



General
Energy-Management
Systems Pvt. Ltd.



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GAS ODORIZER

For Natural Gas, Biogas & LCNG

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Why Odorization System

Odorization of natural gas is one of the most important aspects of delivering gas to customers in a distribution system. It is a requirement that is mandated by the Federal Government ever since the tragic death of students and teachers in a school house in New London, Texas in 1937. Technology, along with innovations to odorization techniques, has advanced rapidly in the last fifteen years, making odorization more reliable.

Natural gas, as it emerges out of the mother earth, is odorless. In order to detect any leaks in the downstream pipeline, an odorant is injected. This is done to fulfill legal requirement as well as for the safety of the persons working on the gas pipelines and end-users of the gas.



Injection Odorization Systems

The system consists of one or two dosing pumps, a flow meter and mechanical and electro-mechanical components that are interconnected with stainless steel tubes, equipped with compression fittings. These components are controlled by the electronic control unit and perform the following functions: signaling, interception, containment and injection to the network.

The injection odorization systems is recommended to obtain greater precision in terms of the quantity of liquid injected, lower management costs due to the purchase of liquid odorant, and where the gas flow rate is greater than 30,000 Nm³/h.

The liquid odorant can be taken from storage tanks. The liquid is sent from the dosing pump to the injector, passing through the flow meter. The control unit receives the mass quantity of the liquid odorant that pass through the flow meter with extreme precision. The control unit matches the quantity of liquid odorant and the gas flow rate, changing the working frequency of the pump to ensure the set odorization rate.

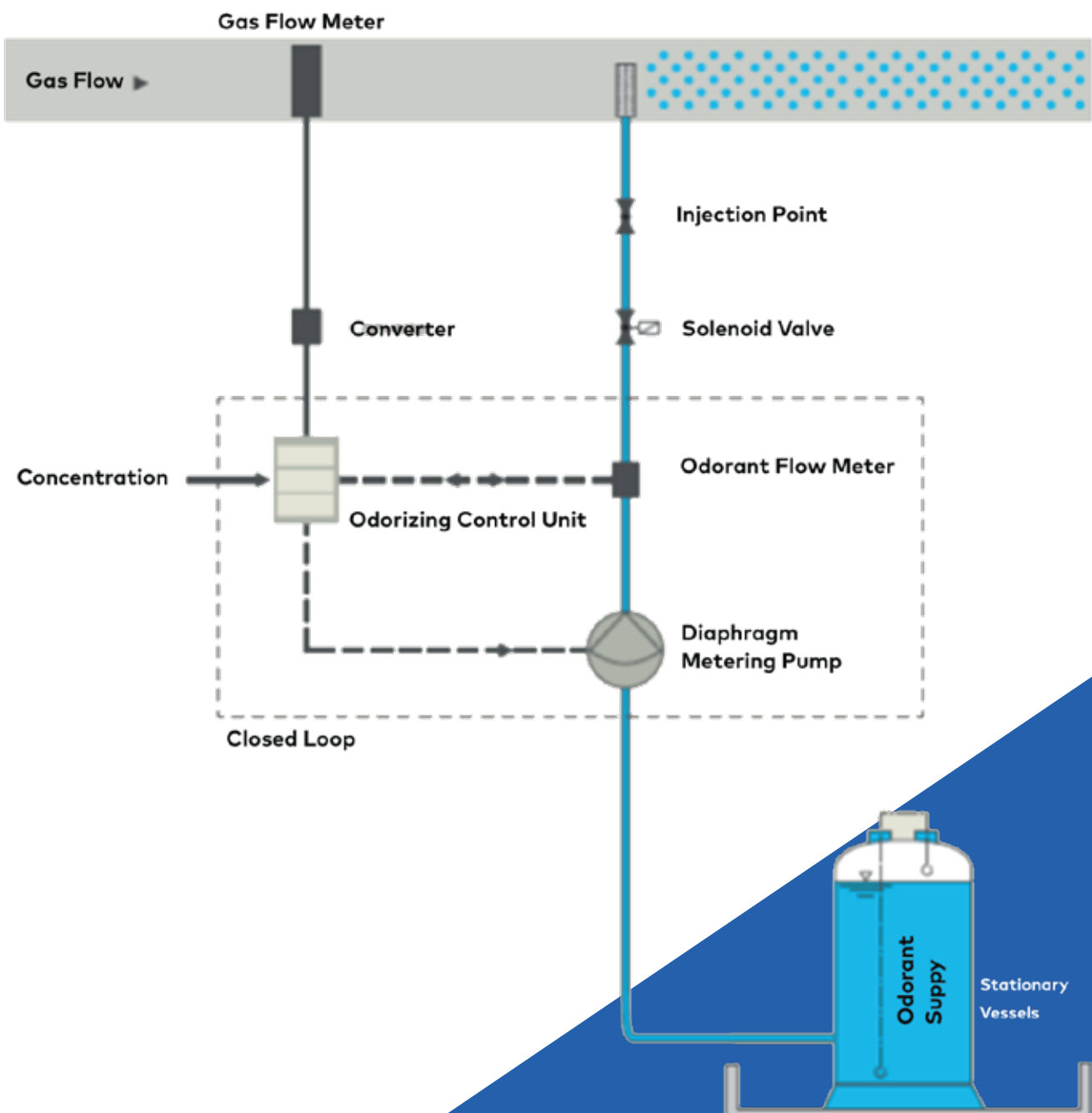
Due to the features described above, this model is suitable also for Biogas & LCNG Odorization with multiple injection pumps in 1 system. The control unit is available in a version for the installation in hazardous zone also.

