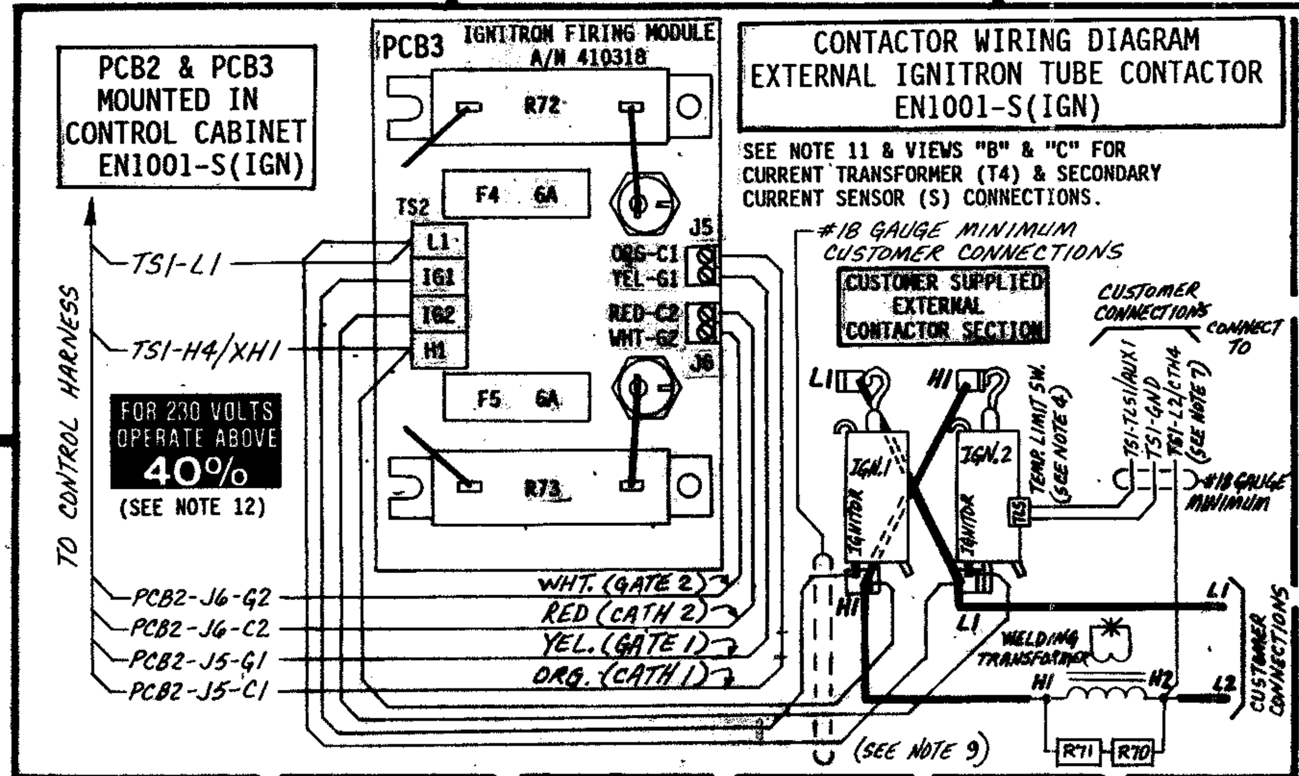
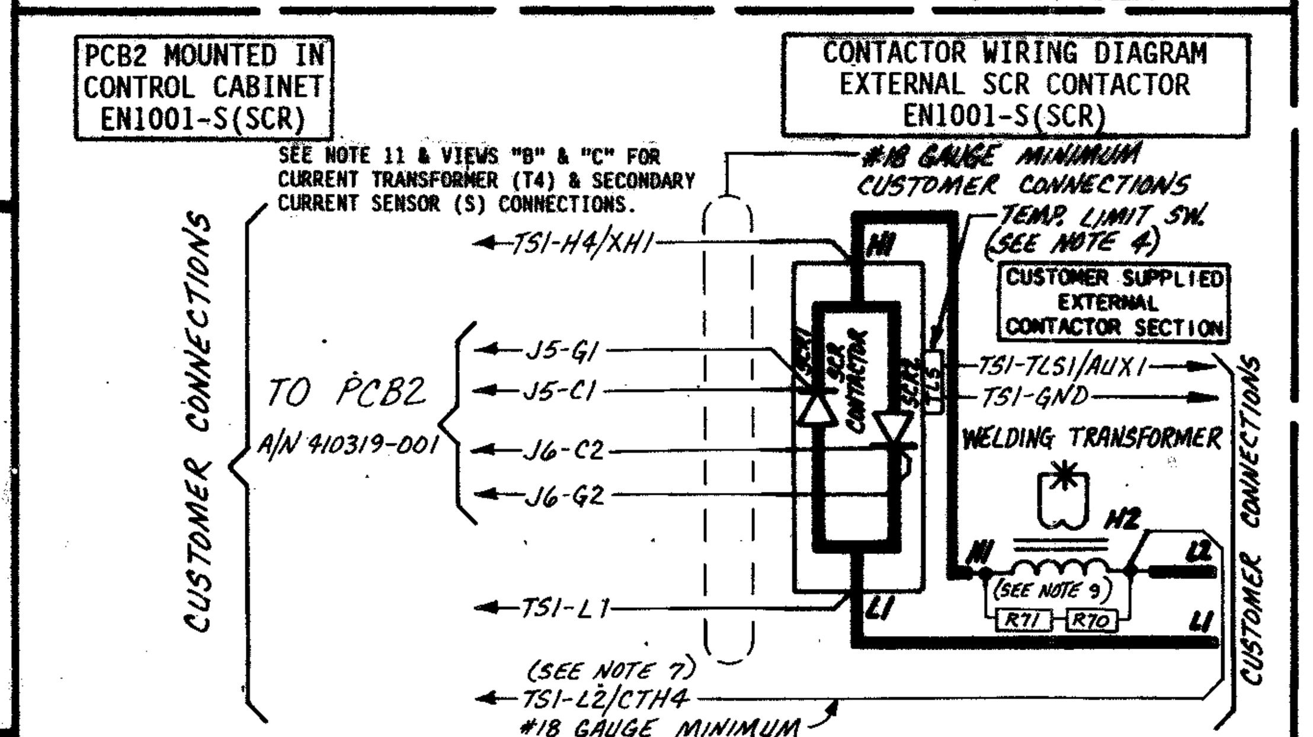
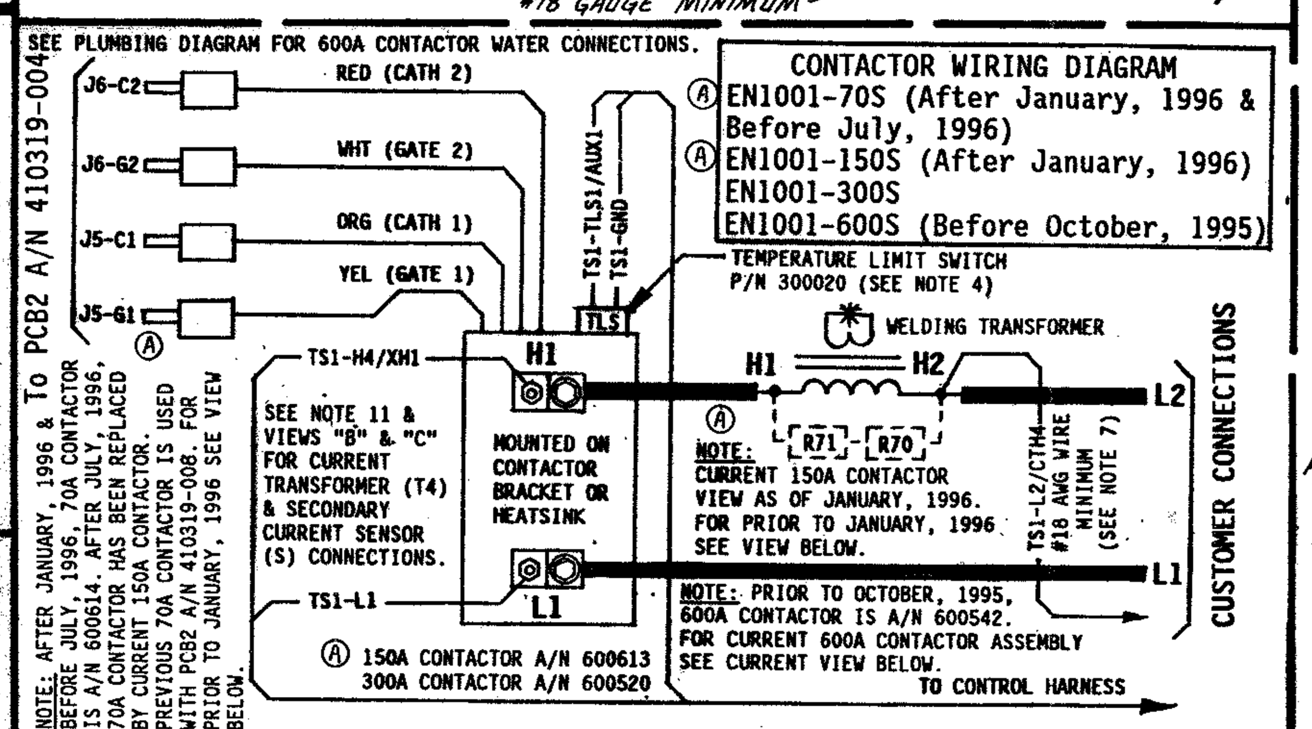
