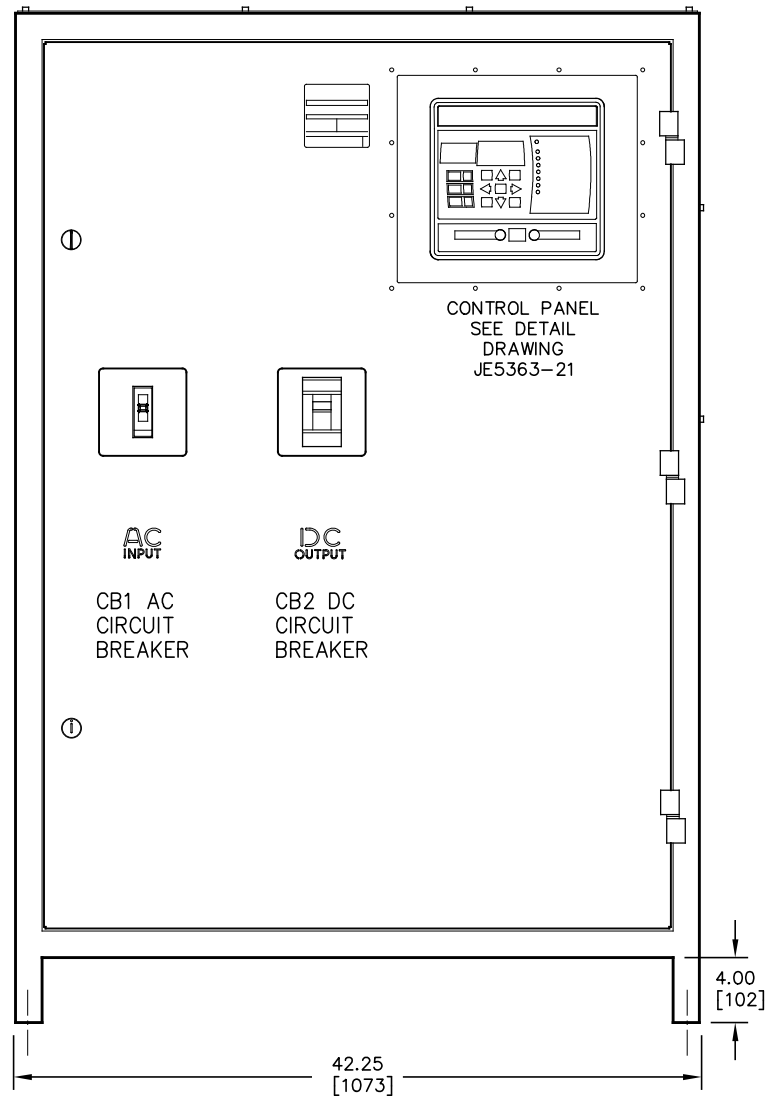
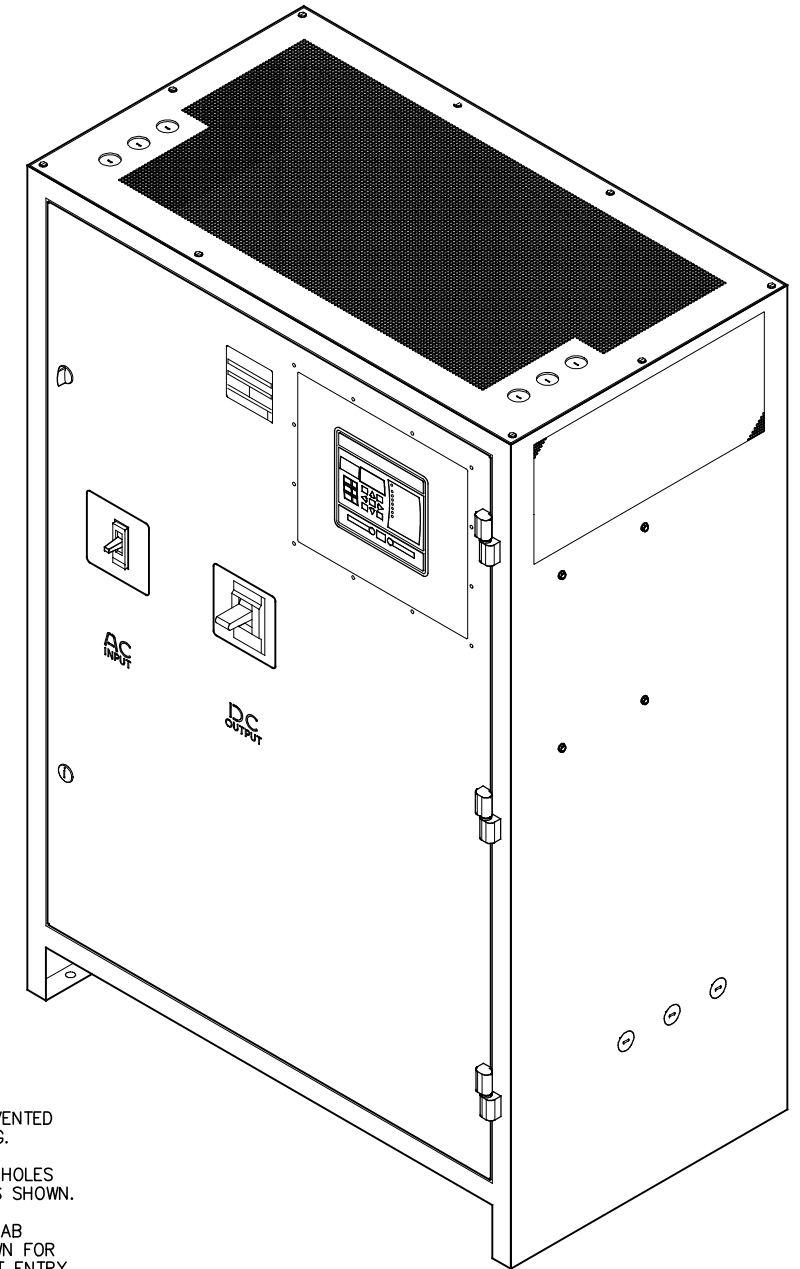
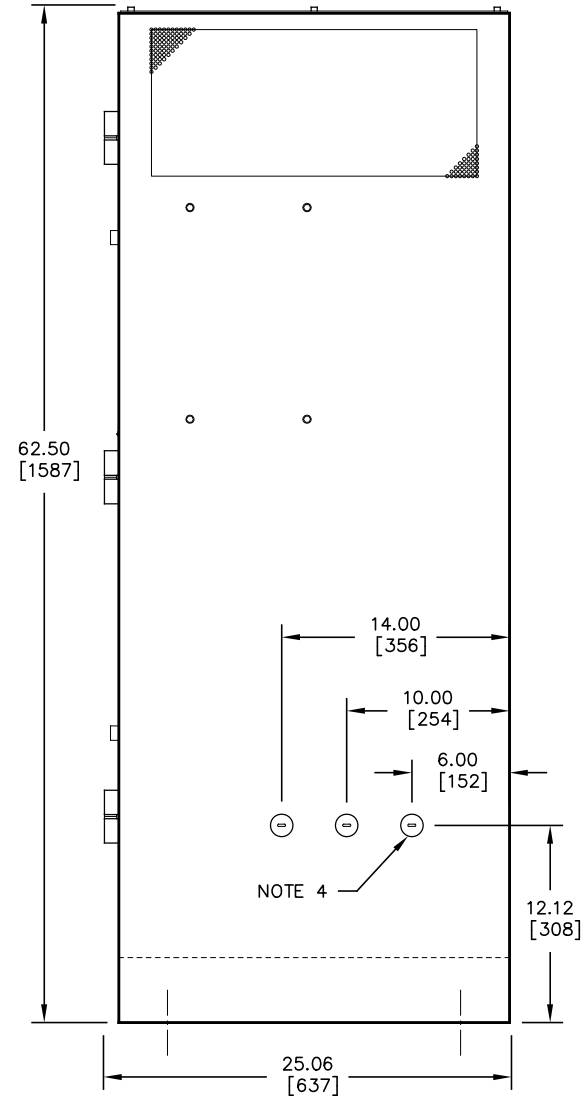


