

Revisions

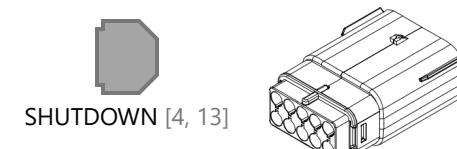
Rev.	Date	Author	Description
A	1/9/2019	Jefferson Jones	Initial design
B	1/19/2019	Nathan Cheek	Finished design utilizing pro license; Added P/Ns; Added signal names; Updated colors; Removed 12V DASH supply since Main ECU now switches on high side
C	2/25/2019	Nathan Cheek	Swapped BRAKE and ACCEL1 lines on PEDALS connector to match HT03

Notes

1 RET_FAN1 (HT04) and FAN2- (HT03) connect to the accumulator fans. RET_FAN2 (HT04) and FAN1- (HT03) connect to the radiator fan. Note that channels 1 and 2 were swapped between HT03 and HT04. Since RET_FAN1 is fused to 50A, ensure it is connected to accumulator fans, not radiator fan.

From	To	Conductor	Color	Gauge	From Contact PN
MAIN_SIG.1	DASH.1	DASH_IO1.Blue	Blue	22 AWG	M39029/56/348
MAIN_SIG.2	DASH.2	DASH_IO2.Blue	Blue	22 AWG	M39029/56/348
MAIN_SIG.3	DASH.3	DASH_IO3.Blue	Blue	22 AWG	M39029/56/348
MAIN_SIG.4	DASH.4	DASH_IO4.Blue	Blue	22 AWG	M39029/56/348
MAIN_SIG.5	REAR_B.3	SHUTDOWN_D.Violet	Violet	22 AWG	M39029/56/348
MAIN_SIG.7	REAR_B.5	INVERTER_SUPPLY.Red	Red	22 AWG	M39029/56/348
MAIN_SIG.8	PEDALS.3	SIGNAL_BRAKE.Yellow	Yellow	22 AWG	M39029/56/348
MAIN_SIG.9	REAR_B.4	BRAKE_LIGHT.Red	Red	22 AWG	M39029/56/348
MAIN_SIG.10	REAR_A.4	12V_ACCUM.Red	Red	22 AWG	M39029/56/348
MAIN_SIG.11	REAR_A.7	CAN.White-Blue	White/Blue	22 AWG	M39029/56/348
MAIN_SIG.12	REAR_A.8	CAN.White	White	22 AWG	M39029/56/348
MAIN_SIG.14	PEDALS.8	GND_ACCEL1.Green	Green	22 AWG	M39029/56/348
MAIN_SIG.15	PEDALS.5	GND_ACCEL2.Green	Green	22 AWG	M39029/56/348
MAIN_SIG.16	PEDALS.2	GND_BRAKE.Green	Green	22 AWG	M39029/56/348
MAIN_SIG.17	REAR_B.9	RET_FAN1.Green	Green	22 AWG	M39029/56/348
MAIN_SIG.18	DASH.5	DASH_IO5.Blue	Blue	22 AWG	M39029/56/348
MAIN_SIG.19	DASH.6	DASH_IO6.Blue	Blue	22 AWG	M39029/56/348
MAIN_SIG.20	DASH.7	DASH_IO7.Blue	Blue	22 AWG	M39029/56/348
MAIN_SIG.21	DASH.8	DASH_IO8.Blue	Blue	22 AWG	M39029/56/348
MAIN_SIG.23	DASH.9	DASH_CTRL9.Blue	Blue	22 AWG	M39029/56/348
MAIN_SIG.24	PEDALS.6	SIGNAL_ACCEL2.Yellow	Yellow	22 AWG	M39029/56/348
MAIN_SIG.25	PEDALS.9	SIGNAL_ACCEL1.Yellow	Yellow	22 AWG	M39029/56/348
MAIN_SIG.27	PEDALS.7	5V_ACCEL1.Red	Red	22 AWG	M39029/56/348
MAIN_SIG.28	PEDALS.4	5V_ACCEL2.Red	Red	22 AWG	M39029/56/348
MAIN_SIG.29	PEDALS.1	5V_BRAKE.Red	Red	22 AWG	M39029/56/348
MAIN_SIG.30	REAR_A.6	GND_ACCUM.Green	Green	22 AWG	M39029/56/348
MAIN_SIG.31	REAR_B.2	BMS_OK.Yellow	Yellow	22 AWG	M39029/56/348
MAIN_SIG.32	DASH.10	DASH_CTRL10.Blue	Blue	22 AWG	M39029/56/348
MAIN_SIG.33	REAR_B.1	OKHS.Yellow	Yellow	22 AWG	M39029/56/348
MAIN_SIG.37	REAR_A.10	LATCH_EXT_BTN.White	White	22 AWG	M39029/56/348