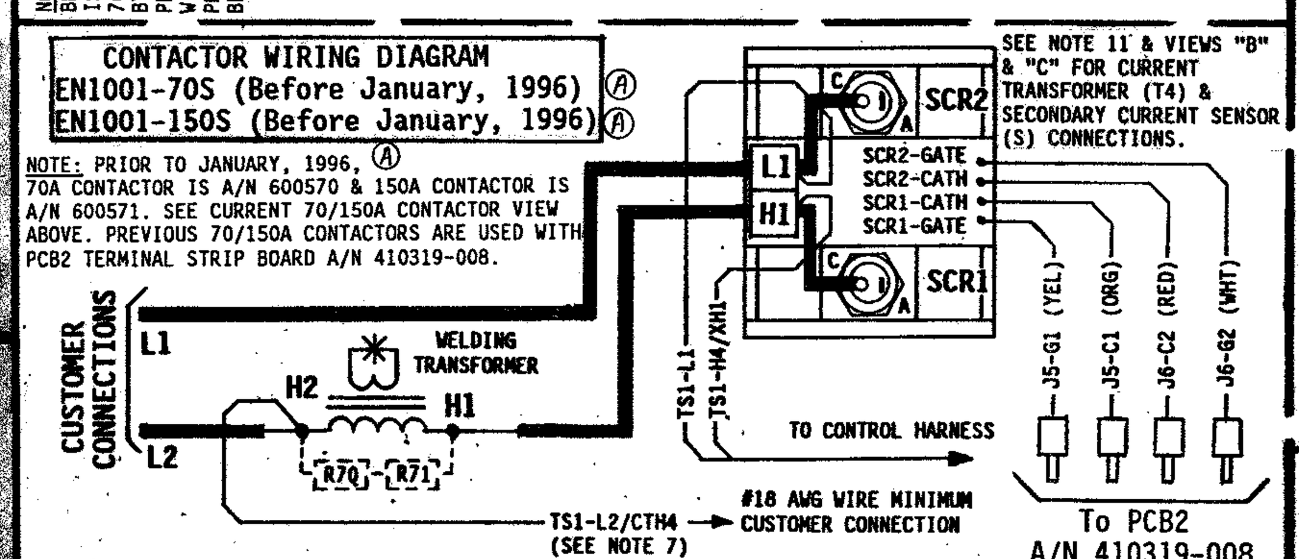
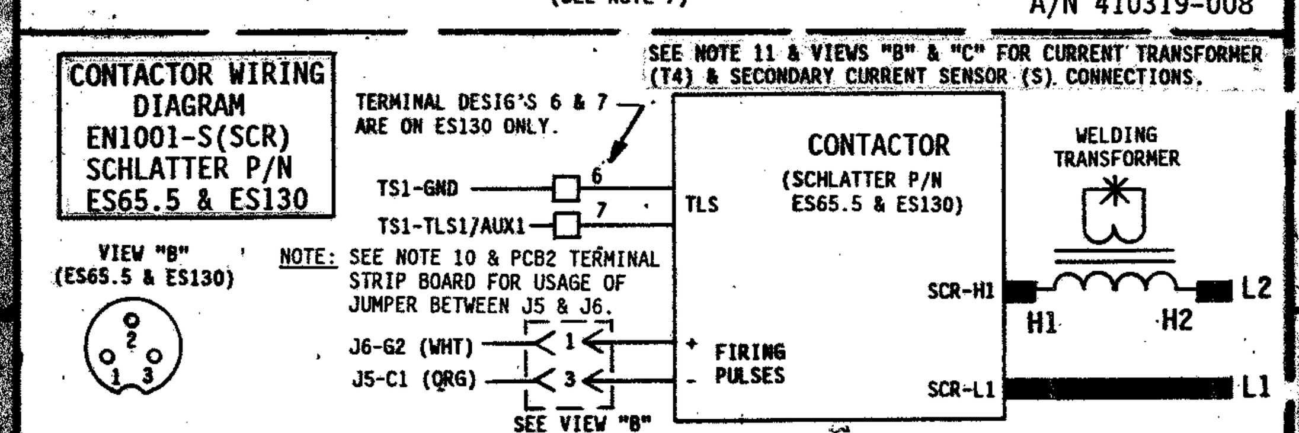
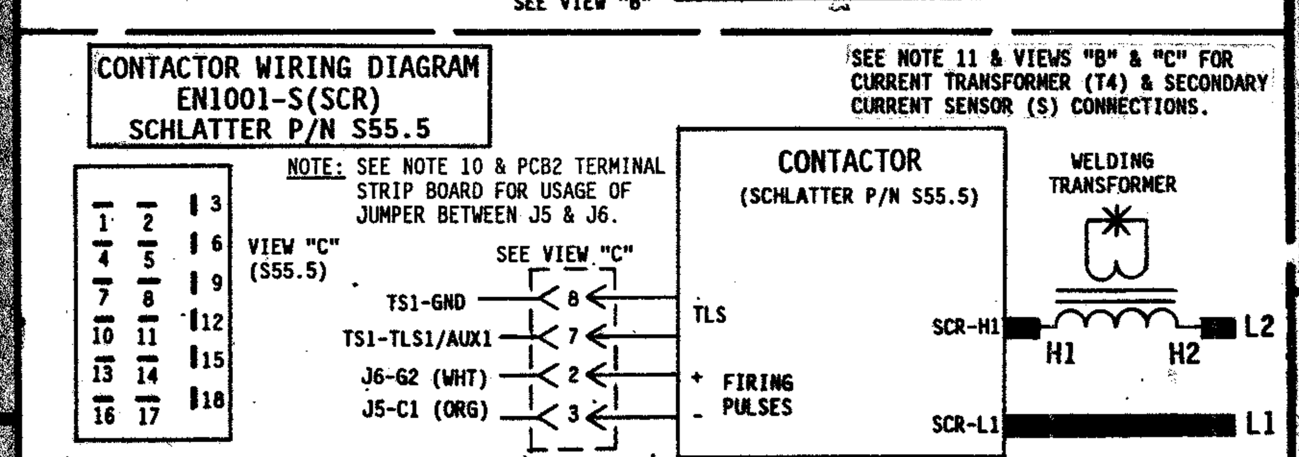


