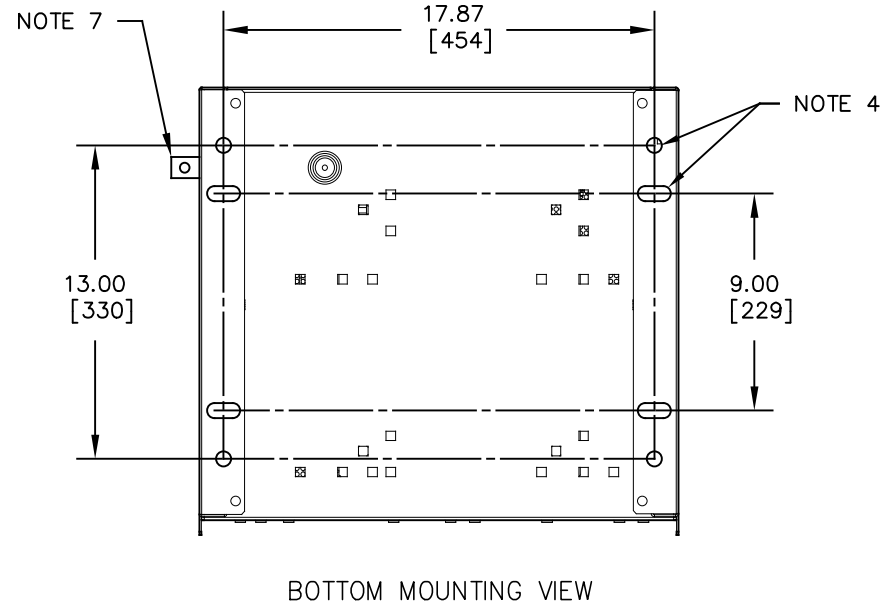


NOTE 3

NOTE 5



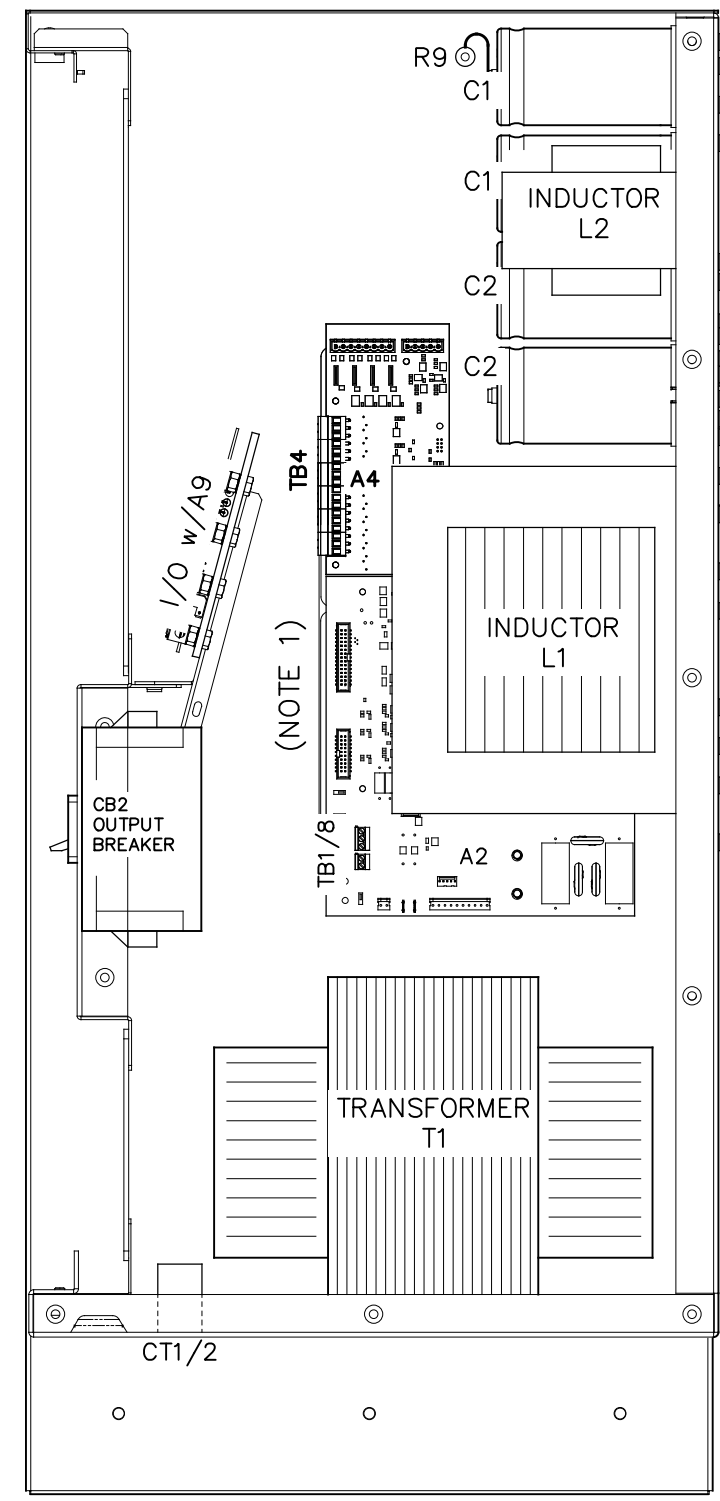
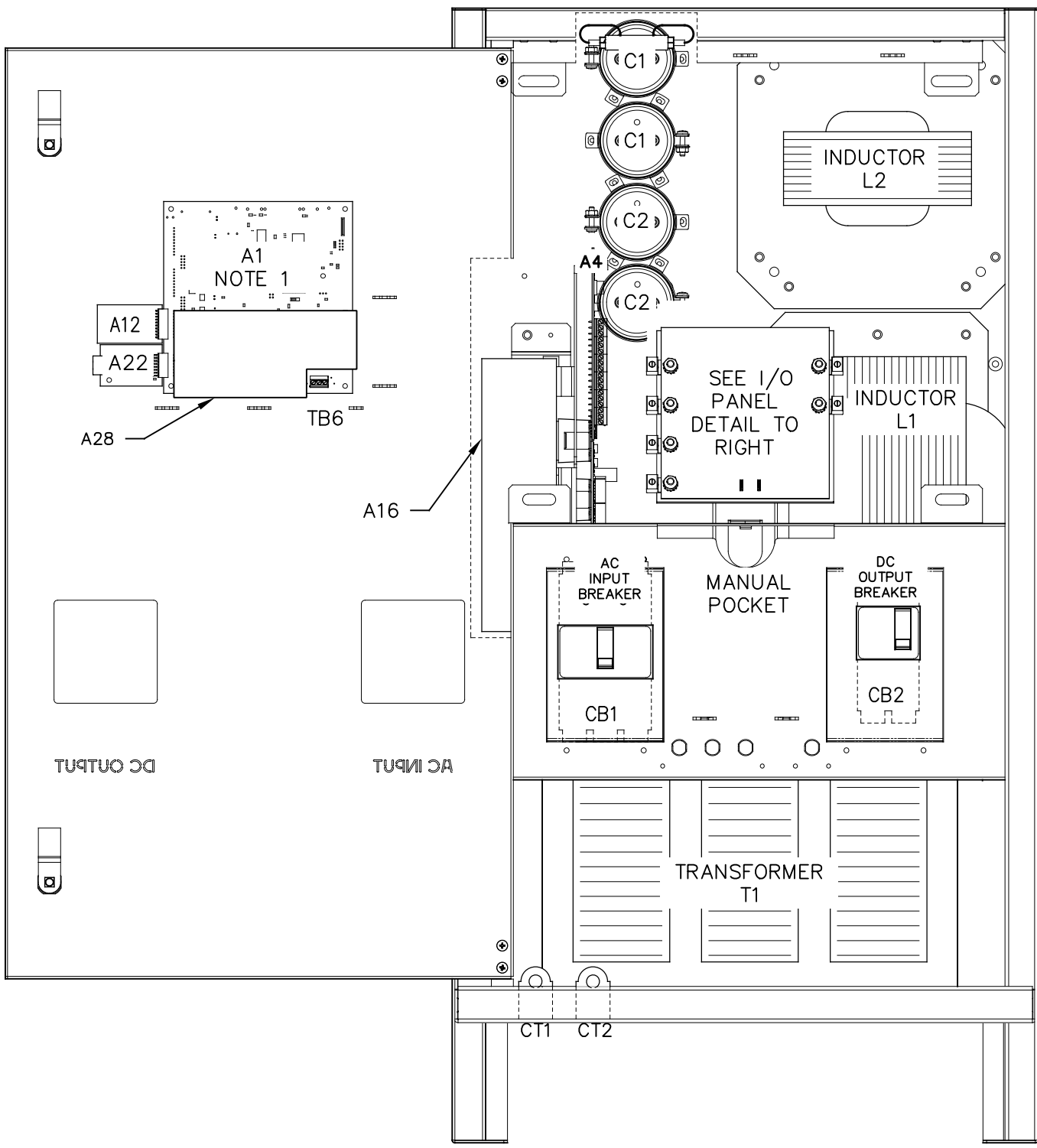
NOTES:

