



ODETTA

Odorizing and dosing system

Natural gas and biogas odorization

Methanol and ethanol dosing into natural gas

Odetta odorization system has been manufactured and supplied since 1985. Based on many years of experience and long-term optimization process, the system corresponds to the latest technical knowledge and safety standards and at the same time complies with relevant European standards and regulations. The odorization system is manufactured in multiple versions with different capacities, odorant stock, and location. All types of odorization stations can be customized to meet specified technical parameters as required by the customer. ODETTA odorization system is suitable for all types of odorants (THT, TBM, sulfur-free and mixed odorants).

Natural gas odorization or biogas odorization are performed either centrally before entry into the distribution system or locally within the distribution system. Odorant dosing is done by regular injecting of odorant by the pump pressure into the pipeline.

Odorant filling is performed by transferring it from reusable or one-time barrels with nitrogen and/or by direct unloading from filling truck.

Development of odorization stations started in company Plynoprojekt, a.s. Prague, which used to be a subsidiary for development, design, and manufacturing of technological equipment for Czech gas industry. Its department in Brno has successfully dealt in particular with the development and production of equipment for fuel gases odorization, methanol and ethanol injection units for underground gas storages, and other equipment for the gas industry, for example welding equipment for LPE pipelines or equipment for trenchless pipelaying. After Plynoprojekt has been incorporated into RWE Distribuční služby, it became the Odorization Stations Section. From October 2020, the company changed its name to GasNet Služby, s.r.o., and is part of the GasNet Group. The section currently provides service of approximately 120 odorization stations and also service of methanol and ethanol injection units from own production.

The Odorization Stations Section currently deals with manufacturing and servicing of these devices:

- odorization stations
- methanol and ethanol injection units
- dosing pumps
- piercing equipment for trenchless horizontal pipelaying PZ 65 and PZ 200
- drilling equipment for gas leaks localization NZ1
- equipment for gas extraction from boreholes OZ 100
- compression equipment STOP for PE gas pipelines
- hydraulic welding equipment HSS 90225 and TSP 2590

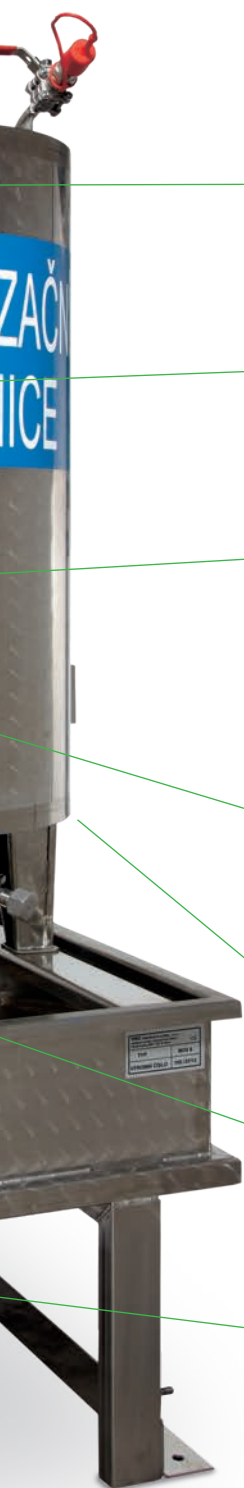
Benefits and advantages of odorization and dosing

- Long service life
- Fault-free operation
- High quality components
- Low demands on operation and maintenance



Advantages of the ODETTA odorization system

- Safe handling
- Technical support and consulting
- Compact set supplied as monobloc



Continuous level gauge with remote odorant level signaling continuously transmits data about current odorant level (in liters or kilograms) to the control unit display and into the superior control system and alerts in case of need for odorant replenishment.

Liquid seal isolates the storage tank from the outside environment and enables tank pressure equalization with the ambient pressure through an absorber according to the odorant level fluctuation.

Adsorber is a vessel with replaceable activated charcoal charge. It forms part of the venting pipeline after the hydraulic seal. The absorber charge arrests the odorant smell during the injection process.

Optical level indicator is intended for visual inspection of odorant level in the storage tank. It also helps with monitoring the process of dosing pumps deaeration during the storage tank filling. The level indicator enables adjustment and checking the pump dose. It consists of a glass pipe under protective cover located along the storage tank.

Dose sensor signals each odorant dose and its pulses are used by the station's control system for dosing pump function monitoring.

