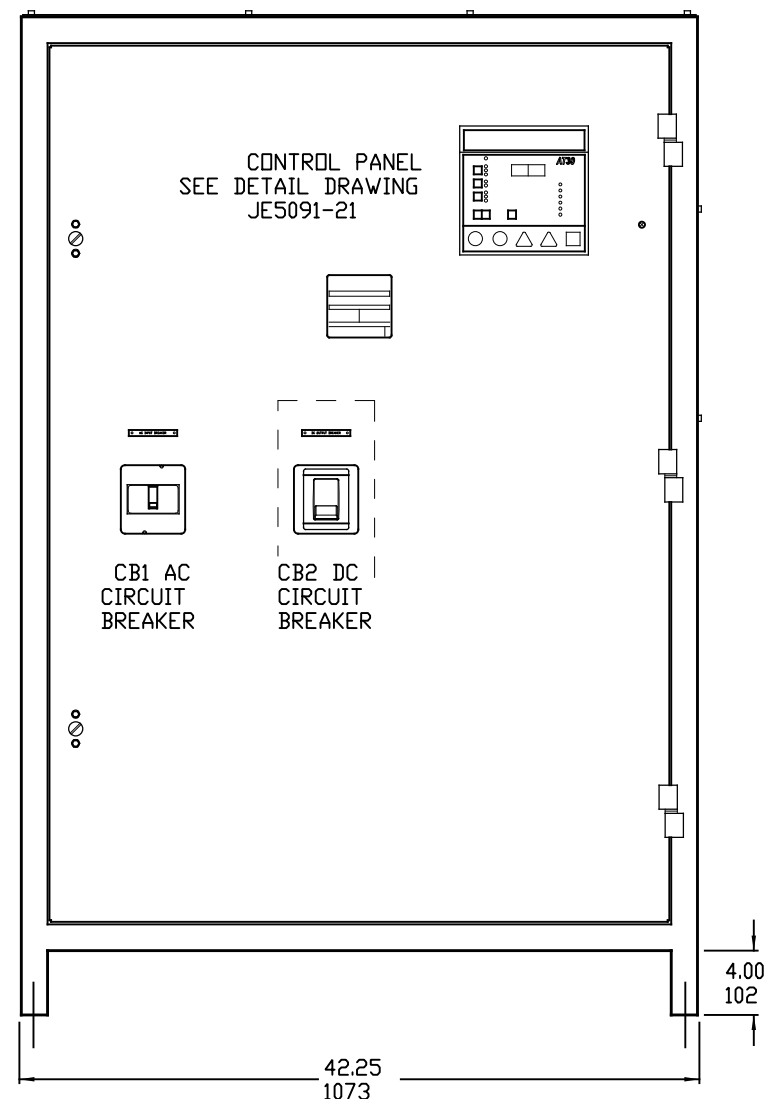
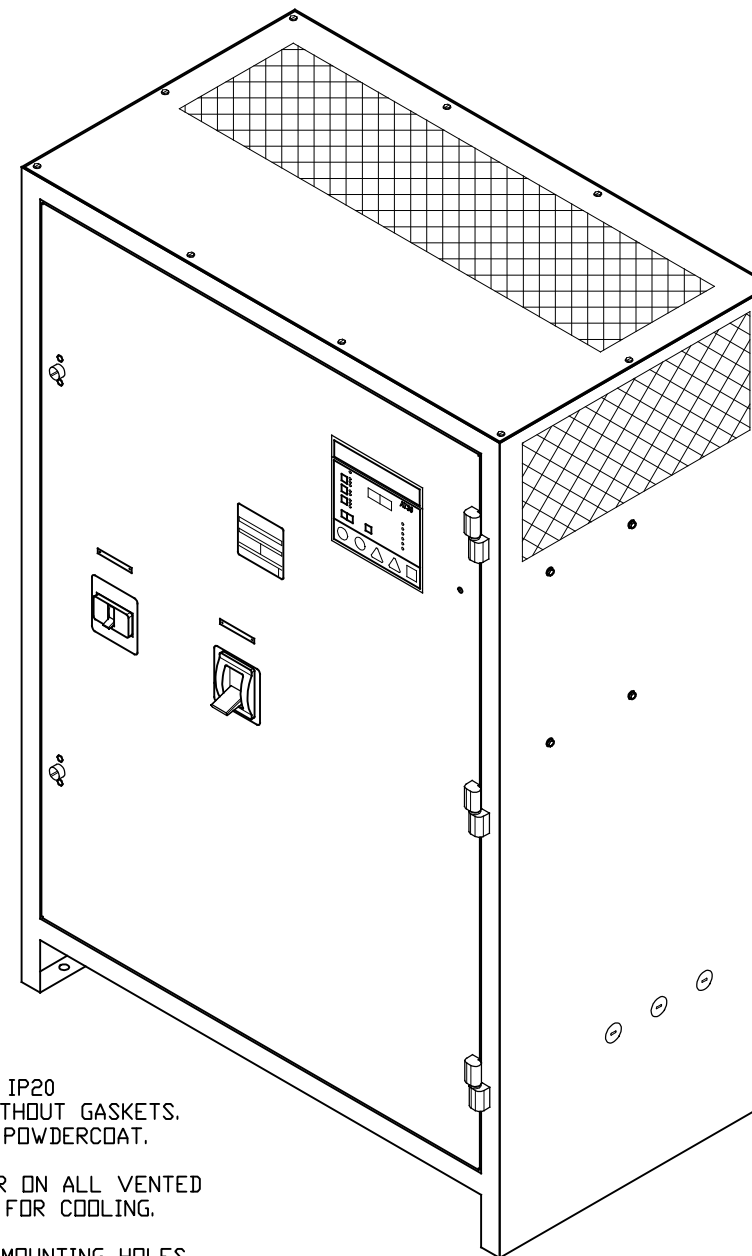
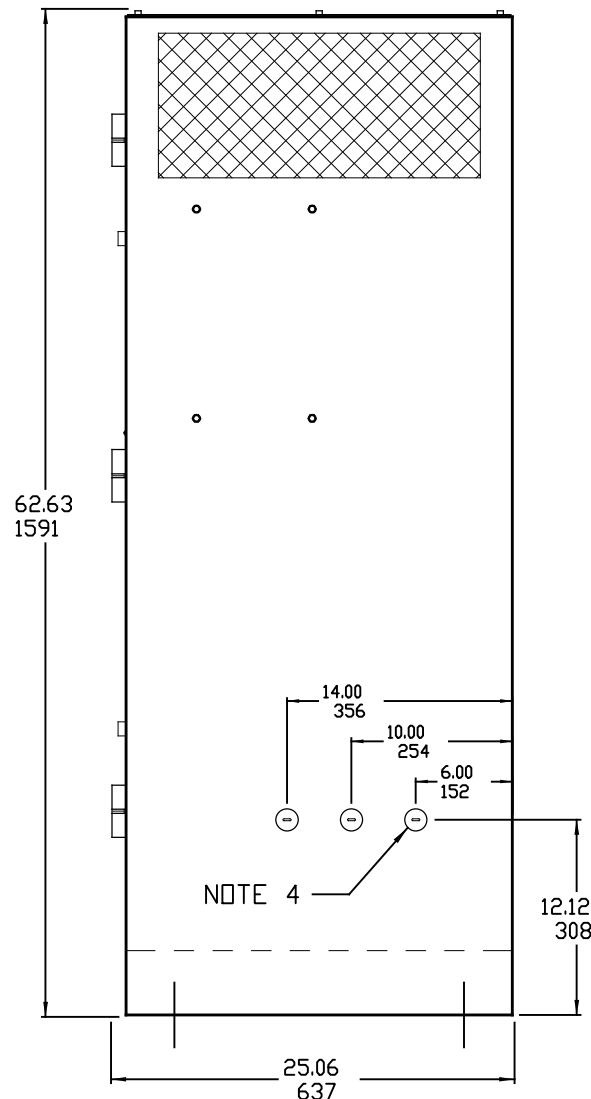