- 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.

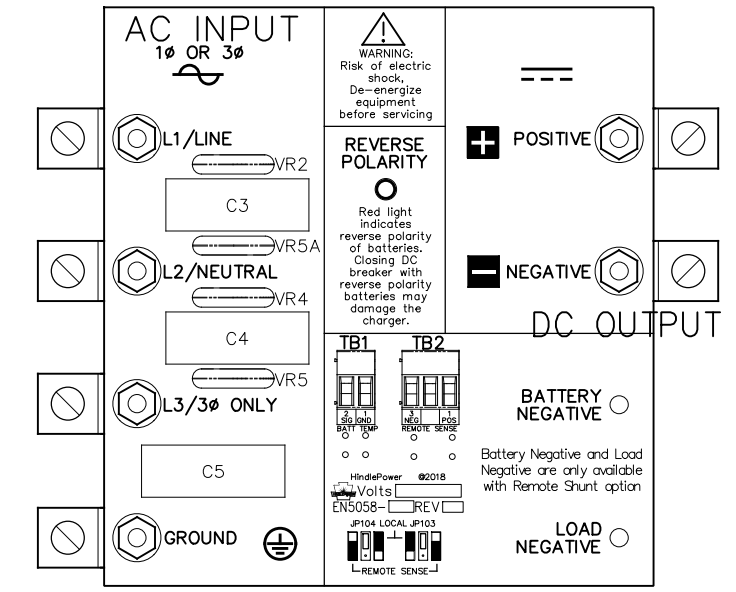
DUAL DIMENSIONS [mm]

REV. 0	DRN BY KJB	CHK BY MCR	APP BY RDB	DATE 11/05/19	DRN BY KJB	DATE 11/05/19	TITLE ATEVO 3PH BATTERY CHARGER OUTLINE: NEMA-1 STYLE-5070 ENCL
DESCRIPTION STANDARD DRAWINGS.					CHK BY MCR	DATE 11/05/19	
					APP BY RDB	DATE 11/05/19	
							B SCALE NTS DWG No JE5331-00 REV 0 SHEET 1 OF 1

- SYM STANDARD COMPONENT DESCRIPTION
- A1 MAIN CONTROL PC BOARD
 - A2 POWER BOARD
 - A16 RECTIFIER H/S ASSEMBLY
 - C1 FILTER CAPACITOR
 - A9 MOV PC BOARD
 - CB1 AC INPUT CIRCUIT BREAKER (BD3)
 - CB2 DC OUTPUT CIRCUIT BREAKER (BD2)
 - L1 MAIN INDUCTOR
 - L2 FILTER INDUCTOR
 - T1 POWER TRANSFORMER
- SYM FEATURED OPTION COMP DESCRIPTION
- A4 AUXILIARY I/O BOARD
 - A12 SERIAL COMMUNICATION ADAPTER
 - A22 ETHERNET ADAPTER
 - A28 METER MODULE PC BOARD
 - C2 BATTERY ELIMINATOR FILTER CAP
 - CTx CURRENT TRANSFORMERS



ST-5070 I/O
TERMINAL
BOARD DETAIL



MOV PC BOARD (A9)

I/O TERMINAL	DESCRIPTION - TYPE	CONNECTION
I/O (+/-)	POS/NEG OUTPUT TERMINALS - CU-ALUMINUM COMPRESSION LUG	#14-1/0 AWG
GND LUG	USER GROUND TERMINAL - CU-ALUMINUM COMPRESSION LUG	#14-1/0 AWG
I/O (L1/L2)	AC INPUT TERMINALS - CU-ALUMINUM COMPRESSION LUG	#14-1/0 AWG
(A1) TB6	SUMMARY ALARM TERMINAL BLOCK (A1) - SOLDERLESS COMPRESSION SCREW	#22-14 AWG
(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) TB4	AUX I/O RELAY CONTACTS (A4) - SOLDERLESS COMPRESSION SCREW	#22-14 AWG

NOTES:
1. FOR DETAIL VIEWS OF ALL PC BOARDS (A1, A2, etc.) SEE DRAWING JE5213-JE5333-00, 20, 30.

