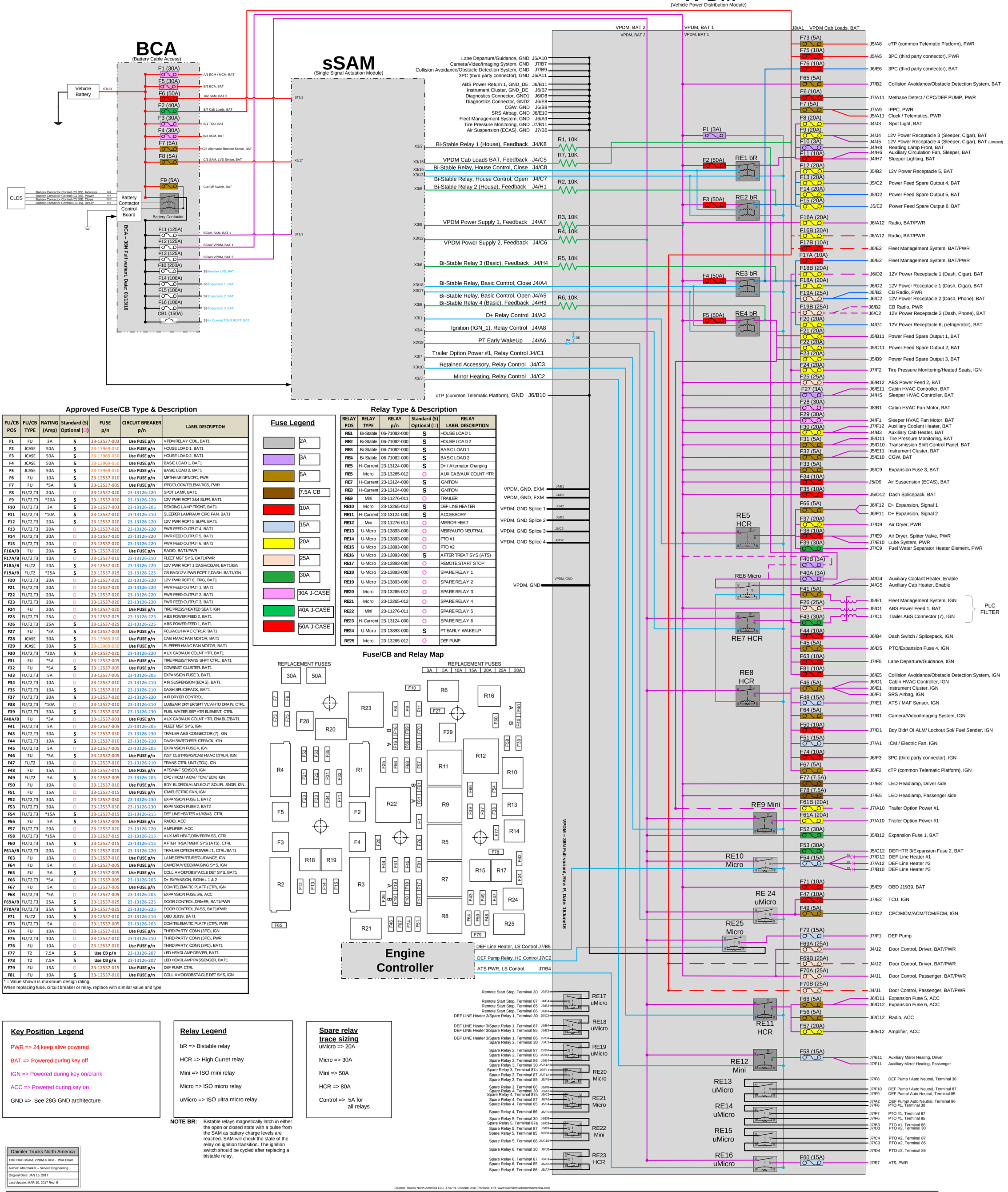
New Cascadia®

VPDM Pin Layout

FREIGHTLINER® Run Smart™ — CASCADIA®



Approved Fuse/CB Type & Description

FU/CB POS	FU/CB TYPE	RATING (Amp)	Standard (S) Optional (O)	FUSE p/n	CIRCUIT BREAKER p/n	LABEL DESCRIPTION
F1	FU	3A	S	23-12537-003	Use FUSE p/n	VPDM,RELAY COIL, BAT1
F2	JCASE	50A	S	23-13969-050	Use FUSE p/n	HOUSE LOAD 1, BAT1
F3	JCASE	50A	S	23-13969-050	Use FUSE p/n	HOUSE LOAD 2, BAT1
F4	JCASE	50A	S	23-13969-050	Use FUSE p/n	BASIC LOAD 1, BAT1
F5	JCASE	50A	S	23-13969-050	Use FUSE p/n	BASIC LOAD 2, BAT1
F6	FU	10A	S	23-12537-010	Use FUSE p/n	METHANE DET/CPC, PWR
F7	FU	*5A	S	23-12537-005	Use FUSE p/n	IPPC/CLOCK/TELEMATICS, PWR
F8	FU,T2,T3	20A	O	23-12537-020	23-13126-220	SPOT LAMP, BAT1
F9	FU,T2,T3	*20A	S	23-12537-020	23-13126-220	12V PWR RCPT 3&4 SLPR, BAT1
F10	FU,T2,T3	3A	S	23-12537-003	23-13126-205	READING LAMP FRONT, BAT1
F11	FU,T2,T3	*10A	S	23-12537-010	23-13126-210	SLEEPER LAMP/AUX CIRC FAN, BAT1
F12	FU,T2,T3	20A	S	23-12537-020	23-13126-220	12V PWR RCPT 5 SLPR, BAT1
F13	FU,T2,T3	20A	O	23-12537-020	23-13126-220	PWR FEED OUTPUT 4, BAT1
F14	FU,T2,T3	20A	O	23-12537-020	23-13126-220	PWR FEED OUTPUT 5, BAT1
F15	FU,T2,T3	20A	O	23-12537-020	23-13126-220	PWR FEED OUTPUT 6, BAT1
F16A/B	FU	20A	S	23-12537-020	Use FUSE p/n	RADIO, BAT1/PWR
F17A/B	FU,T2,T3	10A	O	23-12537-010	23-13126-210	FLEET MGT SYS, BAT1/PWR
F18A/B	FU,T2	20A	S	23-12537-020	23-13126-220	12V PWR RCPT 1,DASH/CIGAR, BAT1/IGN
F19A/B	FU,T2	*25A	S	23-12537-025	23-13126-225	CB RAD/12V PWR RCPT 2,DASH, BAT1/IGN
F20	FU,T2,T3	20A	O	23-12537-020	23-13126-220	12V PWR RCPT 6, FRIG, BAT1
F21	FU,T2,T3	20A	O	23-12537-020	23-13126-220	PWR FEED OUTPUT 1, BAT1
F22	FU,T2,T3	20A	O	23-12537-020	23-13126-220	PWR FEED OUTPUT 2, BAT1
F23	FU,T2,T3	20A	O	23-12537-020	23-13126-220	PWR FEED OUTPUT 3, BAT1
