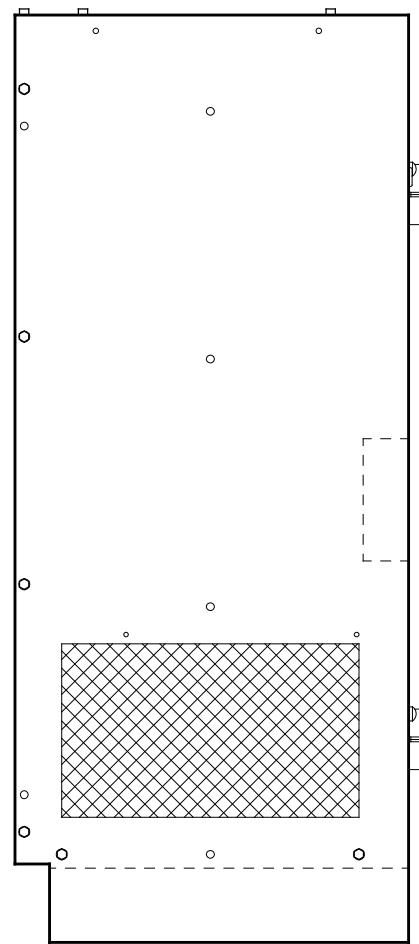
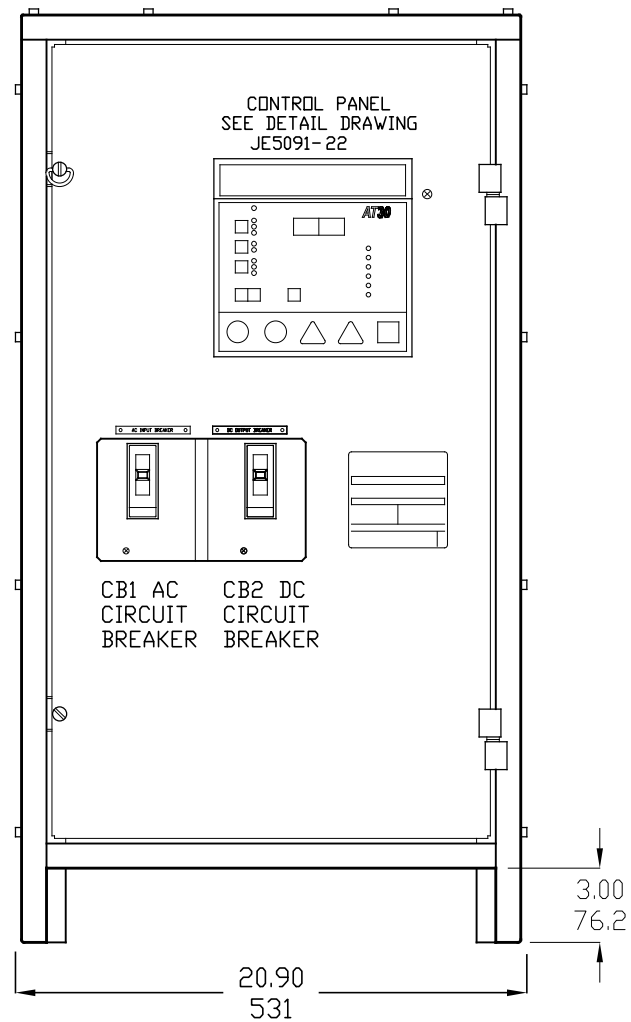


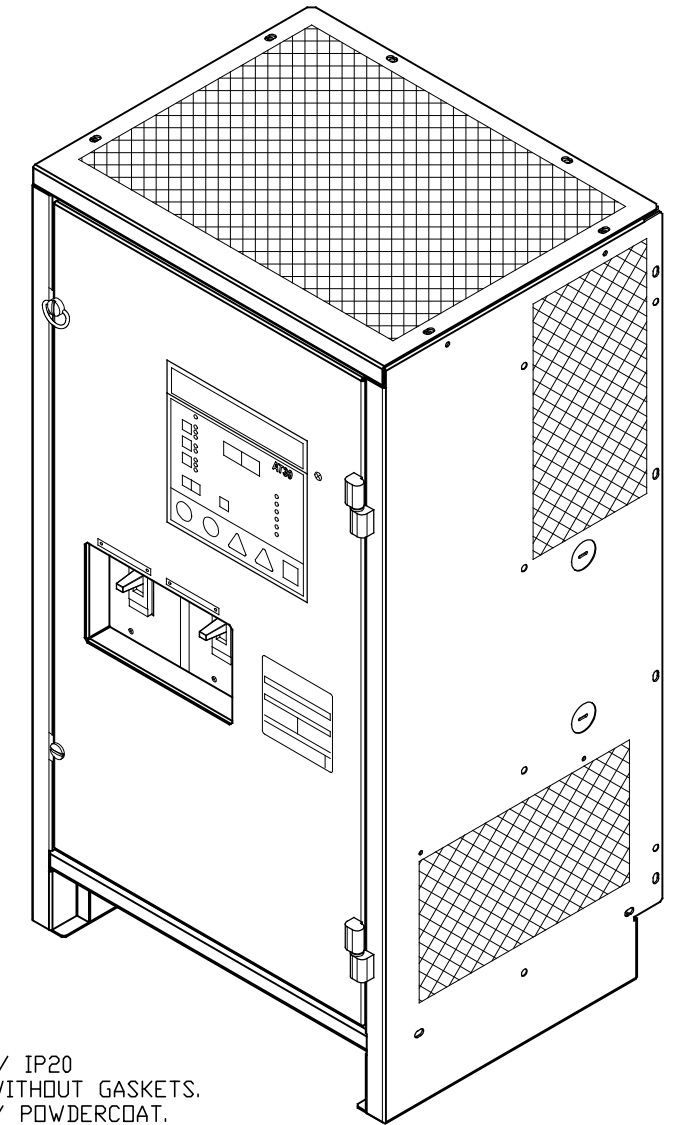
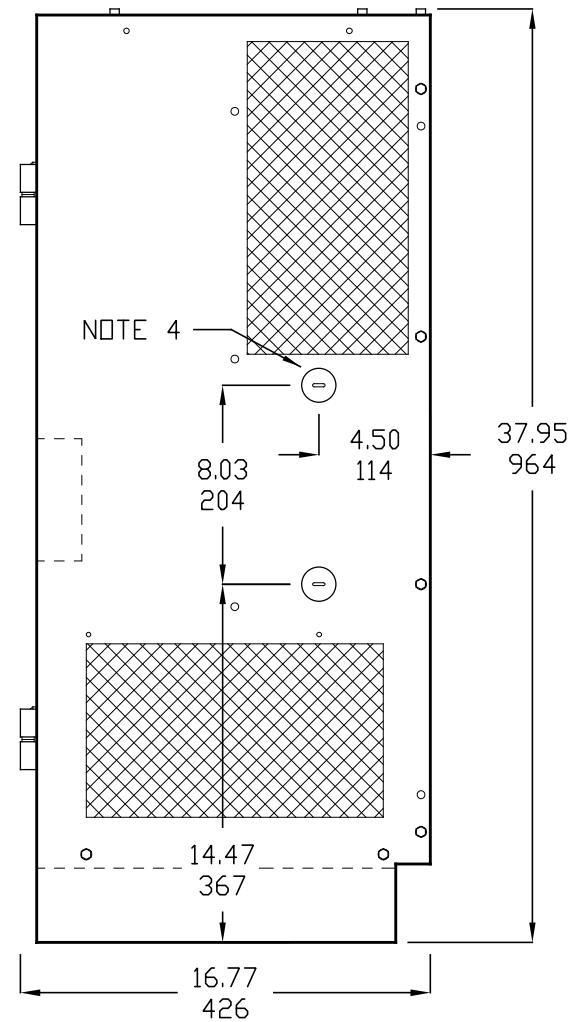
SIDE VIEW



FRONT VIEW



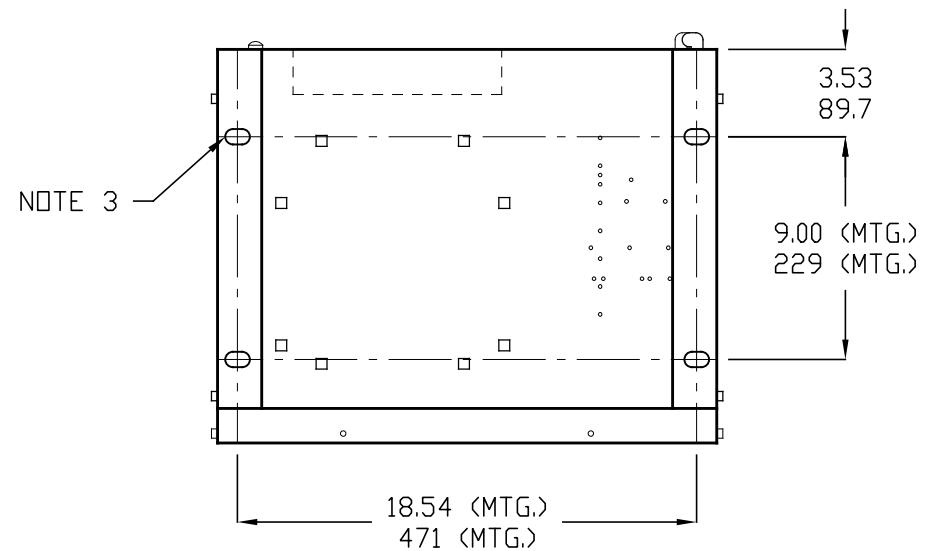
SIDE VIEW



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) 1in x 0.625in / 25mm x 16mm FLOOR-MOUNTING SLOTS ARE PROVIDED ON BOTTOM OF ENCLOSURE AS SHOWN.
- 4) TWO (2) 1.31in / 33mm DIA STANDARD PRE-FAB KEY-SLOT KNOCKOUTS ARE PROVIDED AS SHOWN FOR 1in / 25mm CONDUIT ENTRY. IF ADDITIONAL CONDUIT ENTRANCES ARE REQUIRED, ENCLOSURE SHOULD BE FIELD-MODIFIED BY INSTALLER.
- 5) BATTERY CHARGER SHIPPING WEIGHT: SEE PRODUCT LITERATURE.

