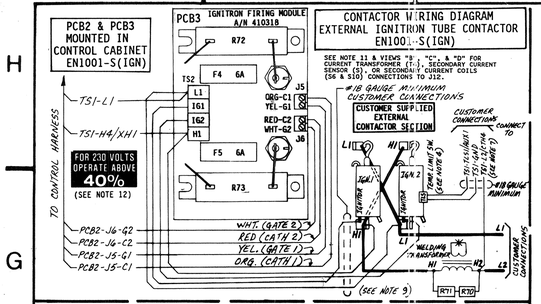
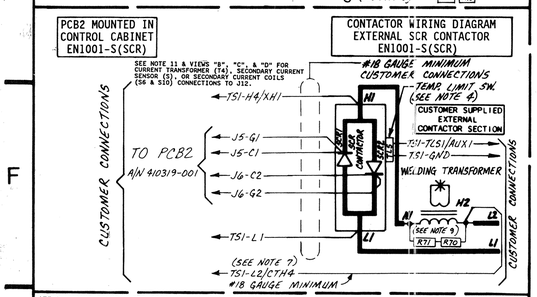
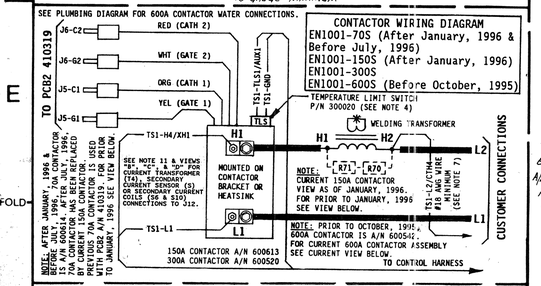
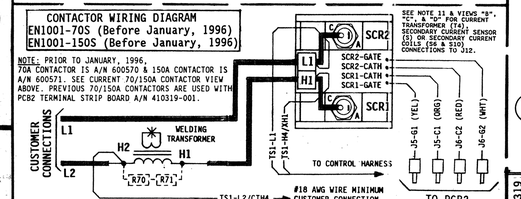
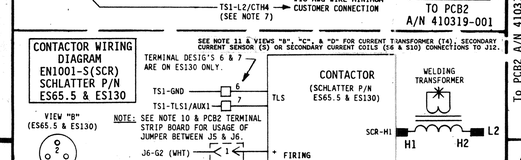
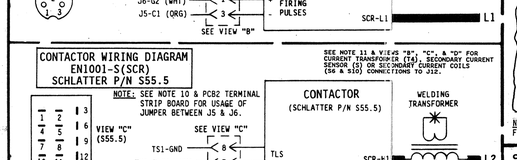


