



WESTERN STAR

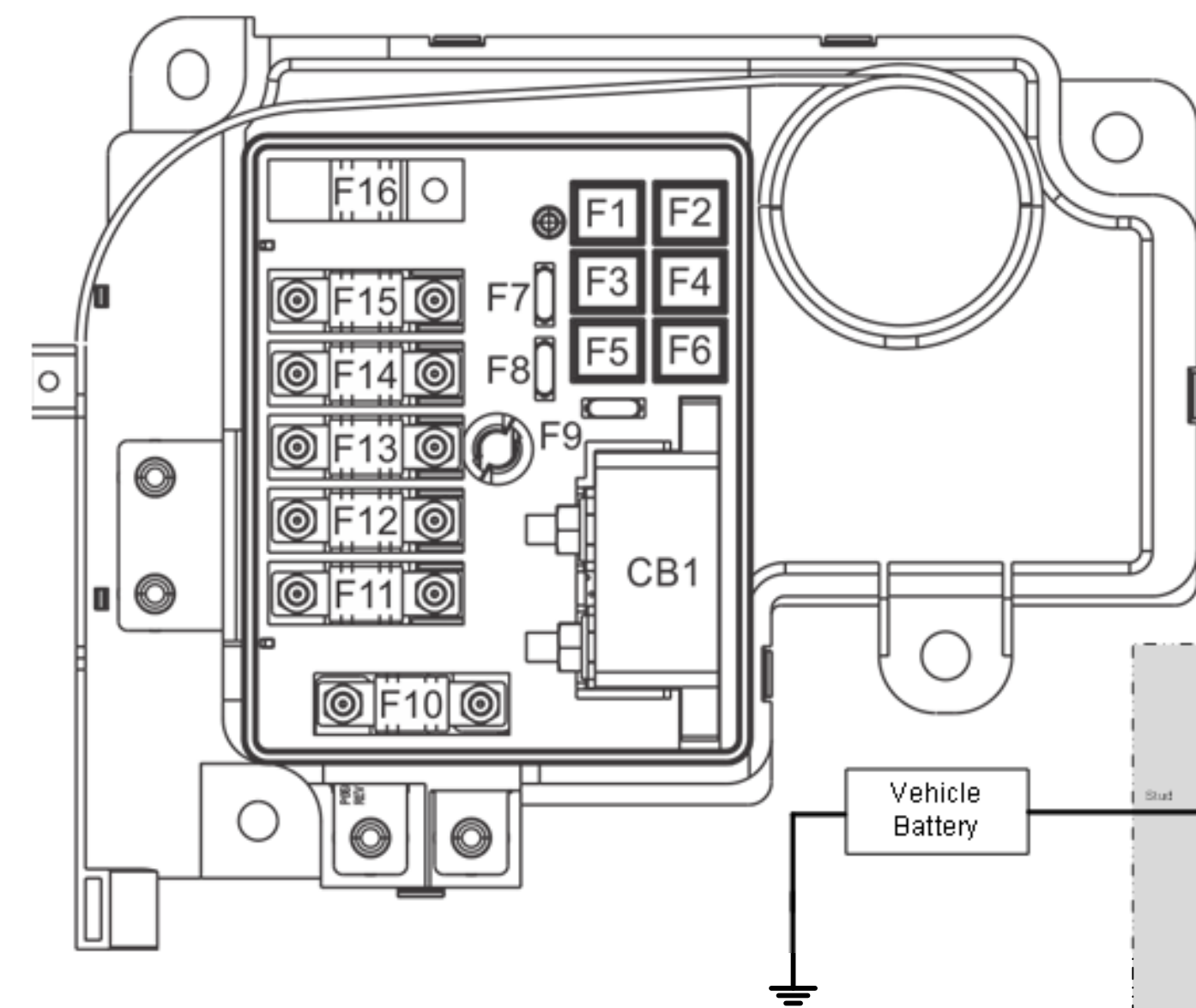
VPDM Pin Layout

STI-517

MODULE: 285

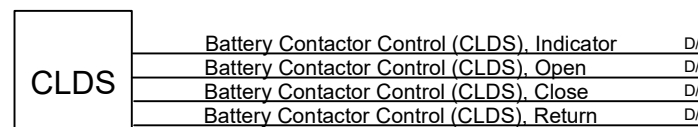
VPDM

(Vehicle Power Distribution Module)



