

BRN/BLU To F3-A

SCR1 H1

SCR1 Wld To Circuit Breaker L1

SCR1 Wld Transformer H1 VIA T5

H1

L1

WHT PCB1-X2-2

RED PCB1-X2-1

TLS

YEL PCB1-X2-4

ORG PCB1-X2-3

Gate Leads To PCB1

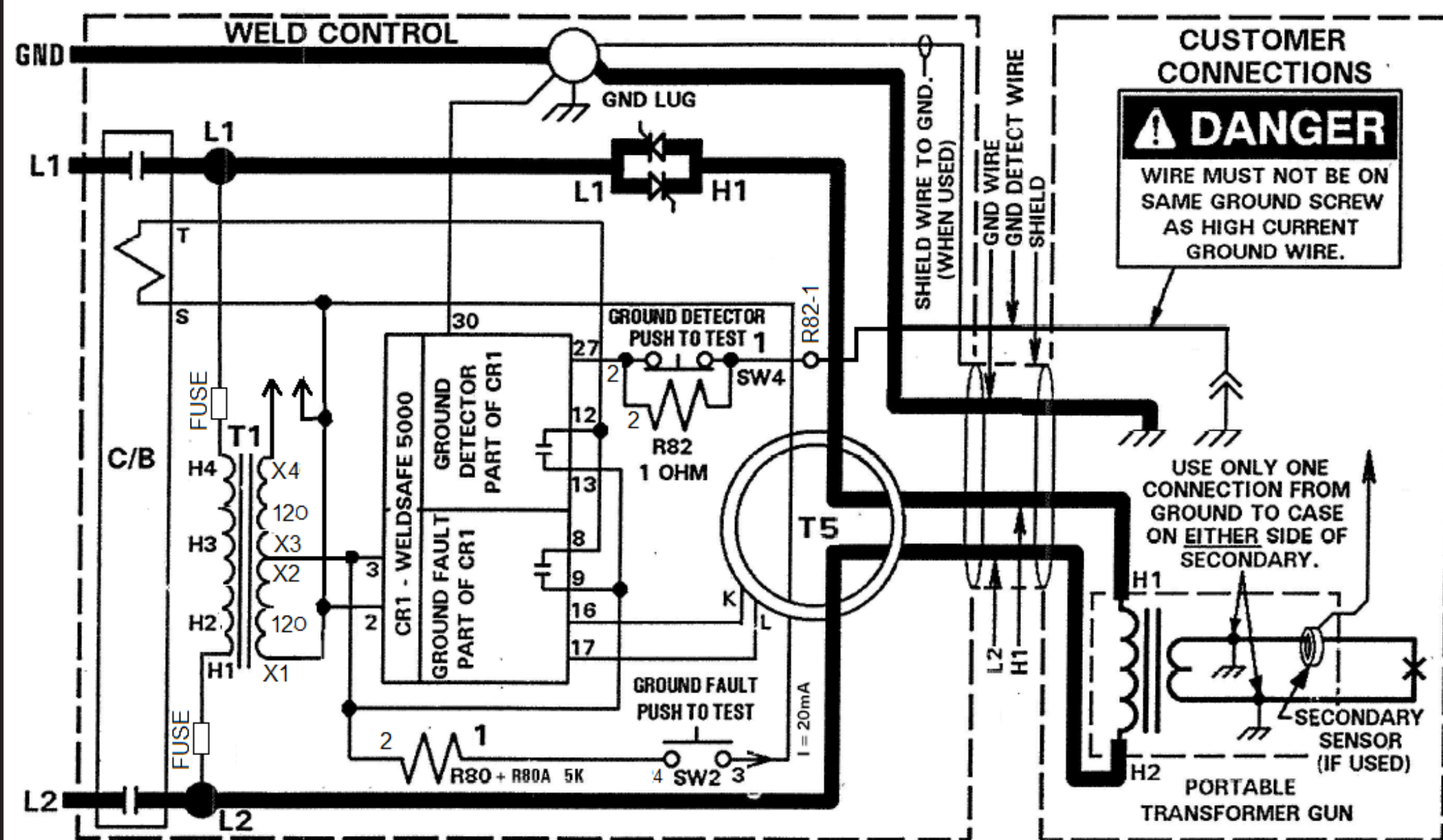
**TLS**

TO PCB1 P1-3


TO PCB1 P1-4

The diagram shows the PCB1 assembly with the following connections:

