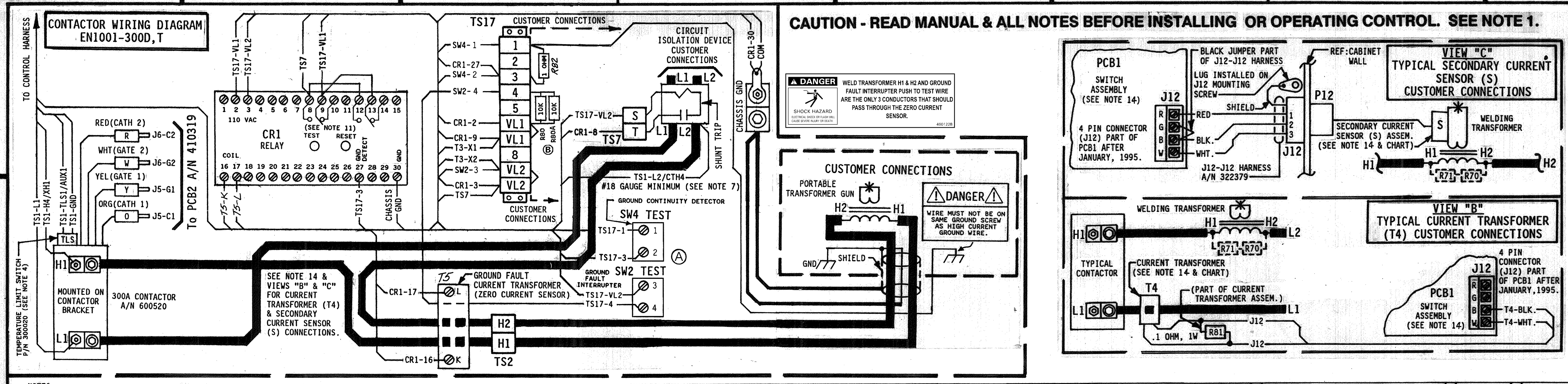
CAUTION - READ MANUAL & ALL NOTES BEFORE INSTALLING OR OPERATING CONTROL. SEE NOTE 1.



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

PARTS LIST - CONTROL SECTION			421377 B
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	600572-002	Assem., Switch, Sequence Control & Display Board
@	SW1	600531-001	Assem., Switch, Keylock, Momentary, SPST
1		540245	Illustrated Panel, Dial Plate, EN1001
1		515104	Panel, Display Window, Red Filter, EN1001
1		565003	Hole Plug, 3/4" Diam., Black
1	PWR.LT.	305001	Lamp, Neon, Red, 230V
1	WLD.LT.	305002	Lamp, Neon, Clear, 230V
1	J2-J2	322326	Assem., Harness, Control Bd. to Terminal Strip Board
1	J3	322334-006	Assem., Harness, Power, EN1000/GF, D/T Cab.

