



D-2 Incorporated

Precision Industrial Sensors

AI-1 Additive Injection System

**Precise Static Dissipative Additive Injection Systems
Real Time Control & Measurement of Conductivity**



D-2 Incorporated is the leading manufacturer for fully automated conductivity improver injection skids. Utilizing our patented AC measurement technology for conductivity we are able to provide real time measurement and control of conductivity in multiple pipelines. We have years of knowledge and experience which has allowed us to develop new techniques for mixing, injection and controlling by conductivity. The JF-1A in line conductivity sensors used for control is ASTM D2624 certified. This result in a fully automated product conductivity control which is fully ASTM specification certified.

D-2 Incorporated is type certified by Kema & FM Approvals to build in Class 1, Division 1, and or ATEX Zone 1 Hazardous Environments systems. Our systems are fully customizable to meet the wide range of customer specifications needed. Through our direct experience of building systems used worldwide we have been able to refine our techniques to improve performance and reduce your cost. AI-1 shown above is representative of the quality and detailed engineering we provide our customers.

Exclusive Features for our AI-1 Systems

- ✦ Real Time, High Precision Conductivity Control (± 10 pS/M) & Measurement for multiple lines.
- ✦ Fully automated, ties into existing DCS system, alerting operator when fuel is out of spec.
- ✦ Customizable to fit your specifications, our systems are built to your custom specifications.
- ✦ Micro-Injection of Neat Additive eliminates requirement of volumetrically diluting additive, also reducing additive storage tank needs.
- ✦ Turn Key installation, designed to be easily installed into any facility.
- ✦ Intrinsically Safe design for hazardous areas, ATEX and NEC available.
- ✦ Complete documentation package provided allowing in-house installation and long term support.D-2 Inc.
- ✦ Worldwide Customer Support from an ISO 9001:2008 Certified Manufacturer



19 Commerce Park Road
Pocasset, MA 02559
(508) 329-2046
www.D-2inc.com



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Why use a D-2 Inc. AI-1 System?

AI-1 Conductivity Enhancer Injection Systems utilize the D-2 JF-1A conductivity sensor to measure conductivity of the delivered fuel, directly, on-line, at the actual process conditions. This process offers a dramatic improvement over batch introduction of the additive and off-line sampling of fuels for conductivity level. D-2 injection packages provide users with continuous on-specification fuel by eliminating errors associated with improper dilution, spot checks, temperature variation, as well as sampling and testing errors.

D-2 AI-1 Injection systems are custom designed to meet specific customer requirements and site conditions. D-2 has installed systems ranging from high-volume (4400 bph, 700 m³/hr, 200,000 GPH) ship delivery systems to low volume (.2 -2 m³/m, 50 - 500 GPM) truck terminal racks. D-2 Inc. provides AI-1 systems packaged to handle both single and multiple load rack line control. Please contact D-2 for a system proposal to meet your specific site requirements.

System Specifications

Sensors/ Control

| Parameter | Conductivity | Temperature | Flow Rate |
|--------------------|-----------------------------------|------------------------------|---------------------------|
| Range | 0-500 pS/M* | -20° / 60° C -4° / 140° F | Customer Site Requirement |
| Accuracy | +/- 10 pS/M** | +/- 1.0° C | |
| Resolution | 0.1 pS/M | 0.1° C | |
| Control Capability | +/- 10 pS/M | N/A | |
| Sensor Type | Coaxial Electrode | Platinum | |
| Calibration | Internal Source Zero and Scale | NIST Traceable | |

* Other Ranges Available, Consult dfougere@d-2inc.com for information

** Typical Control Point Variation



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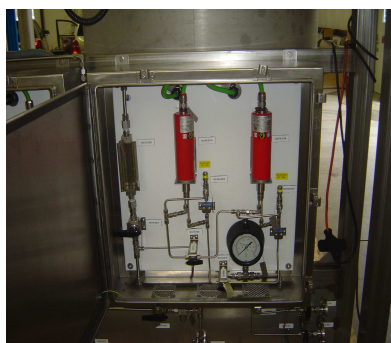
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System Specifications

| | |
|-------------------|--|
| Environmental | Operation: -20° – 60° C 10 Bar (145 psi Max Pressure) Storage -40° - 80° C |
| Power | 90 – 240 VAC, 50/60 Hz |
| System Control | Allen-Bradley PID, Siemens, Moore |
| Outputs | 4-20 mA, RS-232, RS-485, Relay, Alarm |
| Materials | 304 SS Frames Tanks, 316 Tubing |
| Injector Mounting | To Site Requirements |
| Sensor Mounting | To Site Requirements |
| Certifications | To Site Requirements (ATEX Zone 1, Class 1, Division 1 systems available) |



Small AI-1 System



Micro-Pumps in Env. Box
(Full Skid Shown on p.1)



PLC Controller



Injector Nozzle



Open Skid Box
(AI-1 w/ backup pumps)



2 Diesel Line AI-1 w/ backups
(Full Skid Shown on p.1)

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