- To Weld Transformer H1 VIA T5**: A thick black line connects the top of the assembly to the transformer.
- To Circuit Breaker L1**: A thick black line connects the right side of the assembly to the circuit breaker.
- TO PCB1 P1-3** and **TO PCB1 P1-4**: Two lines connect the bottom left of the assembly to the PCB1.
- TLS**: A terminal block is connected to the bottom left of the assembly.
- Gate Leads To PCB1**: A bundle of four wires (WHT, RED, YEL, ORG) connects the right side of the assembly to the PCB1.
- BRN/BLU TO F3-A**: A thick black line connects the bottom of the assembly to the F3-A terminal.



**The ground fault test switch (SW2) and ground fault continuity switch (SW4) push to test buttons should be used periodically to test CR1 operation. The test buttons on face of CR1 need not to be used.**



**GROUND FAULT ADDITIONS  
D CABINET  
WITH 1200A/300A SCR**

## GROUND FAULT ADDITIONS D CABINET WITH 1200A/300A SCR

**F4 & F5 mounted on T2**  
**F5 1.25A 307025**

YEL RED 2 1 ORG RED TO F2-1

**F4 1.25A 307025**

RED YEL 2 1 BLU RED TO F1-1

F4, F5, T2 and PCB2 are optional and only included with ACV (AC Valve Option)

**T2 311027**

Line Voltage Options

Use for 120 VAC Valves  
Use for 120 VAC Valves

When not specified at time of order, Valve power supply will be wired for 24 VAC when shipped from factory.

**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.  
Electrical shock will cause severe injury or death.

**CUSTOMER CONNECTION**  
Connect R82-1 to weld gun case at some point different than earth bonding connection. See notes.

**600805**  
2 1 OHM R82 1 → GUN CASE  
YEL/ORG SW4-1

**600806**  
2 5K OHM R80&80A 1  
WHT/VIO SW2-4

**CR1 600695**  
13 GD COM  
12 GD NO  
9 GF COM  
8 GF NO  
DETECT 27  
COIL K 17  
COIL L 16  
2 120 L1

GND 30 GREEN GND BUS 3

BLK/YEL CR1-2  
VIO/BLK TS7-T  
BLK/BLU TOT1-X2  
BLK/BLU TS7-S  
BLK/BLU SW2-3 VIA T5  
BLK/YEL TOT1-X1  
BLK/YEL CR1-9  
BLA/YEL R80-2

YEL/ORG R82-1

**302025 SW4**  
GROUND DETECT

VIO/YEL R82-2  
WHT/VIO R80-1

**302024 SW2**  
GROUND FAULT

BLK/BLU CR1-3 VIA T5

SW2 & SW4 mounted on door below Timer

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

**GROUND BUS**

GREEN CR1-30

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

**NOTICE**

This weld cable 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.

**EXTERNAL WELDING TRANSFORMER**

H1 H2

**TS2 346025**

**T5 309514**

**SCR H1 CONTACTOR L1**  
See either 300A or 1200A at left side

**CB1 WITH SHUNT TRIP**

L2 L1

TS7 ST

BLK/BLU CR1-3  
VIO/BLK CR1-8

ORG/RED TO F2-1  
Part of standard Harness  
BLU/RED TO F1-1

**DANGER**  
SHOCK HAZARD  
ELECTRICAL SHOCK OR FLASH WILL CAUSE SEVERE INJURY OR DEATH.

**WELD TRANSFORMER H1 & H2 AND GROUND FAULT INTERRUPTER PUSH TO TEST WIRE ARE THE ONLY 3 CONDUCTORS THAT SHOULD PASS THROUGH THE ZERO CURRENT SENSOR.**

**NOTICE**

**SAFETY/INSTALLATION/OPERATION/MAINTENANCE NOTES**

**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 and 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 and ground continuity switch button, (SW1 and SW2 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 (located behind CR1 front plate) closed to put Relay in active mode.

