| Pin | Color | Signal |
|---|---|---|
| 1 | GRN | 24VDC + |
| 2 | BLK | LV RTN |

P1 DT06-2S — W1 GLV Power 14/2 Cable — P2 DT06-2S

| Pin | Color | Signal |
|---|---|---|
| 1 | GRN | 24VDC + |
| 2 | BLK | LV RTN |

| Pin | Color | Signal |
|---|---|---|
| 1 | ORG | TSV HV |

3/8 Ring Conn. — W12 Tractive System HV 3/0 Battery Cable — P2 PL28W-301-70

| Pin | Color | Signal |
|---|---|---|
| 1 | ORG | TSV HV |

| Pin | Color | Signal |
|---|---|---|
| 1 | ORG | TSV HV |

W13 3/0 Battery Cable — PL28W-301-70 — PL28W-301-70

| Pin | Color | Signal |
|---|---|---|
| 1 | ORG | TSV HV |

| Pin | Color | Signal |
|---|---|---|
| 1 | GRN | BRBLS |
| 2 | BLK | BRBLS RTN |
| 3 | | SSOK |
| 4 | | SSOK RTN |

P1 DT06-2S — W3 LS Panel 16/4 Cable — Crimp Conn.

| Pin | Color | Signal |
|---|---|---|
| 1 | GRN | BRBLS |
| 2 | BLK | BRBLS RTN |
| 3 | | SSOK |
| 4 | | SSOK RTN |

| Pin | Color | Signal |
|---|---|---|
| 1 | ORG | TSV HV |

| Pin | Color | Signal |
|---|---|---|
| 1 | WHT | SL1 |
| 2 | BRN | SL2 |
| 3 | RED | AIRs+ |
| 4 | BLK | AIRs- |

P1 DT06-4S — W6 Safety Loop 16/4 Cable — P2 DT06-4S

| Pin | Color | Signal |
|---|---|---|
| 1 | WHT | SL1 |
| 2 | BRN | SL2 |
| 3 | RED | AIRs+ |
| 4 | BLK | AIRs- |

| Pin | Color | Signal |
|---|---|---|
| 1 | BLK | ENB |
| 2 | WHT | RTN |

P1 DT06-2S — W18 TSV power supply enable 16/2 — P2 37-Pin D Conn.

| Pin | Color | Signal |
|---|---|---|
| 26 | BLK | ENB |
| 19 | WHT | RTN |

| Pin | Signal |
|---|---|
| 1 | HUFF Signals |

P1 — W20 USB — P2

| Pin | Signal |
|---|---|
| 1 | HUFF Signals |

| Pin | Color | Signal |
|---|---|---|
| 1 | ORG | TSV HV |

Tractive System HV 2/0 Battery Cable — 3/8 Ring Conn. — 3/8 Ring Conn.

| Pin | Color | Signal |
|---|---|---|
| 1 | ORG | TSV HV |

| Pin | Signal |
|---|---|
| 1 | PNK Select button |
| 2 | BLK Scroll button |
| 3 | BLU Cruise button |
| 4 | ORG BRB |
| 5 | WHT BRB RTN |
| 6 | GRN CPR |
| 7 | WHT/BLK CPR RTN |
| 8 | PNK/BLK GLV Present LED |
| 9 | GRN/BLK SL LED |
| 10 | ORG/BLK Fault LED |
| 11 | BLU/BLK AIRs LED |
| 12 | BLK/WHT GLV RTN |

P1 DT06-12SA — W22 Control System 16/12 Cable — Crimp Conn.

| Pin | Signal |
|---|---|
| 1 | PNK Select button |
| 2 | BLK Scroll button |
| 3 | BLU Cruise button |
| 4 | ORG BRB |
| 5 | WHT BRB RTN |
| 6 | GRN CPR |
| 7 | WHT/BLK CPR RTN |
| 8 | PNK/BLK GLV Present LED |
| 9 | GRN/BLK SL LED |
| 10 | ORG/BLK Fault LED |
| 11 | BLU/BLK AIRs LED |
| 12 | BLK/WHT GLV RTN |

| Pin | Signal |
|---|---|
| 1 | HDMI |
| 2 | USB |

P1 — W38 USB/HDMI — P2

| Pin | Signal |
|---|---|
| 1 | HDMI |
| 2 | USB |

| Pin | Color | Signal |
|---|---|---|
| 1 | WHT | Brake Light |
| 2 | BLK | Brake Light RTN |
| 3 | WHT | TSAL Left |
| 4 | BLK | TSAL Left RTN |
| 5 | WHT | SPARE |
| 6 | BLK | SPARE |
| 7 | WHT | RTDS |
| 8 | BLK | RTDS RTN |

P1 DT06-8SA — W23 Control System 16/8 Cable — Crimp Conn.