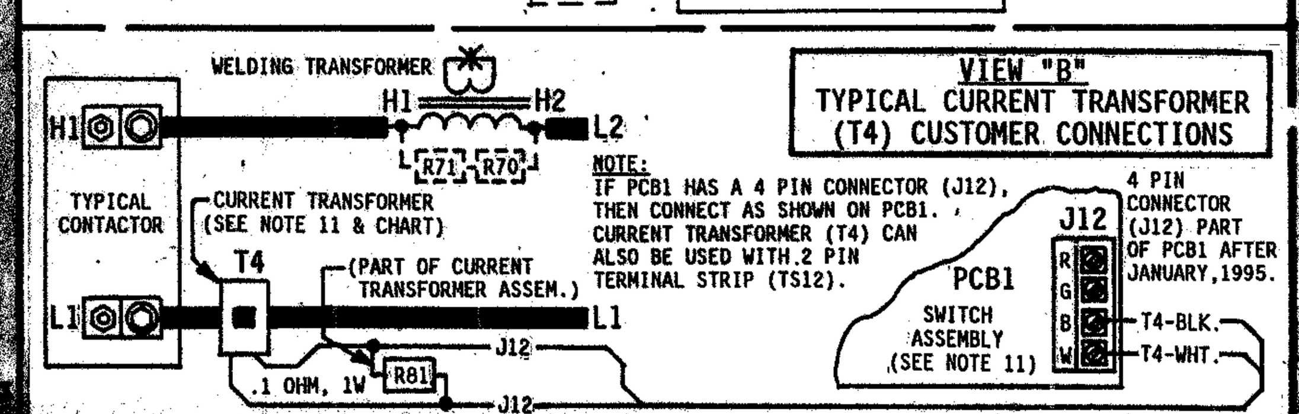












NOTES:

1. It is recommended that control wiring (i.e.: initiation, pressure switch, etc.) be physically separated from the high voltage wiring (115 volts or higher).
2. For 460 VAC Operation - Use Jumper #1 on T3 & TS1. As shipped unless otherwise specified.
For 230 VAC Operation - Use Jumper #2 on T3 & TS1.
For 575 VAC Operation - FACTORY WIRED ONLY. SEE VIEW "A".
Replace T3 with P/N 311016. Wire per View "A". Use Jumper #1 between H2 & H3 on TS1.
Use Resistor R74 (2000 Ohm, 10 Watt) in place of Jumper #1 between CTH2 & CTH3 on TS1.
For 115 VAC or 380 VAC Operation - CONSULT FACTORY.
3. For Single Stage Pilot Operation - Connect pilot switch to TS1-FS3 & TS1-GND. No jumpers required across TS1-FS1 & TS1-GND.

