

# ODORIZATION FOR A CLEANER ENVIRONMENT



*"Safe enough to be your next door neighbor"*

**Pulse and Injection  
Odorization Systems**

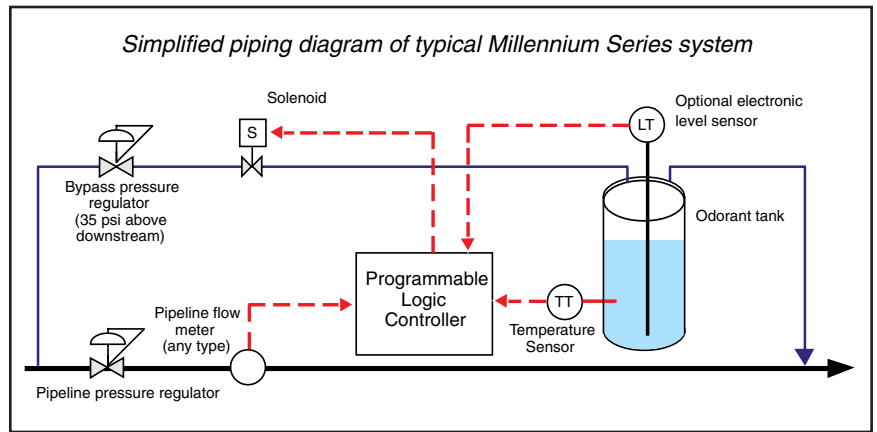
# INTRODUCTION

OdorEyes Technologies, Inc. brings together the combined resources of Welker Engineering and Arnold Energy Services to offer you odorization systems to fit your needs. Bringing with it over 60 years experience, OdorEyes Technologies offers the quality, performance and customer service that you, the customer, expect and deserve.

The principal of bypass odorization is the most widely used method of odorizing natural gas in the world today. Millennium Series Odorizers take bypass odorizing to a new level. Using today's technology, OdorEyes overcomes the problems associated with the old conventional buried bypass odorizer. The most significant advance has been the introduction of the pulse-bypass odorizer. Rather than relying on a constantly changing differential pressure across a restriction in the pipeline, the pulse-bypass odorizer accepts data from the station flow meter and pulses a known volume of gas through the odorant tank proportional-to-flow. The flexibility of electronic controllers permits adaption to both existing and new installations, even where power is not available.

OdorEyes Technologies incorporates the latest program logic control technology into the design of every system. This 21st century design provides a higher level of accuracy, greater flexibility and state of the art data acquisition software to help you manage the system at the highest level available.

OdorEyes pulse-bypass odorizers have proven to be economical and accurate, with no pump to fail, no seals to leak and no moving parts. Safe enough to be your next door neighbor, OdorEyes systems are changing the way that the world odorizes.



- No pump or other moving parts
- No vapor locking or leaky seals
- Very wide flow range
- Simple, low-maintenance
- Accurate flow tracking (from 1 or more meters)
- Retrofit to existing by-pass tank
- Remote access capability

# ODOR X



Easy, on-the-spot odor neutralization.

OdorX Enzymatic Liquid has been developed for the control of natural gas odorants, eliminating the odor caused by Mercaptans! Excellent for cleaning used containers, cleaning up spills and deodorizing parts and tools exposed to natural gas odorants, OdorX is ... safe ... non-toxic ... non-hazardous ... water soluble ... and has a pleasant odor.

