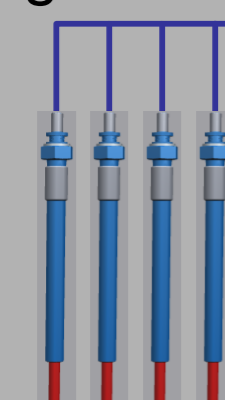
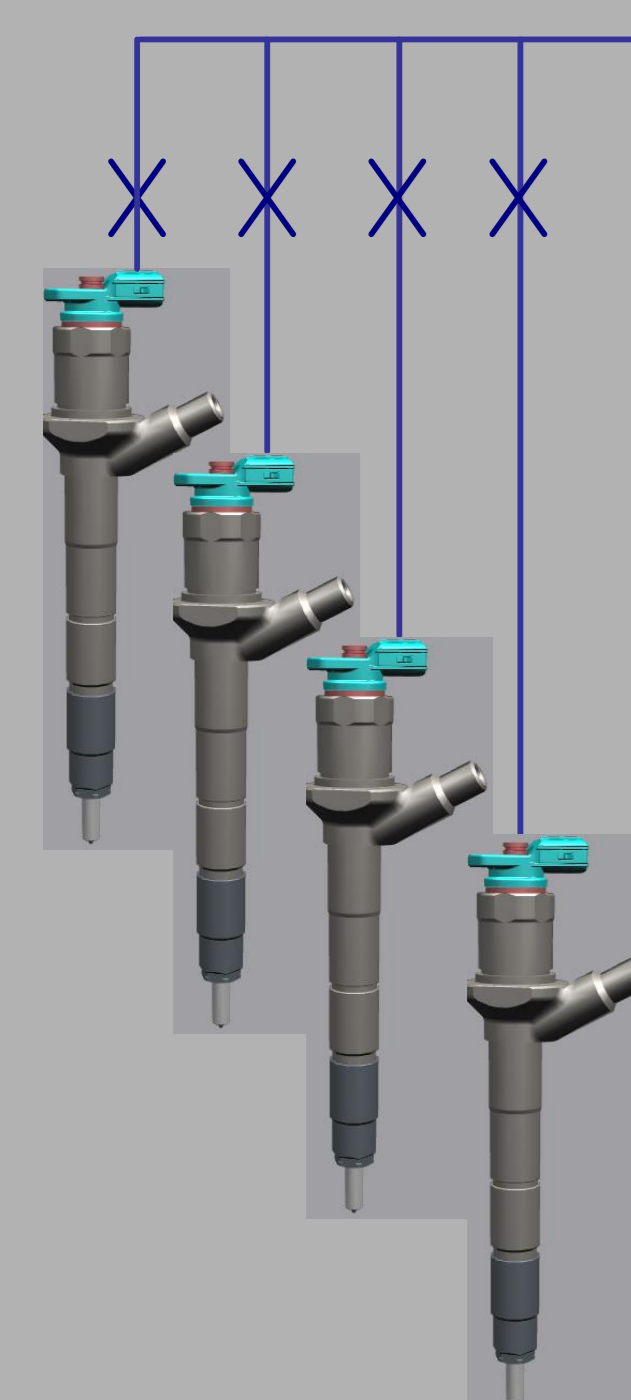


On Engine Components

Engine Glow Plugs



Fuel Injectors



Oil Pressure Switch

Coolant Temperature Sensor

Pre Cooler NRS Temperature Sensor

Fuel Pump Control Valve

Fuel Temperature Sensor

Fuel Pump Mounted

NRS Actuator Valve

Inlet Throttle Valve Actuator

Intake Manifold Pressure Sensor

Intake Manifold Temperature Sensor

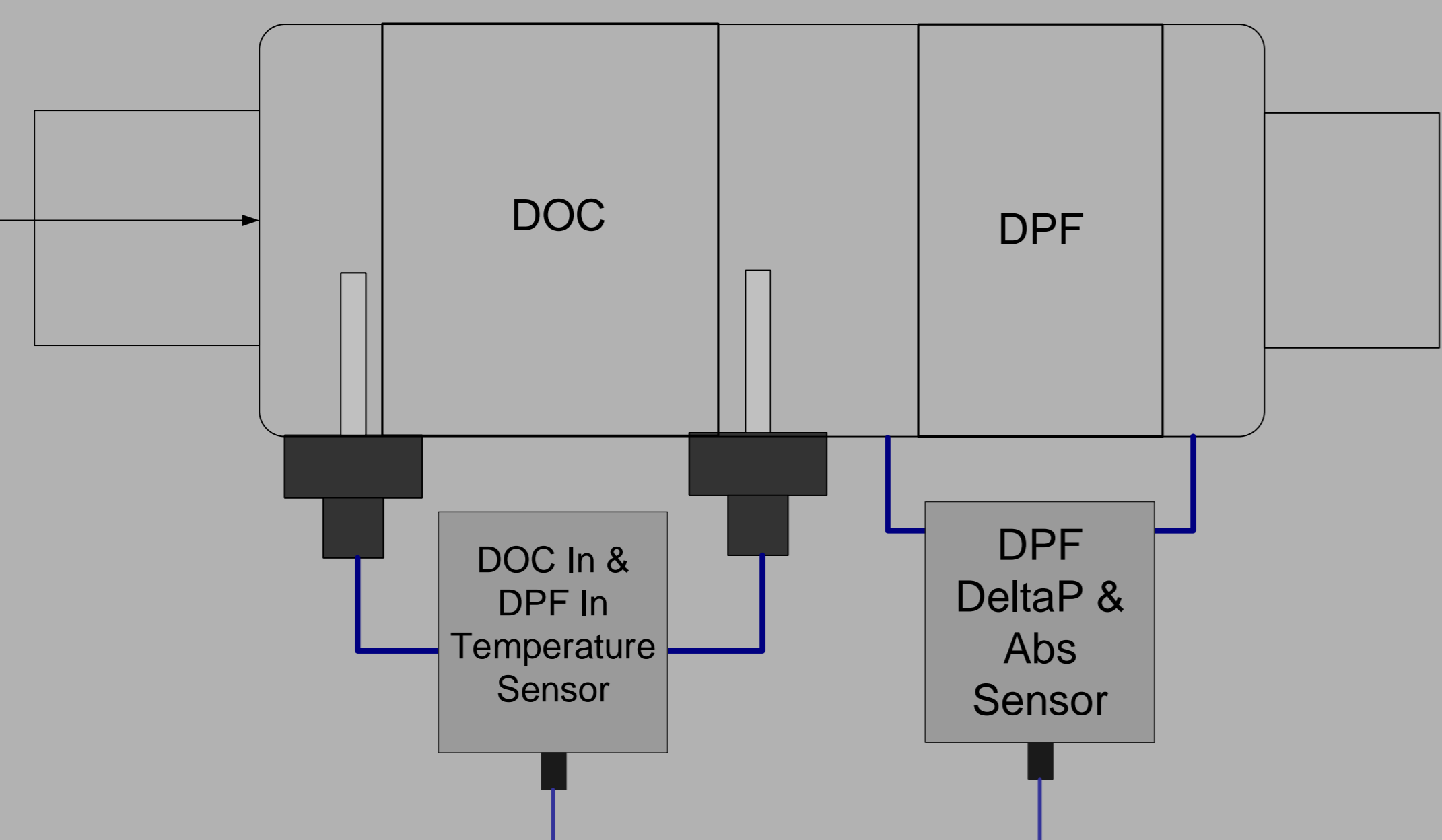
Fuel Rail Pressure Sensor

Camshaft Speed Sensor

Crankshaft Speed Sensor

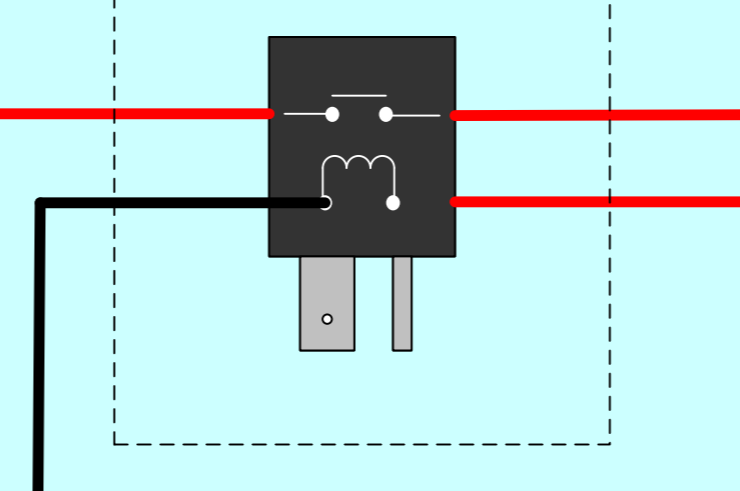
Engine Connector 47 pin

Aftertreatment Components (Rear Mounted, Top Mounted or Remote)

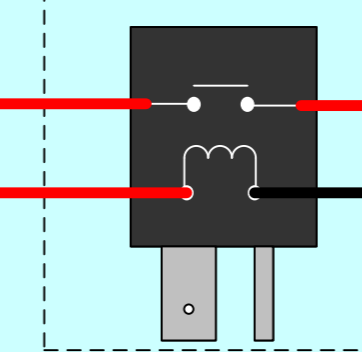


Machine Mounted Components

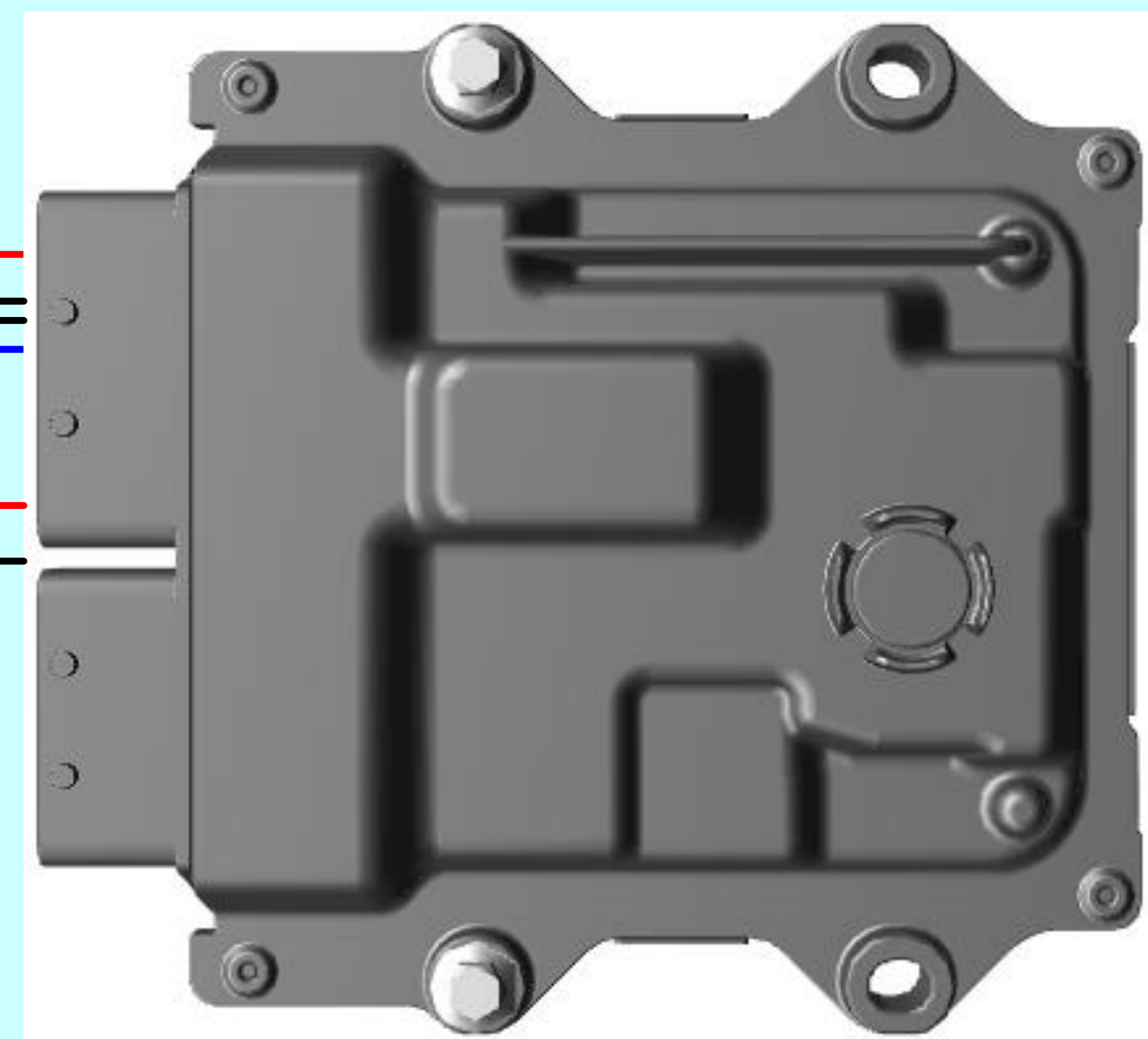
Glow Plug Relay



Engine Power Relay



Fuse Box



Machine Mounted Components

Keyswitch

Engine Shutdown Lamp

Engine Warning Lamp

Wait to start lamp

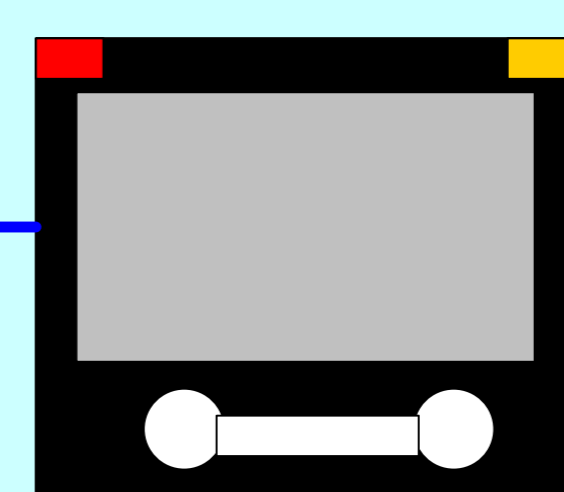
High Water Temp Lamp

Oil Pressure Lamp

Engine Running Lamp

Malfunction (MIL) Lamp

J1939 Gauge



Accelerator Pedal Position Sensor

Accelerator Pedal Position Sensor

9 Pin Diagnostic Connector

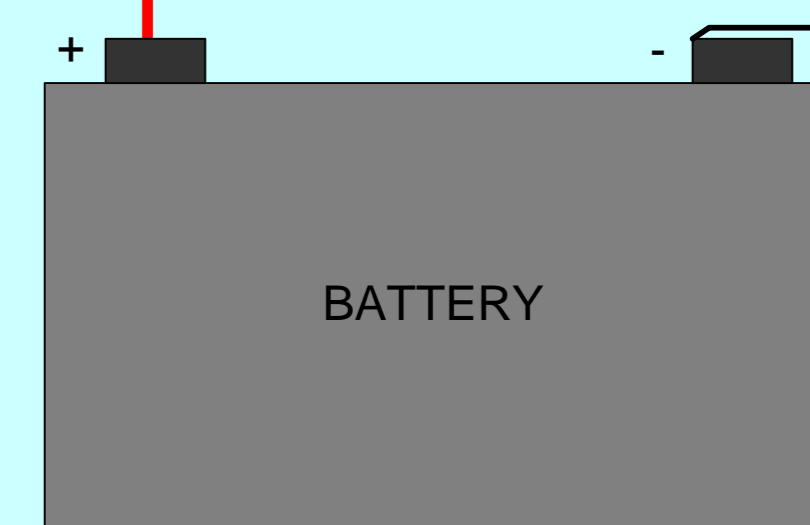
Water in Fuel sensor

Heated Breather

Air Inlet Temperature Sensor

Air Filter Restriction Switch

Machine Mounted Components



Title	404J-E22	Page #	1
Engine System Architecture			
Engine Type	400J-E <55kW		
Drawing Author	IPS Applications	Release Date	SEP 2021



On Engine Components

Engine Glow Plugs

Fuel Injectors

Oil Pressure Switch

Coolant Temperature Sensor

Pre Cooler NRS Temperature Sensor

Fuel Pump Control Valve

Fuel Temperature Sensor

Fuel Pump Mounted

NRS Actuator Valve

Inlet Throttle Valve Actuator

Intake Manifold Pressure Sensor

Intake Manifold Temperature Sensor

Fuel Rail Pressure Sensor

Camshaft Speed Sensor

Crankshaft Speed Sensor

Engine Connector 47 pin

Aftertreatment Components (Rear Mounted, Top Mounted or Remote)

