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

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

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

Pin	Color	Signal
1	GRN	5VDC +
2	BLK	LV RTN
3	WHT	CHGND

W2 GLV Power, 12/3 Cable: P1 DT06-3S — Crimp Conn.

Pin	Color	Signal
1	GRN	5VDC +
2	BLK	LV RTN
3	WHT	CHGND

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

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

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

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

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

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

Pin	Color	Signal
1	ORG	TSV HV

W11 Tractive System HV, 2/0 Battery Cable: 3/8 Ring Conn. — 3/8 Ring Conn.

Pin	Color	Signal
1	ORG	TSV HV

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

Pin	Color	Signal
1	ORG	TSV HV

Pin	Color	Signal
1	ORG	TSV HV

Pin	Color	Signal
1	ORG	TSV HV

Pin	Color	Signal
1	BLK	ENB
2	WHT	RTN

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

Pin	Color	Signal
26	BLK	ENB
19	WHT	RTN

Pin	Color	Signal
1		HUFF Signals

W20 USB: P1 — P2

Pin	Color	Signal
1		HUFF Signals

Pin	Color	Signal
1		HDMI USB

W38 USB/HDMI: P1 — P2

Pin	Color	Signal
1		HDMI USB

Pin	Color	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

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

Pin	Color	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	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

W23 Control System, 4 x 16/2 Cable: P1 DT06-8SA — 8/32 Ring 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

W24 Control System, 16/12 Cable: P1 DT06-12S — 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

W25 Control System, 16/8 Cable: P1 DT06-8S — 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

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

W33 Right side panel, 16/6 Cable: P1 DT08-8S — 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

W36 Motor connector, 16/6 Cable: P1 DT06-6S — 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

W38 Cooling power, 12/2 Cable: P1 DT02-2S

Pin	Signal
1	24V
2	24V RTN
3	24V
4	24V RTN
5	24V
6	24V RTN
7	24V
8	24V
9	24V

DELL DISPLAY

W39

TSI/Pedal Cluster Panel
TSAL
BRAKE LIGHT
READY TO DRIVE SOUND
FOOT PEDALS
BRAKE PRESSURE
BRAKE OVER-TRAVEL
APPS #1
APPS #2
Simulated by slider POTS on test panel

W23

A2 CP/GLV Panel
IMD FAULT
FAULT
AIRs
DRIVE
SAFETY
CP RESET
HV PRESENT
GLV PRESENT
CP E-STOP
LEFT SIDE
E-STOP
SSOK
RIGHT SIDE
LV
GLVMS
E-STOP
MRESET
HV
TSVMS
SSOK

W25

W6

W22

W3

A1 GLV / SCADA
J7 USB/ HDMI
J15 2-Pin
J6 12-pin
J9 4-pin
J10 6-pin
J3 4-Pin
J12
J11 USB
J4 8-Pin
J1 GLV Power 2 Pins
W33

W20

W31

W1

W18

GLV Power Supply

A17 TSV POWER SUPPLY (96V)
P1 JS1 remote interface Power Supply Shut off
J2 PL00W-301-10D10
J3 PL00X-301-10D10
P2 J1 37-Pin

W12

W12

Connect to TSI where packs are during Dyno room testing instead of the packs

PC (used to configure MC)

W24

A3
J6 3-Pin
TSI
J1 12-Pin
J5 4-Pin
J2 8-Pin
J10 2-Pin
J3 8-Pin
J7 6-Pin
J8 6-Pin
J4 4-Pin
THRTL CHGND
LV-Throttle

W38

W11
W11
W11

A15 MOTOR
U
V
W
P3 J1 6-Pin

Mechanical Connection
Dynamometer
P1 J1 USB

HV+ HV-CHGND
TSMP
DANGER HIGH VOLTAGE
J11 Ring
J12 Ring
MOTOR CONTROLLER
J9 6-Pin

W36

A15 Cooling DC2DC
P1 J1 2 Pin

A13 Pump
P2 J1 3 Pin

A14 Radiator
P1 J1 6 Pin
P2

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

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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	1.0.2

COURSE	SHEET
TOP LEVEL	1 OF 1