FRONT VIEW

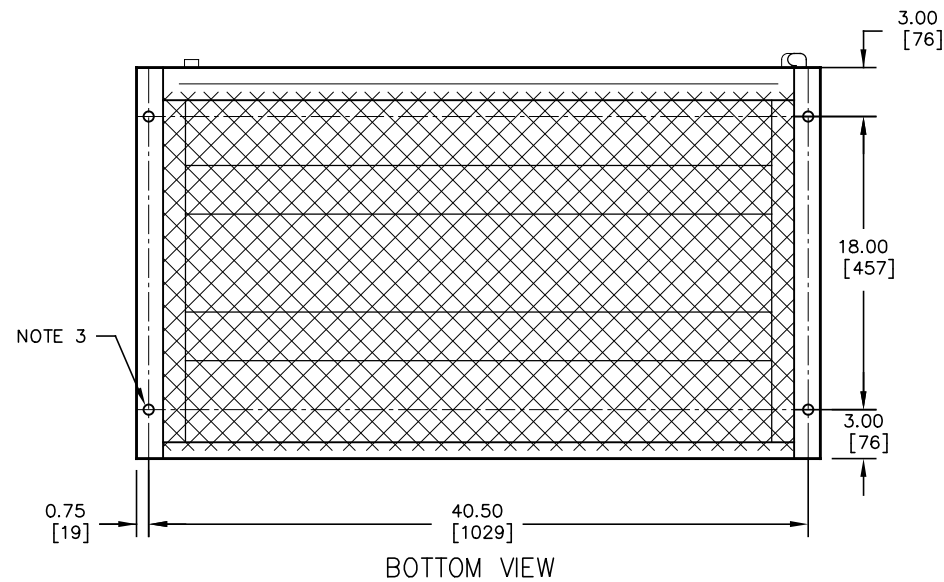


RIGHT SIDE VIEW



NOTES:

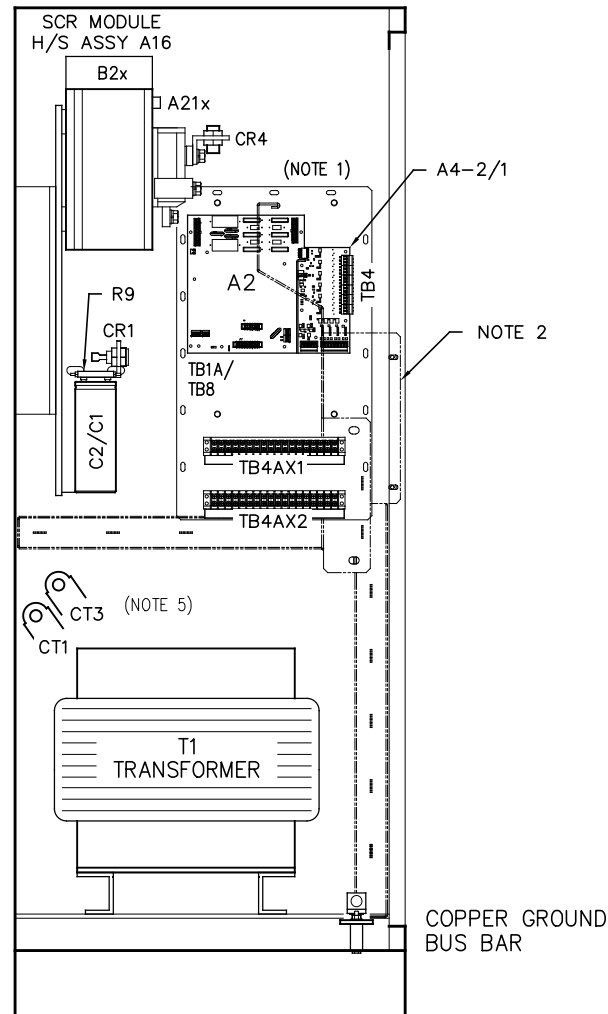
- 1) ENCLOSURE IS A TOP-VENTED STEEL CABINET WITHOUT GASKETS. FINISH IS ANSI-61 GRAY EPOXY POWDERCOAT.
- 2) ALLOW 12in / 305mm OF FREE AIR ON ALL VENTED SURFACES (TOP, SIDES & REAR) FOR COOLING.
- 3) FOUR (4) 0.625in / 16mm FLOOR-MOUNTING HOLES ARE PROVIDED ON BOTTOM OF ENCLOSURE AS SHOWN.
- 4) SIX (6) 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