DOC

DPF

DOC In & DPF In Temperature Sensor

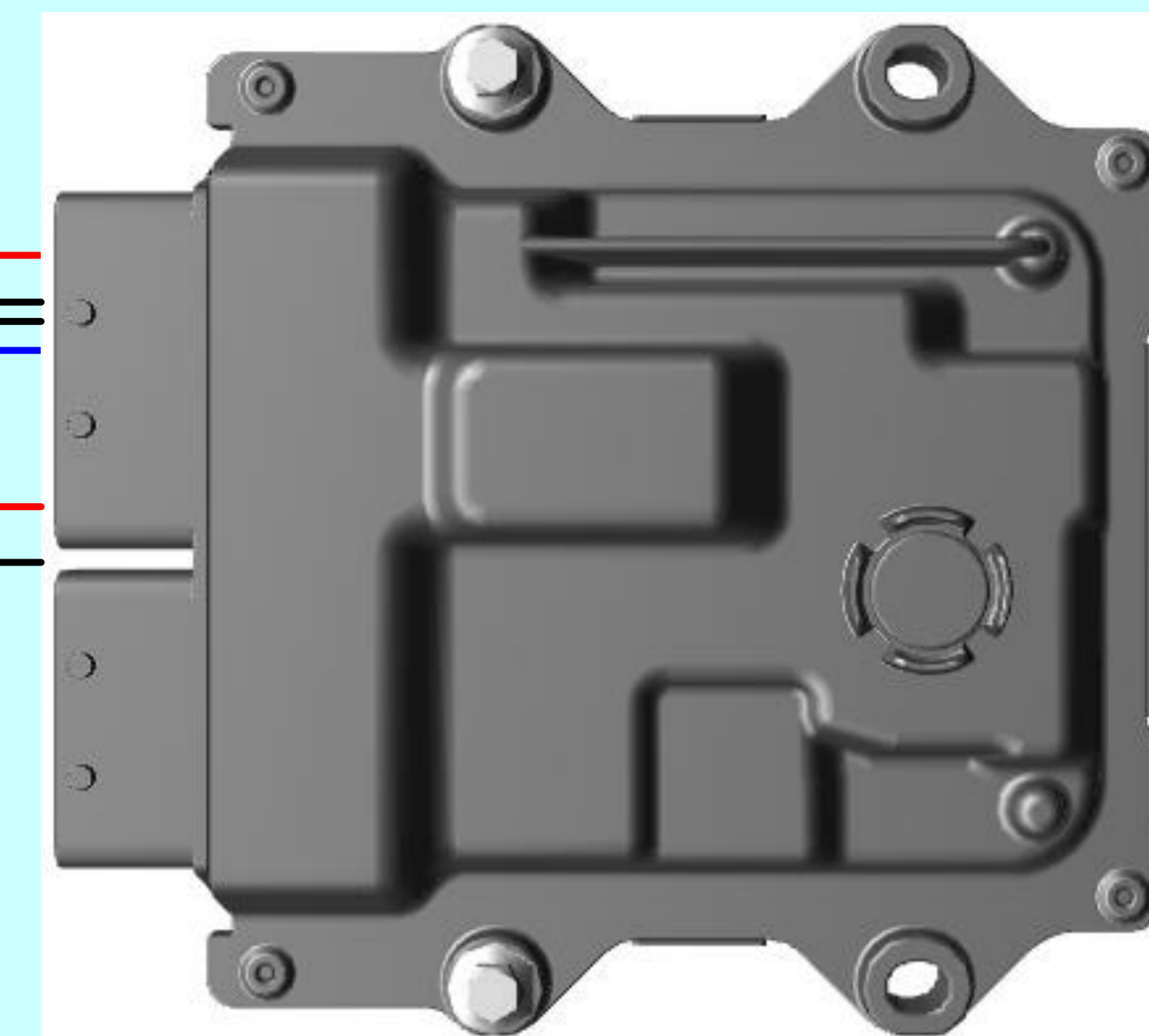
DPF DeltaP & Abs Sensor

Machine Mounted Components

Glow Plug Relay

Engine Power Relay

Fuse Box



Machine Mounted Components

Key Switch

Engine Shutdown Lamp

Engine Warning Lamp

Wait to start lamp

High Water Temp Lamp

Oil Pressure Lamp

Engine Running Lamp

Malfunction (MIL) Lamp

J1939 Gauge

Accelerator Pedal Position Sensor

Accelerator Pedal Position Sensor

9 Pin Diagnostic Connector

Water in Fuel sensor

Heated Breather

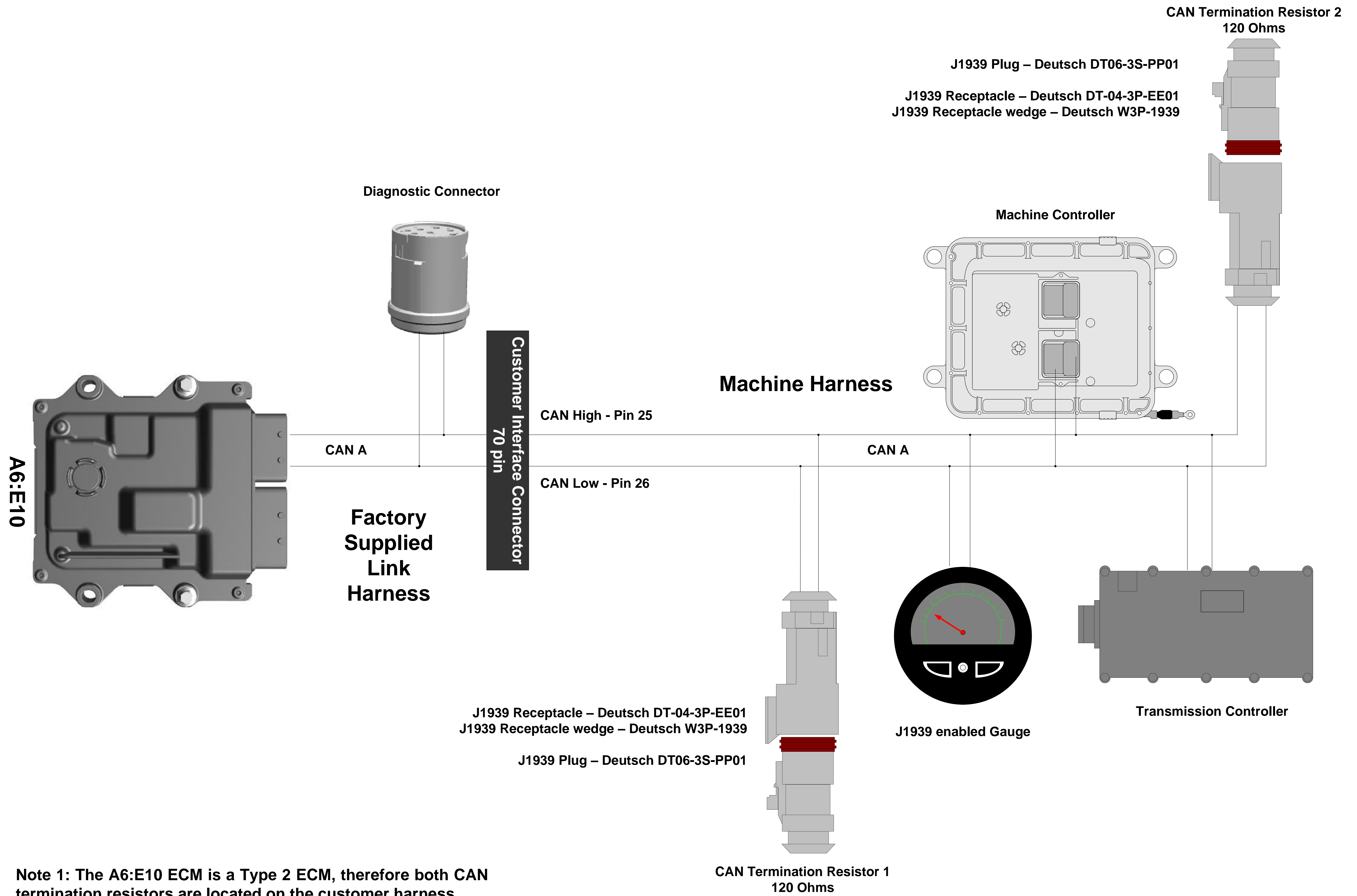
Air Filter Restriction Switch

Machine Mounted Components

BATTERY

Title	403J-E17	Page #	2
Engine System Architecture			
Engine Type	400J-E <55kW		
Drawing Author	IPS Applications	Release Date	SEP 2021



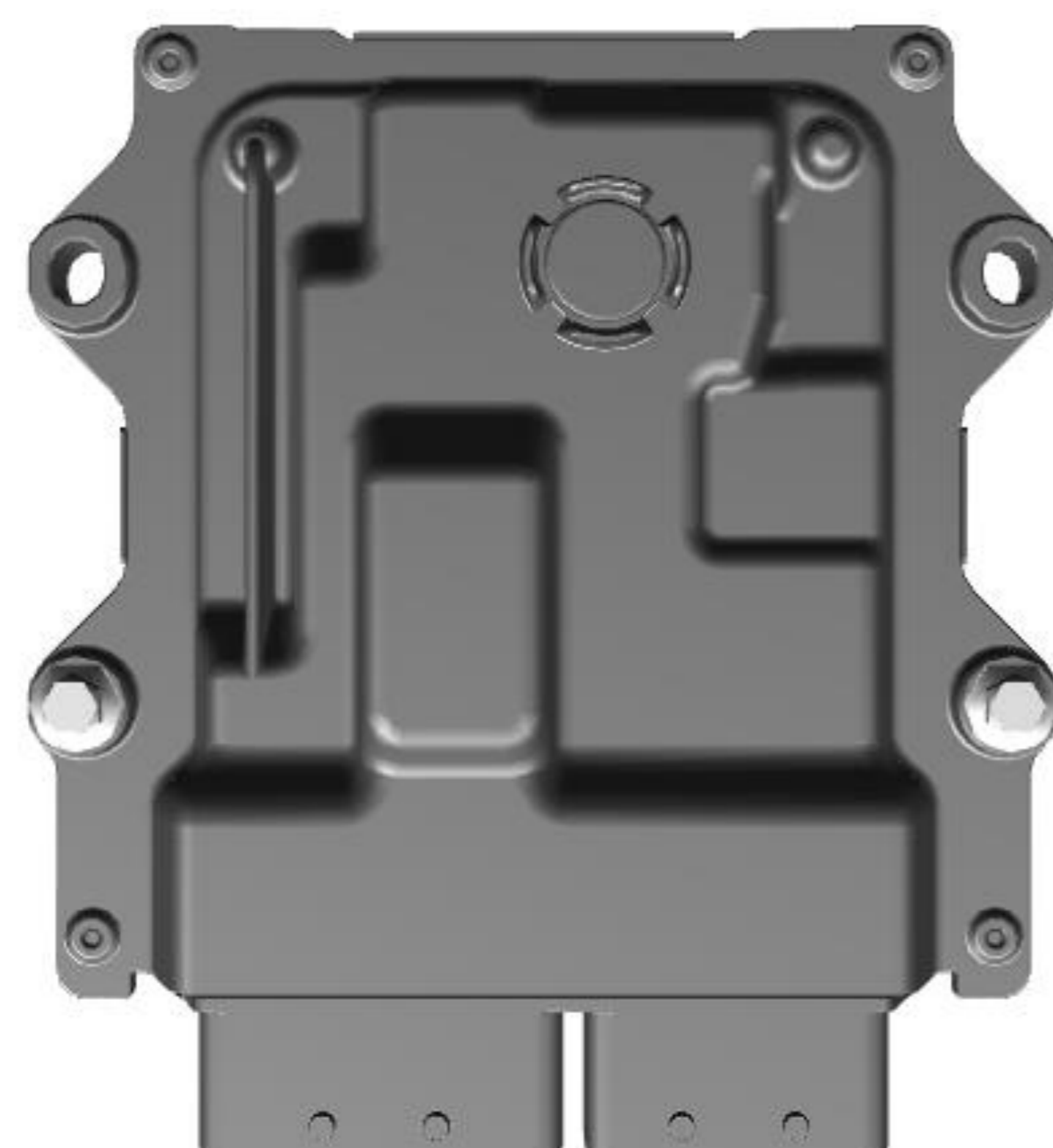


Note 1: The A6:E10 ECM is a Type 2 ECM, therefore both CAN termination resistors are located on the customer harness.

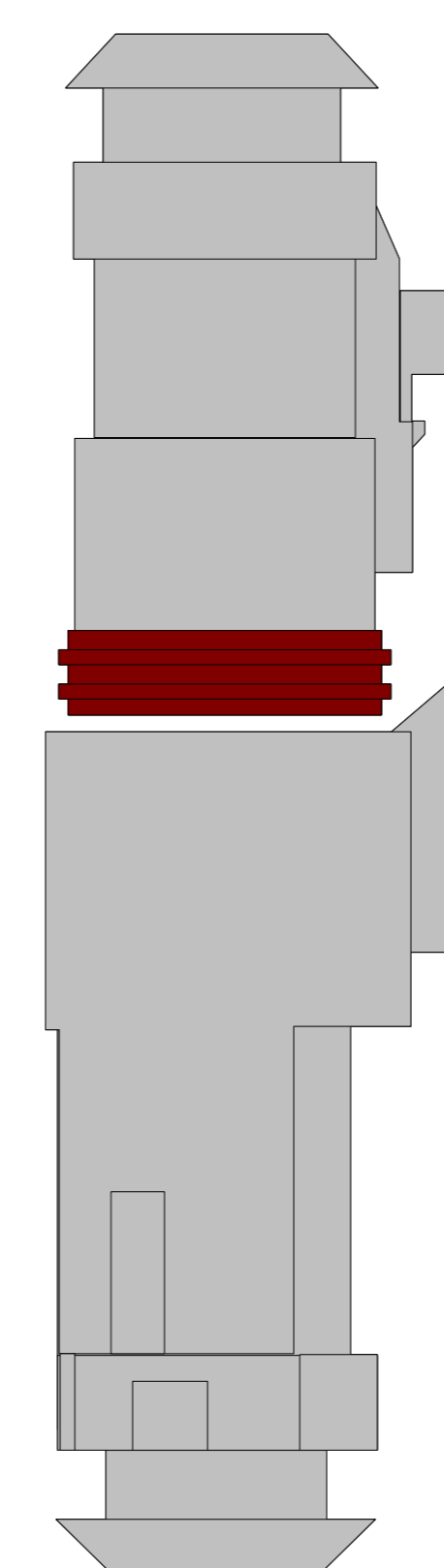
Note 2: The termination resistors must be located at each extremity of the CAN bus.

Title	404J-E & 403J-E	Page #	3
Engine Type	CAN A Architecture		
Drawing Author	400J-E <55kW		
	IPS Applications	Release Date	SEP 2021

A6:E10



**CAN Termination Resistor 1
120 Ohms**



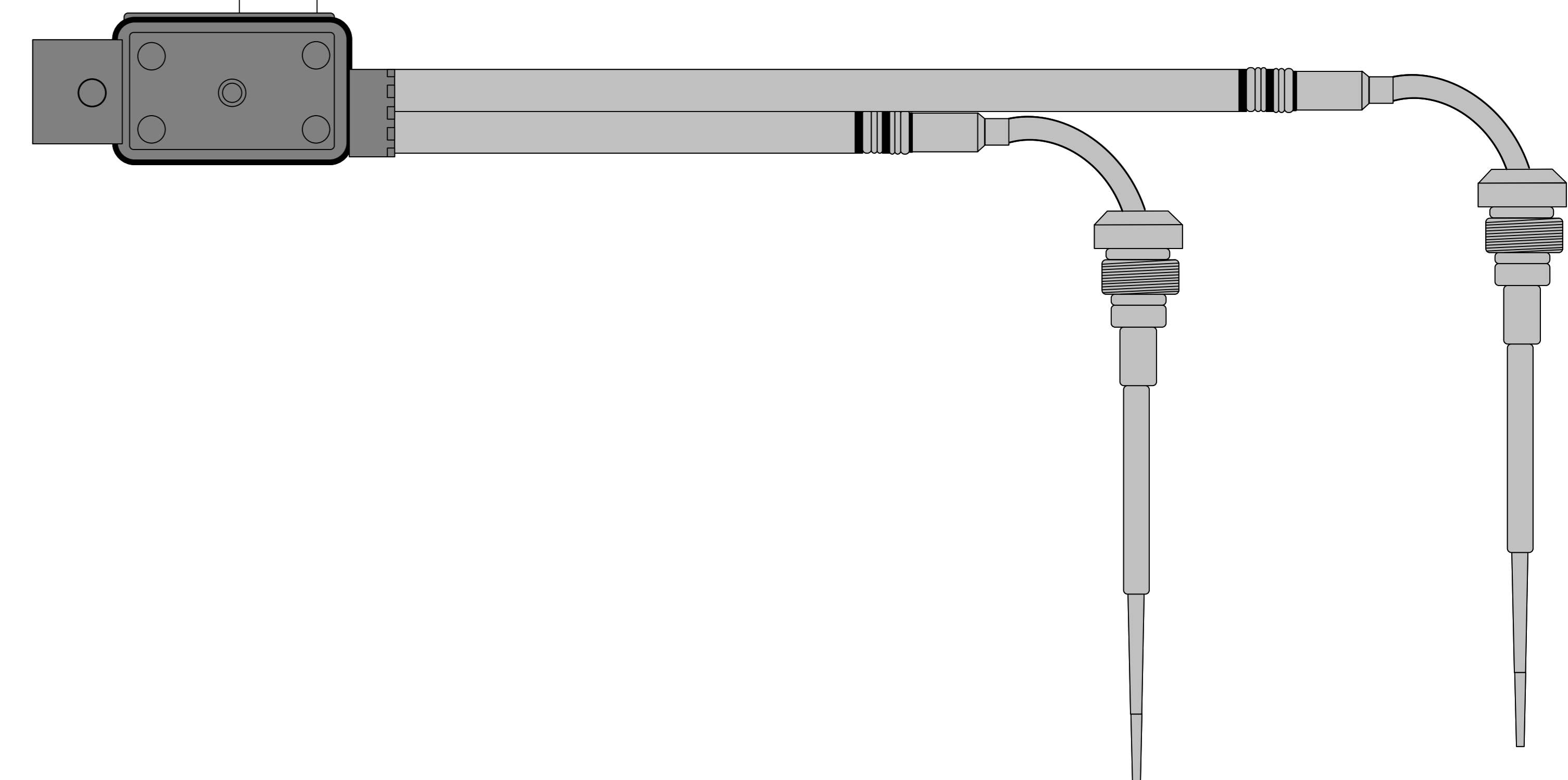
J1939 Plug – Deutsch DT06-3S-PP01

J1939 Receptacle – Deutsch DT-04-3P-EE01
J1939 Receptacle wedge – Deutsch W3P-1939