FRONT VIEW

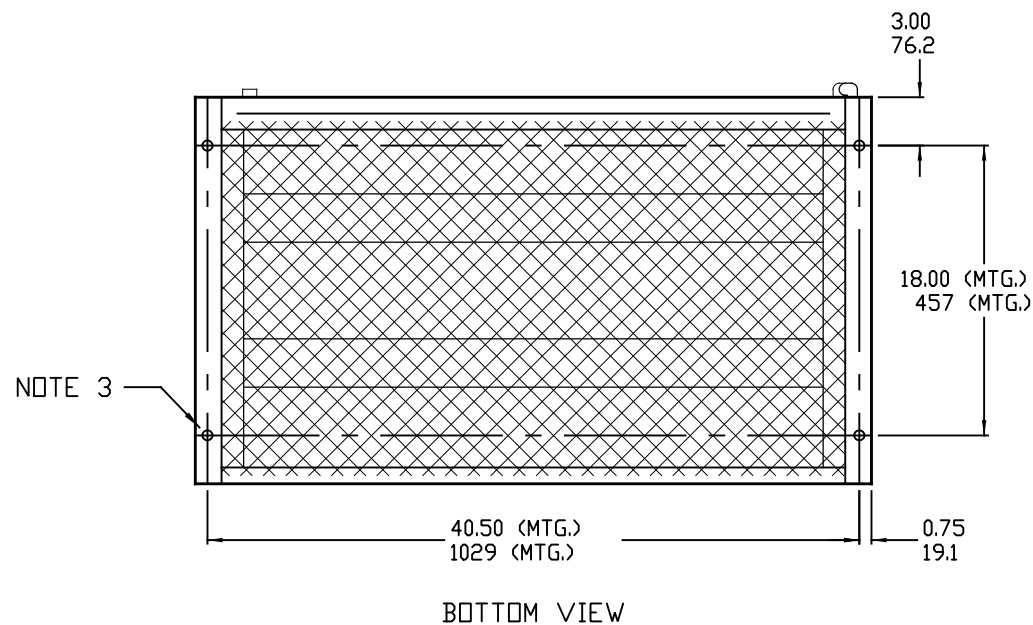


SIDE VIEW



NOTES:

- 1) ENCLOSURE IS A NEMA TYPE 1 / IP20 TOP-VENTED STEEL CABINET WITHOUT GASKETS. FINISH IS ANSI-61 GRAY EPOXY POWDERCOAT.
- 2) ALLOW 6in / 152mm OF FREE AIR ON ALL VENTED SURFACES (TOP, SIDES & REAR) FOR COOLING.
- 3) FOUR (4) 0.625in / 16mm FLOOR-MOUNTING HOLES ARE PROVIDED ON BOTTOM OF ENCLOSURE AS SHOWN.
- 4) SIX (6) 1.31in / 33mm DIA STANDARD PRE-FAB CONDUIT KNOCKOUTS ARE PROVIDED AS SHOWN FOR 1in / 25mm CABLE ENTRY. BOTTOM CONDUIT ENTRY IS POSSIBLE THROUGH EXPANDED METAL UNDERSIDE. IF ADDITIONAL CONDUIT ENTRANCES ARE REQUIRED, ENCLOSURE SHOULD BE FIELD-MODIFIED BY INSTALLER.
- 5) BATTERY CHARGER SHIPPING WEIGHT: APPROXIMATELY TBD lb / TBD kg



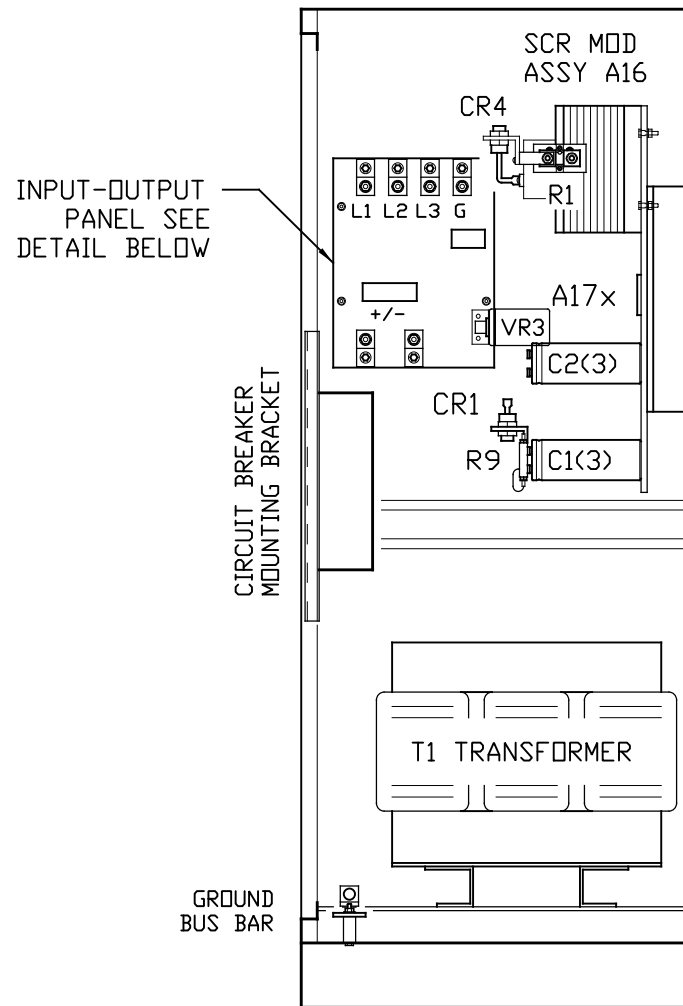
BOTTOM VIEW

DUAL DIMENSIONS in mm

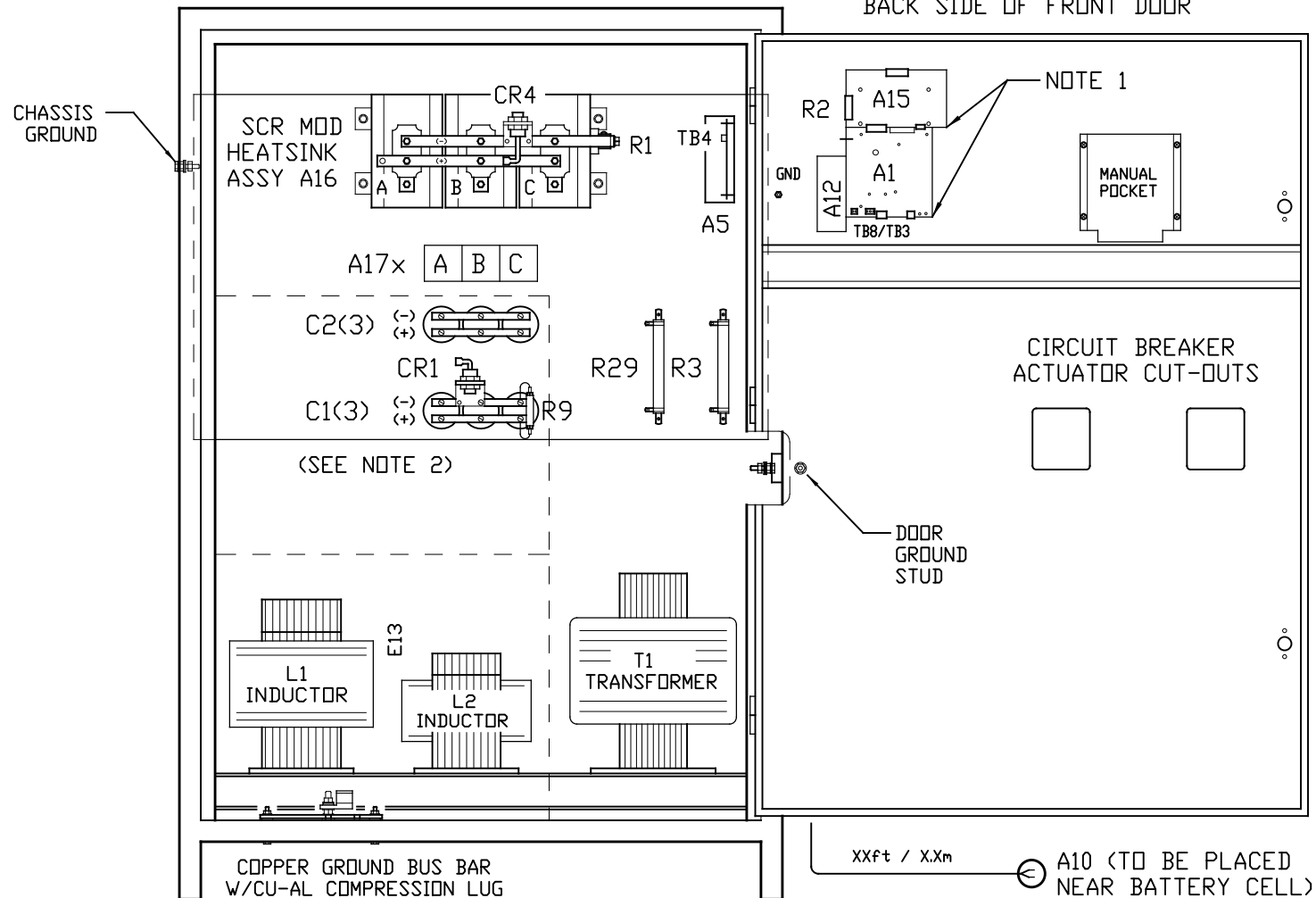
250-600ADC W/ COMMON OPTIONS

			THIRD ANGLE PROJECTION		1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com	
			DRAWN BY KJB 110921		TITLE AT30 BATTERY CHARGER OUTLINE: NEMA-1 STYLE-163 ENCLOSURE	
			ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LOG		DRAWING No JE5095-21	
0 -N/A- 110921			UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		REV 0 B	
REV	ECN No	DATE	SCALE NTS SALES No		SHEET 1 OF 1	