The advantages at Glance

The flexibility of our systems makes it possible to provide reliable, precise and cost-saving dosing of all common odorants such as THT, mercaptan, sulfur-free odorants or any kind of mixtures.

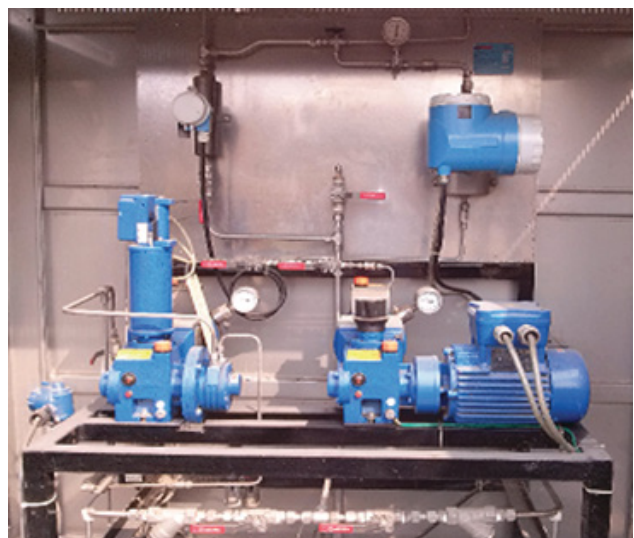
Our diaphragm pumps work without dynamic seals due to their design. This permits a hermetically tight working area. There are no external emissions and contamination of the fluid & this allows us to guarantee an exact and reliable dosage of odorant.