EN1001-300

PARTS LIST - CONTACTOR SECTION

	QTY.	DESIG.	PART NO.	DESCRIPTION
	2	TS1,17	335034	Terminal Strip, 10 Pin, (Part of J3 Harness)
	1	TS2	335023	Terminal Block, 2 Pole, 2/0 Wire
	1	TS7	335044	Terminal Strip, 2 Pin
	1	T1	310001	Transformer, Control, (Part of J3 Harness)
	1	T2	310002	Transformer, Sense, (Part of J3 Harness)
	1	T3	311002	Transformer, Valve, 150VA
	*	T3	311017	Transformer, Valve, 150VA, 575V
	2	R70,71	225016	Resistor, Power, Surge, 500 Ohm, 100W
	*	R74	600048	Assem., Resistor, Power, 2000 ohm, 10W, (For 575V)
Ⓑ	2	R80,R80A	600645	Assem., Resistor, 10,000 Ohm, 1W, (For TS17)
	1	R82	600646	Assem., Resistor, 1 Ohm, 1W, (For TS17)
	1	R81	210198	RESISTOR, METAL OXIDE, .1 OHM, 1W, (PART OF CURRENT TRANSFORMER)
	1	F1	308010	Fuseholder, 1 Pole, Mini, 600V
	1	F1	307018	Fuse, Control, 6/10A, BBS 6/10
	3	F6,7,8(PCB2)	307022	Fuse, 1 Amp, Slow Blow, 2AG, (Part of 410319)
	1	(R70,71)	325024	Assem., Wire, Surge Resistor, 18 Ga., Black
	2	(T3)	325149	Assem., Wire, Valve Transformer, 22 Ga., Black
	1		600520	Assem.,Contactor,Thyristor,Air,300A,460/575V,w/TLS
	#		600590	ASSEM., SECONDARY CURRENT SENSOR
	#	J12-J12	322379	ASSEM., HARNESS, SECONDARY CURRENT SENSOR
	#	T4	SEE CHART	ASSEM., TRANSFORMER, CURRENT, 200:5, P2
	#	T4	SEE CHART	ASSEM., TRANSFORMER, CURRENT, 500:5, P5
	1		324360	Wire, #4 AWG, 300A Contactor, TS2-H2 to C/B-L2
	1		324361	Wire, #4 AWG, 300A Contactor, TS2-H1 to Cont-H1
	1		324362	Wire, #4 AWG, 300A Contactor, C/B-L1 to Cont-L1
	1	T5	309514	Ground Fault Current Transformer
Ⓑ	1	CR1	600695	Relay, Residual Current & Ground Detection, Supplied w/Manual
Ⓐ	1	SW2	302024	Switch, Oiltight, Push Button, Red, N/O Contact 22mm
Ⓐ	1	SW4	302025	Switch, Oiltight, Push Button, Red, N/C Contact 22mm
	1	TLS	300020	Switch, Temperature Limit, (N.C.), (Part of 300A Contactor)
	1		346004	Lug, Screw, Chassis GND, 2/0 Wire
	1	PCB2	410319	Assem., PCB, Terminal Strip Board, EN1001
	1	(PCB2)	510236	Plate, Mounting, Terminal Strip Board
	1		525035	Bracket, Mounting, 300A Thyristor Contactor
	1		550014	Vault Closing Door Mechanism, "D/T" Cabinet
	1		510247-002	Cabinet, Control, Style "D/T", w/CB, Modified for GF
	1		510248	Door, Cabinet, Control, Style "D/T"
	1		510247-005	Cabinet, Control, Style "D/T", w/CB, Modified for 300A Cont.
	1	C/B		Circuit Breaker, Pole, Amp, V, w/110 VAC Shunt Trip
	1		700120	Manual, EN1001
	1		421271	Logic Diagram, EN1001 Control
	1		421377	Wiring Diagram, EN1001-300/GF, "D/T" 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.
\# Supply either quantity one (1) Current Transformer (T4) or Secondary Current Sensor (S). See Current Sensing Coil/Sensor Application Chart for part number.

MANUFACTURING INSTRUCTIONS:
See Drawing #600592 for Mechanical Layout/Assem. of EN1000/GF, "D/T" Cabinet.
See Drawing #440366 for Inner Pack & Use Carton #650016 for "D/T" Cabinet Packing Instructions.
See Drawing #440437 for Circuit Breaker to L1 Contactor Cable connections.
See Drawing #600526 for Layout/Assem. of Front Panel.
Relay (CR1) MUST have S3 & S4 (located behind CR1 Front Plate) closed to put Relay in active mode. Ship with Manufacturer Relay manual.
See Drawing #440457 for Current Transformer Assembly.
See Drawing #440458 for Secondary Current Sensor Assembly.

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-SERIES "D/T" Cabinet:
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 Usage:
When using this control with air over oil Portable Transformer Guns with Extend and Intensify and/or Blocking valves the following valve assignments and jumper placement must be followed:
TS1-SV1 & TS1-SV2 connects to Extend solenoid valve.
TS1-SV3 & TS1-SV4 connects to Intensify solenoid valve.
TS1-SV5 & TS1-SV6 connects to Blocking solenoid valve (when used).

NOTE: TS1-SV5 & TS1-TS6 can be used for a valve output or a Process Output (Blocking Valve). When using TS1-SV5 & TS1-SV6 as a valve output use jumper "A" on TS3. When using TS1-SV5 & TS1-SV6 as a Process Output (Blocking Valve) 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.