REV. DRN BY	CHK BY	APP BY	DATE	DRN BY	DATE:	
B	KJB	MCR	RDB	9/21/2020	KJB	11/05/19
DESCRIPTION				CHK BY	DATE:	
STANDARD DRAWINGS.				MCR	11/05/19	
				APP BY	DATE:	
				MCR	11/05/19	

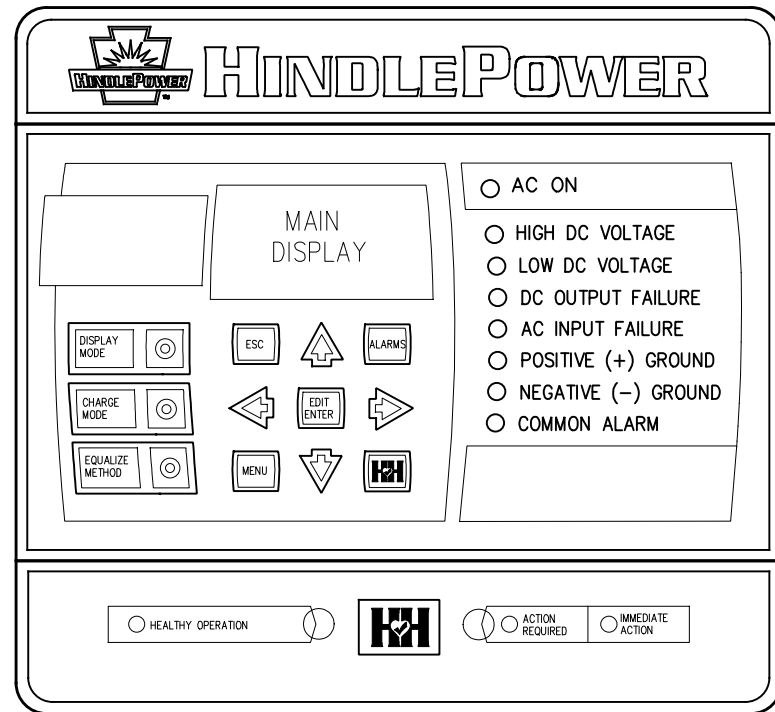
1075 Saint John Street
Easton, PA 18042-6661
PH 610-330-9000 FAX 610-330-8510
www.hindlepowerinc.com

