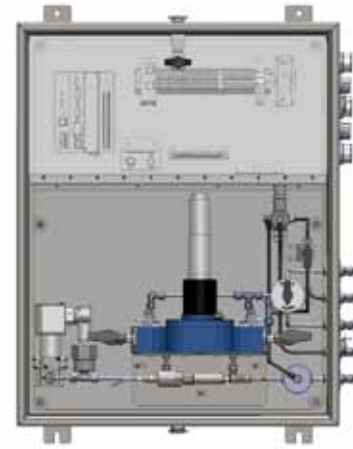




SENTRY® Z10000 Odorant Injection System

U.S. Patent Pending

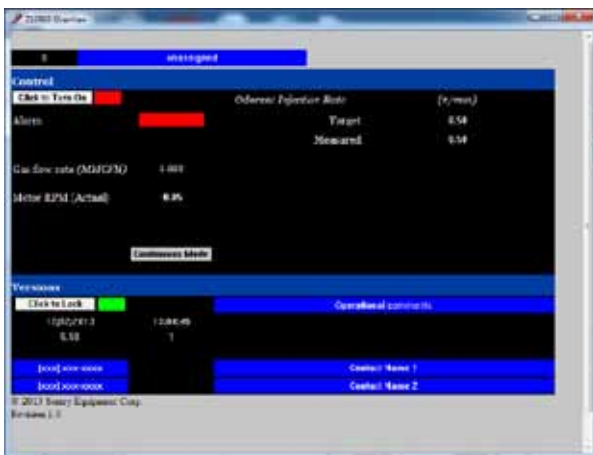
**Accurate odorization from
10,000 to 10,000,000 SCFH**



Z10000 ODORANT INJECTION SYSTEM

Features

- Electrically driven and hydraulically isolated dual stainless steel bellows provide for safe and accurate dosing of the odorant without fear of seal failure or need for odorant-side maintenance. **Backed by a 10-year warranty on the bellows.**
- Slow speed continual dosing operation and low blanket pressure requirements (15–30 psig) assures even odorant distribution in the pipeline and virtually eliminates the possibility of vapor lock.
- Since no pipeline gas is used to actuate the injector, no discharge of gas takes place, eliminating environmental concerns, improving safety, and saving pipeline gas.
- Includes 10 micron odorant filter mounted to enclosure.
- Automatic system shut-off for low odorant supply pressure.