Engine Harness

CAN C

Aftertreatment CAN Temperature Sensor



Factory Supplied Link Harness

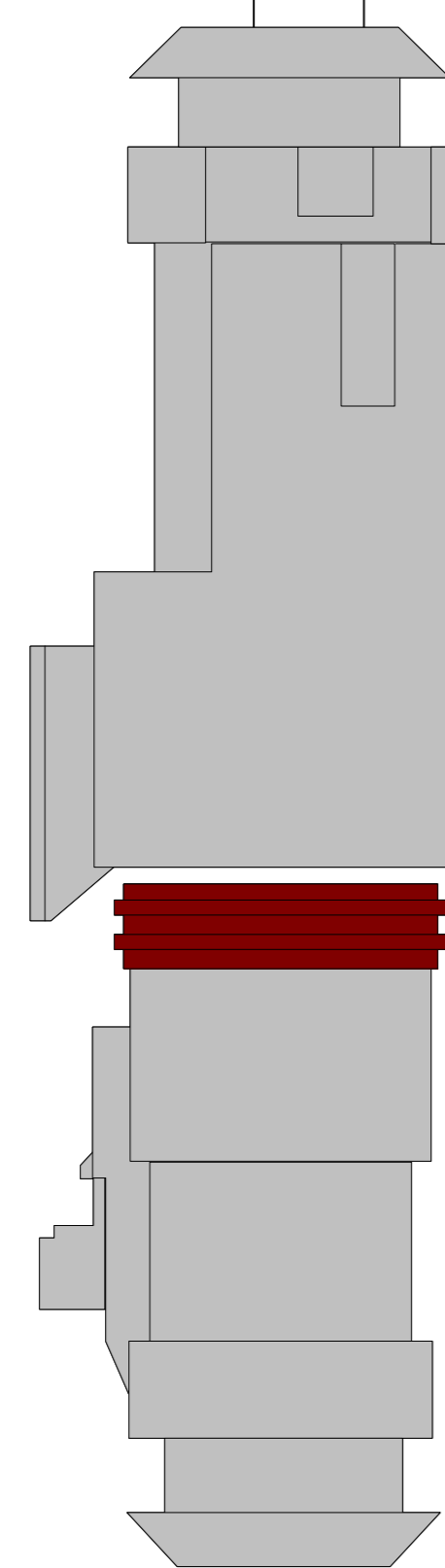
CAN High - Pin 33

CAN C

CAN Low - Pin 34

**Customer Interface Connector
70 pin**

**Engine Interface Connector
47 pin**



**CAN Termination Resistor 1
120 Ohms**

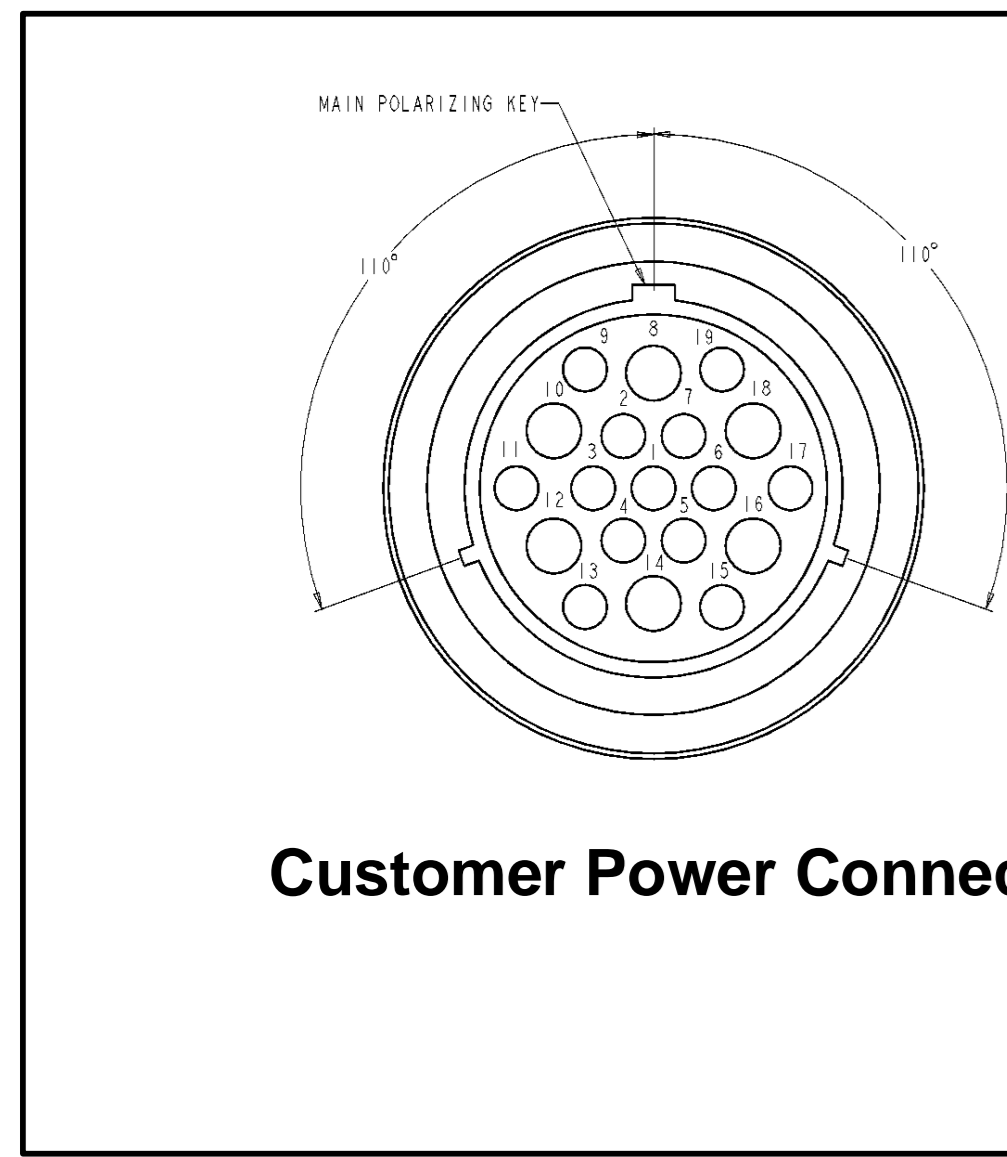
J1939 Receptacle – Deutsch DT-04-3P-EE01
J1939 Receptacle wedge – Deutsch W3P-1939
J1939 Plug – Deutsch DT06-3S-PP01

Note 1: The A6:E10 ECM is a Type 2 ECM, therefore both CAN termination resistors are located on the ECM link lead harness.

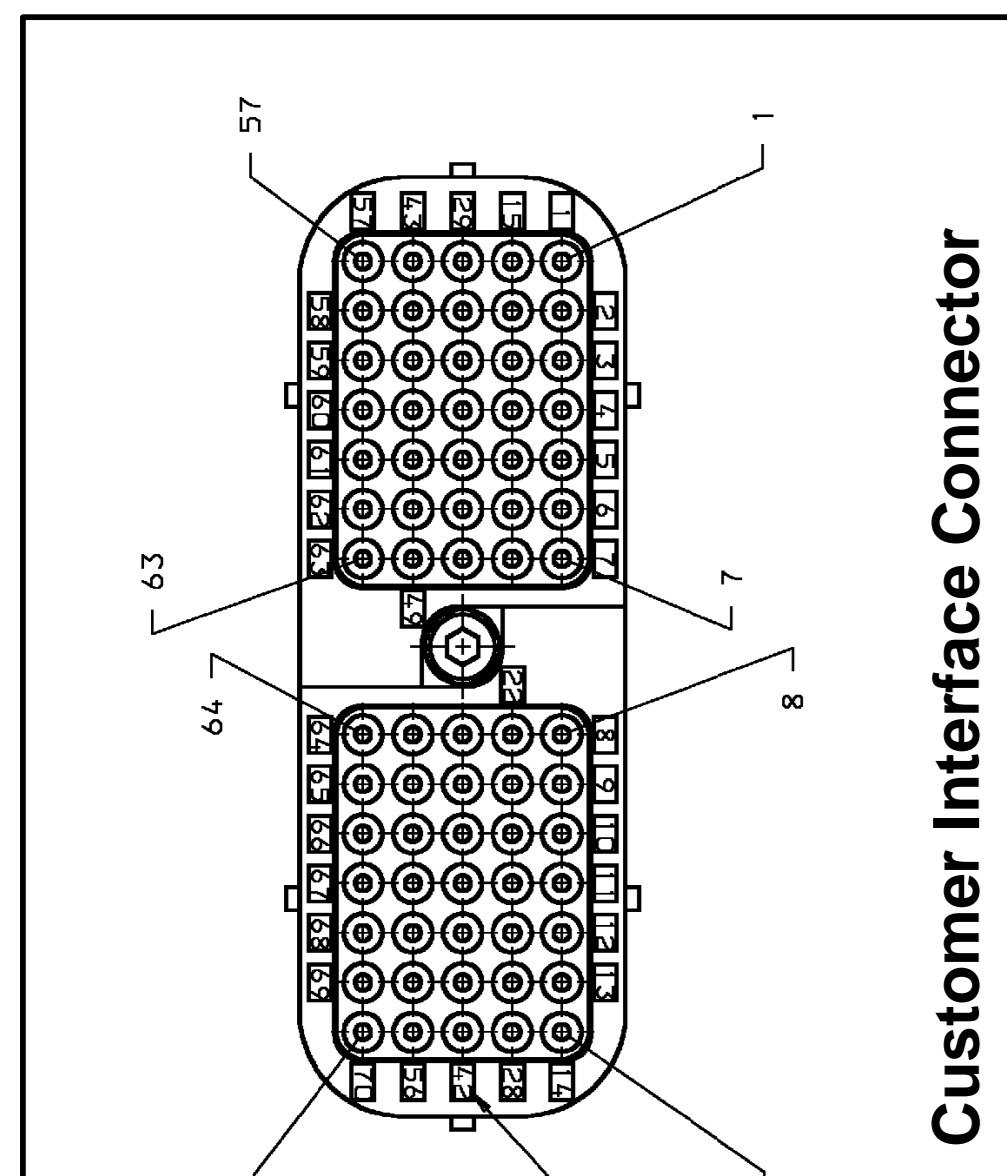
Note 2: The termination resistors are located at each extremity of the CAN bus on the ECM link lead harness.