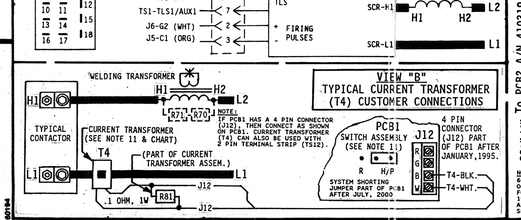




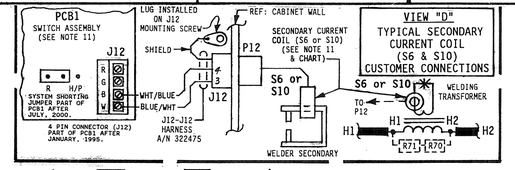


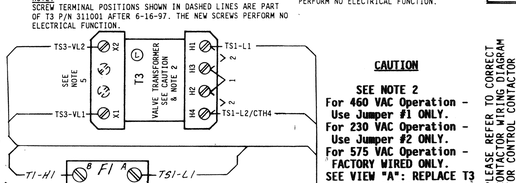


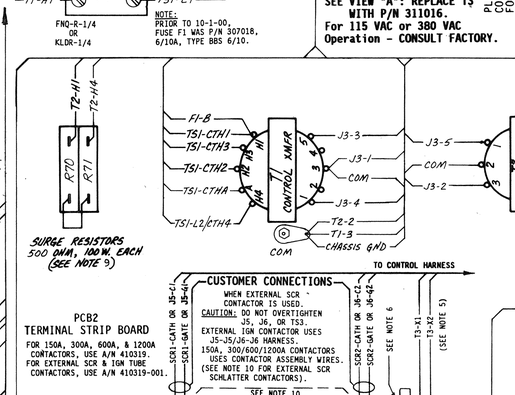


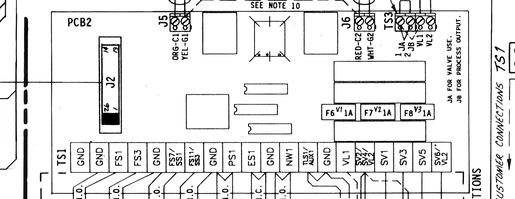


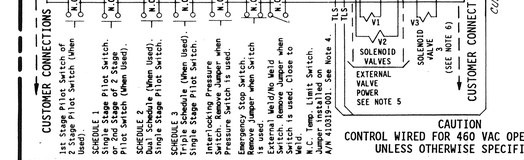
NOTES:
1. It is recommended that control wiring (i.e.: initiation, pressure switch, etc.) be physically separated from the high voltage wiring (115 volts or higher).
2. For 460 VAC Operation - Use Jumper #1 on T3 & T4. As shipped unless otherwise specified.
   For 230 VAC Operation - Use Jumper #2 on T3 & T4.
   For 575 VAC Operation - FACTORY WIRED ONLY. SEE VIEW "A".
   Replace T3 with P/N 311016. 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-S(IGN) & EN1001-S(SCR):
   When used, connect customer provided Normally Closed (N.C.) Temperature Limit Switch (TLS) across TS1-TLS1/AUX1 & TS1-GND and remove jumper between TS1-TLS1/AUX1 & TS1-GND.
   EN1001-150S, EN1001-300S, EN1001-600S, & EN1001-1200S:
   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 Thyristor 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 600574-005 replaces A/N 600574-004. Add Switch P/N 600531-001 & remove Hole Plug P/N 565003.
9. EN1001-S(IGN) & EN1001-S(SCR):
   Remove all connections from previously existing firing circuits to L1, L2/H2, & H1 also Ignitor leads or SCR Cathode leads. All previously existing surge Resistors or Rectifiers must be disconnected prior to installation of this control.
   CAUTION: On EN1001-S(SCR), Do not overtighten J5 & J6.
10. For External SCR Contactor firing with SCHLATTER P/N S55.5, ES65.5, & ES130 Contactors. Do NOT make J5 & J6 connections as shown on PCB2. See EN1001-S(SCR) Contactor Wiring Diagram with SCHLATTER Contactors. Install jumper on PCB2 Terminal Strip Board between J5-2 (Yellow) & J6-1 (Red). Make connections from J5-1 (Orange) & J6-2 (White) on PCB2 to SCHLATTER Contactor per correct External SCR Contactor Wiring Diagram.
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 "2" or any revision there after.
    AFTER JULY, 2000:
    Sequence Control/Display Board A/N 600572-002 (PCB1) Revision "2" 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.
12. CAUTION: Do NOT set Current Control below 40% for 230 Volt Operation with Ignitron Tube Contactor.
13. DIP Switch settings for positions 1 thru 4 on RS485 Driver Board (PCB5) are set at the factory to default as a last location RS485 in an interconnect wiring arrangement. See DIP Switch Settings Chart to change the settings when this RS485 is used as a middle location. J485-J485 Cable Assembly can be used to interconnect to either an RT4 Control, another ENTRON Welding Control, or an NON-ENTRON device that has a RS485 Interface Board. See Wiring Diagram #421407 for Interconnect Wiring of RS485 Driver Boards.