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.

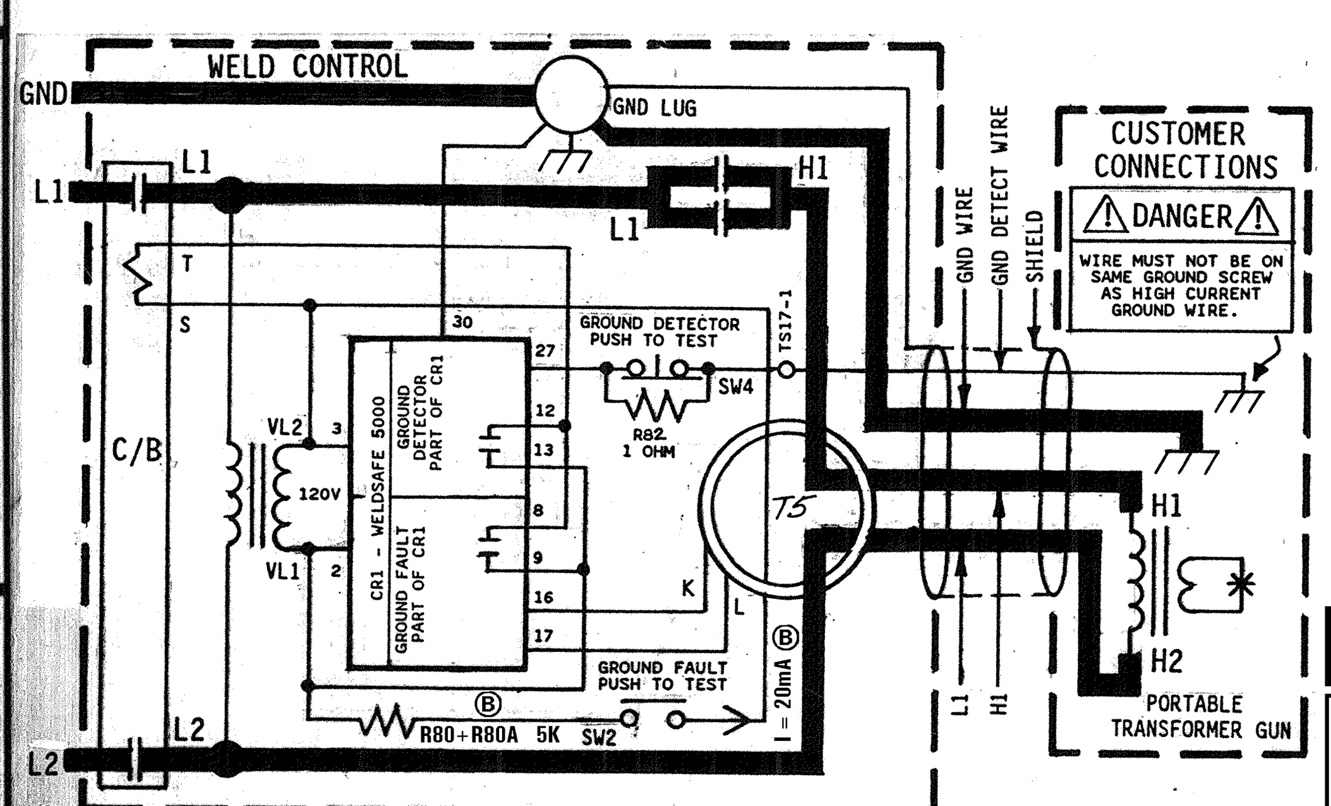
10. PROGRAMMING:
When using this control with air over oil Portable Transformer Guns with Extend and Intensify and Blocking Valves, extended function P0 must be set to 07. Extended function bL (Blocking) and Sd (Squeeze Delay) can then be set to desired times. See manual for more information. When using this control with only Extend and Intensify valves, use of Extended function P0 is not required. See manual for more information.