Title	404J-E & 403J-E	Page #	4
Engine Type	CAN C Architecture		
Drawing Author	400J-E <55kW		
	IPS Applications	Release Date	SEP 2021

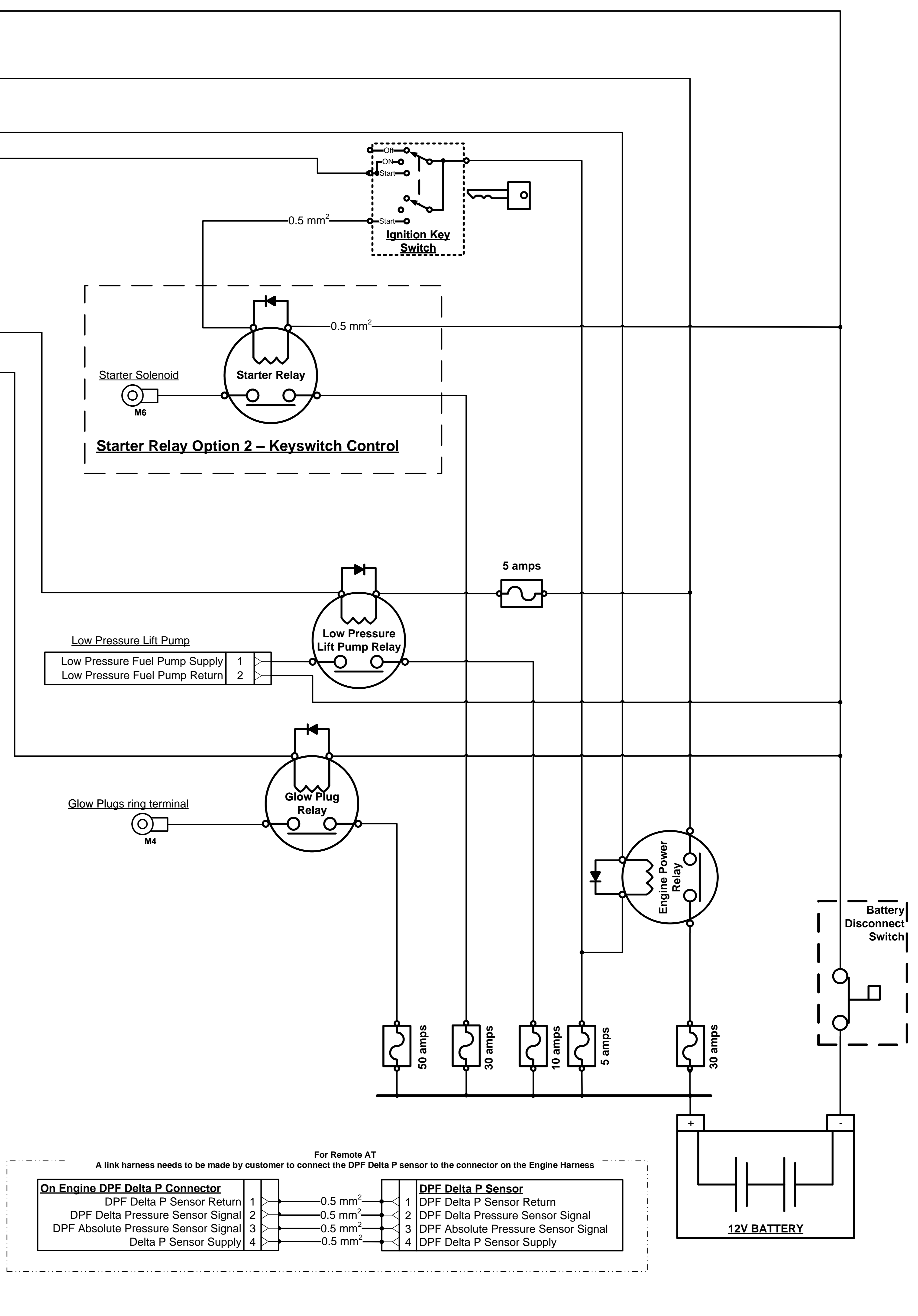


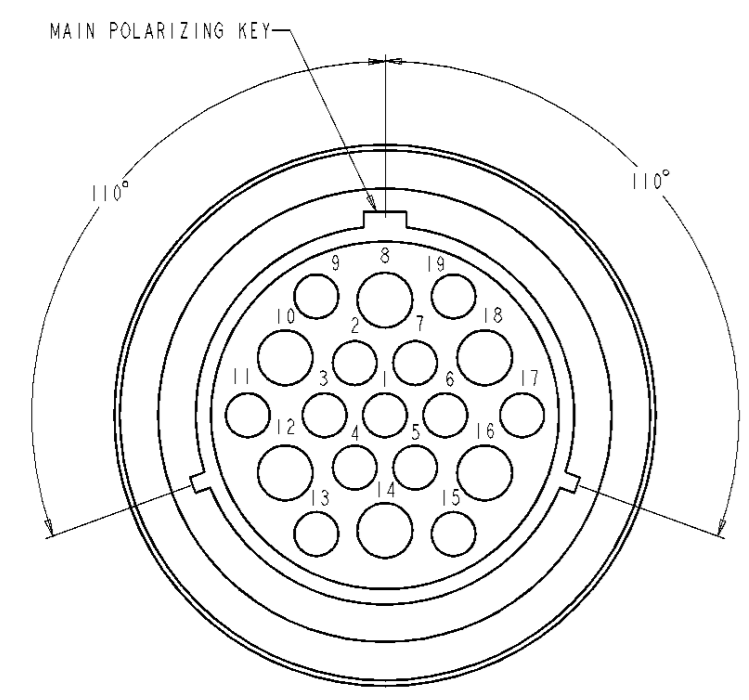


Battery Negative (-)	12	2.0 mm ²
Battery Negative (-)	14	2.0 mm ²
Battery Negative (-)	16	2.0 mm ²
Switch Battery Positive (+)	8	2.0 mm ²
Switch Battery Positive (+)	10	2.0 mm ²
Switch Battery Positive (+)	18	2.0 mm ²
Engine Power Relay	13	0.5 mm ²
Keyswitch	15	0.5 mm ²
5V Supply #1	9	0.5 mm ²
5V Supply #2	19	0.5 mm ²
Analogue Throttle 1 Return	5	0.5 mm ²
Sensor Return	6	0.5 mm ²
Sensor Return	1	0.5 mm ²