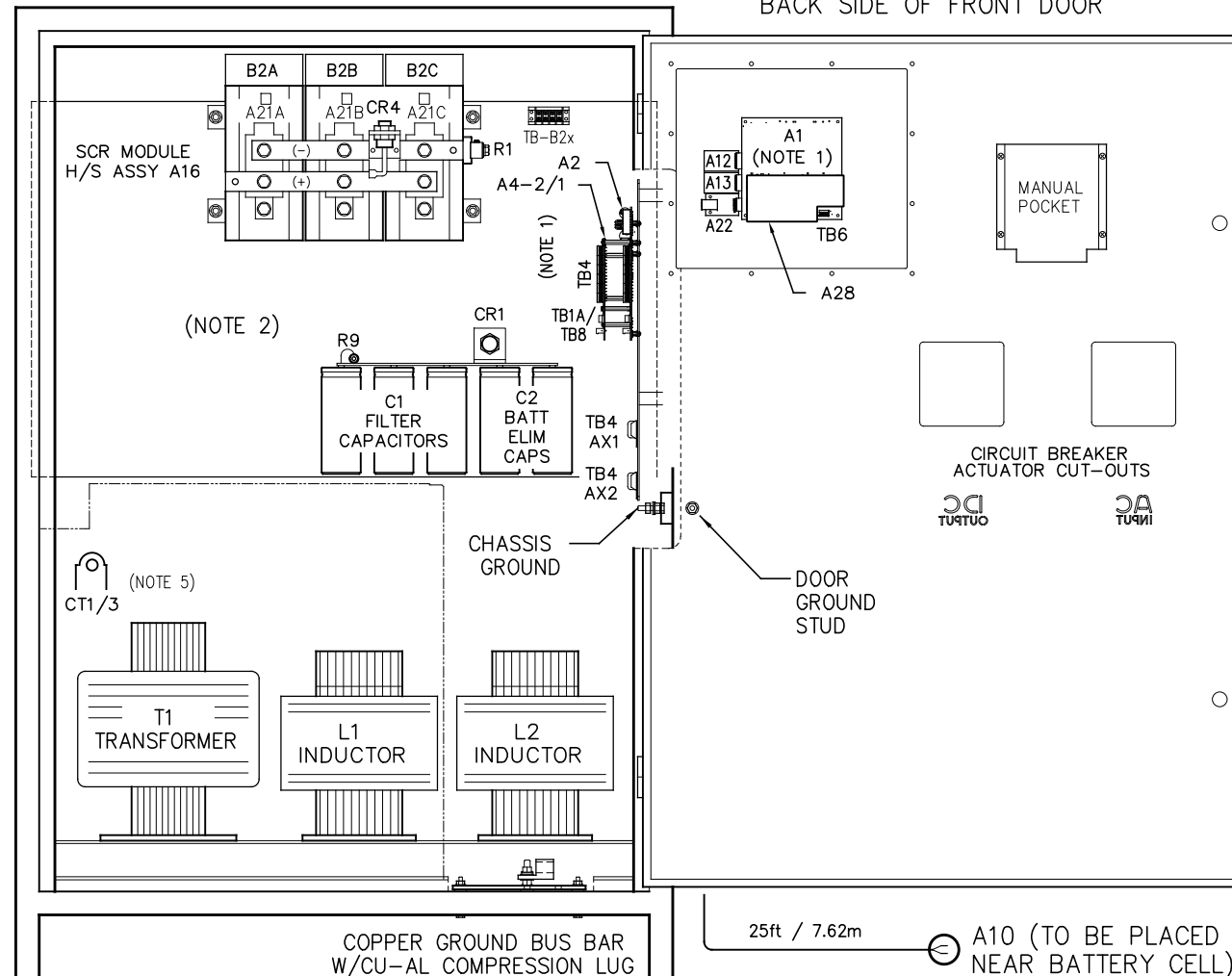
DUAL DIMENSIONS in mm

REV: 0	DRN BY: KMW	CHK BY: MCR	APP BY: MCR	DATE: 03232023	DRN BY: KMW	DATE: 03232023					
DESCRIPTION: STANDARD DRAWINGS.					CHK BY: MCR	DATE: 03232023	TITLE: ATEVO BATTERY CHARGER OUTLINE: NEMA-1 STYLE-163 ENCL 3φ WITH COMMON OPTIONS 150-600A				
ECN NO. N/A					CHK BY: MCR	DATE: 03232023					
							<b>B</b>	SCALE: NTS	DWG No: JE5361-21	REV: 0	SHEET: 1 OF 1

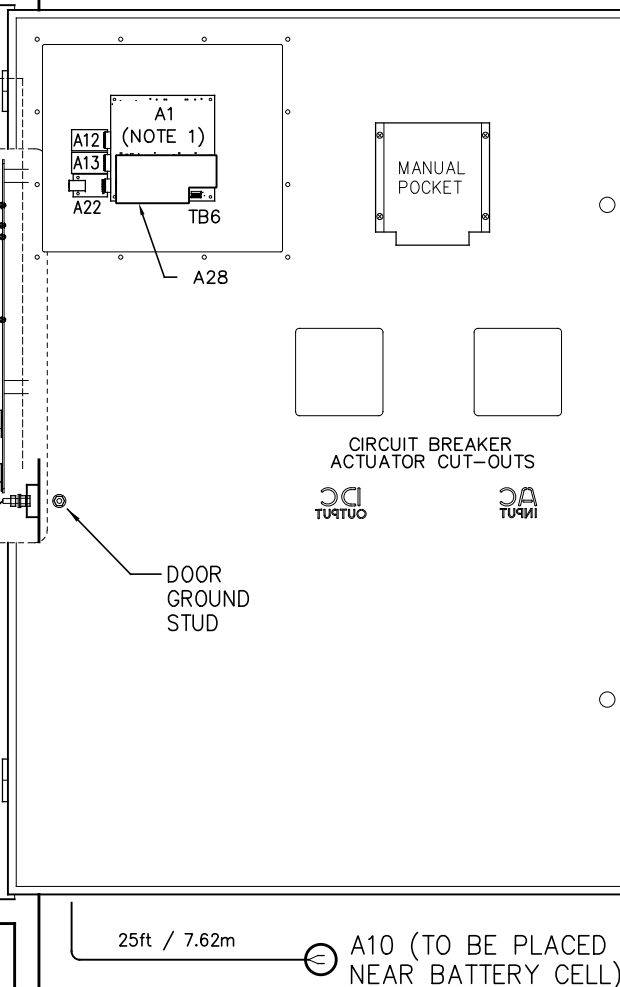
RIGHT SIDE INTERNAL VIEW



FRONT VIEW



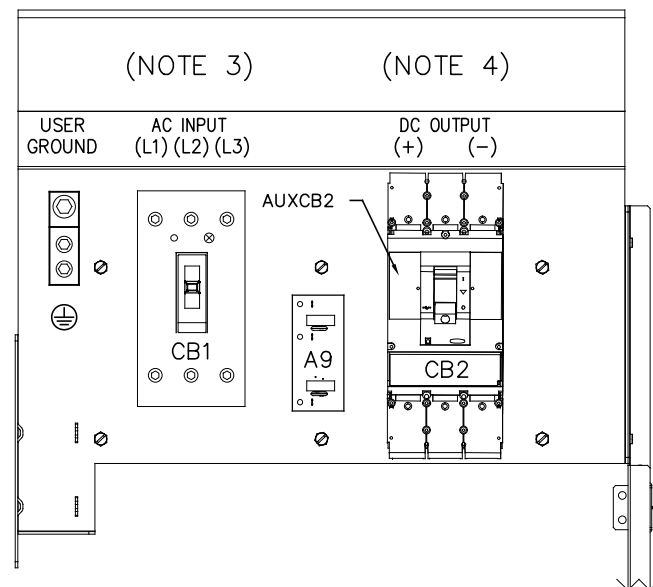
BACK SIDE OF FRONT DOOR



SYM	STANDARD COMPONENT DESCRIPTION
A1	MAIN CONTROL PC BOARD
A2	POWER BOARD
A9	MOV PC BOARD
A16	6-PULSE SCR MODULE HEATSINK ASSY
A21x	SCR MODULE (A16) THERMOSTAT
B2x	SCR MODULE (A16) COOLING FAN
C1x	DC OUTPUT FILTER CAPACITOR
CB1	AC INPUT CIRCUIT BREAKER (H+J3)
CB2	DC OUTPUT CIRCUIT BREAKER (LxL3)
AUXCB2	DC CKT BKR (CB2) AUXILIARY CONTACTS
CR1	POLARITY DIODE
CR4	FREE-WHEELING DIODE
L1	MAIN INDUCTOR
L2	FILTER INDUCTOR
R1	MAIN DC SHUNT, NEG(-) BUS
T1	POWER ISOLATION TRANSFORMER
TB1A	REMOTE SENSE (A2)
TB6	SUMMARY ALARM CONTACTS
TB8	REMOTE BATT TEMP PROBE (A2)
R9	FILTER CAP (C1) BLEED RESISTOR

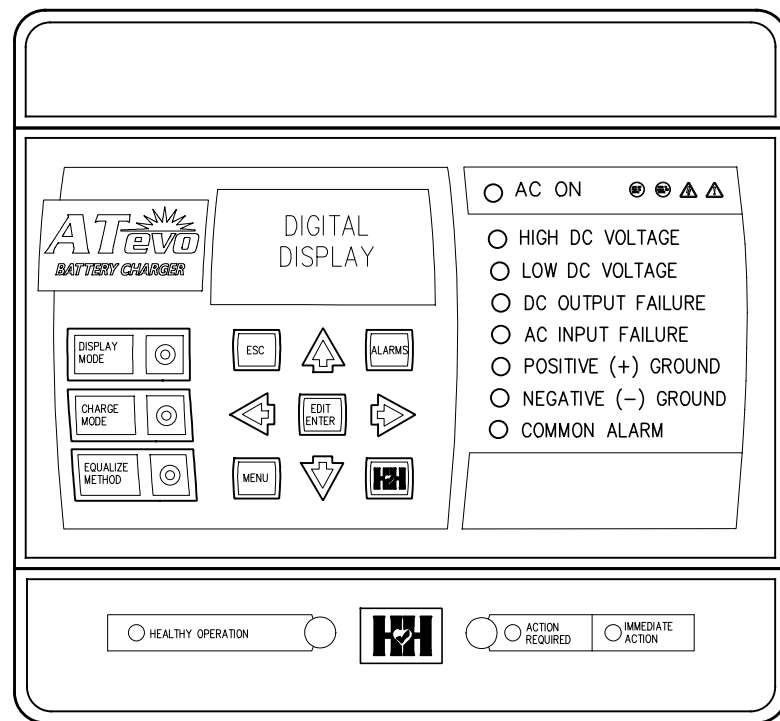
SYM	FEATURED OPTION COMP DESCRIPTION
A4x	AUXILIARY ALARM RELAY PC BOARD
A10	EXTERNAL TEMPCO PROBE
A12	SERIAL COMMUNICATION ADAPTER
A13	FORCED LOAD SHARE PCB
A22	ETHERNET COMMUNICATION ADAPTER
A28	METER MODULE PCB
C2x	BATTERY ELIMINATOR FILTER CAP
CT#	AC LINE CURRENT XFMR (AFFIXED TO WIRE)

- NOTES:
- FOR DETAIL VIEWS OF ALL PC BOARDS (A1, A2, etc.) SEE DRAWING JE5363-21.
  - CIRCUIT BREAKER MOUNTING BRACKET NOT FULLY SHOWN. SEE DETAIL TO RIGHT.
  - USER AC INPUT TERMINALS UTILIZES TOP OF AC INPUT BREAKER (CB1).
  - USER DC OUTPUT TERMINALS UTILIZES TOP OF DC OUTPUT BREAKER (CB2).
  - CURRENT TRANSFORMER AFFIXED TO LINE 1 AND LINE 3, BETWEEN AC INPUT BREAKER (CB1) AND POWER ISOLATION TRANSFORMER (T1).



