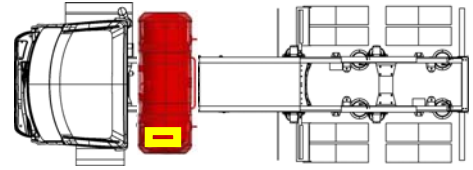


Part Number: 116353

Part Description: Fuel Storage Module (FSM)



Product Technical Specifications

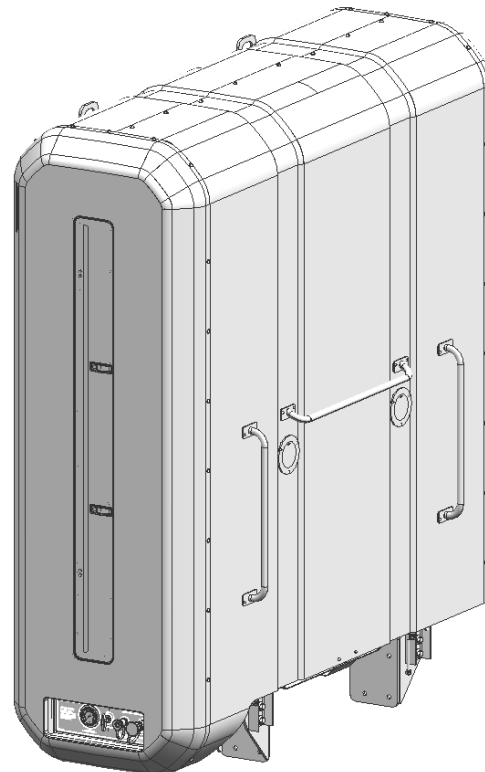
General Specifications

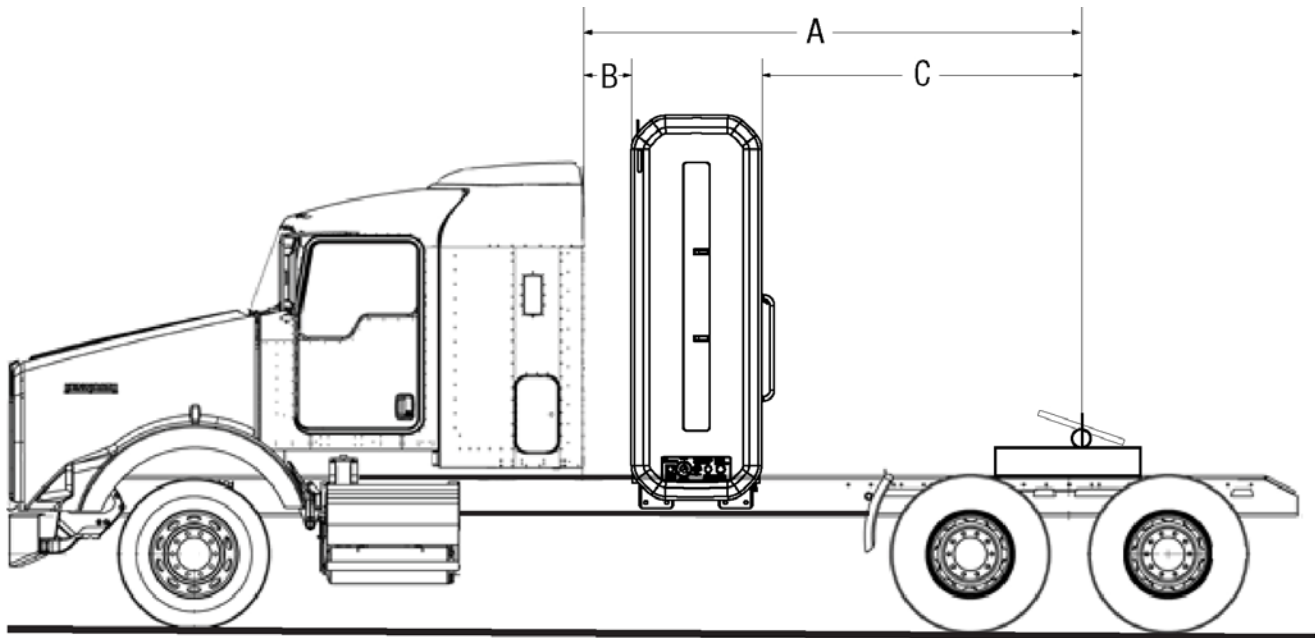
Designed Location	Back Of Cab (BOC)
Gasoline Gallon Equivalency (IA)	139.8 GGE
Gasoline Gallon Equivalency (NIST)	119.1 GGE
Diesel Gallon Equivalency (IA)	123.0 DGE
Module Weight (Empty)	1700 lbs (771 Kg)
Module Weight (Full)	2500 lbs (1134 Kg)
Internal Volume	417 ±6 Gallons (1584 ±24L)
Fill Panel Location	Driver's Side (See Yellow Box in Illustration)
Cylinder Certifications (114093)	NGV 2-2007
Canadian Registration Number (CRN)	N/A*
Service Pressure	3,600 psi (24.8 MPa) @ 70°F (21°C)
Minimum Working Pressure	290 psi (2 MPa)
Module Temperature Range	-40°F (-40°C) to 122°F (50°C)