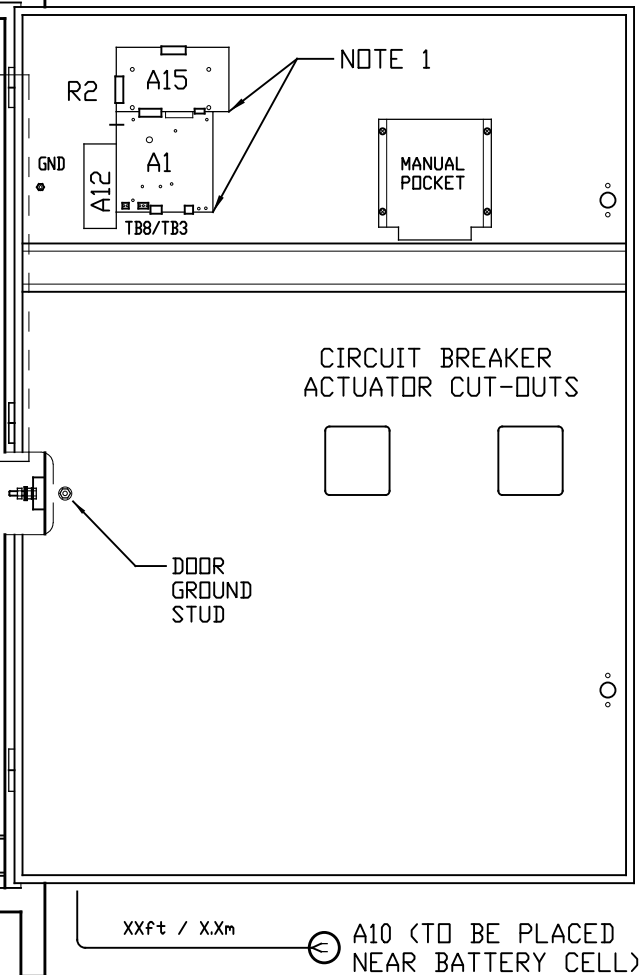
LEFT INSIDE VIEW



FRONT VIEW



BACK SIDE OF FRONT DOOR



SYM	STANDARD COMPONENT DESCRIPTION
A1	MAIN CONTROL PC BOARD
A15	THREE PHASE GATE DRIVER PC BRD
A16	6-PULSE SCR MODULE HEATSINK ASSY
A17x	SCR SNUBBER PC BOARD - QTY. (3)
C4	EMI OUTPUT FILTER CAP (NEG-GND)
C5	EMI OUTPUT FILTER CAP (POS-GND)
CB1	AC INPUT CIRCUIT BREAKER (Bx3)
CB2	DC OUTPUT CIRCUIT BREAKER (LAL2)
CR4	FREE-WHEELING DIODE
L1	MAIN INDUCTOR
R1	MAIN DC SHUNT, NEG(-) BUS
R2	CURRENT RATING RESISTOR
R3	PWR SUPPLY BALLAST RES (130VDC)
T1	POWER ISOLATION TRANSFORMER
TB1	I/O TERMINAL BOARD
TB2	INT DC VOLTAGE (+/-) CONTACTS
TB3	SUMMARY ALARM CONTACTS
TB8	OPT. TEMPCO PROBE TERM BLOCK
TB21	INTERNAL GROUND (-) CONTACTS
VR1	OUTPUT SURGE SUPPRESSOR (+TO-)
VR2	INPUT SURGE SUPPRESSOR (LINE 1)
VR4	INPUT SURGE SUPPRESSOR (LINE 2)
VR5	INPUT SURGE SUPPRESSOR (LINE 3)
VR6	OUTPUT SURGE SUPPRESSOR (-)
VR7	OUTPUT SURGE SUPPRESSOR (+)

SYM	FEATURED OPTION COMP DESCRIPTION
A5	AUXILIARY ALARM RELAY PC BOARD
A10	TEMPERATURE COMPENSATION PROBE
A12	COMMUNICATIONS MODULE PC BOARD
C1x	DC OUTPUT FILTER CAPACITOR
CR1	POLARITY DIODE
C2x	BATTERY ELIMINATOR FILTER CAP
E13	INDUCTOR INTER-CONNECT POINT
L2	FILTER INDUCTOR
R9	FILTER CAP (C1) BLEED RESISTOR
R29	COMM PCB (A12) PWR RES (130VDC)
TB4	AUX ALARM PCB (A5) TERM BLOCK
VR3	AC INPUT LIGHTNING ARRESTOR

INPUT-OUTPUT PANEL SEE DETAIL BELOW

CIRCUIT BREAKER MOUNTING BRACKET

GROUND BUS BAR

CHASSIS GROUND

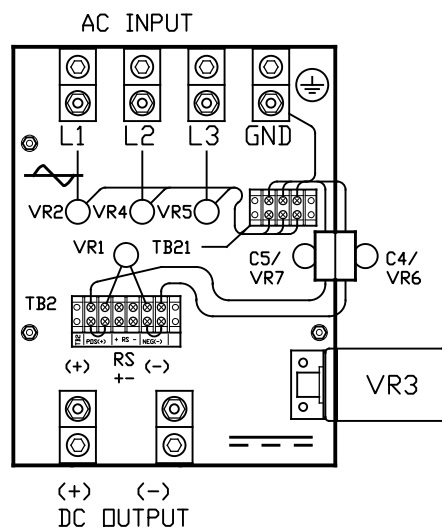
NOTE 1

CIRCUIT BREAKER ACTUATOR CUT-OUTS

XXft / X.Xm A10 (TO BE PLACED NEAR BATTERY CELL)

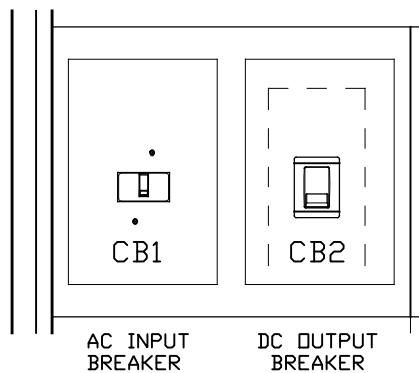
COPPER GROUND BUS BAR W/CU-AL COMPRESSION LUG

I/O TERMINAL BOARD (TB1) DETAIL



NOTES:

- FOR DETAIL VIEWS OF ALL PC BOARDS (A1, A5, A15, A17, etc.) SEE DRAWING JE5091-21.
- CIRCUIT BREAKER(S) MOUNTED ON LEFT SIDE BRACKET, NOT SHOWN FOR CLARITY OF VIEW.



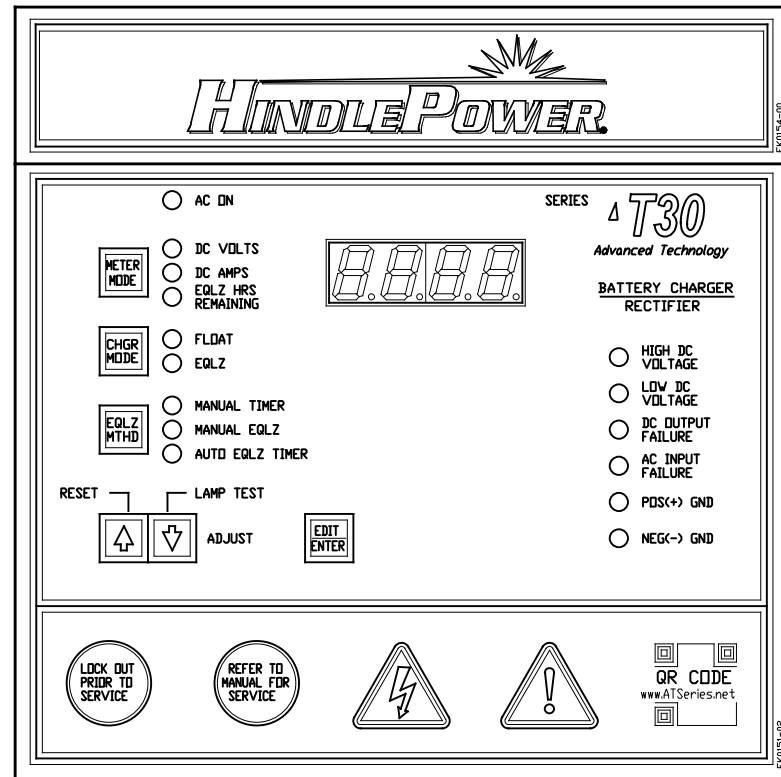
CIRCUIT BREAKER MOUNTING BRACKET

I/O TERMINAL	DESCRIPTION - TYPE	CONNECTION
TB1(+)	POS(+) DC OUTPUT TERMINAL - CU-ALUMINUM COMPRESSION LUG	#6 AWG-350 MCM
TB1(-)	NEG(-) DC OUTPUT TERMINAL - CU-ALUMINUM COMPRESSION LUG	#6 AWG-350 MCM
REM SENSE(+/-)	POS/NEG REMOTE SENSE TERMINALS - 6-32 BINDER HEAD SCREW	#16-14 AWG
(2) TB1-GND	USER GROUND TERMINAL - CU-ALUMINUM COMPRESSION LUG	#6 AWG-350 MCM
TB1-L1/L2/L3	AC INPUT TERMINALS - CU-ALUMINUM COMPRESSION LUG	#6 AWG-350 MCM
TB3	SUMMARY ALARM TERMINAL BLOCK - SOLDERLESS COMP SCREW	#22-14 AWG
TB4	AUX ALARM RELAY (A5) TERM BLOCK - SOLDERLESS COMP SCREW	#22-14 AWG
TB8	TEMPCO PROBE (A10) TERM BLK - SOLDERLESS COMP SCREW	#22-14 AWG