I/O TERMINAL	DESCRIPTION - TYPE	CONNECTION
CB2(+)	POSITIVE (+) DC OUTPUT TERMINAL - CU-ALUMINUM COMPRESSION LUG	(2) #2 AWG-500 MCM
CB2(-)	NEGATIVE (-) DC OUTPUT TERMINAL - CU-ALUMINUM COMPRESSION LUG	(2) #2 AWG-500 MCM
(2) USER GND	USER GROUND TERMINAL - CU-ALUMINUM COMPRESSION LUG	#6 AWG-350 MCM
CB1-L1/L2/L3	AC INPUT TERMINALS - CU-ALUMINUM COMPRESSION LUG	#14 AWG-3/0 AWG
(NOTE 1) (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
TB4AX1/2	BARRIER TYPE AUX ALARM (A4) CONTACTS - 6-32 BINDER HEAD SCREW	#16-14 AWG

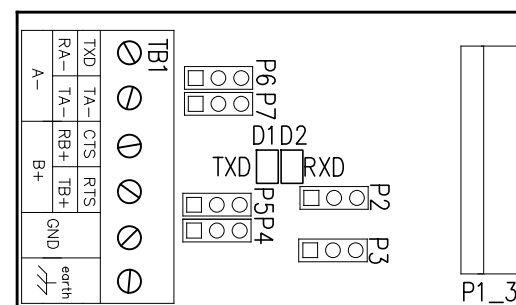
REV. DRN BY 1 KJB	CHK BY KMW	APP BY KMW	DATE 6/15/2023	DRN BY KMW	DATE: 03232023	TITLE ATEVO BATTERY CHARGER INTERNAL COMPONENT LAYOUT: STYLE-163 3Ø WITH COMMON OPTIONS 150-600A	
DESCRIPTION REVISED TO REMOVE 3 POLE DC BREAKER JUMP.				CHK BY MCR	DATE: 03232023		
ECN NO. N/A				CHK BY MCR	DATE: 03232023		
					SCALE NTS	DWG No JE5362-21	
						REV 1	SHEET 1 OF 1



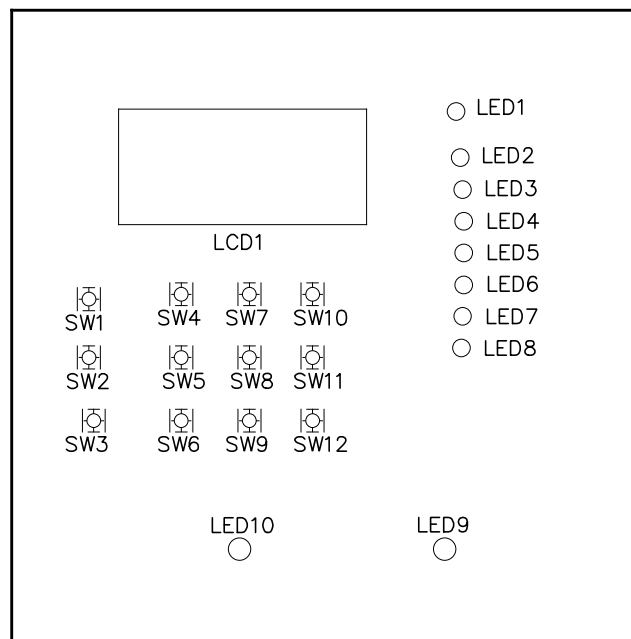
CONTROL PANEL  
(PART No. FK5047-00)

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.

SERIAL COMMUNICATION ADAPTER (A12)

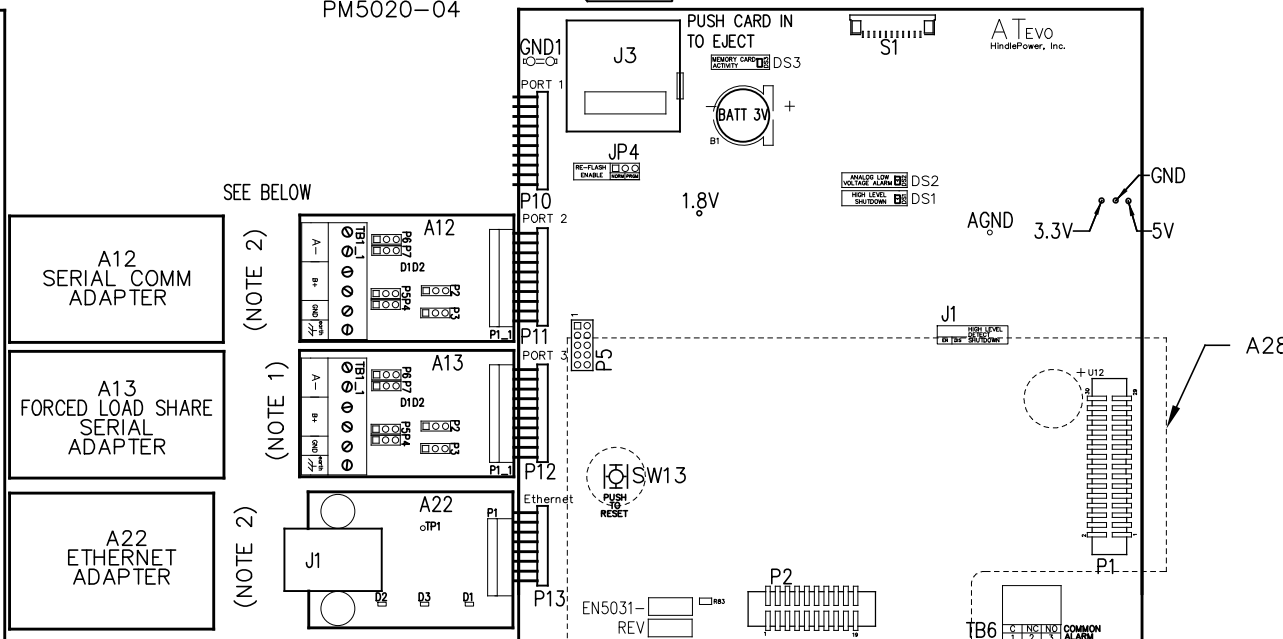


- CONNECTORS (A12):  
P1 - MAIN CONTROL BOARD
- JUMPERS & CONFIGURATION SWITCHES (A12):  
P2 - RECEIVER ENABLE CONTROL SELECTION  
P3 - MEDIA CONTROL SELECTION (RS-234 OR RS-485)  
P4 - RS-485 TERMINATION RESISTOR ENABLE (RECEIVE)  
P5 - RS-485 TERMINATION RESISTOR ENABLE (TRANSMIT)  
P6 - RS-485 INTERFACE 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



