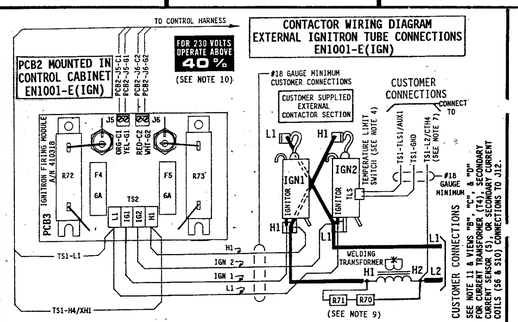
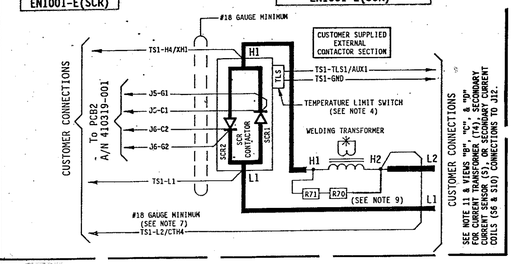
CONTACTOR WIRING DIAGRAM EXTERNAL IGNITRON TUBE CONNECTIONS EN1001-E(IGN)



CONTACTOR WIRING DIAGRAM EXTERNAL SCR CONNECTIONS EN1001-E(SCR)



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. EN1001-E(IGN) & EN1001-E(SCR):
   When used, connect Normally Closed (N.C.) Temperature Limit Switch (TLS) across TS1-TLS1/AUX1 & TS1-GND and remove jumper between TS1-TLS1/AUX1 & TS1-GND.

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.

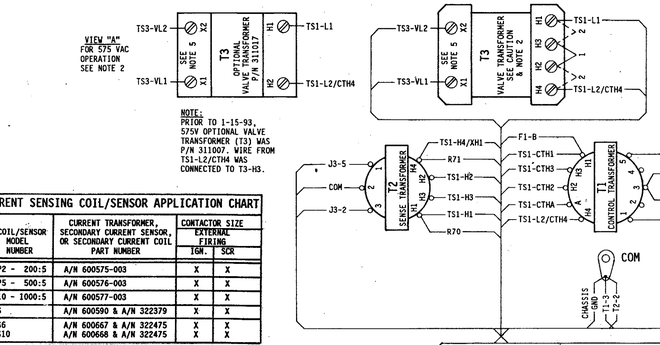
8. When Optional Program Lockout is specified by customer. Dial Plate A/N 600574-005 replaces A/N 600574-004. Add Switch P/N 600531-001 & remove Hole Plug P/N 565003.

9. EN1001-E(IGN) & EN1001-E(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-E(SCR), do NOT overtighten J5 & J6.

10. CAUTION: Do NOT set Current Control below 40% for 230 Volt Operation with Ignitron Tube Contactors.

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.
    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.
    SECONDARY CURRENT COIL (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.
    NOTE: Secondary Current Coils (S6) & (S10) can ONLY be used with PCB1 A/N 600572-002 at revision "Z" or any revision there after.
    AFTER JULY, 2000:
    Sequence Control/Display Board A/N 600572-002 (PCB1) Revision "Z" or any revision there after MUST have the System Shorting Jumper installed into the correct two (2) pins for usage with either a Current Transformer (T4), Secondary Current Sensor (S), or Secondary Current Coils (S6 & S10). See applicable View "B", "C", or "D" for correct Jumper installation.

