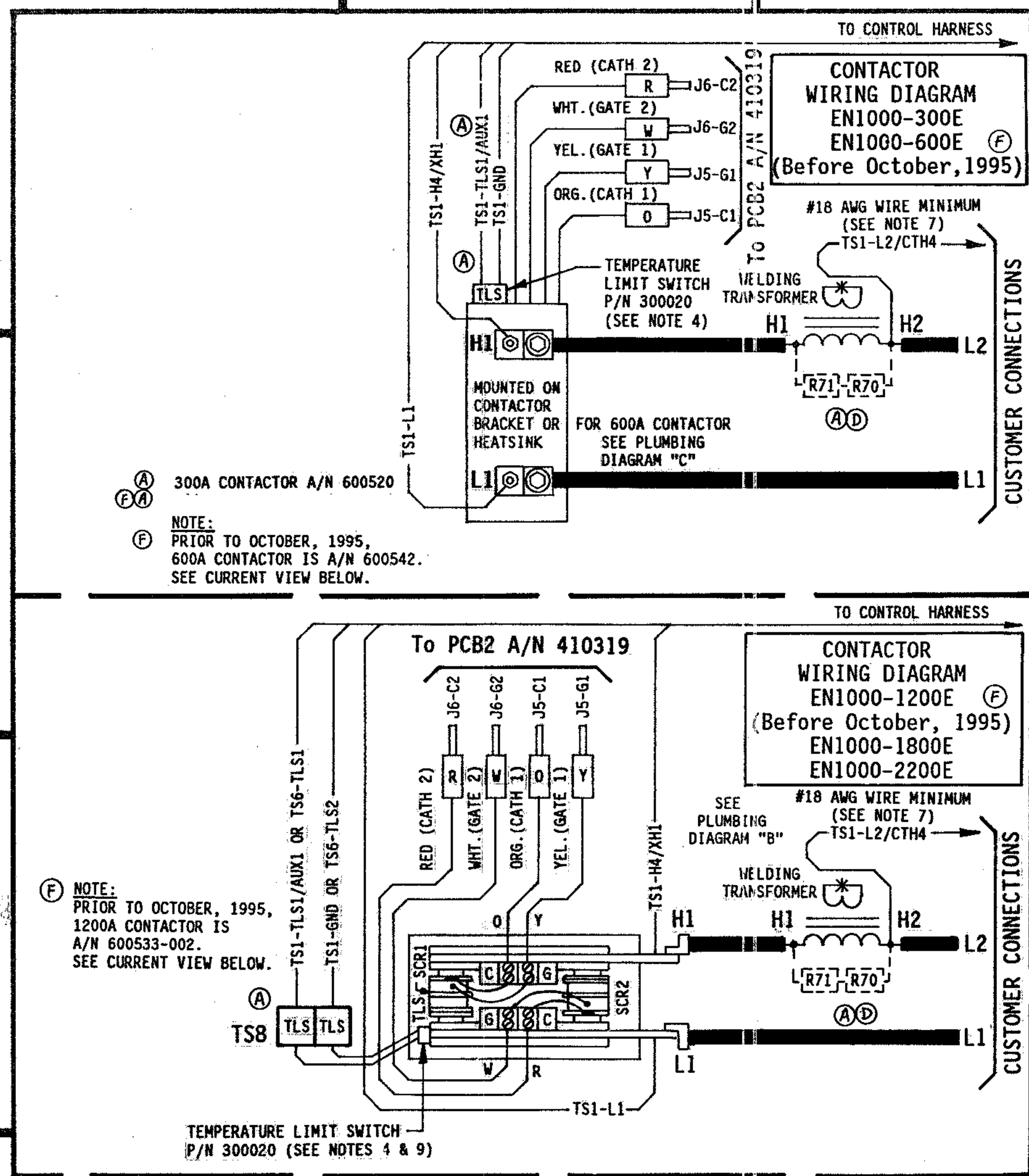
CAUTION - READ MANUAL & ALL NOTES BEFORE INSTALLING OR OPERATING CONTROL. SEE NOTE 1.



