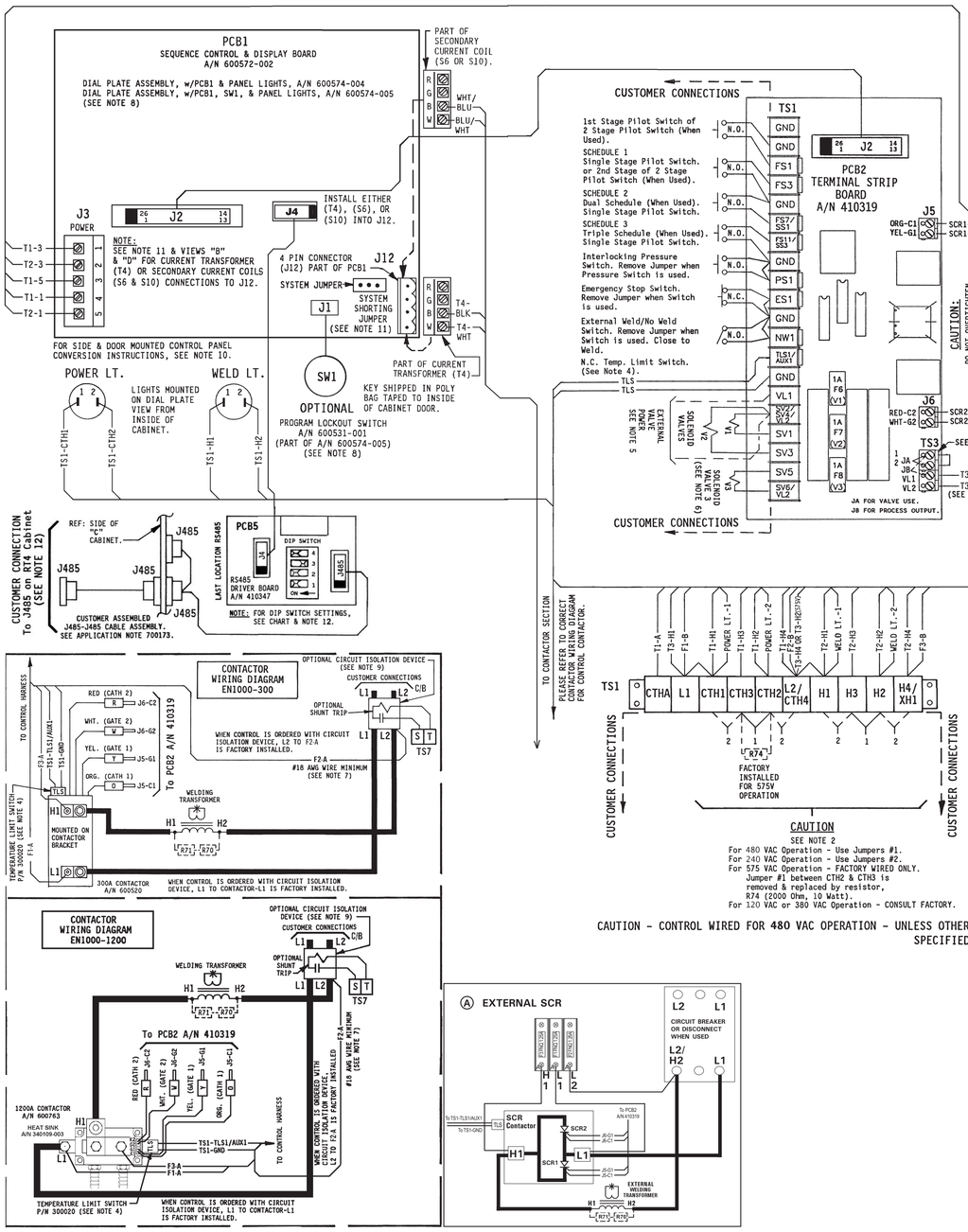

CAUTION – READ MANUAL & ALL NOTES BEFORE INSTALLING OR OPERATING CONTROL. SEE NOTE 1.

CAUTION - CONTROL WIRED FOR 480 VAC OPERATION - UNLESS OTHERWISE SPECIFIED.

NO CIRCUIT CALIBRATION OR ADJUSTMENT EVER REQUIRED.

DANGER

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.
Do not remove or cover this sign 4601428

DANGER

VOLTAGE HAZARD FLASH HAZARD
Turn off all voltage sources before removing or replacing fuse.
Electrical shock or flash will cause severe injury or death.
Do not remove or cover this sign 4601428

CAUTION
Control Shipped Wired for 480 VAC unless otherwise specified – See Note 2.