11. GROUND FAULT INTERRUPTER:
This control is equipped with a ground fault and Ground Continuity operator protection system. For proper operation and operator protection, the following MUST be considered:

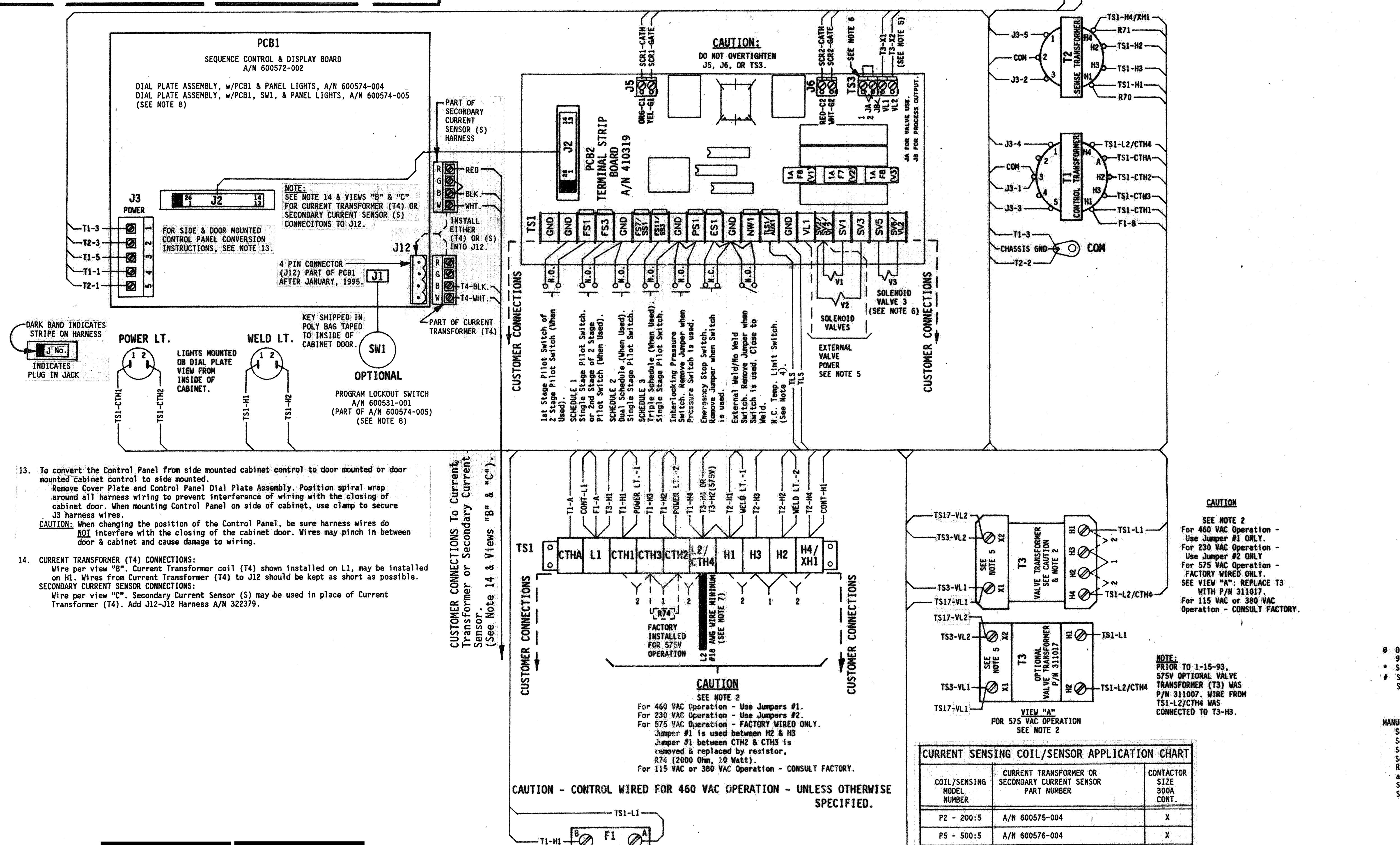
H1 & H2 Weld Transformer primary connections and push to TEST (SW2) lead are the ONLY 3 conductors that should pass through the Ground Fault Current Transformer (T5). The H1 & H2 wires should also be in close proximity to each other. Never pass a neutral or ground or shield or any other conductor other than the 3 wires listed above through the Ground Fault Current Transformer (T5).