250-600ADC W/ COMMON OPTIONS

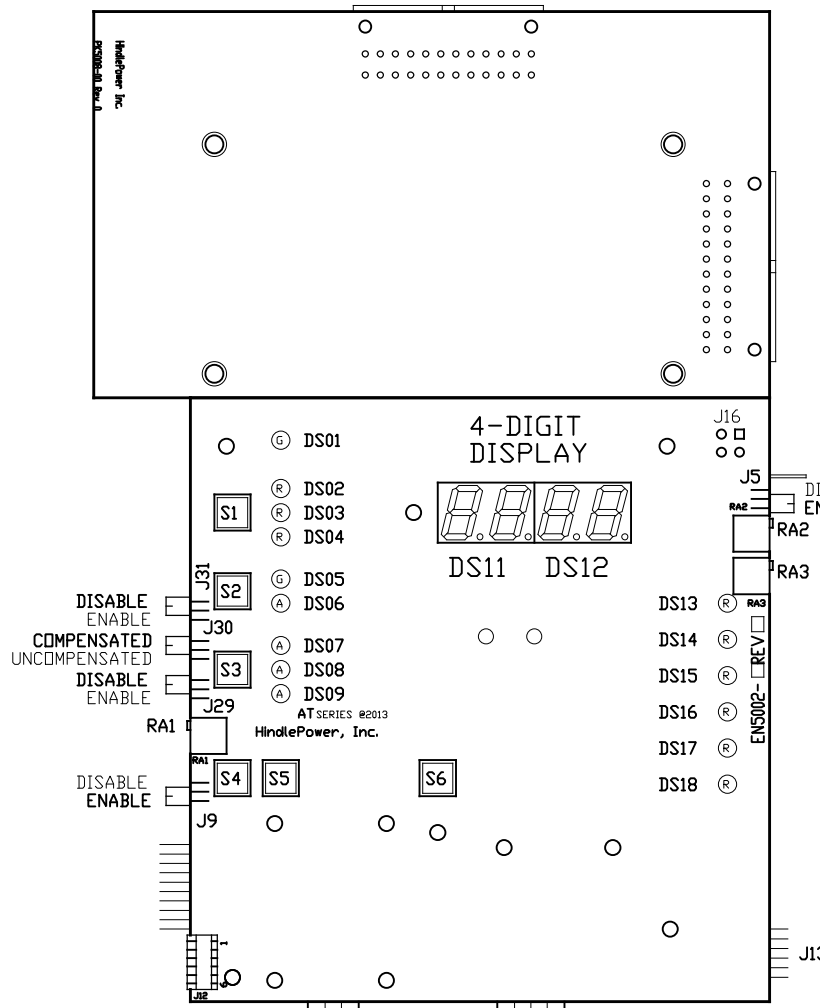
THIRD ANGLE PROJECTION					1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com	
DRAWN BY KJB 110921			TITLE AT30 SERIES BATTERY CHARGER INTERNAL COMPONENT LAYOUT: STYLE-163			
ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LOG			DRAWING No JE5098-21		REV 0	B
0 -N/A- 110921			UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		SCALE NTS SALES No SHEET 1 OF 1	
REV	ECN No	DATE				

- INDICATOR LIGHTS (LEDs):
- |                                     |                                  |
|-------------------------------------|----------------------------------|
| DS01 - GREEN - AC ON                | DS10 - RED - LOW LEVEL DETECT    |
| DS02 - RED - DC VOLTS               | DS11 - RED - (METER DISPLAY)     |
| DS03 - RED - DC AMPERES             | DS12 - RED - (METER DISPLAY)     |
| DS04 - RED - EQUALIZE HRS REMAINING | DS13 - RED - HIGH DC VOLTAGE     |
| DS05 - GREEN - FLOAT                | DS14 - RED - LOW DC VOLTAGE      |
| DS06 - AMBER - EQUALIZE             | DS15 - RED - DC OUTPUT FAILURE   |
| DS07 - AMBER - MANUAL TIMER         | DS16 - RED - AC INPUT FAILURE    |
| DS08 - AMBER - MANUAL EQUALIZE      | DS17 - RED - POS(+) GROUND FAULT |
| DS09 - AMBER - AUTO EQUALIZE TIMER  | DS18 - RED - NEG(-) GROUND FAULT |



CONTROL PANEL  
(p/n FK0151-01)

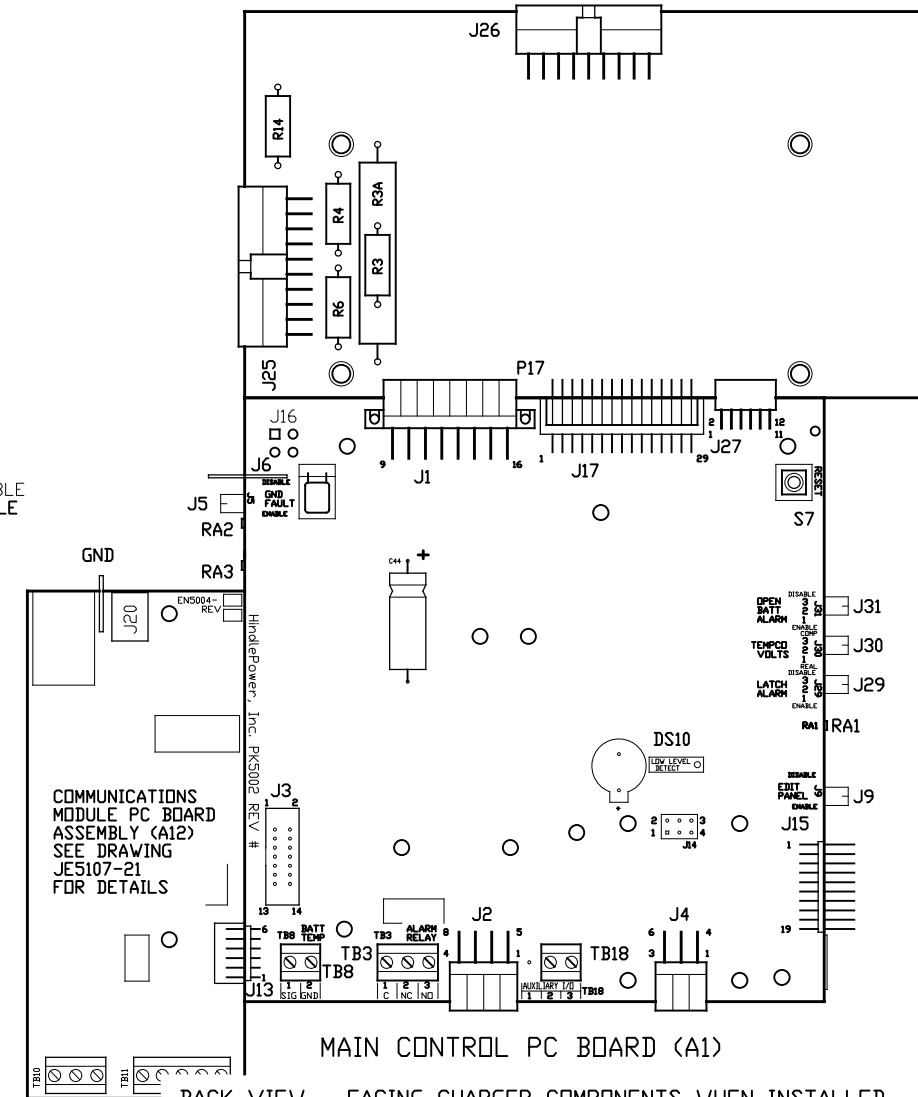
THREE PHASE GATE DRIVER PC BOARD (A15)



