VERNITRON CW01-04	0000		1.0000	EA	SHIPPING KIT
392-608	CABLE, DPDT SWITCH		0000		1.0000	EA	30
400-007	LABEL WARNING	700262	0000		1.0000	EA	15
400-009	LABEL CAUTION DNGR VOLT	127431	0000		1.0000	EA	16
402-005	TERMINAL CRIMP FM	MOLEX 02-06-1103	0000		8.0000	EA	23
402-007	PIN 18-24 AWG STD-KK	MOLEX 08-50-0106	0000		2.0000	EA	29
402-007T	PIN 18-24 AWG	MOLEX 08-52-0113	0000		2.0000	EA	27
403-003T	CONN 3-P	MOLEX 026-03-4030	0000		1.0000	EA	28
403-004	CONN 4-P CBL MT LCK .156	MOLEX 09-50-3041	0000		2.0000	EA	24
403-006T	CONN 6-P	MOLEX 026-03-4061	0000		1.0000	EA	26
405-04S	CONN 4-P RECEPTACLE	MOLEX 03-06-1042	0000		1.0000	EA	22
86-308	ASSY DC-DC CONV (25W)	9-18VDC	0000		1.0000	EA	02 (PS2)
LA	LABOR ASSEMBLY COST HRS		0000		0	EA	
LT	LABOR TEST COST HOURS		0000		0	EA	