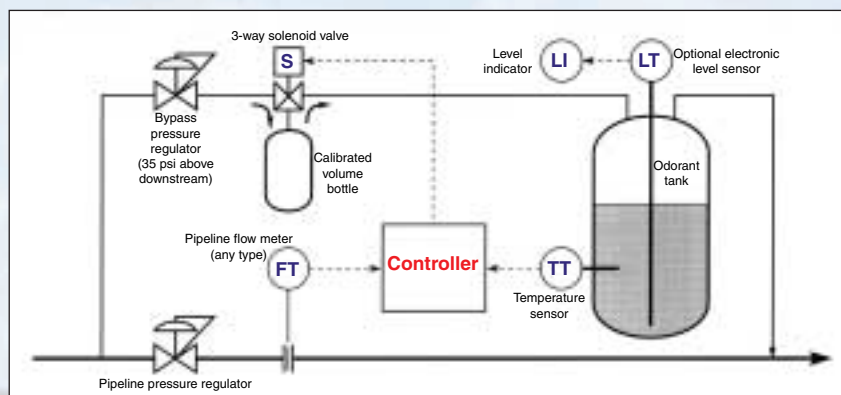
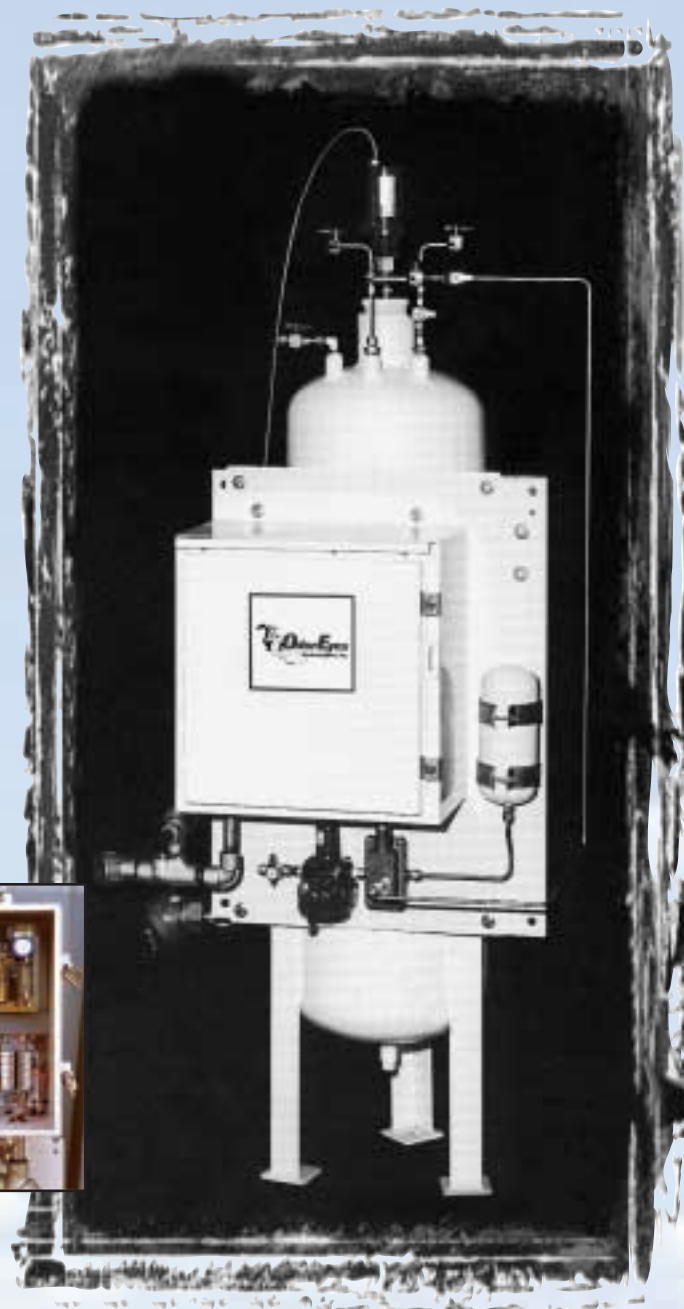
OdorX liquid quickly and easily eliminates odors caused by **Mercaptans, Sulfides and Thiophene**, removing them completely by neutralizing and digesting the source of the odor. OdorX is not a masking agent. It is an enzymatic liquid containing a special blend of bio-strains specifically designed to promote optimum enzymatic activity for the production of Protease, Lipase, Amylase and Cellulase enzymes. As a result, OdorX provides excellent aerobic and anaerobic breakdown of odor-causing agents. OdorX has been proven to work effectively against natural gas odorants such as Mercaptan, Sulfide and Thiophene. Non-toxic and non-hazardous, OdorX is water soluble and may be used full strength or diluted. OdorX is available in 2 ounce spray bottles, 1 gallon bottles or 55 gallon drums.

