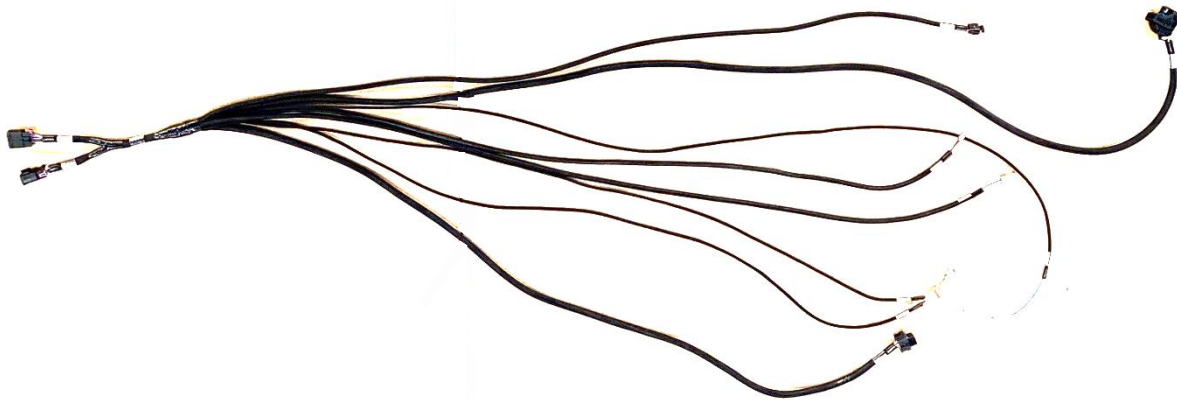




30-8601

**Rear Low Voltage VCU Harness System
User Manual**



AEM EV

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Instruction Part Number: 10-8601_REV_A

Document Build 2023-03-21

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Introduction

This low voltage harness assembly was designed to be installed in the rear half of the electric vehicle. It was designed to be used with a mating front half assembly that is VCU hardware specific. The AEM part number for the mating front half harness is 30-8600.

Connector interface features include:

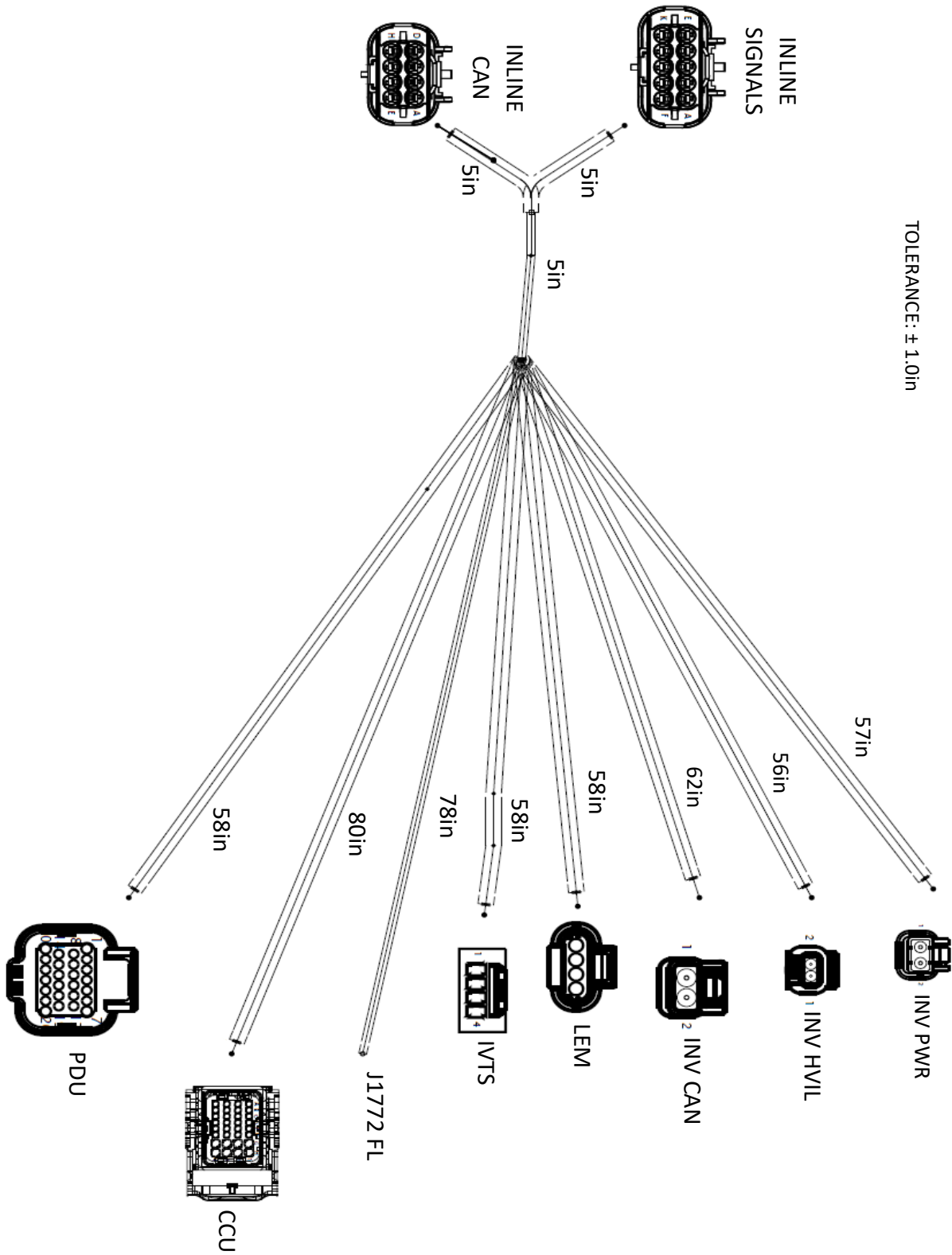
- Power Distribution Unit (PDU)
- Combined Charging Unit (CCU)
- Isabellenhütte (IVTS) - current voltage shunt based measuring system
- Life Energy Motion (LEM) – current voltage DHAB s/124 Transducer Sensor
- Inverter CAN (INV CAN)
- Inverter High-Voltage Interlock (HVIL)
- Inverter Power (INV PWR)
- J1772 Flying Leads – Proximity Pilot (PROX) and Control Pilot (CP)
- Inline Signals
- Inline CAN

