






Product Description	<p>An automatic Additive Injection System (AIS) that provides consistent distribution of additives throughout the entire delivery of fuel into your tanks. The integrated flow meter and control valves allows the AIS to continuously calculate and inject additive every few seconds, directly into the flow stream. Over the course of the delivery hundreds of small injections result in an excellent distribution of additives with fuel.</p> <p>The AIS continuously monitors for fuel movement. When a delivery is detected, the AIS Controller will instantly calculate the amount of additive needed for each product or tank and immediately begin sequential treatment for up to (8) tanks.</p> <p>The AIS is always active and provides 24/7 coverage for automatic treatment of incoming fuel. It monitors the fuel temperature and has the ability to automatically increase or decrease seasonal additives such as cold flow, cetane boost and more.</p> <p>The AIS will simultaneously treat gasoline and diesel tanks using different chemicals or ratios. It will automatically switch between summer and winter additives, inject biocides, stabilizers and other chemicals at different intervals.</p>	
System Features	System Description	
	<p>The AIS uses a combination of mechanical and electrical components and custom-software, to optimize the conventional additive 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>	
	AIS Controller	Flow Meter
	<p>The AIS 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 additive volumes and controls the injection into the storage tank for optimal blending. It communicates to the ATG any alarms and reports. The AIS Controller is configured to support 4-8 storage tanks.</p>	<p>The Flow Meter measures the volume and flow rate of additive injected into the fuel storage tank(s). Data collected by the AIS Flow Meter is sent to the AIS Controller, which enables real time additive flow rate calculations. Additionally, the AIS Flow Meter will identify unexpected flow/ no flow conditions, enabling the AIS to activate warnings and shut down the system as required.</p>
	Filter Cartridge	Flow Control Valve
	<p>The Filter Cartridge is used to filter impurities from the additive, improving reliability and extending the durability of the system.</p>	<p>The Flow Control Valve optimizes the additive flow rate. An optimized additive flow rate increases the precision of the AIS Flow Meter, ensuring accurate additive injections.</p>
	Calibration Port/Kit	Solenoid Valve
	<p>Consists of a 1 liter beaker, 5' long stainless steel braided flex hose and fittings necessary to connect directly to the AIS Flow Meter for calibration.</p>	<p>The Solenoid Valve, controlled by electrical signals from the AIS Batch Processor, opens and closes, enabling precise volumes of additive to be injected into each fuel storage tank.</p>
	Automatic Tank Gauge	Additive Pump
	<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 deliver 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 AIS to stop the injection process and notify the store personnel of a delivery issue.</p>	<p>The pump in the additive tank used to deliver additive to the Solenoid Valve to be injected into the storage tank.</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
	AIS Controller Power Draw	Max 3A