Primary overview of Techview software

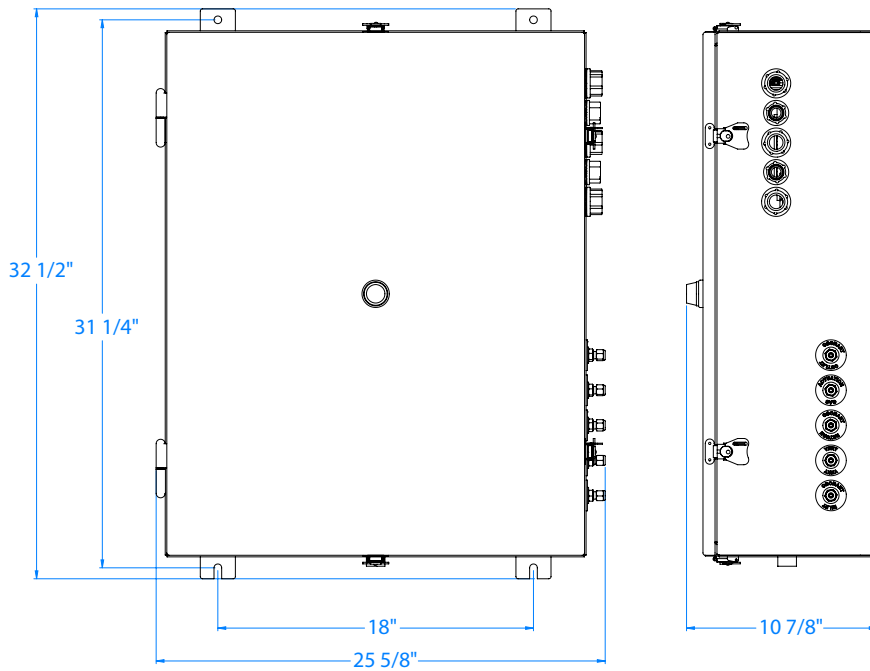
Description and Principles of Operation

With a 100:1 turndown and 0.2% accuracy of odorant flow across the entire operating range (continuous and batch modes), the Z10000 odorant injection system is a complete odorization system that meets the demands of almost any pipeline application. The Z10000 is an electrically driven dual pump injection system that uses opposing reciprocating pistons that displace hydraulic fluid in a chamber totally isolated from the odorant. This displaced volume causes compression of an infinite cycle welded stainless steel bellows, which displaces an equivalent volume of odorant in the bellows capsule that is continuously injected into the pipeline at any pressure up to 1480 psig. As the piston continues to move further into the hydraulic chamber, the bellows continues to compress, and odorant continues to be discharged downstream. The travel of the pistons is synchronized. The net result is that the system sees continuous metered flow of odorant to the natural gas pipeline down to 100,000 SCFH. Changeover to batch mode operation is automatic and seamless for flows below 100,000 SCFH.*

The reciprocation of the pistons is intentionally slow, never exceeding 25 rpm. By keeping piston speeds low (slow), pressure drops in the injector are minimized, and *flashing* or vaporization of the fluids is prevented. Flashing or vaporization is a cause for vapor lock—detrimental to the performance and accuracy of odorant injection systems. This also allows for lower odorant tank blanket pressures (15-30 psig), enhancing safety and limiting gas entrainment.

The speed of the motor is determined by a controller using natural gas flow rate information, odorant temperature, and user-defined parameters to calculate required odorant flow rate, then compares it to the actual odorant flow rate measured by a highly accurate positive displacement flow meter (+/-0.2% of reading at flow rates as low as .05cc/min).

Z10000 Technical Data



SPECIFICATIONS

Power	24 VDC; 0.036 HP; 27.05W
Gas Pipeline Pressure	to 1480 psi (102 bar) max
Odorant Blanket Pressure	15 to 30 psig (1 to 2 barg)
Odorant Injection Rate: Continuous*	.50–50 cc/min (.008–.793 gal/hr) at natural gas flow rate of .107–10.7 mmscfh
Odorant Injection Rate: Batch	for natural gas flow rates below 100,000 scfh down to virtually zero flow
Connections	Myers Hub: (3) 3/4" NPT; (2) 1/2" NPT Odorant Outlet, Odorant Return, Vent, Odorant Inlet: 1/4" comp.
User Interface Options	Optional HMI via a serial interface (max. 20 ft from unit); Z10000-configured TechView† via Ethernet or Internet (supplied at no charge); Serial RS-485 Modbus; Open/TCP Modbus via cell modem
Data Logging	Hourly archives; Audit trail
Enclosure	304 Stainless Steel
Options	Wireless modem; battery pack; solar panel, odorant tanks and containments
Ambient Temperature	0–140 °F (-18–60 °C) heater assembly option available for temps below 0 °F (-18 °C)
Shipping Weight	75 lbs
Hazardous Classification	Class 1 Div 2

*at injection rate of 0.5# odorant/mmscf

†TechView is a freeware program from Emerson Process Management configured by Sentry Equipment Corp for use with the Z10000 odorizer

⚠ WARNING

It is solely the responsibility of the end-user, through its own analysis and testing, to select products and materials suitable for their specific application requirements, ensure they are properly installed, safely applied, properly maintained, and limit their use to their intended purpose. Improper selection, installation, or use may result in personal injury or property damage.



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**QUALITY MANAGEMENT SYSTEM
CERTIFIED BY DNV**
ISO 9001:2008

For further information, contact: