

NOTES:

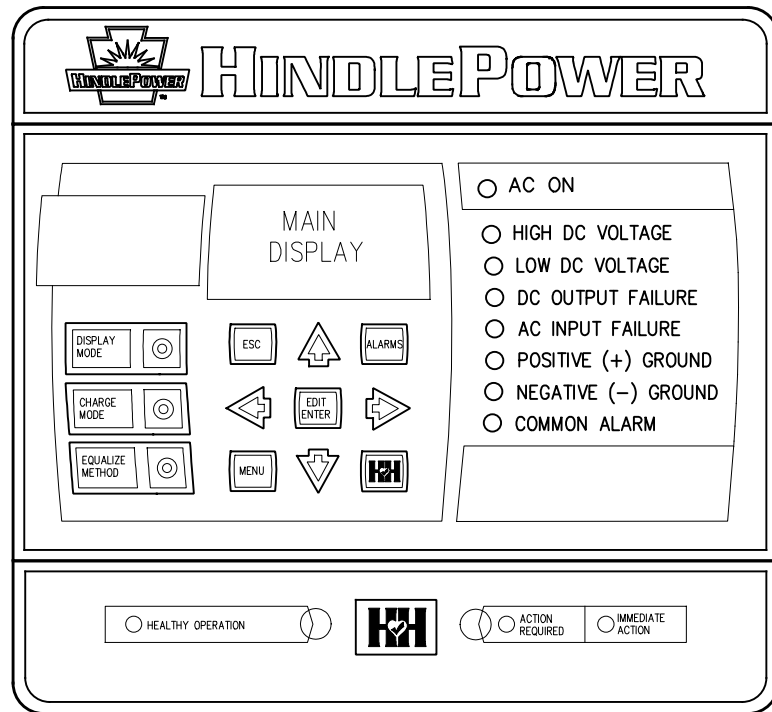
- ENCLOSURE IS A NEMA TYPE 1 / IP20 TOP-VENTED STEEL CABINET WITHOUT GASKETS. FINISH IS ANSI-61 GRAY EPOXY POWDERCOAT.
- ALLOW 6in / 152mm OF FREE AIR ON ALL VENTED SURFACES (TOP, SIDES & REAR) FOR COOLING.
- DATA NAMEPLATE (WITH CHARGER RATINGS) MOUNTED ON DOOR.
- FOUR (4) 0.5in / 12mm FLOOR-MOUNTING HOLES AND FOUR (4) 1in x 0.625in / 25mm x 16mm FLOOR-MOUNTING SLOTS ARE PROVIDED ON BOTTOM OF ENCLOSURE AS SHOWN.
- FOUR (4) 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.
- BATTERY CHARGER SHIPPING WEIGHT: APPROXIMATELY TBD lbs / TBD kg
- OPTIONAL GROUND BUS BAR WITH 0.41 in / 10.41 mm DIA HOLE.

DUAL DIMENSIONS [mm]

REV. 0	DRN BY KJB	CHK BY MCR	APP BY RDB	DATE 11/05/19	DRN BY KJB	DATE 11/05/19
DESCRIPTION				CHK BY MCR	DATE 11/05/19	
STANDARD DRAWINGS.				APP BY RDB	DATE 11/05/19	

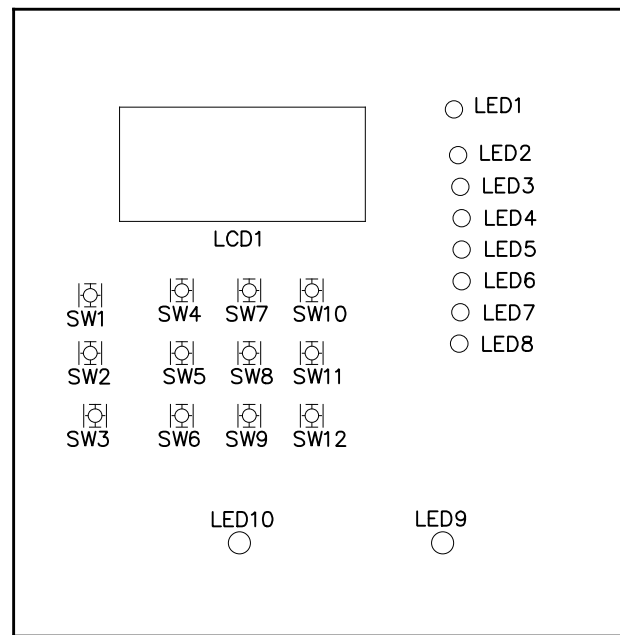
TITLE		ATEVO 3PH BATTERY CHARGER OUTLINE: NEMA-1 STYLE-5070 ENCL	
SCALE	DWG No	REV	SHEET
NTS	JE5331-00	0	1 OF 1



