



220V Battery Health Tester Manual

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ELECTRICAL REQUIREMENTS

- Input Voltage = 220VAC / 50Hz
- Input Current = 5A
- Battery Voltage = 0VDC to 120VDC
- Max Battery Load Current = 1500A
- Duty Cycle = 10 second start delay, 15 second load test, 15 minute cool down

CAUTIONS

- **DO NOT disconnect the tester from the 220VAC source until the red TEST / COOLDOWN light is off and the green READY light is on again.**
- **DO NOT attempt to perform another test until the red TEST / COOLDOWN light is out (no longer blinking) and the green READY light is on.**
- **The tester can be disconnected from the 220VAC source and moved to another location for further testing ONLY when the green READY light is ON.**
- **BE EXTREMELY CAREFUL NOT TO TOUCH THE KNIFE SWITCH CONNECTION INSIDE THE LOCOMOTIVE CAB.**
- **BE EXTREMELY CAREFUL TO HOLD THE TEST LEAD BATTERY CONNECTORS ONLY BY THE INSULATED PART OF THE CLIP WHEN CONNECTING TO THE BATTERY BANKS.**

OPERATING PROCEDURE

1. Plug power cord into a 220VAC source.
2. Observe BATTERY #1 and BATTERY #2 voltmeters power up and display 0V.
3. Green READY light will become illuminated.
4. Connect the test leads: Black (NEG) to the (-) on battery bank 1; White (COM) to the common between the two battery banks; Red (POS) to the (+) on battery bank 2.
5. Connect the knife switch plug to the knife switch inside the locomotive cab behind the engineer's seat. Make sure to observe the top/bottom markings on the plug (top marked side up).
6. Record the BATTERY #1 and BATTERY #2 voltages displayed on the panel meters prior to performing the battery test.
7. Make sure that the green READY light is on.
8. Press the START/STOP button to begin the test.
9. Observe that the green READY light flashes for 10 seconds.
10. After 10 seconds the contactor will close, the red TEST / COOLDOWN light will illuminate steady, and the top strobe light will come on signaling the test is in progress.
11. The load test will remain in progress for 15 seconds, then the contactor will open, the strobe light will go out, and the red TEST / COOLDOWN light will blink signaling the 15 minute cool down period.
12. Record the end of test voltage displayed on the BATTERY #1 and BATTERY #2 voltmeters after the contactor is open and the red TEST / COOLDOWN light begins to blink. The end voltage will remain displayed on the voltmeters for 15 minutes.
13. The red TEST / COOLDOWN light will blink for the remainder of the 15 minute cooldown period.

Spare Parts

PART DESCRIPTION	HAPEMAN PART NUMBER	NOTES
Rigid 8" Solid Caster	HE2809PB8X2-R	
Swivel/Brake 8" Solid Caster	HE2809PB8X2-S	
Knife Switch Plug	HE280100	Comes as a complete assembly
Red Lion Meter w/Hapeman Programming	HE280PAXD0000	
250° Thermal Switch	HE280557-0017	
Red Battery Clip	HE280860-4540	
Black Battery Clip	HE280860-4530	
10" Cooling Fan	HE280592-0052x220	
Strobe Light	HE2805WF91x220	
4/0 600V Welding Connector Cable	HE28001771	assembly comes with 2 25' lengths of cable,4 lugs
Strobe Guard	HE280103	
Battery Test lead Sensor Cable	HE2804A-1803	
Meter Covers	HEBEZELKIT1	SET OF 2

TROUBLESHOOTING GUIDE

SYSTEM DOES NOT POWER UP UPON PLUGGING UNIT IN

- Check outlet for power.
- Verify power cable is not damaged.

FAN RUNS BUT NO GREEN OR RED LIGHTS

- Refer unit to a qualified service technician – DO NOT try to service the unit.

GFI TRIPS UPON PLUGGING UNIT IN

- Refer unit to a qualified service technician – DO NOT try to service the unit.

EITHER OR BOTH METERS DISPLAY 0.00 OR NEGATIVE VALUES AFTER CONNECTIONS ARE MADE

- Check test lead connections to make sure the connections are good and the leads are not reversed.
- Check test leads and clips for damage.

METER VALUES STAY THE SAME AFTER CONTACTOR CLOSES TO BEGIN TEST

- Check knife switch plug to make sure it is plugged in properly.
- Check knife switch plug and cables for damage.