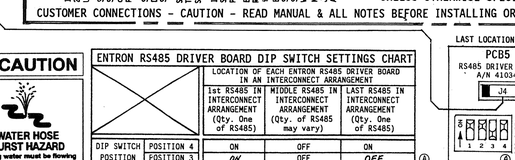


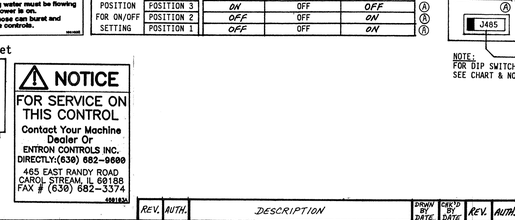


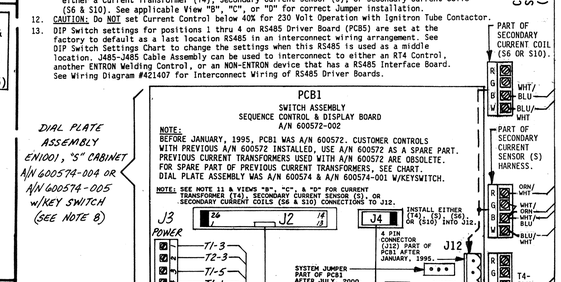


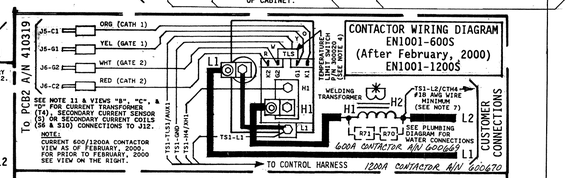


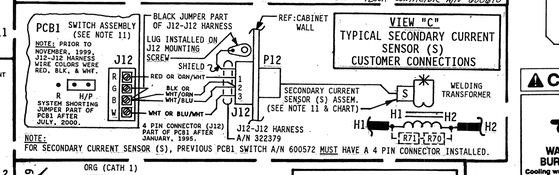


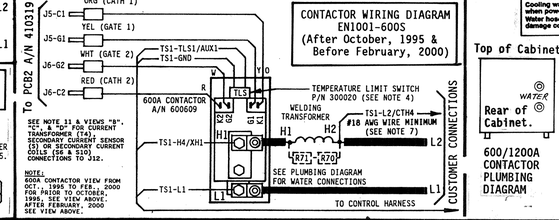












Top of Cabinet

CAUTION

WATER HOSE BURST HAZARD
Cooling water must be flowing when power is on.
Water hose can burst and damage controls.

NOTICE
FOR SERVICE ON THIS CONTROL
Contact Your Machine Dealer Or
ENTRON CONTROLS INC.
DIRECTLY:(630) 682-9600
465 EAST RANDY ROAD
CAROL STREAM, IL 60188
FAX # (630) 682-3374

ENTRON RS485 DRIVER BOARD DIP SWITCH SETTINGS CHART

		LOCATION OF EACH ENTRON RS485 DRIVER BOARD IN AN INTERCONNECT ARRANGEMENT		
		1st RS485 IN INTERCONNECT ARRANGEMENT (Qty. One of RS485)	MIDDLE RS485 IN INTERCONNECT ARRANGEMENT (Qty. of RS485 may vary)	LAST RS485 IN INTERCONNECT ARRANGEMENT (Qty. One of RS485)
DIP SWITCH POSITION FOR ON/OFF SETTING	POSITION 4	ON	OFF	ON
	POSITION 3	ON	OFF	OFF
	POSITION 2	OFF	OFF	ON
	POSITION 1	OFF	OFF	ON

NO CIRCUIT CALIBRATION OR ADJUSTMENT EVER REQUIRED.