BOTTOM VIEW



DUAL DIMENSIONS in mm

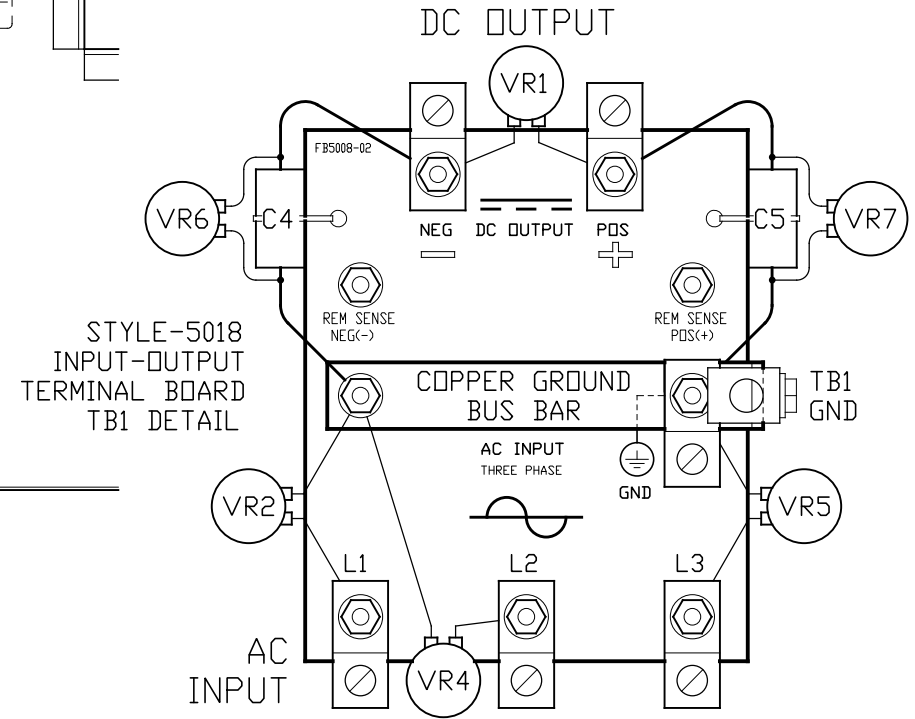
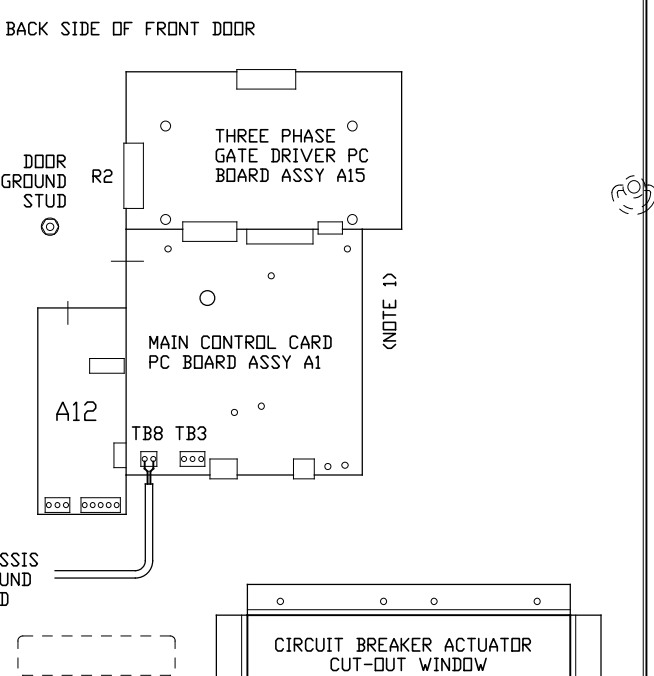
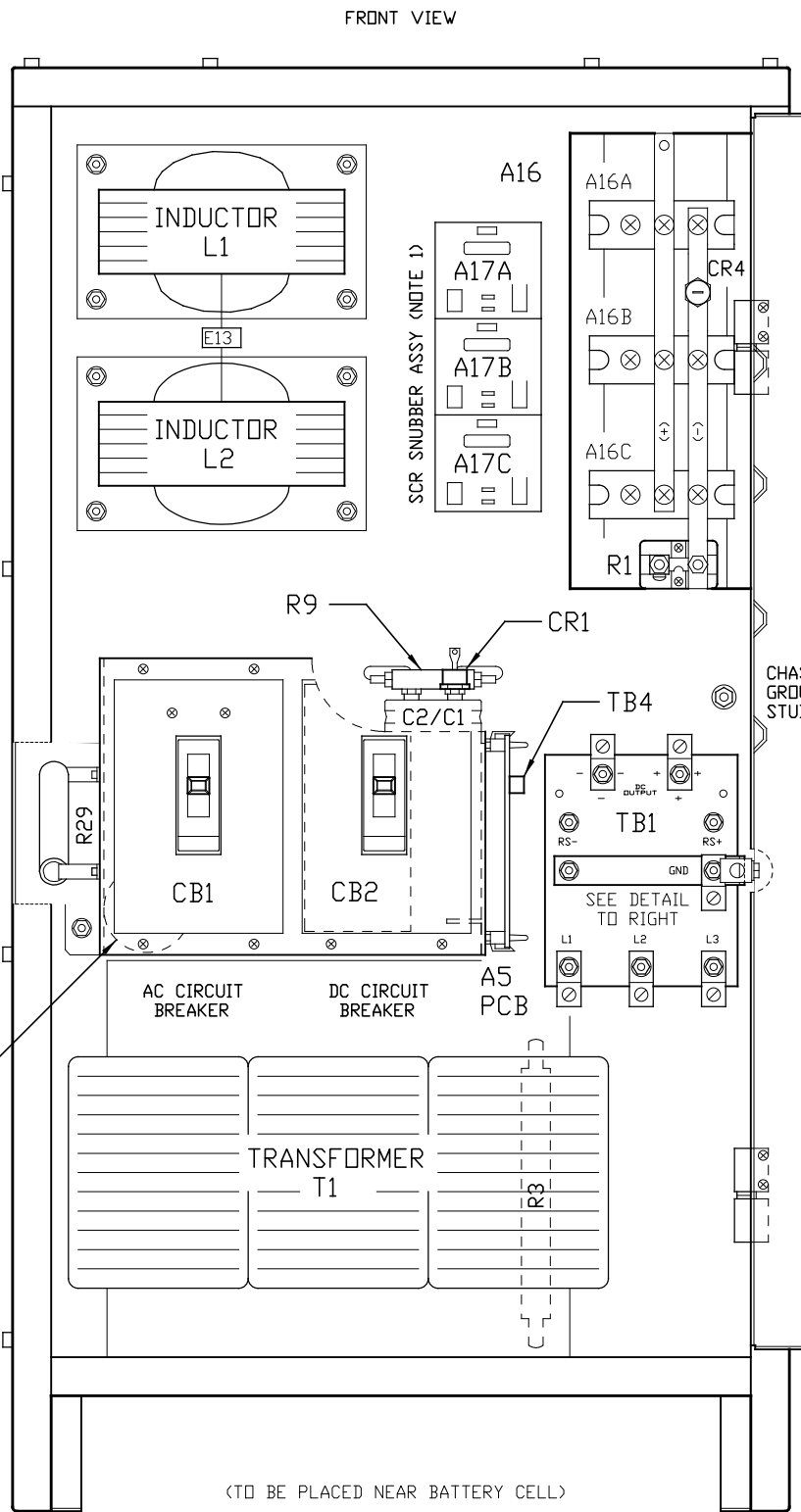
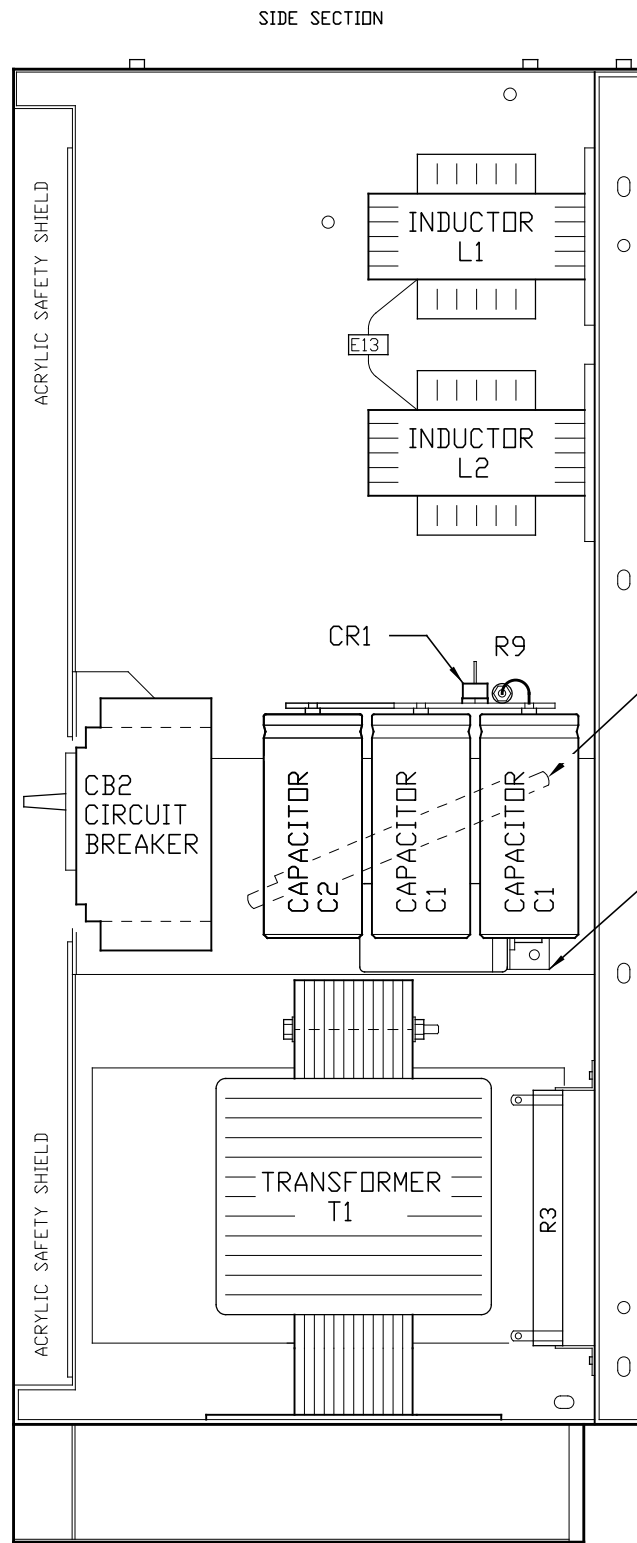
75-100ADC W/ COMMON OPTIONS

			<p>THIRD ANGLE PROJECTION</p>		<p>1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com</p>	
			<p>DRAWN BY <b>KMW</b>    <b>110421</b></p> <p>ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LOG</p>	<p>TITLE    <b>AT30 SERIES BATTERY CHARGER OUTLINE: NEMA-1 STYLE-5018 ENCLOSURE</b></p>		
0	N/A	110421	<p>UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:</p>		<p>DRAWING No    <b>JE5085-22</b></p>	<p>REV    0    <b>B</b></p>
REV	ECN No	DATE	SCALE <b>NTS</b>	SALES No	<p>SHEET    1    OF    1</p>	

SYM	STANDARD COMPONENT DESCRIPTION
A1	MAIN CONTROL PC BOARD
A15	THREE PHASE GATE DRIVER PC BRD
A16	3PH SCR MODULE (3x2 Q1-Q6)
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 (HJ3)
CB2	DC OUTPUT CIRCUIT BREAKER (HJ2)
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
TB3	SUMMARY ALARM CONTACTS
TB8	TEMPCD PROBE TERMINAL BLOCK
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
C2	BATTERY ELIMINATOR CAPACITOR
CR1	POLARITY DIODE
E13	INDUCTOR INTER-CONNECT POINT
L2	FILTER INDUCTOR
R9	FILTER CAP (C1) BLEED RESISTOR
R29	COMM MOD BALLAST RES (130VDC)
TB4	AUX ALARM PCB (A5) TERM BLK
VR3	AC INPUT LIGHTNING ARRESTOR



