



CAUTION - READ MANUAL & ALL NOTES BEFORE INSTALLING OR OPERATING CONTROL - SEE NOTE 1.
NO CIRCUIT CALIBRATION OR ADJUSTMENT EVER REQUIRED.

- NOTES:**
- It is recommended that control wiring (i.e.: initiation, pressure switch, etc.) be physically separated from the high voltage wiring (115 volts or higher).
 - For 460 VAC Operation - Use Jumper #1 on T8 & T519. Connect Jumper #13 (Yellow) to Resistor's R2-X-2 (from T2-H4) on Power Supply's. As shipped unless otherwise specified.
 - For 380 VAC Operation - Use Jumper #2 on T8 & T519. Connect Jumper #13 (Yellow) to Resistor's R2-X-1 (from T2-H4) on Power Supply's. As shipped unless otherwise specified.
 - For 575 VAC Operation - Use Jumper #3 on T8 & T519. Add Jumper #3 between J2 to CTM on Terminal Strip TS19. Connect Jumper #3 between CTM & CH3 on Terminal Strip TS19. Connect Jumper #13 (Yellow) to Resistor's R2-X-2 (from T2-H4) on Power Supply's.
 - For Two Stage Pilot Operation - Connect 1st Stage Pilot Switch to T51-FS1 & T51-GND. Connect 2nd Stage Pilot Switch to T51-FS2 & T51-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.
 - ENTRON supplies Temperature Limit Switch (TSL) P/N 300020 and provides connections to T58 on supplied PCB7 Firing Board(s). Contactor 1 TSL connects to PCB7-1.
 - Contactor 2 TSL connects to PCB7-2.
 - NOTE: SCR & Thyristor TSL will open at temperatures greater than or equal to 150 F. CAUTION: Do NOT overheat TSL.
 - When external valve power is supplied to the control, remove and insulate leads T519-VL1 & T519-VL2 on the Terminal Strip Output Board (PCB4), (from P54-9 & P54-10). Connect external DC power supply (5-60 VDC) to T519-VL1 & T519-VL2.
 - 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.
 - The Termination Plug A/N 322340 will ALWAYS be located in the "J-OUT" socket on the Firing Board of the last numbered Contactor in the Cascade arrangement.
 - 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.
 - When Optional Water Flow Switch (WFS) is required, add Terminal Strip T56 (P/N 335017) and wire as shown. Remove Jumper between T51-WFS1/AUX1 & T51-GND.
 - NOTE: WFS will open with flows less than 75 GPM.
 - When Optional Circuit Isolation Device is required, 1st P/N and size of Circuit Isolation Device, and appropriate cabinet P/N.
 - CURRENT TRANSFORMER (T4) CONNECTIONS:
Wire per view "B" - Current Transformer Coil (T4) MUST be installed ONLY on L1. Wires from Current Transformer (T4) to J12 should be kept as short as possible. SECONDARY CURRENT COILS (S6 & S10) CONNECTIONS:
Wire per view "D" - Secondary Current Coils (S6 & S10) may be used in place of Current Transformer (T4). Add J12-J12 Harness A/N 322475.

CURRENT SENSING COIL/SENSOR APPLICATION CHART

COIL/SENSING MODEL NUMBER	SECONDARY CURRENT COIL PART NUMBER	300A	600A	1200A	1800A	2200A
P2 - 200-5	A/N 600575-003	X	X	X	X	X
P2 - 500-5	A/N 600576-003	X	X	X	X	X
P10 - 1000-5	A/N 600577-003	X	X	X	X	X
S6	A/N 600667 & A/N 322475	X	X	X	X	X
S10	A/N 600668 & A/N 322475	X	X	X	X	X

X = ONE CURRENT TRANSFORMER ASSEMBLY OR ONE SECONDARY CURRENT COIL ASSEMBLY.

PARTS LIST - CONTROL SECTION

QTY.	DESIG.	PART NO.	DESCRIPTION
1	1	600685	Assem., Dial Plate, EN1001 Cascade, Consisting of:
1	1	600541-001	Assem., Switch, Front Panel Display Board.
1	1	545298	11-illustrated Panel, Dial Plate, EN1001 Cascade/Multi-Valve
1	1	515096	Display Window, Panel, Red Filter, Cont. & Valve, EN1001 Cascade
1	1	515101	Display Window, Panel, Red Filter, LED, EN1001 Cascade
1	1	410324	Assem., PCB, Contactor Weld & Valve Indicator Board, EN1001 Casc.
1	1	410363	Assem., PCB, Program Board, EN1001 Cascade/Multi-Valve
0	0	600531-001	Assem., Switch, Keylock, Momentary, SPST
0	0	565003	Hole Plug, 3/4" Diam., Black, (For Keylock Hole)
1	1	322340-005	Assem., Harness, Power, Door Mounted
1	1	322341	Assem., Harness, Power, Side Mounted
1	1	322342	Assem., Harness, Seq. Display Bd./Program Bd./LED Indicator Bd.
1	1	322343	Assem., Harness, Program Bd./Output Bd./Input Bd., Door Mtd.
1	1	322344	Assem., Harness, Program Bd./Output Bd./Input Bd., Side Mtd.
1	1	322425	Assem., Harness, Term Output Bd. to Valve Extension Term Bd.
1	1	322346	Assem., Harness, Program Bd. to Firing Board, Door Mounted
1	1	322347	Assem., Harness, Program Bd. to Firing Board, Side Mounted

