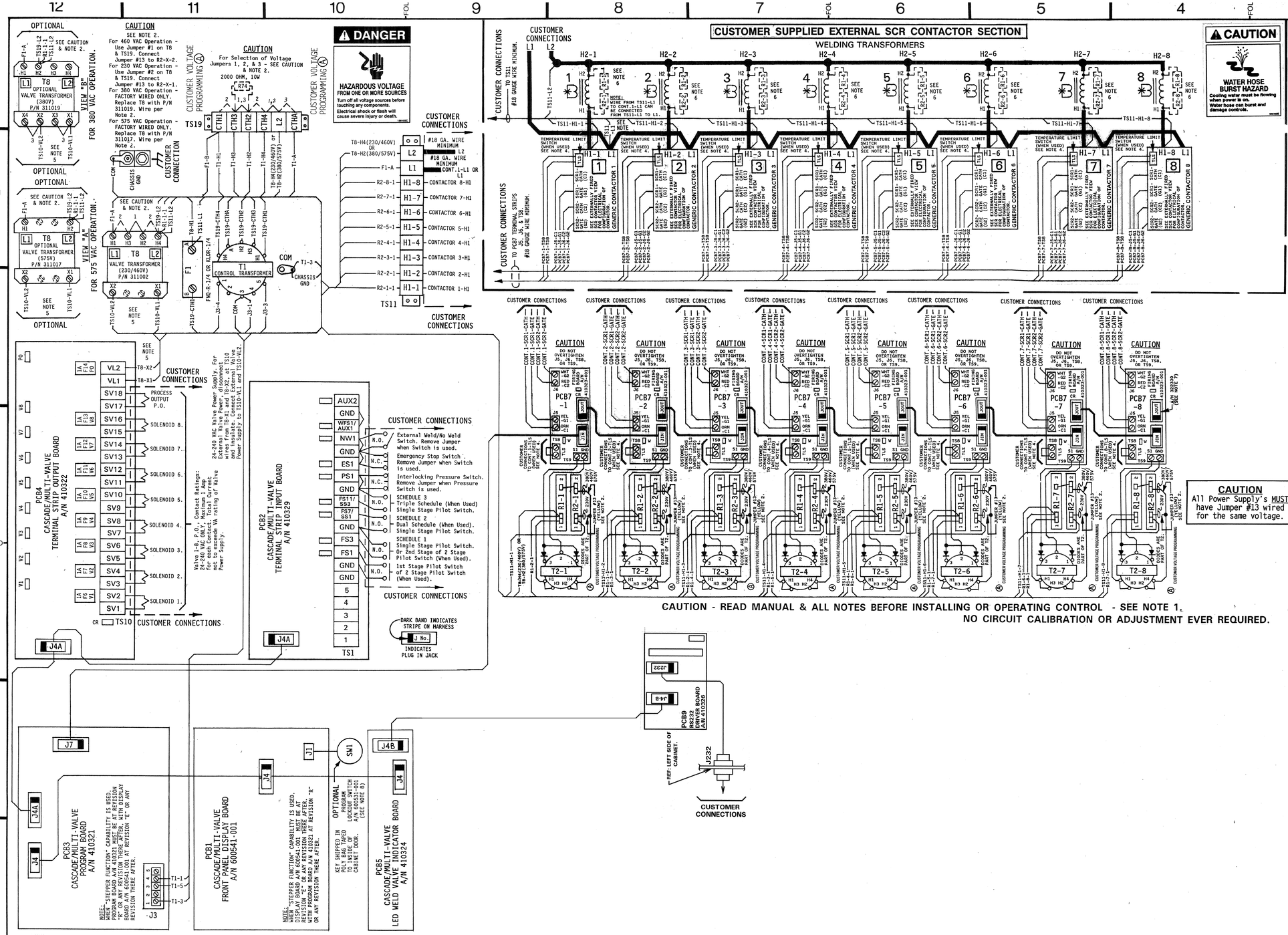


SIDE MT'D DIAL PLATE	DOOR MT'D DIAL PLATE	PARTS LIST - CONTROL SECTION			421214-044
QUANTITY		DESIG.	PART NO.	DESCRIPTION	
1	1		600558	Assem., Dial Plate, EN1000 Cascade, Consisting of:	
1	1	PCB1	600541-001	Assem. Switch, Front Panel Display Board	
1	1		540248	Illustrated Panel, Dial Plate, EN1000 Cascade/Multi-Valve	
2	2		515096	Display Window, Panel, Red Filter, Cont. & Valve, EN1000 Cascade	
1	1		515104	Display Window, Panel, Red Filter, LED, EN1000 Cascade	
1	1	PCB5	410324	Assem., PCB, Contactor Weld & Valve Indicator Board, EN1000 Casc.	
1	1	PCB3	410321	Assem., PCB, Program Board, EN1000 Cascade/Multi-Valve	
@	@	SW1	600531-001	Assem., Switch, Keylock, Momentary, SPST	
1	1		565003	Hole Plug, 3/4" Diam., Black, (For Keylock Hole)	
	1	J4B-J4B	322393	ASSEM, HARNESS, RS232 DRIVER TO LED INDICATOR BD. DOOR MT.	
1		J4B-J4B	322394	ASSEM, HARNESS, RS232 DRIVER TO LED INDICATOR BD. SIDE MT.	
	1	J3	322340-005	Assem., Harness, Power, Door Mounted	
	1	J3	322341-005	Assem., Harness, Power, Side Mounted	
1	1	J4-J4-J4	322342	Assem., Harness, Seq. Display Bd./Program Bd./LED Indicator Bd.	
	1	J4A-J4A-J4A	322343	Assem., Harness, Program Bd./Output Bd./Input Bd., Door Mt'd	
1		J4A-J4A-J4A	322344	Assem., Harness, Program Bd./Output Bd./Input Bd., Side Mt'd	
	*1	J7-IN	322346	Assem., Harness, Program Bd. to Firing Board, Door Mounted	
*1		J7-IN	322347	Assem., Harness, Program Bd. to Firing Board, Side Mounted	

EN1000-(SCR)	PARTS LIST - CONTACTOR SECTION		
QTY.	DESIG.	PART NO.	DESCRIPTION
#	TS11	335034	Terminal Strip, 10 Pin, 20A, ("L" Cabinet)
#	TS11	600561	Assem., Terminal Strip, 10 Pin, 20A, ("D/T" Cabinet)
1	TS19	335024	Terminal Strip, 6 Pin, 20A