* Contact Quantum for additional information.

Standard Equipment:

- Grab Handles
- Load Lights
- Standard Flow Fill Valve
- High Flow Fill Valve
- System Pressure Gauge
- Coalescent Filter
- High Pressure Regulator
- Control Module
- Vent Valve





⚠ DANGER

The FSM has been approved to be installed with the front of the FSM facing forward. The correct installed position can be confirmed with the fill panel on the driver's side of the frame. Failure to install the FSM in the correct approved position may result in death or serious injury.

General Vehicle Requirements

Maximum Distance Between Cab and Kingpin (A)	106" (2692mm)
Minimum Distance Between Cab and FSM (B)	5" (127mm)
Minimum Distance Between FSM and Kingpin (C)*	70" (1778mm)
Minimum Frame Height	N/A
Minimum Frame Width	N/A

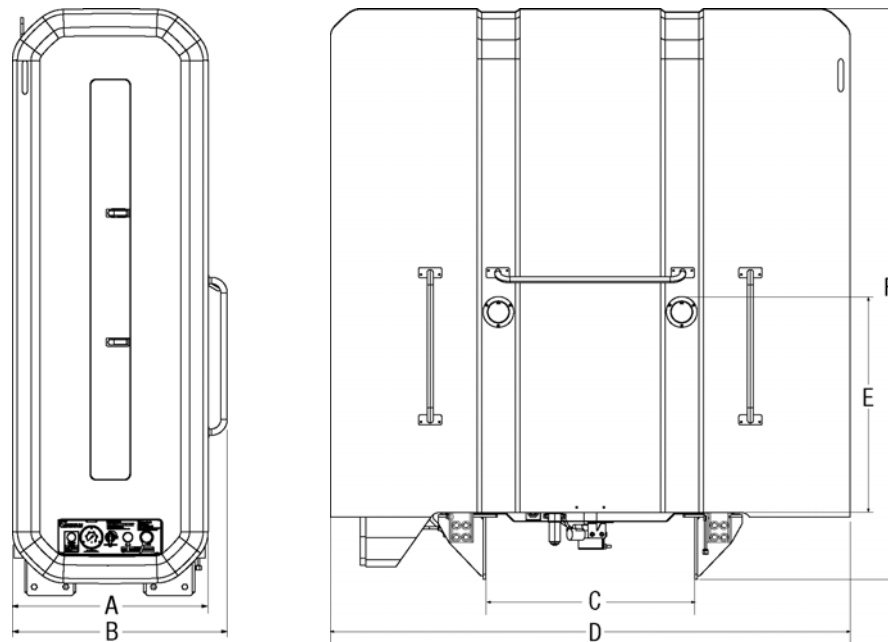
** Verify measurement with the 5th wheel in the forward most position. Trailers with non-standard (42" or 48") kingpins may require additional wheelbase and clearance.*

Electrical Requirements

Voltage Range	12-16 VDC
Nominal Current Draw	2 A
Peak Current Draw	3.5 A
Electrical Interface Connector	Deutsch HDP30-18-14 PN