Ground Detect wire **MUST** be connected to Gun Case (GND) at a point mechanically different from the High-Current Protection Ground. See view below.

A Ground wire **MUST** be connected to the Weld Control Cabinet Ground. This ground wire must be able to pass high currents and trip up stream protection devices. See RWMA bulletin 5.015.68.04.

Cable from Weld Control to Transgun must comply with RWMA Bulletin 5.015.68.04.

**WARNING**  
SHOCK HAZARD  
Electrical shock or flash will cause severe injury or death.

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

**PE**  
Connect the system directly to earth ground.

**ETRON**  
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www.etronelectronics.com  
e-mail: info@etronelectronics.com

**RWMA**  
Typical Diagram For details see Wiring Diagram

4601180

QTY	Part #	Description
1	308010	308010 FUSE HOLDER,ONE POLE,(SING.BAF
2	307025	FUSE;1 1/4A;TIME DELAY;13/32 X 1.5
1	311027	XFMR;POWER;100VA;208/230/380/460.115/24V
1	600695	Assembly, Ground Fault Relay, 60Hz, Weldsafe 5000
1	600805	Resistor, Assem din rail, 2W, 10%, 5K
1	600806	Resistor, Assem din rail, 1W, 5%, 1 ohm
1	309514	Ground Fault Current Coil
1	335017	Terminal Block, 2 Pole, 20A
1	318001-002	5" of 318001 Din Rail
2	318030	End Stop, Din Rail
1	346025	2 pole terminal block
1	302024	Switch Assem, Oil Tight, Push Button, Red, N/O, 22mm Consists of: 302022, 302023, 302019
1	302025	Switch Assem, Oil Tight, Push Button, Red, N/C, 22mm Consists of: 302020, 302023, 302019
1	322596	Harness Assembly,Components, EN6001, L or T Cab/GF
1	410412	EN6001,ADD ON, BD AC VALVES
1	460118	LABEL;GF SAFETY NOTICE;8X9.5
1	460122	LABEL;DANGER;GF COIL
1	460143	LABEL;DANGER VOLT&FLASH HAZ
1	460172	LABEL; SHUNT TRIP TERM. STRIP
1	460198	LABEL;DANGER;SHOCK HAZARD TEST
1	460251	LABEL;FUSE;FNQ-R-1/4 OR KLDR
1	460281	LABEL;DANGER;DO NOT OPERATE
1	460339	LABEL;GROUND FAULT FOR EN1701 'T' CAB
1	460344	LABEL;NOTICE;THIS CONTROL...

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REV	AUTH	DESCRIPTION			CH'KD BY DATE
<div style="text-align: right;">400054</div> <h1 style="text-align: center;">ENTRON</h1>					
SCALE	DATE	DRAWN BY	CH'KD BY	APPROVED BY	
<b>none</b>	<b>10/2/20</b>	<b>DCS</b>	<b>DCS</b>	<b>DCS</b>	
TOLERANCE UNLESS SPECIFIED			REVISED		
ANGLES		± 1/2°	REV LTR		
DECIMALS:		± .010	APPROVED BY		
FRACTIONS		± 1/64	DATE		
<b>Wiring Diagram, EN6001, 'D' Cabinets</b> <b>GF ADDITIONS</b>					
NEXT ASSUMED ON			DRAWING NUMBER		REV
<b>EN6001 SERIES</b>			<b>421561</b>		<b>01</b>