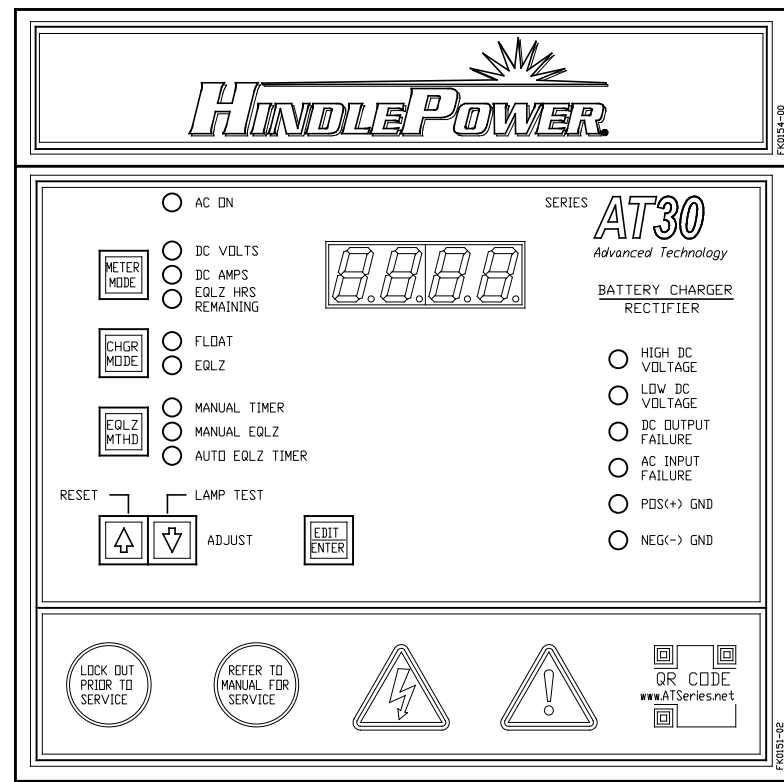
I/O TERMINAL	DESCRIPTION - TYPE	CONNECTION
TB1(+/-)	POS/NEG DC OUTPUT TERMS - CU-ALUMINUM COMPRESSION LUG	#14-1/0 AWG
REM SENSE(+/-)	POS/NEG REMOTE SENSE TERMINALS - 1/4-20 ZPS STUDS	1/4in RING LUG
(2) TB1-GND	USER GROUND TERMINAL - CU-ALUMINUM COMPRESSION LUG	#14-1/0 AWG
TB1-L1/L2/L3	AC INPUT TERMINALS - CU-ALUMINUM COMPRESSION LUG	#14-1/0 AWG
TB3	SUMMARY ALARM TERMINAL BLOCK - SOLDERLESS COMP SCREW	#22-14 AWG
TB4	AUXILIARY ALARM TERM BLOCK - SOLDERLESS COMP SCREW	#22-14 AWG
TB8	TEMPCD PROBE (A10) TERM BLK - SOLDERLESS COMP SCREW	#22-14 AWG

NOTES:  
 1) FOR DETAIL VIEWS OF ALL PC BOARDS (A1, A5, A15, A17, etc.) SEE DETAIL JE5091-22.

(TO BE PLACED NEAR BATTERY CELL)  
 A10 25ft / 7.6m CABLE

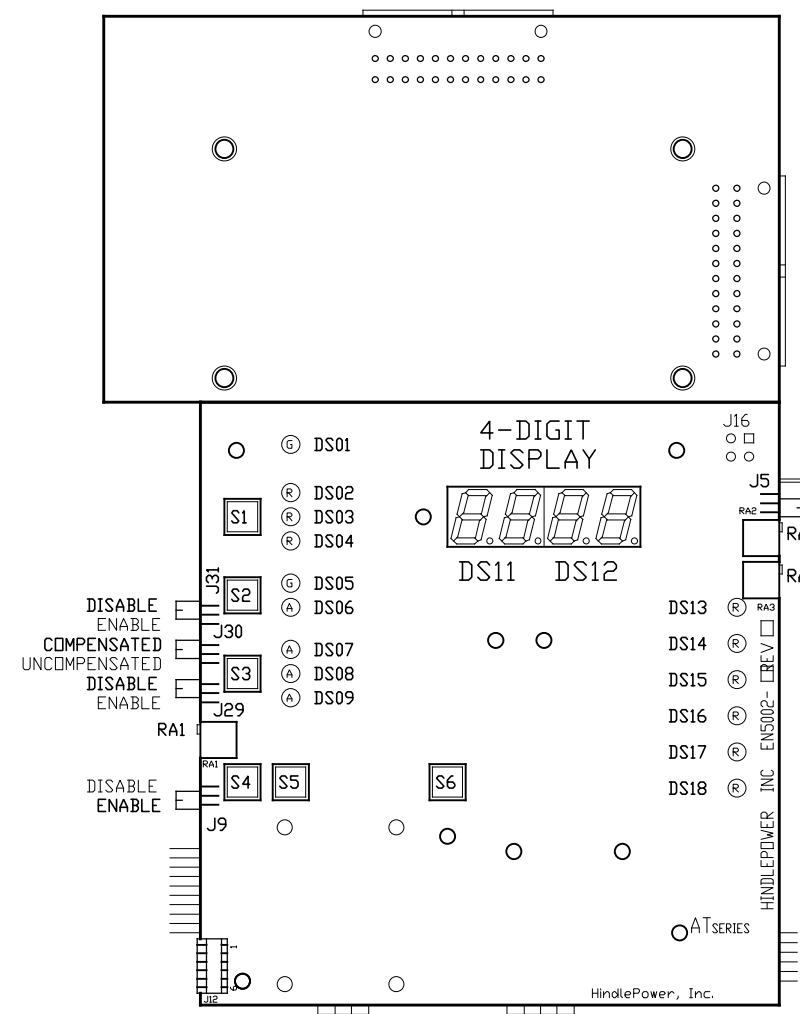
			THIRD ANGLE PROJECTION		 1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com			
			DRAWN BY	KMW			110421	
			ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LOG			TITLE	AT30 SERIES BATTERY CHARGER INTERNAL COMPONENT LAYOUT: STYLE-5018	
			UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:			DRAWING No	JE5088-22	
REV	ECN No	DATE				SCALE	NTS	SALES No
0	N/A	110421				SHEET	1	OF 1

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



CONTROL PANEL  
(PART No. FK0151-02)