Fluid Specifications

Coolant Type	Glycol / Phosphate Based Coolant
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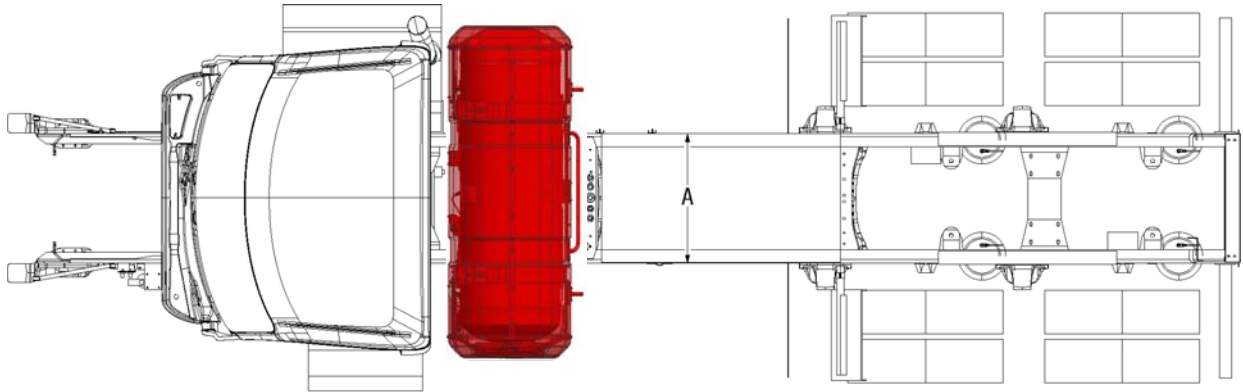


FSM Dimensions

Depth of CNG Fuel Storage Module (A)	30.7" (780mm)
Depth of CNG Fuel Storage Module with Handles (B)	33.8" (859mm)
Maximum Width Between Mounts (C)	34.5" (876mm)
Minimum Allowable Width (C)	33.75" (857mm)
Width of CNG Fuel Storage Module (D)	84.3" (2142mm)
Height of Load Light (E)	35.0" (889mm)
Height of the CNG Fuel Storage Module (F)	93.0" (2362mm)

Width (C) / Part Number

116353-001 (PACCAR / Peterbilt / Kenworth, Standard Module)	34.2" (869mm)
116353-002 (PACCAR / Peterbilt / Kenworth, Fuel Transfer Valve)	34.2" (869mm)
116353-003 (Volvo / Mack, Standard Module)	33.8" (859mm)
116353-004 (Volvo / Mack, Fuel Transfer Valve)	33.8" (859mm)
116353-005 (PACCAR / Peterbilt / Kenworth, 1/2" Fuel Outlet Pipe)	34.2" (869mm)



FSM Vehicle Interface

Coolant Connection	5/8" Hose Bib
Fuel Outlet Connection	-12 37° Flare, Stainless Steel
System Vent Valve Type	1/4 Turn Valve
Vent Valve Flow Rate (Approximate)	15 GGE/hr
Vent Port Interface	37° Male O-Ring Face Seal, 3/8"

Cylinder Information

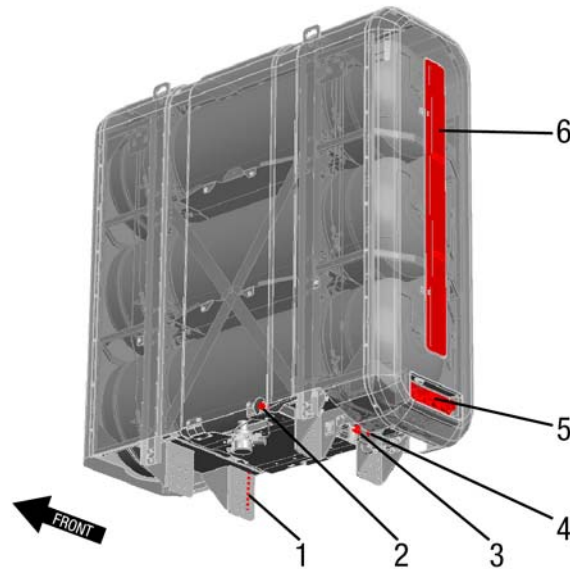
CNG Cylinder Service Life.....	See Cylinder Labels
Recommended Minimum CNG Fuel Quality	SAE J1616
Approved Service Gas	Compressed Natural Gas (CNG)
Cylinder Construction	Type IV
Cylinder Temperature Range	-40°F (-40°C) to 185°F (85°C)
Cylinder Manufacturer	Quantum Technologies