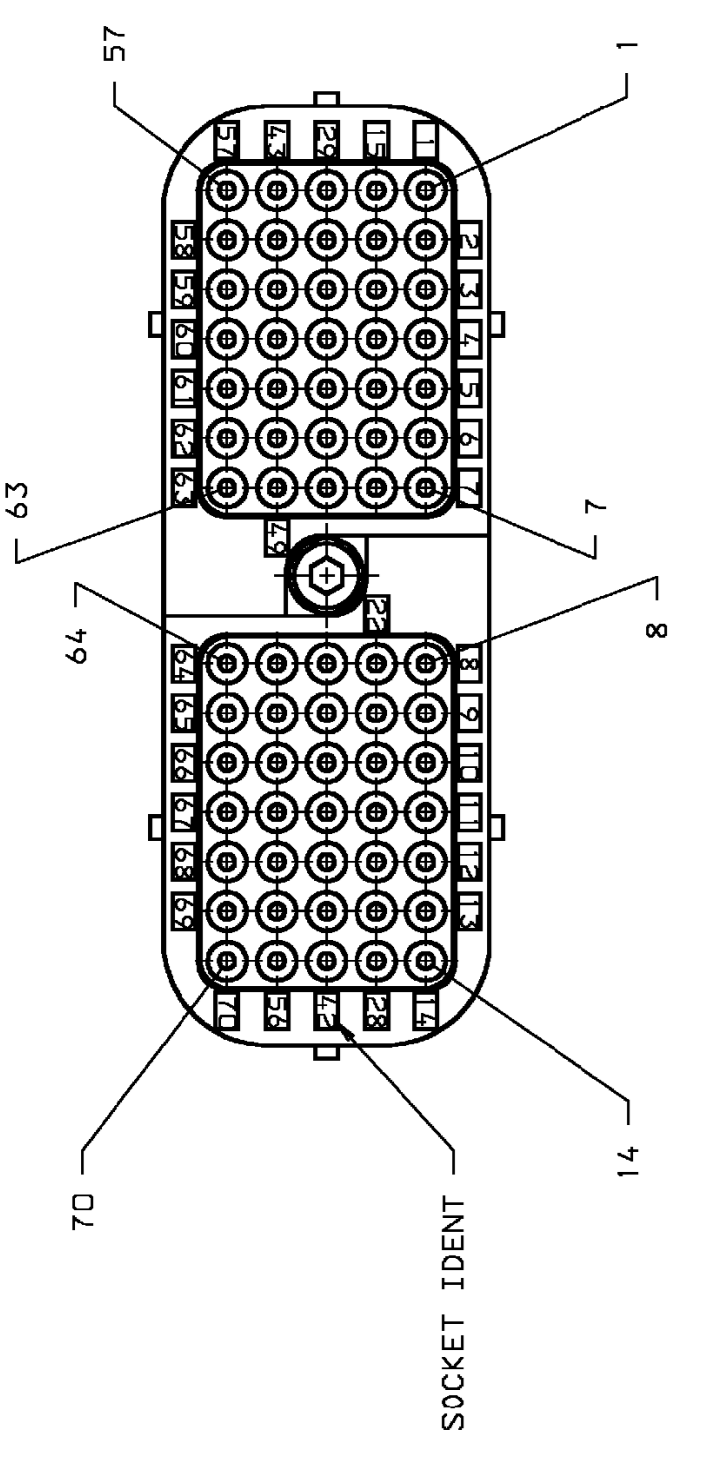
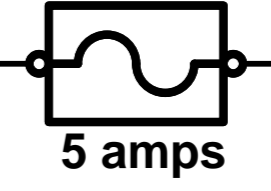
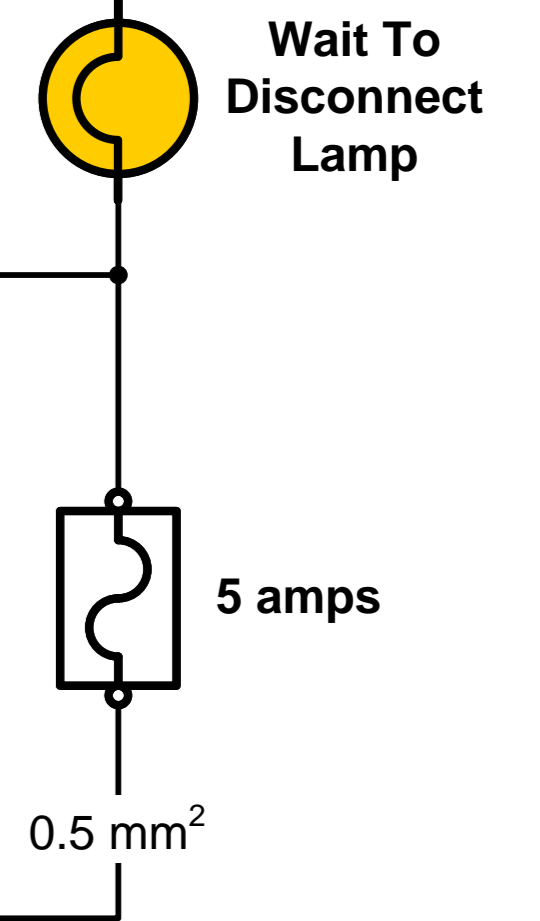
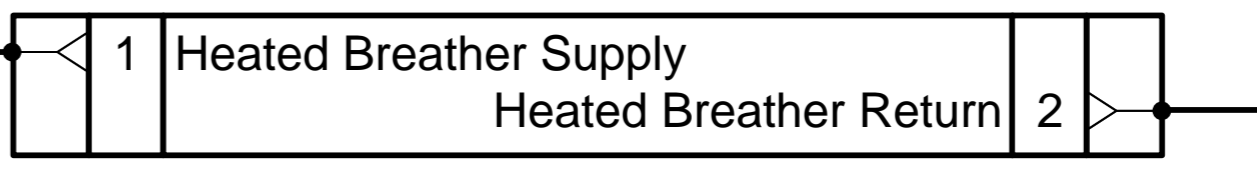
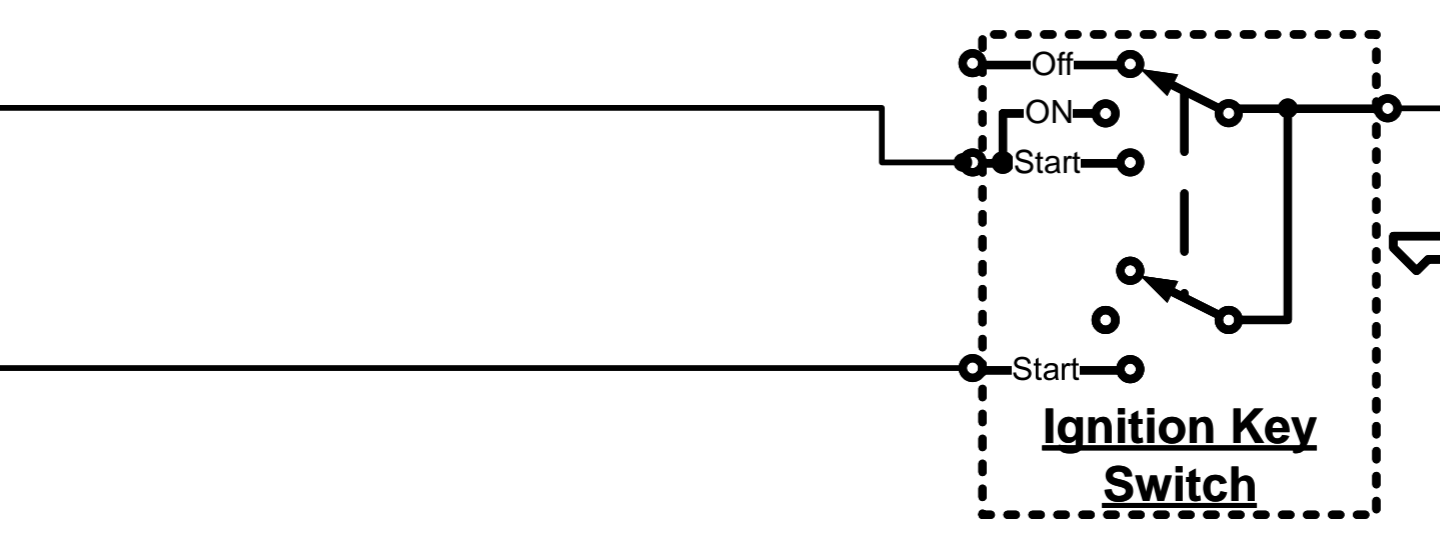
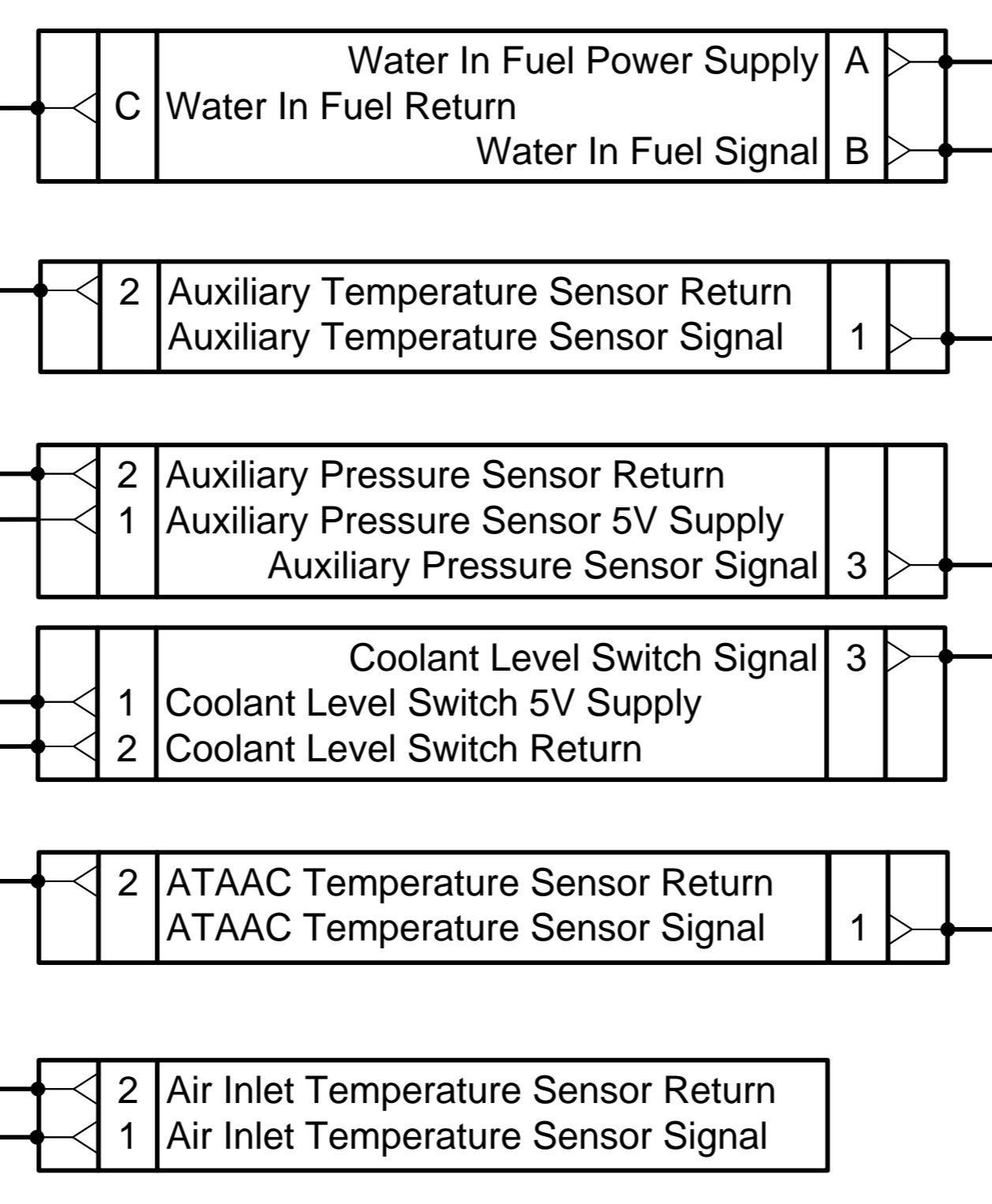
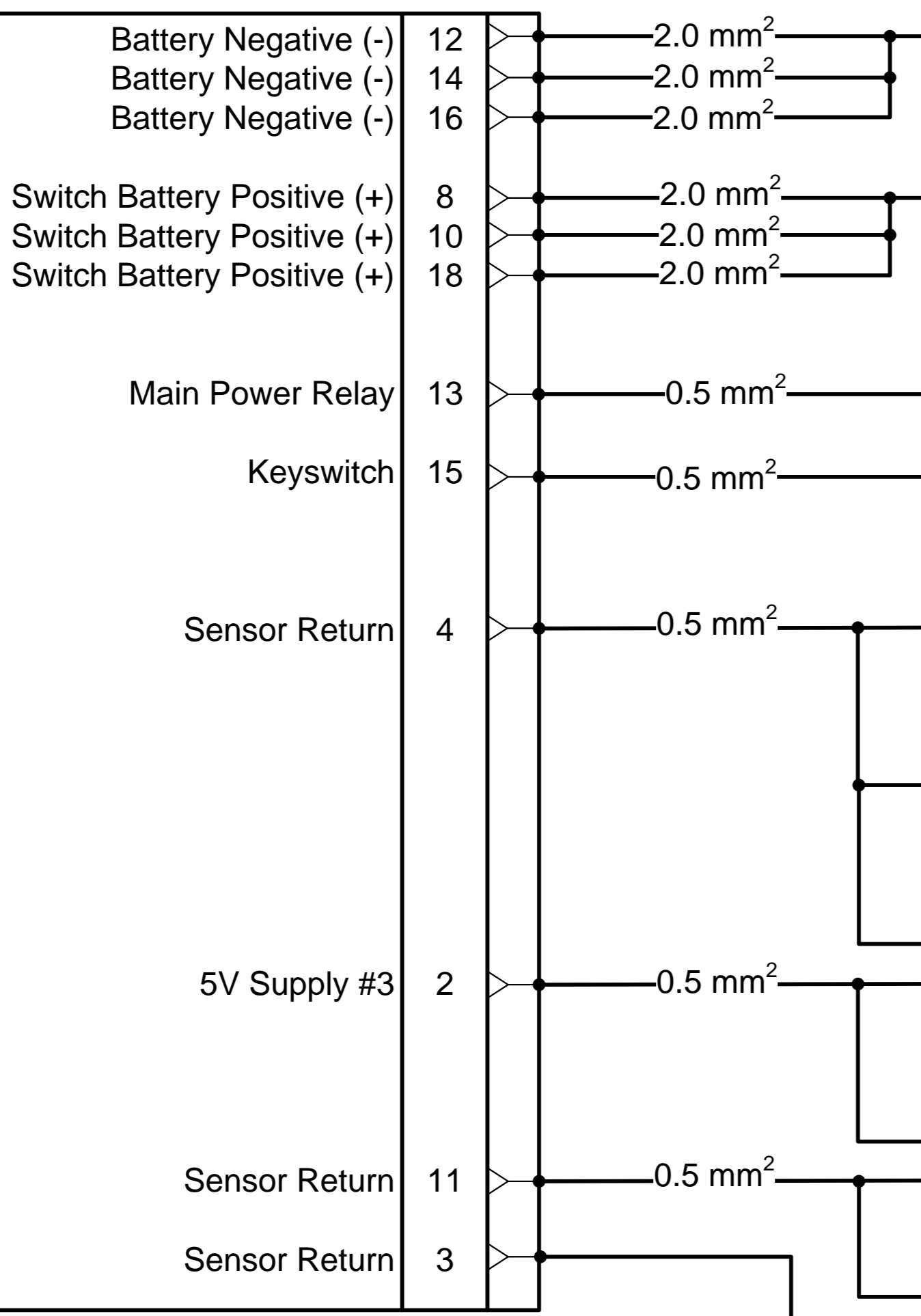


Low Pressure Lift Pump (LS)	7	0.5 mm ²
Glow Plug Relay (HS)	8	0.5 mm ²
Analogue Throttle 1 Signal	13	0.5 mm ²
Analogue Throttle 1 IVS Switch	14	0.5 mm ²
Analogue Throttle 2 Signal	69	0.5 mm ²
Analogue Throttle 2 IVS Switch	66	0.5 mm ²
PWM Throttle 1 Signal	6	0.5 mm ²
PWM Throttle 2 Signal	45	0.5 mm ²
Multi Position Throttle Switch 1 / PTO Mode – Engage / Disengage	67	0.5 mm ²
Multi Position Throttle Switch 2 / PTO Mode – On / Off	51	0.5 mm ²
Multi Position Throttle Switch 3 / PTO Mode – Raise / Resume	52	0.5 mm ²
Multi Position Throttle Switch 4 / PTO Mode – Lower / Set	43	0.5 mm ²
Mode Switch #1	42	0.5 mm ²
Mode Switch #2	28	0.5 mm ²
Alternative Low Idle Speed	18	0.5 mm ²
Work Mode	56	0.5 mm ²
Regen Inhibit Switch	2	0.5 mm ²
Manual Throttle Arbitration Switch / Intermediate Engine Speed Switch	53	0.5 mm ²
User Defined Shutdown	44	0.5 mm ²
Customer CAN A + (High)	25	0.5 mm ²
Customer CAN A – (Low)	26	0.5 mm ²

