



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 & 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 - Use Jumper #3 on T8 & TS19. Add Jumper #3 between L2 to CTH4 on Terminal Strip TS19. Use Jumper #3 between CTH4 & 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 CTH4 & 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.
- Y = 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.**
- For Single Stage Pilot Operation - Connect Pilot Switch to TS1-FS3 & TS1-GND.
- For Two Stage Pilot Operation - Connect 1st Stage Pilot Switch to TS1-FS3 & 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 or Selection - See MANUAL.
- When used, connect Normally Closed (N.C.) Temperature Limit Switch (TLS) across T8 on supplied PCB7 Firing Board(s). Contactor 1 TLS connects to PCB7-1. Contactor 2 TLS connects to PCB7-2, etc. Remove jumper(s) between T8 terminals. Customer supplied interconnection wiring for TLS should be physically separated from all other interconnection wiring.
- CAUTION: Do NOT over-tighten T8.
- When external valve power is supplied to the control, remove and insulate leads TS10-VL1 & TS10-VL2 at the Terminal Strip Output Board (PCB4), (from T8-X1 & T8-X2). Connect external AC power supply (24-240 VAC) to TS10-VL1 & TS10-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 32230 will ALWAYS be located in the "3-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 460126 and Remove Hole Plug P/N 565003.
- EN1000-FP(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.
 - CAUTION: Do NOT over-tighten T8, J5, or J6.
- All customer Connection Wiring to be made with #18 Ga. Wire Minimum.
- After January, 2002, this Wiring Diagram #421214-026 for EN1000-FP(SCR), Cascade/Multi-Valve Controls with Selectable 230/380/460/575 VAC Operation #421214-012, EN1000-FP(SCR), Cascade/Multi-Valve, 460 VAC Operation, #421214-015, EN1000-FP(SCR), Cascade/Multi-Valve, 230 VAC Operation, #421214-022, EN1000-FP(SCR), Cascade/Multi-Valve, 380 VAC Operation.

PARTS LIST - CONTROL SECTION 421214-026 A

QTY.	DESIG.	PART NO.	DESCRIPTION
1	PCB1	600558-002	Assem., Dial Plate, EN1000-FP Cascade/Multi-Valve, Consisting of: Assem. Switch, Front Panel Display Board
1		540248	Illustrated Panel, Dial Plate, EN1000 Cascade/Multi-Valve
1		515096	Display Window, Panel, Red Filter, Cont. & Valve, EN1000 Cascade
1		515104	Display Window, Panel, Red Filter, LED, EN1000 Cascade
1	PCB3	410321	Assem., PCB, Program Board, EN1000 Cascade/Multi-Valve
1	PCB5	410324	Assem., PCB, Contactor Weld & Valve Indicator Board, EN1000 Casc.
1	J4-J4-J4	322342	Assem., Harness, Seq. Display Bd./Program Bd./LED Indicator Bd.
6	SW1	600531-001	Assem., Switch, Keylock, Momentary, SPST
1	J3	322418-003	Assem., Harness, Power, EN1000-FP(SCR), Cascade/Multi-Valve
1	J4A-J4A-J4A	322420	Assem., Harness, Program Bd./Output Bd./Input Bd., EN1000-FP(SCR)
1	J7-IN	322421	Assem., Harness, Program Bd. to Firing Board, EN1000-FP(SCR)

PARTS LIST - CONTACTOR SECTION

QTY.	DESIG.	PART NO.	DESCRIPTION
1	TS11	335034	Terminal Strip, 10 Pin, 20A. (Part of J3 Harness)
1	TS19	335024	Terminal Strip, 6 Pin, 20A. (Part of J3 Harness)
1	T8	311001	Transformer, Control. (Part of J3 Harness)
1	T8	311002	Transformer, Valve, 150VA, 230/460V
1	T8	311011	Transformer, Valve, 150VA, 575V
1	T8	311021	Transformer, Valve, 150VA, 380/408/415V
1	T8	311022	Transformer, Valve, 250VA
1	T8 (T8)	325149	Assem., Wire, Valve Transformer, 22 Ga., Black
1	F1	308010	Fuseholder, 1 Pole, Mini, 600V, HPC-L(BBS)
1	F1	307024	Fuse, Control, 1/4A, 250V, 1/4" or 1/2" or 3/4"
1	F6-14	307022	Fuse, 1 Amp, Slow Blow, 250V, (Part of 600547-005)
1-8	T2	600547-005	Assem., Power Supply, Selectable 230/380/460/575V, Consisting of: Transformer, Sense. (Part of 600547-005)
1-16	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	322348-006	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	PCB2	346004	Lug, Screw, Chassis GND, 5/16" Bolt to 2/0 Wire
1	PCB4	410329	Assem., PCB, Terminal Strip Input Bd., Cascade
1		410322	Assem., PCB, Terminal Strip Output Bd., Cascade
1		510236	Plate Mounting, Terminal Strip Input & Output Boards
1		510260	Flat Plate, 9" x 23-5/8", Firing Board, EN1000-FP(SCR)
1		510269	Flat plate, 9" x 23-5/8", Input/Output & Power Supply
1		700112	Manual, EN1000 Cascade
1		421386	Logic Diagram, EN1000 Cascade
1		421214-026	Wiring Diagram, EN1000-FP(SCR), Cascade/Multi-Valve

CAUTION - HAZARDOUS VOLTAGE FROM ONE OR MORE SOURCES

Turn off all voltage sources before touching any components. Electrical shock or flash will cause severe injury or death.

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.

OPTIONAL:

- Substitution or addition of part when 575V control is specified. See Drawing #440450-002 for mounting detail of Flat Plate (FP) control.

Ship one (1) Poly Bag P/N 900148 with control & include the following items in bag:

4 Each #6-32 x 1/4" PHMS, Ph11, Black	P/N 557004
4 Each #6-32 x 1/4" A/F Hex Nut	P/N 557018
1 Each Label, "DANGER, HAZARDOUS VOLTAGE, ..."	P/N 460142/RWMA156103C
1 Each Label, "DANGER, VOLTAGE AND FLASH HAZARD, ..."	P/N 460143/RWMA156103A
1 Each Label, "VOLTAGE HAZARDOUS, ... EARTH GND"	P/N 460144/RWMA156103D
1 Each Label, "CAUTION, WATER HOSE BURST HAZARD, ..."	P/N 460145/RWMA156103E
1 Each Label, "WARNING, HAZARDOUS VOLTAGE, ..."	P/N 460146/RWMA156103B
1 Each Label, "CAUTION, DO NOT PINCH WIRES, ..."	P/N 460170

MANUFACTURING INSTRUCTIONS:

See Drawing #600622 for Firing Board Flat Plate Assembly.

See Drawing #600623 for Input/Output & Power Supply Flat Plate Assembly.

See Drawing #440468 for Packing Instructions.

See Drawing #440469 for Label Locations.

CAUTION - CONTROL SHIPPED IS WIRED FOR 460 VAC OPERATION UNLESS OTHERWISE SPECIFIED.

NOTICE FOR SERVICE ON THIS CONTROL

Contact Your Machine Dealer Or ENTRON CONTROLS INC. DIRECTLY: (630) 682-9680

465 EAST RANDY ROAD, CAROL STREAM, IL 60158 FAX # (630) 682-3374

REV	AUTH	DESCRIPTION	DRWN	CHK	BY	DATE
1		ORIGINAL RELEASE				

ENTRON CONTROLS INC.

SCALE	DATE	DRAWN BY	CHK'D BY	APPROVED BY
1/8"	3-26-02	DC	DC	

TOLERANCE UNLESS SPECIFIED

ANGLES: ± 1/2°

DECIMALS: ± .010

FRACTIONS: ± 1/64

DATE: 12/11/02 RHL

WIRING DIAGRAM, EN1000-FP(SCR), 9" x 23-5/8" FLAT PLATE, CASCADE/MULTI-VALVE CONTROL, 1-8 EXTERNAL SCR CONTACTORS, VALVE OUTPUT CIRCUIT WIRED FOR SELECTABLE 230/380/460/575 VAC OPERATION

NEXT ASSM USED ON: 421214-026 A