For Two Stage Pilot Operation - Connect 1st stage pilot switch to TS1-FS1 & TS1-GND. Connect 2nd stage pilot switch to TS1-FS3 & TS1-GND.

For DUAL COUNT/DUAL CURRENT (Dual Weld/Dual Heat) or TRIPLE COUNT/TRIPLE CURRENT (Triple Weld/Triple Heat) or External Schedule Selection, SEE MANUAL.

Ⓐ 4. EN1001-S(IGN) & EN1001-S(SCR):
When used, connect customer provided Normally Closed (N.C.) Temperature Limit Switch (TLS) across TS1-TLS1/AUX1 & TS1-GND and remove jumper between TS1-TLS1/AUX1 & TS1-GND.
EN1001-150S, EN1001-300S, & EN1001-600S:
ENTRON supplies Temperature Limit Switch (TLS) P/N 300020 and provides connections to TS1-TLS1/AUX1 & TS1-GND. Jumper not required between TS1-TLS1/AUX1 & TS1-GND.
NOTE: TLS SCR will open at temperatures greater than or equal to 150° F.
5. When external valve power is supplied to the control. Remove and insulate leads TS3-VL1 & TS3-VL2 on the Terminal Strip Board (PCB2), (from T3-X1 & T3-X2). Connect external AC power supply (24-240 VAC) to TS1-VL1 & TS1-SV2/SV4/VL2.
CAUTION: Do not overtighten TS3.
6. VALVE USAGE:
TS1-SV1 & TS1-SV2 can ONLY be used for Solenoid Valve. Valve 2 and 3 are used to Disable SCR1 & SCR2 for 1/2 Cycle Operation. See Application Note 700114 for more information.

7. Connect TS1-L2/CTH4 to L2/H2 side of Welding Transformer Primary.
8. When Optional Program Lockout is specified by customer. Dial Plate A/N 600574-005 replaces A/N 600574-004. Add Switch P/N 600531-001 & remove Hole Plug P/N 565003.
9. EN1001-S(IGN) & EN1001-S(SCR):
Remove all connections from previously existing firing circuits to L1, L2/H2, & H1 also Ignitor leads or SCR Gate leads & SCR Cathode leads. All previously existing surge Resistors or Rectifiers must be disconnected prior to installation of this control.
CAUTION: On EN1001-S(SCR), Do not overtighten J5 & J6.
10. For External SCR Contactor firing with SCHLATTER P/N S55.5, ES65.5, & ES130 Contactors. Do NOT make J5 & J6 connections as shown on PCB2. See EN1001-S(SCR) Contactor Wiring Diagram with SCHLATTER Contactors. Install jumper on PCB2 Terminal Strip Board between J5-2 (Yellow) & J6-1 (Red). Make connections from J5-1 (Orange) & J6-2 (White) on PCB2 to SCHLATTER Contactor per correct External SCR Contactor Wiring Diagram.
11. CURRENT TRANSFORMER (T4) CONNECTIONS:
Wire per view "B". Current Transformer coil (T4) shown installed on L1, may be installed on H1. Wires from Current Transformer (T4) to J12 should be kept as short as possible.
SECONDARY CURRENT SENSOR (S) CONNECTIONS:
Wire per view "C". Secondary Current Sensor (S) may be used in place of Current Transformer (T4). Add J12-J12 Harness A/N 322379 & modify cabinet per drawing P/N 510015-006.
NOTE: Secondary Current Sensor (S) can ONLY be used with PCB1 A/N 600572-002 or A/N 600572 that has a 4 pin connector (J12) installed.
12. CAUTION: Do NOT set Current Control below 40% for 230 Volt Operation with Ignitron Tube Contactor.

FOR SERVICE ON THIS CONTROL
CONTACT YOUR MACHINE DEALER
OR
ENTRON CONTROLS INC.
DIRECTLY : (630) 682-9600
465 EAST RANDY ROAD
CAROL STREAM, IL 60188
FAX # (630) 682-3374

WARNING: HIGH VOLTAGE

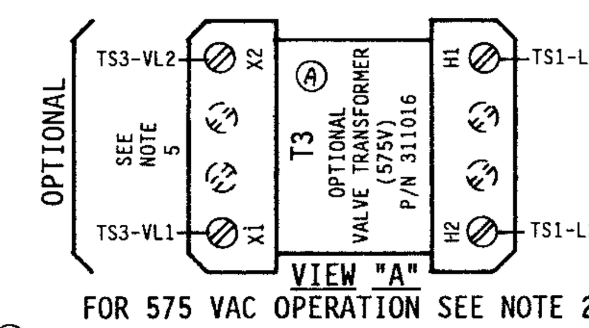
VOLTAGES PRESENT IN THIS CONTROL CAN CAUSE SEVERE OR FATAL INJURIES
NOTE: EVEN THOUGH SUPPLY POWER TO THIS UNIT HAS BEEN DISCONNECTED, THERE MAY BE VOLTAGES IN THIS CONTROL ORIGINATING FROM OTHER SOURCES.
FOR ALL VOLTAGE POTENTIAL TO BE REMOVED FROM THIS CONTROL, POWER MUST BE REMOVED FROM ALL EXTERNAL CONTROL CIRCUITS CONNECTED TO TERMINALS IN THIS CABINET

CAUTION
Control Shipped Wired for 460 VAC
Unless otherwise specified - See Note 2.