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 311017. 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. EN1000-SERIES "E" Cabinet:
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.

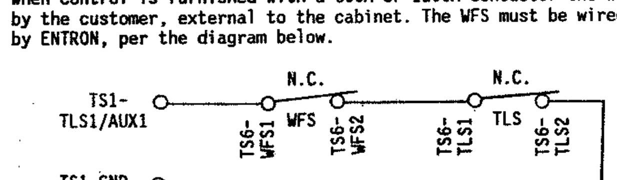
6. VALVE 3 OUTPUT USAGE:
TS1-SV5 & TS1-SV6 (Valve 3) can be used for either a Valve output or a Process output.
When TS1-SV5 & TS1-SV6 is used as a Valve output use Jumper "A" on TS3.
When TS1-SV5 & TS1-SV6 is used as a Process output use Jumper "B" on TS3.
CAUTION: Do not overtighten TS3

WARNING: Use of Jumper "B" bypasses control relay contacts to allow a process output without an initiation. SEE MANUAL.

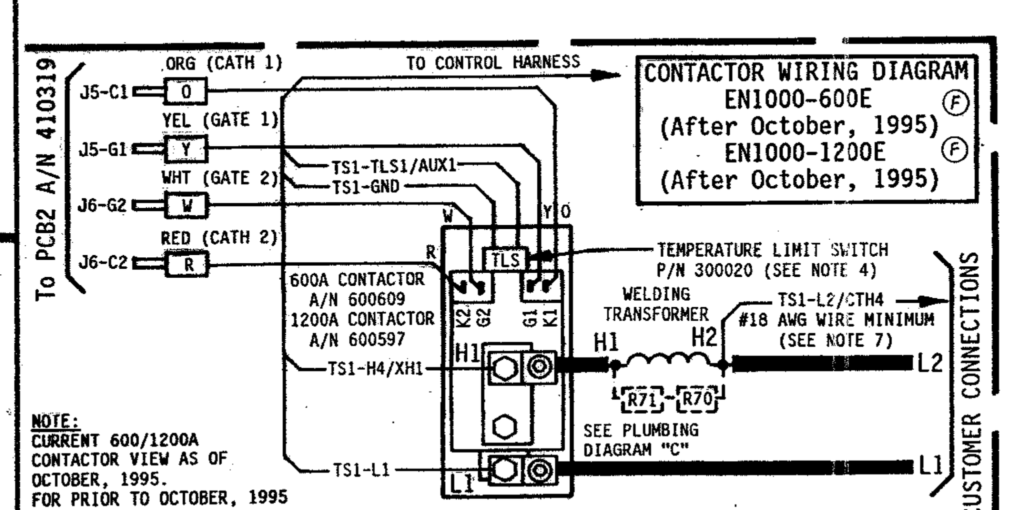
7. Connect TS1-L2/CTH4 to L2/H2 side of Welding Transformer Primary.

8. When Optional Program Lockout is specified by customer. Dial Plate A/N 600528-001 replaces A/N 600528. Add Switch P/N 600531-001 & remove Hole Plug P/N 565003.