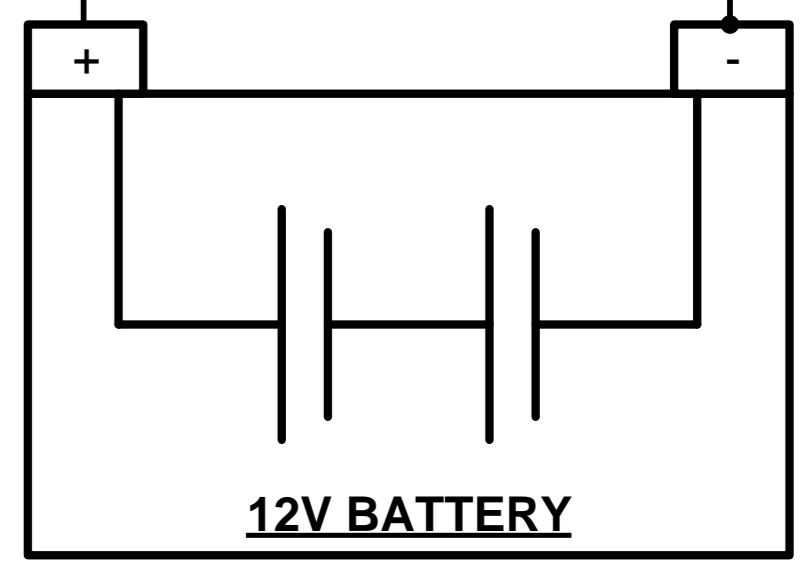
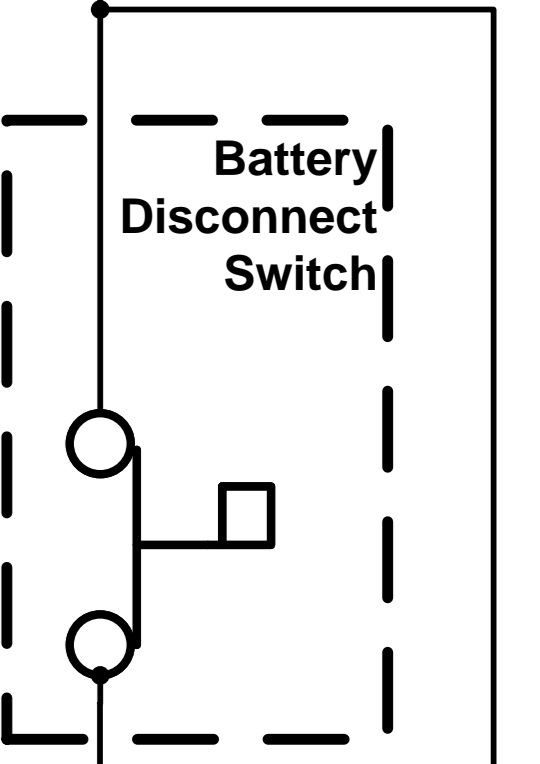
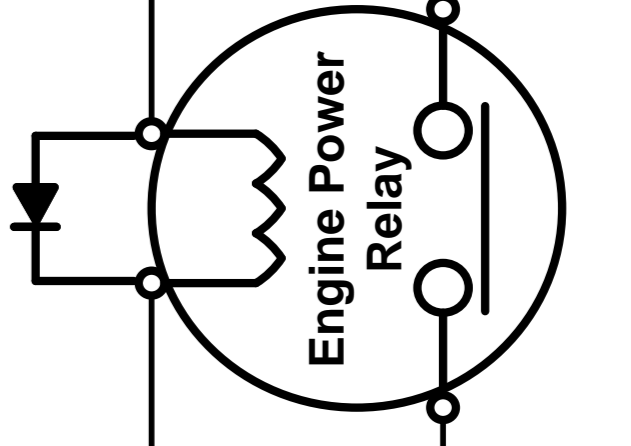
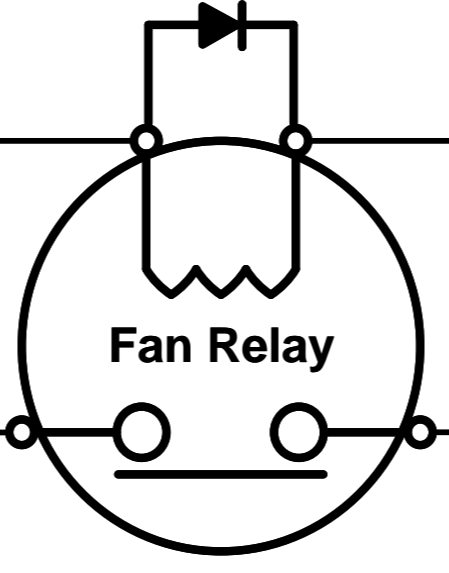
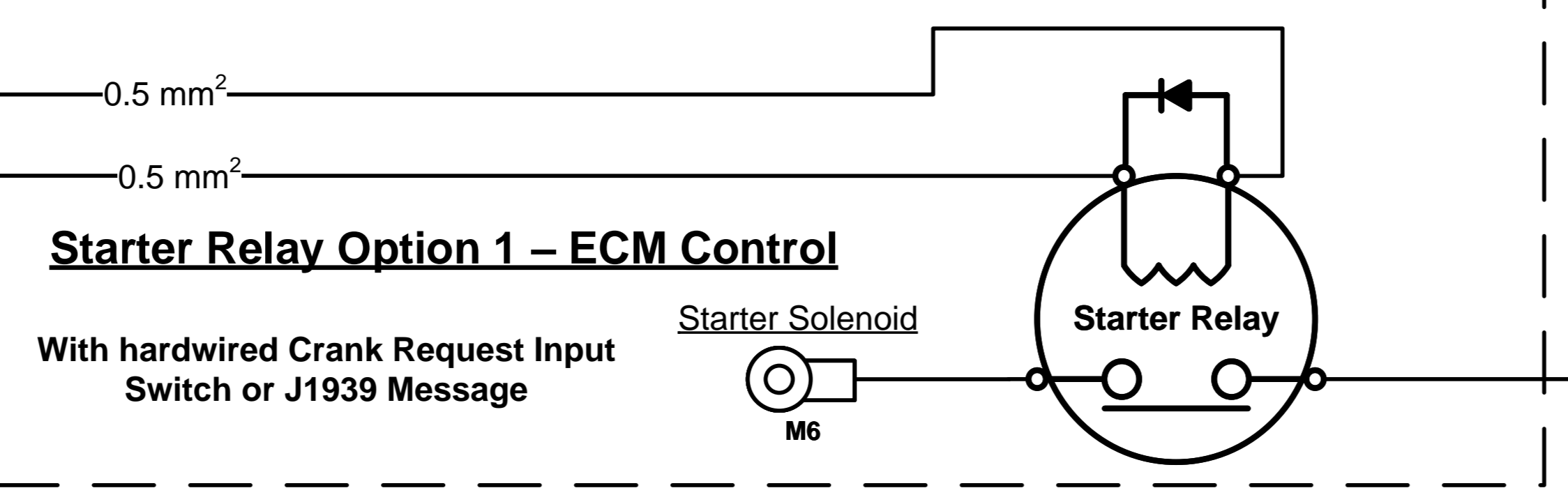
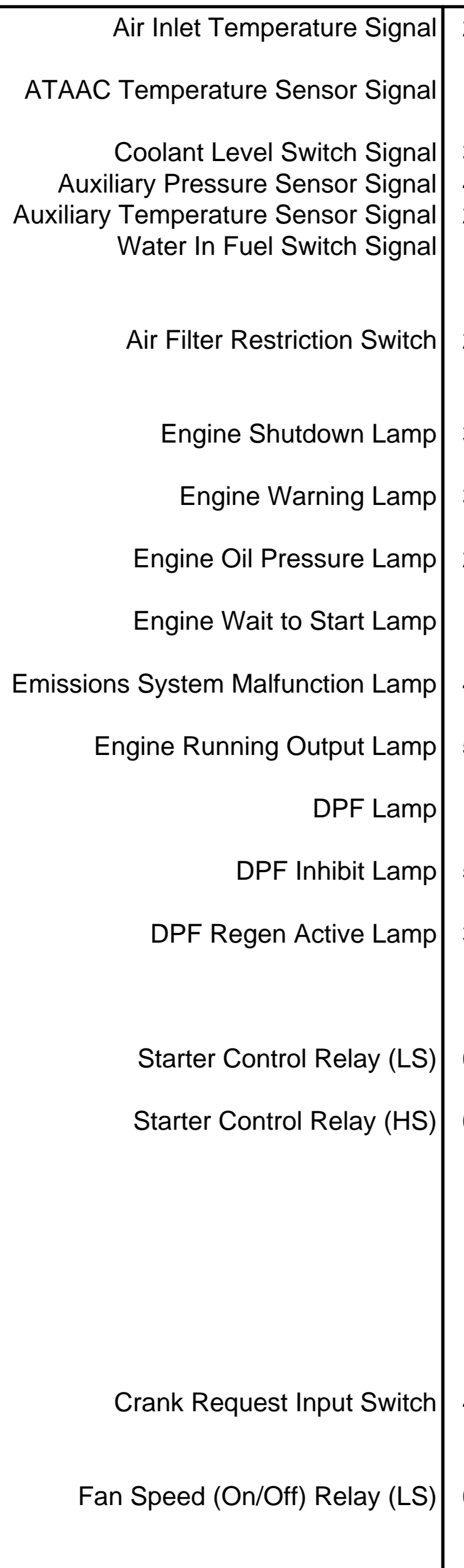