Shipping Information

Shipping Height	99" (2.52m)
Shipping Width	96" (2.44m)
Shipping Length	75" (1.91m)
Shipping Weight (One FSM / Pallet)	1898 lbs. (861kg)
Shipping Weight (Two FSM / Pallet)	3588 lbs. (1533kg)

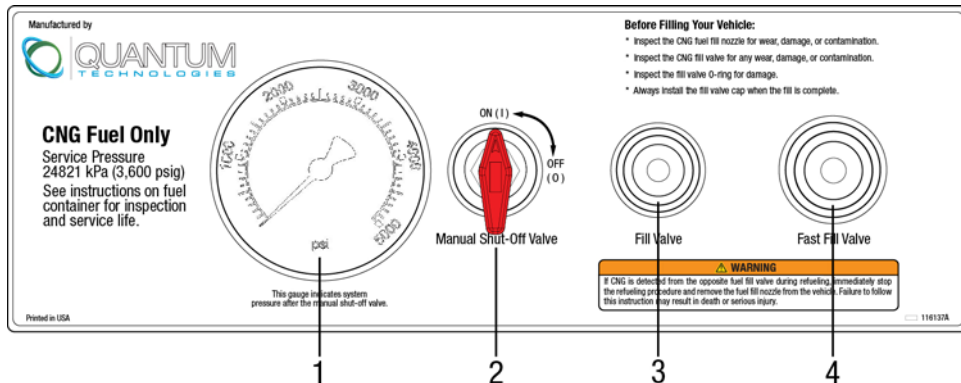
Kit Contents

Part Number	Quantity	Description
115696	1	Fuel Storage Module
S1-20298-014	16	Screw, Heavy Hex Flange, M16-2.0 X 60
N1-20300-006	16	Nut, Crimp Lock, Hex Flange, M16-2.0
116161-001	2	1/16" Frame Mount Shim 0.0625" (1.6mm)
116161-002	2	1/8" Frame Mount Shim 0.125" (3.2mm)
Select	1	Interface Harness
116510	2	Hose Clamp, SAE No. 10, Stainless Steel



Component Location

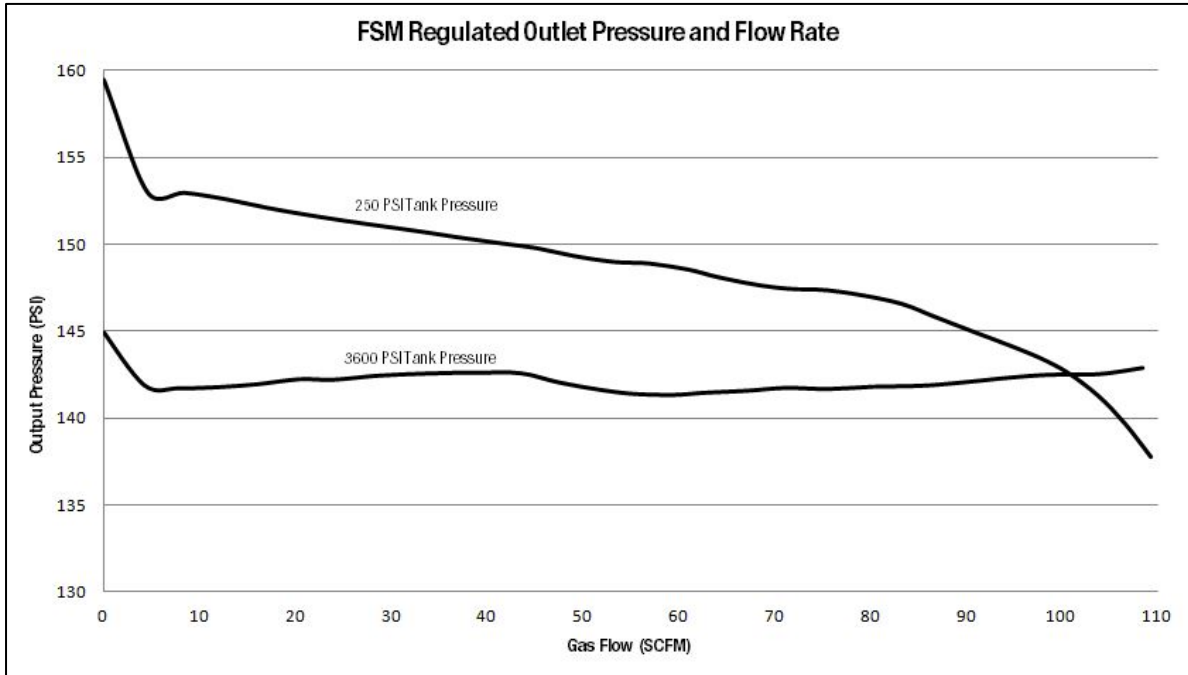
Fuel Outlet Pipe (1)	Base of Back Cover / Next To Left Side FSM Support
Electrical Connector / Interface (2)	Base Of Front Cover / Between Frame Rails
System Vent Valve (3)	Behind Fill Panel / Next To Filter
System Vent Cap (4)	Behind Fill Panel / Next To System Vent Valve
Fill Panel (5)	Right Side / Base Of Side Cover
Cylinder Access Door (6)	Right Side / Middle Of Side Cover



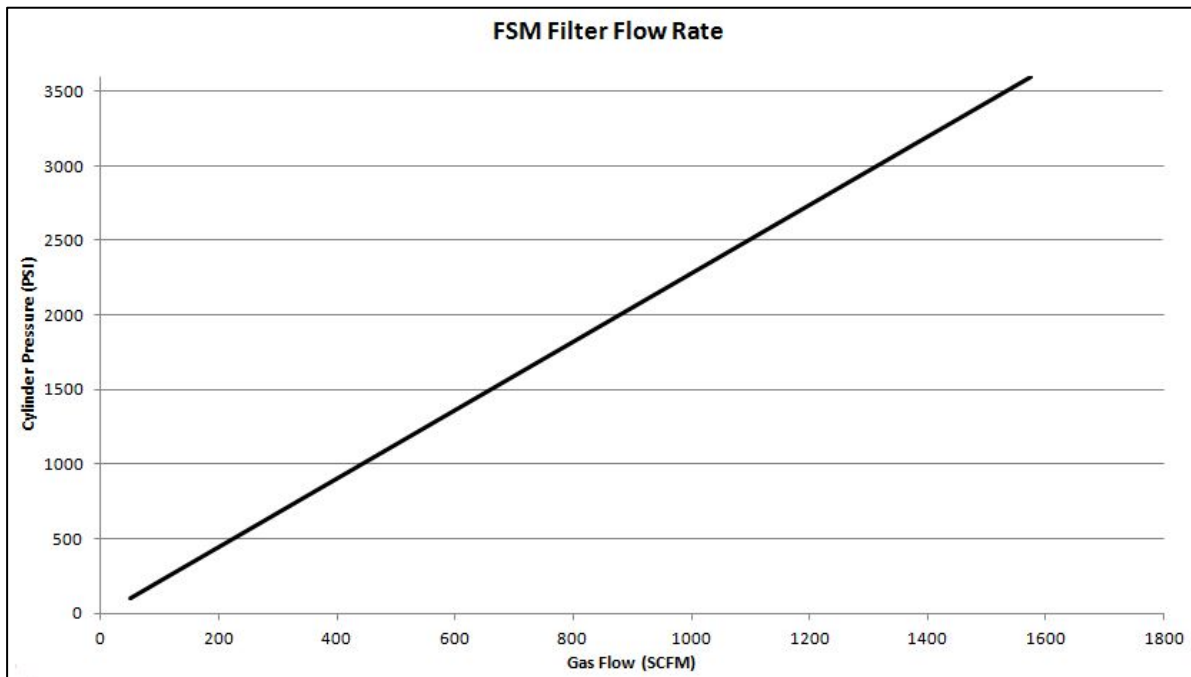
Fill Panel

CNG Pressure Gauge (1)	0-5000 psi (0-340 Bar)
.....	Liquid Filled Display
.....	Stainless Steel
Manual Shut-Off Valve (2)	Isolate FSM from down-stream components
Fill Valve (3)	NGV1 (Compliant to 3600 psi)
Fast Fill Valve (4)	NGV1 (Compliant to 3600 psi)