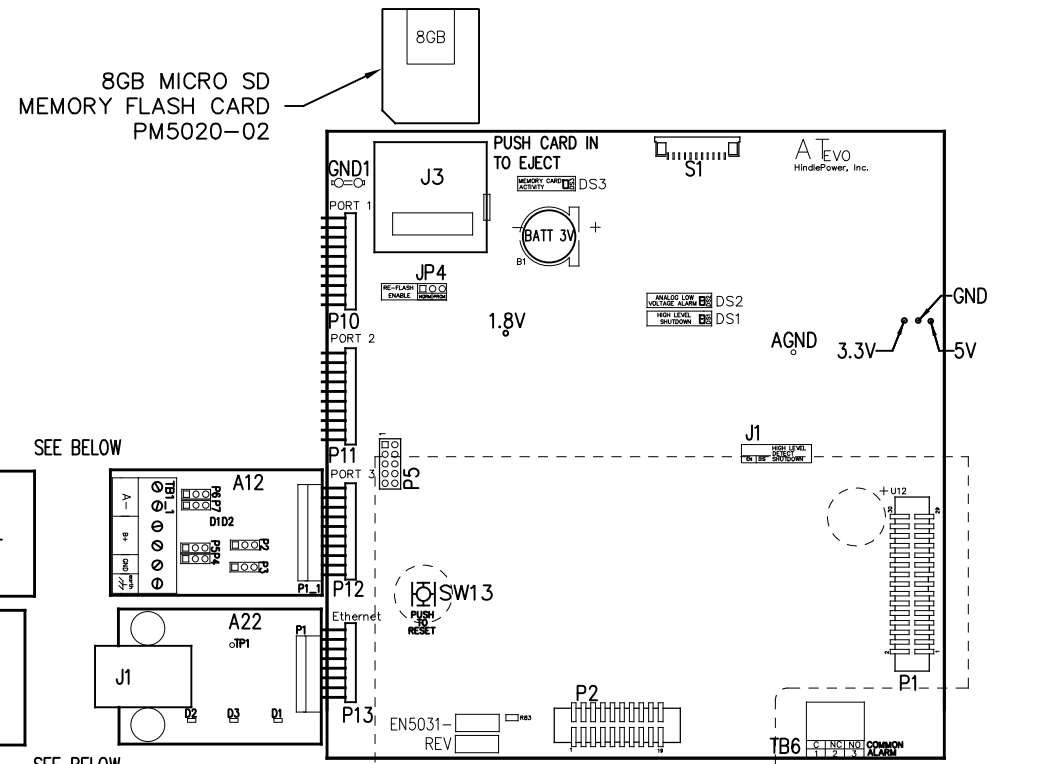


**CONTROL PANEL**  
(PART No. FK5047-00)

NOTE: ALL ALARM CONTACTS ARE ENERGIZED WHEN IN THE NON-ALARM STATE (FAIL SAFE). ALL ALARM CONTACTS WILL CHANGE STATE WHEN CHARGER IS POWERED DOWN. CONTACT RATING IS 0.5A @ 125VAC/VDC RESISTIVE.

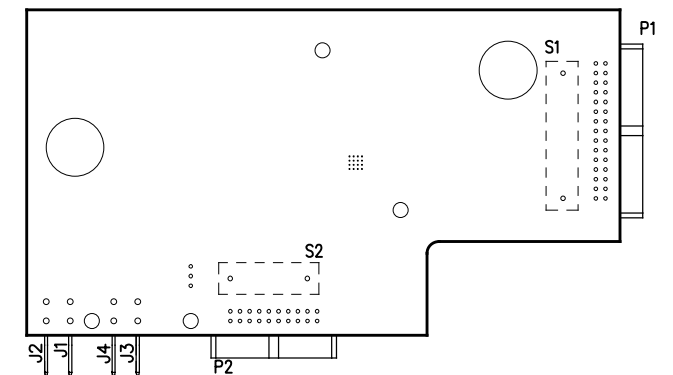


**MAIN CONTROL PC BOARD (A1)**  
FRONT VIEW - FACING CHARGER DOOR WHEN INSTALLED

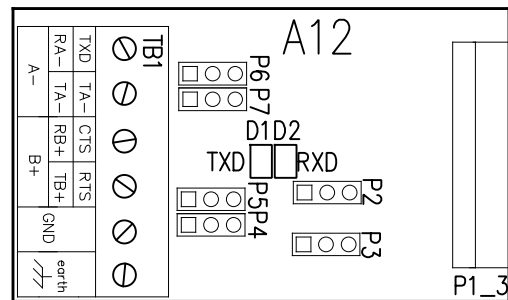


**MAIN CONTROL PC BOARD (A1)**  
BACK VIEW - FACING CHARGER COMPONENTS WHEN INSTALLED

**METER MODULE PC BOARD (A28)**  
MOUNTED ON MAIN CONTROL PC BOARD



**SERIAL ADAPTER (A12)**



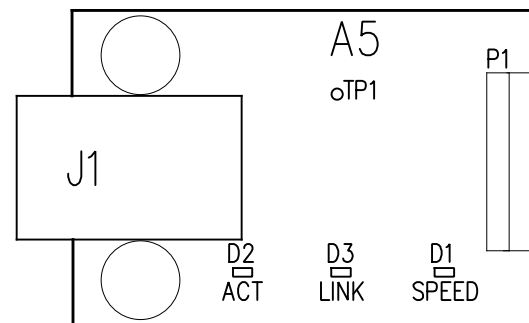
**CONNECTORS (A12):**  
P1 - MAIN CONTROL BOARD

**JUMPERS & CONFIGURATION SWITCHES (A12):**  
P2 - RECEIVER ENABLE CONTROL SELECTION  
P3 - MEDIA CONTROL SELECTION (RS-234 OR RS-485)  
P4 - RS-485 TERMINATION RESISTOR ENABLE (RECEIVE)  
P5 - RS-485 TERMINATION RESISTOR ENABLE (TRANSMIT)  
P6 - RS-485 INTERFACE 2 WIRE/4 WIRE SELECTION (A)  
P7 - RS-485 INTERFACE 2 WIRE/4 WIRE SELECTION (B)

**TERMINAL BLOCKS (A12):**  
TB1 - USER CONNECTIONS TO SERIAL INTERFACE

**INDICATOR LIGHTS (A12):**  
TXD (D1) - SERIAL DATA BEING SENT  
RXD (D2) - SERIAL DATA BEING RECEIVED

**ETHERNET ADAPTER (A22)**



**CONNECTORS (A5):**  
P1 - MAIN CONTROL BOARD  
J1 - RJ-45 ETHERNET USER CONNECTION

**INDICATOR LIGHTS (A5 LEDs):**  
D1 - ORANGE - ETHERNET SPEED INDICATION 10/100 MBPS  
D2 - YELLOW - ETHERNET ACTIVITY (FLASHING)  
D3 - RED - ETHERNET LINK

**TEST POINTS (A5):**  
TP1 - CLOCK OUT

**MAIN CONTROL PC BOARD (A1)**

**INDICATOR LIGHTS (LEDs):**  
LED1 - GREEN - AC ON  
LED2 - RED - HIGH DC VOLTAGE ALARM  
LED3 - RED - LOW DC VOLTAGE ALARM  
LED4 - RED - DC OUTPUT FAILURE ALARM  
LED5 - RED - AC INPUT FAILURE ALARM  
LED6 - RED - POSITIVE (+) GROUND ALARM  
LED7 - RED - NEGATIVE (-) GROUND ALARM  
LED8 - RED - COMMON ALARM  
LED9 - RED - ACTION REQUIRED ALARM  
LED10 - GREEN - HEALTHY OPERATION  
DS1 - RED - HIGH LEVEL SHUTDOWN (HLD)  
DS2 - RED - ANALOG LOW VOLTAGE ALARM (LLD)  
DS3 - RED - MEMORY CARD ACTIVITY

**JUMPERS:**  
J1 - ANALOG HIGH VOLTAGE SHUTDOWN JUMPER  
J3 - SD CARD PORT  
JP4 - RE-FLASH (FIELD PROGRAMMING) JUMPER

**TERMINAL BLOCKS:**  
TB6 - COMMON ALARM RELAY CONTACTS

**TEST POINTS:**  
1.8V - 1.8 VOLTS  
3.3V - 3.3 VOLTS  
5V - 5.0 VOLTS  
GND - GROUND  
AGND - ANALOG GROUND  
SDA - MAIN BOARD I2C DATA  
SCL - MAIN BOARD I2C CLOCK

**SWITCHES:**  
S1 - DISPLAY BUTTON  
S2 - CHARGE MODE BUTTON  
S3 - EQUALIZE METHOD BUTTON  
S4 - ESCAPE (ESC) BUTTON  
S5 - LEFT ARROW BUTTON  
S6 - MENU BUTTON  
S7 - UP ARROW BUTTON  
S8 - EDIT / ENTER BUTTON  
S9 - DOWN ARROW BUTTON  
S10 - ALARM BUTTON  
S11 - RIGHT ARROW BUTTON  
S12 - HINDLE HEALTH (HHS) BUTTON  
SW13 - SYSTEM RESET BUTTON (BACK OF BOARD)

**CONNECTORS:**  
P1 - POWER BOARD RIBBON  
P2 - 3 PHASE RECTIFIER RIBBON  
P3 - USB EXPANSION PORT  
P4 - SPI & I2C EXPANSION PORT #1  
P5 - SPI & I2C EXPANSION PORT #2  
P6 - DISPLAY SPI PORT  
P7 - DISPLAY JTAG PORTS  
P10 - SERIAL INTERFACE PORT #1  
P11 - SERIAL INTERFACE PORT #2  
P12 - SERIAL INTERFACE PORT #3  
P13 - ETHERNET INTERFACE PORT  
P17 - GENERAL EXPANSION PORT

I/O TERMINAL	DESCRIPTION - TYPE	CONNECTION
(A1) TB6	SUMMARY ALARM TERMINAL BLOCK (A1) - SOLDERLESS COMP SCREW	#22-14 AWG
(A12) TB1	RS-232 / RS-485 USER CONNECTIONS - SOLDERLESS COMP SCREW	#22-14 AWG
(A22) J1	SERIAL ETHERNET CONNECTION - RJ45 PLUG	CAT5

REV. 0	DRN BY KJB	CHK BY MCR	APP BY MCR	DATE 7/22/2021	DRN BY KJB	DATE 4/17/2021
DESCRIPTION				CHK BY MCR	DATE 4/17/2021	
STANDARD DRAWINGS.				APP BY MCR	DATE 4/17/2021	

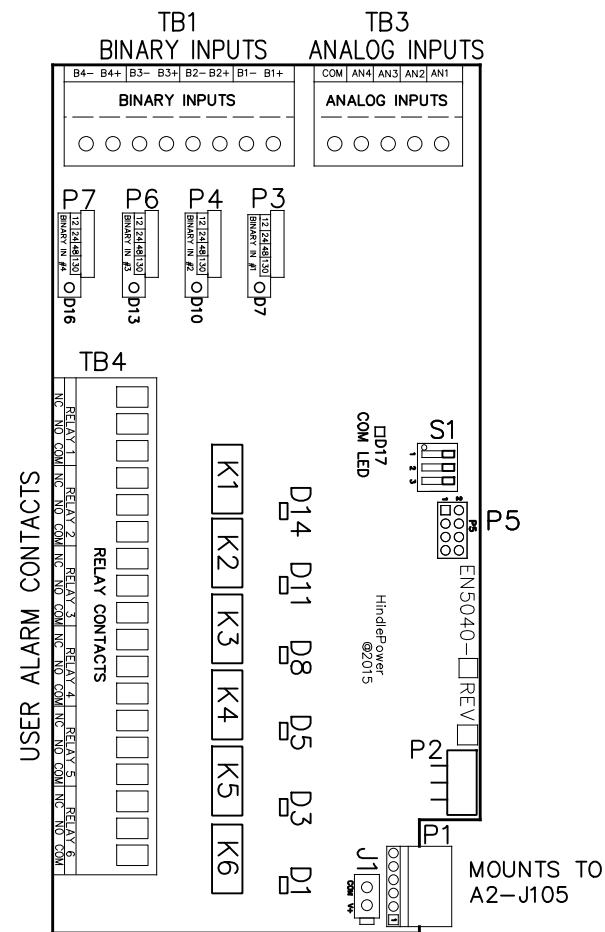
1075 Saint John Street  
Easton, PA 18042-6661  
PH 610-330-9000 FAX 610-330-8510  
www.hindlepowerinc.com

**HINDLEPOWER**

TITLE  
**ATEVO 3PH BATTERY CHARGER  
CONTROL PANEL / PC BOARD DETAIL  
3Ø WITH COMMON OPTIONS 25-50A**

SCALE DWG No  
**B** NTS JE5333-19

REV 0 SHEET 1 OF 2



**AUXILIARY I/O BOARD (A4)**

**JUMPERS & CONFIGURATION SWITCHES FOR AUX I/O BOARD (A4)**

- J1 - AUXILIARY POWER INPUT
- P1 - POWER BOARD (PRIMARY POWER & COMM SOURCE)
- P5 - PROGRAMMING HEADER

**USER TERMINALS ON RELAY BOARD (A4):**

- D1 - RED - RELAY #6 IN ALARM STATE
- D3 - RED - RELAY #5 IN ALARM STATE
- D5 - RED - RELAY #4 IN ALARM STATE
- D7 - YELLOW - BINARY INPUT #1 IS ABOVE THRESHOLD
- D8 - RED - RELAY #3 IN ALARM STATE
- D10 - YELLOW - BINARY INPUT #2 IS ABOVE THRESHOLD
- D11 - RED - RELAY #2 IN ALARM STATE
- D13 - YELLOW - BINARY INPUT #3 IS ABOVE THRESHOLD
- D14 - RED - RELAY #1 IN ALARM STATE
- D16 - YELLOW - BINARY INPUT #4 IS ABOVE THRESHOLD
- D17 - GREEN - COMMUNICATION TO MAIN BOARD (FLASHING)

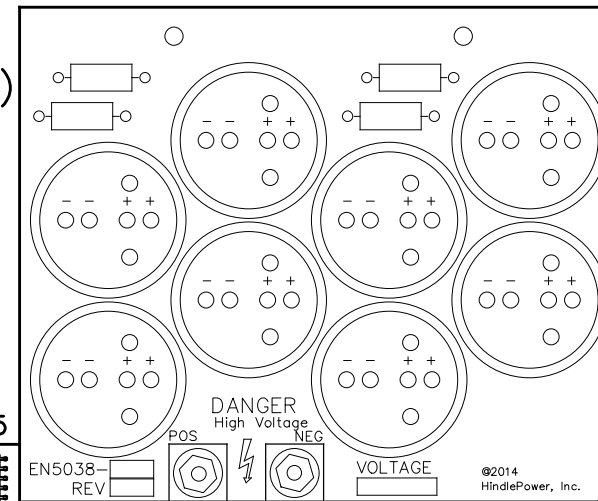
**USER TERMINALS ON RELAY BOARD (A4):**

- TB1 - BINARY INPUTS
- TB2 - SERIAL INTERFACE
- TB3 - ANALOG INPUTS
- TB4 - AUXILIARY I/O RELAY CONTACTS

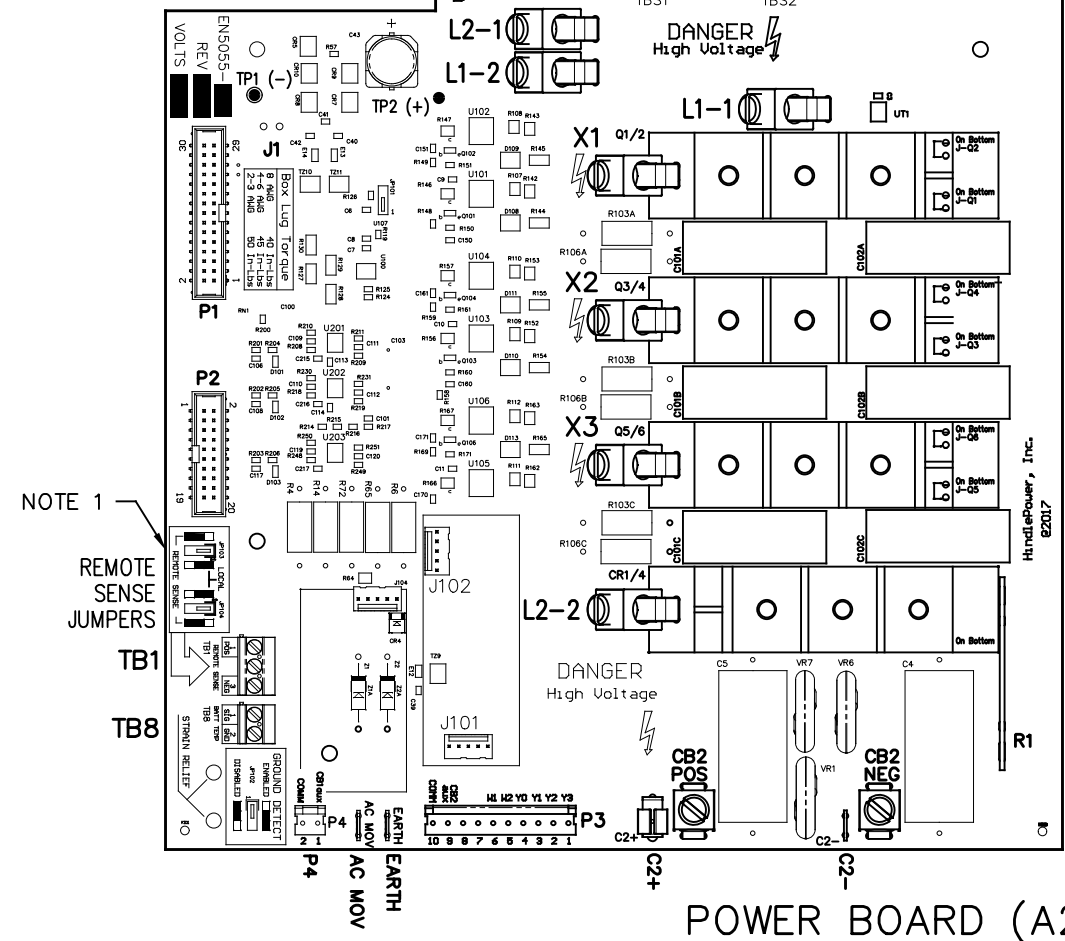
**JUMPERS & CONFIGURATION SWITCHES**

- P3, 4, 6, 7 - BINARY INPUT VOLTAGE CONFIGURATION JUMPERS
- S1 - BOARD ADDRESS DIPSWITCH

**FILTER BOARD (A7)**



MOUNTS TO A4-P1



**POWER BOARD (A2)**

- TB1 - REMOTE VOLTAGE SENSE
- TB8 - BATTERY TEMPERATURE COMPENSATION

- JP102 - GROUND DETECT CIRCUIT ENABLE / DISABLE
- JP103 - REMOTE OR LOCAL SENSE SELECTOR (+)
- JP104 - REMOTE OR LOCAL SENSE SELECTOR (-)