Kit Content

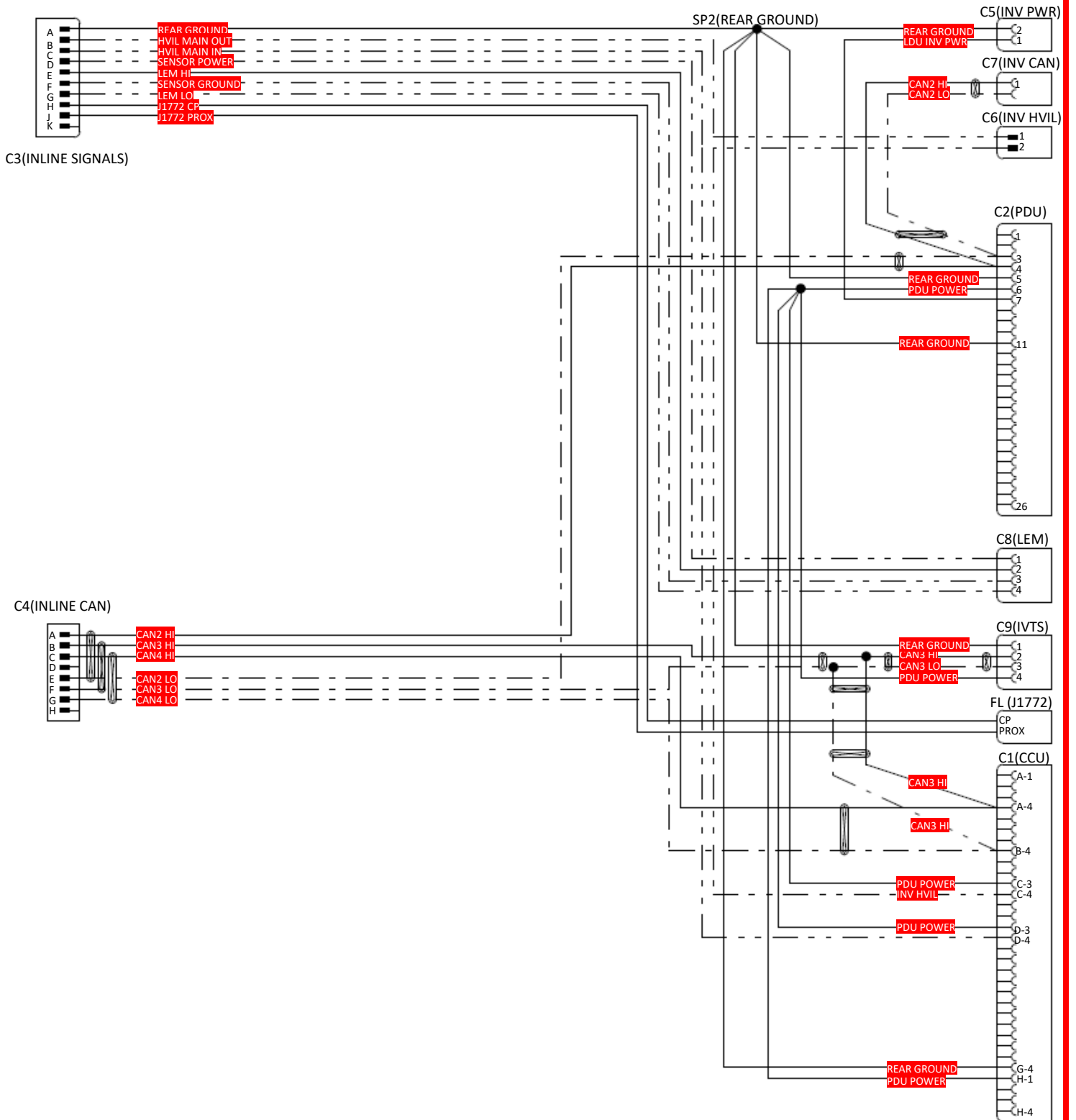
- Rear Voltage VCU Harness
- User Manual