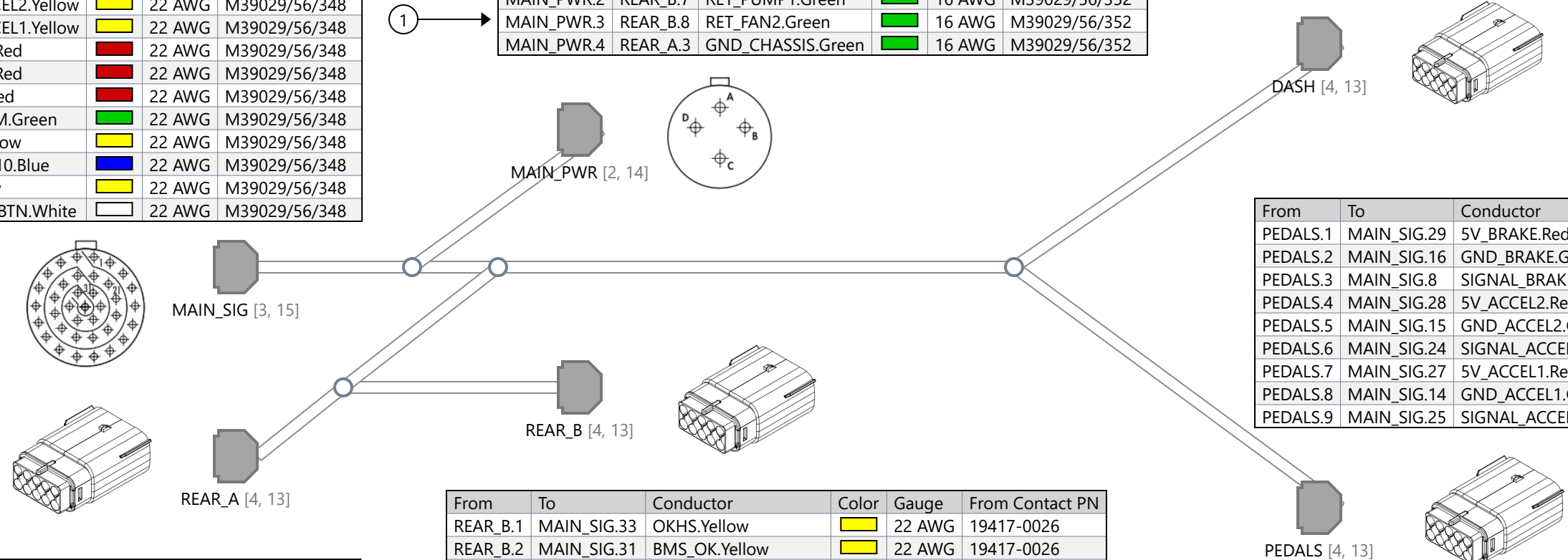
Bill of Materials				
Id	Type	Manufacturer	Part Number	Quantity
1	Cable		2 Wire (1 twisted pair), 22AWG Shielded CAN	
2	Connector		AS612-04SN	1
3	Connector		AS614-35SN	1
4	Connector	Molex	19419-0015	5
5	Wire		M22759/32-16-2	
6	Wire		M22759/32-16-5	
7	Wire		M22759/32-22-2	
8	Wire		M22759/32-22-4	
9	Wire		M22759/32-22-5	
10	Wire		M22759/32-22-6	
11	Wire		M22759/32-22-7	≥ 0 in
12	Wire		M22759/32-22-9	
13	Contact	Molex	19417-0026	36
14	Contact		M39029/56/352	4
15	Contact		M39029/56/348	30