DANGER

HAZARDOUS VOLTAGE
Electrical shock will cause severe injury or death.
PE Connect this terminal directly to earth ground.
Do not remove or cover this sign. 4601446

CAUTION

WATER HOSE BURST HAZARD
Cooling water must be flowing when power is on.
Water hose can burst and damage controls.
Do not remove or cover this sign. 4601458

CURRENT SENSING APPLICATION CHART (A)

COIL/SENSOR MODEL NUMBER	CURRENT TRANSFORMER OR SECONDARY CURRENT SENSOR PART NUMBER	CONTACTOR SIZE 300A XTOR	CONTACTOR SIZE 1200A XTOR
P2 - 200:5	#600575-004	X	
P5 - 500:5	#600576-004	X	X
P10 - 1000:5	#600577-004		X
S6	#600667 & 322475	X	X
S10	#600668 & 322475	X	X

ENTRON RS485 DRIVER BOARD DIP SWITCH SETTINGS CHART

		LOCATION OF EACH ENTRON RS485 DRIVER BOARD IN AN INTERCONNECT ARRANGEMENT		
		FIRST 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

NOTES:

1. It is recommended that control wiring (i.e.: initiation, pressure switch, etc.) be physically separated from high voltage wiring (120 volts or higher).
2. For 480 VAC Operation – Use Jumper #1 on T3 & TS1. As shipped unless otherwise specified.
   For 240 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 120 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.
4. 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 SCR will open at temperatures greater than or equal to 150° F.
5. When external valve power is supplied to control, remove and insulate leads TS3-VL1 & TS3-VL2 on 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.
   WARNING: Use of Jumper "B" bypasses control relay contacts to allow a Process output without an initiation. SEE MANUAL.
7. Connect F2-A to L2/H2 side of Welding Transformer Primary. (Factory wired on controls supplied with Circuit Isolation Device).
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. When Options are required contact factory for compatibility.
10. To convert Control Panel from side mounted cabinet control to door mounted or door mounted cabinet control to side mounted:
    Remove Cover Plate and Control Panel Dial Plate Assembly. Position spiral wrap around all harness wiring to prevent interference of wiring with closing of cabinet door. When mounting Control Panel on side of cabinet, use clamp to secure J3 harness wires.
    CAUTION: When changing position of Control Panel, be sure harness wires do NOT interfere with closing of cabinet door. Wires may pinch in between door & cabinet and cause damage to wiring.
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 trancformer (T4) to J12 should be kept as short as possible.
    SECONDARY CURRENT SENSOR (S6) & (S10) CONNECTIONS:
    Wire per view "D" Secondary Current Coil (S6) & (S10) may be used in place of current Transformer (T4). Add J12-J12 Harness A/N 322475
12. 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 a non-ENTRON device that has a RS485 Interface Board. See Wiring Diagram #421407 for interconnect wiring of RS485 Driver Board.

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
4601038

PARTS LIST -- CONTROL SECTION 421499-001 A

QTY	DESIG.	PART NO.	DESCRIPTION
1		600574-004	Assem., Dial Plate w/Sw. Assem., EN1001, Consisting of:
@		600574-005	Assem., Dial Plate w/Sw. Assem. & Keylock, EN1001, Consisting of:
1	PCB1	600572	Assem., Switch, Sequence Control & Display Board
@	SW1	600531-001	Assem., Switch, Keylock, Momentary, SPST
1		600735	Assem., Dial Plate, EN1001
1		565003	Hole Plug, 3/4" Diam., Black
1	POWER LT.	305001	Lamp, Neon, Red, 240V
1	WELD LT.	305002	Lamp, Neon, Clear, 240V
1	J2-J2	322560	Assem., Harness, Control Board to Terminal Strip Board
1	J3	322558	Assem., Harness, Power, EN1000/EN1001
1	J4-J4	322397	Assem., Harness, Sequence Control Board to RS485 Driver Board
1	J485-J485-J485	322369-011	Assem., Harness, RS485 Driver Board to Cabinet Connector