CURRENT SENSING COIL/SENSOR APPLICATION CHART

COIL/SENSOR MODEL NUMBER	CURRENT TRANSFORMER OR SECONDARY CURRENT SENSOR PART NUMBER	CONTACTOR SIZE: OBS. 70A CONT	150A CONT	300A CONT	600A CONT	EXTERNAL FIRING: IGN.	SCR
P2 - 200:5	A/N 600575 OBSOLETE	X	X				
P2 - 200:5	A/N 600575-001 OBSOLETE					X	X
P2 - 200:5	A/N 600575-002	X	X				
P2 - 200:5	A/N 600575-003					X	X
P5 - 500:5	A/N 600576 OBSOLETE			X	X		
P5 - 500:5	A/N 600576-001 OBSOLETE					X	X
P5 - 500:5	A/N 600576-002			X	X		
P5 - 500:5	A/N 600576-003					X	X
P10 - 1000:5	A/N 600577-001 OBSOLETE					X	X
P10 - 1000:5	A/N 600577-003					X	X
S	A/N 600590 & A/N 322379	X	X	X	X	X	X

X = ONE CURRENT TRANSFORMER ASSEMBLY or ONE SECONDARY CURRENT SENSOR ASSEMBLY.

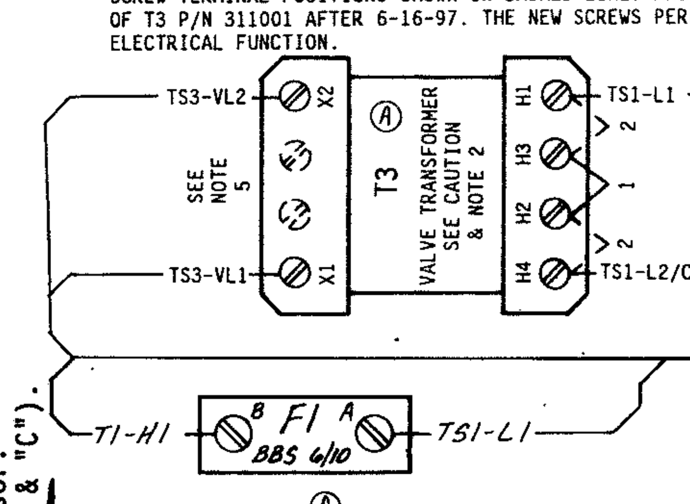


FOR 575 VAC OPERATION SEE NOTE 2.

Ⓐ NOTE: SCREW TERMINAL POSITIONS SHOWN IN DASHED LINES ARE PART OF T3 P/N 311001 AFTER 6-16-97. THE NEW SCREWS PERFORM NO ELECTRICAL FUNCTION.

Ⓐ NOTE: PRIOR TO 1-15-93, OPTIONAL 575V T3 VALVE TRANSFORMER WAS P/N 311006. WIRE FROM TS1-L2/CTH4 WAS CONNECTED TO T3-H3. T3-H3 SCREW POSITION WAS IN SAME LOCATION AS T3-H2.

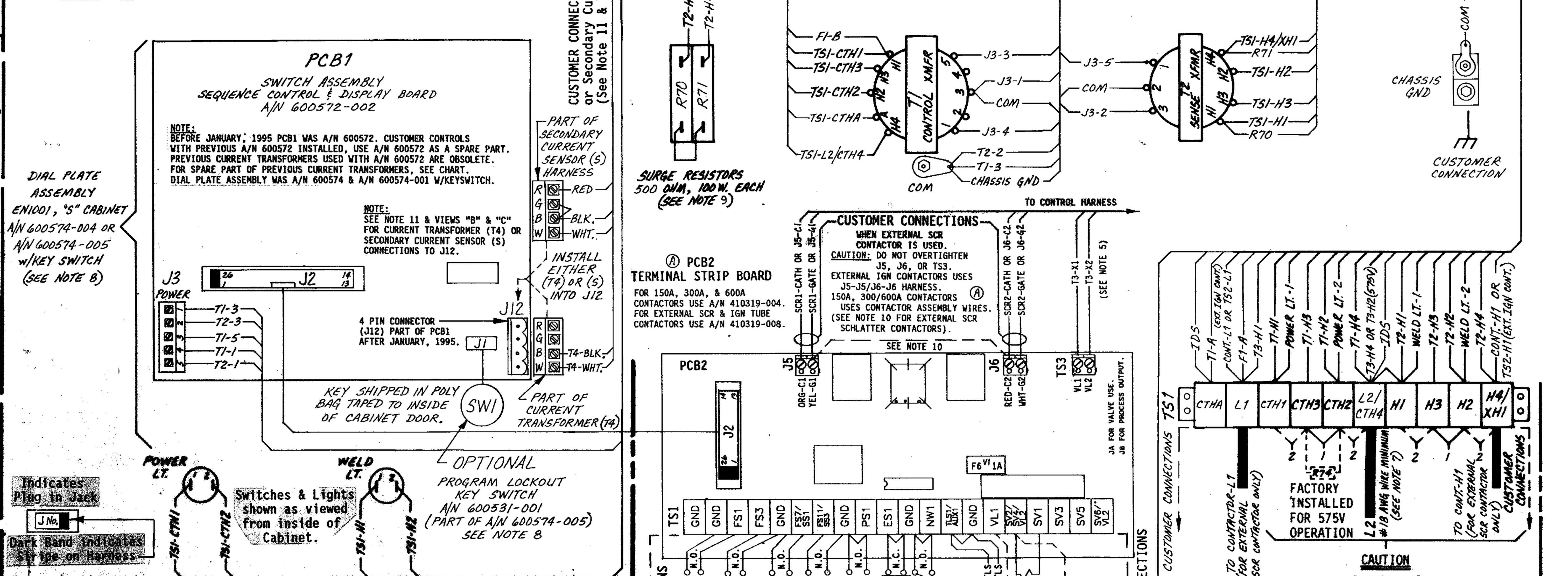
NOTE: Ⓐ SCREW TERMINAL POSITIONS SHOWN IN DASHED LINES ARE PART OF 575V T3 P/N 311016 AFTER 6-16-97. THE NEW SCREWS PERFORM NO ELECTRICAL FUNCTION.



