

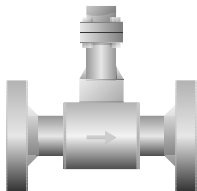


Product Description	<p>An automatic Biofuel Injection System (BIS) provides consistent distribution of biofuels throughout the entire delivery of fuel into the tanks. The integrated flow meter and control valves allows the BIS to continuously calculate and inject biofuels every few seconds, directly into the flow stream. Over the course of the delivery hundreds of small injections result in an excellent mixture of biofuels with the incoming fuel.</p> <p>The BIS continuously monitors for fuel movement. When a delivery is detected, the BIS Controller will start calculating the amount of biofuel needed for each product or tank and immediately begin sequential treatment for up to (2) tanks. The BIS is always active and provides 24/7 coverage for automatic treatment of incoming fuel. It will simultaneously treat gasoline and diesel tanks using different biofuel ratios.</p>	
System Features	System Description	
	<p>The BIS uses a combination of mechanical and electrical components and custom-software, to optimize the conventional biofuel blending procedure applied to gasoline and diesel fuels. These refinements automate the blending procedure, saving significant amounts of money, time and most importantly, improving the quality of blended fuel for customers.</p>	
	BIS Controller	Flow Meter
	<p>The BIS Controller monitors volume levels reported by the Veeder-Root Automatic Tank Gauge (ATG) to determine when a delivery starts and delivery flow rate. It calculates the required biofuel volumes and controls the injection into the storage tank, throughout the delivery, for optimal blending. It communicates to the ATG any alarms and reports. The BIS Controller is configured to support up to 2 storage tanks.</p>	<p>The Flow Meter measures the volume and flow rate of biofuel injected into the fuel storage tank(s). Data collected by the BIS Flow Meter is sent to the BIS Controller, which enables real time additive flow rate calculations. Additionally, the BIS Flow Meter will identify unexpected flow/ no flow conditions, enabling the BIS to activate warnings and shut down the system as required.</p>
	Filter Cartridge	Solenoid Valve
	<p>The Filter Cartridge is used to filter impurities from the biofuel, improving reliability and extending the durability of the system.</p>	<p>The Solenoid Valve, controlled by electrical signals from the BIS Controller, opens and closes, enabling precise volumes of additive to be injected into each fuel storage tank.</p>
	Meter Calibration	Biofuel Pump
	<p>BIS meter setup has 2-inch camlock connections that are used to calibrate the meter upon commissioning and thereafter.</p>	<p>The pump in the biofuel tank used to deliver additive to the Solenoid Valve to be injected into the storage tank.</p>
	Automatic Tank Gauge	
	<p>The Veeder-Root ATG (TLS-450PLUS, TLS4 Series and legacy TLS consoles) will send volume levels of the storage tank and indicate when a delivery is occurring. The ATG will send the volume rate of change for injection calculations. It controls the Additive pump and monitors for any alarm conditions received from the BIS to stop the injection process and notify the store personnel of a delivery issue.</p>	
Specifications	System Specifications	
	Operating Temperature	32°F (0°C) to 104°F (40°C)
	Storage Temperature	32°F (0°C) to 104°F (40°C)
	Relative Humidity	0-75%
	Installation Location	Zone 0, Div. 1 hazardous environment. Indoor or outdoor installation
	Power	100-240VAC @ 50/60Hz, 0.16 - 0.384KVA, single phase supply Cert. to CAN/CSA Std. C22.2 No. 61010-1. Conforms to UL Std. 61010-1 and 698A
	BIS Controller Power Draw	Max 3A