PARTS LIST -- CONTACTOR SECTION

EN1001-1200 QTY	EN1001-300 QTY	DESIG.	PART NO.	DESCRIPTION
1	1	TS1	335067	Terminal Strip, 10 Pin (Part of J3 Harness)
#	#	TS7	335044	Terminal Strip, 2 Pin
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, 150VA
*	*		311017	Transformer, Valve, 150VA, 575V
Δ	Δ	T3	311022	Transformer, Valve, 250VA
Δ	Δ	T3	311021	Transformer, Valve, 500VA
2	2	R70, 71	225016	Resistor, Power, Surge, 500 Ohm, 100W
*	*	R74	600048	Assem., Resistor, Power, 2000 Ohm, 10W (for 575V)
3	3	F1, 2, 3	308010	Fuseholder, 1 Pole, Mini. 600V
3	3	F1, 2, 3	307025	Fuse, Control, 1-1/4A, FNQ-R-1-1/4 or KLDR-1-1/4
3	3	F6, 7, 8 (PCB2)	307022	Fuse, 1 Amp, Slow Blow, 2AG (Part of 410319)
1	1	(R70, 71)	325024	Assem., Wire, Surge Resistor, 18 Ga., Black
	1		600520	Assem., Contactor, Thyristor, Air, 300A, 480/575V, w/TLS
1			600763	Assem., Contactor, Thyristor, Water, 1200A, 480/575V
1			340109-003	Assem., Heat Sink, Straight 3/8" Hose Barbs, 1-1/2" Ctrs.
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
SEE CHART		S6	600667	Secondary Current, 6" Coil Rogowski
SEE CHART		S10	600668	Secondary Current, 10" Coil Rogowski
SEE CHART		J12-J12	322475	Assem., Harness, Secondary Current, Rogowski Coil
1	1		346004	Lug, Screw, Chassis GND, 2/0 Wire
1	1	PCB2	410319	Assem., PCB, Terminal Strip Board
1	1	PCB5	410347	Assem., PCB, RS485 Driver Board
1	1	PCB5	525035	Bracket, Mounting,RS485 Driver Board
25▼	25▼	J485-J485	900258	Cable Wire, 4 Conductor, 24 Gauge, w/Shield
2▼	2▼	J485-J485	331136	Connector, 9 Pin, Screw Terminal, "D" Style
1	1	TLS	300020	Switch, Temperature Limit, (N.C.)
1	1		550075	Hoffman, Padlocking Handle
1	1		510300-001	Cabinet, Control, Style "C", w/CB
1	1		510298	Door, Cabinet, Control, Style "C"
1	1		510301	Rear Panel, Cabinet, Control, Style "C"
	Δ	Δ	C/B	Circuit Breaker, Pole, Amp, V (see Note 9)
Δ	Δ		309069-007	Thru Door Operator, Circuit Breaker
1	1		421407	Wiring Diagram, Interconnect Wiring of RS485 Driver Boards
1	1		600689	Assem., ENLINK
1	1		700173	Application Note, Customer Assembled J485-J485 Cable
1	1		700171	Manual, 485 Options
1	1		700120	Manual, EN1000/EN1001
1	1		421183	Logic Diagram, EN1000 Control
1	1		421499	Wiring Diagram, EN1001-Series, "C" Cabinet

DRAWING NUMBER 421499-001 A REV

@ Optional Keylock when specified by customer. See Note 8. Pack Key in Poly Bag 900148 & attach to Door w/Yellow Tape 900118.
# Supplied when optional Shunt Trip (ST), 120V is specified.
* Substitution or addition of parts when 575V control is specified.
△ Optional, see Note 9.
▼ 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 331136; two (2) "J485" Labels P/N 460228, one (1) for each connector (shipped loose).

For Optional Water Flow Switch, see Manual 700149 and A/N 600632.

MANUFACTURING INSTRUCTIONS:
See Drawing 510300-001 for Cabinet Modification for RS485 Instructions
See Drawing 600747 for Enclosure Assembly Instructions
See Drawing 600749 for Layout/Assembly Instructions

REV	AUTH	DESCRIPTION	DRAWN BY DATE	CHK'D BY DATE
A	DCS 6/12/12	IN P/L: CHG'D TS1 P/N 335067 WAS 335034; CHG'D 1200A XTOR P/N 600763 WAS 600727. CHG'D THRU DOOR OPERATOR P/N 309069-007 WAS 309069. UPDATED VIEW D. ADDED EXTERNAL SCR. RMV'D OBS. SECONDARY CURRENT SENSOR.	DCS 6/12/12	
—	—	ORIGINAL RELEASE		

460064

ENTRON

SCALE	DATE	DRAWN BY	CHK'D BY	APPROVED BY
	5/11/11 2/11/09	DCS		

TOLERANCE UNLESS SPECIFIED — REVISED

ANGLES: ± 1/2°	REV LTR	APPROVED BY
DECIMALS: ± .010	A	
FRACTIONS ± 1/64	DATE	6/12/12 DCS

WIRING DIAGRAM, EN1001, /485 "C" CABINET

NEXT ASSM USED ON	DRAWING NUMBER	REV
	421499-001	A

ENTRON 470046 12 22 x 34