Odorant storage tank from stainless steel has the capacities between 50 and 900 liters depending on the type of the station.

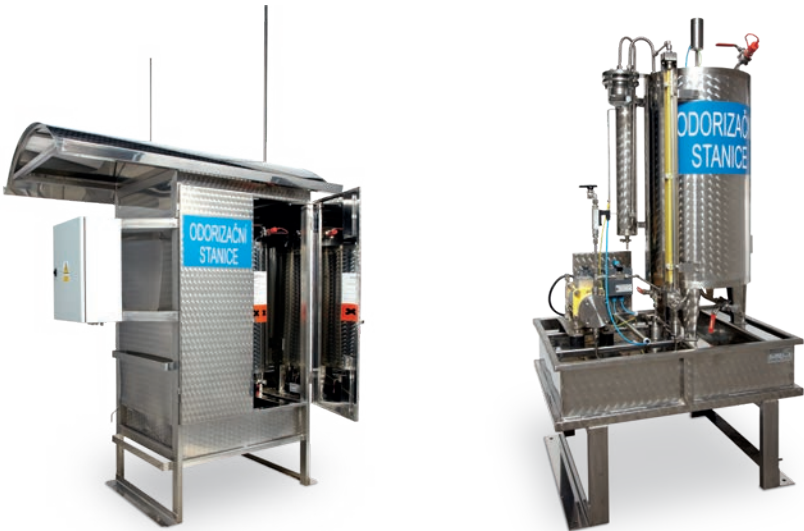
Dosing pump is intended for accurate odorant dosing based on preset values. It is a electromagnetic membrane pump with EX design for explosion hazard zone

Retention sump from stainless material, which forms part of the station, is intended to retain any potential odorant leakage. The construction of the sump is certified by an authorized laboratory.

Injection equipment enables odorant injection into the gas pipeline. It consists of isolating valves, backflow valve, filters and nipple with spray nozzle.



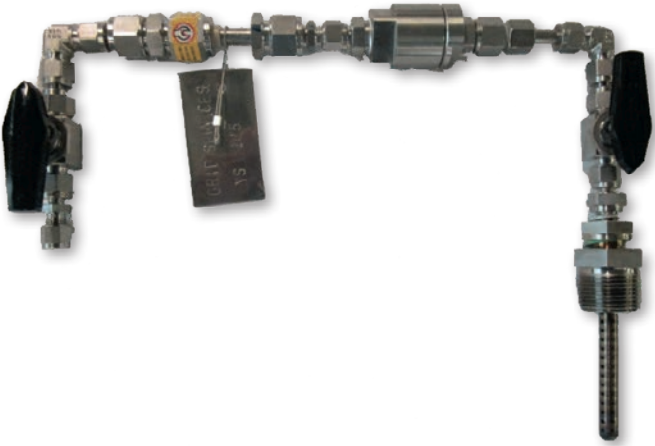
OD 4 control unit controls dosing pumps DC 041 and DC 06 on all manufactured odorization station types. It can be supplied in a separate cabinet or in switchboard panel design.



Types of odorant equipment	MOS 5	MOS 6
	Station in stainless casing, for outdoor installations	Station without stainless casing, for indoor installation (Zone 1)
Storage tank:	80 l	80 l
Dosing pump:	DC 06	DC 06
Control unit:	OD 4	OD 4
Odorized gas flow:	0–50000 Nm ³ /hr	0–50000 Nm ³ /hr
Dimensions (L x W x H):	1650 x 1050 x 2050 mm	850 x 650 x 1550 mm

Accessories

Basic types of odorization stations can be customized to suit customer’s specific needs and equipped with optional components. Advice regarding selected station type usage and its possible customization is available at the professional technical support team of the Odorization Stations Section.