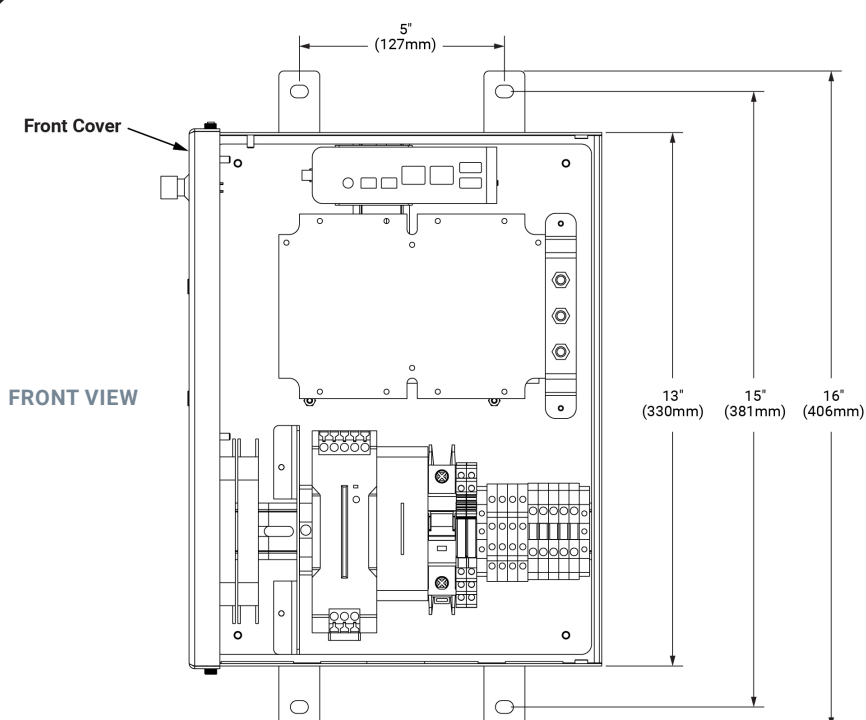
Specifications (Continued)	System Specifications			
		AIS Kit	AIS Plus	AIS Complete
	AIS External Dimensions	Flow Meter Enclosure: 6" x 6" x 4"	Cabinet: 30" x 28" x 9.75"	Varies by hardware and tank size
	Weight	10lbs	150lbs	> 1000lbs when full
	Connection to ATG	Cat-5 from AIS Controller to ATG		
	Display/Indicators	LED		
	Alarm Features	Pump Status, Relay Fault, System Status, Tank Status		
	Additive Compatibility	Broad additive capability, wetted components are stainless steel		
Approvals & Manuals	Component Approvals	Cert to CAN/CSA Std. C22.2 No.61010-1 Conforms to UL Std. 6101-1 and 698A		
	Manuals	Installation Manual, Service Manual		
System Configuration		AIS Kit	AIS Plus	AIS Complete
	Typical Application	Retrofit	New Builds & Retrofit	Retrofit
	Additive Tank	45 Gallon Drum Minimum No Max Size	45 Gallon Drum Minimum No Max Size	Aboveground Tank, 264 Gallons
	Install Location	Containment Sump	Wall Mounted Cabinet	Forecourt
	Number of Additives	Single Additive/Kit	Multiple Additives (1-2)	Single Additive
	Built in Calibration	No	Yes	Yes
	In-line Additive Filtration	No	Yes	Yes
System Components		Part Number	Description	Comments
	AIS Controller (10000 Series)			
		10004	AIS Controller, 4 Tanks	AIS Controller, supports up to 4 Tanks
		10008	AIS Controller, 8 Tanks	AIS Controller, supports up to 8 Tanks
	AIS Kit (10100 Series)			
		10100	Flow Meter Assembly	Flow Meter with Enclosure, Flex Conduit (18"), 24" Flex Hose (x2), Calibration Kit with 1000ml Beaker and hose extension (5' hose, beaker, ball valve, hose connection)
		10101	Solenoid Injection Kit, Collar Drop (Option A)	1 Solenoid Kit per Tank (select Option A or Option B)
		10102	Solenoid Injection Kit, Direct Drop (Option B)	
	AIS Plus (11000 Series)			
		11003	Single Additive, 3 Tanks	1 AIS Plus Cabinet per site
		11004	Double Additive, 4 Tanks	
		11008	Double Additive, 8 Tanks	
		Custom	Custom	Custom configuration of the AIS Plus system that can support up to 8 Tanks
	AIS Complete (12000 Series)			
		12001	Standard, Single Additive, support for 3 Tanks	Standalone AIS, 264 Gallon Tank
		Custom	Custom	Cost Varies

System Accessory & Replacement Parts	Part Number	Description	Category
	10500	Collar	Accessory
	10501	Spill Bucket - Emco-Wheaton	Accessory
	10503	Calibration Beaker	Accessory
	11500	Filter Catridge	Accessory
	10504	Solenoid Valve	Replacement
	10505	Flow Meter	Replacement
	10506	Relay Board	Replacement
	10507	Pulser Board	Replacement
	10508	AIS Computer	Replacement
	10509	LED Board	Replacement
	10510	Wire Harness	Replacement
	10511	Power Supply, 24V	Replacement
	10512	Power Supply, 12V	Replacement
	10513	Flow Meter Accessory Kit (U-Bolt, Strut, 90 Deg Comp. Fitting, Elbow, Tee)	Replacement
	10514	Filter Housing	Replacement
	10515	Galvanic Isolated Barrier	Replacement
	10516	Expansion Relay Board (Dual Controller)	Replacement
	10517	System Diagnostic Bracket Assembly	Replacement
	10518	Flex Conduit - 18"	Replacement
	10519	24" Flex Hose	Replacement
	10520	USB Relay Board Cable	Replacement
	10521	Pump Relay Terminal	Replacement
	10103	Calibration Kit	Replacement