CAUTION
SEE NOTE 2
For 460 VAC Operation - Use Jumper #1 ONLY.
For 230 VAC Operation - Use Jumper #2 ONLY.
For 575 VAC Operation - FACTORY WIRED ONLY.
SEE VIEW "A": REPLACE T3 WITH P/N 311016.
For 115 VAC or 380 VAC Operation - CONSULT FACTORY.

PLEASE REFER TO CORRECT CONTACTOR WIRING DIAGRAM FOR CONTROL CONTACTOR

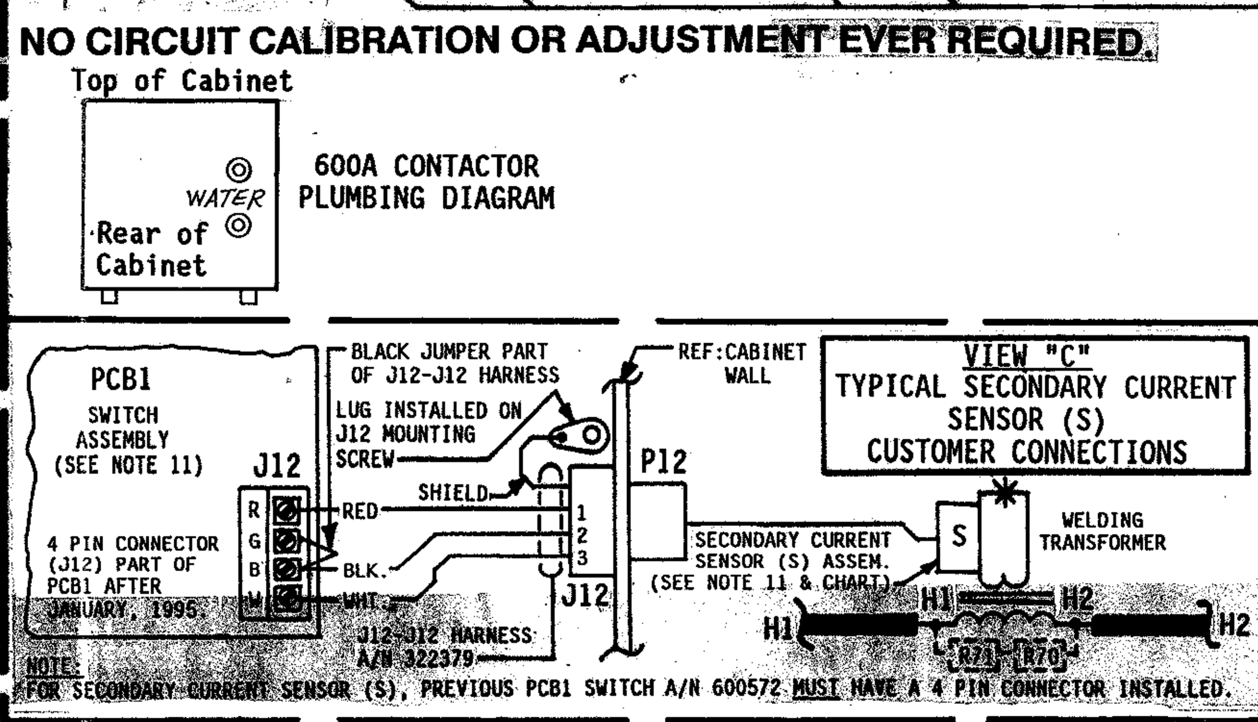
TO CONTACTOR SECTION

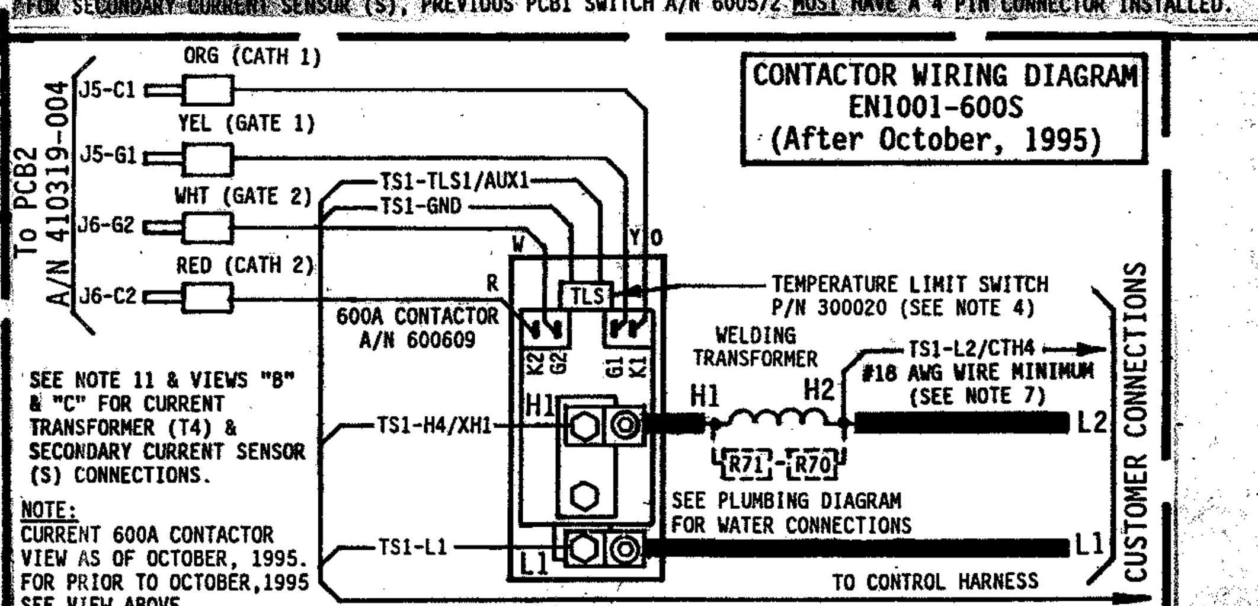


CAUTION
See Note 2
For 460VAC Operation-Use Jumpers #1.
For 230VAC Operation-Use Jumpers #2.
For 575VAC Operation-FACTORY WIRED ONLY.
Jumper #1 is used between H2 & H3
Jumper #1 between CTH2 & CTH3 is removed & replaced by resistor. R74 (2000 ohm, 10 Watt).
For 115VAC or 380VAC Operation-Consult Factory