BCA

(Battery Cable Access)



BCB

(Battery Control Board)

sSAM

(Single Signal Activation Module)

Lane Departure/Guidance, GND J6-A10
Camera/Video/Imaging System, GND J7-B7
Collision Avoidance/Obstacle Detection System, GND J7-B9
3PC (third party connector), GND J6-A11
SODS/SGA, GND J4-D2
Driver Facing Camera, GND J4-D3
ABS Power Return 1, GND, DE J6-B11
Instrument Cluster, GND, DE J6-B7
Diagnostics Connector, GND1 J6-D8
Clockspring, GND J6-E8
CGW, GND J6-B8
SRS Airbag, GND J6-E10
Fleet Management System, GND J6-A9
Tire Pressure Monitoring, GND J7-B11
Air Suspension (ECAS), GND J7-B6
Bi-Stable Relay 1 (House), Feedback J4-K8

VPDM Cab Loads BAT, Feedback J4-C5
Bi-Stable Relay, House Control, Close J4-C8
Bi-Stable Relay, House Control, Open J4-C7
Bi-Stable Relay 2 (House), Feedback J4-H1
VPDM Power Supply 1, Feedback J4-A7
VPDM Power Supply 2, Feedback J4-C6
Bi-Stable Relay 3 (Basic), Feedback J4-H4
Bi-Stable Relay, Basic Control, Close J4-A4
Bi-Stable Relay, Basic Control, Open J4-A5
Bi-Stable Relay 4 (Basic), Feedback J4-H3
D+ Relay Control J4-A3
Ignition (IGN_1), Relay Control J4-A8
PT Early WakeUp J4-A6
Trailer Option Power #1, Relay Control J4-C1
Retained Accessory, Relay Control J4-C3
Mirror Heating, Relay Control J4-C2