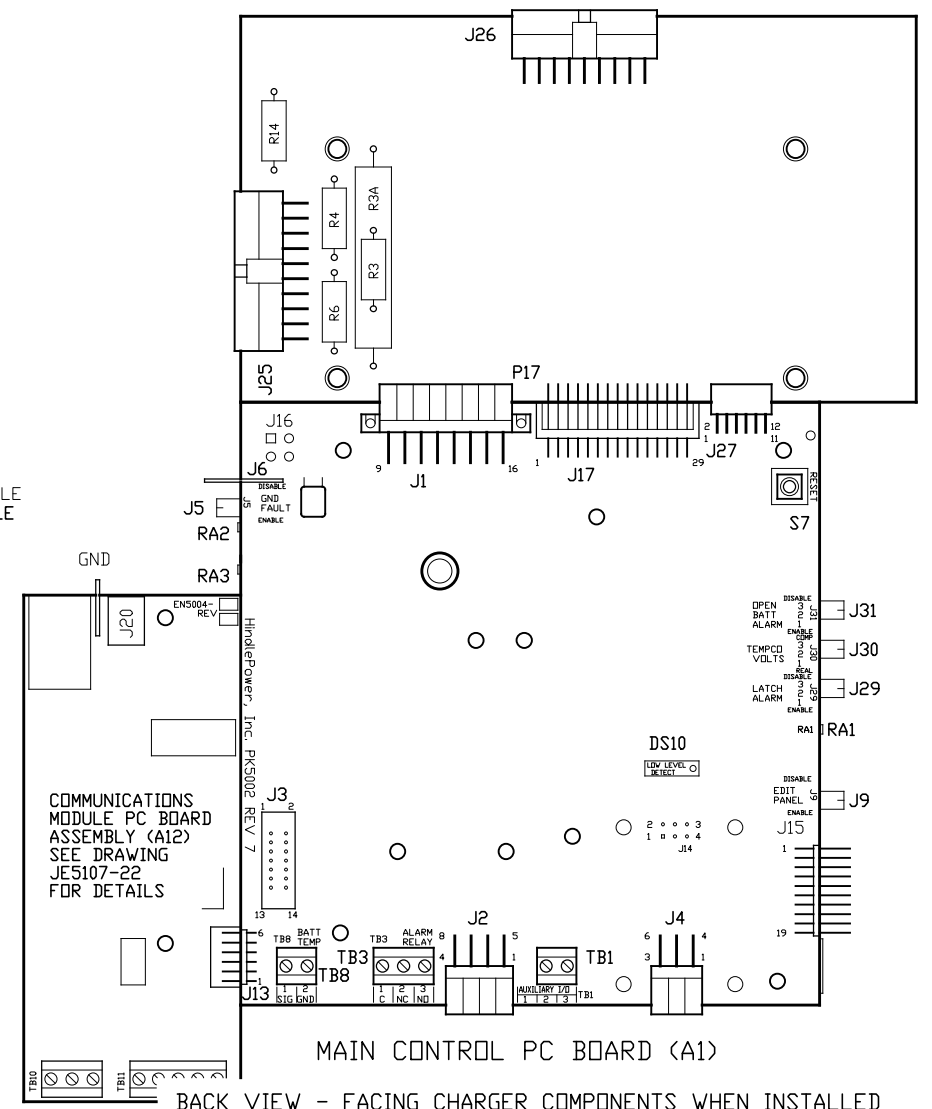
THREE PHASE GATE DRIVER PC BOARD (A15)



MAIN CONTROL PC BOARD (A1)

FRONT VIEW - FACING CHARGER DOOR WHEN INSTALLED

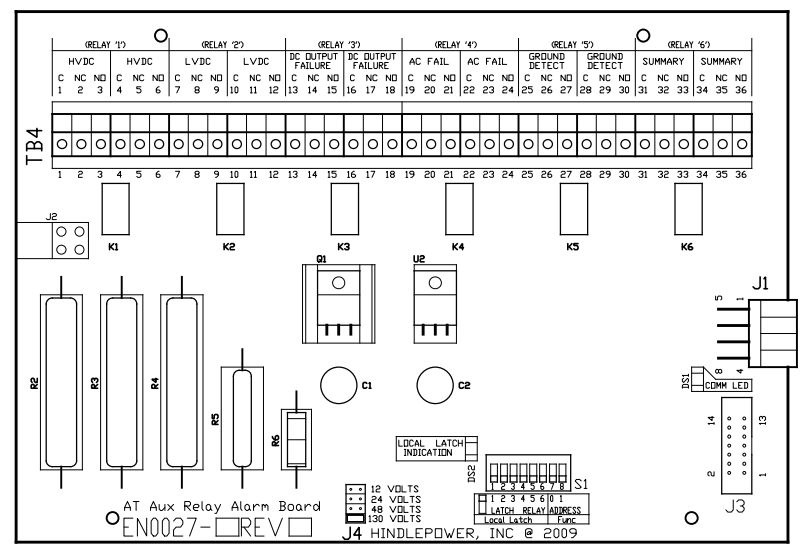
THREE PHASE GATE DRIVER PC BOARD (A15)



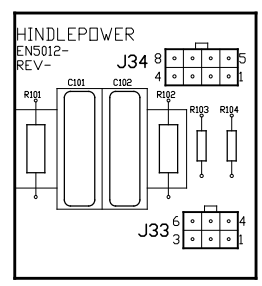
MAIN CONTROL PC BOARD (A1)

BACK VIEW - FACING CHARGER COMPONENTS WHEN INSTALLED

NOTE: UNLESS OTHERWISE SPECIFIED, ALL USER TERMINAL BLOCKS (TB3/TB4/TB8) ARE SOLDERLESS COMPRESSION 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

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

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 - TEMPCO VOLTAGES (COMPENSATED/UNCOMP) SELECTOR
- J31 - BATTERY OPEN ALARM ENABLE/DISABLE SELECTOR

SWITCHES:

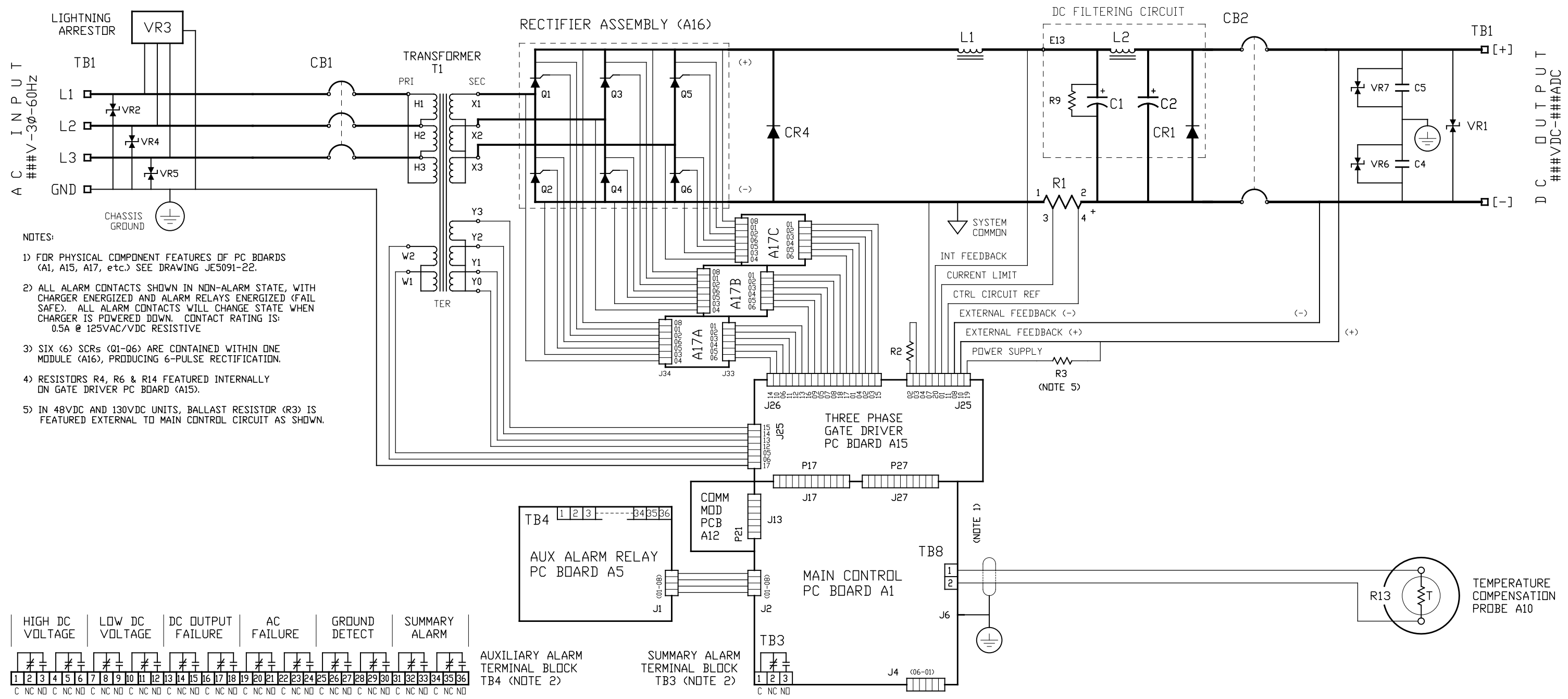
- S1 - METER MODE
- S2 - CHARGER MODE
- S3 - EQUALIZE METHOD
- S4 - ΔADJUST
- S5 - ▽ADJUST
- S6 - EDIT / ENTER
- S7 - PROCESSOR MANUAL RESET