From	To	Conductor	Color	Gauge	From Contact PN
SHUTDOWN.1	SHUTDOWN.2	SHUTDOWN_LOOPBACK.Violet	Violet	22 AWG	19417-0026
SHUTDOWN.2	SHUTDOWN.1	SHUTDOWN_LOOPBACK.Violet	Violet	22 AWG	19417-0026

From	To	Conductor	Color	Gauge	From Contact PN
DASH.1	MAIN_SIG.1	DASH_IO1.Blue	Blue	22 AWG	19417-0026
DASH.2	MAIN_SIG.2	DASH_IO2.Blue	Blue	22 AWG	19417-0026
DASH.3	MAIN_SIG.3	DASH_IO3.Blue	Blue	22 AWG	19417-0026
DASH.4	MAIN_SIG.4	DASH_IO4.Blue	Blue	22 AWG	19417-0026
DASH.5	MAIN_SIG.18	DASH_IO5.Blue	Blue	22 AWG	19417-0026
DASH.6	MAIN_SIG.19	DASH_IO6.Blue	Blue	22 AWG	19417-0026
DASH.7	MAIN_SIG.20	DASH_IO7.Blue	Blue	22 AWG	19417-0026
DASH.8	MAIN_SIG.21	DASH_IO8.Blue	Blue	22 AWG	19417-0026
DASH.9	MAIN_SIG.23	DASH_CTRL9.Blue	Blue	22 AWG	19417-0026
DASH.10	MAIN_SIG.32	DASH_CTRL10.Blue	Blue	22 AWG	19417-0026

From	To	Conductor	Color	Gauge	From Contact PN
MAIN_PWR.1	REAR_A.2	12VSUPPLY_BRB.Red	Red	16 AWG	M39029/56/352
MAIN_PWR.2	REAR_B.7	RET_PUMP1.Green	Green	16 AWG	M39029/56/352
MAIN_PWR.3	REAR_B.8	RET_FAN2.Green	Green	16 AWG	M39029/56/352
MAIN_PWR.4	REAR_A.3	GND_CHASSIS.Green	Green	16 AWG	M39029/56/352



From	To	Conductor	Color	Gauge	From Contact PN
REAR_A.2	MAIN_PWR.1	12VSUPPLY_BRB.Red	Red	16 AWG	19417-0026
REAR_A.3	MAIN_PWR.4	GND_CHASSIS.Green	Green	16 AWG	19417-0026
REAR_A.4	MAIN_SIG.10	12V_ACCUM.Red	Red	22 AWG	19417-0026
REAR_A.6	MAIN_SIG.30	GND_ACCUM.Green	Green	22 AWG	19417-0026
REAR_A.7	MAIN_SIG.11	CAN.White-Blue	White/Blue	22 AWG	19417-0026
REAR_A.8	MAIN_SIG.12	CAN.White	White	22 AWG	19417-0026
REAR_A.10	MAIN_SIG.37	LATCH_EXT_BTN.White	White	22 AWG	19417-0026

From	To	Conductor	Color	Gauge	From Contact PN
REAR_B.1	MAIN_SIG.33	OKHS.Yellow	Yellow	22 AWG	19417-0026
REAR_B.2	MAIN_SIG.31	BMS_OK.Yellow	Yellow	22 AWG	19417-0026
REAR_B.3	MAIN_SIG.5	SHUTDOWN_D.Violet	Violet	22 AWG	19417-0026
REAR_B.4	MAIN_SIG.9	BRAKE_LIGHT.Red	Red	22 AWG	19417-0026
REAR_B.5	MAIN_SIG.7	INVERTER_SUPPLY.Red	Red	22 AWG	19417-0026
REAR_B.7	MAIN_PWR.2	RET_PUMP1.Green	Green	16 AWG	19417-0026
REAR_B.8	MAIN_PWR.3	RET_FAN2.Green	Green	16 AWG	19417-0026
REAR_B.9	MAIN_SIG.17	RET_FAN1.Green	Green	22 AWG	19417-0026