These cables come out of the same jack but go to different places

| Pin | Color | Signal |
|---|---|---|
| 1 | WHT | Brake Light |
| 2 | BLK | Brake Light RTN |
| 3 | WHT | TSAL Left |
| 4 | BLK | TSAL Left RTN |
| 5 | WHT | SPARE |
| 6 | BLK | SPARE |
| 7 | WHT | RTDS |
| 8 | BLK | RTDS RTN |

| Pin | Color | Signal |
|---|---|---|
| 1 | PNK | Brake 24VDC + |
| 2 | BLK | Brake 24VDC + |
| 3 | BLU | Brake Pressure |
| 4 | ORG | Brake Over-Travel |
| 5 | WHT | APPS 1 10VDC+ |
| 6 | GRN | APPS 1 Signal |
| 7 | WHT/BLK | APPS 1 RTN |
| 8 | PNK/BLK | APPS 2 5VDC + |
| 9 | GRN/BLK | APPS 2 Signal |
| 10 | ORG/BLK | RTN GLV |
| 11 | BLU/BLK | BOT RTN |
| 12 | BLK/WHT | Spare |

P1 DT06-12S — W24 Control System 16/12 Cable — Misc. Conn.

| Pin | Color | Signal |
|---|---|---|
| 1 | PNK | Brake 24VDC + |
| 2 | BLK | Brake 24VDC + |
| 3 | BLU | Brake Pressure |
| 4 | ORG | Brake Over-Travel |
| 5 | WHT | APPS 1 10VDC + |
| 6 | GRN | APPS 1 Signal |
| 7 | WHT/BLK | APPS 1 RTN |
| 8 | PNK/BLK | APPS 2 5VDC + |
| 9 | GRN/BLK | APPS 2 Signal |
| 10 | ORG/BLK | RTN GLV |
| 11 | BLU/BLK | BOT RTN |
| 12 | BLK/WHT | Spare |

| Pin | Color | Signal |
|---|---|---|
| 1 | BLK | LV GND |
| 2 | PNK | IMD Fault LED |
| 3 | BLU | +5LV (Spare) |
| 4 | ORG | From Drive Button |
| 5 | WHT | Drive LED |
| 6 | GRN | HV Present LED |
| 7 | PNK/BLK | Cruise LED |
| 8 | WHT/BLK | HVPL_RTN |

P1 DT06-8S — W25 Control System 16/8 Cable — Crimp Conn.

| Pin | Color | Signal |
|---|---|---|
| 1 | BLK | LV GND |
| 2 | PNK | IMD Fault LED |
| 3 | BLU | +5LV (Spare) |
| 4 | ORG | From Drive Button |
| 5 | WHT | Drive LED |
| 6 | GRN | HV Present LED |
| 7 | PNK/BLK | Cruise LED |
| 8 | WHT/BLK | HVPL_RTN |

| Pin | Color | Signal |
|---|---|---|
| 1 | YEL | CAN H |
| 2 | GRN | CAN L |
| 3 | BARE | SHIELD |
| 4 | GRN | CHGND |
| 5 | WHT | 24VDC |
| 6 | BLK | 24V RTN |

P1 DT06-6S — W31 SCADA 20/3 CanBus Cable — P2 DT06-6S

GLV Power 12/3 Cable

| Pin | Color | Signal |
|---|---|---|
| 1 | YEL | CAN H |
| 2 | GRN | CAN L |
| 3 | BARE | SHIELD |
| 4 | GRN | CH |
| 5 | WHT | 24VDC |
| 6 | BLK | 24V RTN |

| Pin | Color | Signal |
|---|---|---|
| 1 | WHT | Safety Circuit |
| 2 | ORG | Safety Circuit RTN |
| 3 | PNK | MRESET |
| 4 | GRN | MRESET RTN |
| 5 | BLU | TSVMS |
| 6 | BLK | TSVMS RTN |
| 7 | | SSOK |
| 8 | | SSOK RTN |

P1 DT08-8S — W33 Right side panel 16/6 Cable — Crimp Conn.

| Pin | Color | Signal |
|---|---|---|
| 1 | WHT | GLVMS |
| 2 | ORG | ESTOP RTN |
| 3 | PNK | MRESET |
| 4 | GRN | MRESET RTN |
| 5 | BLU | TSVMS |
| 6 | BLK | TSVMS RTN |
| 7 | | SSOK |
| 8 | | SSOK RTN |

Note the change of color This cable is a crossover

| Pin | Color | Signal |
|---|---|---|
| 1 | WHT | Encoder |
| 2 | ORG | Encoder |
| 3 | PNK | Encoder |
| 4 | GRN | Encoder |
| 5 | BLU | Temp |
| 6 | BLK | Temp |