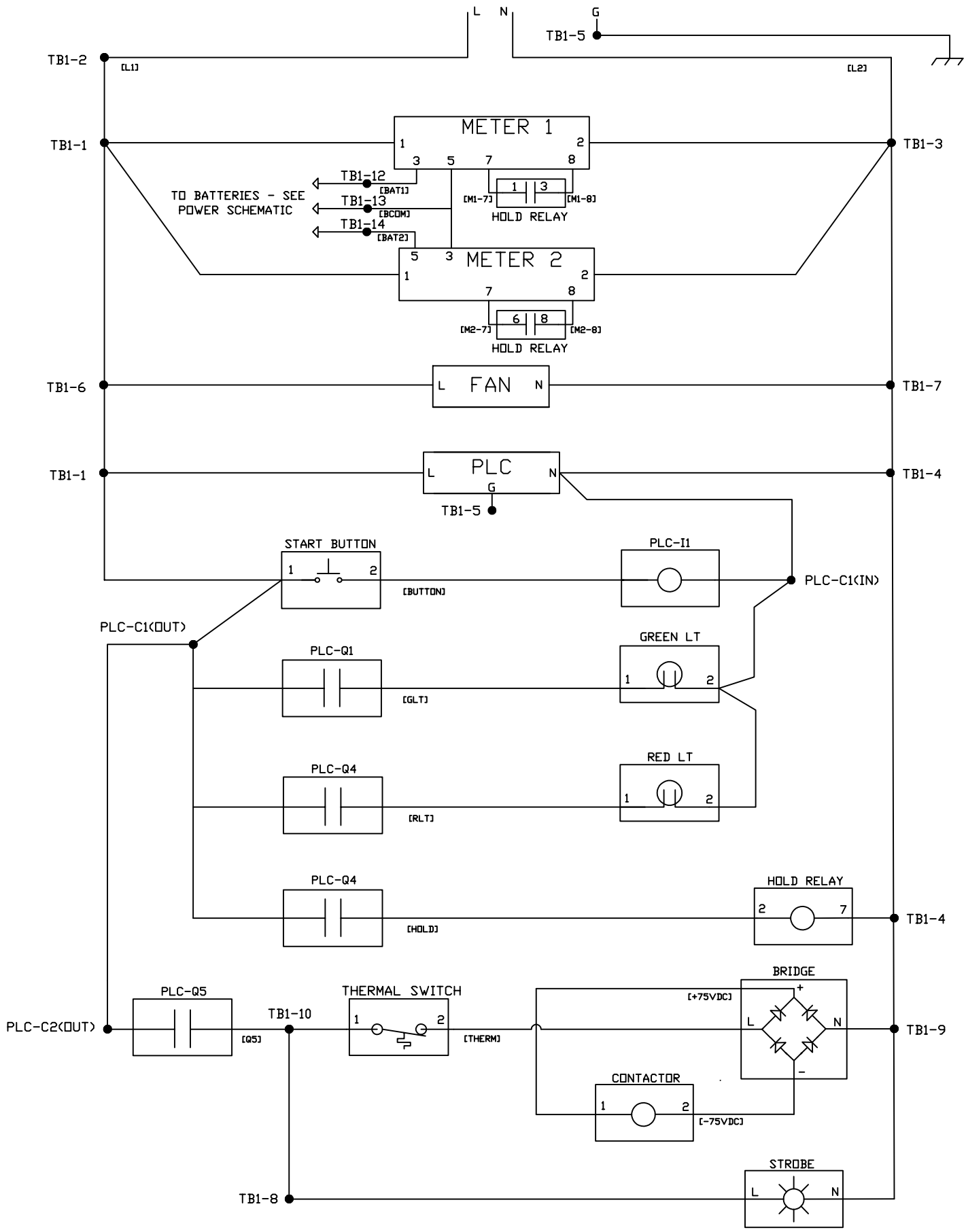
METERS DO NOT RETAIN VALUES AFTER 15 SECOND LOAD TEST ENDS

- Refer unit to a qualified service technician – DO NOT try to service the unit.