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



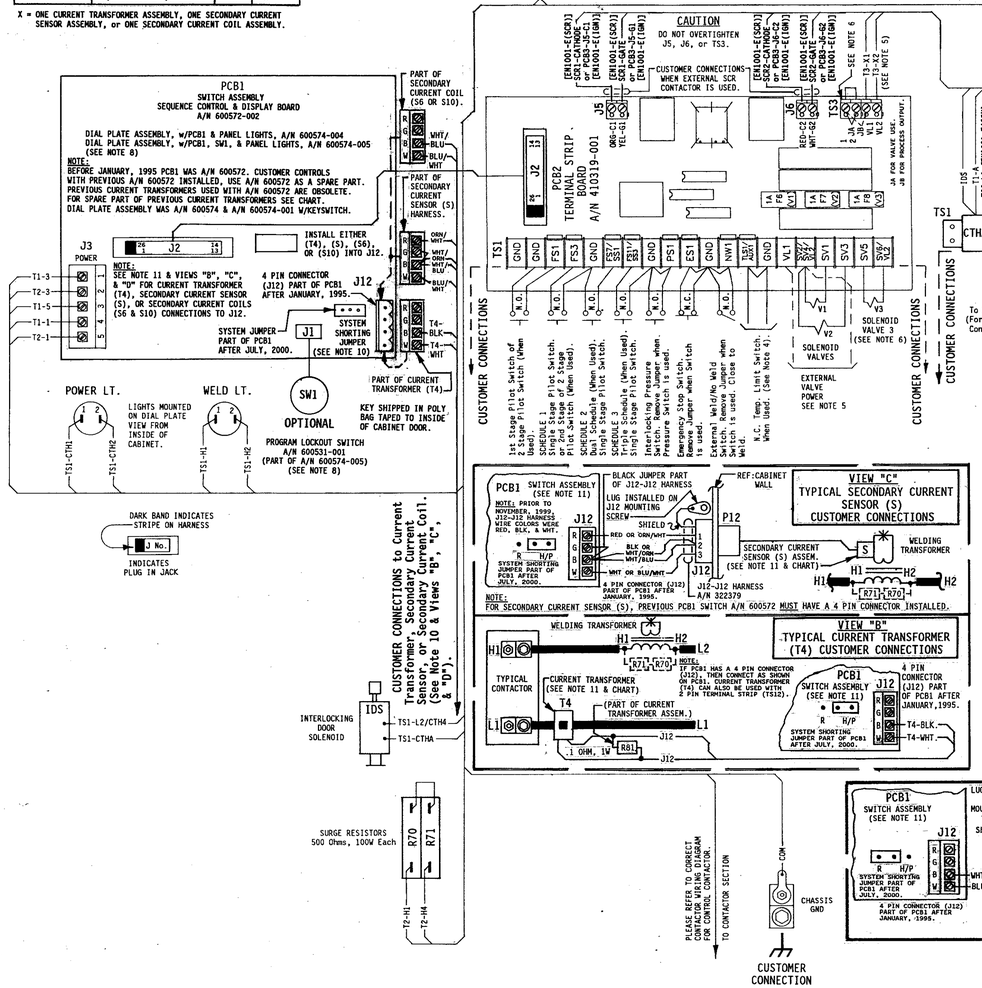
NOTE: PRIOR TO 1-15-93, 575V OPTIONAL VALVE TRANSFORMER (T3) WAS P/N 311007. WIRE FROM TS1-L2/CTH4 WAS CONNECTED TO T3-H3.

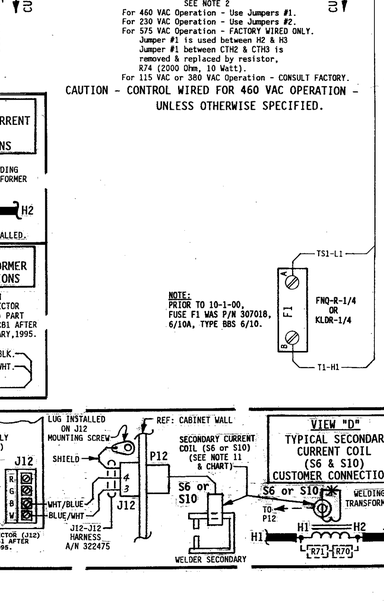
CAUTION

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 311017.
For 115 or 380 VAC Operation - CONSULT FACTORY.

CURRENT SENSING COIL/SENSOR APPLICATION CHART			
COIL/SENSOR MODEL NUMBER	CURRENT TRANSFORMER, SECONDARY CURRENT SENSOR, OR SECONDARY CURRENT COIL PART NUMBER	CONTACTOR SIZE EXTERNAL FIRING IGN	SCR
P2 - 200:5	A/N 600575-003	X	X
P5 - 500:5	A/N 600576-003	X	X
P10 - 1000:5	A/N 600577-003	X	X
S	A/N 600590 & A/N 322379	X	X
S6	A/N 600667 & A/N 322475	X	X
S10	A/N 600668 & A/N 322475	X	X

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





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.
460014

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

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.
480003

EXT. SCR CONT.	EXT. IGN CONT.	PARTS LIST - CONTROL SECTION		421268-008
QTY.	QTY.	DESIG.	PART NO.	DESCRIPTION
1	1		600574-004	Assem., Dial Plate, EN1001, Consisting of:
@	@		600574-005	Assem., Dial Plate, w/Key Switch, EN1001, Consisting of:
1	1	PCB1	600572-002	Assem., Switch, Sequence Control & Display Board
@	@	SW1	600531-001	Assem., Switch, Keylock, Momentary, SPDT
1	1		540245	Illustrated Panel, Dial Plate, EN1001
1	1		515104	Panel, Display Window, Red Filter, EN1001
1	1		565003	Hole Plug, 3/4" Diam., Black
1	1	PWR.LT.	305001	Lamp, Neon, Red, 230V
1	1	WLD.LT.	305002	Lamp, Neon, Clear, 230V
1	1	J2-J2	322303	Assem., Harness, Ctrl Bd. to Term. Strip Bd.
1	1	J3	322327-005	Assem., Harness, Power, EN1001-E(IGN)
1		J3	322327-006	Assem., Harness, Power, EN1001-E(SCR)

PARTS LIST - CONTACTOR SECTION

EN1001-E(SCR) EN1001-E(IGN)			
QTY	DESIG.	PART NO.	DESCRIPTION
1 1	TS1	335034	Terminal Strip, 10 Pin, (Part of J3 Harness)
1 1	R81	210198	Resistor,Metal Oxide,.1 Ohm,1W,(Part of Curr Xfmr Assem.)
2 2	R70,71	225016	Resistor, Power, Surge, 500 Ohm, 100W
* *	R74	600048	Assem., Resistor, Power, 2000 Ohm, 10W, (For 575V)
1 1	T1	310001	Transformer, Control, (Part of J3 Harness)
1 1	T2	310002	Transformer, Sense, (Part of J3 Harness)
1 1	T3	311002	Transformer, Valve, 150 VA
* *	T3	311017	Transformer, Valve, 150 VA, 575V
1 1	F1	308010	Fuseholder, 1 Pole, Mini, 600V
1 1	F1	307024	Fuse, Control, 1/4A, FNQ-R-1/4 or KLDR-1/4
3 3	F6,7,8(PCB2)	307022	Fuse, 1 Amp, Slow Blow, 2AG, (Part of 410319-001)
1 1	(R70,71)	325024	Assem., Wire, Surge Resistor, 18 Ga., Black
2 2	(T3)	325149	Assem., Wire, Valve Transformer, 22 Ga., Black
1	PCB3	410318	Assem., PCB, IGN Firing Module
2	R72,73(PCB3)	220505	Resistor, Ignitor, 5 Ohm, 50W, (Part of 410318)
2	F4,5(PCB3)	307010	Fuse, Ignitor, 6 Amp, BAF 6, (Part of 410318)
1	J5-J5/J6-J6	322311	Assem., Harness, IGN Firing Module to Term. Bd.
1 1	PCB2	410319-001	Assem., PCB, Terminal Strip Board, Ext. Firing, EN1001
1 1		346004	Lug, Screw, Chassis GND, 2/0 Wire
1 1	(PCB2)	510236	Plate, Mounting, Terminal Strip Board
X X	T4	SEE CHART	Assem., Transformer, Current, 200:5, P2
X X	T4	SEE CHART	Assem., Transformer, Current, 500:5, P5
X X	T4	SEE CHART	Assem., Transformer, Current, 1000:5, P10
X X	S	600590	Assem., Secondary Current Sensor (S)
X X	J12-J12	322379	Assem., Harness, Secondary Current Sensor
X X	S6	600667	Secondary Current, 6" Coil Rogowski
X X	S10	600668	Secondary Current, 10" Coil Rogowski
X X	J12-J12	322475	Assem., Harness, Secondary Current, Rogowski Coil
1 1	IDS	600044	Assem., Interlocking Door Solenoid
		314001	Coil Assem. Only, IDS
1 1		510238	Cabinet, Control Style "E"
1 1		510241	Door, Cabinet, Style "E"
1 1		700120	Manual, EN1001
1 1		421271	Logic Diagram, EN1001 Control
1 1		421268-008	Wiring Diagram, EN1001-E(IGN) or -E(SCR), "E" 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.

X See Current Sensing Coil/Sensor Application Chart.

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.

FOR SERVICE ON THIS CONTROL
CONTACT YOUR MACHINE DEALER
OR
ENTRON CONTROLS INC.
DIRECTLY : (630) 682-9600
485 EAST RANDY ROAD
CAROL STREAM, IL 60188
FAX # (630) 682-3374
460103

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

ENTRON CONTROLS INC

SCALE	DATE	DRAWN BY	CHK'D BY	APPROVED BY
NW	2-2-01	DEC	DEC 2-2-01	

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

REVISED
REV LTR | APPROVED BY | DATE

WIRING DIAGRAM, EN1001-E(IGN); "E" CABINET -E(SCR),

NEXT ASSM/USED ON: EN1001-E(IGN) EN1001-E(SCR)

DRAWING NUMBER: 421268-008 REV

NO CIRCUIT CALIBRATION OR ADJUSTMENT EVER REQUIRED.

22x34 ENTRON 470046