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

CURRENT SENSING COIL/SENSOR APPLICATION CHART

COIL/SENSOR MODEL NUMBER	CURRENT TRANSFORMER OR SECONDARY CURRENT SENSOR PART NUMBER	CONTACTOR SIZE: OBS. 70A CONT	150A CONT	300A CONT	600/ 1200A CONT.	EXTERNAL FIRING: IGN.	SCR
P2 - 200:5	A/N 600575 OBSOLETE	X	X				
P2 - 200:5	A/N 600575-001 OBSOLETE					X	X
P2 - 200:5	A/N 600575-002	X	X				
P2 - 200:5	A/N 600575-003					X	X
P5 - 500:5	A/N 600576 OBSOLETE			X	X		
P5 - 500:5	A/N 600576-001 OBSOLETE					X	X
P5 - 500:5	A/N 600576-002			X	X		
P5 - 500:5	A/N 600576-003					X	X
P10 - 1000:5	A/N 600577-001 OBSOLETE					X	X
P10 - 1000:5	A/N 600577-003					X	X
S	A/N 600590 & A/N 322379	X	X	X	X	X	X
S6	A/N 600667 & A/N 322475	X	X	X	X	X	X
S10	A/N 600668 & A/N 322475	X	X	X	X	X	X

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

PARTS LIST - CONTROL SECTION 421270-007 A

EXT SCR CONT'S QTY.	EXT. IGN TUBE CONT'S QTY.	150A, 300A, & 600/1200A CONT'S QTY.	DESIG.	PART NO.	DESCRIPTION
1	1	1		600574-004	Assem., Dial Plate, EN1001, Consisting of:
@	@	@		600574-005	Assem., Dial Plate, w/Keylock, EN1001, Consisting of:
1	1	1	PCB1	600572-002	Assem., Switch, Sequence Control & Display Bd.
@	@	@	SW1	600531-001	Assem., Switch, Keylock, Momentary, SPDT
1	1	1		540245	Illustrated Panel, Dial Plate, EN1001
1	1	1		515104	Panel, Display Window, Red Filter, EN1001
1	1	1		565003	Hole Plug, 3/4" Diam., Black
1	1	1	J4-J4	322422	Assem.,Harness, Ctrl Bd./RS485 Driver Bd.,24" Lg.
1	1	1	J485-J485 -J485	322369-010	Assem.,Harness,RS485 Driver Bd./Cabinet Connector
1	1	1	PWR.LT.	305001	Lamp, Neon, Red, 230V
1	1	1	WLD.LT.	305002	Lamp, Neon, Clear, 230V
1	1	1	J2-J2	322303	Assem., Harness, Control Bd. to Terminal Bd.
	1	1	J3	322304	Assem., Harness, Power, 150A,300/600/1200A Cont's
	1		J3	322304-002	Assem., Harness, Power, External IGN Tube Cont's
1			J3	322304-003	Assem., Harness, Power, External SCR Contactors