System Overview

CAD Drawings

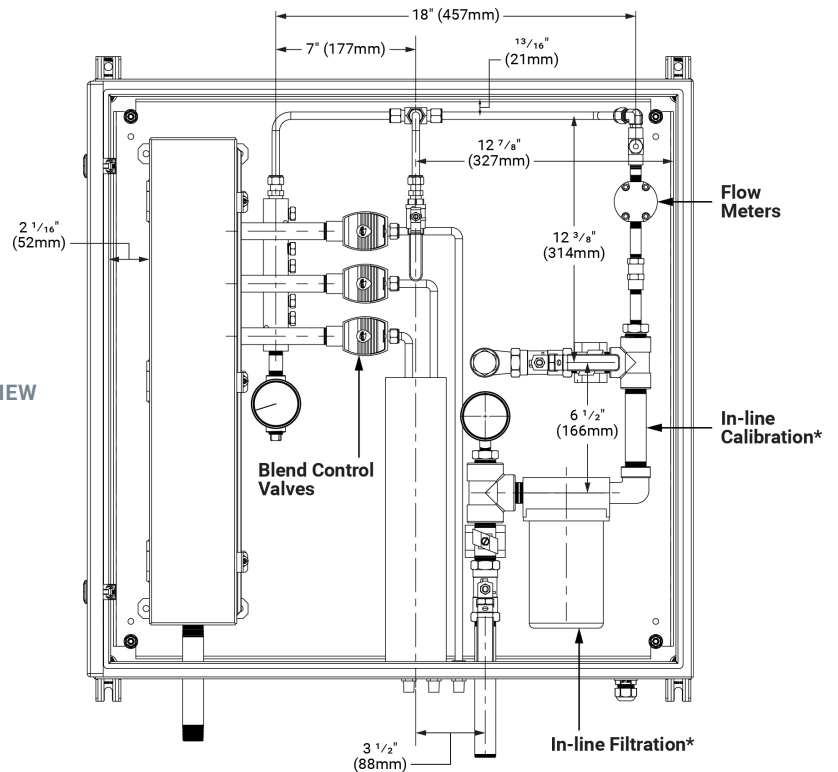
AIS Controller



System Overview (Continued)

AIS Cabinet

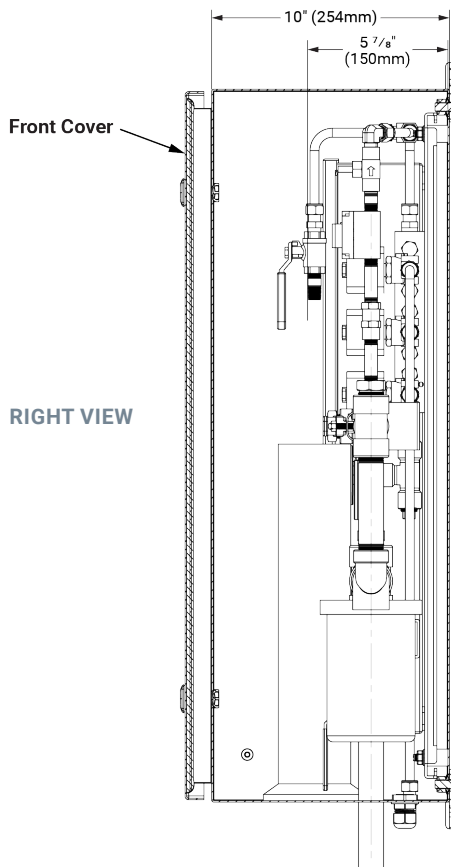
FRONT VIEW



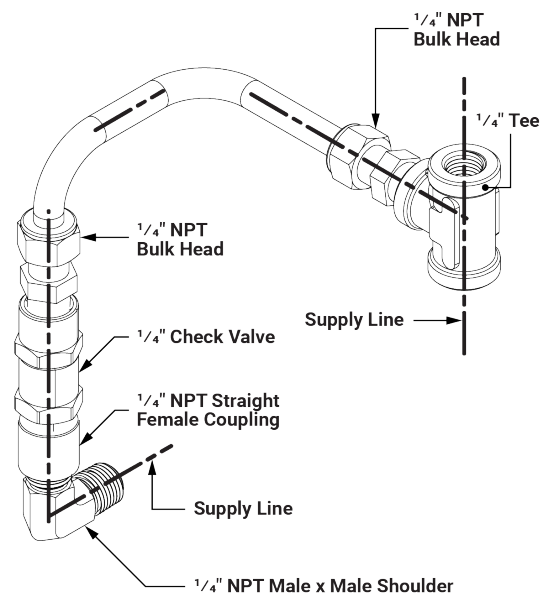
* Included in the AIS Plus only

**CAD Drawings
(Continued)**

RIGHT VIEW



AIS Relief Line Typical



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Example Illustrations

Illustrations used in this guide for example sensor installations may contain components that are customer supplied and not included with the sensor. Please check with your Veeder-Root Distributor for recommended installation accessories.

Third Party Evaluations

Third party evaluations of the Veeder-Root sensors contained in this application guide can be found under the Veeder-Root vendor name on the National Work Group on Leak Detection Evaluations (NWGLDE) website: <http://www.nwglde.org>