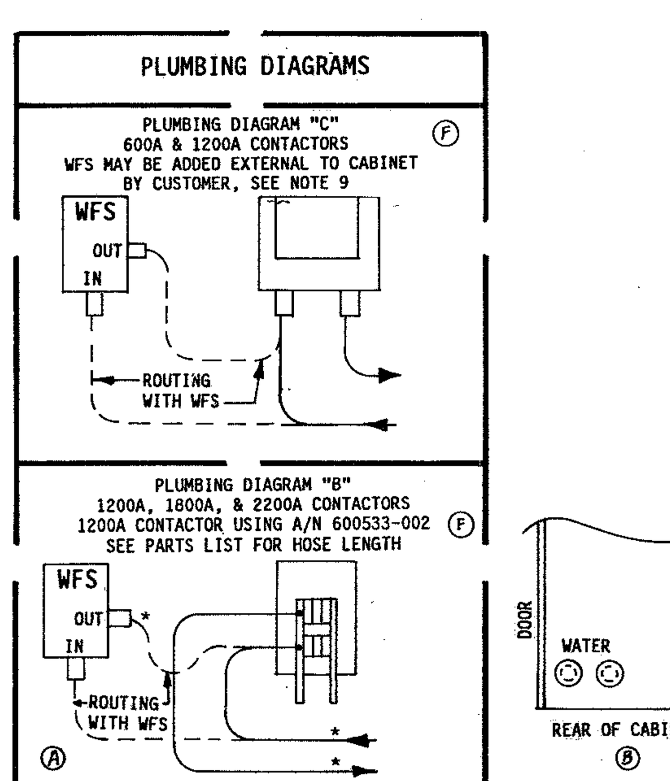
Ⓕ 9. When TLS and WFS are used together, add terminal strip TS6 (P/N 335038) and wire as shown below. Jumper not required between TS1-TLS1/AUX1 & TS1-GND. WFS will open with flows less than .75 GPM.
EN1000-600E & EN1000-1200E:
When control is furnished with a 600A or 1200A Contactor the Water Flow Switch may be installed by the customer, external to the cabinet. The WFS must be wired in series with the TLS supplied by ENTRON, per the diagram below.