1	T1	310001	Transformer, Control, (Part of J3 Harness)
1	T8	311002	Transformer, Valve, 150VA, 230/460V
⊠	T8	311017	Transformer, Valve, 150VA, 575V
X	T8	311019	Transformer, Valve, 150VA, 380/408/415V
X	T8	311022	Transformer, Valve, 250VA
X	T8	311021	Transformer, Valve, 500VA
2	(T8)	325149	Assem., Wire, Valve Transformer, 22 Ga., Black
1-8		600547-005	Assem., Power Supply, Selectable 230/380/460/575V. Consisting of:
1-8	T2	600548-003	Transformer, Sense, (Part of 600547-005)
2-16	R1,2	225016	Resistor, Power, Surge, 500 Ohm, 100W, (Part of 600547-005)
1-8	(R1,2)	325024	Assem., Wire, Surge Resistor, 18 Ga., Black,(Part of 600547-005)
1-8	PCB7-1 thru -8	410323-001	Assem., PCB, Firing Board, Cascade, (Mounted on Power Supply)
*0-7	JIN-JOUT	322348	Assem., Harness, Firing Bd., Input to Output
1	JOUT	322330	Assem., Termination Plug, Cascade Firing Bd. (SEE NOTE 7)
⊠	R74	600048	Assem., Resistor, Power, 2000 Ohm, 10W, (For 575V)
1	F1	308010	Fuseholder, 1 Pole, Mini, 600V, HPC-L(BBS)
1	F1	307024	Fuse, Control, 1/4A, FNQ-R-1/4 OR KLDR-1/4
9	F6-14	307022	Fuse, 1 Amp, Slow Blow, 2AG, (Part of 410322)
1	PCB9	410326	ASSEM, PCB, RS232 DRIVER BD.
▼	J232-J232	322369-002	ASSEM, HARNESS, RS232 DRIVER BD. TO CABINET
▼	J232-J232	322369-004	ASSEM, HARNESS, RS232 DRIVER BD. TO CABINET
1		346004	Lug, Screw, Chassis GND, 5/16" Bolt to 2/0 Wire
1	PCB2	410329	Assem., PCB, Terminal Strip Input Bd., Cascade
1	PCB4	410322	Assem., PCB, Terminal Strip Output Bd., Cascade
2		510236	Plate Mounting, Terminal Strip Input & Output Boards
△		510247	Cabinet, Control, Style "D/T"
△		510257	Cabinet, Control, Style "LS/LF"
1		700112	Manual, EN1000 Cascade
1		421386	Logic Diagram, EN1000 Cascade
1		421214-024	Wiring Diagram, EN1000-(SCR), Cascade/Multi-Valve