The ground fault interrupter TEST switch button (SW2) and Ground Continuity Switch Button (SW4), (push to test) should be used periodically to test the ground fault detection components. The TEST button on the Current Relay (CR1) need not be used.

Ⓑ Relay (CR1) MUST have S3, S4 & S8 (located behind CR1 Front Plate) closed to put Relay in active mode. S3, S4 & S8 are adjusted by ENTRON at factory.
TS17-1 MUST be connected to Gun Case (GND) at a point mechanically different from the High Current Protection Ground. See view below.



12. BEAT DURING SQUEEZE/NON BEAT DURING SQUEEZE - Control can be configured so that the weld sequence can be terminated before the end of the Squeeze Time by opening the initiation contacts.
BEAT during squeeze - If this is required, use Extended Function bE and set to 01. To remove beat during squeeze set Extended Function bE to 00. See manual for more information.



13. To convert the 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 the closing of cabinet door. When mounting Control Panel on side of cabinet, use clamp to secure J3 harness wires.
CAUTION: When changing the position of the Control Panel, be sure harness wires do NOT interfere with the closing of the cabinet door. Wires may pinch in between door & cabinet and cause damage to wiring.

14. 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 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.

CURRENT SENSING COIL/SENSOR APPLICATION CHART

COIL/SENSING MODEL NUMBER	CURRENT TRANSFORMER OR SECONDARY CURRENT SENSOR PART NUMBER	CONTACTOR SIZE 300A CONT.
P2 - 200:5	A/N 600575-004	X
P5 - 500:5	A/N 600576-004	X
S	A/N 600590 & A/N 322379	X

X = ONE (1) CURRENT TRANSFORMER ASSEMBLY or ONE (1) SECONDARY CURRENT SENSOR.

NOTICE
This weld control complies with the RWMA bulletin 5.015.68.04 for use with a hand-held transgun.
Proper installation and maintenance must be followed for hand-held transgun operation.
See instructions.

DANGER
SHOCK HAZARD
TEST OPERATOR PROTECTION BEFORE USE.
ELECTRICAL SHOCK OR FLASH WILL CAUSE SEVERE INJURY OR DEATH.

DANGER
HAZARDOUS VOLTAGE

DANGER
HAZARDOUS VOLTAGE
DO NOT DEFEAT OR REMOVE PROTECTION CIRCUITRY.
Do Not Defeat or Remove Items Such as Ground Fault or Earth Leakage or Operate Without Shunt Trip Breaker.

DANGER
HAZARDOUS VOLTAGE
Electrical shock will cause severe injury or death.

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.

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

PLEASE REFER TO CORRECT CONTACTOR WIRING DIAGRAM FOR CONTROL CONTACTOR.

NO CIRCUIT CALIBRATION OR ADJUSTMENT EVER REQUIRED.

EN1001-300D,T/GF

REV	AUTH	DESCRIPTION	DRWN BY DATE	CHK BY DATE
B	ECN 2940	REVISED GF TEST TO 20mA; ADDED RESISTOR R80A.	DCS 11/10/08	
	ECN 2928	WELDSAFE 5000 (CR1) P/N 600695 SET SWITCH 8 TO CLOSED POSITION FOR 20mSEC RESPONSE TIME.	DPDII 2/29/08	
	ECN 2713	IN P/L: CR1 600695 (WELDSAFE 5000) WAS 309516.	DEC 3/22/02	
A	ECN 2892	CHGD SWITCH 2, 4 WAS P/N 30016, NOW SW2 IS P/N 302024 AND SW4 P/N 302025	2/15/07 DPD II	
—	—	ORIGINAL RELEASE		

ENTRON CONTROLS INC

SCALE	DATE	DRAWN BY	CHK'D BY	APPROVED BY
	4-27-98	DEC	DEC 4-27-98	

TOLERANCE UNLESS SPECIFIED: ANGLES: ± ½° DECIMALS: ± .010 FRACTIONS: ± 1/64
REVISED: REV LTR B; DATE DCS 1/5/11

WIRING DIAGRAM, EN1001-300/GF, "D" or "T" CABINET, with CIRCUIT BREAKER

DRAWING NUMBER 421377- REV B