TERMINAL BLOCKS:

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

75-100ADC 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 <b>KMW</b> 110421		TITLE <b>AT30 SERIES BATTERY CHARGER CONTROL PANEL / PC BOARD DETAIL</b>			
			ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LOG		DRAWING No <b>JE5091-22</b>		REV <b>0</b> <b>B</b>	
0 N/A 110421			UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		SCALE <b>NTS</b>		SALES No	
REV	ECN No	DATE			SHEET <b>1</b> OF <b>1</b>			

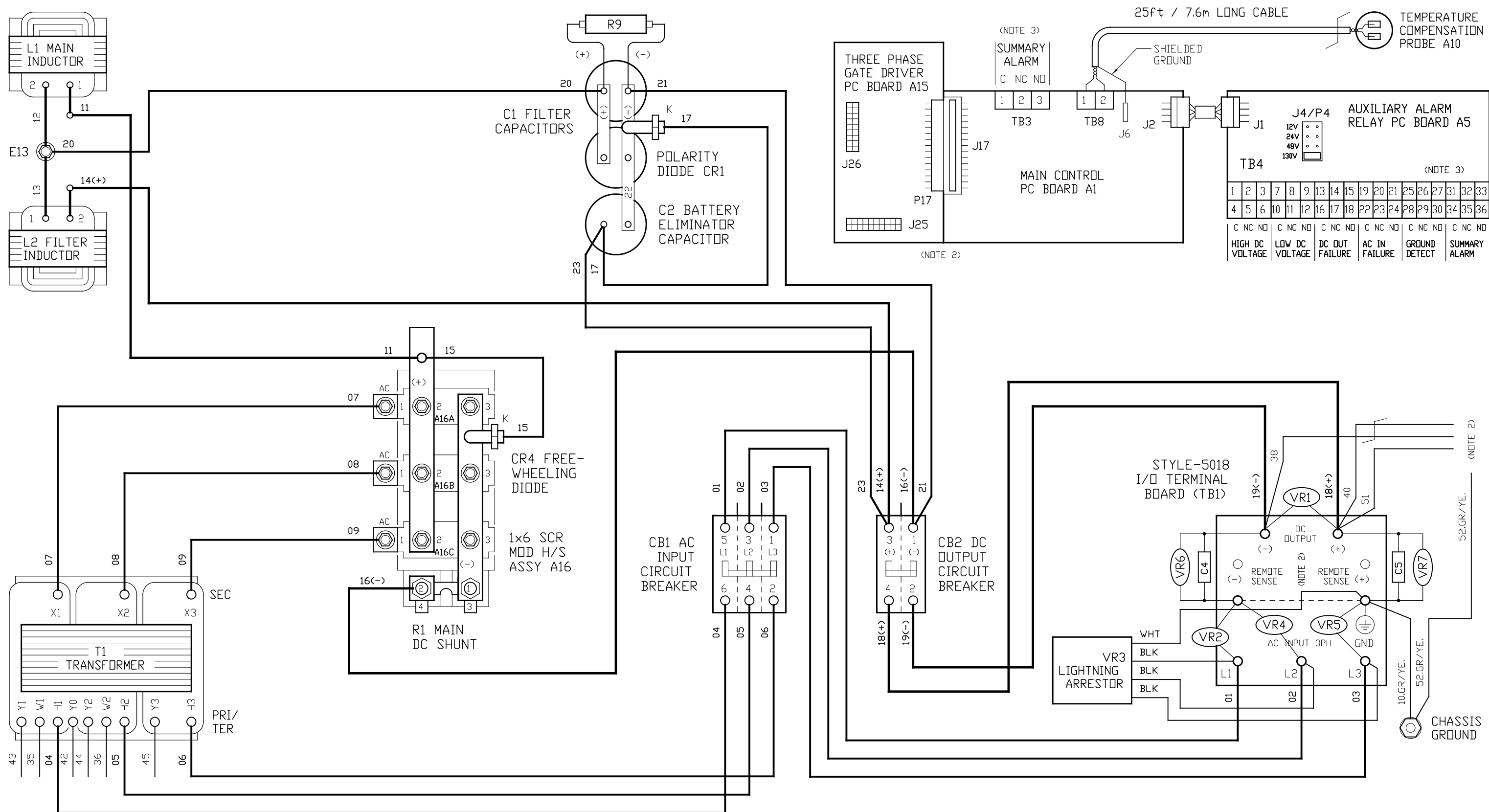


- NOTES:
- FOR PHYSICAL COMPONENT FEATURES OF PC BOARDS (A1, A15, A17, etc.) SEE DRAWING JE5091-22.
  - ALL ALARM CONTACTS SHOWN IN NON-ALARM STATE, WITH CHARGER ENERGIZED AND ALARM RELAYS ENERGIZED (FAIL SAFE). ALL ALARM CONTACTS WILL CHANGE STATE WHEN CHARGER IS POWERED DOWN. CONTACT RATING IS: 0.5A @ 125VAC/VDC RESISTIVE
  - SIX (6) SCRS (Q1-Q6) ARE CONTAINED WITHIN ONE MODULE (A16), PRODUCING 6-PULSE RECTIFICATION.
  - RESISTORS R4, R6 & R14 FEATURED INTERNALLY ON GATE DRIVER PC BOARD (A15).
  - IN 48VDC AND 130VDC UNITS, BALLAST RESISTOR (R3) IS FEATURED EXTERNAL TO MAIN CONTROL CIRCUIT AS SHOWN.