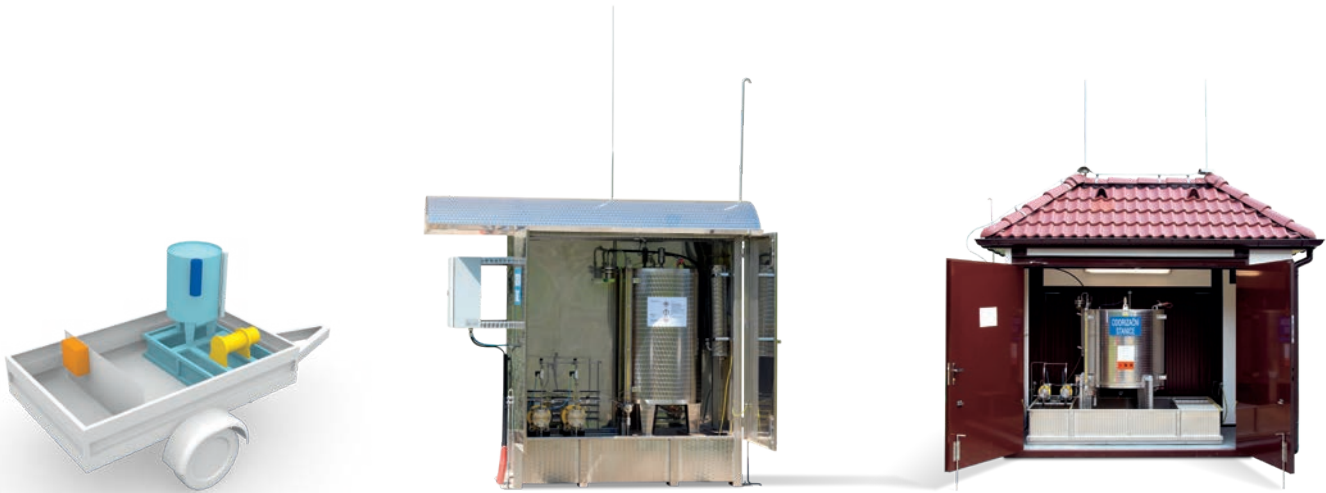
The injection nozzle ensures even dispersion of odorant and uniform concentration of odorant in the pipeline. It is especially suitable for smaller gas flows.

Anti-explosion fuse, intended for stations with an odorant capacity over 500 l, is inserted into the venting pipeline and prevents possible flashing of flame into the storage tank (for example in case of fire or lightning strike).

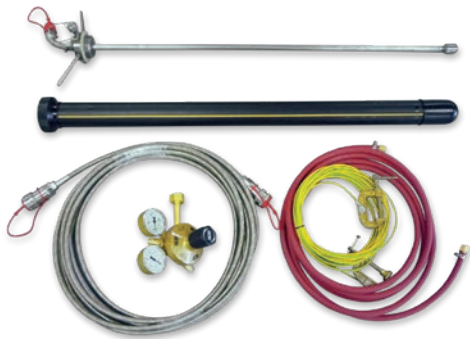


Odorant flow meter measures and evaluates exact quantity of dosed odorant while the control unit adjusts the dosed odorant volume with regard to the odorized gas flow.

Odorant overfill protection is an integrated device with a solenoid valve that automatically stops the odorant filling when the maximum level in the storage tank is reached. This ensures 100% safety of the odorization station against possible overfilling and subsequent leakage of odorant.



	MOS 7	AN 1-2 / AN C 1-2	B 1-2222
	Mobile odorization station for backup odorization	Station in stainless casing for outdoor installations, or without stainless casing for indoor installation	Station without stainless casing, for indoor installation
	50 l	250 l	900 l
	DC 041	DC 041	DC 041
	OD 4	OD 4	OD 4
	0–100000 Nm ³ /hr	0–200000 Nm ³ /hr	0–800000 Nm ³ /hr
	850 x 650 x 1400 mm	2350 x 1020 x 2200 mm	2500 x 1280 x 1900 mm



Equipment for odorant transfer into the storage tank from reusable or non-reusable vessels uses nitrogen with reduced pressure from pressure cylinder to transfer the odorant through an interconnection hose with non-drip couplings into the storage tank.

Type of station	Dosing pump – max. number of pieces		Storage tank volume	Dimension in mm (L x W x H)
	DC 06	DC 041	in Litres	in mm
MOS 5	1		80	1650 x 1050 x 2050
MOS 6	1		80	850 x 650 x 1550
MOS 7*	1	1	50	850 x 650 x 1400
AN**	1–2	1–2	250	2350 x 1020 x 2200
AN–C***	1–2	1–2	250	1800 x 700 x 1800
B**		1–8	900	2500 x 1280 x 1900

* The station can be adapted for mobile use.