MAIN CONTROL PC BOARD (A1)

FRONT VIEW - FACING CHARGER DOOR WHEN INSTALLED

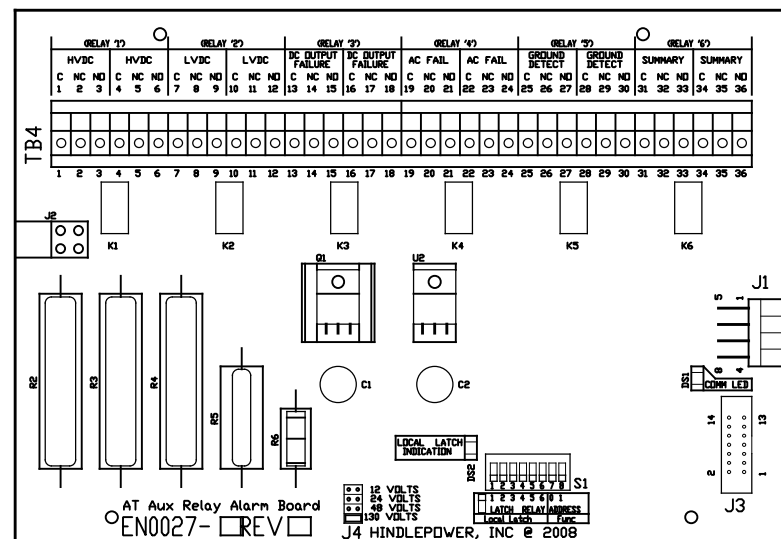
THREE PHASE GATE DRIVER PC BOARD (A15)



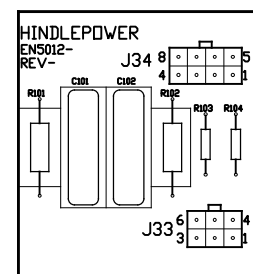
MAIN CONTROL PC BOARD (A1)

BACK VIEW - FACING CHARGER COMPONENTS WHEN INSTALLED

NOTE: UNLESS OTHERWISE SPECIFIED, ALL ALARM TERMINAL BLOCKS (TB3/TB4/TB8) ARE SOLDERLESS COMPRESSION SCREW TERMINALS, ACCEPTING #22-14 AWG WIRE. ALL ALARM CONTACTS SHOWN IN NON-ALARM STATE, WITH CHARGER ENERGIZED AND ALARM RELAYS ENERGIZED (FAIL SAFE). ALL ALARM CONTACTS WILL CHANGE STATE WHEN CHARGER IS POWERED DOWN. CONTACT RATING IS 0.5A @ 125VAC/VDC RESISTIVE.



AUXILIARY ALARM RELAY PC BOARD (A5)



SCR SNUBBER  
PC BOARD (A17x)  
THREE (3) REQ'D  
PER CHARGER

USER JUMPERS:

- J1 - not used with 3PH (MAINFRAME SIGNAL HARNESS)
- J2 - AUX ALARM RELAY BOARD (A5) SERIAL CONNECTOR
- J4 - FORCED LOAD SHARING CABLE INTERCONNECTOR
- J5 - GROUND FAULT ENABLE/DISABLE
- J6 - EARTH GROUND CONNECTOR
- J9 - FRONT PANEL ENABLE/DISABLE (LOCKOUT)
- J13 - COMMUNICATIONS PC BOARD (A12) INTERCONNECTOR
- J17 - 3PH GATE DRIVER PC BOARD (A15) INTERCONNECTOR
- J25 - MAINFRAME CONTROL SIGNAL HARNESS
- J26 - SCR FIRING CONTROL HARNESS (3 PHASE/6 PULSE)
- J27 - 3PH GATE DRIVER PC BOARD (A15) INTERCONNECTOR
- J29 - LATCHING ALARMS ENABLE/DISABLE SELECTOR
- J30 - TEMPCD VOLTAGES (COMPENSATED/UNCOMP) SELECTOR
- J31 - BATTERY OPEN ALARM ENABLE/DISABLE SELECTOR

SWITCHES:

- S1 - METER MODE
- S2 - CHARGER MODE
- S3 - EQUALIZE METHOD
- S4 -  $\Delta$  ADJUST
- S5 -  $\nabla$  ADJUST
- S6 - EDIT / ENTER
- S7 - PROCESSOR MANUAL RESET

TERMINAL BLOCKS:

- TB3 - SUMMARY ALARM RELAY CONTACTS
- TB4 - AUX ALARM RELAY CONTACTS
- TB8 - OPT TEMPCD PROBE (A10) CONN
- TB18 - REM SHUTDOWN INTERFACE

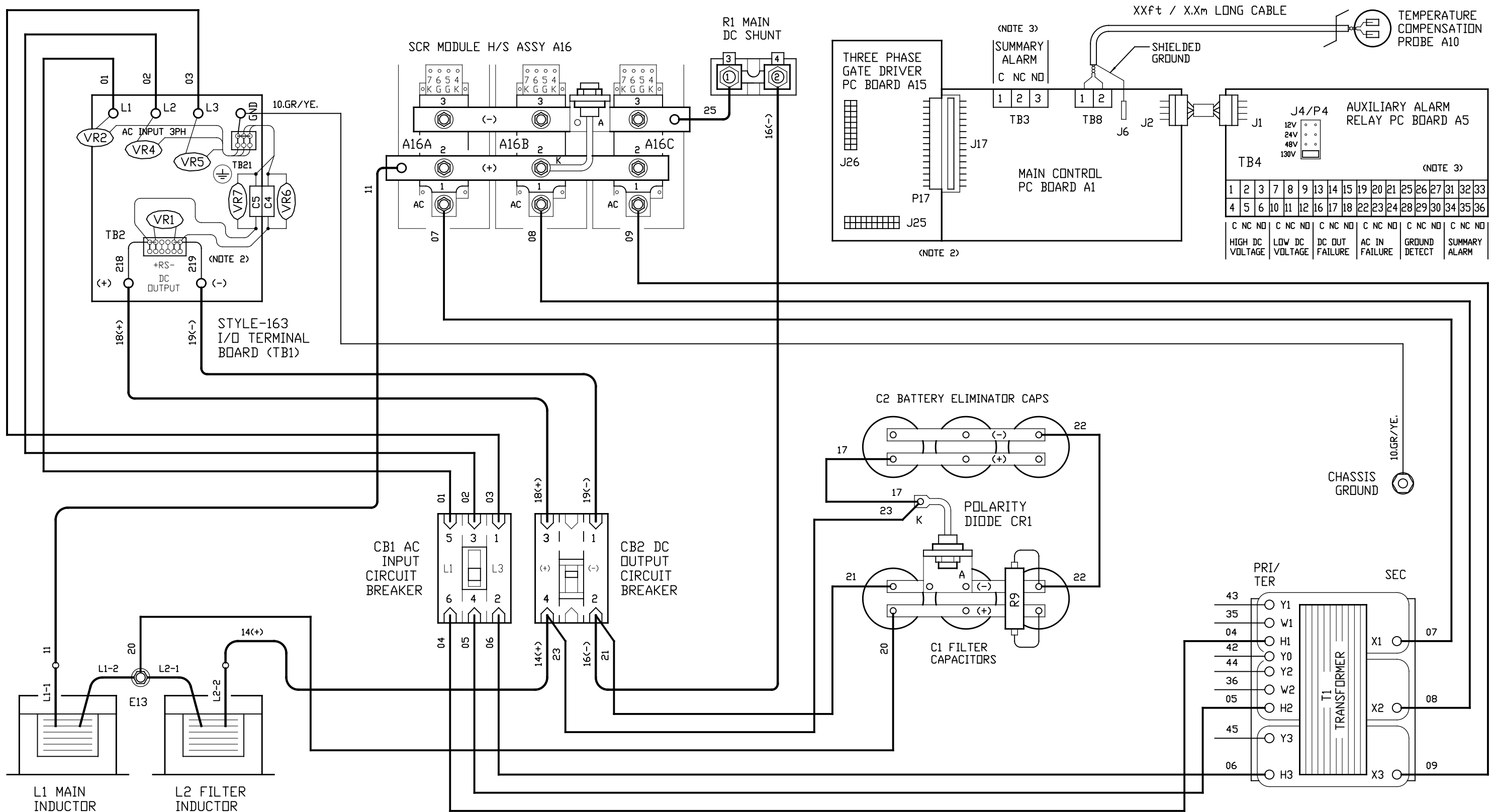
A5-J1 CONNECTED TO  
A1-J2 VIA EHS045-0#  
8-PIN SERIAL CABLE