CAUTION CONTROL WIRED FOR 460 VAC - UNLESS OTHERWISE SPECIFIED.
CUSTOMER CONNECTIONS- CAUTION- READ MANUAL & ALL NOTES BEFORE INSTALLING OR OPERATING CONTROL. SEE NOTE 1.

NO CIRCUIT CALIBRATION OR ADJUSTMENT EVER REQUIRED.





CAUTION
DO NOT OPERATE WITHOUT WATER ON
POWER ON WITHOUT WATER FLOW MAY CAUSE DAMAGE TO CONTROL. TURN POWER OFF WHEN CONTROL IS NOT IN USE.

PARTS LIST - CONTROL SECTION (421270-003 A)

EXT SCR CONT'S QTY.	EXT. IGN TUBE CONT'S QTY.	150A, 300A, & 600A CONT'S QTY.	DESIG.	PART NO.	DESCRIPTION
1	1	1		600574-004	Assem., Dial Plate, EN1001, Consisting of:
@	@	@		600574-005	Assem., Dial Plate, w/Keylock, EN1001, Consisting of:
1	1	1	PCB1	600572-002	Assem., Switch, Sequence Control & Display Bd.
@	@	@	SW1	600531-001	Assem., Switch, Keylock, Momentary, SPDT
1	1	1		540245	Illustrated Panel, Dial Plate, EN1001
1	1	1		515104	Panel, Display Window, Red Filter, EN1001
1	1	1		565003	Hole Plug, 3/4" Diam., Black
1	1	1	PWR.LT.	305001	Lamp, Neon, Red, 230V
1	1	1	WLD.LT.	305002	Lamp, Neon, Clear, 230V
1	1	1	J2-J2	322303	Assem., Harness, Control Bd. to Terminal Bd.
Ⓐ		1	J3	322304	Assem., Harness, Power, 150A & 300/600A Cont's
Ⓐ	1		J3	322304-002	Assem., Harness, Power, External IGN Tube Cont's
1			J3	322304-003	Assem., Harness, Power, External SCR Contactors

PARTS LIST - CONTACTOR SECTION

	QUANTITY: EN1001-600S	EN1001-300S	EN1001-150S	Ⓐ EN1001-S(SCR)	EN1001-S(IGN)	DESIG.	PART NO.	DESCRIPTION
Ⓐ	1	1	1	1	1	TS1	335034	Terminal Strip, 10 Pin, (Part of J3 Harness)
					1	(J5-J5/J6-J6)	322311	Assem., Harness, IGN Firing Module to Term. Bd.
Ⓐ	1	1	1	1	1	T1	310001	Transformer, Control, (Part of J3 Harness)
Ⓐ	1	1	1	1	1	T2	310002	Transformer, Sense, (Part of J3 Harness)
Ⓐ	1	1	1	1	1	T3	311001	Transformer, Valve, 50VA
Ⓐ	*	*	*	*	*	T3	311016	Transformer, Valve, 50VA, 575V
Ⓐ	SEE CHART					T4	SEE CHART	Assem., Transformer, Current, 200:5, P2
Ⓐ	SEE CHART					T4	SEE CHART	Assem., Transformer, Current, 500:5, P5
Ⓐ	SEE CHART					T4	SEE CHART	Assem., Transformer, Current, 1000:5, P10
Ⓐ	2	2	2	2	2	R70,71	225016	Resistor, Power, Surge, 500 Ohm, 100W
					2	R72,73(PCB3)	220505	Resistor, Ignitor, 5 Ohm, 50W, (Part of 410318)
Ⓐ	*	*	*	*	*	R74	600048	Assem., Resistor, Power, 2000 Ohm, 10W, (For 575V)
Ⓐ	1	1	1	1	1	R81	210198	Resistor, Metal Oxide, .1 Ohm, 1W, (Part of Curr Xfmr)
Ⓐ	1	1	1	1	1	F1	308010	Fuseholder, 1 Pole, Mini, 600V
Ⓐ	1	1	1	1	1	F1	307018	Fuse, Control, 6/10A, BBS 6/10
Ⓐ	1	1	1	1	1	F6(PCB2)	307022	Fuse, 1 Amp, Slow Blow, 2AG, (Part of 410319-004 & 410319-008)
					2	F4,5(PCB3)	307010	Fuse, Ignitor, 6 Amp, BAF 6, (Part of 410318)
Ⓐ	1	1	1	1	1	(R70,71)	325191	Assem., Wire, Surge Resistor, 18 GA., Black
Ⓐ	2	2	2	2	2	(T3)	325149	Assem., Wire, Valve Transformer, 22 GA., Blk.
Ⓐ	SEE CHART						600590	Assem., Secondary Current Sensor (S)
Ⓐ	SEE CHART					J12-J12	322379	Assem., Harness, Secondary Current Sensor
Ⓐ								
Ⓐ			1				600613	Assem., Contactor, Thyristor, Air, 150A, 460/575V, w/TLS
		1					600520	Assem., Cont., Thyristor, Air, 300A, 460/575V, w/TLS
	1						600609	Assem., Cont., Thyristor, Water, 600A, 460/575V
Ⓐ	1	1	1			TLS	300020	Switch, Temp. Limit, (Part of 600520 & 600613)
	2						346004	Lug, 5/16 Bolt to 2/0 Wire, 600A Contactor, L1 & H1
	1						530021	Plate, Mounting, 600A Thyristor Contactor
Ⓐ	1	1	1			PCB2	410319-004	Assem., PCB, Terminal Strip Board, EN1001/1/2
Ⓐ				1	1	PCB2	410319-008	Assem., PCB, Term. Strip Bd., Ext. firing, EN1001/1/2
					1	PCB3	410318	Assem., PCB, IGN Firing Module
Ⓐ	1	1	1	1	1	(PCB2)	510236	Plate, Mounting, Terminal Strip Board
Ⓐ	1	1	1	1	1		346004	Lug, Screw, Chassis GND, 2/0 Wire
Ⓐ	1	1	1	1	1	IDS	600044	Assem., Interlocking Door Solenoid
Ⓐ							314001	Coil Assem Only, IDS
Ⓐ	1	1	1	1	1		510015	Cabinet, "S" Subcompact
Ⓐ	1	1	1	1	1		510017	Door, Cabinet, "S"
Ⓐ							700114	Application Note, EN1001/1/2 Control
Ⓐ	1	1	1	1	1		700120	Manual, EN1001
Ⓐ	1	1	1	1	1		421271	Logic Diagram, EN1001 Control
Ⓐ	1	1	1	1	1		421270-003	Wiring Diagram, EN1001/1/2-Series, "S" Cabinet