@ Optional Keylock when specified by customer. See Note 8. Pack key in poly bag P/N 900148 & attach to door w/yellow tape P/N 900118.
X Optional.
△ For External 1 thru 4 SCR Contactors, use "D/T" Cabinet.
For External 5 thru 8 SCR Contactors, use "L" Cabinet.
⊠ Substitution or addition of part when 575V control is specified.
Install quantity one (1) Terminal Strip (TS11). For "L" Cabinet, use P/N 335034 & for "D/T" Cabinet, use P/N 600561.
* For 1 or 2 Cascade External SCR Firing Control in "T" Cabinet, substitute J7-IN Harness 322346-001 for 322346.
For 1 or 2 Cascade External SCR Firing Control in "D" Cabinet, substitute J7-IN Harness 322347-001 for 322347.
For 2 Cascade External SCR Firing Control in "D/T" Cabinet, substitute JIN-JOUT Harness 322348-001 for 322348.
For 3 or 4 Cascade External SCR Firing Control in "D/T" Cabinet, substitute JIN-JOUT Harness 322348-002 for 322348 between Firing Boards 2 & 3.
For 5 thru 8 Cascade External SCR Firing Control in "D/T" Cabinet, substitute JIN-JOUT Harness 322348-005 for 322348 between Firing Boards 4 & 5.
For 7 or 8 Cascade External SCR Firing Control in "L" Cabinet, substitute JIN-JOUT Harness 322348-004 for 322348 between Firing Boards 6 & 7.
▼ For J232-J232 Hrness in "T/D" Cabinet, use P/N 322369-004. For all other Cabinets, use P/N 322369-002.

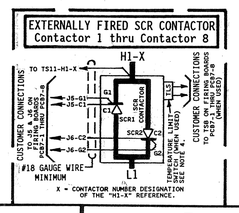
MANUFACTURING INSTRUCTIONS:
SEE DRAWINGS #440024, #515055, & #510095 FOR MECHANICAL ASSEMBLY INSTRUCTIONS.
See Drawing #440093 for Crating Instructions.
See Drawing #440428 for Label Locations.
For 1 thru 4 External SCR Contactors, use Rear Panel 494141.
For 5 thru 8 External SCR Contactors, use Rear Panel 494182.

NOTICE
FOR SERVICE ON THIS CONTROL
Contact Your Machine Dealer Or
ENTRON CONTROLS INC.
DIRECTLY:(630) 682-9600

CAUTION
SEE NOTE 2.
Control Shipped is Wired for 460 VAC Operation
unless otherwise specified.