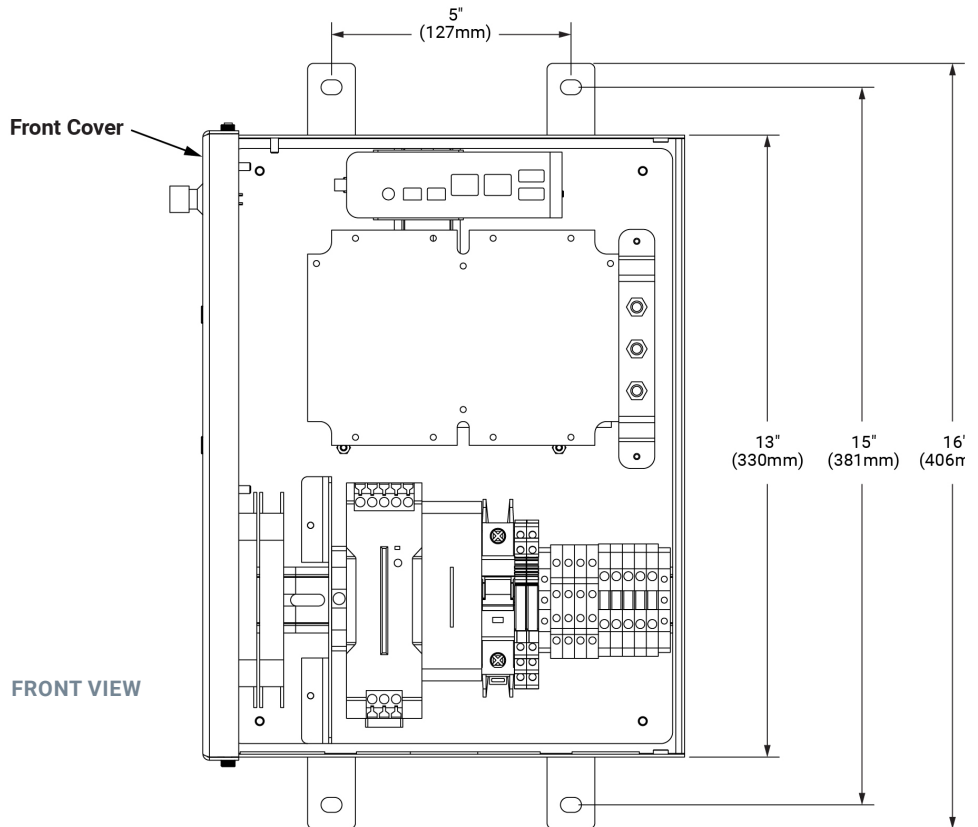
Approvals & Manuals	Component Approvals	Cert to CAN/CSA Std. C22.2 No.61010-1 Conforms to UL Std. 6101-1 and 698A		
	Manuals	Installation	577014-507	
		Service & Troubleshooting	577014-506	
System Configuration *		Controller Only	Controller with LC or TCS meter setup	Controller with Badger meter
	Description	BIS controller to replace existing blending controller installed on site to achieve automated, consistent, and homogenized Biofuel blending on site	BIS controller with Meter, strainer, valve setup (LC or TCS) to achieve automated, consistent, and homogenized Biofuel blending on site	BIS controller with Badger meter, strainer, ASCO Solenoid valve setup to achieve automated, consistent, and homogenized Biofuel blending on site
	Typical Application	Retrofit	New Build and Retrofits	New Build and Retrofits
	Recommended For	Biodiesel Blending and Ethanol Blending	Biodiesel Blending and Ethanol Blending	Biodiesel Blending and Ethanol Blending
	Number of Fuel Tanks (Diesel, Gas or Combination)	2 Tanks per controller expandable up to 4 tanks with small Expansion Box	2 Tanks per controller expandable up to 4 tanks with small Expansion Box	2 Tanks per controller expandable up to 4 tanks with small Expansion Box
	Install Location	<ul style="list-style-type: none"> Controller – Beside Tank Monitoring System 	<ul style="list-style-type: none"> Controller – Beside Tank Monitoring System Metering Equipment – In Blending Sump 	<ul style="list-style-type: none"> Controller – Beside Tank Monitoring System Metering Equipment – In Blending Sump
	Equipment Material	-	Steel	Stainless Steel
	Remote Access	Yes	Yes	Yes
System Components *		Part Number	Description	Comments
	BIS Controller (20000 Series)			
		20002	BIS Controller, 2 Tanks	Ethanol or Biodiesel
		20004	BIS Controller with Expansion Box, 4 Tanks	Ethanol and Biodiesel
	Meter Equipment			
		20100	LC M7 Steel Meter setup with Strainer and Solenoid Valve for Biodiesel	
		20101	TCS 700 Rotary meter, 100 GPM c/w Strainer with 40 mesh screen, Two Stage Valve with 24V ATEX SS Solenoid, Direct Mount Pulsar 9-24VDC for Biodiesel and Ethanol	
20102		2-inch Stainless Steel Badger Meter, ASCO Solenoid and Strainer Setup for Biodiesel		
20103		1.5-inch Stainless Steel Badger Meter, ASCO Solenoid and Strainer Setup for Ethanol		

System Accessory & Replacement Parts	Part Number	Description	Category
	20506	Relay Board	Replacement
	20507	Pulser Board	Replacement
	20508	BIS Computer	Replacement
	20509	LED Board	Replacement
	20510	Wire Harness	Replacement
	20511	Power Supply, 24V	Replacement
	20512	Power Supply, 12V	Replacement
	20513	Flow Meter Accessory Kit	Replacement
	20514	Galvanic Isolated Barrier	Replacement
	20515	Safety Shunt Power Barrier	Replacement
	20516	Expansion Box	Replacement
	20517	System Diagnostic Bracket Assembly	Replacement
	20520	USB Relay Board Cable	Replacement
	20521	Pump Relay	Replacement

System Overview

BIS Controller

CAD Drawings



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