- J1 - POWER OUT
- J101 - DC POWER SUPPLY
- J102 - DC POWER SUPPLY
- J105 - AUXILIARY I/O BOARD
- P1 - MAIN CONTROL BOARD RIBBON
- P2 - MAIN CONTROL BOARD RIBBON (3 PHASE)
- P3 - TRANSFORMER AND CB2 AUX RIBBON
- P4 - CB2 AUX SWITCH CONTACTS

**DISCRETE TERMINALS:**

- AC MOV - CHASSIS EARTH GROUND
- EARTH - CHASSIS EARTH GROUND (DOOR)
- CB2 POS - DCBREAKER POSITIVE
- CB2 NEG - DC BREAKER NEGATIVE
- C2+ - ELIMINATOR FILTER CAPACITOR (+)
- C2 - ELIMINATOR FILTER CAPACITOR (-)
- L1-1 - FILTER INDUCTOR #1 (TERMINAL #1)
- L1-2 - FILTER INDUCTOR #1 (TERMINAL #2)
- L2-1 - FILTER INDUCTOR #2 (TERMINAL #1)
- L2-2 - FILTER INDUCTOR #2 (TERMINAL #2)
- TBS1 - FILTER CAPACITOR BOARD (+)
- TBS2 - FILTER CAPACITOR BOARD (-)

**TEST POINTS ON POWER BOARD (A2):**

- TP1 - PRE-FILTERED DC BUS (-)
- TP2 - PRE-FILTERED DC BUS (+)

**NOTE:**

1. REMOTE SENSE JUMPERS (JP103, JP104) MUST BE IN REMOTE SENSE POSITION IN STYLE-5070 ENCLOSURE.

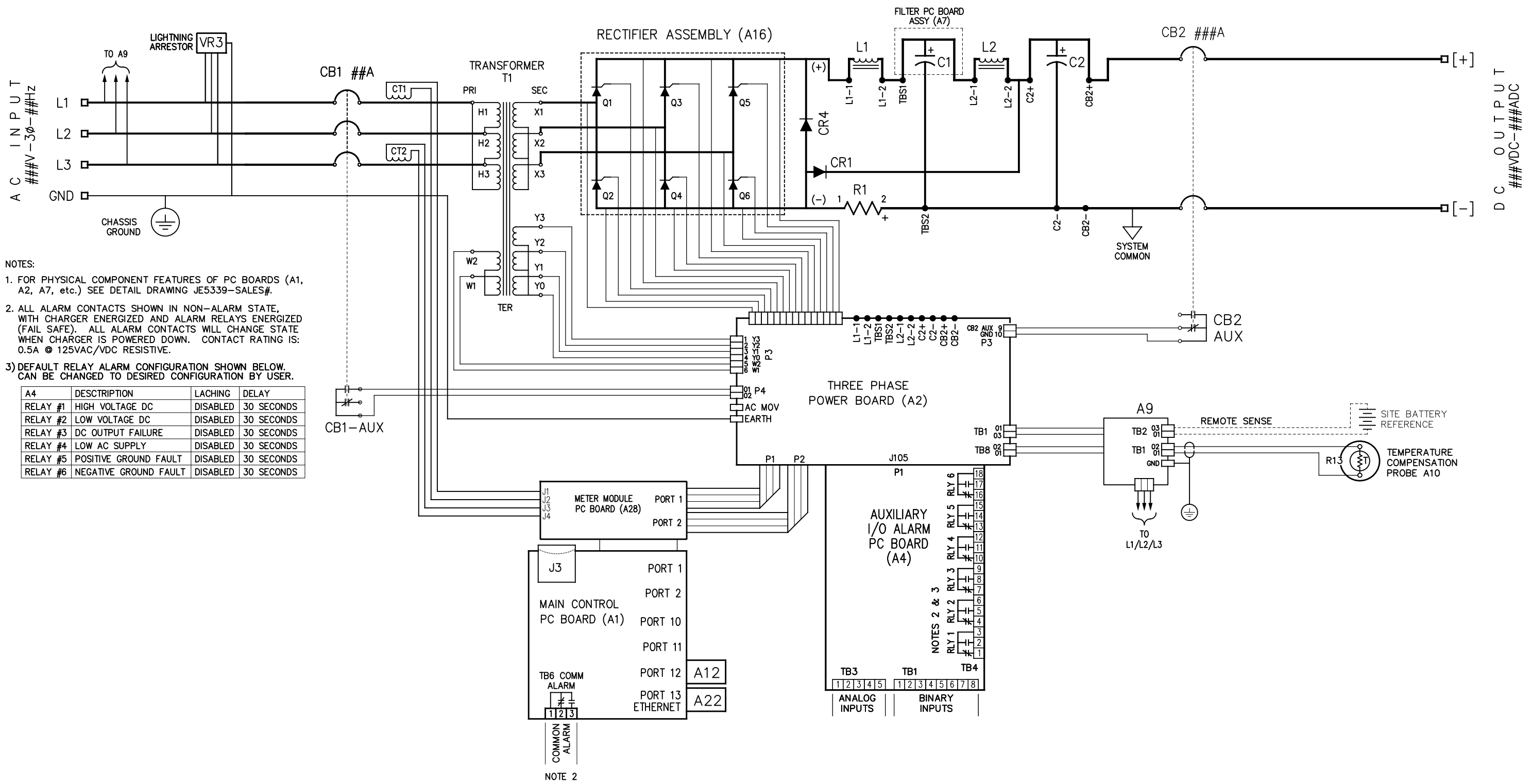
NOTE 1  
REMOTE SENSE JUMPERS  
TB1  
TB8