cTP (common Telematic Platform), GND J6-B10

Fuse/ Circuit Breaker Type & Description

FU/CB POS	FU/CB TYPE	RATING (Amps)	Standard (S) Optional (O)	FUSE LABEL DESCRIPTION
F01	FU,T2,T3	5A	S	READING LAMP FRONT, BAT1
F02	FU,T2,T3	15A	O	EXPANSION FUSE 33, BAT
F03	FU	5A	S	IPPC/CLOCK/TELEMATICS, PWR
F04	FU	10A	S	METHANE DET/CP/DEF PUMP, PWR
F05	FU,T2,T3	15A	O	EXPANSION FUSE 32, BAT
F06	FU,T2,T3	30A	O	EXPANSION FUSE 1, BAT
F07	FU,T2,T3	30A	O	EXPANSION FUSE 2, BAT
F08	FU,T2,T3	15A	O	EXPANSION FUSE 11, BAT
F09	FU	3A	S	FCU/ACU HVAC CTRLR, BAT1
F10	FU,T2,T3	15A	S	AFTER TREATMENT SYS (ATS), CTRL
F11	FU	10A	O	AUX CAB/AUX COLNT HTR, ENABLE/BAT1
F12	FU,T2,T3	10A	O	EXPANSION FUSE 38, PWR
F13	FU,T2,T3	10A	O	EXPANSION FUSE 12, PWR
F14	JCASE	30A	S	CAB HVAC FAN MOTOR, BAT1
F15	FU,T2,T3	20A	O	EXPANSION FUSE 35, BAT
F16	FU	30A	O	RADIO/CONNECT-5, BAT1/PWR
F17	FU,T2,T3	30A	O	DOOR CONTROL, DRIVER, BAT1/PWR
F18	FU,T2,T3	30A	O	DOOR CONTROL, PASS, BAT1/PWR
F19	JCASE	30A	O	EXPANSION FUSE 13, BAT
F20	FU,T2,T3	20A	O	AUX MIR HEAT, DRIVER/PASS CTRL
F21	FU,T2,T3	20A	S	AUX CAB/AUX COLNT HTR, BAT1
F22	FU,T2,T3	10A	S	AIR SOLENOID ECU, BAT2
F23	FU,T2,T3	30A	O	LANE DEPT GUIDE/DRIVER CAM, BAT
F24	FU,T2,T3	10A	S	DASH SPLICEPACK, BAT1
F25	FU,T2,T3	20A	O	EXPANSION FUSE 34, BAT
F26	FU,T2,T3	25A	S	ABS POWER FEED 2, BAT1
F27	FU	5A	S	RADIO, ACC
F28	FU,T2,T3	30A	O	EXPANSION FUSE 5/6, ACC
F29	FU,T2,T3	30A	O	EXPANSION FUSE 14, ACC
F30	FU,T2,T3	30A	O	EXPANSION FUSE 15, BAT
F31	FU,T2,T3	30A	O	EXPANSION FUSE 16, BAT
F32	FU,T2,T3	10A	O	TIRE PRESS/TRANS SHFT CTRL, BAT
F33	FU	5A	S	CGW/INST CLUSTER, BAT
F34	FU,T2,T3	30A	O	EXPANSION FUSE 17, BAT
F35	FU,T2,T3	25A	O	EXPANSION FUSE 3, BAT
F36	FU,T2,T3	30A	O	EXPANSION FUSE 18, BAT
F37	FU,T2	10A	S	OBJ I1939, BAT1
F38	FU,T2,T3	20A	O	EXPANSION FUSE 19, CTRL/BAT
F39	FU,T2,T3	15A	O	EXPANSION FUSE 31, D+
F40	FU,T2,T3	30A	O	DEF LINE HEATER #1/#2/#3 CTRL
F41	JCASE	50A	S	BASIC LOAD 2, BAT
F42	JCASE	50A	S	HOUSE LOAD 1, BAT
F43	FU,T2,T3	30A	S	FUEL WATER SEP HTR, IGN
F44	FU,T2,T3	20A	O	AIR DRYER, D+
F45	FU,T2,T3	25A	O	LUBE/AIR DRYER/SPIT VLV/HTD DRAIN, D+
F46	JCASE	50A	S	HOUSE LOAD 2, BAT
F47	JCASE	50A	S	BASIC LOAD 1, BAT
F48	FU,T2,T3	20A	O	EXPANSION FUSE 20, BAT
F49	FU	5A	S	VPDM, RELAY COIL, BAT
F50	FU	20A	O	EXPANSION FUSE 21, BAT
F51	FU,T2,T3	20A	O	EXPANSION FUSE 22, BAT
F52	FU,T2,T3	20A	O	EXPANSION FUSE 23, BAT
F53	FU	25A	O	EXPANSION FUSE 37, IGN
F54	FU,T2,T3	10A	S	DASH SWITCH/SPLICEPACK, IGN
F55	FU,T2,T3	10A	O	EXPANSION FUSE 39, IGN
F56	FU,T2,T3	15A	O	EXPANSION FUSE 4, IGN
F57	FU	10A	S	COLL AVOID/OBSTACLE DET SYS, IGN
F58	FU,T2,T3	30A	O	EXPANSION FUSE 24, BAT
F59	FU,T2,T3	30A	O	EXPANSION FUSE 25, BAT
F60	FU,T2,T3	30A	O	EXPANSION FUSE 7, BAT
F61	FU,T2,T3	30A	O	EXPANSION FUSE 8, BAT
F62	FU,T2,T3	30A	O	ABS POWER FEED 1, PLC/NO PLC, BAT1
F63	FU,T2,T3	30A	O	CB RAD/12V PWR RCPT 2,DASH, BAT1/IGN
F64	FU,T2,T3	30A	O	12V PWR RCPT 1,DASH/CIGAR, BAT1/IGN
F65	FU,T2,T3	20A	O	FLEET MGT SYS, BAT1/PWR
F66	FU,T2,T3	30A	S	TRAILER ABS CONN (7) & ABS PLC, IGN
F67	FU,T2	5A	S	CPC / MCM / ACM / TCM / ECM, IGN
F68	FU,T2,T3	25A	O	EXPANSION FUSE 26, IGN
F69	FU	30A	O	EXPANSION FUSE 27, IGN
F70	FU	5A	S	COLL AVOID/OBSTACLE DET SYS, BAT1
F71	FU	5A	S	INST CLSTR/SRS/CAB HVAC CTRLR, IGN
F72	FU	10A	O	EXPANSION FUSE 28, IGN
F73	FU	15A	O	EXPANSION FUSE 29, IGN
F74	FU	25A	O	EXPANSION FUSE 30, IGN
F75	FU	20A	O	EXPANSION FUSE 10, IGN
F76	FU	20A	O	80V BLDR/LKOUT SOL/FLSNDR, IGN
F77	FU	20A	O	EXPANSION FUSE 9, IGN
F78	FU	15A	O	DEF PUMP, PWR