Harness Layout



Harness Schematic



Harness Pinout

36-8601- VCU 200 Layover Harness

| C1 | CCU | | | | | Description |
|------------|-------------------|--------------|--------------------|----------|----------|--|
| Pin | Wire Color | Gauge | Destination | | | .635mm, 1.50mm, CMC Receptacle, 32 Circuits, Right Wire Output, Black Coding, Mat Sealed |
| | | | 1 | 2 | 3 | |
| C1-A1 | | | | | | |
| C1-A2 | | | | | | |
| C1-A3 | | | | | | |
| C1-A4 | WHITE | 24 | C4-C | SP3 | | CAN4_HI and CAN3_HI |
| C1-B1 | | | | | | |
| C1-B2 | | | | | | |
| C1-B3 | | | | | | |
| C1-B4 | WHITE/BLUE | 24 | C4-1G | SP4 | | CAN4_LO and CAN3_LO |
| C1-C1 | | | | | | |
| C1-C2 | | | | | | |
| C1-C3 | RED | 20 | SP1 | | | PDU POWER |
| C1-C4 | ORANGE/BLACK | 20 | C6-2 | | | INV HVIL |
| C1-D1 | | | | | | |
| C1-D2 | | | | | | |
| C1-D3 | RED | 20 | SP1 | | | PDU POWER |
| C1-D4 | ORANGE/BLACK | 20 | C3-C | | | HVIL_MAIN_IN |
| C1-E1 | | | | | | |
| C1-E2 | | | | | | |
| C1-E3 | | | | | | |
| C1-E4 | | | | | | |
| C1-F1 | | | | | | |
| C1-F2 | | | | | | |
| C1-F3 | | | | | | |
| C1-F4 | | | | | | |
| C1-G1 | | | | | | |
| C1-G2 | | | | | | |
| C1-G3 | | | | | | |
| C1-G4 | BLACK | 20 | SP2 | | | REAR GROUND |
| C1-H1 | RED | 20 | SP1 | | | PDU POWER |
| C1-H2 | | | | | | |
| C1-H3 | | | | | | |
| C1-H4 | | | | | | |

| C2 | PDU | Description |
|-----------|------------|--------------------|
|-----------|------------|--------------------|