F24	FU	20A	O	23-12537-020	Use FUSE p/n	TIRE PRESS/HEATED SEAT, IGN
F25	FU,T2,T3	25A	O	23-12537-025	23-13126-225	ABS POWER FEED 2, BAT1
F26	FU,T2,T3	25A	S	23-12537-025	23-13126-225	ABS POWER FEED 1, BAT1
F27	FU	*3A	S	23-12537-003	Use FUSE p/n	FCU/ACU HVAC CTRLR, BAT1
F28	JCASE	30A	S	23-13969-030	Use FUSE p/n	CAB HVAC FAN MOTOR, BAT1
F29	JCASE	30A	S	23-13969-030	Use FUSE p/n	SLEEPER HVAC FAN MOTOR, BAT1
F30	FU,T2,T3	*20A	S	23-12537-020	23-13126-220	AUX CAB/AUX COLNT HTR, BAT1
F31	FU	*5A	O	23-12537-005	Use FUSE p/n	TIRE PRESS/TRANS SHFT CTRL, BAT1
F32	FU	*5A	S	23-12537-005	Use FUSE p/n	CGW/INST CLUSTER, BAT1
F33	FU,T2,T3	5A	O	23-12537-005	23-13126-205	EXPANSION FUSE 3, BAT1
F34	FU,T2,T3	10A	O	23-12537-010	23-13126-210	AIR SUSPENSION (ECAS), BAT1
F35	FU,T2,T3	10A	S	23-12537-010	23-13126-210	DASH SPLICEPACK, BAT1
F37	FU,T2,T3	20A	S	23-12537-020	23-13126-220	AIR DRYER CONTROL
F38	FU,T2,T3	*10A	O	23-12537-010	23-13126-210	LUBE/AIR DRYER/SPIT VLV/HTD DRAIN, CTRL
F39	FU,T2,T3	30A	S	23-12537-030	23-13126-230	FUEL WATER SEP HTR ELEMENT, CTRL
F40A/B	FU	*3A	O	23-12537-003	Use FUSE p/n	AUX CAB/AUX COLNT HTR, ENABLE/BAT1
F41	FU,T2,T3	5A	O	23-12537-005	23-13126-205	FLEET MGT SYS, IGN
F43	FU,T2,T3	30A	S	23-12537-030	23-13126-230	TRAILER ABS CONNECTOR (7), IGN
F44	FU,T2,T3	10A	S	23-12537-010	23-13126-210	DASH SWITCH/SPLICEPACK, IGN
F45	FU,T2,T3	5A	O	23-12537-005	23-13126-205	EXPANSION FUSE 4, IGN
F46	FU	*5A	S	23-12537-005	Use FUSE p/n	INST CLSTR/SRS/CAB HVAC CTRLR, IGN
F47	FU,T2	10A	O	23-12537-010	23-13126-210	TRANS CTRL UNIT (TCU), IGN
F48	FU	15A	O	23-12537-015	Use FUSE p/n	ATS/MAF SENSOR, IGN
F49	FU,T2	5A	S	23-12537-005	23-13126-205	CPC / MCM / ACM / TCM / ECM, IGN
F50	FU	10A	O	23-12537-010	Use FUSE p/n	BDY BLDR/OI ALM/LKOUT SOL/FL SNDR, IGN
F51	FU	15A	O	23-12537-015	Use FUSE p/n	ICM/ELECTRIC FAN, IGN
F52	FU,T2,T3	30A	O	23-12537-030	23-13126-230	EXPANSION FUSE 1, BAT2
F53	FU,T2,T3	30A	O	23-12537-030	23-13126-230	EXPANSION FUSE 2, BAT2
F54	FU,T2,T3	*15A	S	23-12537-015	23-13126-215	DEF LINE HEATER #1//#2//#3, CTRL
F56	FU	5A	S	23-12537-005	Use FUSE p/n	RADIO, ACC
F57	FU,T2,T3	20A	O	23-12537-020	23-13126-220	AMPLIFIER, ACC
F58	FU,T2,T3	*15A	O	23-12537-015	23-13126-215	AUX MIR HEAT,DRIVER/PASS, CTRL
F60	FU,T2,T3	15A	S	23-12537-015	23-13126-215	AFTER TREATMENT SYS (ATS), CTRL
F61A/B	FU,T2,T3	20A	O	23-12537-020	23-13126-220	TRAILER OPTION POWER #1, CTRL/BAT1
F63	FU	10A	O	23-12537-010	Use FUSE p/n	LANE DEPARTURE/GUIDANCE, IGN
F64	FU	5A	O	23-12537-005	Use FUSE p/n	CAMERA/VIDEO/IMAGING SYS, IGN
F65	FU	5A	S	23-12537-005	Use FUSE p/n	COLL AVOID/OBSTACLE DET SYS, BAT1
F66	FU,T2,T3	*5A	O	23-12537-005	23-13126-205	D+ EXPANSION, SIGNAL 1 & 2
F67	FU	5A	O	23-12537-005	Use FUSE p/n	COM TELEMATIC PLATF (CTP), IGN
F68	FU,T2,T3	*5A	O	23-12537-005	23-13126-205	EXPANSION FUSE 5/6, ACC
F69A/B	FU,T2,T3	25A	S	23-12537-025	23-13126-225	DOOR CONTROL,DRIVER, BAT1/PWR
F70A/B	FU,T2,T3	25A	S	23-12537-025	23-13126-225	DOOR CONTROL,PASS, BAT1/PWR
F71	FU,T2	10A	S	23-12537-010	23-13126-210	OBD J1939, BAT1
F73	FU,T2,T3	5A	O	23-12537-005	23-13126-205	COM TELEMATIC PLATF (CTP), PWR
F74	FU	10A	O	23-12537-010	Use FUSE p/n	THIRD PARTY CONN (3PC), IGN
F75	FU,T2,T3	10A	O	23-12537-010	23-13126-210	THIRD PARTY CONN (3PC), PWR
F76	FU	10A	O	23-12537-010	Use FUSE p/n	THIRD PARTY CONN (3PC), BAT1
F77	T2	7.5A	S	Use CB p/n	23-13126-207	LED HEADLAMP DRIVER, BAT1
F78	T2	7.5A	S	Use CB p/n	23-13126-207	LED HEADLAMP PASSENGER, BAT1
F79	FU	15A	O	23-12537-015	Use FUSE p/n	DEF PUMP, CTRL
F81	FU	10A	S	23-12537-010	Use FUSE p/n	COLL AVOID/OBSTACLE DET SYS, IGN

* = Value shown is maximum design rating.
When replacing fuse, circuit breaker or relay, replace with similar value and type

Fuse Legend

2A, 3A, 5A, 7.5A CB, 10A, 15A, 20A, 25A, 30A, 30A J-CASE, 40A J-CASE, 50A J-CASE

Relay Type & Description

RELAY POS	RELAY TYPE	RELAY p/n	Standard (S) Optional (O)	RELAY LABEL DESCRIPTION
RE1	Bi-Stable	06-71082-000	S	HOUSE LOAD 1
RE2	Bi-Stable	06-71082-000	S	HOUSE LOAD 2
RE3	Bi-Stable	06-71082-000	S	BASIC LOAD 1
RE4	Bi-Stable	06-71082-000	S	BASIC LOAD 2
RE5	Hi-Current	23-13124-000	S	D+ / Alternator Charging
RE6	Micro	23-13265-012	O	AUX CAB/AUX COLNT HTR
RE7	Hi-Current	23-13124-000	S	IGNITION
RE8	Hi-Current	23-13124-000	S	IGNITION
RE9	Mini	23-11276-011	O	TRAILER
RE10	Micro	23-13265-012	S	DEF LINE HEATER
RE11	Hi-Current	23-13124-000	S	ACCESSORY
RE12	Mini	23-11276-011	O	MIRROR HEAT
RE13	U-Micro	23-13893-000	O	MEIR/AUTO NEUTRAL
RE14	U-Micro	23-13893-000	O	PTO #1
RE15	U-Micro	23-13893-000	O	PTO #2
RE16	U-Micro	23-13893-000	S	AFTER TREAT SYS (ATS)
RE17	U-Micro	23-13893-000	O	REMOTE START STOP
RE18	U-Micro	23-13893-000	O	SPARE RELAY 1
RE19	U-Micro	23-13893-000	O	SPARE RELAY 2
RE20	Micro	23-13265-012	O	SPARE RELAY 3
RE21	Micro	23-13265-012	O	SPARE RELAY 4
RE22	Mini	23-11276-011	O	SPARE RELAY 5
RE23	Hi-Current	23-13124-000	O	SPARE RELAY 6
RE24	U-Micro	23-13893-000	S	PT EARLY WAKE UP
RE25	Micro	23-13265-012	O	DEF PUMP

Fuse/CB and Relay Map

Key Position Legend

PWR => 24 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 => Bistable relay

HCR => High Curret relay

Mini => ISO mini relay

Micro => ISO micro relay

uMicro => ISO ultra micro relay

NOTE BR: 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 => 80A

Control => 5A for all relays

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