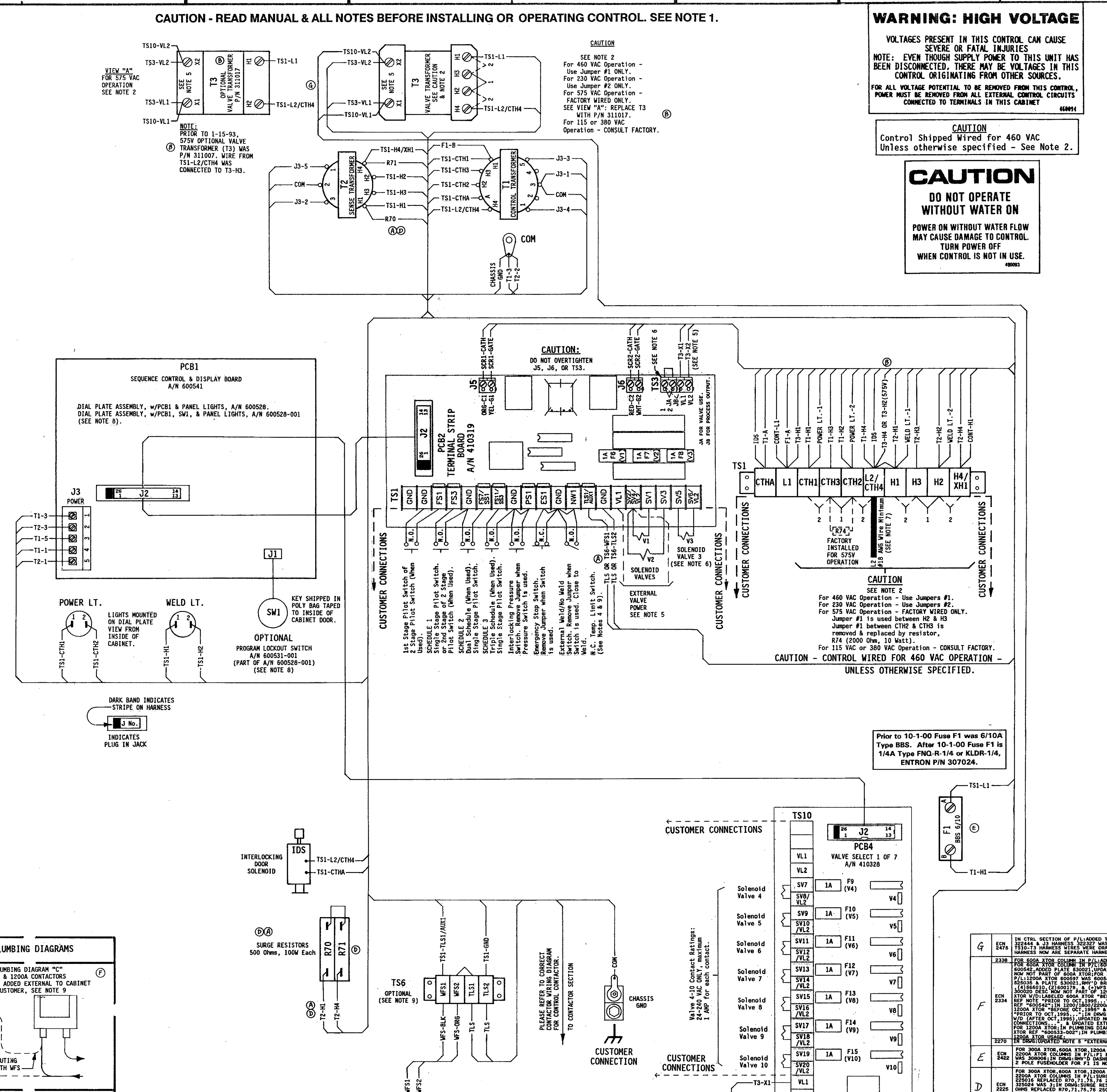


ⒷⒶ 10. See Wiring Diagram #421189-003 for EN1000/VS-Series, "R" Cabinet.
See Wiring Diagram #421210-003 for EN1000/VS-Series, "D/T/LS/LF" Cabinet, w/Optional Circuit Isolation Device.



NO CIRCUIT CALIBRATION OR ADJUSTMENT EVER REQUIRED.





FOR SERVICE ON THIS CONTROL
CONTACT YOUR MACHINE DEALER
OR
ENTRON CONTROLS INC.
DIRECTLY : (630) 682-8600
465 EAST RANDY ROAD
CAROL STREAM, IL 60188
FAX # (630) 682-3374

24-240 VAC Valve Power Supply.

For External Valve Power, disconnect wires from T3-X1 and T3-X2, at TS10 and insulate.

Connect External Valve Power Supply to TS10-VL1 and TS10-VL2.

PARTS LIST - CONTROL SECTION — 421212-001 G

QTY	DESIG.	PART NO.	DESCRIPTION
1		600528	Assem., Dial Plate, EN1000, Consisting of:
@		600528-001	Assem., Dial Plate, w/Key Switch, EN1000, Consisting of:
1	PCB1	600541	Assem., Switch, Sequence Control & Display Board
@	SW1	600531-001	Assem., Switch, Keylock, Momentary, SPST
1		540251	Illustrated Panel, Dial Plate, EN1000
1		515104	Panel, Display Window, Red Filter, EN1000
1		565003	Hole Plug, 3/4" Diam., Black
1	PWR.LT.	305001	Lamp, Neon, Red, 230V
1	WLD.LT.	305002	Lamp, Neon, Clear, 230V
1	J2-J2-J2	322337-001	Assem., Harness, Term. Strip Bd./Ctrl Bd./Valve Select Bd.
Ⓖ 1	J3	322327	Assem., Harness, Power, EN1000
Ⓖ 1	TS10-T3	322444	Assem., Harness, Valve Select Bd. to Valve Transformer