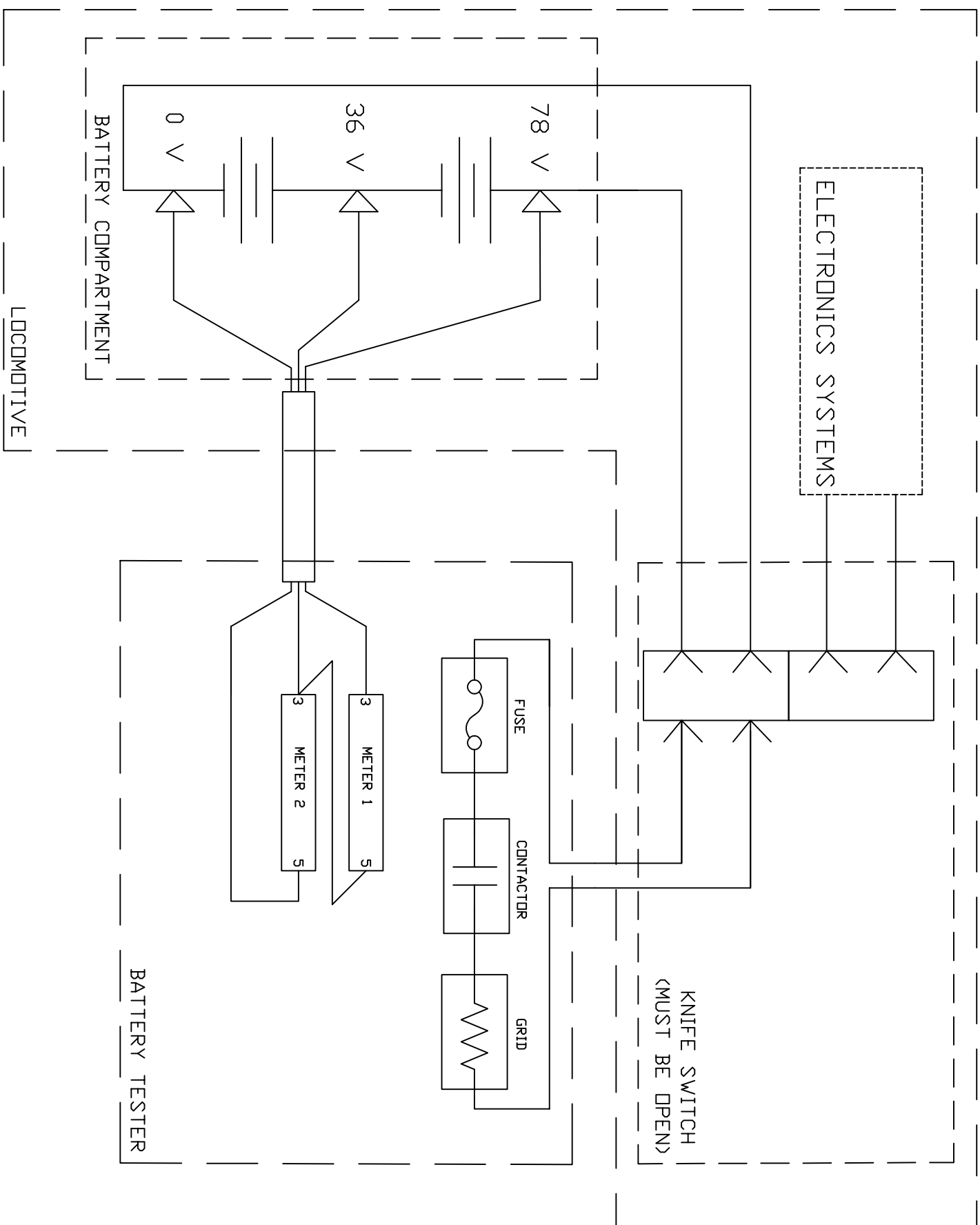
CONTACTOR DOES NOT CLOSE WHEN TEST START/STOP BUTTON IS DEPRESSED

- Thermal switch may be tripped – wait 15 minutes and try to start test again – if the contactor still does not close, refer unit to a qualified service technician.

220V PLUG



Drawn By: TDH Issued: 4-10-2019 Approved:		HAPEMAN ELECTRONICS 761 N. COTTAGE RD MERCER PA. 16137		Title: BATTERY TESTER LADDER Project: 28000 Drawing: A Sheet: 1 of 1 REV: C	
Made For: HAPEMAN					



Drawn By: TDH		Title: POWER SCHEMATIC	
Issued: 5-18-2018		Project: 28000	
Approved:		Drawing: 005	
Made For: HAPEMAN ELECTRONICS		Sheet: 1 of 1	
761 N. COTTAGE RD MERCER PA, 16137		REV: B	