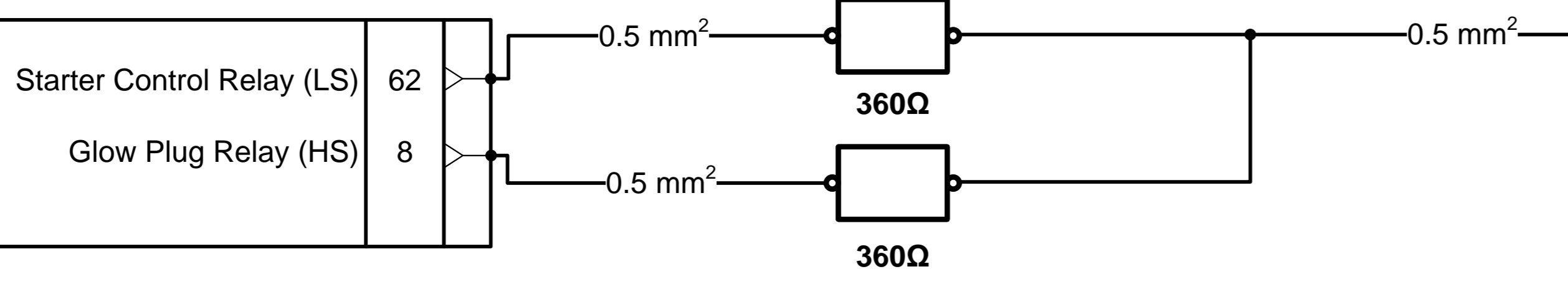
Customer Power Connector



Customer Interface Connector

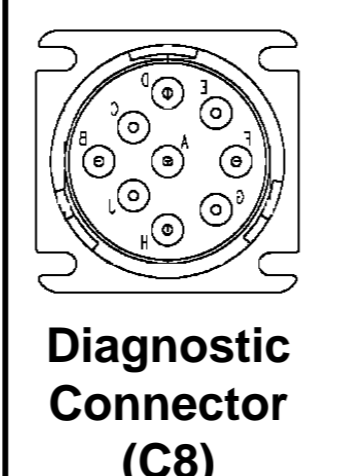
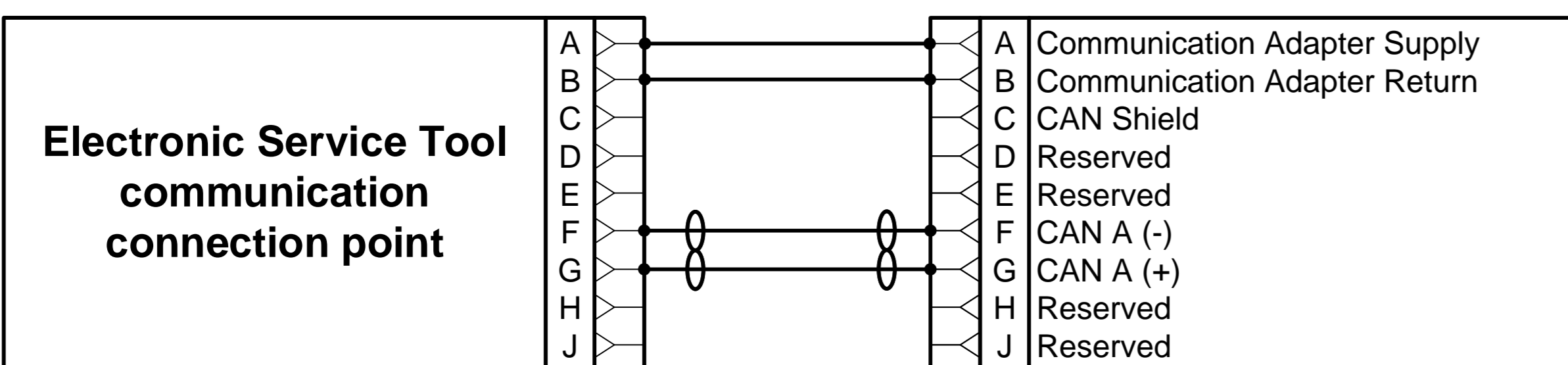
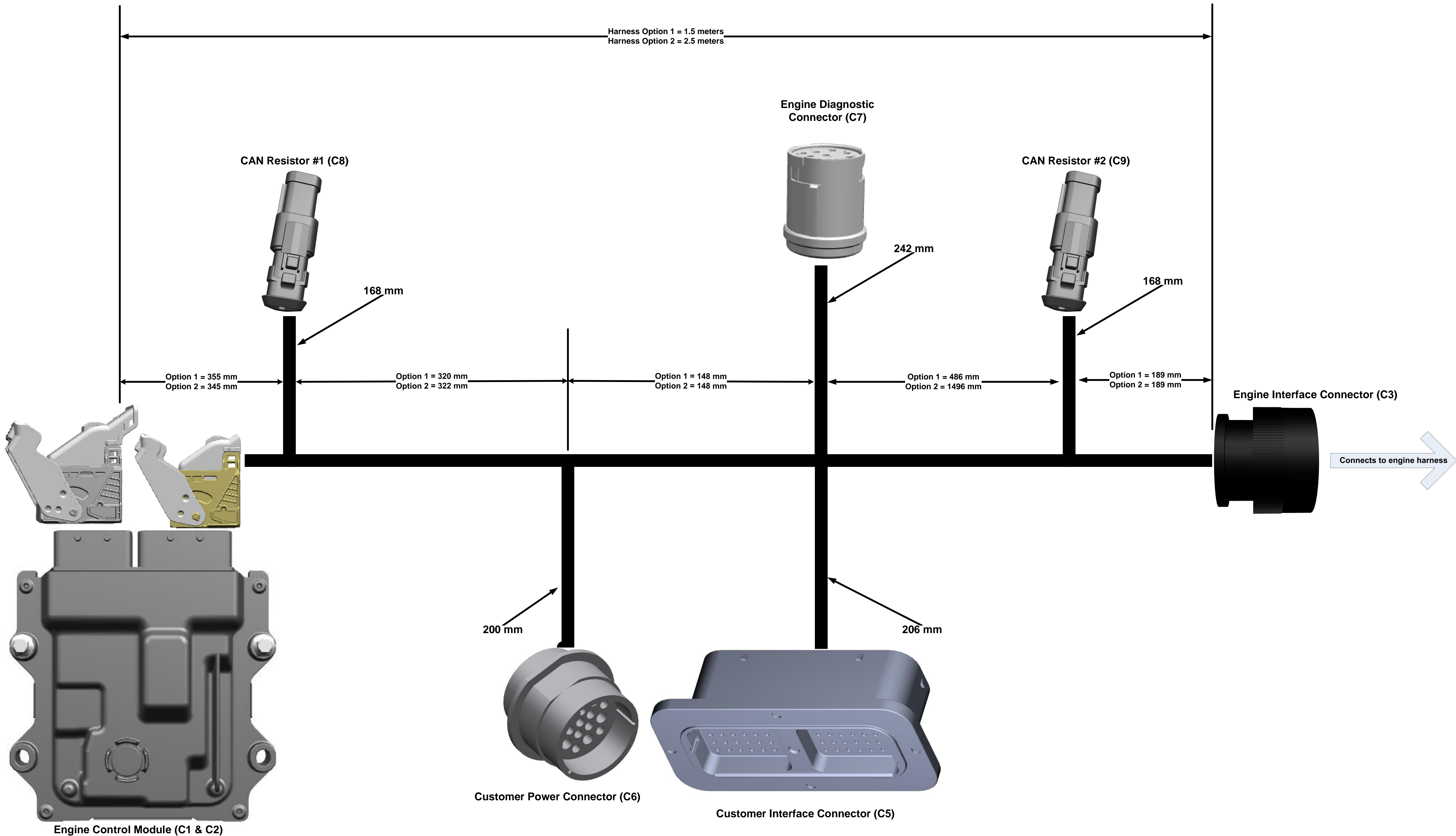


If any of the below pins are not used in the OEM customer wiring design, then they must be connected up through a 360Ω resistor (or closest available) to Battery negative as shown below.



Title	404J-E & 403J-E	Page #	6
Engine Type	400J-E <55kW		
Drawing Author	IPS Applications	Release Date	SEP 2021





Title	1.5m & 2.5m Lengths	Page #	7
	Factory Supplied Link Harness Layout		
Engine Type	400J-E <55kW		
Drawing Author	IPS Applications	Release Date	SEP 2021



Air Inlet Temperature Sensor					
QTY	Component Description	Supplier Part #	Supplier	Part #	Kit Part #
1	2 Pin Connector	776427-1	AMP INC	T405217	T432693
	2 Pin Connector - Reduced Seal	776522-1	AMP INC	N/A	
2	Socket	1924464-1	AMP INC	2900A016	

Electric Fuel Priming Pump					
QTY	Component Description	Supplier Part #	Supplier	Part #	Kit Part #
1	2 Pin Lift/Prime Fuel Pump Connector	DT06-2S	Deutsch	28170051	T432695
2	Terminal (Nickel)	1062-16-0122	Deutsch	T402651	

Water In Fuel Switch					
QTY	Component Description	Supplier Part #	Supplier	Part #	Kit Part #
1	3 Pin WIF Switch Connector	DT06-3S	Deutsch	28170056	T432692
3	Socket (Nickel)	1062-16-0122	Deutsch	T402651	

On-Engine Delta Pressure Connector (For remote AT Only)					
Qty	Component Description	Supplier Part #	Supplier	Part #	Kit Part #
1	4 Pin Delta P Sensor Connector - Code A	1-1564559-1	Tyco	T431930	T432696
4	Pin (Silver)	1718760-3	AMP	T432660	
4	Wire Seal (Green)	967067-1	AMP	T432661	

Delta Pressure Sensor Connector (For remote AT Only)					
Qty	Component Description	Supplier Part #	Supplier	Part #	Kit Part #
1	4 Pin Delta P Sensor Connector - Code A	1-1718645-1	Tyco	T431531	T432697
4	Socket (Silver)	1452668-3	AMP	T432662	
4	Wire Seal (Green)	967067-1	AMP	T432661	

Glow Plugs					
QTY	Component Description	Supplier Part #	Supplier	Part #	Kit Part #
1	M4 Terminal (0.8Nm -1.5 Nm)	N/A	N/A	N/A	N/A

Customer Interface Connector					
QTY	Component Description	Supplier Part #	Supplier	Part #	Kit Part #
1	70 Pin Customer Interface Connector	DRC16-70SA-P013	Deutsch	2800A009	T432787
44	Socket	1924464-1	AMP INC	2900A016	
26	Cavity Plug	114017	Deutsch	2900A011	

Customer Power Connector					
QTY	Component Description	Supplier Part #	Supplier	Part #	Kit Part #
1	19 Pin Customer Power Connector	HDP26-24-19SE	Deutsch	T432786	T432788
6	Socket	1062-16-0722	Deutsch	T402651	
10	Socket - Normal Wire Insulation	1062-20-0122	Deutsch	T432784	
	Socket - Reduced Wire Insulation	1062-20-0222	Deutsch	T432785	
3	Cavity Plug	0413-204-2005	Deutsch	T400135	

Heated Breather					
QTY	Component Description	Supplier Part #	Supplier	Part #	Kit Part #
1	2 Pin Heated Breather Connector	1-1355200-1	Tyco	T421903	T432698
2	Terminals (Socket)	929939-3	Tyco	T432664	
2	Wire Seal	828905-1	Tyco	T432665	

Version	Section	Description
1.0		First production release created from draft version 1.2.
2.0	Application Features	Starter Relay coil (LS) wiring changed from Battery negative to Customer Interface Connector, pin 62.
	Application Features	New wiring showing 360kΩ resistors connected to Starter Control Relay (HS) and Glow Plug Relay (HS) if the OEM machine harness doesn't use the pins.
	Application Features	Engine Power Relay (LS) and Keyswitch pins on Customer Power Connector updated to match on both pages.
	Application Features	Air Inlet Temperature Sensor added.
3.0	Application Features	Starter Relay wiring updated to show two options, ECM controlled or Keyswitch controlled.
	Application Features	Crank Request Input Switch moved to other application feature page to be included on the same page as the ECU controlled Starter Relay option.
	Application Features	WiF Switch pinout updated.
	Application Features	Keyswitch wiring corrected for both pages.
	Application Features	Air Filter Restriction Switch pin corrected on Customer Interface Connector.
	Application Features	WiF Switch pinout updated.
	Application Features	Engine Power Relay (HS) coil moved from the 30A fuse to the keyswitch 5A fuse.
	Application Features	Low Pressure Fuel Lift Pump Relay (HS) coil connected to Engine Power Relay via a 5A fuse.
	Application Features	Heated Breather supply wire moved from keyswitch to Wait to Disconnect Lamp's 5A fuse.
	Customer Connectors	Heated Breather connector table corrected to change one part name from terminal to wire seal.
Customer Connectors	Electric Fuel Priming Pump connector supplier number corrected.	
4.0	Application Features	Resistor value correction from 360kΩ to 360Ω for resistors connected to Starter Control Relay (HS) and Glow Plug Relay (HS) if the OEM machine harness doesn't use the pins.

Title	404J-E & 403J-E	Page #	9
Engine Type	Version History 400J-E <55kW		
Drawing Author	IPS Applications	Release Date	SEP 2021