- OTHER CONTROLS:
- RA1 - LOW LEVEL DETECT ADJUST
  - RA2 - GROUND FAULT BALANCE
  - RA3 - GROUND FAULT SENSITIVITY

- NON-USER ACCESSED JUMPERS:
- J3 - OLD A5 RIBBON CONNECTOR
  - J12 - BOARD PROGRAMMING
  - J14 - OLD FORCED LOAD SHARING
  - J15 - MANUFACTURING TEST
  - J16 - OLD INTERNAL TEMP

0	-N/A-	110921	THIRD ANGLE PROJECTION
REV	ECN No	DATE	

DRAWN BY KJB 110921		250-600ADC W/ COMMON OPTIONS	
ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LOG		 1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com	
UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		<b>TITLE</b> AT30 SERIES BATTERY CHARGER CONTROL PANEL / PC BOARD DETAIL <b>DRAWING No</b> JE5091-21 <b>REV</b> 0 <b>B</b>	
SCALE NTS		SALES No	
SHEET 1 OF 1		FILENAME [JH0016-21.DWG]	



NOTES:

- 1) CHARGER COMPONENTS ARE CONNECTED WITH FLAME-RETARDANT SWITCHBOARD INSULATION SYSTEM (SIS) TYPE WIRING, IDENTIFIED ON EACH END WITH NUMBER-CODED WIRE MARKERS. GROUND WIRES ARE GREEN WITH YELLOW STRIPE. DIODES (CR1 & CR4) ARE ANODE-MOUNTED TYPE, WIRE TO CATHODE.
- 2) THIS DRAWING (SHEET 1) SHOWS THE MAINFRAME POWER WIRING AND USER CONNECTION CONTACTS TO CONTROL PC BOARDS (A1 & A5). SEE SHEET 2 FOR ALL CONTROL (SIGNAL) WIRING, INCLUDING REMOTE SENSE MODIFICATIONS, IF APPLICABLE.
- 3) STANDARD USER ALARM CONTACTS (TB3, TB4, etc.) ARE SOLDERLESS COMPRESSION SCREW TERMINALS, ACCEPTING #22-14 AWG WIRE.

FEATURED OPTIONS:

- STANDARD DC OUTPUT FILTERING
- BATTERY ELIMINATOR FILTER CAPS
- AC INPUT CIRCUIT BREAKER
- DC OUTPUT CIRCUIT BREAKER
- AUXILIARY ALARM RELAY PC BOARD

- EXTERNAL TEMPCD REMOTE PROBE

REV	ECN No	DATE	THIRD ANGLE PROJECTION
0	-N/A-	110921	DRAWN BY KJB 110921
			ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LOG
			UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:

250-600ADC W/ COMMON OPTIONS

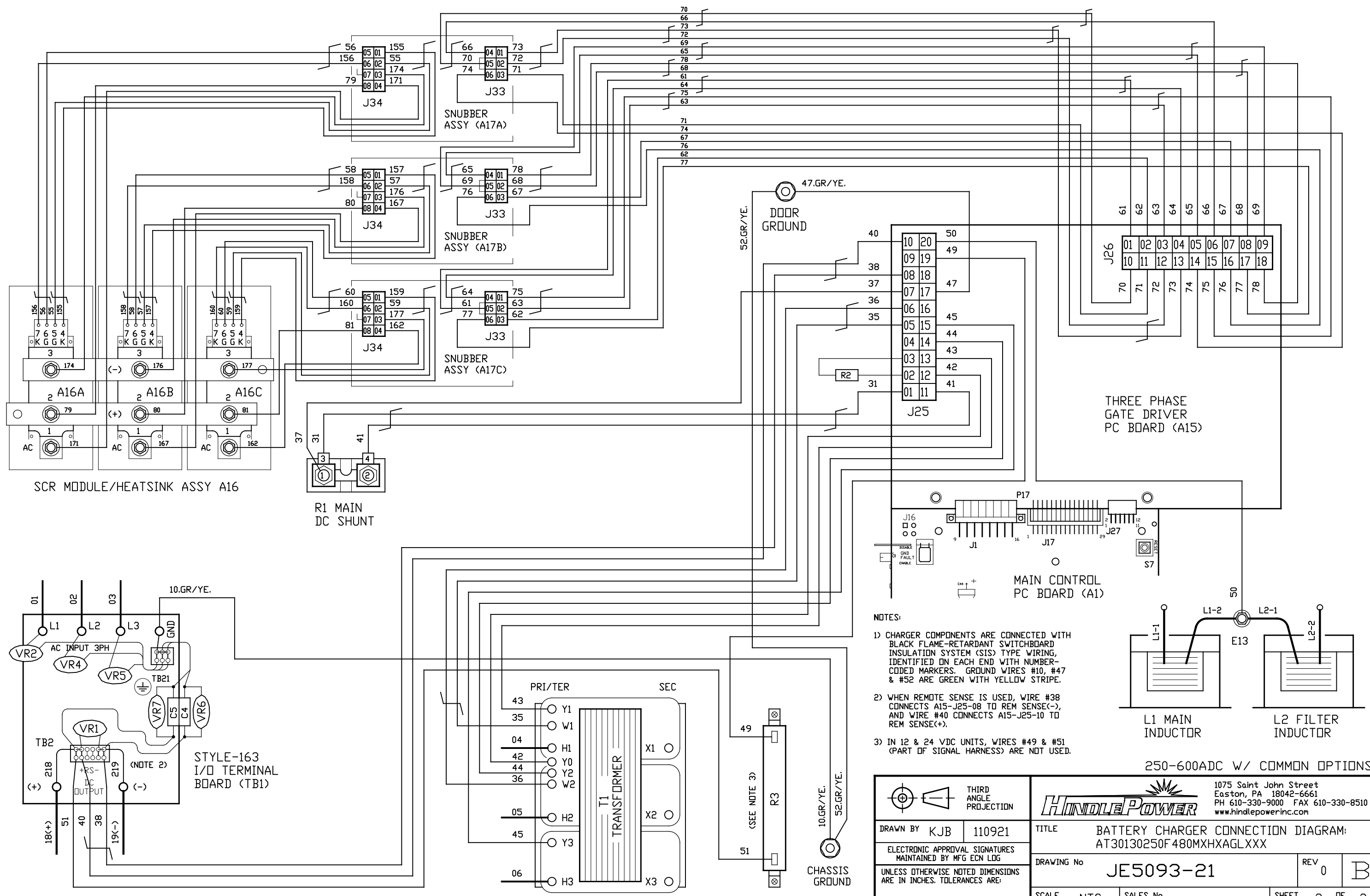
1075 Saint John Street  
Easton, PA 18042-6661  
PH 610-330-9000 FAX 610-330-8510  
www.hindlepowerinc.com

**HINDLEPOWER**

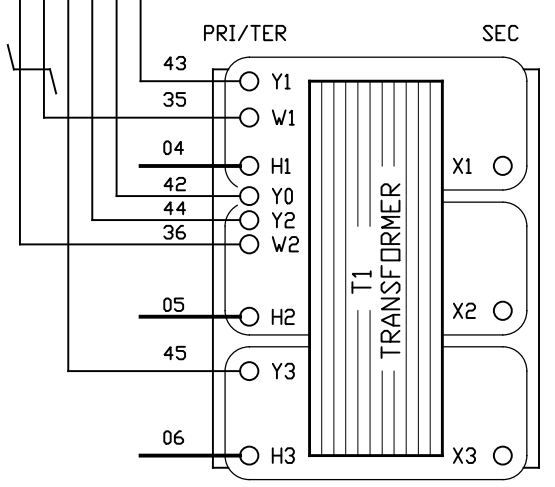
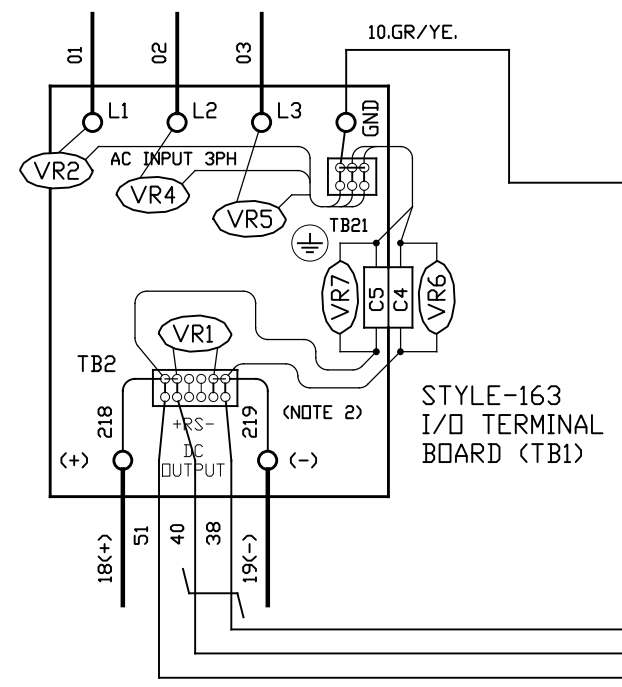
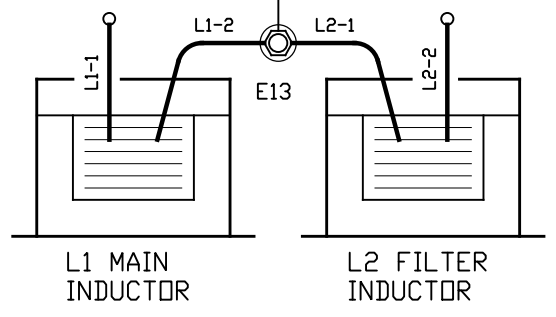
TITLE BATTERY CHARGER CONNECTION DIAGRAM:  
250-600ADC W/ COMMON OPTIONS