NOTES:
1. When replacing fuse, circuit breaker or relay, replace with similar value and type
2. Highlighted Label Descriptions "Expansion Fuse XX, XXX" or "Spare Relay XX" are flexible outputs driven by SMARTPARTS and dependant on vehicle configurations. Reference 49-00306 and SMARTPART Functional Assignment Spec 49-00329 for more information

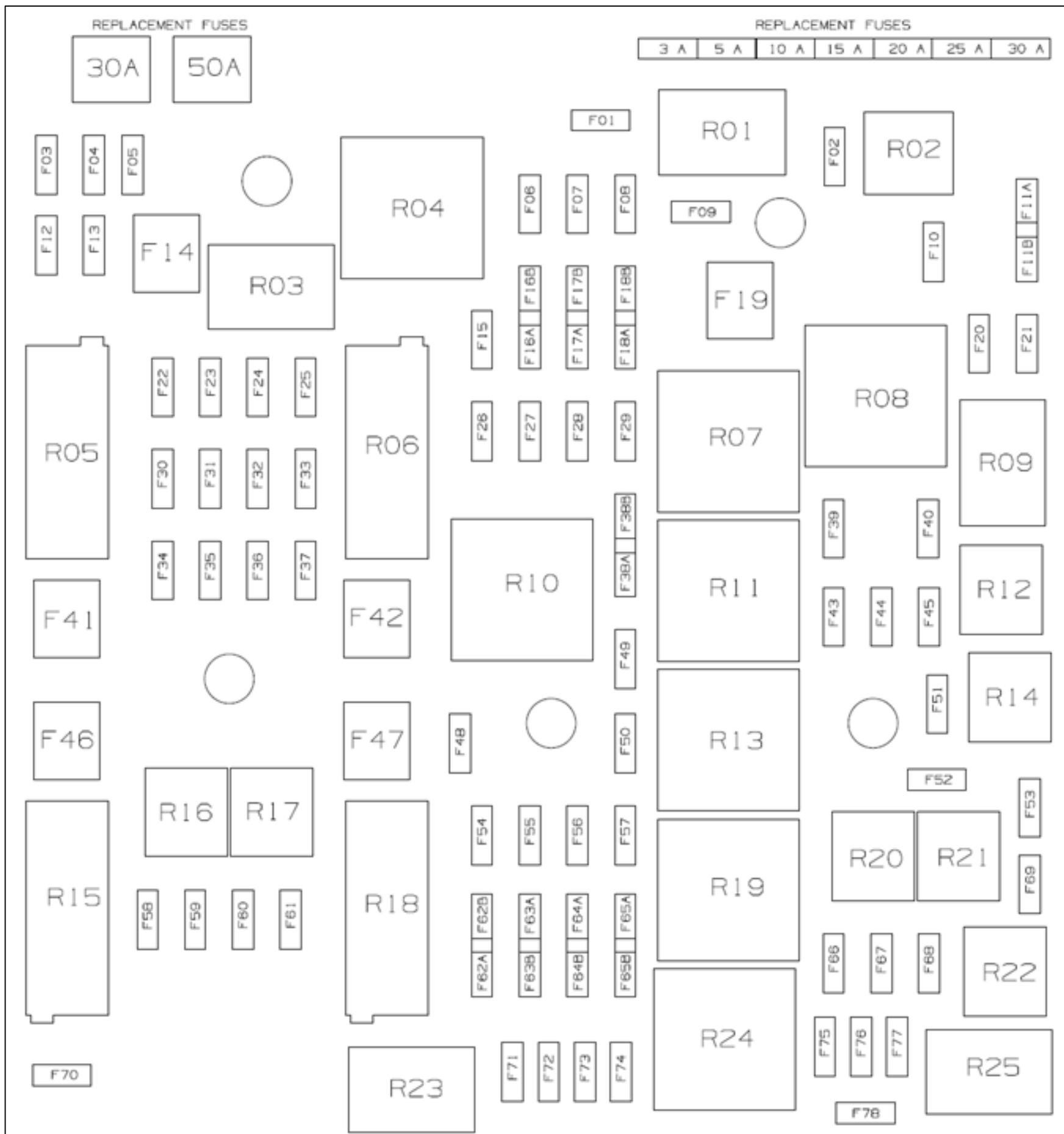
NOTE: For all fuses with multiple positions, this document shows their primary (A) position, with the secondary (B) position shown as open.