I/O TERMINAL	DESCRIPTION - TYPE	CONNECTION
(A2) TB1	POS/NEG REMOTE SENSE TERMS (A2) - SOLDERLESS COMPRESSION SCREW	#22-14 AWG
(A2) TB8	TEMPCO PROBE (A10) TERM BLK - SOLDERLESS COMPRESSION SCREW	#22-14 AWG
(A4) TB1	AUX I/O BINARY INPUTS (A4) - SOLDERLESS COMPRESSION SCREW	#22-14 AWG
(A4) TB2	AUX I/O RELAY CONTACTS (A4) - SOLDERLESS COMPRESSION SCREW	#22-14 AWG
(A4) TB3	AUX I/O ANALOG INPUTS (A4) - SOLDERLESS COMPRESSION SCREW	#22-14 AWG
(A4) TB4	AUX I/O RELAY CONTACTS (A4) - SOLDERLESS COMPRESSION SCREW	#22-14 AWG

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TITLE  
**ATEVO 3PH BATTERY CHARGER  
INSTRUMENT PANEL / PC BOARD DETAIL  
3Ø WITH COMMON OPTIONS 25-50A**

<b>B</b>	SCALE NTS	DWG No JE5333-19	REV 0	SHEET 2 OF 2
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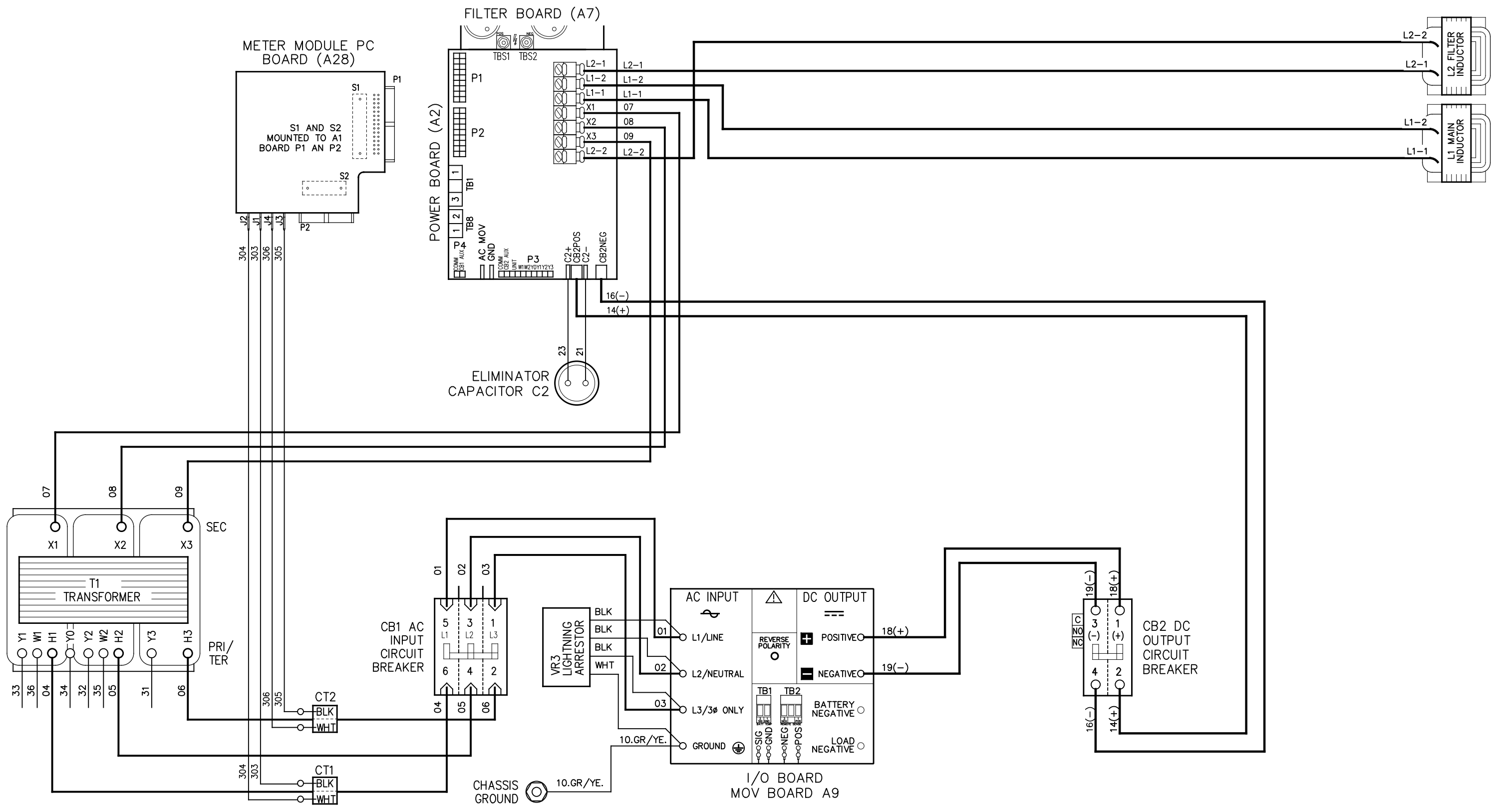


- NOTES:
1. FOR PHYSICAL COMPONENT FEATURES OF PC BOARDS (A1, A2, A7, etc.) SEE DETAIL DRAWING JE5339-SALES#.
  2. ALL ALARM CONTACTS SHOWN IN NON-ALARM STATE, WITH CHARGER ENERGIZED AND ALARM RELAYS ENERGIZED (FAIL SAFE). ALL ALARM CONTACTS WILL CHANGE STATE WHEN CHARGER IS POWERED DOWN. CONTACT RATING IS: 0.5A @ 125VAC/VDC RESISTIVE.
  - 3) DEFAULT RELAY ALARM CONFIGURATION SHOWN BELOW. CAN BE CHANGED TO DESIRED CONFIGURATION BY USER.