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 T8 & TS19. Connect Jumper #13 (Yellow) to Resistor(s) R2-X-2 (from T2-H4) on Power Supply's. As shipped unless otherwise specified.
   For 230 VAC Operation - Use Jumper #2 on T8 & TS19. Connect Jumper #13 (Yellow) to Resistor(s) R2-X-1 (from T2-H4) on Power Supply's.
   For 380 VAC Operation - FACTORY WIRED ONLY. SEE VIEW "B". Replace T8 with P/N 311019. Wire per view "B". Use Jumper #3 on T8 & TS19. Add Jumper #3 between L2 to CTH4 on Terminal Strip TS19. Use Jumper #3 between CTH2 & CTH3 on Terminal Strip TS19. Connect Jumper #13 (Yellow) to Resistor(s) R2-X-2 (from T2-H4) on Power Supply's.
   For 575 VAC Operation - FACTORY WIRED ONLY. SEE VIEW "A". Replace T8 with P/N 311017. Wire per view "A". Use Resistor R74 (2000 Ohm, 10 Watt) in place of Jumper #1 between CTH2 & CTH3 on TS19. Use Jumper #1 between CTH4 & L2 on TS19. Connect Jumper #13 (Yellow) to Resistor(s) R2-X-2 (from T2-H4) on Power Supply's.
   X = Contactor number designation of the "-X-" reference for R2-X-1 and R2-X-2.
   CAUTION: All Power Supply's MUST have Jumper #13 wired for the same voltage.
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 Sitwch 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-(SCR), CASCADE/MULTI-VALVE CONTROL:
   When used, connect Normally Closed (N.C.) Temperature Limit Switch (TLS) across TS8 on supplied PCB7 Firing Board(s). Contactor 1 TLS connects to PCB7-1, Contactor 2 TLS connects to PCB7-2, etc. Remove Jumper between TS8 terminals. Customer supplied interconnection wiring for TLS should be physically separated from all other interconnection wiring.
   CAUTION: Do NOT overtighten TS8.
5. When external valve power is supplied to the control. Remove and insulate leads TS10-VL1 & TS10-VL2 on the Terminal Strip Output Board (PCB4). (from T8-X1 & T8-X2). Connect external AC power supply (24-240 VAC) to TS10-VL1 & TS10-VL2.
6. This drawing is for Cascade/Multi-Valve Controls for any of 1 thru 8 Contactors and up to 8 Valves. Please note in the contactor section that electrical connections connect from the 1st contactor to the 2nd contactor then continue in succession (DAISY CHAIN) from one to another in numerical order until the last contactor is electrically connected in the Cascade arrangement. In the Parts List, parts with multiple quantities listed, correspond to the various number of cascade contactor arrangements.
7. The Termination Plug A/N 322330 will ALWAYS be located in the "J-OUT" socket on the Firing Board of the last numbered Contactor in the Cascade arrangement.
8. When Optional Program Lockout is specified by customer. Add Switch P/N 600531-001 and Escutcheon P/N 460128 & remove Hole Plug P/N 565003.
9. EN1000-(SCR) CASCADE/MULTI-VALVE CONTROL:
   Disconnect all connections from previously existing firing circuits to L1, L2, H1, H2, & also SCR contactor Gate leads & SCR contactor Cathode leads. All previously existing Surge Resistors or Rectifiers MUST be replaced prior to installation of this control.
10. After January, 2002, this Wiring Diagram #421214-024 for EN1000-(SCR), Cascade/Multi-Valve Controls with Selectable 230/380/460/575 VAC Operation replaces the following Wiring Diagrams:
    #421214 , EN1000-(SCR), Cascade/Multi-Valve, 460 VAC Operation.
    #421214-001, EN1000-(SCR), Cascade/Multi-Valve, 230 VAC Operation.
    #421214-003, EN1000-(SCR), Cascade/Multi-Valve, 575 VAC Operation.
    #421214-008, EN1000-(SCR), Cascade/Multi-Valve, 380 VAC Operation.
    See Wiring Diagram #421214-023 for EN1000-Series, Cascade/Multi-Valve Controls with Selectable 230/380/460/575 VAC Operation.
    See Wiring Diagram #421214-025 for EN1000-(IGN), Cascade/Multi-Valve Controls with Selectable 230/380/460/575 VAC Operation.



CAUTION
All Power Supply's MUST have Jumper #13 wired for the same voltage.

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

ENTRON CONTROLS INC

SCALE	DATE	DRAWN BY	CHK'D BY	APPROVED BY
NS	3/23/09	DCS	DCS	DCS

TOLERANCE UNLESS SPECIFIED
ANGLES: ± ½°
DECIMALS: ± .010
FRACTIONS: ± 1/64

REVISED
REV LTR | APPROVED BY
DATE

WIRING DIAGRAM,EN1000-(SCR),232 CASCADE/MULTI-VALVE CONTROL, 1-8 CONTACTORS/8 VALVE OUTPUT CIRCUITS, WIRED FOR SELECTABLE 230/380/460/575 VAC OPERATION

NEXT ASSM/USED ON | DRAWING NUMBER 421214-044 | REV

DRAWING NUMBER 421214-044 REV

22X34 ENTRON 470046