FSM Regulated Outlet Pressure and Flow Rate



FSM Filter Flow Rate (Omnitek)

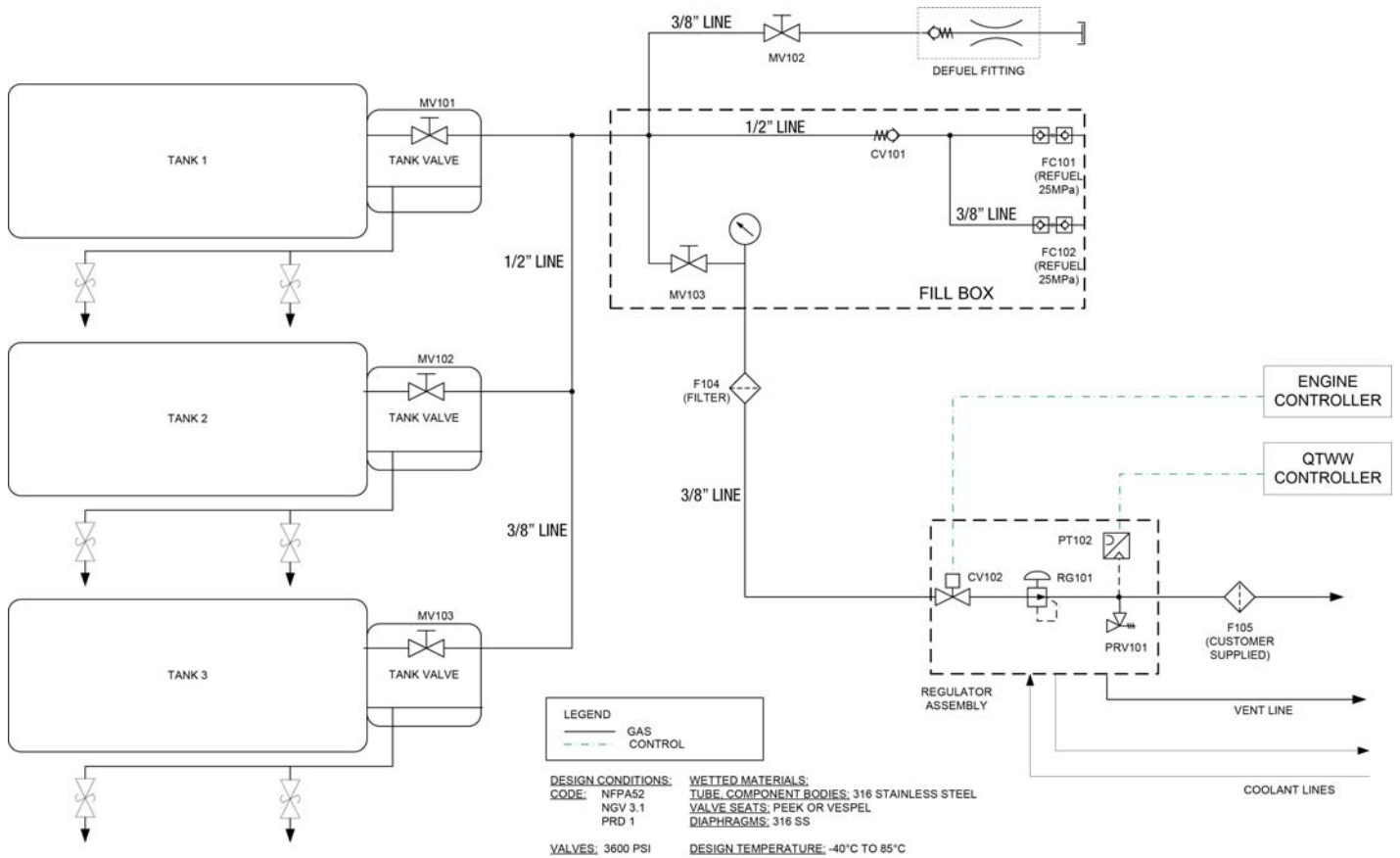


Fuel Flow Data

Regulator Outlet Pressure 150 psi (-10/+15 psi)
 Maximum Regulator Flow @ 250 psi (Inlet) 100 SCFM*

* Refer to the FSM Regulated Outlet Pressure and Flow Rate on the next page for additional information.