HIGH DC VOLTAGE	LOW DC VOLTAGE	DC OUTPUT FAILURE	AC FAILURE	GROUND DETECT	SUMMARY ALARM
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36

STANDARD AT30 COMPONENTS:	STANDARD AT30 COMPONENTS:	FEATURED AT30 OPTION COMPONENTS:	FEATURED 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 TEMPCO 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 VR3 AC INPUT LIGHTNING ARRESTOR	A5 AUXILIARY ALARM RELAY PC BOARD (NOTE 1) TB4 AUXILIARY ALARM (A5) TERMINAL BLOCK (NOTE 2) A10 EXTERNAL TEMPERATURE COMPENSATION PROBE R13 TEMPCO PROBE (A10) RESISTOR T TEMPCO PROBE (A10) THERMISTOR A12 COMMUNICATIONS MODULE PC BOARD (NOTE 1)

THIRD ANGLE PROJECTION		DRAWN BY <b>KMW</b> 110421		TITLE <b>BATTERY CHARGER SCHEMATIC: 75-100ADC W/ COMMON OPTIONS</b>	
ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LOG		DRAWING No <b>JE5092-22</b>		REV <b>0</b> <b>B</b>	
0	N/A	110421	UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		SCALE <b>NTS</b>
REV	ECN No	DATE	SALES No	SHEET <b>1</b> OF <b>1</b>	



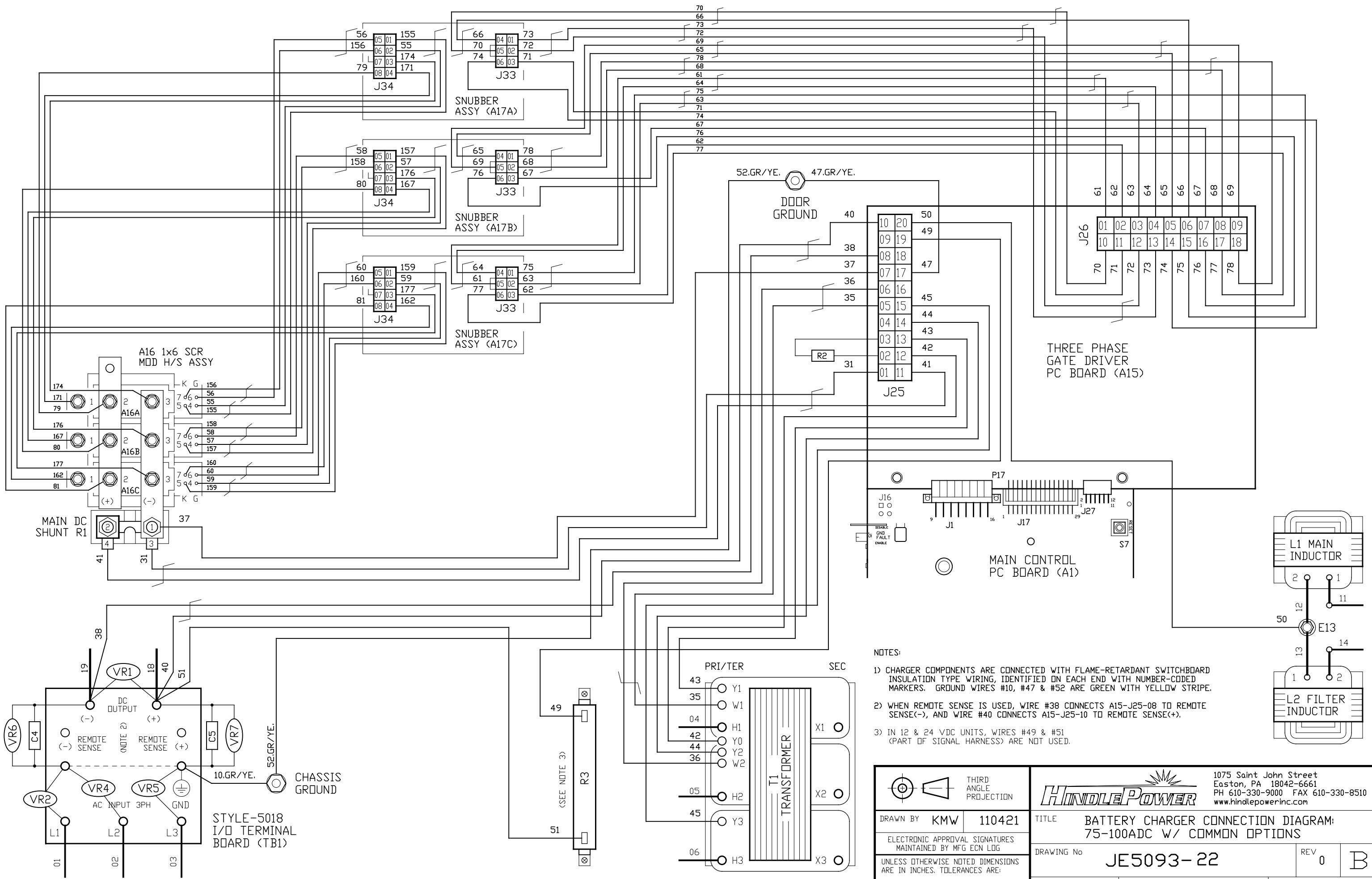
**NOTES:**

- 1) CHARGER COMPONENTS ARE CONNECTED WITH BLACK 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) DEPICTS THE AT30 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 CAP
- AC INPUT CIRCUIT BREAKER
- DC OUTPUT CIRCUIT BREAKER
- AUXILIARY ALARM RELAY PC BOARD
- AC INPUT LIGHTNING ARRESTOR
- EXTERNAL TEMPCO REMOTE PROBE

		 THIRD ANGLE PROJECTION		 1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com	
		DRAWN BY <b>KMW</b>	<b>110421</b>	TITLE <b>BATTERY CHARGER CONNECTION DIAGRAM: 75-100ADC W/ COMMON OPTIONS</b>	
		ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LOG		DRAWING No <b>JE5093-22</b>	
		UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		REV <b>0</b>	
0	N/A	110421			
REV	ECN No	DATE	SCALE <b>NTS</b>	SALES No	SHEET <b>1</b> OF <b>2</b>