# MILLENNIUM SERIES TWO

Utilizing the pulse-bypass method, Millennium Series Two Odorizer Systems add odorant to flowing gas accurately proportional to the flow rate. As with all Millennium Series Odorizer Systems, there is no pump to fail, no seals to leak and no moving parts. Millennium Series Two Systems are intended for natural gas pipelines or similar installations with flow rates less than one million standard cubic feet per hour. For greater flow rates, OdorEyes™ Technologies offers the Millennium Series Three system of pumpless odorizers or the Accu/Line™ Injection style odorizer.

The Millennium Series Two Pulse Gas Odorizer takes bypass odorizing to a new level. Using today's technology, we can overcome the problems associated with the old conventional buried bypass odorizer. The most significant advance in bypass technology has been the introduction of the pulse-bypass odorizer. Rather than relying on a constantly changing differential pressure across a restriction in the pipeline, the pulse-bypass odorizer pulses a known volume of gas through the odorant tank proportional to flow. This makes it a true flow tracking odorizer. The unique control technology incorporated in the Millennium Series Two system can provide continual odorization even in the event of loss of meter signal or power failure. The pulse-bypass system can operate accurately down to zero flow and will never vapor lock. It is ideal for stations that may periodically cease operation or go to extremely low flow. When the flow returns or increases it will remain accurate and reliable. Additionally, the system can be equipped with a temperature sensor in the odorant tank. The bypass flow is adjusted to compensate for changes in odorant vapor concentration due to temperature changes. This OdorEyes feature allows the tank to be either buried or above ground and remain accurate.

Millennium Series Two systems incorporate numerous design details resulting from over 60 years of manufacturing and odorizing experience. Systems can be built to EACH customer's INDIVIDUAL needs. Adverse and often changing operating conditions are easily controllable with the flexibility of the Millennium Series Central Processing Unit. The system can be quickly reconfigured for changing requirements with the use of a hand held programmer unit. When increased demand requires more capacity, the Millennium Series Two allows the customer to easily expand their current system capacity by simply changing the size of the volume bottle.



CALL 1-877-ODORIZE

# INJECTION SYSTEMS

More than 20 years of solid performance characterize the injection odorizers manufactured by OdorEyes Technologies. We introduced the first computer controlled injection odorizers in 1978 and have been consistently raising the performance bar ever since.

Our Accu/Line Injection Odorizer continues this trend by incorporating the latest program logic control (PLC) technology into the design of every system. This 21st century design provides a higher level of accuracy, greater flexibility and state of the art data acquisition software to help you manage the system at the highest level of accuracy available. Touch Screen technology brings the necessary data to you instantly in user friendly real time graphics. The unit can be programmed to respond to changing conditions and performance data feedback in a variety of ways, while maintaining continuously accurate service. The 12 VDC Program Logic Control unit has battery backup for uninterrupted service or can be equipped with optional solar panel.

Just as with the Millennium Series, the PLC stores an audit trail detailing the system's performance for a specified time period. The alarm log shows a date/time stamp for all alarm occurrences and when they were cleared. Additionally, the central controller system monitors gas flow in the pipeline. This allows the user to check for deviations from normal operation, allowing the appropriate actions to be taken should any problems occur.

Accu/Line's data acquisition software gives you the ability to read, alter and download system information remotely using a PC. In the same manner as the Millennium Series, this gives you the capability to adjust and monitor the system's performance whether at your desk or in the field.

Injection odorizers from OdorEyes are time tested, providing the industry with unwavering performance for over three decades.