HINDLEPOWER

**ATEVO 3PH BATTERY CHARGER
INTERNAL COMPONENT LAYOUT: STYLE-5070
3Ø WITH COMMON OPTIONS 75-100A**

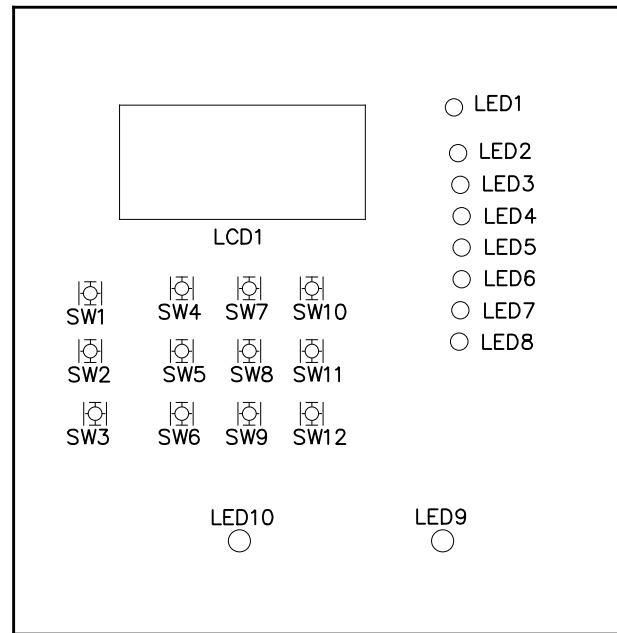
B SCALE DWG No
NTS JE5332-29

REV B SHEET 1 OF 1

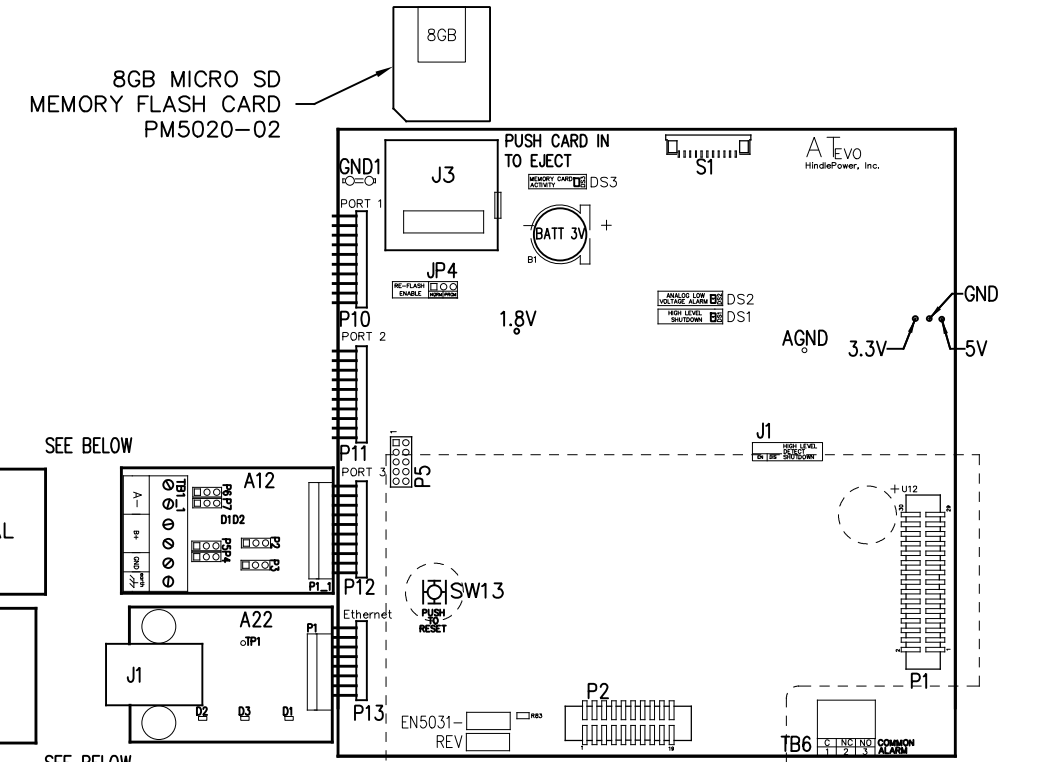


CONTROL PANEL
(PART No. FK5047-00)

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.

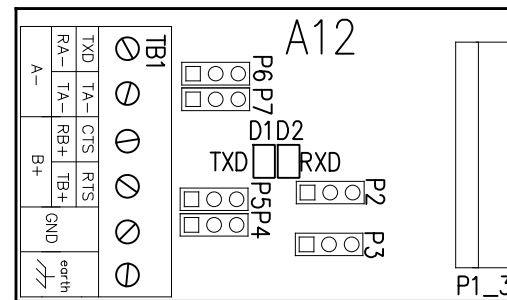


MAIN CONTROL PC BOARD (A1)
FRONT VIEW - FACING CHARGER DOOR WHEN INSTALLED



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

SERIAL ADAPTER (A12)



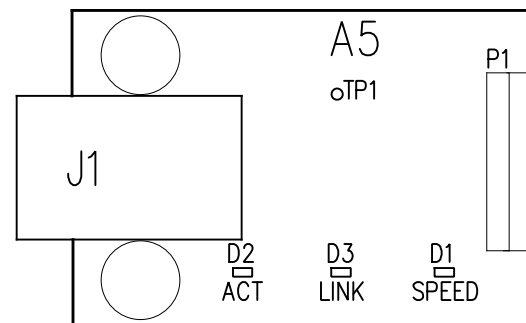
CONNECTORS (A12):
P1 - MAIN CONTROL BOARD

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)

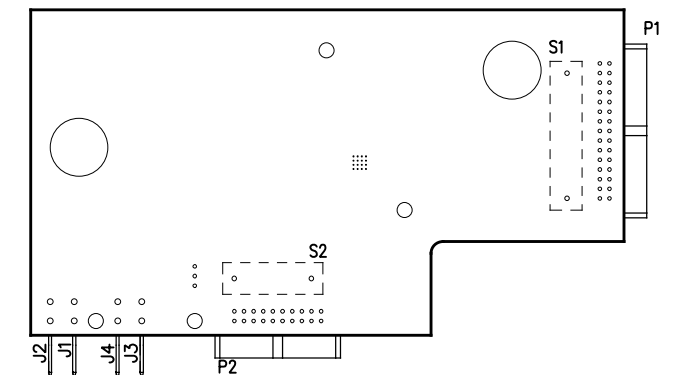


CONNECTORS (A5):
P1 - MAIN CONTROL BOARD
J1 - RJ-45 ETHERNET USER CONNECTION

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

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

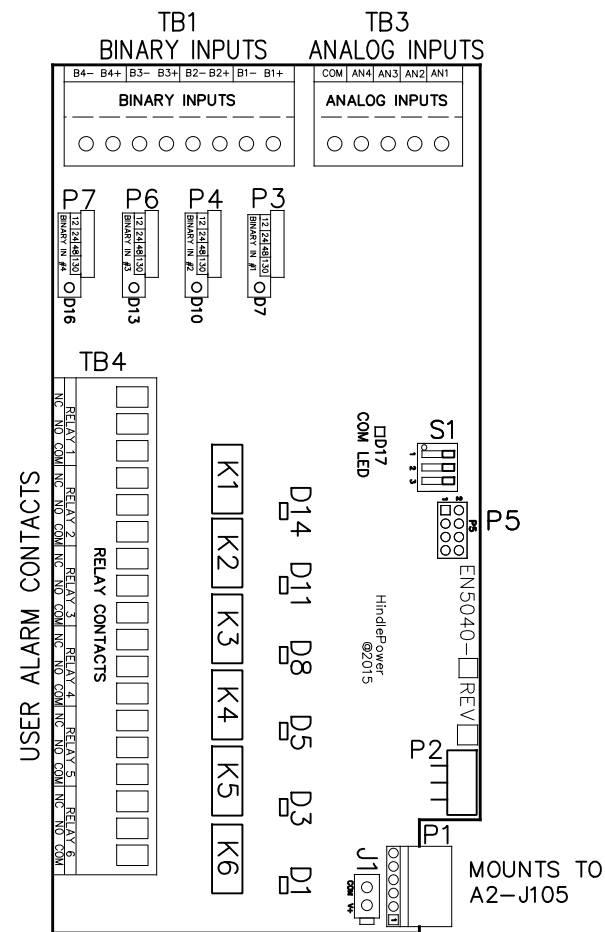


I/O TERMINAL	DESCRIPTION - TYPE	CONNECTION
(A1) TB6	SUMMARY ALARM TERMINAL BLOCK (A1) - SOLDERLESS COMP SCREW	#22-14 AWG
(A12) TB1	RS-232 / RS-485 USER CONNECTIONS - SOLDERLESS COMP SCREW	#22-14 AWG
(A22) J1	SERIAL ETHERNET CONNECTION - RJ45 PLUG	CAT5

MAIN CONTROL PC BOARD (A1)