DRAWING No JE5093-21 REV 0 B

SCALE NTS SALES No SHEET 1 OF 2



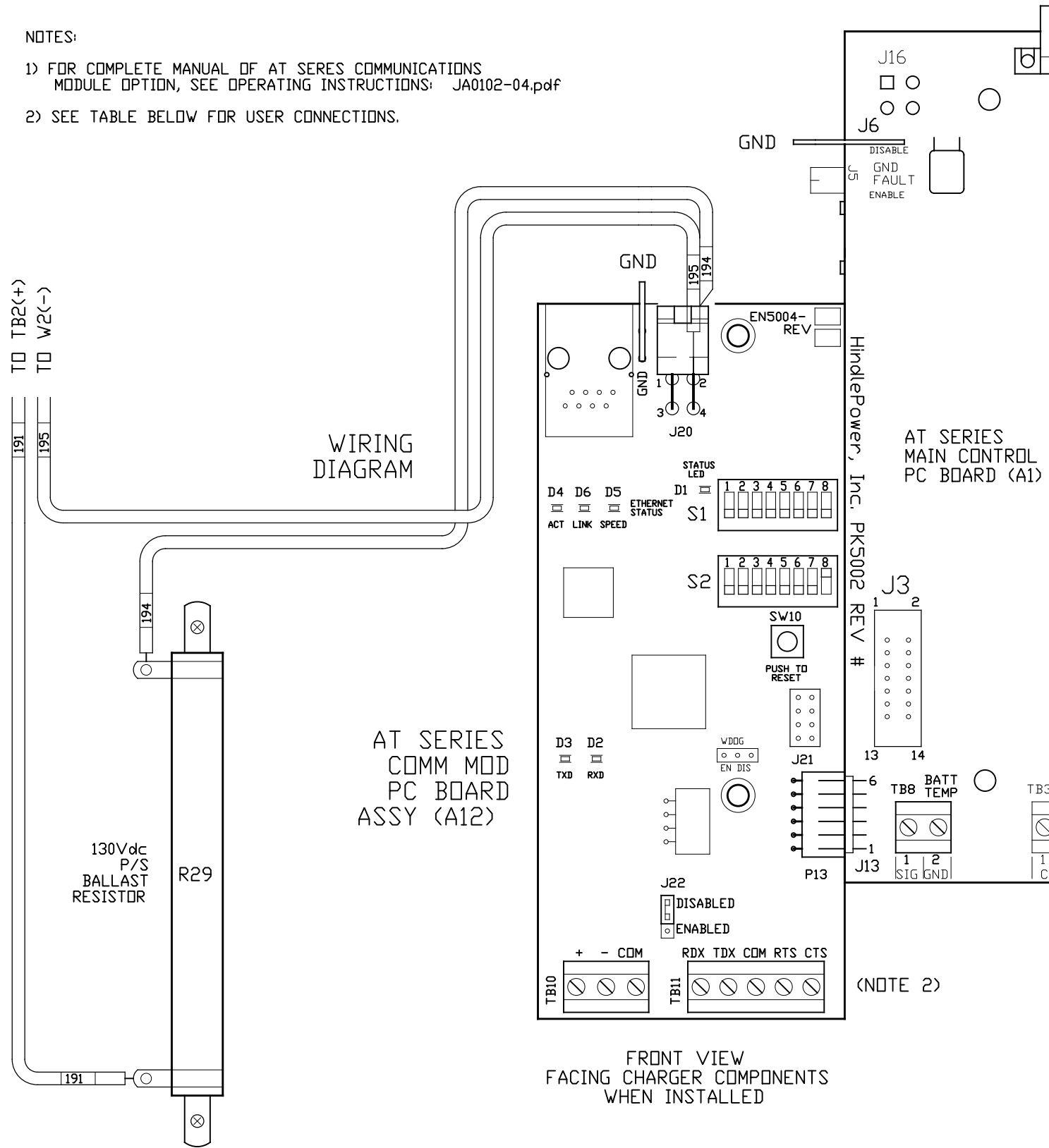
- NOTES:
- 1) CHARGER COMPONENTS ARE CONNECTED WITH BLACK FLAME-RETARDANT SWITCHBOARD INSULATION SYSTEM (SIS) TYPE WIRING, IDENTIFIED ON EACH END WITH NUMBER-CODED MARKERS. GROUND WIRES #10, #47 & #52 ARE GREEN WITH YELLOW STRIPE.
  - 2) WHEN REMOTE SENSE IS USED, WIRE #38 CONNECTS A15-J25-08 TO REM SENSE(-), AND WIRE #40 CONNECTS A15-J25-10 TO REM SENSE(+).
  - 3) IN 12 & 24 VDC UNITS, WIRES #49 & #51 (PART OF SIGNAL HARNESS) ARE NOT USED.



THIRD ANGLE PROJECTION				1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com	
DRAWN BY KJB ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LOG UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:	110921	TITLE BATTERY CHARGER CONNECTION DIAGRAM: AT30130250F480MXHXAGLXXX		DRAWING No <b>JE5093-21</b>	REV 0 <b>B</b>
SCALE NTS	SALES No	SHEET 2 OF 2		FILENAME [JH0016-21.DWG]	

NOTES:

- 1) FOR COMPLETE MANUAL OF AT SERIES COMMUNICATIONS MODULE OPTION, SEE OPERATING INSTRUCTIONS: JA0102-04.pdf
- 2) SEE TABLE BELOW FOR USER CONNECTIONS.



- INDICATOR LIGHTS:**
- D1 - STATUS LED, SPI COMM
  - D2 - RXD, SERIAL RECEIVE LED
  - D3 - TXD, SERIAL TRANSMIT LED
  - D4 - ACT, ETHERNET ACTIVITY LED
  - D5 - SPEED, ETHERNET 10/100 LED
  - D6 - LINK, ETHERNET STATUS LED
- JUMPERS / CONNECTORS:**
- J20 - POWER SUPPLY CONNECTION
  - J21 - FACTORY CONNECTION
  - J22 - RS-485 TERMINATING RESISTOR (ENABLE/DISABLE)
  - P13 - PLUG FOR MAIN CONTROL PCB (A1) (J13 CONNECTION)
- SWITCHES:**
- S1 - CONFIGURATION DIP SWITCHES
  - S2 - MODBUS ADDRESS DIP SWITCHES
  - SW10 - RESET BUTTON

I/O TERMINAL	DESCRIPTION - TYPE	CONNECTION
TB10	RS-485 SERIAL TERMINALS - SOLDERLESS COMPRESSION SCREW	#22-14 AWG
TB11	RS-232 SERIAL TERMINALS - SOLDERLESS COMPRESSION SCREW	#22-14 AWG
GND	PC BOARD GROUND TERMINAL - SLIP-ON TAB	QC LUG