System Mechanization



Accessories

Description	Part Number
RH 25"x90" Slave Module	116691
RH 25"x80" Slave Module	116727
Fuel Outlet Pipe – Standard Module, Left Side	115947
1/16" Frame Mount Shim (0.0625", 1.6mm)	116161-001
1/8" Frame Mount Shim (0.125", 3.2mm)	116161-002
10' CNG Low Pressure Flex Hose	116574-003
12' CNG Low Pressure Flex Hose	116574-004
18' CNG Low Pressure Flex Hose	116574-006

General Maintenance

Inspect the CNG cylinder and brackets every 3 years or 36,000 miles (60,000 km), whichever comes first. The frequency and level of inspection may vary based on state and local requirements.

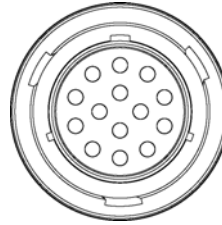
For additional information, refer to the *Type IV Compressed Natural Gas (CNG) Cylinder Installation and Maintenance Guide* available at www.qtw.com.

Configuration Options

Description	Part Number
Fill Receptacles with Filter	TBD
Fill Receptacles without Filter	TBD
Transfer Valve Kit	116665
Grab Handle Relocation Kit	TBD

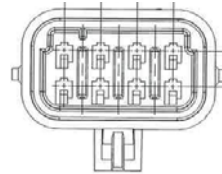
Appendix A – Interface Connections

A	Vehicle Ground	H	Fuel Gauge Driver
B	Low Voltage Disc 12v	I	Fuel Gauge Driver
C	Ignition Solenoid Pwr	K	Fuel Gauge Driver
D	Key Switch 12v Pwr	L	N/A
E	F-CAN	M	Fill Box Lighting Pwr
F	F-CAN	N	Lighting Ground
G	Fuel Gauge Driver	O	Load Lights Pwr



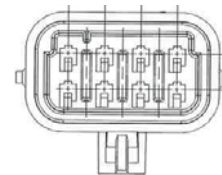
Electrical Connector / Interface

PACCAR / Peterbilt / Kenworth			
A	Vehicle Ground	E	N/A
B	N/A	F	F-CAN
C	Ignition Solenoid Pwr	G	F-CAN
D	Key Switch 12v Pwr	H	Fuel Level Signal



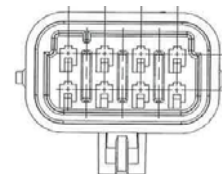
Vehicle 8-Pin Connector

Freightliner			
A	Vehicle Ground	E	N/A
B	N/A	F	N/A
C	Ignition Solenoid Pwr	G	N/A
D	Key Switch 12v Pwr	H	Fuel Level Signal



Vehicle 8-Pin Connector

Volvo / Mack			
A	Vehicle Ground	E	N/A
B	N/A	F	N/A
C	Ignition Solenoid Pwr	G	N/A
D	Key Switch 12v Pwr	H	Fuel Level Signal



Vehicle 8-Pin Connector

Interface Harness Options

Part Number	MFR Application	Description	Specifications
116340	All	Main Harness	
116338	PACCAR / Peterbilt / Kenworth	Interface Harness	0-5v Pulse Width Modulated
116339	Freightliner	Interface Harness	0-5v Pulse Width Modulated
116337	Volvo / Mack	Interface Harness	255 Ohms
116334	All	Load Lights w/ Pigtail Harness	
116336	All	Interface Harness – Fill and Load Lights Only	
116333	All	Fill Panel Light Harness	
116341	All	Main Harness – Lights Only	
116346	All	Load Light Extension Harness	
116818	PACCAR / Peterbilt	Fuel Gauge	
116817	PACCAR / Kenworth	Fuel Gauge	
116819	PACCAR	Wire Harness – Fuel Gauge	
116821	Peterbilt - 300 / 600 SERIES	Wire Harness – Ignition Jumper	
116815-005	As Required	Fuse – ATO, 5A	
116816	Kenworth T800	Terminal – Fuel Gauge	