

Systems Interconnect Interconnectivity Document

ECE 492 Spring 2017

Overview

The purpose of this document is to provide wiring and interconnect information about the Interconnectivity subsystem and all its components for the Lafayette Formula Electric Vehicle as of spring 2017. The diagram that it references is listed below as Figure 1. The other documents can be found linked on our website < <http://sites.lafayette.edu/ece492-sp17/>>.

Cable Specifications

Please note that all of these cables have been fully assembled, tested, and labeled.

| Cable | Label | Connect 1 | Wire Type | Connect 2 | Description | Length (Feet) |
|-------|-------|-----------|-----------|------------|------------------------|---------------|
| W1 | W1-1 | DT06-2S | 3-Dec | DT06-2S | GLV Charger | 3 |
| | W1-2 | DT06-2S | | DT06-2S | GLV Power Supply | 3 |
| | W1-3 | DT06-2S | | DT06-2S | GLV Battery | 3 |
| W2 | W2-1 | DT06-3S | 3-Dec | Crimp Conn | GLV/SCADA to Cockpit | 7 |
| W3 | W3-1 | DT06-2S | 2-Dec | Crimp Conn | GLV/SCADA to Left Side | 7 |
| W6 | W6-1 | DT06-4S | 16/4 | DT06-4S | Pack 1 to TSI | 10 |
| | W6-2 | DT06-4S | 16/4 | DT06-4S | Pack 1 to Pack 2 | 4 |
| | W6-3 | DT06-4S | 16/4 | DT06-4S | Pack 2 to Pack 3 | 10 |
| | W6-4 | DT06-4S | 16/4 | DT06-4S | Pack 3 to Pack 4 | 4 |

| | | | | | | |
|-----|-------|----------|----------------------|---------------------------------------|---------------------------------|------------------------------|
| | W6-5 | DT06-4S | 16/4 | DT06-4S | TSI to Cooling Controller | 4 |
| | W6-6 | DT06-4S | 16/4 | DT06-4S | GLV/SCADA to Cooling Controller | 4 |
| W7 | W7-1 | DT06-4S | 16/1 | None (single connector with resistor) | Pack 4 | N/A (loopback with resistor) |
| W11 | W11-1 | 3/8 Ring | 2/0 Battery | 3/8 Ring | Motor Controller to Motor | 3 |
| | W11-2 | 3/8 Ring | 2/0 Battery | 3/8 Ring | Motor Controller to Motor | 3 |
| | W11-3 | 3/8 Ring | 2/0 Battery | 3/8 Ring | Motor Controller to Motor | 3 |
| | W11-4 | 3/8 Ring | 2/0 Shielded Battery | 3/8 Ring | TSI to Motor Controller | 3 |
| | W11-5 | 3/8 Ring | 2/0 Shielded Battery | 3/8 Ring | TSI to Motor Controller | 3 |

| | | | | | | |
|-----|-------|----------------------------|---------------------------|---------------------------------|----------------------------------|------|
| W12 | W12-1 | 3/8 Ring | 2/0 Battery | NLDFT-E-GN- L-S120-M40A | Pack 1 to TSI | 6'6" |
| W13 | W13-1 | 3/8 Ring | 2/0 Battery | NLDFT-N-BL- L-S120-M40A | Pack 4 to TSI(Pack half) | 6'6" |
| W15 | W15-1 | NLDFT-N-BL-L- S120-M40A | 2/0 Battery | GNLS-N-BL- S120-M40A | Pack 2 to Pack 3 | 9'5" |
| W18 | W18-1 | DT06-S2 | 16/2 | 37 pin D Conn | GLV/SCADA to TSV Power Supply | 6 |
| W20 | W20-1 | HDMI | HDMI | HDMI | Cockpit to GLV/SCADA | 10 |
| W21 | W21-1 | DT06-12SA | 16/10 & 20/2 CanBus | 35 Pin Motor Controller Conn | TSI to Motor Controller | 3 |
| W22 | W22-1 | DT06-12SA | 16/12 | Crimp Conn | Cockpit to GLV/SCADA | 7 |

| | | | | | | |
|-----|-------|-----------|------------------|---------------------------------|------------------------------------|--------|
| W23 | W23-1 | DT06-8SA | Four 16/2 | 8/32 ring | TSI to TSALs/RTDS/BL | 7 each |
| W24 | W24-1 | DT06-12SA | 16/12 | Misc TBD | TSI to Foot Pedals | 9 |
| W25 | W25-1 | DT06-8SA | 16/8 | Tab connectors | TSI to Cockpit | 8 |
| W26 | W26-1 | DT06-6S | 22/6 | 35 Pin Motor Controller conn | Motor Controller to Motor | 3 |
| W28 | W28-1 | DT06-2S | 16/2 | 8/32 Ring | GLV/SCADA to TS Energized Light | 5 |
| W31 | W31-1 | DT06-6S | 20/3 and 12/3 | DT06-6S | Pack 1 to Pack 2 | 5 |
| | W31-2 | DT06-6S | 20/3 and 12/3 | DT06-6S | Pack 1 to TSI | 10 |
| | W31-3 | DT06-6S | 20/3 and 12/3 | DT06-6S | Pack 2 to Pack 3 | 10 |
| | W31-4 | DT06-6S | 20/3 and 12/3 | DT06-6S | Pack 3 to Pack 4 | 5 |
| | W31-5 | DT06-6S | 20/3 and 12/3 | DT06-6S | TSI to Huff | 8 |

| | | | | | | |
|-----|-------|-----------|---------------------|---|----------------------------|---------------------------------------|
| | W31-6 | DT06-6S | 20/3 and 12/3 | DT06-6S | Huff to Cooling | 10 |
| | W31-7 | DT06-6S | 20/3 and 12/3 | DT06-6S | Cooling to GLV/SCADA | 5 |
| W32 | W32-1 | DT06-6S | 120 ohm resistor | None (single connector with resistor) | Pack 4 | N/A (Loopback with resistor) |
| W33 | W33-1 | DT06-6S | 16/6 | Crimp Conn | GLV/SCADA to Right Side | 3 |
| W34 | W34-1 | 8/32 Ring | 1-Dec | 8/32 Ring | GLV/SCADA Chassis GND | 3 |
| W35 | W35-1 | DT06-3S | Three 16/1 | DT06-3S | TSI to GLV/SCADA | 3 |
| W36 | W36-1 | DT06-6S | 16/6 | Crimp Conn | Motor to GLV/SCADA | 3 |