0	-N/A-	110921	<p>THIRD ANGLE PROJECTION</p>
REV	ECN No	DATE	

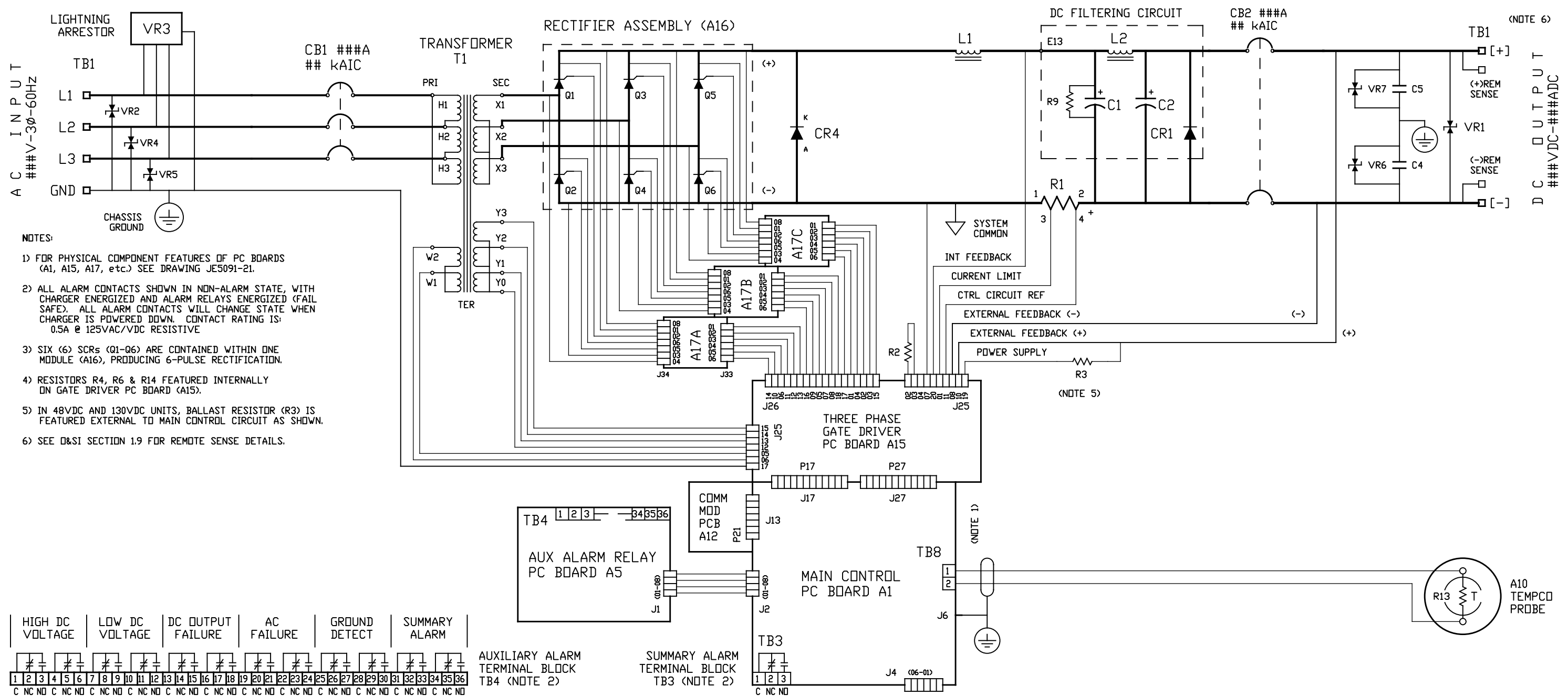
250-600ADC W/ COMMON OPTIONS

1075 Saint John Street  
 Easton, PA 18042-6661  
 PH 610-330-9000 FAX 610-330-8510  
[www.hindlepowerinc.com](http://www.hindlepowerinc.com)

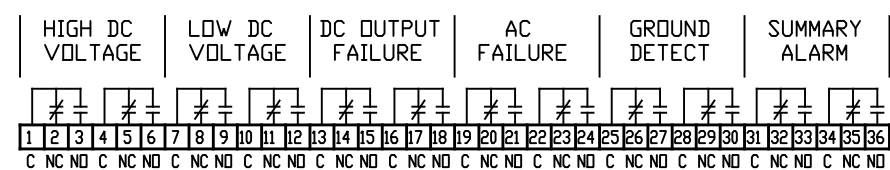
**TITLE** AT SERIES BATTERY CHARGER COMMUNICATIONS MODULE DETAIL (STANDARD)

**DRAWING No** JE5107-21      **REV** 0      **B**

**SCALE** NTS      **SALES No**      **SHEET** 1 OF 1



- NOTES:
- 1) FOR PHYSICAL COMPONENT FEATURES OF PC BOARDS (A1, A15, A17, etc.) SEE DRAWING JE5091-21.
  - 2) ALL ALARM CONTACTS SHOWN IN NON-ALARM STATE, WITH CHARGER ENERGIZED AND ALARM RELAYS ENERGIZED (FAIL SAFE). ALL ALARM CONTACTS WILL CHANGE STATE WHEN CHARGER IS POWERED DOWN. CONTACT RATING IS: 0.5A @ 125VAC/VDC RESISTIVE
  - 3) SIX (6) SCRS (Q1-Q6) ARE CONTAINED WITHIN ONE MODULE (A16), PRODUCING 6-PULSE RECTIFICATION.
  - 4) RESISTORS R4, R6 & R14 FEATURED INTERNALLY ON GATE DRIVER PC BOARD (A15).
  - 5) IN 48VDC AND 130VDC UNITS, BALLAST RESISTOR (R3) IS FEATURED EXTERNAL TO MAIN CONTROL CIRCUIT AS SHOWN.
  - 6) SEE Q&SI SECTION 1.9 FOR REMOTE SENSE DETAILS.



STANDARD AT30 COMPONENTS:	STANDARD AT30 COMPONENTS:	SUPPLIED AT30 OPTION COMPONENTS:	SUPPLIED AT30 OPTION COMPONENTS:
A1 MAIN CONTROL PC BOARD (NOTE 1) A15 THREE PHASE GATE DRIVER PC BOARD (NOTE 1) A16 6-PULSE SCR (Q1-Q6) MODULE (NOTE 3) A17A SCR SNUBBER ASSY PC BOARD (NOTE 1) A17B SCR SNUBBER ASSY PC BOARD (NOTE 1) A17C SCR SNUBBER ASSY PC BOARD (NOTE 1) C4 DC OUTPUT EMI FILTER CAPACITOR (-) TO GROUND C5 DC OUTPUT EMI FILTER CAPACITOR (+) TO GROUND CB1 AC INPUT CIRCUIT BREAKER CB2 DC OUTPUT CIRCUIT BREAKER CR4 FREE-WHEELING DIODE L1 MAIN INDUCTOR Q1 SILICON-CONTROLLED RECTIFIER (A16A) (NOTE 3) Q2 SILICON-CONTROLLED RECTIFIER (A16A) (NOTE 3) Q3 SILICON-CONTROLLED RECTIFIER (A16B) (NOTE 3) Q4 SILICON-CONTROLLED RECTIFIER (A16B) (NOTE 3) Q5 SILICON-CONTROLLED RECTIFIER (A16C) (NOTE 3) Q6 SILICON-CONTROLLED RECTIFIER (A16C) (NOTE 3)	R1 MAIN DC SHUNT, NEG(-) BUS R2 CURRENT RATING RESISTOR R3 POWER SUPPLY BALLAST RESISTOR (NOTE 5) R4 EXTERNAL SCALING RESISTOR (+) (NOTE 4) R6 INTERNAL SCALING RESISTOR (NOTE 4) R14 EXTERNAL SCALING RESISTOR (-) (NOTE 4) T1 POWER ISOLATION TRANSFORMER (+10/-12%) TB1 INPUT/OUTPUT TERMINAL BLOCK TB3 SUMMARY ALARM TERMINAL BLOCK (NOTE 2) TB8 OPTIONAL TEMPCD PROBE (A10) INTERCONNECTOR VR1 DC OUTPUT SURGE SUPPRESSOR (-) TO (+) VR2 AC INPUT SURGE SUPPRESSOR (LINE 1) VR4 AC INPUT SURGE SUPPRESSOR (LINE 2) VR5 AC INPUT SURGE SUPPRESSOR (LINE 3) VR6 DC OUTPUT SURGE SUPPRESSOR (-) TO GROUND VR7 DC OUTPUT SURGE SUPPRESSOR (+) TO GROUND	DC FILTERING ASSEMBLY: C1 DC OUTPUT FILTERING CAPACITOR CR1 POLARITY DIODE E13 INDUCTOR INTERCONNECTION POINT L2 FILTERING INDUCTOR R9 FILTER CIRCUIT BLEED RESISTOR C2 BATTERY ELIMINATOR FILTER CAPACITOR A5 AUXILIARY ALARM RELAY PC BOARD (NOTE 1) TB4 AUXILIARY ALARM (A5) TERMINAL BLOCK (NOTE 2) A10 EXTERNAL TEMPERATURE COMPENSATION PROBE R13 TEMPCD PROBE (A10) RESISTOR SEE T TEMPCD PROBE (A10) THERMISTOR JD5003-00 A12 COMMUNICATIONS MODULE PC BOARD (NOTE 1)	A10 EXTERNAL TEMPERATURE COMPENSATION PROBE R13 TEMPCD PROBE (A10) RESISTOR SEE T TEMPCD PROBE (A10) THERMISTOR JD5003-00 A12 COMMUNICATIONS MODULE PC BOARD (NOTE 1)

250-600ADC W/ COMMON OPTIONS

1075 Saint John Street  
 Easton, PA 18042-6661  
 PH 610-330-9000 FAX 610-330-8510  
 www.hindlepowerinc.com

**HINDLEPOWER**

TITLE BATTERY CHARGER SCHEMATIC:  
 250-600ADC W/ COMMON OPTIONS

DRAWING No JE5092-21 REV 0 B

SCALE NTS SALES No SHEET 1 OF 1