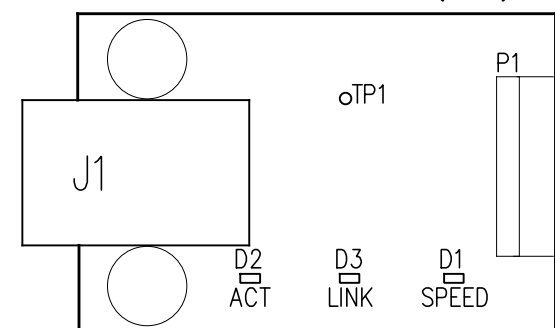
MAIN CONTROL PC BOARD (A1)  
FRONT VIEW - FACING CHARGER DOOR WHEN INSTALLED

16GB MICRO SDHC FLASH MEMORY CARD PM5020-04



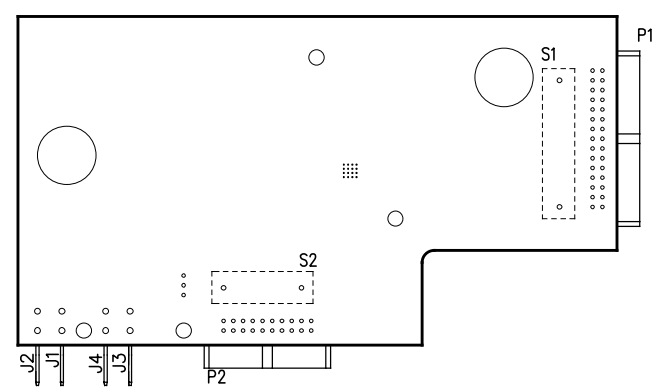
MAIN CONTROL PC BOARD (A1)  
BACK VIEW - FACING CHARGER COMPONENTS WHEN INSTALLED

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

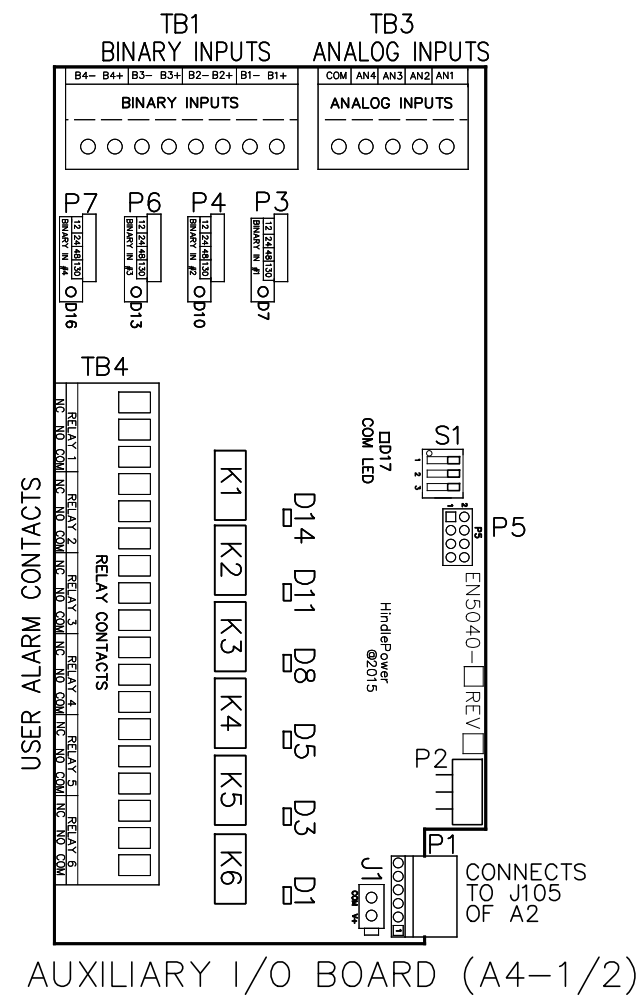


MAIN CONTROL PC BOARD (A1)

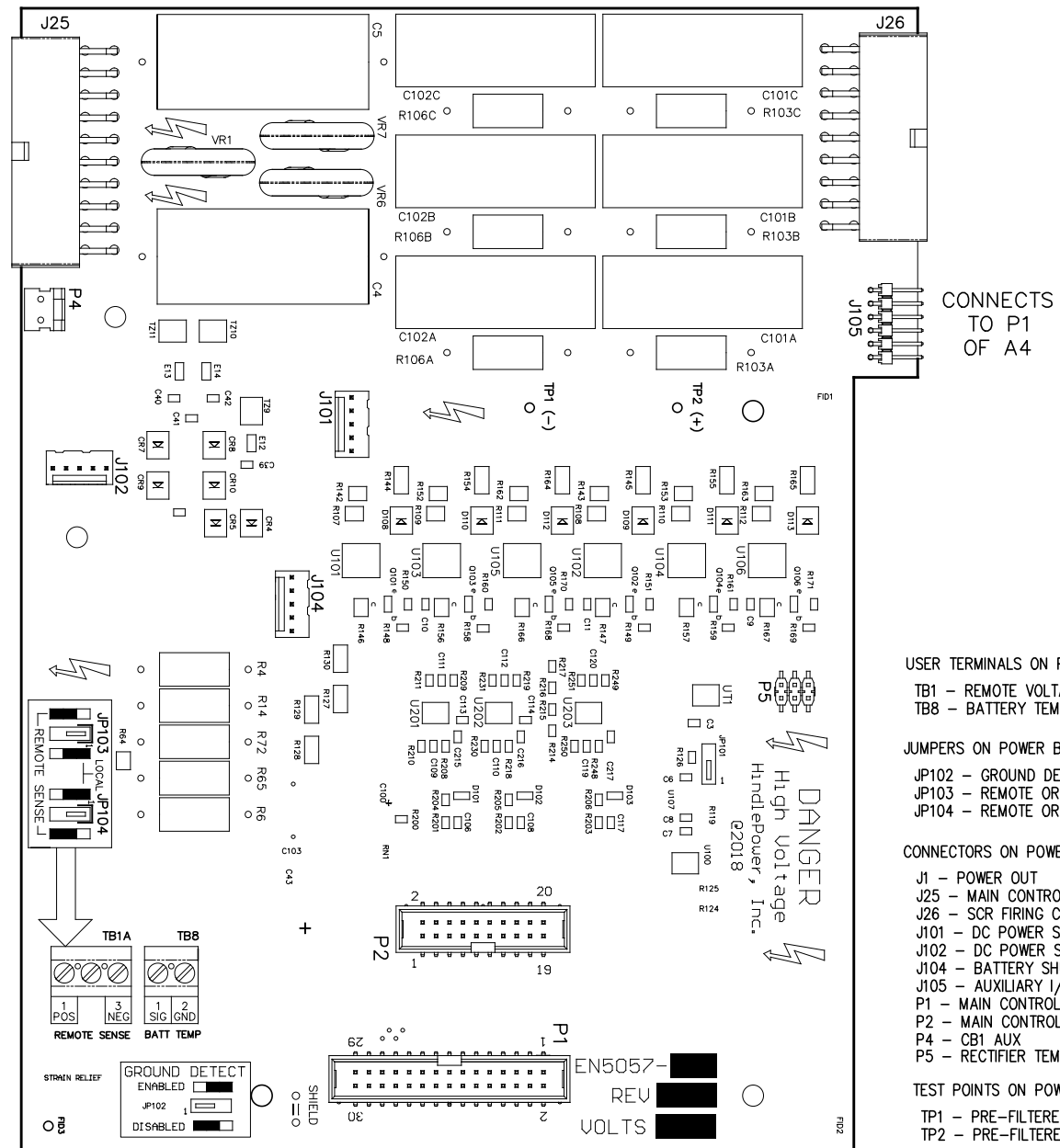
- INDICATOR LIGHTS (LEDs):  
LED1 - GREEN - AC ON  
LED2 - RED - HIGH DC VOLTAGE ALARM  
LED3 - RED - LOW DC VOLTAGE ALARM  
LED4 - RED - DC OUTPUT FAILURE ALARM  
LED5 - RED - AC INPUT FAILURE ALARM  
LED6 - RED - POSITIVE (+) GROUND ALARM  
LED7 - RED - NEGATIVE (-) GROUND ALARM  
LED8 - RED - COMMON 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
- SWITCHES:  
SW1 - DISPLAY BUTTON  
SW2 - CHARGE MODE BUTTON  
SW3 - EQUALIZE METHOD BUTTON  
SW4 - ESCAPE (ESC) BUTTON  
SW5 - LEFT ARROW BUTTON  
SW6 - MENU BUTTON  
SW7 - UP ARROW BUTTON  
SW8 - EDIT / ENTER BUTTON  
SW9 - DOWN ARROW BUTTON  
SW10 - ALARM BUTTON  
SW11 - RIGHT ARROW BUTTON  
SW12 - 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
- 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

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
(A13) TB1	FORCED LOAD SHARING SIGNAL - SOLDERLESS COMP SCREW	#22-14 AWG
(A22) J1	SERIAL ETHERNET CONNECTION - RJ45 PLUG	CAT5

REV. DRN BY	CHK BY	APP BY	DATE	DRN BY	DATE:	
0	KMW	MCR	MCR	03232023	KMW	03232023
DESCRIPTION			STANDARD DRAWINGS.	CHK BY	DATE:	
ECN NO. N/A			MCR	MCR	03232023	
TITLE						
						ATEVO BATTERY CHARGER CONTROL PANEL / PC BOARD DETAIL 3Ø WITH COMMON OPTIONS 150-600A
SCALE			DWG No	REV	SHEET	
B			JE5363-21	0	1 OF 2	



- 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

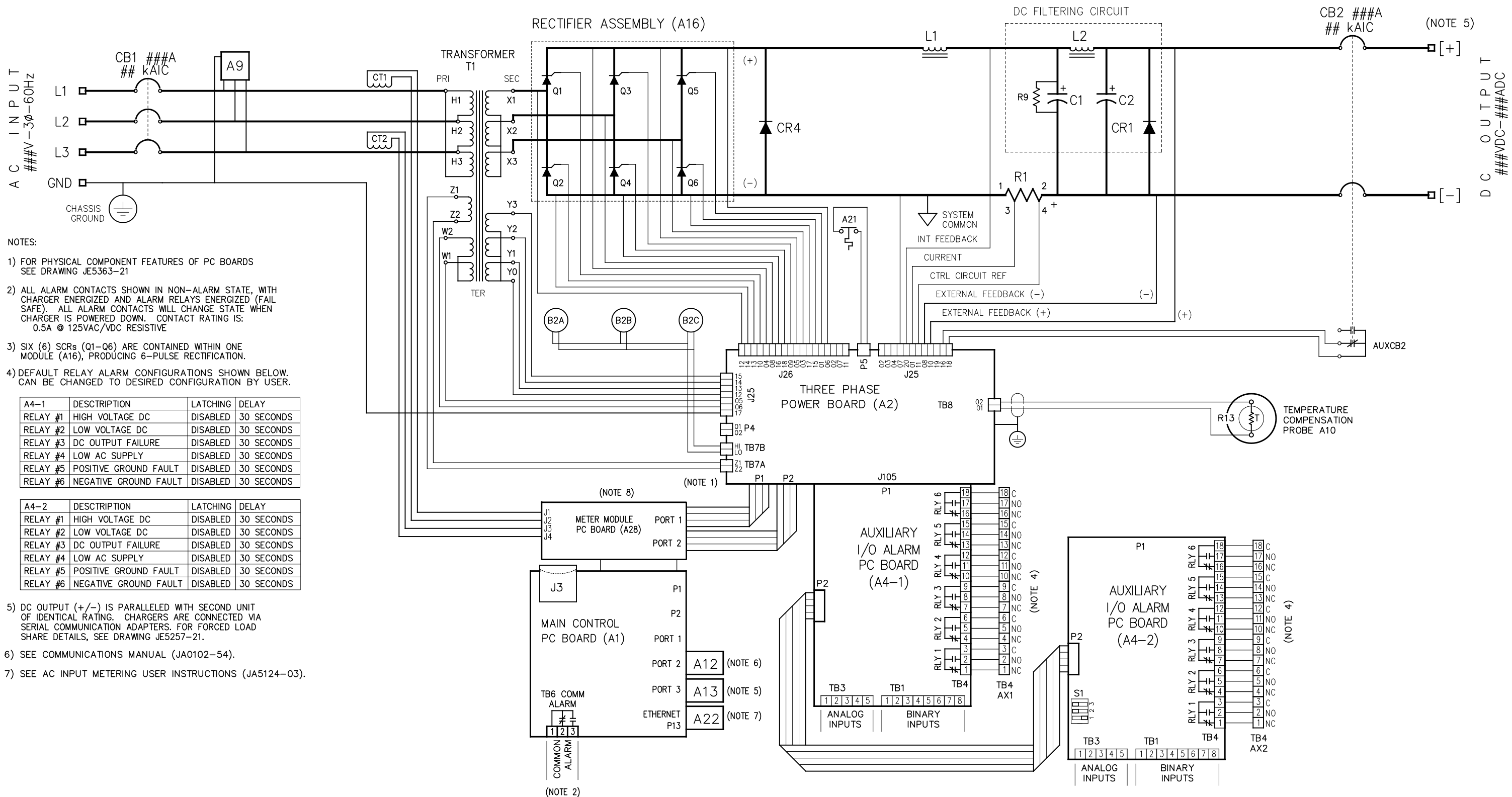


- USER TERMINALS ON POWER BOARD (A2):**
- TB1 - REMOTE VOLTAGE SENSE
  - TB8 - BATTERY TEMPERATURE COMPENSATION
- JUMPERS ON POWER BOARD (A2):**
- JP102 - GROUND DETECT CIRCUIT ENABLE / DISABLE
  - JP103 - REMOTE OR LOCAL SENSE SELECTOR (+)
  - JP104 - REMOTE OR LOCAL SENSE SELECTOR (-)
- CONNECTORS ON POWER BOARD (A2):**
- J1 - POWER OUT
  - J25 - MAIN CONTROL SIGNAL HARNESS
  - J26 - SCR FIRING CONTROL HARNESS
  - 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
  - P4 - CB1 AUX
  - P5 - RECTIFIER TEMP SENSOR INTERFACE
- TEST POINTS ON POWER BOARD (A2):**
- TP1 - PRE-FILTERED DC BUS (-)
  - TP2 - PRE-FILTERED DC BUS (+)

POWER BOARD (A2)