A4	DESCRIPTION	LACHING	DELAY
RELAY #1	HIGH VOLTAGE DC	DISABLED	30 SECONDS
RELAY #2	LOW VOLTAGE DC	DISABLED	30 SECONDS
RELAY #3	DC OUTPUT FAILURE	DISABLED	30 SECONDS
RELAY #4	LOW AC SUPPLY	DISABLED	30 SECONDS
RELAY #5	POSITIVE GROUND FAULT	DISABLED	30 SECONDS
RELAY #6	NEGATIVE GROUND FAULT	DISABLED	30 SECONDS

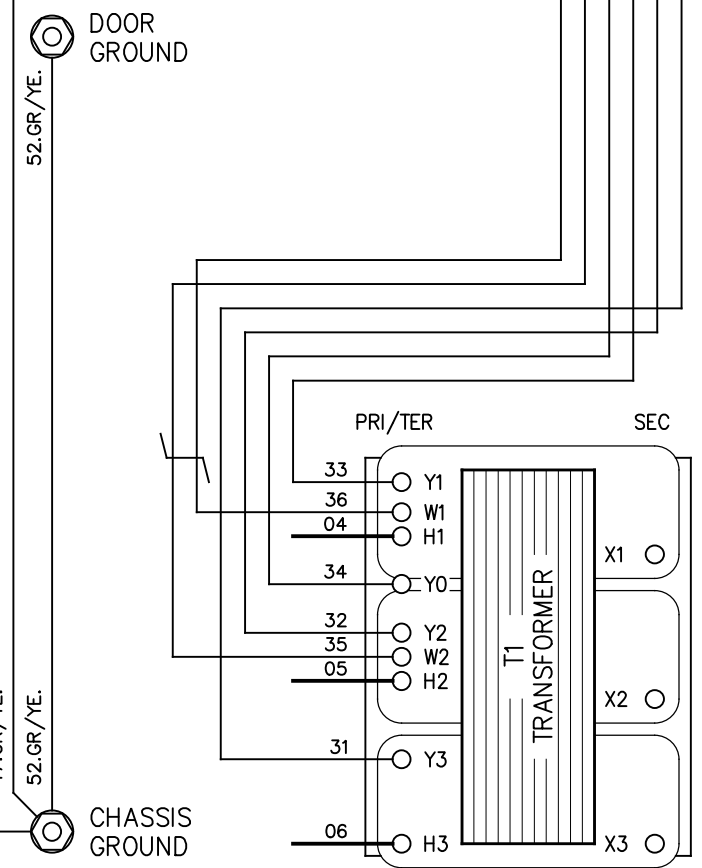
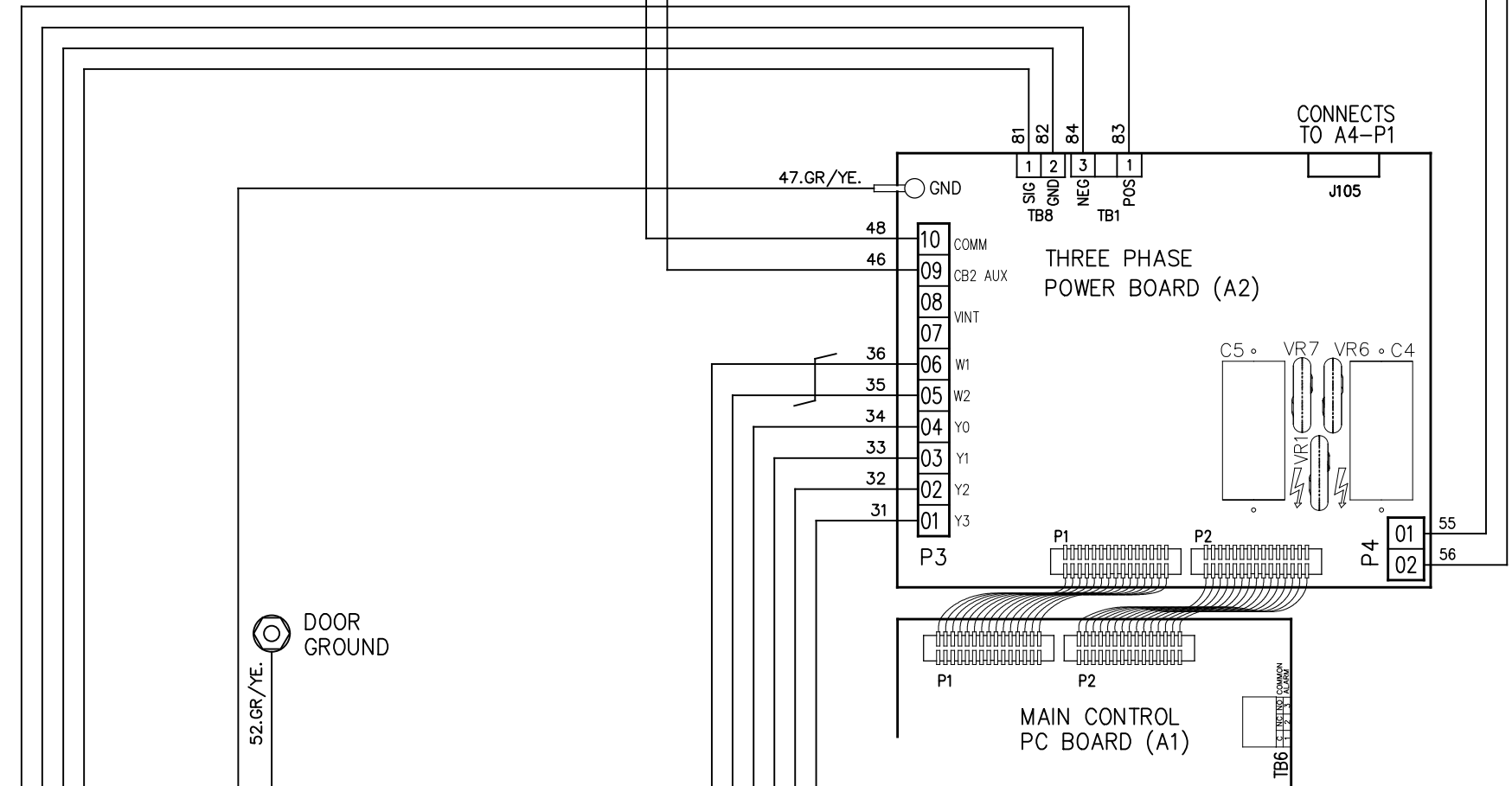
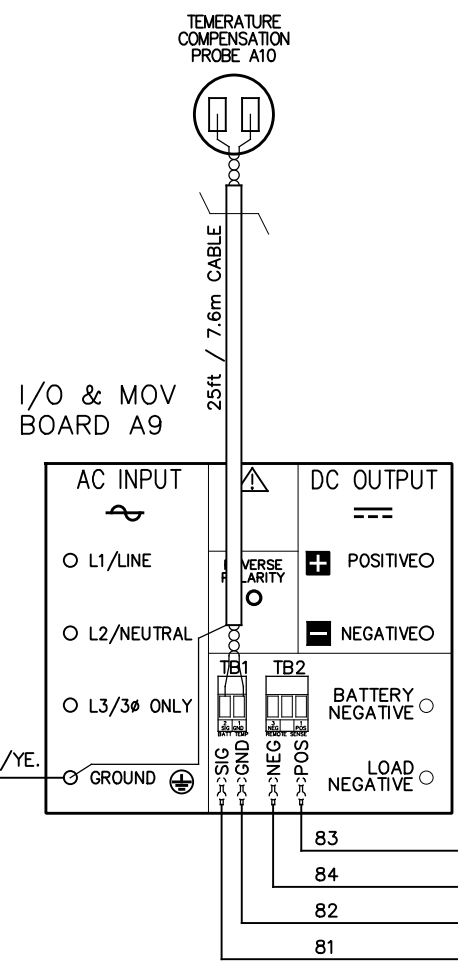
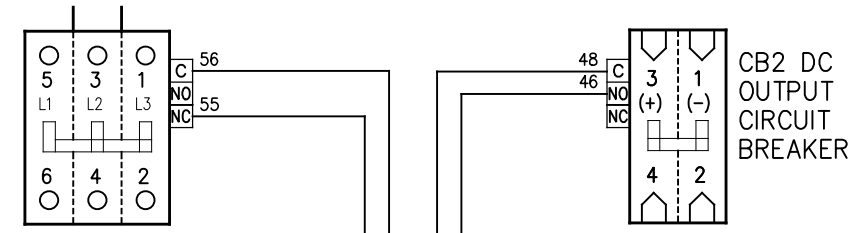
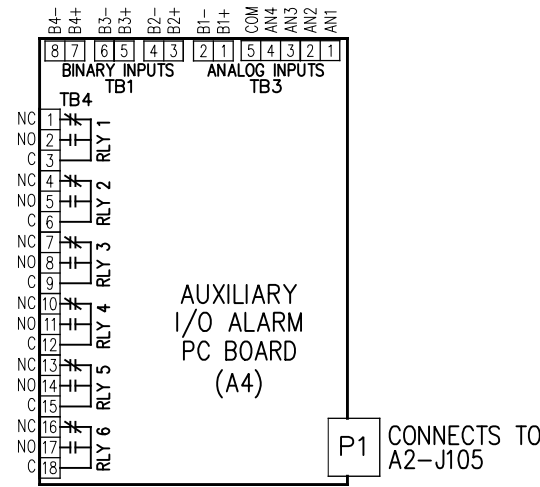
NOTE 2