| Pin | Wire Color | Gauge | Destination | | | 26POS,SUPERSEAL,REC HSG ASSY,SLD,COD 1 |
|-------|------------|-------|-------------|---|---|--|
| | | | 1 | 2 | 3 | |
| C2-1 | | | | | | |
| C2-2 | | | | | | |
| C2-3 | WHITE/BLUE | 24 | C4-E | | | CAN_LO |
| C2-4 | WHITE | 24 | C4-A | | | CAN2_HI |
| C2-5 | BLACK | 20 | SP2 | | | REAR GROUND |
| C2-6 | RED | 20 | SP1 | | | PDU POWER |
| C2-7 | RED | 16 | C5-1 | | | LDU INV PWR |
| C2-8 | | | | | | |
| C2-9 | | | | | | |
| C2-10 | | | | | | |
| C2-11 | BLACK | 20 | SP2 | | | GROUND |
| C2-12 | | | | | | |
| C2-13 | | | | | | |
| C2-14 | | | | | | |
| C2-15 | | | | | | |
| C2-16 | | | | | | |
| C2-17 | | | | | | |
| C2-18 | | | | | | |
| C2-19 | | | | | | |
| C2-20 | | | | | | |
| C2-21 | | | | | | |
| C2-22 | | | | | | |
| C2-23 | | | | | | |
| C2-24 | | | | | | |
| C2-25 | | | | | | |
| C2-26 | | | | | | |

| C3 | Inline Signals | | | | | Description |
|------|----------------|-------|-------------|---|---|--------------------------|
| Pin | Wire Color | Gauge | Destination | | | 10 Way 1.5 GT 150 Sealed |
| | | | 1 | 2 | 3 | |
| C3-A | BLACK | 16 | SP2 | | | REAR GROUND |
| C3-B | ORANGE/RED | 20 | C6-1 | | | HVIL_ MAIN-OUT |
| C3-C | ORANGE/BLACK | 20 | C1-D4 | | | HAVIL_ MAIN_IN |
| C3-D | RED/WHITE | 20 | C8-1 | | | SENSOR_POWER |
| C3-E | BROWN | 20 | C8-2 | | | LEM_HI |
| C3-F | BLACK/WHITE | 20 | C8-3 | | | SENSOR_GROUND |
| C3-G | BROWN/WHITE | 20 | C8-4 | | | LEM_LO |
| C3-H | GREEN | 20 | FL | | | J1772_CP |

| | | | | | | |
|------|-----|----|----|--|--|------------|
| C3-J | BLU | 20 | FL | | | J1772_PROX |
| C3-K | | | | | | |

| C4 | | Inline CAN | | | | Description |
|------|------------|------------|-------------|---|---|-------------------------|
| Pin | Wire Color | Gauge | Destination | | | 8 Way 1.5 GT 150 Sealed |
| | | | 1 | 2 | 3 | |
| C4-A | WHITE | 24 | C2-4 | | | CAN2_HI |
| C4-B | WHITE | 24 | SP3 | | | CAN3_HI |
| C4-C | WHITE | 24 | C1-A4 | | | CAN4_HI |
| C4-D | | | | | | |
| C4-E | WHITE/BLUE | 24 | C2-3 | | | CAN2_LO |
| C4-F | WHITE/BLUE | 24 | SP4 | | | CAN3_LO |
| C4-G | WHITE/BLUE | 24 | C1-B4 | | | CAN4_LO |
| C4-H | | | | | | |

| C5 | | INV PWR | | | | Description |
|------|------------|---------|-------------|---|---|-----------------|
| Pin | Wire Color | Gauge | Destination | | | PLG, 2P, GRY, N |
| | | | 1 | 2 | 3 | |
| C5-1 | RED | 20 | C2-7 | | | LDU INV PWR |
| C5-2 | BLACK | 20 | SP2 | | | REAR GROUND |

| C6 | | INV HVIL | | | | Description |
|------|--------------|----------|-------------|---|---|-----------------|
| Pin | Wire Color | Gauge | Destination | | | REC, 2P, GRY, N |
| | | | 1 | 2 | 3 | |
| C6-A | ORANGE/RED | 20 | C3-B | | | HVIL_MAIN_OUT |
| C6-B | ORANGE/BLACK | 20 | C1-C4 | | | CCU |

| C7 | | INV CAN | | | | Description |
|------|------------|---------|-------------|---|---|-----------------|
| Pin | Wire Color | Gauge | Destination | | | PLG, 2P, GRY, N |
| | | | 1 | 2 | 3 | |
| C7-1 | WHITE | 24 | C2-4 | | | CAN2_HI |
| C7-2 | WHITE/BLUE | 24 | C2-3 | | | CAN2_LO |

| C8 | | LEM | | | | Description |
|------|-------------|-------|-------------|---|---|------------------------------------|
| Pin | Wire Color | Gauge | Destination | | | 4POS, MCON 1.2 CB REC 2p TL SEALED |
| | | | 1 | 2 | 3 | |
| C8-1 | RED/WHITE | 20 | C3-D | | | SENSOR_POWER |
| C8-2 | BROWN | 20 | C3-E | | | LEM_HI |
| C8-3 | BLACK/WHITE | 20 | C3-F | | | SENSOR_GROUND |
| C8-4 | BROWN/WHITE | 20 | C3-G | | | LEM_LO |

| C9 | IVTS | | | | | Description |
|------|------------|-------|-------------|---|---|---|
| Pin | Wire Color | Gauge | Destination | | | DuraClik ISL Wire-to-Board Receptacle Housing, Single Row, White, 4 Circuits |
| | | | 1 | 2 | 3 | |
| C9-1 | BLACK | 22 | SP2 | | | GROUND |
| C9-2 | WHITE | 24 | SP3 | | | CAN3_HI |
| C9-3 | BLUE | 24 | SP4 | | | CAN3_LO |
| C9-4 | RED | 22 | SP1 | | | POWER |

| FL | J1772 | | | | | Description |
|-----|------------|-------|-------------|---|---|--------------|
| Pin | Wire Color | Gauge | Destination | | | flying leads |
| | | | 1 | 2 | 3 | |
| | GREEN | 20 | | | | CP |
| | BLUE | 20 | | | | PROX |

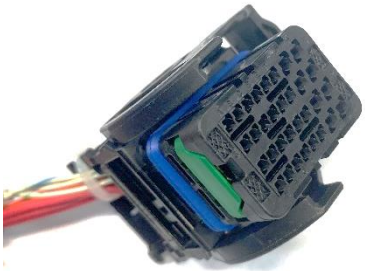
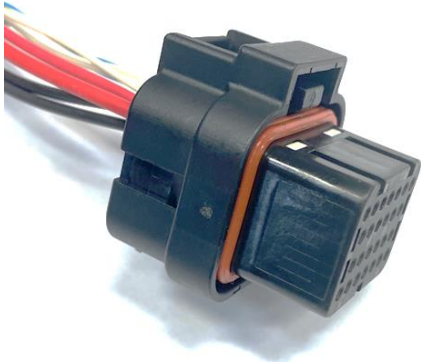
| SP1 | PDU POWER | | | | | Description |
|-----|------------|-------|-------------|---|---|-------------|
| Pin | Wire Color | Gauge | Destination | | | splice |
| | | | 1 | 2 | 3 | |
| | RED | 20 | C2-6 | | | PDU |
| | RED | 20 | C1-C3 | | | CCU |
| | RED | 20 | C1-D3 | | | CCU |
| | RED | 16 | C5-1 | | | INV PWR |
| | RED | 22 | C9-4 | | | IVTS |

| SP2 | REAR GROUND | | | | | Description |
|-----|-------------|-------|-------------|---|---|---------------|
| Pin | Wire Color | Gauge | Destination | | | splice |
| | | | 1 | 2 | 3 | |
| | BLACK | 16 | C3-A | | | INLINE SIGNAL |
| | BLACK | 20 | C1-G4 | | | CCU |
| | BLACK | 20 | C2-5 | | | PDU |
| | BLACK | 20 | C2-11 | | | PDU |
| | BLACK | 16 | C5-2 | | | INV PWR |
| | BLACK | 22 | C9-1 | | | IVTS |

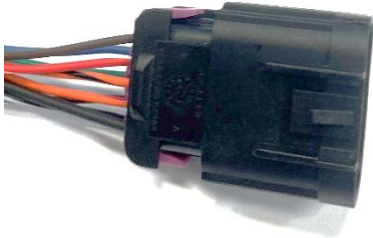
| SP3 | CAN3 HI | | | | | Description |
|-----|------------|-------|-------------|---|---|-------------|
| Pin | Wire Color | Gauge | Destination | | | splice |
| | | | 1 | 2 | 3 | |
| | WHITE | 24 | C9-2 | | | CAN3_HI |
| | WHITE | 24 | C4-B | | | CAN3_HI |
| | WHITE | 24 | C1-A4 | | | CAN4_HI |

| SP4 | CAN3 LO | | | | | Description |
|-----|------------|-------|-------------|---|---|-------------|
| Pin | Wire Color | Gauge | Destination | | | splice |
| | | | 1 | 2 | 3 | |
| | WHITE/BLUE | 24 | C9-3 | | | CAN3_LO |
| | WHITE/BLUE | 24 | C4-F | | | CAN3_LO |
| | WHITE/BLUE | 24 | C1-B4 | | | CAN4_LO |