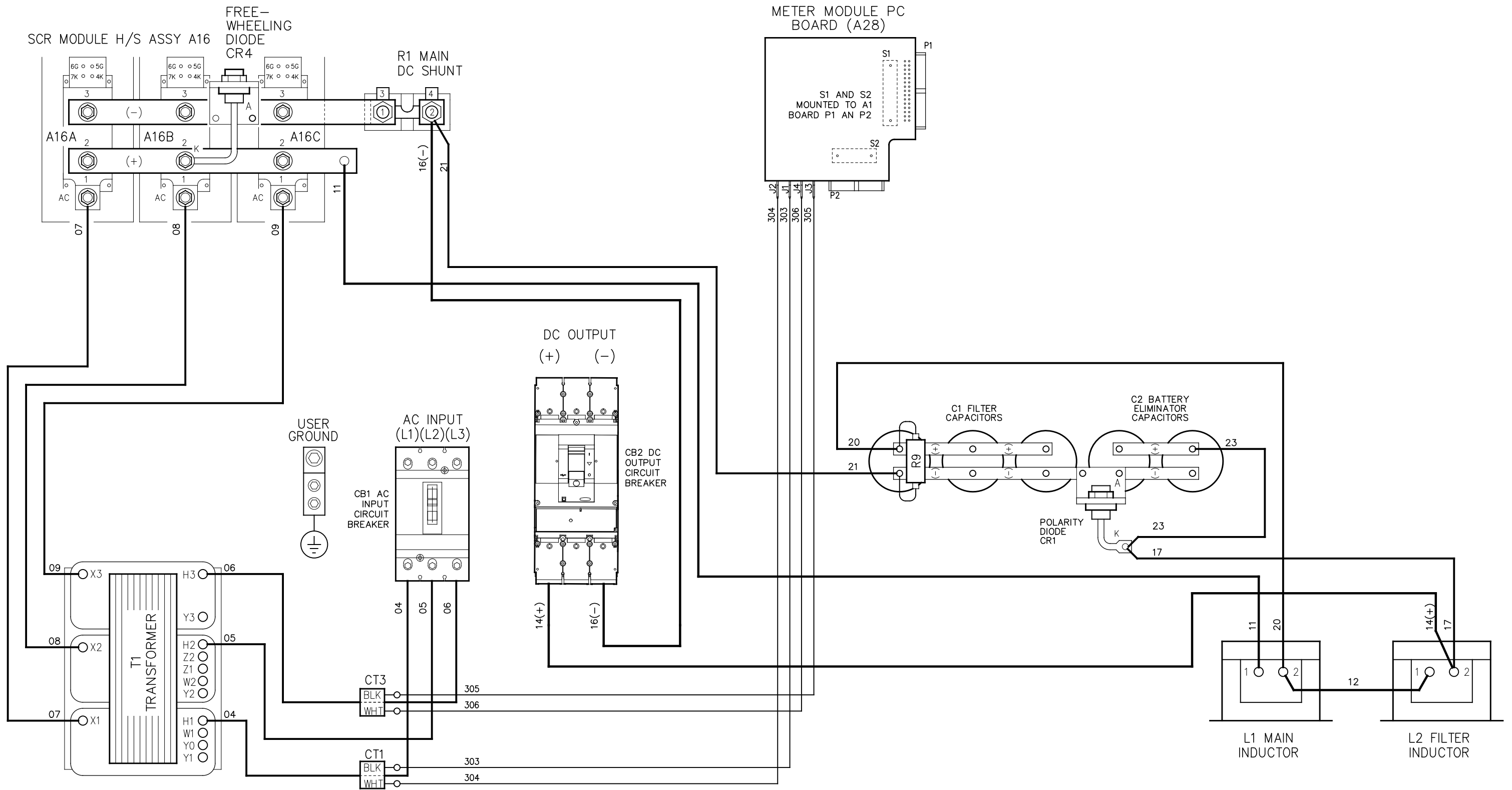
I/O TERMINAL	DESCRIPTION - TYPE	CONNECTION
(A2) TB1	POS/NEG REMOTE SENSE TERMS (A2) - SOLDERLESS COMPRESSION SCREW	#22-14 AWG
(A2) TB8	TEMPCO PROBE (A10) TERM BLK - SOLDERLESS COMPRESSION SCREW	#22-14 AWG

DRN BY: KMW	DATE: 03232023	TITLE ATEVO BATTERY CHARGER CONTROL PANEL / PC BOARD DETAIL 3Ø WITH COMMON OPTIONS 150-600A	SCALE NTS	DWG No JE5363-21	REV 0A	SHEET 2 OF 2
CHK BY: MCR	DATE: 03232023					
CHK BY: MCR	DATE: 03232023					



- NOTES:
- 1) FOR PHYSICAL COMPONENT FEATURES OF PC BOARDS SEE DRAWING JE5363-21
  - 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) DEFAULT RELAY ALARM CONFIGURATIONS SHOWN BELOW. CAN BE CHANGED TO DESIRED CONFIGURATION BY USER.
- | A4-1     | DESCRIPTION           | LATCHING | 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 |
- 
- | A4-2     | DESCRIPTION           | LATCHING | 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 |
- 5) DC OUTPUT (+/-) IS PARALLELED WITH SECOND UNIT OF IDENTICAL RATING. CHARGERS ARE CONNECTED VIA SERIAL COMMUNICATION ADAPTERS. FOR FORCED LOAD SHARE DETAILS, SEE DRAWING JE5257-21.
  - 6) SEE COMMUNICATIONS MANUAL (JA0102-54).
  - 7) SEE AC INPUT METERING USER INSTRUCTIONS (JA5124-03).

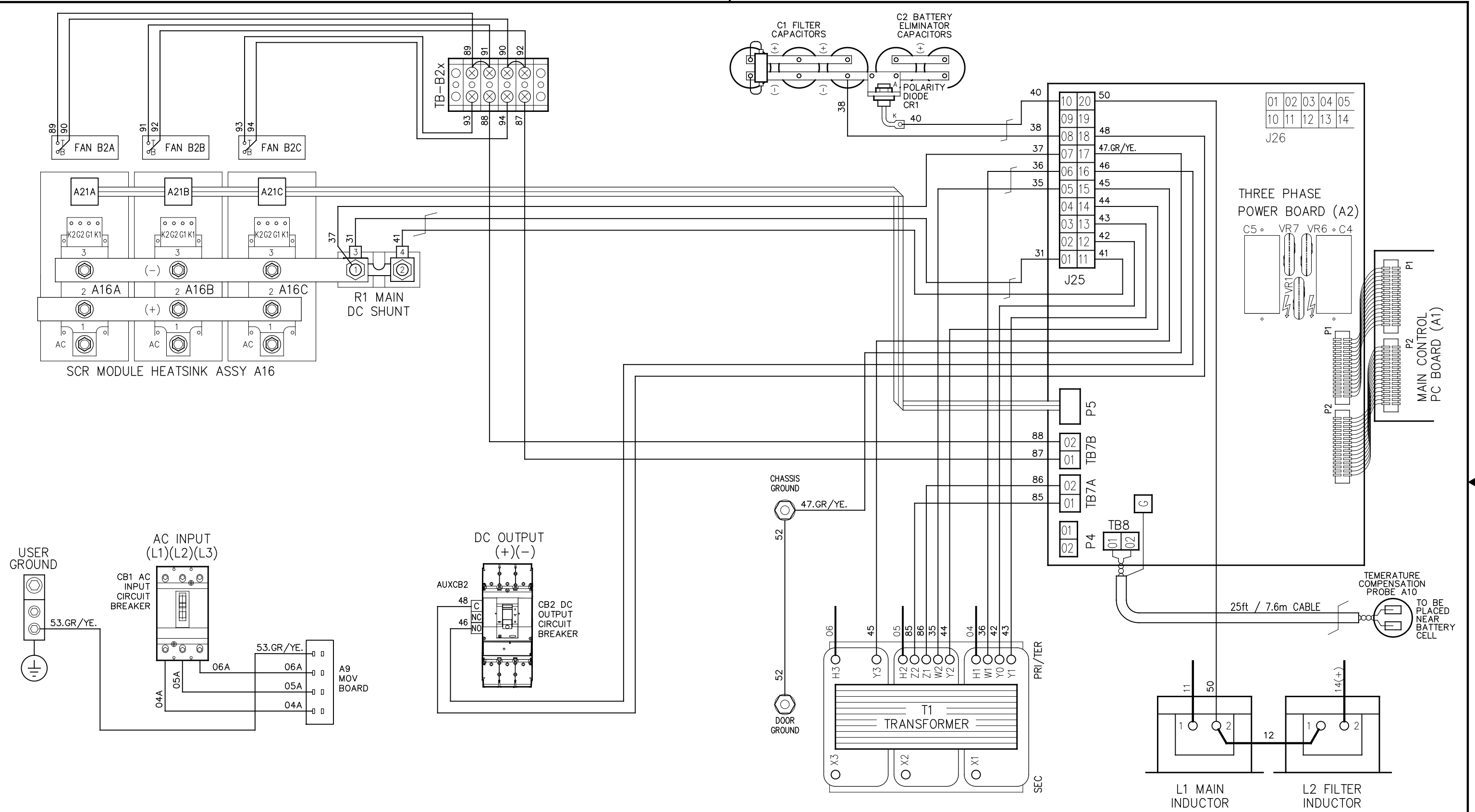
REV. DRN BY	CHK BY	APP BY	DATE	DRN BY	DATE:
1	KJB	KMW	6/15/2023	KMW	03232023
DESCRIPTION				CHK BY	DATE:
REVISED TO REMOVE 3 POLE DC BREAKER JUMP.				MCR	03232023
ECN NO. N/A				CHK BY	DATE:
				MCR	03232023
TITLE					
ATEVO BATTERY CHARGER					
SCHEMATIC: STYLE-163					
3φ WITH COMMON OPTIONS 150-600A					
SCALE		DWG No	REV	SHEET	
B		JE5364-21	1	1 OF 1	



**NOTES:**

- CHARGER COMPONENTS ARE CONNECTED WITH FLAME-RETARDANT SWITCHBOARD INSULATION SYSTEM (SIS) TYPE WIRING, IDENTIFIED ON EACH END WITH NUMBER-CODED MARKERS. GROUND WIRE #10 IS GREEN WITH YELLOW STRIPE.
- THIS DRAWING (SHEET 1 OF 3) SHOWS MAINFRAME POWER WIRING. SEE SUBSEQUENT SHEETS FOR:
  - SHEET 2 OF 3 - SENSE (SIGNAL) WIRING.
  - SHEET 3 OF 3 - SCR (A16x) TRIGGER WIRING

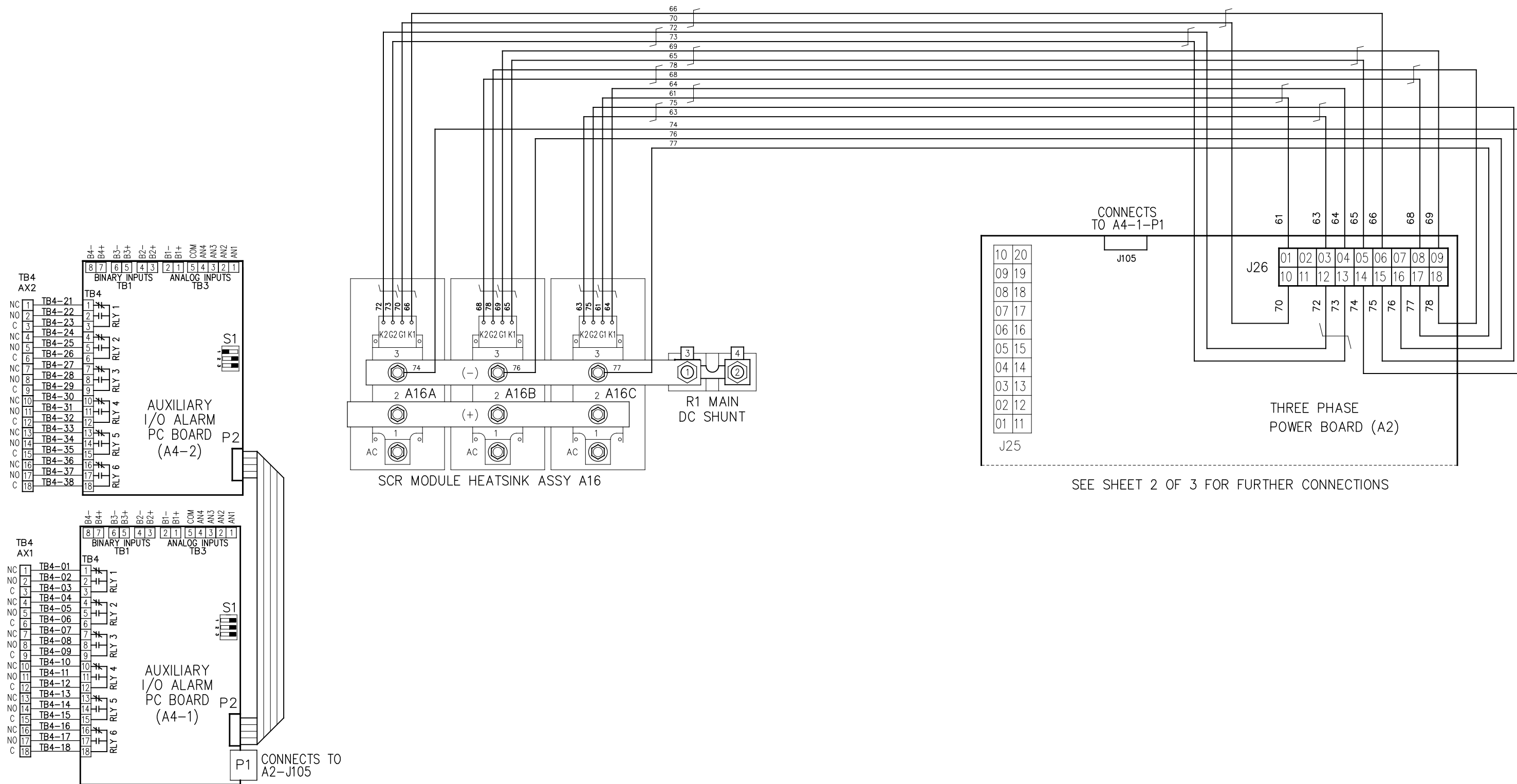
REV. 1	DRN BY KJB	CHK BY KMW	APP BY KMW	DATE 6/15/2023	DRN BY KMW	DATE: 03232023	TITLE <b>ATEVO BATTERY CHARGER</b> <b>CONNECTION DIAGRAM: STYLE-163</b> <b>3φ WITH COMMON OPTIONS 150-600A</b>
DESCRIPTION REVISED TO REMOVE 3 POLE DC BREAKER JUMP.					CHK BY MCR	DATE: 03232023	
ECN NO. N/A					CHK BY MCR	DATE: 03232023	
						<b>B</b> SCALE NTS	DWG No. <b>JE5365-21</b>
						REV 1	SHEET 1 OF 3



NOTES:

- CHARGER COMPONENTS ARE CONNECTED WITH FLAME-RETARDANT SWITCHBOARD INSULATION SYSTEM (SIS) TYPE WIRING, IDENTIFIED ON EACH END WITH NUMBER-CODED MARKERS. GROUND WIRE #10 IS GREEN WITH YELLOW STRIPE.
- THIS DRAWING (SHEET 2 OF 3) SHOWS SENSE SIGNAL WIRING.  
SEE:  
- SHEET 1 OF 3 - MAINFRAME POWER WIRING  
- SHEET 3 OF 3 - SCR (A16x) TRIGGER WIRING

DRN BY KMW	DATE: 03232023	TITLE <b>ATEVO BATTERY CHARGER CONNECTION DIAGRAM: STYLE-163 3φ WITH COMMON OPTIONS 150-600A</b>	SCALE NTS	DWG No <b>JE5365-21</b>	REV 1	SHEET 2 OF 3
CHK BY MCR	DATE: 03232023					
CHK BY MCR	DATE: 03232023					



SEE SHEET 2 OF 3 FOR FURTHER CONNECTIONS

NOTES:

- CHARGER COMPONENTS ARE CONNECTED WITH FLAME-RETARDANT SWITCHBOARD INSULATION SYSTEM (SIS) TYPE WIRING, IDENTIFIED ON EACH END WITH NUMBER-CODED MARKERS. GROUND WIRE #10 IS GREEN WITH YELLOW STRIPE.
- THIS DRAWING (SHEET 3 OF 3) SHOWS SCR (A16x) TRIGGER WIRING. SEE:
  - SHEET 1 OF 3 - MAINFRAME POWER WIRING
  - SHEET 2 OF 3 - SENSE (SIGNAL) WIRING.

DRN BY KMW	DATE: 03232023	TITLE ATEVO BATTERY CHARGER CONNECTION DIAGRAM: STYLE-163 3 $\phi$ WITH COMMON OPTIONS 150-600A	SCALE NTS	DWG No JE5365-21	REV 1	SHEET 3 OF 3
CHK BY MCR	DATE: 03232023					
CHK BY MCR	DATE: 03232023					