Now, the Accu/Line Injection System incorporates the latest in PLC technology with injection pump dependability. OdorEyes provides you with greater precision of operation, extensive system information management and reduced labor costs through remote access capabilities.



# MILLENNIUM PULSE SYSTEMS



Combine the benefits of Pulse Bypass Odorizers with the latest in Program Logic Control (PLC) Technology, and you get a system that gives you the simplicity, selection and unlimited flexibility that you want. Millennium Series Systems give you odorizers with no moving parts. There's no pump to repair, tank level measurement is accurate to within a hundredth of an inch and there is no contact with odorant except when filling the tank. The Millennium Series odorizers can be operated over a wide range to fit **any size** system.

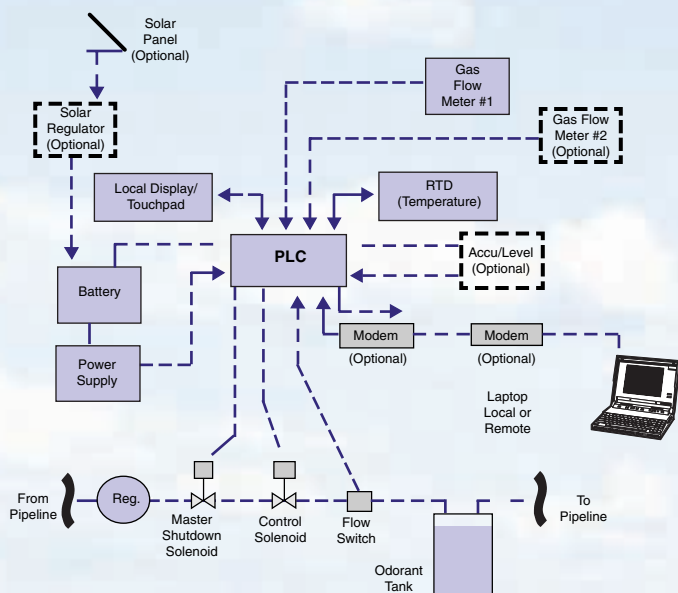
All Millennium Series Systems take the quality and performance you've come to expect from OdorEyes to a new, higher level. The PLC storage capacity holds an audit trail detailing the system's performance for a specified time period, anywhere from 1 day to over 1 year. You select the time frame to match your needs. Millennium Series One Odorizers have scrolling digital readouts with keyboard style input, while the new Millennium Series Three units feature user friendly touch screen technology that brings the data to you in real time graphics.

The central controller system monitors gas flow to the tank. It creates a computer record of how much odorant was put in and has electronic tank level transmitters so the operator knows at all times the level of odorant in the tank and how much has been used.

The alarm data log shows a date/time stamp for all alarm occurrences and their clearing. This permits you to monitor not only deviations from normal operations, but response time to any detected problems. With the Millennium Series Data Acquisition Software you can save on maintenance costs by reading, altering and downloading system information from your office using a PC and the systems' RS-232 serial port. This capability duplicates the functionality of the integral key pad and display unit.