PARTS LIST - CONTACTOR SECTION

Rev	EN1000-2200E	EN1000-1800E	EN1000-1200E	EN1000-600E	EN1000-300E	DESIG.	PART NO.	DESCRIPTION
Ⓐ	1	1	1	1	1	TS1	335034	Terminal Strip, 10 Pin, (Part of J3 Harness)
Ⓐ	1	1	1			TS8	335017	Terminal Strip, 2 Pin, (Part of Contactor Assem.)
	X	X	X	X		TS6	335038	Terminal Strip, 4 Pin, (For TLS/WFS), (SHIP LOOSE w/600A & 1200A)
ⒹⒶ	2	2	2	2	2	R70,71	225016	Resistor, Power, Surge, 500 Ohm, 100W
	*	*	*	*	*	R74	600048	Assem., Resistor, Power, 2000 Ohm, 10W, (For 575V)
Ⓐ	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	311002	Transformer, Valve, 150 VA
Ⓑ	*	*	*	*	*	T3	311017	Transformer, Valve, 150 VA, 575V
Ⓑ							311007	
Ⓔ	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
	3	3	3	3	3	F6,7,8(PCB2)	307022	Fuse 1 Amp, Slow Blow, 2AG, (Part of 410319)
ⒹⒶ	1	1	1	1	1	(R70,71)	325024	Assem., Wire, Surge Resistor, 18 Ga., Black
	2	2	2	2	2	(T3)	325149	Assem., Wire, Valve Transformer, 22 Ga., Black
Ⓐ							222516	
Ⓐ							325024	
Ⓕ							600542	
Ⓐ					1		600520	Assem., Cont., Thyristor, Air, 300A, 460/575V, w/TLS
ⒻⒶ				1			600609	Assem., Cont., Thyristor, Water, 600A, 460/575V
Ⓕ			1				600597	Assem., Cont., Thyristor, Water, 1200A, 460/575V
		1					600533-005	Assem., Contactor, SCR, Water, 1800A, 460/575V, w/TLS
	1						600533-003	Assem., Contactor, SCR, Water, 2200A, 460/575V, w/TLS
Ⓕ							600533-002	
	1	1	1	1	1	PCB4	410328	Assem., PCB, Valve Select 1 of 7
	1	1	1	1	1		525125	Bracket, Mounting, Valve Select Plate
	1	1	1	1	1		510236	Plate, Mounting, Valve Select PCB
Ⓕ				2			346004	Lug, 5/16 Bolt to 2/0 Wire, 600A Contactor, L1 & H1
	1	1	1	1	1	PCB2	410319	Assem., PCB, Terminal Strip Board, EN1000
	1	1	1	1	1		346004	Lug, Screw, Chassis GND, 2/0 Wire
Ⓕ	1	1					525136	Bracket, Mounting, 1800/2200A Contactors
ⒻⒸ			1	1	1		525035	Bracket, Mounting, 300/600/1200A Contactors
Ⓒ	1	1	1	1	1	(PCB2)	510236	Plate, Mounting, Terminal Strip Board
Ⓕ	1	1	1	1	1	TLS	300020	Switch,Temp.,Limit,(N.C.),(Part of 300/1800/2200A Cont.)
Ⓕ			1	1			530021	Plate, Mounting, 600/1200A Contactors
Ⓕ	39"						900045	Hose, 3/8" ID
Ⓕ	4	4					566010	Hose Clamp, 3/8" Hose
Ⓕ	2	2					600179	Assem., Water Fitting, 3/8" Hose
Ⓕ	+	+				WFS	600297	Assem., Water Flow Switch, 3/8" Hose, (SHIP LOOSE w/600A & 1200A)
	1	1	1	1	1	IDS	600044	Assem., Interlocking Door Solenoid
							314001	Coil Assem. Only, IDS
	1	1	1	1	1		510238-003	Cabinet, Control Style "E", Modified
	1	1	1	1	1		510241	Door, Cabinet, Style "E"
	1	1	1	1	1		700110	Instruction, Valve Select 1 of 7
	1	1	1	1	1		700105	Manual, EN1000
	1	1	1	1	1		421183	Logic Diagram, EN1000 Control
	1	1	1	1	1		421212-001	Wiring Diagram, EN1000/VS-Series, "E" Cabinet

Ⓐ

@ Optional Keylock when specified by customer. See Note 8. Pack Key in Poly bag 900148 & attach to Door w/Yellow Tape 900118.
X Optional when specified by customer. See Notes 4 & 9.
* Substitution or addition of parts when 575V control is specified.
\+ Optional Water Flow Switch Assembly. An additional inches (") of hose, P/N 900045 and two (2) hose clamps, P/N 566010, are to be supplied. See Note 9. See Drawing #440449 for Customer Mounting & Knockout Detail "E" Cabinet.

MANUFACTURING INSTRUCTIONS:
See Drawing #440445 for Packing Instructions "E" Cabinet.
See Drawing #440448 for Label Locations "E" Cabinet.
SEE DRAWING #600550, #600550-001, #600550-002, or #600550-003 FOR MECHANICAL ASSEMBLY INSTRUCTIONS.

REV.	AUTH.	DESCRIPTION	DRWN BY DATE	CHK'D BY DATE
G	ECN 2475	IN CTRL SECTION OF P/L:ADDED TS10-T3 HARNESS 322444 & J3 HARNESS 322327 WAS 322327-001;IN DRWG: TS10-T3 HARNESS WIRES WERE DRAWN AS PART OF J3 HARNESS NOW ARE SEPARATE HARNESS WIRES FROM J3;	DEC 12-2 97	DEC 12-2 97
F	2338	FOR 600A XTOR COLUMN IN P/L:ADDED LUG (2)346004;		
F	ECN 2334	FOR 600A XTOR COLUMN IN P/L:600A XTOR 600609 WAS 600542,ADDED PLATE 530021,UPDATED TLS 300020 DESC NOW NOT PART OF 600A XTOR;FOR 1200A XTOR COLUMN IN P/L:1200A XTOR 600597 WAS 600533-002,ADDED BRKT 525035 & PLATE 530021,RMV'D BRKT 525136,(39")900045 ,(4)566010,(2)600179, & (+)WFS 600297,UPDATED TLS 300020 DESC NOW NOT PART OF 1200A XTOR;IN 300/600A XTOR W/D:LABELED 600A XTOR "BEFORE OCT,1995",ADDED REF NOTE "PRIOR TO OCT,1995...", & RMV'D 600A XTOR REF "600542";IN 1200/1800/2200A XTOR W/D:LABELED 1200A XTOR "BEFORE OCT,1995" & ADDED REF NOTE "PRIOR TO OCT,1995...";IN DRWG:ADDED 600/1200A XTOR W/D (AFTER OCT,1995),UPDATED NOTE 9 "TLS/WFS CONNECTIONS...", & UPDATED EXTERNAL WFS REF NOTE FOR 1200A XTOR;IN PLUMBING DIAGRAM "B":ADDED 1200A XTOR REF "600533-002";IN PLUMBING DIAGRAM "C":ADDED 1200A XTOR USAGE;	DEC 11-25 96	DEC 11-25 96
F	2270	IN DRWG:UPDATED NOTE 5 "EXTERNAL VALVE POWER...";		
E	ECN 2422	FOR 300A XTOR,600A XTOR,1200A XTOR,1800A XTOR, & 2200A 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;	DEC 11-15 96	DEC 11-15 96
D	ECN 2225	FOR 300A XTOR,600A XTOR,1200A XTOR,1800A XTOR, & 2200A XTOR COLUMNS IN P/L:SURGE RESISTORS R70,71 225016 REPLACED R70,71,75,76 222516 & QTY 1 FOR 325024 WAS 3;IN DRWG:SURGE RESISTORS R70,71 500 OHMS REPLACED R70,71,75,76 250 OHMS & T2-H1 NOW WIRED TO R70 WAS R76;IN 300/600A XTOR W/D & 1200/1800/2200A XTOR W/D:UPDATED SURGE RESISTOR WIRING ON WELDING XFMR;	DEC 9-12 94	DEC 9-12 94
C	ECN 2207	FOR 300A XTOR,600A XTOR,1200A XTOR,1800A XTOR, & 2200A XTOR COLUMNS IN P/L:ADDED PLATE 510236;FOR 300A XTOR & 600A XTOR COLUMNS IN P/L:ADDED BRKT 525035;	DEC 6-2 94	DEC 6-2 94
B	ECN 2087	FOR 300A XTOR,600A XTOR,1200A XTOR,1800A XTOR, & 2200A XTOR COLUMNS IN P/L & IN DRWG:T3 311017 WAS 311007;ON TS1-CTH4/L2:WIRE "OR T3-H2(575V)" WAS "OR T3-H3(575V)";IN DRWG:ADDED T3 REF NOTE "PRIOR TO 1-15-93...",UPDATED T3 CAUTION NOTE, & UPDATED NOTE 2 "575 VAC OPERATION..."; IN DRWG:NOTE 10 "SEE W/D'S 421189-003 & 421210-003 ..." WAS NOTE 11;	DEC 2-16 94	DEC 2-16 94
B	2031	IN DRWG:ADDED CABINET REAR VIEW FOR PLUMBING;		
A	ECN 2005	FOR 300A XTOR COLUMN IN P/L:300A XTOR 600520 WAS 600520-002 & RMV'D TS8 335017;FOR 600A XTOR COLUMN IN P/L:600A XTOR 600542 WAS 600542-001 & RMV'D TS8 335017;IN 300/600A XTOR W/D:RMV'D TS8,REWIRED TLS WIRES DIRECTLY FOR TLS TO TS1,300A XTOR REF 600520 WAS 600520-002, & 600A XTOR REF 600542 WAS 600542-001;	DEC 12-9 92	DEC 12-9 92
A	ECN 2046	FOR 300A XTOR,600A XTOR,1200A XTOR,1800A XTOR, & 2200A XTOR COLUMNS IN P/L:DESC OF TS1,T1, & T2 "P/O J3 HARNESS" WAS "P/O 322327";		
A	ECN 2006	IN PLUMBING DIAG B:ADDED REF "MINIMUM HOSE LENGTH ...";		
A	ECN 2047	IN 1200/1800/2200A XTOR W/D:RMV'D DESIG'S "-1,-2" ON TS8;IN DRWG:RMV'D DESIG'S "-1,-2" FOR TLS CONNECTIONS ON TS1;		
A	ECN 2030	FOR 300A XTOR,600A XTOR,1200A XTOR,1800A XTOR, & 2200A XTOR COLUMNS IN P/L:SURGE RESISTORS R75 & R76 222516 WITH (2)325024 WERE OPTIONAL NOW STD;IN DRWG:RMV'D REF BELOW P/L "OPTIONAL,SEE NOTE 10", RMV'D OPTIONAL REF OF R75 & R76, & RMV'D NOTE 10 "OPTIONAL,HIGH DUTY CYCLE...";IN DRWG,300/600A XTOR W/D, & 1200/1800/2200A XTOR W/D:UPDATED SURGE RESISTOR WIRING;		
A	1528	UPDATED NOTE 11:ADDED REF "SEE W/D 421210-003...";		
—	—	ORIGINAL RELEASE		

EN1000/VS-300E EN1000/VS-1200E EN1000/VS-2200E
EN1000/VS-600E EN1000/VS-1800E

ENTRON CONTROLS INC

SCALE	DATE	DRAWN BY	CHK'D BY	APPROVED BY
~~	8-3 92	DEC	DEC 8-3-92	

TOLERANCE UNLESS SPECIFIED: ANGLES: ± ½° DECIMALS: ± .010 FRACTIONS: ± 1/64
REVISED: REV LTR G, DATE 12-2-97 DEC, APPROVED BY

WIRING DIAGRAM, EN1000/VS-SERIES, "E" CABINET

NEXT ASSM/USED ON	DRAWING NUMBER	REV
	421212-001	G