PARTS LIST - CONTACTOR SECTION

EN1001-60OS	EN1001-30OS	EN1001-15OS	EN1001-12OOS	EN1001-S(SCR)	EN1001-S(IGN)	DESIG.	PART NO.	DESCRIPTION
1	1	1	1	1	1	TS1	335034	Terminal Strip, 10 Pin, (Part of J3 Harness)
X	X	X	X	X	X	T3	311002	Transformer, Valve, 150VA
					1	(J5-J5/J6-J6)	322311	Assem., Harness, IGN Firing Module to Term. Bd.
1	1	1	1	1	1	T1	310001	Transformer, Control, (Part of J3 Harness)
1	1	1	1	1	1	T2	310002	Transformer, Sense, (Part of J3 Harness)
1	1	1	1	1	1	T3	311001	Transformer, Valve, 50VA
*	*	*	*	*	*	T3	311016	Transformer, Valve, 50VA, 575V
SEE CHART						T4	SEE CHART	Assem., Transformer, Current, 200:5, P2
SEE CHART						T4	SEE CHART	Assem., Transformer, Current, 500:5, P5
SEE CHART						T4	SEE CHART	Assem., Transformer, Current, 1000:5, P10
2	2	2	2	2	2	R70,71	225016	Resistor, Power, Surge, 500 Ohm, 100W
*	*	*	*	*	2	R72,73(PCB3)	220505	Resistor, Ignitor, 5 Ohm, 50W, (Part of 410318)
*	*	*	*	*	*	R74	600048	Assem., Resistor, Power,2000 Ohm,10W,(For 575V)
1	1	1			1	R81	210198	Resistor,Metal Oxide,.1 Ohm,1W,(Part of Curr Xfmr)
1	1	1	1	1	1	F1	308010	Fuseholder, 1 Pole, Mini, 600V
1	1	1	1	1	1	F1	307024	Fuse, Control, 1/4A, FNQ-R-1/4 or KLDR-1/4
3	3		3	3	3	F6,7,8(PCB2)	307022	Fuse, 1 Amp, Slow Blow, 2AG, (Part of 410319 & 410319-001)
				2	1	F4,5(PCB3)	307010	Fuse, Ignitor, 6 Amp, BAF 6, (Part of 410318)
1	1	1	1	1	1	(R70,71)	325191	Assem., Wire, Surge Resistor, 18 GA., Black
2	2	2	2	2	2	(T3)	325149	Assem., Wire, Valve Transformer, 22 GA., Blk.
SEE CHART							600590	Assem., Secondary Current Sensor (S)
SEE CHART						J12-J12	322379	Assem., Harness, Secondary Current Sensor
	1	1					600613	Assem.,Contactor,Thyristor,Air,150A,460/575V,w/TLS
	1						600520	Assem., Cont.,Thyristor,Air, 300A, 460/575V, w/TLS
2							346004	Lug, 5/16" Bolt to 2/0 Wire, 600A Cont., L1 & H1
1							600669	Assem., Cont., Thyristor, Water, 600A, 460/575V
1	1	1	1			TLS	300020	Switch, Temp. Limit, (Part of 600520 & 600613)
			2				346002	Lug, 5/16" Bolt to 4/0 Wire, 1200A Cont., L1 & H1
			1				600670	Assem., Cont., Thyristor, Water, 1200A, 460/575V
1	1	1	1			PCB2	410319	Assem., PCB, Terminal Strip Board, EN1001
				1	1	PCB2	410319-001	Assem., PCB, Term. Strip Bd., Ext. Firing, EN1001
				1		PCB3	410318	Assem., PCB, IGN Firing Module
1	1	1	1	1	1	(PCB2)	510236	Plate, Mounting, Terminal Strip Board
SEE CHART						S6	600667	Assem., Secondary Current, 6" Coil Rogowski
SEE CHART						S10	600668	Assem., Secondary Current, 10" Coil Rogowski
SEE CHART						J12-J12	322475	Assem., Harness, Secondary Current, Rogowski Coil
1	1	1	1	1	1		346004	Lug, Screw, Chassis GND, 2/0 Wire
1	1	1	1	1	1	IDS	600044	Assem., Interlocking Door Solenoid
							314001	Coil Assem. Only, IDS
1	1	1	1	1	1		510015	Cabinet, "S" Subcompact
1	1	1	1	1	1		510017	Door, Cabinet, "S"
1	1	1	1	1	1	PCB5	410347	Assem., PCB, RS485 Driver Board
♥	♥	♥	♥	♥	♥	J485-J485	900258	Cable, Wire, 4 Cond.,24 Ga.,w/Shield,SHIPPED LOOSE
♥	♥	♥	♥	♥	♥	J485-J485	331136	Connector,9 Pin,Screw Term,"D" Style,SHIPPED LOOSE
1	1	1	1	1	1		421407	Wiring Diag,Interconnect Wiring of RS485 Driver Bd.
1	1	1	1	1	1		700171	Application Note, RS485 Driver Board
1	1	1	1	1	1		700173	App. Note,Customer Assembled J485-J485 Cable Assem
1	1	1	1	1	1		700120	Manual, EN1001
1	1	1	1	1	1		421271	Logic Diagram, EN1001 Control
1	1	1	1	1	1		421270-007	Wiring Diagram, EN1001-Series/485, "S" 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.
♥ Customer to assemble J485-J485 Cable Assembly per Application Note 700173. ENTRON to supply 25 Feet (25') of Cable P/N 900258, two (2) Connectors P/N