REV. DRN BY B KJB	CHK BY MCR	APP BY MCR	DATE 9/22/2020	DRN BY KJB	DATE 2/6/2020	<p>1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com</p>
DESCRIPTION STANDARD DRAWINGS.				CHK BY MCR	DATE 2/6/2020	
				APP BY MCR	DATE 2/6/2020	
TITLE <b>ATEVO BATTERY CHARGER SCHEMATIC: 3φ STYLE 5070 3φ WITH COMMON OPTIONS 25-50A</b>						
SCALE NTS		DWG No JE5334-19		REV 0	SHEET 1 OF 1	



- NOTES:
1. WHEN NATURAL LEADS OF MAGNETICS ARE NOT USED, CHARGER COMPONENTS ARE CONNECTED WITH BLACK FLAME-RETARDANT SWITCHBOARD INSULATION SYSTEM (SIS) TYPE WIRING, IDENTIFIED ON EACH END WITH NUMBER-CODED MARKERS. GROUND WIRES ARE GREEN WITH YELLOW STRIPE.
  2. THIS DRAWING (SHEET 1) SHOWS THE MAINFRAME POWER WIRING AND USER CONNECTION CONTACTS TO CONTROL PC BOARDS (A1 & A2). SEE SHEET 2 FOR ALL CONTROL (SIGNAL) WIRING.

REV. C	DRN BY KJB	CHK BY ND	APP BY ND	DATE 6/8/2021	DRN BY KJB	DATE: 9/22/2020	<p><b>HINDLEPOWER</b></p> <p>1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com</p>
DESCRIPTION REVISED SIGNAL WIRING.					CHK BY MCR	DATE: 9/22/2020	
					APP BY MCR	DATE: 9/22/2020	
TITLE <b>ATEVO BATTERY CHARGER CONN DIAGRAM: 3Ø STYLE 5070 FOR CHARGERS AT 25-50ADC</b>							
		SCALE NTS	DWG No <b>JE5335-19</b>		REV C	SHEET 1 OF 2	



- NOTES:
1. WHEN NATURAL LEADS OF MAGNETICS ARE NOT USED, CHARGER COMPONENTS ARE CONNECTED WITH BLACK FLAME-RETARDANT SWITCHBOARD INSULATION SYSTEM (SIS) TYPE WIRING, IDENTIFIED ON EACH END WITH NUMBER-CODED MARKERS. GROUND WIRES ARE GREEN WITH YELLOW STRIPE.
  2. STANDARD USER ALARM CONTACTS (TB6 [A1], etc.) ARE SOLDERLESS COMPRESSION SCREW TERMINALS, ACCEPTING #22-14 AWG WIRE.

DRN BY KJB	DATE 9/22/2020		1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com			
CHK BY MCR	DATE 9/22/2020		<b>ATEVO BATTERY CHARGER CONN DIAGRAM: 3Ø STYLE 5070 FOR CHARGERS AT 25-50ADC</b>			
APP BY MCR	DATE 9/22/2020					
		<b>B</b>	SCALE NTS	DWG No JE5335-19	REV C	SHEET 2 OF 2