Key Position Legend
PWR => Keep Alive Powered
BAT => Powered During Key-Off
IGN => Powered During Key-On/Crank
ACC => Powered During Key-On
GND => See 28G GND Architecture

Relay Legend
bR => Bi-stable Relay
HCR => High Current Relay
Mini => ISO Mini Relay
Micro => ISO Micro Relay
uMicro => ISO Ultra Micro Relay

NOTE: Bistable relays magnetically latch in either the open or closed state with a pulse from the SAM as battery charge levels are reached. SAM will check the state of the relay on ignition transition. The ignition switch should be cycled after replacing a bistable relay.

Spare Relay Trace Sizing
uMicro => 20A
Micro => 30A
Mini => 50A
HCR => 70A
Control => 5A for all relays



Engine Controller

DEF Line Heater, LS Control J7-B5
DEF Pump Relay, HC Control J7-C2
ATS PWR, LS Control J7-B5

Remote Start Stop, Terminal 87 J7-F3
Remote Start Stop, Terminal 87 J7-E4
Remote Start Stop, Terminal 85 J7-E3
Spare Relay 1, Terminal 30 J5-C3
Spare Relay 1, Terminal 87 J5-B4
Spare Relay 1, Terminal 85 J5-B3
Spare Relay 1, Terminal 86 J5-C4
Spare Relay 2, Terminal 30 J5-E3
Spare Relay 2, Terminal 87 J5-D4
Spare Relay 2, Terminal 85 J5-D3
Spare Relay 2, Terminal 86 J5-E4
Spare Relay 3, Terminal 30 J5-A12
Spare Relay 3, Terminal 87 J5-F11
Spare Relay 3, Terminal 87 J5-E12
Spare Relay 3, Terminal 85 J5-F9
Spare Relay 3, Terminal 86 J5-F8
Spare Relay 4, Terminal 30 J6-A2
Spare Relay 4, Terminal 87 J6-C8
Spare Relay 4, Terminal 87 J6-B9
Spare Relay 4, Terminal 85 J6-C8
Spare Relay 5, Terminal 86 J6-C10
Spare Relay 5, Terminal 30 J8-D1
Spare Relay 6, Terminal 87 J9-C1
Spare Relay 6, Terminal 85 J6-A5
Spare Relay 6, Terminal 86 J6-A7

VPDM - Full Variant

**Available 43N Launch Group 2 and Beyond