Working Principle of Odorization System

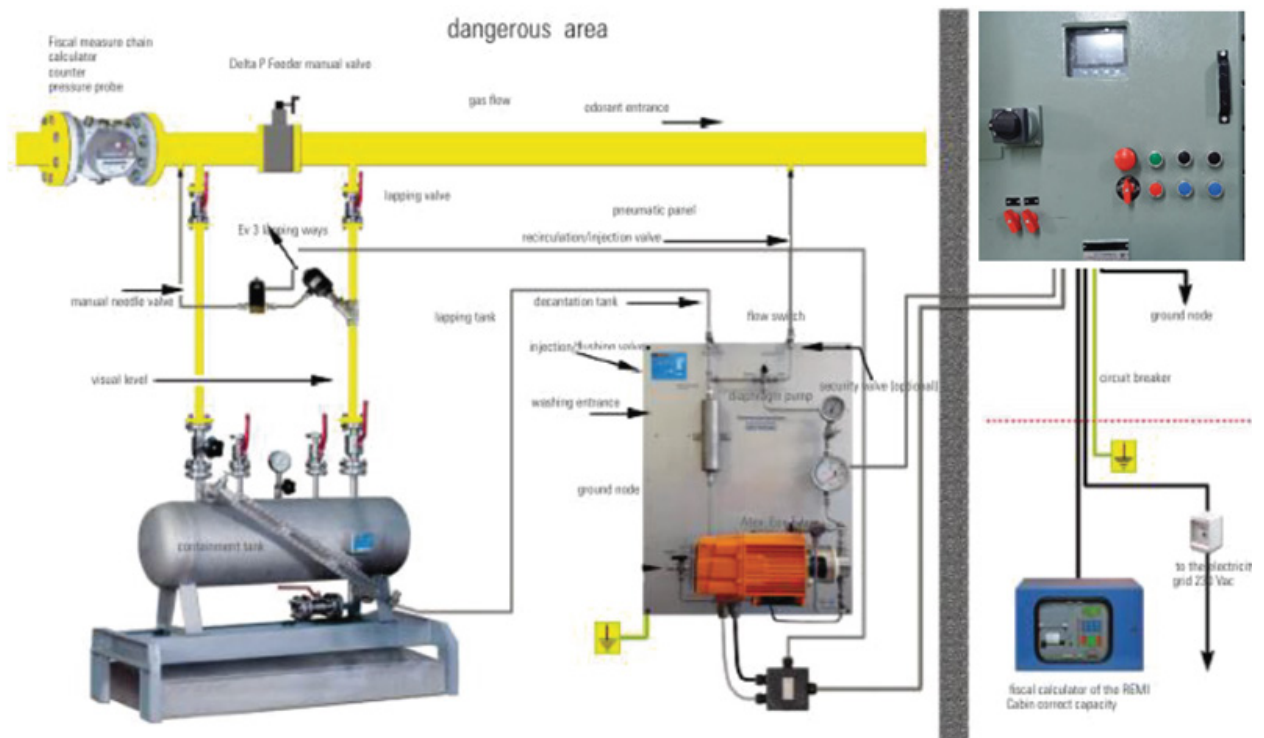


Custom made Solutions and **Optimum Execution** *(Project Management)*

CPL understand the individual customer's requirement & provide tailor made solution with customized design and features. In house production with strict quality control at every stages ensures the product quality to international standard. We also offer customized tests according to customer's requirement. GEMS/CPL has pan India service team to provide technical services at every location, in accordance with uniform quality standards. We also undertake Comprehensive Annual maintenance contract & ensures uninterrupted odorization in Natural Gas in desired quantity to comply to safety requirements.



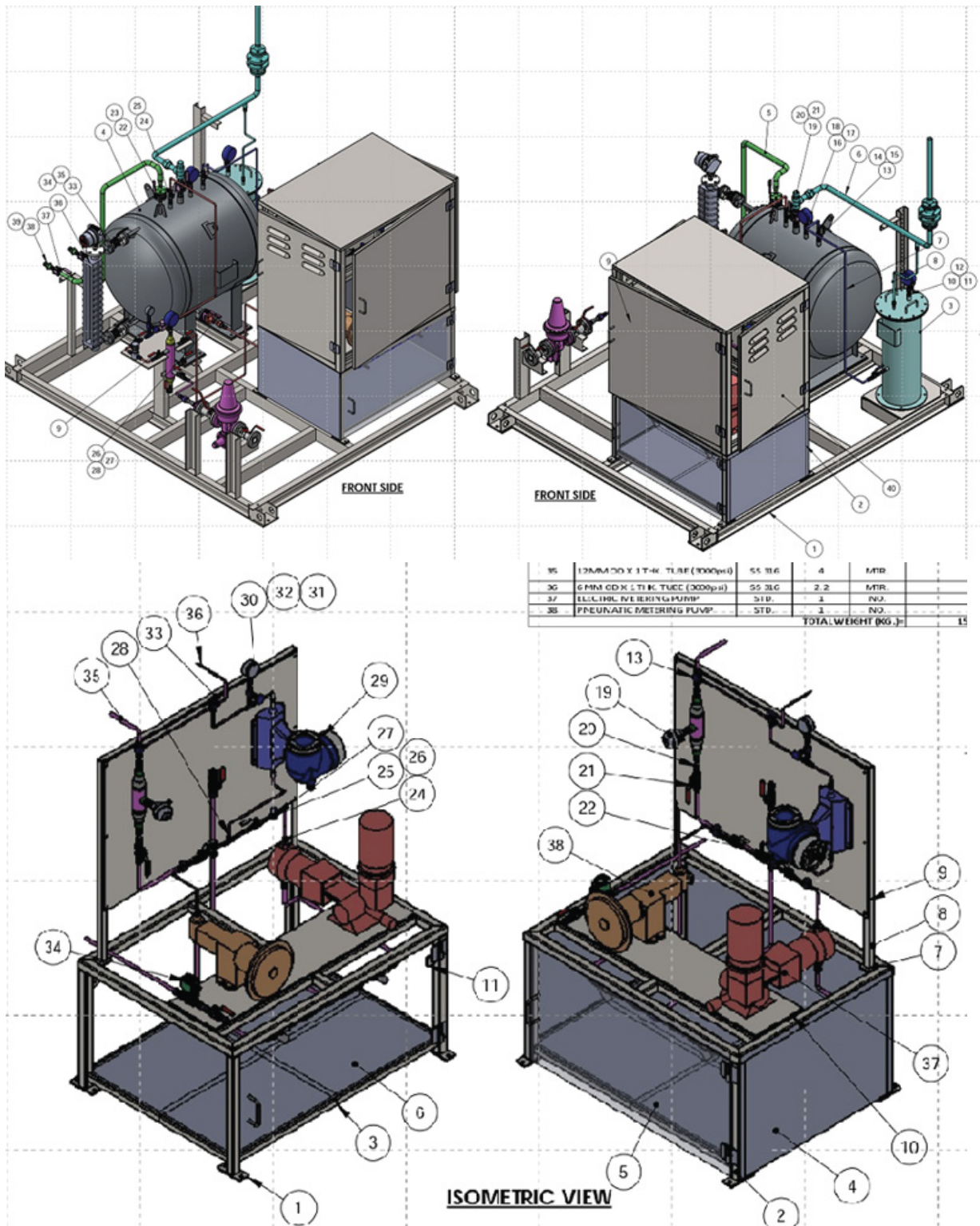
Installation of Chemical Injection System



Subject	Description
Counter	It measures the gross cubic meters circulating in the tube
Tank	It contain odorant
Repeated outputs	Dig/Analog signals that can be used by other system
Smart Doz Motherboard	It is the heart of Injection System
Circuit Breaker	It protects from indirect contacts/over tensions/short circuit
Fiscal Calculator	It measure the flow capacity of natural gas SCMH
Ground node	It's a terminal board that goes directly to the underground pile shoe
Three way valve	It is used to move direction towards during services of media flow line
Drip Tray	It is used to store odorant during emergency condition
Manual needle valve	It's used to regulate flow of odorant manually
Pneumatic Panel	It's the injection System

General Arrangement Drawing

Drawing



Subject	Description
Flexible Storage Tank	We offer systems for stationary and exchangeable vessels in sizes from 7 up to 1,000 liters, and upon customer request also large-scale systems of up to 10,000 liters.
Magnetic Level Gauge	We offer visible filling monitoring The Magnetic level indicator can also be used for calibration. Odorant level indicators and over filling protection in accordance with a stationary vessel.
Drip Tray	All drip trays comply with the regulations for stationary systems for the storage of water-polluting materials and are leak-proof.
Smart Doz Electronic Control Unit	Modular designed controller for proportionally based odorization.
Safety Valves	Optional protection of process equipment against Over pressure by safety valves.
High accuracy Flow meter	The flow meter monitors the flow of the odorant. We provide flow meters with a measuring accuracy of +/- 1% optimally selected for the metering pump and metering volume in use.
Precise and reliable metering pump	The use of diaphragm pumps ensures precise metering. In addition, the pumps are hermetically tight, extremely durable and easy to maintain.
Three way valve	It is used to move direction towards during services of media flow line
Activated Carbon Filter	This filter is required to sanitize smell characteristics of odorant during venting of odorized gas of Tank

Electronic Control Unit *(Smart Doz)*

Smart Doz distinguishes itself from traditional injection systems by its ability to correctly odorize gas at both high and low flow rates in completely automatic manner.

Smart Doz consists of the following features

- Battery Backup
- 60 MHz, 32 – bit ARM 7 Processor.
- Non Volatile 8 – Mbit Memory
- GSM/GPRS Modem
- MODBUS Communication at RS 232 / RS 485
- Installation in Hazardous area
- Firmware upgrade from remote
- Zone 1, Class Iarea based control panel
- The ability to monitor exactly the amount of odorant injected into the network is given by the feedback checks performed by the control unit in real time

The System feedback loop makes it possible to reduce the calculation error during operation



Alarms & Data Archiving

The Control unit signals alarm conditions by means of following methods:

- Display of the active alarms
- Storage of the event in internal storage
- Sending an alarm SMS to dedicated two mobiles numbers

It is possible to view alarms by means of:

- Display
- Local serial communication and management software
- Remote modem and management software

Smart Doz is able to store in its internal memory alarms, events, configurations and consumption data with date & time of storage.

Communication

The measurements and the historical data can be sent with any alarms and the diagnostics of peripheral unit, via SMS or GPRS (Future option by email)

The data can be transmitted to central software for the remote reading and configuration of the peripheral units.

It displays and manages the following parameters:

- Network Status: Measurements and diagnostics of all the odorization system installed.
- Alarms
- Detailed information on peripheral unit
- Report on recorded parameters
- Remote configuration of peripheral unit
- Log of events stored in the applications database
- Exportation of all data in text format

Safety

- Control Unit Safety
- UPS functions
- Watchdog hardware
- Watchdog software
- Real time monitoring
- Statistical monitoring
- Emergency switch to isolate control system



After Sales Support

FASTER

BETTER

TOGETHER

Toll Free Number



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Services Managed By



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