Harness Installation Tips

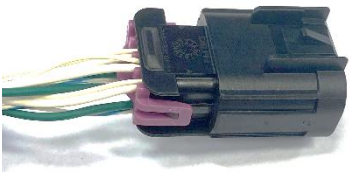
| 36-8601 CONNECTORS | INFORMATION & RECOMMENDED LOCATION |
|--|--|
| <p data-bbox="217 422 480 489">C1 (CCU) MOLEX: 643193211</p>  | <ul data-bbox="651 558 1317 701" style="list-style-type: none">- MATE: AEM COMBINED CHARGING UNIT (CCU) Part Number: 30-8405- RECOMMENDED LOCATION: Rear trunk area- NOTES: |
| <p data-bbox="138 907 558 974">C2 (PDU) TE CONNECTIVITY: 3-1437290-7</p>  | <ul data-bbox="651 1043 1442 1234" style="list-style-type: none">- MATE: AEM POWER DISTRIBUTION UNIT (PDU-8) Part Number: 30-8300- RECOMMENDED LOCATION: Rear trunk area- NOTES: Installer responsible for adding power leads from PDU-8 to 12 volt loads. |

C3 (INLINE SIGNALS)
Aptiv 15326847



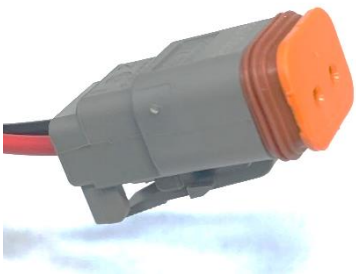
- MATE: Aptiv 13545282
- MATE: AEM FRONT LOW VOLTAGE VCU HARNESS
Part Number: 30-8600
- RECOMMENDED LOCATION: As required
- NOTES:

C4 (INLINE CAN)
Aptiv 15326840



- MATE: Aptiv 13545280
- MATE: AEM FRONT LOW VOLTAGE VCU Harness
Part Number: 30-8600
- RECOMMENDED LOCATION: As required
- NOTES:

C5 (INV PWR)
TE CONNECTIVITY: DT06-2S



- MATE: TE CONNECTIVITY: DT04-2P
- RECOMMENDED LOCATION: Rear half, as required
- NOTES: VCU controlled switched 12V power supply for inverter

C6 (INV HVIL)
TE CONNECTIVITY: DTM04-2P



- MATE: TE CONNECTIVITY: DTM06-2S
- RECOMMENDED LOCATION: As required
- NOTES: VCU source/supply high voltage interlock circuit for inverter and/or other high voltage peripherals

C7 (INV CAN)
TE CONNECTIVITY: DTM06-2S



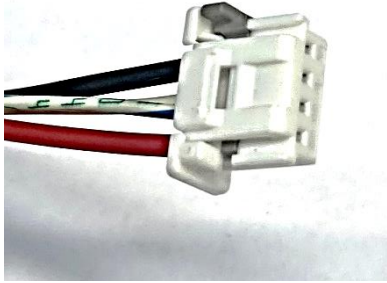
- MATE: TE CONNECTIVITY: DTM04-2P
- RECOMMENDED LOCATION: As required
- NOTES: Inverter CAN connection

C8 (LEM)
TE Connectivity: 1-1456426-5



- MATE: LEM DHAB S/124 TRANSDUCER SENSOR
- RECOMMENDED LOCATION: As required
- NOTES: Used to measure battery pack current. Systems supports both LEM and IVTS options. Only one is needed.

C9 (IVTS)
Molex 5601230400



- MATE: ISABELLENHÜTTE IVT-S
- RECOMMENDED LOCATION: As required
- NOTES: Used to measure battery pack current. Systems supports both LEM and IVTS options. Only one is needed.

FL (J1772)
GREEN FLYING LEAD: CP
BLUE FLYING LEAD: PROX



- MATE: As necessary to integrate J1772 charging plug assembly
- RECOMMENDED LOCATION: As required
- NOTES:

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PROCEDURES FOR ISSUANCE OF A RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER

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