PARTS LIST - CONTACTOR SECTION

QTY.	DESIG.	PART NO.	DESCRIPTION
1	TS11	335034	Terminal Strip, 10 Pin, 20A, ("L" Cabinet)
1	TS19	600561	Terminal Strip, 10 Pin, 20A, ("D/T" Cabinet)
1	TS19	335024	Terminal Strip, 6 Pin, 20A
1	T1	310001	Transformer, Control, (Part of 33 Harness)
1	T8	311002	Transformer, Valve, 150VA, 230/460V
1	T8	311017	Transformer, Valve, 150VA, 575V
1	T8	311019	Transformer, Valve, 150VA, 380/408/415V
1	T8	311022	Transformer, Valve, 250VA
1	T8	311021	Transformer, Valve, 500VA
2	(T8)	325149	Assem., Wire, Valve Transformer, 22 Ga., Black
1-8	T2	600547-005	Assem., Power Supply, Selectable 230/380/460/575V, Consisting of:
1-8	R1,2	225016	Transformer, Sense, (Part of 600547-005)
2-16	(R1,2)	325024	Resistor, Power, Surge, 500 Ohm, 100W, (Part of 600547-005)
1-8	PCB7-1 thru -8	410323-001	Assem., PCB, Firing Board, Cascade, (Mounted on Power Supply)
1	J10	322341	Assem., Harness, Firing Bd., Input to Output
1	JOUT	322330	Assem., Termination Plug, Cascade Firing Bd. (SEE NOTE 7)
1	R74	600048	Assem., Resistor, Power, 2000 Ohm, 10W, (For 575V)
1	F1	308010	Fuseholder, 1 Pole, Mini, 600V, HPC-1(BBS)
1	F6-14	307024	Fuse, Control, 1/4A, FTK-R-1/4 or KLD-R-1/4
1	F6-14	307022	Fuse, 1 Amp, Slow Blow, ZAG, (Part of 410322)
1	T4	SEE CHART	Assem., Transformer, Current, 200-5, P2
1	T4	SEE CHART	Assem., Transformer, Current, 500-5, P10
1	T4	SEE CHART	Assem., Transformer, Current, 1000-5, P5
1	S6	600667	Assem., Secondary Current, 6" Coil Rogowski
1	S10	600668	Assem., Secondary Current, 10" Coil Rogowski
1	J12-J12	322475	Assem., Harness, Secondary Current, Rogowski Coil
1	J12	346004	Lug, Screw, Chassis GND, 5/16" Bolt to 2/O Wire
1	PCB2	410329	Assem., PCB, Terminal Strip Input Bd., Cascade
1	PC4	510232	Assem., PCB, Terminal Strip Output Bd., Cascade
1	PC4	510236	Plate Mounting, Terminal Strip Input & Output Boards
1	Δ	510247	Cabinet, Control, Style "D/T"
1	Δ	510257	Cabinet, Control, Style "LS/LF"
1		700194	Manual, EN1000/EN1001 Cascade
1		421451	Logic Diagram, EN1001 Cascade
1		421438-005	Wiring Diagram, EN1001-SCSR, 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.

Δ 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 "L" Cabinet, substitute J7-IN Harness 322346-001 for 322346. For 3 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.

SEE CURRENT SENSING COIL/SENSING APPLICATION CHART

MANUFACTURING INSTRUCTIONS:
SEE DRAWINGS #440024, #515055, & #510095 FOR MECHANICAL ASSEMBLY INSTRUCTIONS.
See Drawing #440093 for Crating Instructions.
See Drawing #440426 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.
See Drawing #440457 for Current Transformer Assembly.
See Drawing #440478 for Secondary Current Coil Assembly.

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

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

NOTICE
FOR SERVICE ON THIS CONTROL
Contact Your Machine Dealer Or
ENTRON CONTROLS LLC.
DIRECTLY: (864) 416-0190
601 HIGH TECH COURT
GREER, SC 29650
FAX# (864) 416-0195

ENTRON CONTROLS INC

REV	AUTH	DESCRIPTION	DATE	CHK'D BY	DATE
1		ORIGINAL RELEASE			

SCALE DATE DRAWN BY CHK'D BY APPROVED BY

TOLERANCE UNLESS SPECIFIED

ANGLES: ± 1/2°
DECIMALS: ± .010
FRACTIONS: ± 1/64

REVISED

REV LTR APPROVED BY

DATE DATE

WIRING DIAGRAM, EN1001-SCSR, CASC/MULTI-VALVE CONTROL 1-8 EXTERNAL SCR CONTACTORS/8 VALVE OUTPUT CIRCUITS WIRED FOR SELECTABLE 230/380/460/575 VAC OPERATION NEXT ASS'Y USED ON

DRAWING NUMBER REV

421438-005