@ Optional Keylock when specified by customer. See Note 8. Pack key in Poly bag 900148 & attach to Door w/Yellow Tape 900118.
* Substitution or Addition of Parts when 575V Control is specified.

MANUFACTURING INSTRUCTIONS
See Drawings #600530, #600530-001, #600530-002, & #600530-003 for Mechanical Assembly Instructions.
See Drawing #440269 for Packing Instructions, "S" Cabinet.
See Drawing #440352 for Label Locations, "S" Cabinet.
See Drawing #440055 for Customer Mounting & Knockout Detail of "S" Cabinet.
For Layout/Assembly of Front Panel, See Drawing #600526.
See Drawing #440457 for Current Transformer Assembly.
See Drawing #440458 for Secondary Current Sensor Assembly.

See Wiring Diagram #421268 for EN1001-Series, "E" Cabinet.
See Wiring Diagram #421269 for EN1001-Series, "D/T/LS/LF" Cabinet, w/Optional Circuit Isolation Device.
See Wiring Diagram #421277 for EN1001-Series, "R" Cabinet.

REV	AUTH		DESCRIPTION	DRWN BY DATE	CHK BY DATE
A		ECN 2456	IN DRWG: ADDED 4 DASHED LINE SCREWS TO 575 VAC T3 VALVE XFMR, ADDED 2 DASHED LINE SCREWS TO 230/460 VAC T3 VALVE XFMR, ADDED REF NOTE "DASHED SCREWS PART OF 311001 AFTER 6-16-97...", ADDED REF NOTE "DASHED SCREWS PART OF 311016 AFTER 6-16-97...", & UPDATED REF NOTE "PRIOR TO 1-15-93..."	DEC 6-26 97	DEC 6-26 97
		ECN 2422	FOR EXT SCR XTOR, EXT IGN XTOR, 150A XTOR, 300A XTOR, & 600A XTOR COLUMNS IN P/L: F1 FUSEHOLDER 308010 WAS 308006; IN DRWG: RMV'D DASHED LINE REPRESENTING 2 POLE FUSEHOLDER FOR F1 IS NOW 1 POLE;		
		ECN 2420	IN CTRL & XTOR SECTIONS OF P/L: RMV'D 70A XTOR COLUMN W/70A XTOR 600570 & RELATED COMPONENTS CURRENTLY IN P/L FOR 70A XTOR & UPDATED DESC'S OF J3 HARNESS'S 322304 & 322304-002; IN DRWG: UPDATED PCB2 REF NOTE & J5/J6 REF NOTE FOR REMOVAL OF 70A XTOR, UPDATED NOTE 4 "TLS CONNECTIONS...", & RMV'D 70A XTOR REF FROM BELOW REV DESC BLOCK; IN 300/600A XTOR W/D: LABELED 70A XTOR "AFTER JAN, 1996 & BEFORE JULY, 1996...", ADDED REF NOTE "CURRENT 150A XTOR AS OF JAN, 1996...", REF NOTE "AFTER JAN, 1996 & BEFORE JULY, 1996...";		
		ECN 2358	IN 150A XTOR COLUMN IN P/L: 150A XTOR 600613 WAS 600571, PCB2 410319-004 WAS 410319-008, & ADDED TLS 300020; IN DRWG: 150A XTOR PCB2 410319-004 WAS 410319-008; IN 70/150A XTOR W/D: LABELED 70/150A XTORS "BEFORE JAN, 1996" & ADDED REF NOTE "PRIOR TO JAN, 1996..."; IN 300/600A XTOR (BEFORE OCT, 1995) W/D: ADDED 70/150A XTORS (AFTER JAN, 1996), & 150A XTOR REF "A/N 600613";		

Ⓐ EN1001/1/2-S(IGN), EN1001/1/2-S(SCR), EN1001/1/2-150S, EN1001/1/2-300S, EN1001/1/2-600S

REV	AUTH	DESCRIPTION	DRWN BY DATE	CHK BY DATE
—	—	ORIGINAL RELEASE		

ENTRON CONTROLS INC

SCALE	DATE	DRAWN BY	CHK'D BY	APPROVED BY
—	12-4 95	DEC	DEC 12-4-95	

TOLERANCE UNLESS SPECIFIED: ANGLES: ± ½°; DECIMALS: ± .010; FRACTIONS: ± 1/64
REVISED: REV LTR A; DATE 6-26-97 DEC

WIRING DIAGRAM, EN1001/1/2-SERIES, "S" CABINET

NEXT ASSM/USED ON | DRAWING NUMBER 421270-003 | REV A