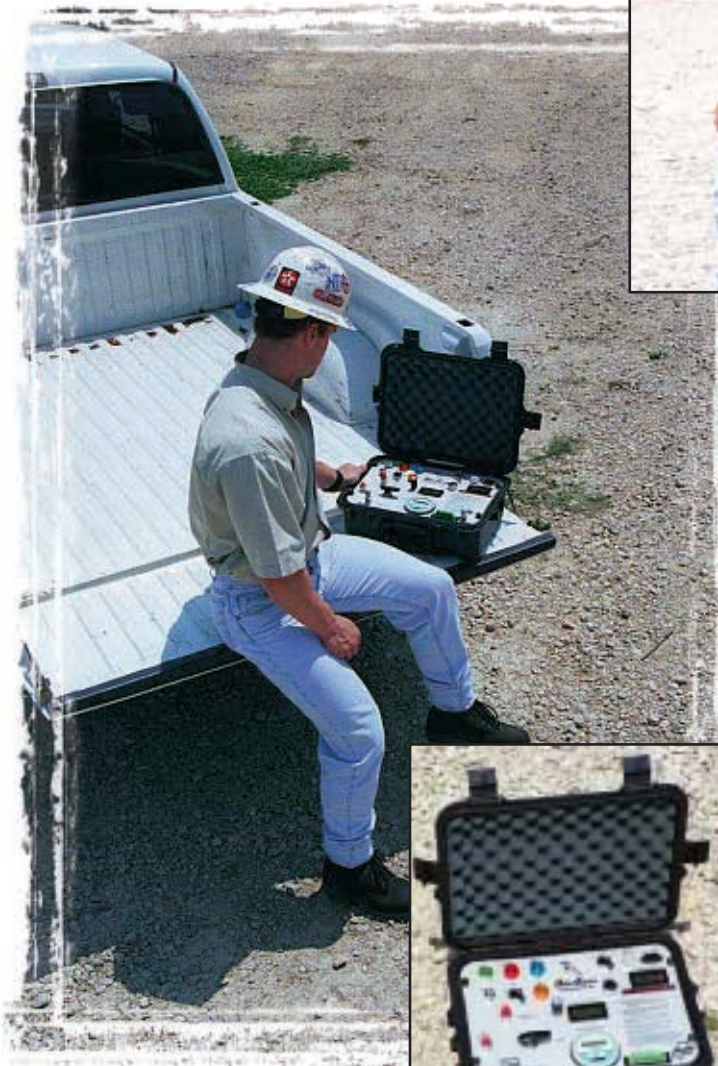


Millennium Series odorant systems are environmentally safe enough to be used even in residential neighborhoods.



This typical installation diagram illustrates the relationships of the major elements of the Millennium Series Three system and shows the optional components that are available, including remote maintenance access using a laptop PC.

# MONITORS



*Portable Monitor Transmitter comes in an easy to carry, weather resistant carrying case.*

The OdorEyes™ Monitor-Transmitter automatically measures the concentration of any commonly used mercaptan odorant in natural gas or vaporized LPG (liquefied petroleum gas). An electrochemical sensor is exposed to a flowing sample at user selected intervals. The measurement signal can be recorded to verify the accuracy with which mercaptan has been added to odorless fuel gas for safety purposes by an odorizer system. The signal can also be used as a feedback to control the odorizer, thus assuring accurate odorization levels despite varying temperatures, pressures and pipeline flow rates.

OdorEyes equipment is available as fully assembled units or systems built to meet customer requirements. They can also be supplied separately, as subassemblies and components, if you wish to assemble your own system or hook up to an existing odorant tank. We believe that you will find the OdorEyes equipment to be a truly significant advance in odorization technology. Call us today for more information on OdorEyes products and services.

*OdorEyes permanent, fixed system monitor provides continuous online monitoring of your odorant conditions, allowing you to detect, correct and prevent faulty conditions before a problem arises.*



# TANKS

The tanks used by OdorEyes Technologies are ASME certified and code stamped. Strict requirements and specifications provide you with reliability that you can depend on. Volume and pressure ratings are designed on an individual basis depending on specific customer requirements. An electronic level transmitter allows the odorant level to be an integral part of the odorizer. The system has the ability to calculate and record the odorant usage directly from the tank. Tanks are available in both vertical and horizontal configuration. Optional: For complete environmental protection, a skid-mounted 110% containment pan is available for overflow protection.



# LEVEL GAUGES

The Accu/Level™ MS1000 electronic level gauge system replaces conventional side-mounted sight glasses and top-mounted float gauges on odorant tanks. The transmitter also detects the temperature of the liquid using thermistors in the tube. Accu/Level MS1000 gauges can be applied to new or existing odorant tanks, whether buried or above ground.

Your local representative:



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