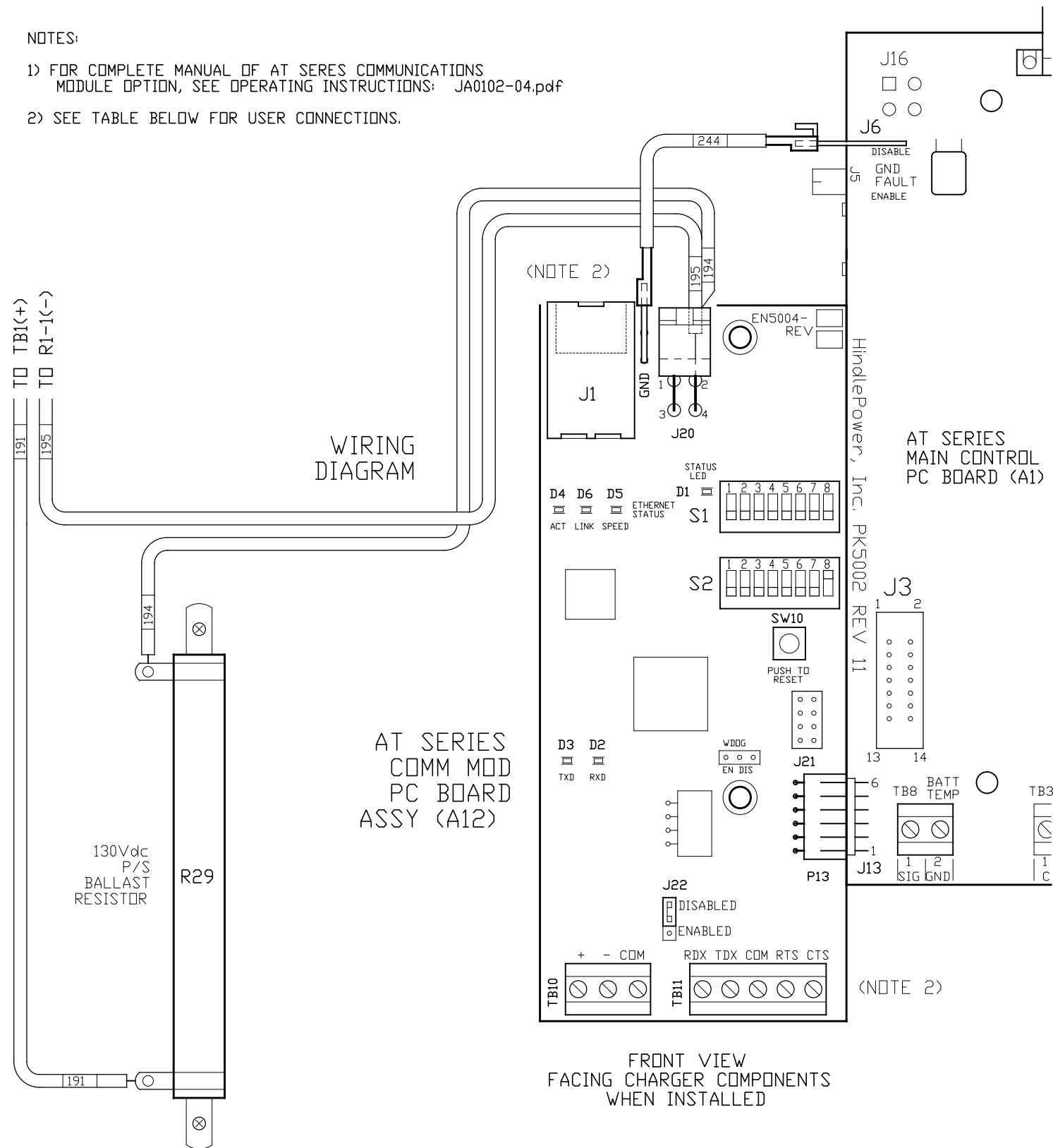


- NOTES:
- 1) CHARGER COMPONENTS ARE CONNECTED WITH FLAME-RETARDANT SWITCHBOARD INSULATION TYPE WIRING, IDENTIFIED ON EACH END WITH NUMBER-CODED MARKERS. GROUND WIRES #10, #47 & #52 ARE GREEN WITH YELLOW STRIPE.
  - 2) WHEN REMOTE SENSE IS USED, WIRE #38 CONNECTS A15-J25-08 TO REMOTE SENSE(-), AND WIRE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

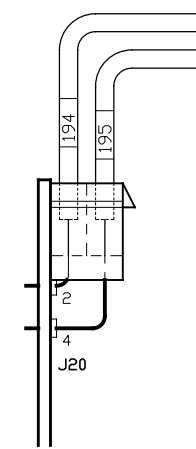
THIRD ANGLE PROJECTION		1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com	
DRAWN BY <b>KMW</b>	<b>110421</b>	TITLE <b>BATTERY CHARGER CONNECTION DIAGRAM:          75-100ADC W/ COMMON OPTIONS</b>	
ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LG		DRAWING No <b>JE5093-22</b>	REV <b>0</b>
UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		SCALE <b>NTS</b>	SHEET <b>2</b> OF <b>2</b>

NOTES:

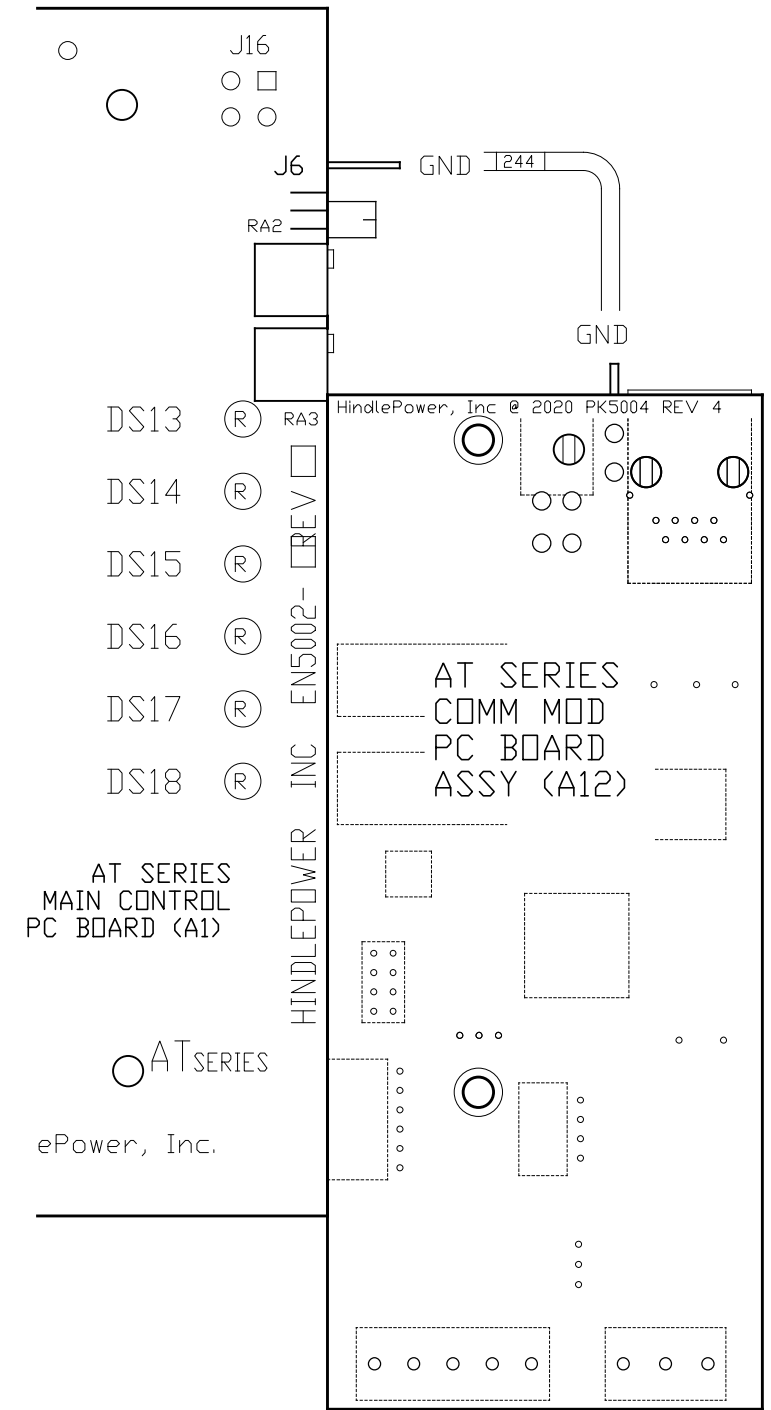
- FOR COMPLETE MANUAL OF AT SERIES COMMUNICATIONS MODULE OPTION, SEE OPERATING INSTRUCTIONS: JA0102-04.pdf
- SEE TABLE BELOW FOR USER CONNECTIONS.



SIDE VIEW OF PC BOARD



- 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 SWITCHES
  - S2 - MODBUS ADDRESS
  - 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
J1	ETHERNET SERIAL TERMINAL - RJ45 SOCKET	CAT 5,6 UTP
GND	PC BOARD GROUND TERMINAL - SLIP-ON TAB	QC LUG

75-100ADC 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		TITLE AT SERIES BATT CHGR COMMUNICATIONS MODULE OPTION DETAIL			
		ELECTRONIC APPROVAL SIGNATURES MAINTAINED BY MFG ECN LOG		DRAWING No		REV	
0		UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		JE5107-22		0 B	
REV	ECN No	DATE	SCALE	NTS	SALES No	SHEET	1 OF 1