Title	MAIN ECU TO HT03 ADAPTER HARNESS	Part Number	HT04.LV.HT03_MAIN_ADAPT
Description			
Revision	C		

	Name	Date
Drawn By	----	----
Eng Approved	----	----
Mfg Approved	----	----
QA	----	----






































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Title:	Bill of Materials: MAIN ECU TO HT03 ADAPTER HARNESS
Part Number:	HT04.LV.HT03_MAIN_ADAPT
Description:	

Id	Type	Manufacturer	Part Number	Description	Quantity	Usage
1	Cable		2 Wire (1 twisted pair), 22AWG Shielded CAN			CAN
2	Connector		AS612-04SN	4CKT Pin Plug Size 12	1	MAIN_PWR
3	Connector		AS614-35SN	37CKT Pin Plug Size 14	1	MAIN_SIG
4	Connector	Molex	19419-0015	MX150-L 10CKT Plug	5	DASH, PEDALS, REAR_A, REAR_B, SHUTDOWN
5	Wire		M22759/32-16-2	M22759 16 AWG Red Tin Plated Copper wire		12VSUPPLY_BRB
6	Wire		M22759/32-16-5	M22759 16 AWG Green Tin Plated Copper wire		GND_CHASSIS, RET_FAN2, RET_PUMP1
7	Wire		M22759/32-22-2	M22759 22 AWG Red Tin Plated Copper wire		5V_ACCEL1, 5V_ACCEL2, 5V_BRAKE, 12V_ACCUM, BRAKE_LIGHT, INVERTER_SUPPLY
8	Wire		M22759/32-22-4	M22759 22 AWG Yellow Tin Plated Copper wire		BMS_OK, OKHS, SIGNAL_ACCEL1, SIGNAL_ACCEL2, SIGNAL_BRAKE
9	Wire		M22759/32-22-5	M22759 22 AWG Green Tin Plated Copper wire		GND_ACCEL1, GND_ACCEL2, GND_ACCUM, GND_BRAKE, RET_FAN1
10	Wire		M22759/32-22-6	M22759 22 AWG Blue Tin Plated Copper wire		DASH_CTRL9, DASH_CTRL10, DASH_IO1, DASH_IO2, DASH_IO3, DASH_IO4, DASH_IO5, DASH_IO6, DASH_IO7, DASH_IO8
11	Wire		M22759/32-22-7	M22759 22 AWG Violet Tin Plated Copper wire	≥ 0 in	SHUTDOWN_D, SHUTDOWN_LOOPBACK
12	Wire		M22759/32-22-9	M22759 22 AWG White Tin Plated Copper wire		LATCH_EXT_BTN
13	Contact	Molex	19417-0026	MX150L male terminal	36	See Wiring Table
14	Contact		M39029/56/352	#16 socket terminal	4	See Wiring Table
15	Contact		M39029/56/348	#22D socket terminal	30	See Wiring Table

Title:	Wiring Table: MAIN ECU TO HT03 ADAPTER HARNESS
Part Number:	HT04.LV.HT03_MAIN_ADAPT
Description:	

From	To	Conductor	Conductor PN	Twisted With	Gauge	Length	From Contact PN	Notes
MAIN_PWR.1	REAR_A.2	 12VSUPPLY_BRB.Red	M22759/32-16-2		16 AWG		M39029/56/352	
MAIN_PWR.2	REAR_B.7	 RET_PUMP1.Green	M22759/32-16-5		16 AWG		M39029/56/352	
MAIN_PWR.3	REAR_B.8	 RET_FAN2.Green	M22759/32-16-5		16 AWG		M39029/56/352	
MAIN_PWR.4	REAR_A.3	 GND_CHASSIS.Green	M22759/32-16-5		16 AWG		M39029/56/352	
MAIN_SIG.1	DASH.1	 DASH_IO1.Blue	M22759/32-22-6		22 AWG		M39029/56/348	
MAIN_SIG.2	DASH.2	 DASH_IO2.Blue	M22759/32-22-6		22 AWG		M39029/56/348	
MAIN_SIG.3	DASH.3	 DASH_IO3.Blue	M22759/32-22-6		22 AWG		M39029/56/348	
MAIN_SIG.4	DASH.4	 DASH_IO4.Blue	M22759/32-22-6		22 AWG		M39029/56/348	
MAIN_SIG.5	REAR_B.3	 SHUTDOWN_D.Violet	M22759/32-22-7		22 AWG		M39029/56/348	
MAIN_SIG.7	REAR_B.5	 INVERTER_SUPPLY.Red	M22759/32-22-2		22 AWG		M39029/56/348	
MAIN_SIG.8	PEDALS.3	 SIGNAL_BRAKE.Yellow	M22759/32-22-4		22 AWG		M39029/56/348	
MAIN_SIG.9	REAR_B.4	 BRAKE_LIGHT.Red	M22759/32-22-2		22 AWG		M39029/56/348	
MAIN_SIG.10	REAR_A.4	 12V_ACCUM.Red	M22759/32-22-2		22 AWG		M39029/56/348	
MAIN_SIG.11	REAR_A.7	 CAN.White-Blue	2 Wire (1 twisted pair), 22AWG Shielded CAN	White	22 AWG		M39029/56/348	
MAIN_SIG.12	REAR_A.8	 CAN.White	2 Wire (1 twisted pair), 22AWG Shielded CAN	White-Blue	22 AWG		M39029/56/348	
MAIN_SIG.14	PEDALS.8	 GND_ACCEL1.Green	M22759/32-22-5		22 AWG		M39029/56/348	
MAIN_SIG.15	PEDALS.5	 GND_ACCEL2.Green	M22759/32-22-5		22 AWG		M39029/56/348	
MAIN_SIG.16	PEDALS.2	 GND_BRAKE.Green	M22759/32-22-5		22 AWG		M39029/56/348	
MAIN_SIG.17	REAR_B.9	 RET_FAN1.Green	M22759/32-22-5		22 AWG		M39029/56/348	
MAIN_SIG.18	DASH.5	 DASH_IO5.Blue	M22759/32-22-6		22 AWG		M39029/56/348	
MAIN_SIG.19	DASH.6	 DASH_IO6.Blue	M22759/32-22-6		22 AWG		M39029/56/348	
MAIN_SIG.20	DASH.7	 DASH_IO7.Blue	M22759/32-22-6		22 AWG		M39029/56/348	
MAIN_SIG.21	DASH.8	 DASH_IO8.Blue	M22759/32-22-6		22 AWG		M39029/56/348	
MAIN_SIG.23	DASH.9	 DASH_CTRL9.Blue	M22759/32-22-6		22 AWG		M39029/56/348	
MAIN_SIG.24	PEDALS.6	 SIGNAL_ACCEL2.Yellow	M22759/32-22-4		22 AWG		M39029/56/348	
MAIN_SIG.25	PEDALS.9	 SIGNAL_ACCEL1.Yellow	M22759/32-22-4		22 AWG		M39029/56/348	
MAIN_SIG.27	PEDALS.7	 5V_ACCEL1.Red	M22759/32-22-2		22 AWG		M39029/56/348	
MAIN_SIG.28	PEDALS.4	 5V_ACCEL2.Red	M22759/32-22-2		22 AWG		M39029/56/348	
MAIN_SIG.29	PEDALS.1	 5V_BRAKE.Red	M22759/32-22-2		22 AWG		M39029/56/348	
MAIN_SIG.30	REAR_A.6	 GND_ACCUM.Green	M22759/32-22-5		22 AWG		M39029/56/348	
MAIN_SIG.31	REAR_B.2	 BMS_OK.Yellow	M22759/32-22-4		22 AWG		M39029/56/348	
MAIN_SIG.32	DASH.10	 DASH_CTRL10.Blue	M22759/32-22-6		22 AWG		M39029/56/348	
MAIN_SIG.33	REAR_B.1	 OKHS.Yellow	M22759/32-22-4		22 AWG		M39029/56/348	
MAIN_SIG.37	REAR_A.10	 LATCH_EXT_BTN.White	M22759/32-22-9		22 AWG		M39029/56/348	
SHUTDOWN.1	SHUTDOWN.2	 SHUTDOWN_LOOPBACK.Violet	M22759/32-22-7		22 AWG	0 in	19417-0026	Loopback

Title:	Cutlist: MAIN ECU TO HT03 ADAPTER HARNESS
Part Number:	HT04.LV.HT03_MAIN_ADAPT
Description:	

#	Type	Reference Designator	Manufacturer	Part Number	Color	Gauge	Length	Twisted With
1	Cable	CAN		2 Wire (1 twisted pair), 22AWG Shielded CAN	White			
2	Wire	5V_ACCEL1		M22759/32-22-2	Red	22 AWG		
3	Wire	5V_ACCEL2		M22759/32-22-2	Red	22 AWG		
4	Wire	5V_BRAKE		M22759/32-22-2	Red	22 AWG		
5	Wire	12VSUPPLY_BRB		M22759/32-16-2	Red	16 AWG		
6	Wire	12V_ACCUM		M22759/32-22-2	Red	22 AWG		
7	Wire	BMS_OK		M22759/32-22-4	Yellow	22 AWG		
8	Wire	BRAKE_LIGHT		M22759/32-22-2	Red	22 AWG		
9	Wire	DASH_CTRL9		M22759/32-22-6	Blue	22 AWG		
10	Wire	DASH_CTRL10		M22759/32-22-6	Blue	22 AWG		
11	Wire	DASH_IO1		M22759/32-22-6	Blue	22 AWG		
12	Wire	DASH_IO2		M22759/32-22-6	Blue	22 AWG		
13	Wire	DASH_IO3		M22759/32-22-6	Blue	22 AWG		
14	Wire	DASH_IO4		M22759/32-22-6	Blue	22 AWG		
15	Wire	DASH_IO5		M22759/32-22-6	Blue	22 AWG		
16	Wire	DASH_IO6		M22759/32-22-6	Blue	22 AWG		
17	Wire	DASH_IO7		M22759/32-22-6	Blue	22 AWG		
18	Wire	DASH_IO8		M22759/32-22-6	Blue	22 AWG		
19	Wire	GND_ACCEL1		M22759/32-22-5	Green	22 AWG		
20	Wire	GND_ACCEL2		M22759/32-22-5	Green	22 AWG		
21	Wire	GND_ACCUM		M22759/32-22-5	Green	22 AWG		
22	Wire	GND_BRAKE		M22759/32-22-5	Green	22 AWG		
23	Wire	GND_CHASSIS		M22759/32-16-5	Green	16 AWG		
24	Wire	INVERTER_SUPPLY		M22759/32-22-2	Red	22 AWG		
25	Wire	LATCH_EXT_BTN		M22759/32-22-9	White	22 AWG		
26	Wire	OKHS		M22759/32-22-4	Yellow	22 AWG		
27	Wire	RET_FAN1		M22759/32-22-5	Green	22 AWG		
28	Wire	RET_FAN2		M22759/32-16-5	Green	16 AWG		
29	Wire	RET_PUMP1		M22759/32-16-5	Green	16 AWG		
30	Wire	SHUTDOWN_D		M22759/32-22-7	Violet	22 AWG		
31	Wire	SHUTDOWN_LOOPBACK		M22759/32-22-7	Violet	22 AWG	0 in	
32	Wire	SIGNAL_ACCEL1		M22759/32-22-4	Yellow	22 AWG		
33	Wire	SIGNAL_ACCEL2		M22759/32-22-4	Yellow	22 AWG		
34	Wire	SIGNAL_BRAKE		M22759/32-22-4	Yellow	22 AWG		