** The station can be expanded with a storage tank of the same size.

*** Station without stainless steel cabinet.



	Dosing pump DC 06 / HT	Dosing pump DC 041 / HT	High pressure dosing pump VT 1P 25
Max. dosed volume:	0,6 l/h	2,5 l/h	12,5 l/h
Max. pressure:	64 bar	64 bar	250 bar
Min. dosing interval:	0,8 s	1,2 s	
Power consumption:	0,2 kW	0,75 kW	0,55 kVA
Power input:	230 V DC, 2 A	230 V DC, 4 A	3 x 400 V, 50 Hz
ATEX:	FTZÚ 05 ATEX 0169 Ex II 2G Ex e IIA T4 Gb Ex II 2G c IIA T4	FTZÚ 03 ATEX 0286X Ex II 2G Ex e IIA T4 Gb Ex II 2G c IIA T4	FTZÚ 03 ATEX 0160X Ex II 3G IIB T 3
Protection:	IP 65	IP 65	IP 65
Control:	control unit OD 4	control unit OD 4	control unit MH 06
Dimensions (L x W x H):	340 x 110 x 170 mm	450 x 170 x 190 mm	400 x 380 x 460 mm
Operating temperature:	type DC 06 -20 to +40 °C type DC 06/HT -40 to +50°C	typ DC 041 -25 to +35 °C typ DC 041/HT -40 to +50°C	

Dosing pumps DC 041 and DC 06 are electromagnetic membrane pumps, in model version for potentially explosive atmospheres of flammable gases and vapors – zone 1. Electromagnet creates pressure in hydraulic space of the pump for each dose and transfers this pressure into the space with the odorant over a stainless isolating membrane. The odorant dose then passes the backflow valve, dose sensor, and injection equipment into the gas pipeline. The dose can be increased or lowered as required by adjusting the electromagnet stroke. Dosing pumps enable reliable and accurate odorant dosing based on preset values.

High pressure dosing pump VT 1P 25 is intended for dosing of low viscosity liquids under high pressure (up to 250 bar). It is used for ethanol or methanol dosing into the gas pipeline. This is an electromotor driven plunger pump designed for environments with flammable gases and vapors explosion hazard – zone 2. The pump can be controlled by control unit OD 4 MH or MH 06, which controls dosing between 0.4 and 12.5 l/hour by changing the delay between individual doses.

Control unit OD 4 controls dosing pumps DC 041 and DC 06 on all specified odorization station types. All outputs from the control system are displayed on a clear four-line

display. Based on the gas flow data and required dosing, the control system calculates the frequency of pump pulses and checks correct function of the pumps based on the signals of the dose sensor or the signals of the odorant flow meter. It also enables both local and remote communication for the purpose of odorization station operation, checking of odorant level in the storage tank, and remote adjustment of the dose. It is supplied in wall mounted design, for installation in premises without flammable gases and vapors explosion hazard, and/or in switchboard panel design. OD 4 MH version is used to control injection unit MH 03.

Control unit MH 06 is intended for both local and remote control of units for methanol injection with dosing pumps VT 1P 25. It enables setup of required dosing, transmission of information about unit operation including signaling of faults and information about fluid level in the storage tank.



On the control units can be set manually or remotely the following operations:

- Dosing ON/OFF
- Increase / decrease of odorant dose in mg/Nm³
- Information about preset dose in mg/Nm³
- Information about real amount of odorant dose (if the odorant flow meter is installed)
- Information about odorant level (if the tank is equipped with continuous level gauge)
- System fault indication – dosing fault or transfer to odorization based on predefined flow value
- Operating fault indication – station out of order

Stations for methanol and ethanol dosing into natural gas

The stations are intended to inject methanol or ethanol into gas pipeline during production or injection of gas from/into underground gas storages in order to prevent water and hydrocarbon vapors freezing at low temperatures due to pressure change.

The pump output is equipped with dose monitor and with an injection device. Storage tank is equipped with optical level indicator for pump dose adjustment and inspection, by ventilation with anti-explosion fuse, by-pass level gauge, and continuous or limit level measurement. The filling orifice can be equipped with drip-free coupling for road tank unloading.

The unit can be equipped with up to three dosing pumps for injection into multiple nearby production wells.



	Injection unit MH 03	Injection unit MH 06
Max. injection quantity:	2,5 l/hr	12,5 l/hr
Max. pressure:	64 bar	250 bar
Dimensions (L x W x H):	1980 x 1270 x 1800 mm	3000 x 1600 x 2150 mm
Tank volume:	900 l	900 l
Pump:	DC 041 MH	VT 1P 25
Control unit:	OD 4 MH	MH 06

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