<p>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</p>	<p>JUMPERS: J1 - ANALOG HIGH VOLTAGE SHUTDOWN JUMPER J3 - SD CARD PORT JP4 - RE-FLASH (FIELD PROGRAMMING) JUMPER</p> <p>TERMINAL BLOCKS: TB6 - COMMON ALARM RELAY CONTACTS</p> <p>TEST POINTS: 1.8V - 1.8 VOLTS 3.3V - 3.3 VOLTS 5V - 5.0 VOLTS GND - GROUND AGND - ANALOG GROUND SDA - MAIN BOARD 12C DATA SCL - MAIN BOARD 12C CLOCK</p>	<p>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)</p>	<p>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</p>
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REV. 0	DRN BY KJB	CHK BY MCR	APP BY MCR	DATE 7/22/2021	DRN BY KJB	DATE 4/17/2021	<p>1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com</p> <p>TITLE ATEVO 3PH BATTERY CHARGER CONTROL PANEL / PC BOARD DETAIL 3Ø WITH COMMON OPTIONS 75-100A</p>
DESCRIPTION: STANDARD DRAWINGS.					CHK BY MCR	DATE 4/17/2021	
					APP BY MCR	DATE 4/17/2021	
					<p>B SCALE NTS DWG No JE5333-29 REV 0 SHEET 1 OF 2</p>		



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):

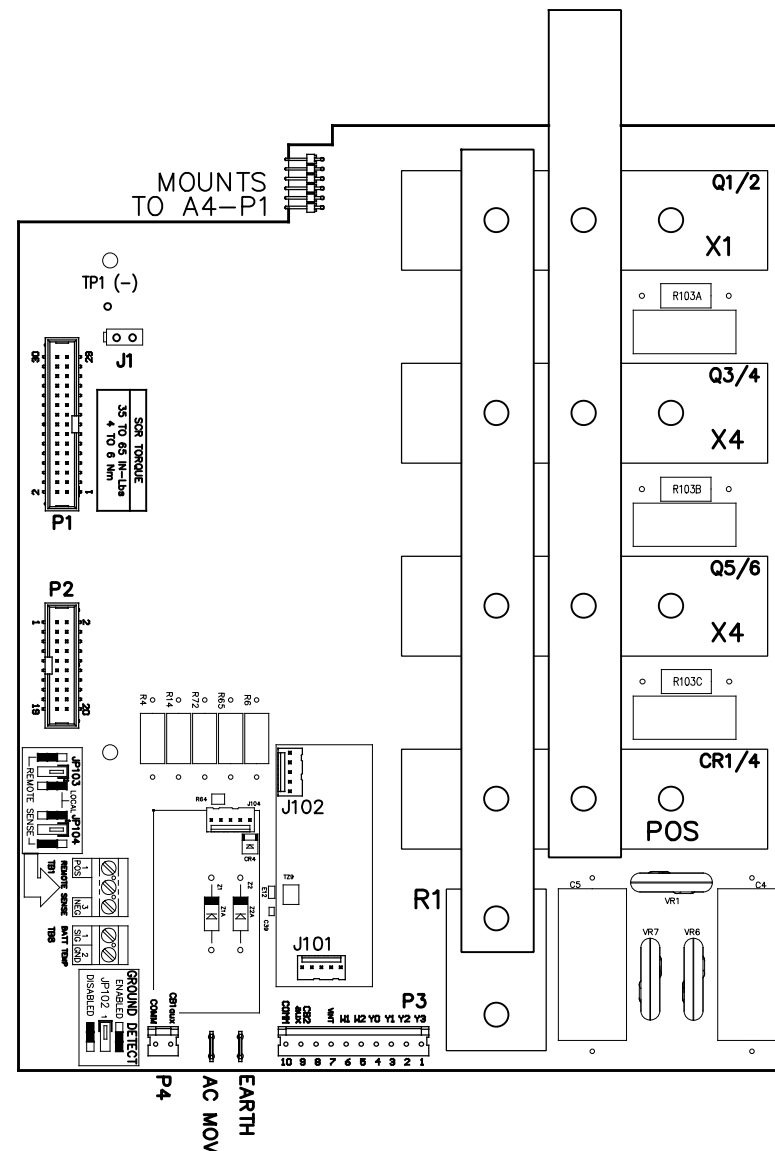
- D1 - RED - RELAY #6 IN ALARM STATE
- D3 - RED - RELAY #5 IN ALARM STATE
- D5 - RED - RELAY #4 IN ALARM STATE
- D7 - YELLOW - BINARY INPUT #1 IS ABOVE THRESHOLD
- D8 - RED - RELAY #3 IN ALARM STATE
- D10 - YELLOW - BINARY INPUT #2 IS ABOVE THRESHOLD
- D11 - RED - RELAY #2 IN ALARM STATE
- D13 - YELLOW - 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



USER TERMINALS ON POWER BOARD (A2):

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

JUMPERS ON POWER BOARD (A2):

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

CONNECTORS ON POWER BOARD (A2):

- J1 - POWER OUT
- J101 - DC POWER SUPPLY
- J102 - DC POWER SUPPLY
- J104 - BATTERY SHUNT
- J105 - AUXILIARY I/O BOARD
- P1 - MAIN CONTROL BOARD RIBBON 1
- P2 - MAIN CONTROL BOARD RIBBON 2
- P3 - Wx, Yx, CB2-AUX, VINT
- P4 - CB1-AUX

DISCRETE TERMINALS:

- AC MOV - CHASSIS EARTH GROUND
- EARTH - CHASSIS EARTH GROUND (DOOR)
- POS - POSITIVE CONNECTION POINT
- NEG - NEGATIVE CONNECTION POINT
- COMM - BREAKER AUX SWITCH COMMON
- X1 - TRANSFORMER SECONDARY WINDING
- X2 - TRANSFORMER SECONDARY WINDING
- X3 - TRANSFORMER SECONDARY WINDING
- L1-1 - FILTER INDUCTOR #1 (TERMINAL #1)
- L1-2 - FILTER INDUCTOR #1 (TERMINAL #2)

TEST POINTS ON POWER BOARD (A2):

- TP1 - PRE-FILTERED DC BUS (-)
- TP2 - PRE-FILTERED DC BUS (+)
- TP3 - DC BUS (-)
- TP4 - DC BUS (+)

NOTE:

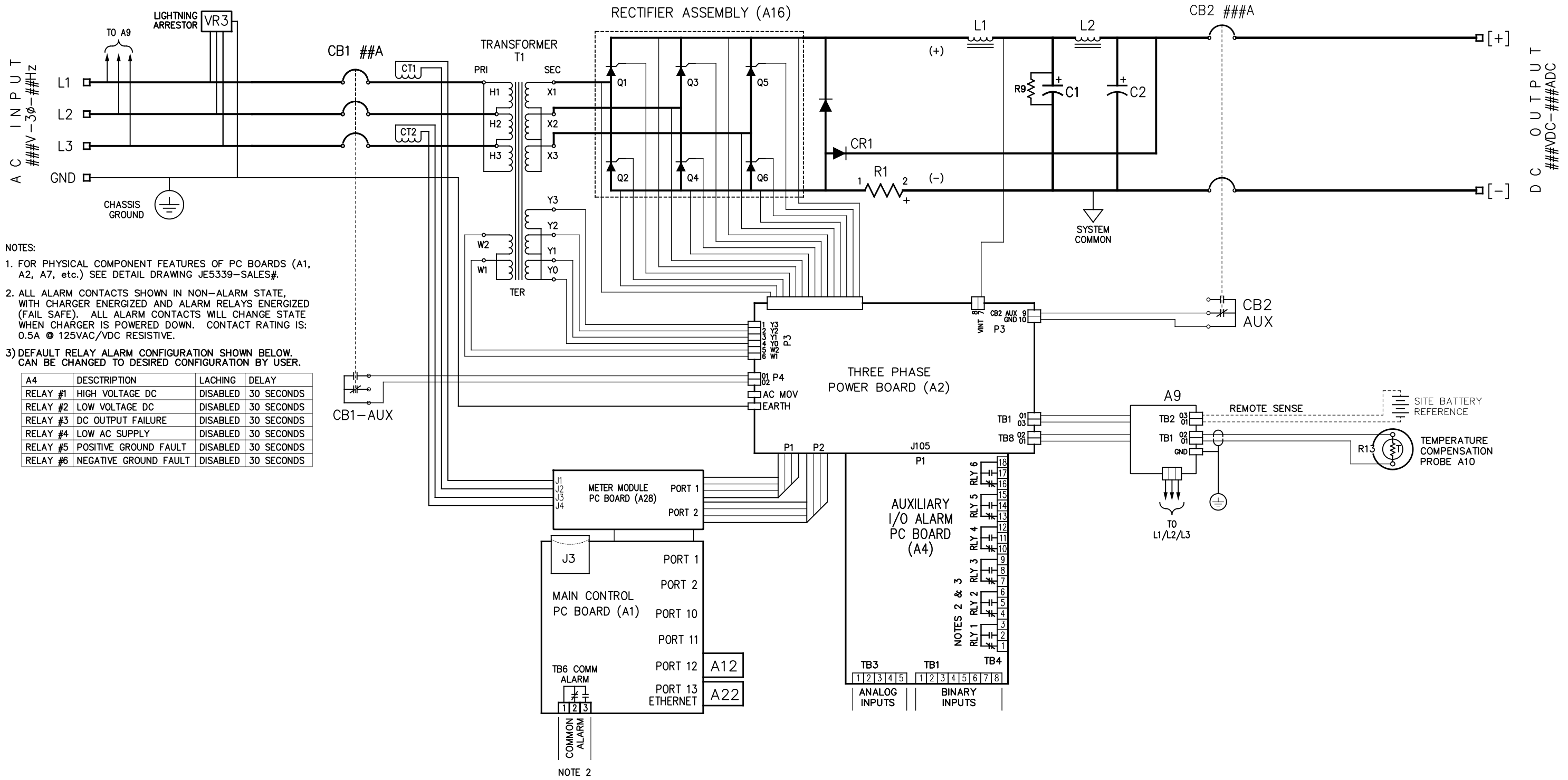
1. REMOTE SENSE JUMPERS (JP103, JP104) MUST BE IN REMOTE SENSE POSITION IN STYLE-5070 ENCLOSURE.

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

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

TITLE
**ATEVO 3PH BATTERY CHARGER
INSTRUMENT PANEL / PC BOARD DETAIL
3Ø WITH COMMON OPTIONS 75-100A**

B	SCALE NTS	DWG No JE5333-29	REV 0	SHEET 2 OF 2
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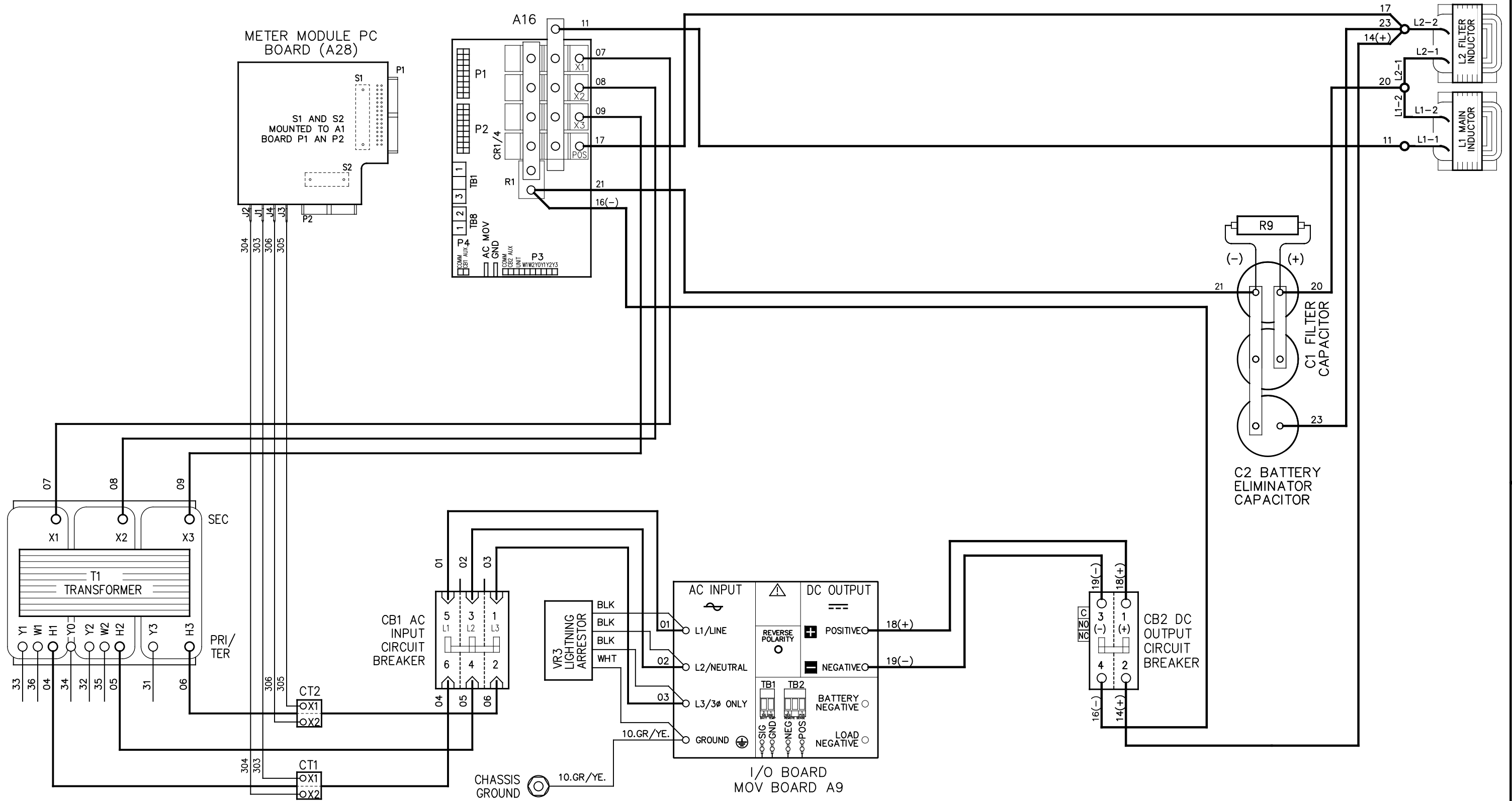