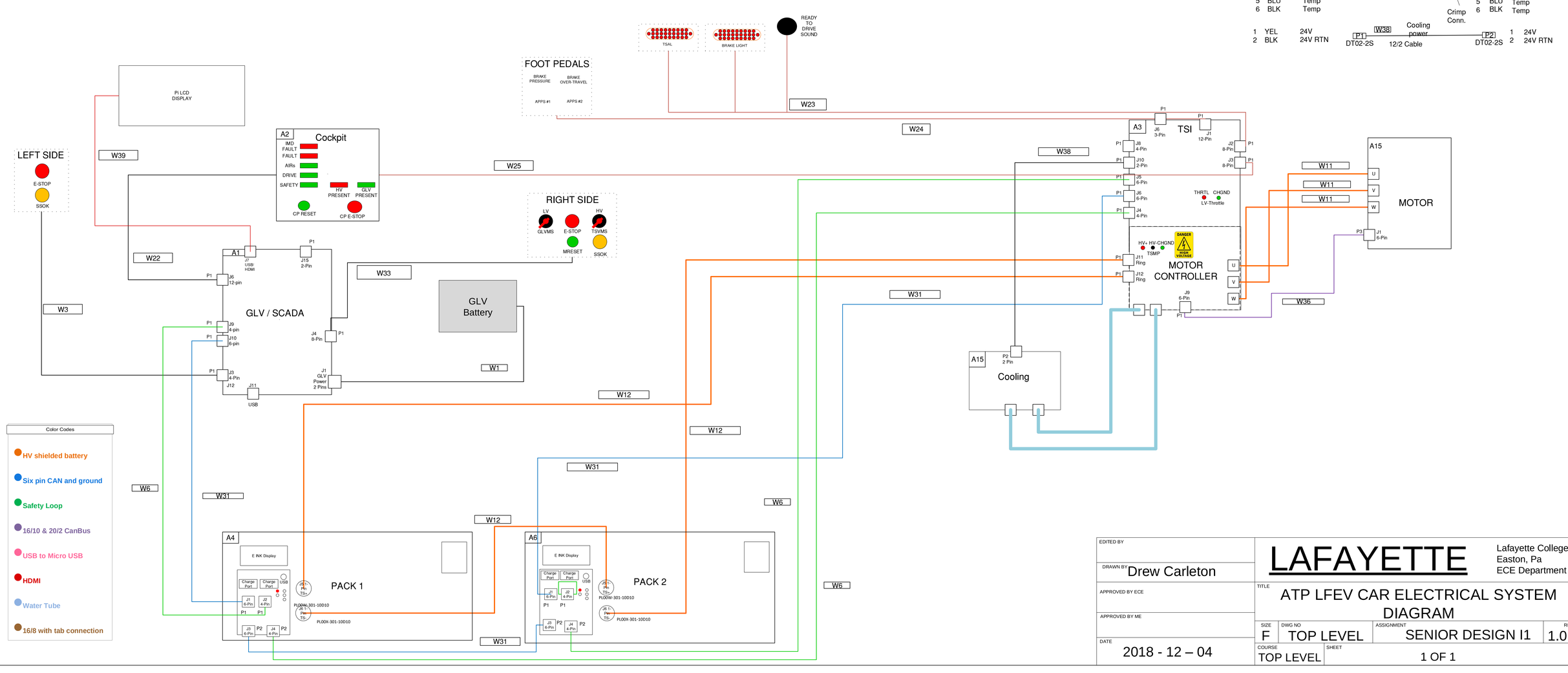
P1 DT06-6S — W36 Motor connector 16/6 Cable — Crimp Conn.

| Pin | Color | Signal |
|---|---|---|
| 1 | WHT | Encoder |
| 2 | ORG | Encoder |
| 3 | PNK | Encoder |
| 4 | GRN | Encoder |
| 5 | BLU | Temp |
| 6 | BLK | Temp |

| Pin | Color | Signal |
|---|---|---|
| 1 | YEL | 24V |
| 2 | BLK | 24V RTN |

P1 DT02-2S — W38 Cooling power 12/2 Cable — P2 DT02-2S

| Pin | Signal |
|---|---|
| 1 | 24V |
| 2 | 24V RTN |




Color Codes

- HV shielded battery
- Six pin CAN and ground
- Safety Loop
- 16/10 & 20/2 CanBus
- USB to Micro USB
- HDMI
- Water Tube
- 16/8 with tab connection

| | |
|---|---|
| EDITED BY | |
| DRAWN BY | Drew Carleton |
| APPROVED BY ECE | |
| APPROVED BY ME | |
| DATE | 2018 - 12 – 04 |

LAFAYETTE

Lafayette College
Easton, Pa
ECE Department

TITLE: ATP LFEV CAR ELECTRICAL SYSTEM DIAGRAM

| SIZE | DWG NO | ASSIGNMENT | REV |
|---|---|---|---|
| F | TOP LEVEL | SENIOR DESIGN I1 | 1.0.4 |

| COURSE | SHEET |
|---|---|
| TOP LEVEL | 1 OF 1 |