- NOTES:
- FOR PHYSICAL COMPONENT FEATURES OF PC BOARDS (A1, A2, A7, etc.) SEE DETAIL DRAWING JE5339-SALES#.
 - ALL ALARM CONTACTS SHOWN IN NON-ALARM STATE, WITH CHARGER ENERGIZED AND ALARM RELAYS ENERGIZED (FAIL SAFE). ALL ALARM CONTACTS WILL CHANGE STATE WHEN CHARGER IS POWERED DOWN. CONTACT RATING IS: 0.5A @ 125VAC/VDC RESISTIVE.
 - 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

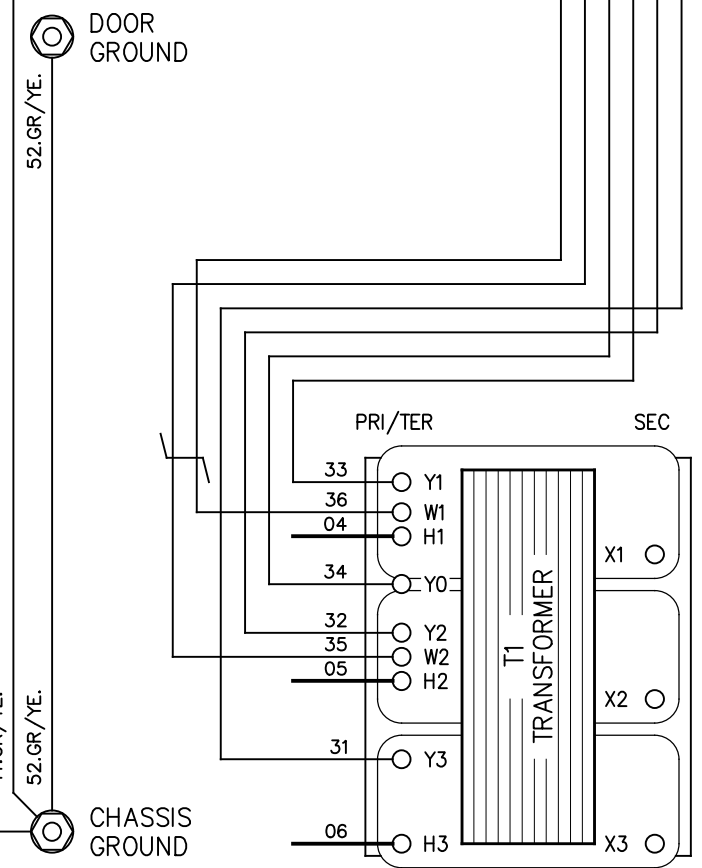
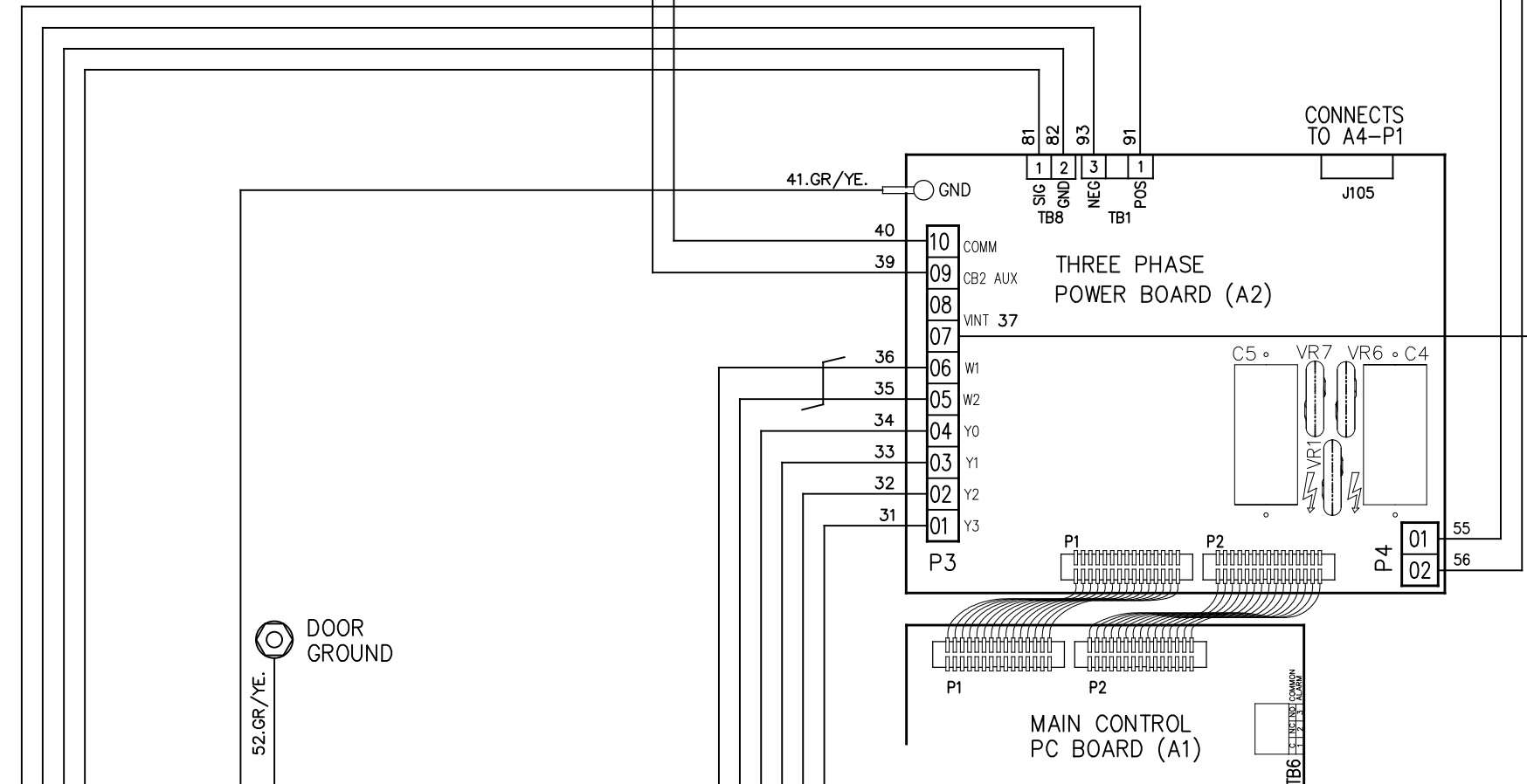
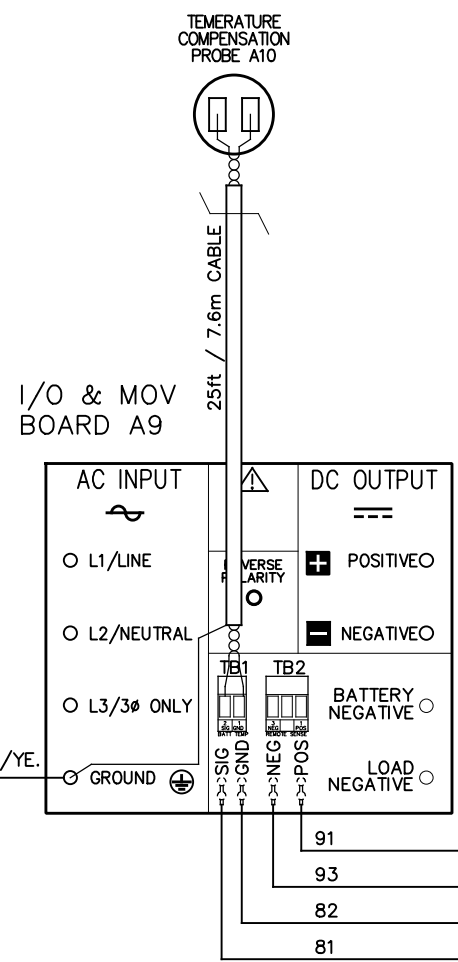
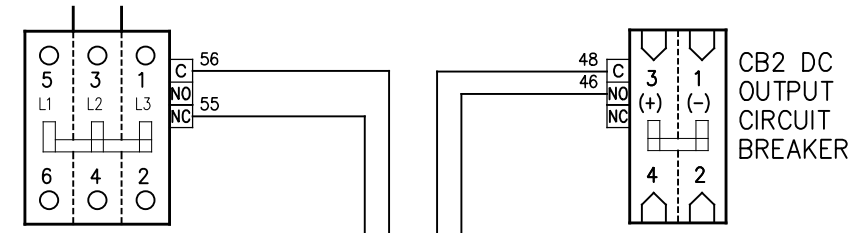
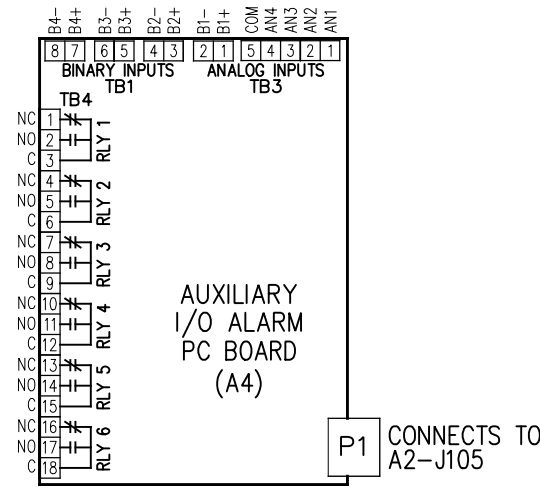
NOTE 2

REV. DRN BY B KJB	CHK BY MCR	APP BY MCR	DATE 9/22/2020	DRN BY KJB	DATE 2/6/2020		1075 Saint John Street Easton, PA 18042-6661 PH 610-330-9000 FAX 610-330-8510 www.hindlepowerinc.com
DESCRIPTION STANDARD DRAWINGS.				CHK BY MCR	DATE 2/6/2020		
				APP BY MCR	DATE 2/6/2020	TITLE	ATEVO BATTERY CHARGER SCHEMATIC: 3φ STYLE 5070 3φ WITH COMMON OPTIONS 75-100ADC
		SCALE NTS	DWG No JE5334-29	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 MCR	APP BY MCR	DATE 6/8/2021	DRN BY KJB	DATE: 9/22/2020	TITLE ATEVO BATTERY CHARGER CONN DIAGRAM: 3Ø STYLE 5070 3Ø WITH COMMON OPTIONS 75-100ADC
DESCRIPTION REVISED SIGNAL WIRING.					CHK BY MCR	DATE: 9/22/2020	
					APP BY MCR	DATE: 9/22/2020	
							B SCALE NTS DWG No JE5335-29 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	TITLE ATEVO BATTERY CHARGER CONN DIAGRAM: 3Ø STYLE 5070 3Ø WITH COMMON OPTIONS 75-100ADC	SCALE B	DWG No JE5335-29	REV C	SHEET 2 OF 2
CHK BY MCR	DATE 9/22/2020					
APP BY MCR	DATE 9/22/2020					