

# Reliable Solutions for the Oil & Gas, Petrochemical and Chemical Industries

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Maximum operational reliability for sensitive production processes

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# ProMinent – Solutions for Greater Efficiency and Safety

**The oil/gas petrochemical and chemical industries demand process and safety technology of the highest standard from their equipment suppliers. Productivity, quality and production safety are among the factors that determine a company's success. We measure our work against these factors and are working with innovative products, industry-specific solutions and services to achieve more efficiency and safety for our customers - worldwide.**

With its process metering pumps, ProMinent has been a reliable partner for the oil/gas, petrochemical and chemical industries for many years. As a global company, you can rely on us in every respect: from consultation to the implementation of the package solution and provision of worldwide support.

We can also support you from the outset, in terms of adapting to difficult applications conditions with complete application-orientated solutions which cover all of the process steps: from metering through control technology to the storage of inhibitors, drag reducers, additives, and other chemicals.

Worldwide applications experience, plus knowledge and expertise gained in practical applications, combined with the exceptional flexibility of our experts in meeting customer requirements, all ensure a smooth operation.

Personal proximity and committed service, global knowledge and expertise, many years of experience, and intensive research and development work – these are the strengths that ProMinent offers the oil/gas, petrochemical and chemical industries.



## Complete Solutions to Customer Requirements

- Complete, ready-to-run metering systems tailored to customer's specific requirements
- On-site commissioning on request
- Any customer requirement can be implemented quickly thanks to in-house manufacturing capability
- Range of simple, decentralised systems up to ATEX-compliant explosion-proof systems with connection to a process control system
- From proportional metering to complex systems with reaction tanks
- Also complete metering systems installed in walk-in containers, complete with heating and/or air conditioning
- Large capacity range and suitable for many types of chemicals

### ■ Installed in a container

#### Possible features

- Accommodated in a metering pump cabinet
- Panel or frame mounted
- With metering pump container and collection tank

#### Materials (other materials possible)

- PVC, PP, PVDF, PTFE
- Stainless steel
- Duplex stainless steel
- Hastelloy
- Alloy 20
- Titanium

#### Control systems on request

- Terminal boxes
- Relay control systems
- Compact controllers
- ProMinent® controllers
- PLC with operator panel and PROFIBUS® connection



## For Special Applications

**Special applications need special metering systems. We can provide special packages that are precisely tailor-made for our customers' processes specifically for the oil and gas industry: highly practical, attractively priced and extremely reliable.**

### Tasks

- Methanol injection in underground deposits and pipelines
- Glycol injection in gas drying plants
- Metering of various additives and inhibitors in oil and gas treatment, transportation and processing
- Injection of high-viscosity drag reducers (DRA) to reduce pipe friction in pipelines
- Injection of chemicals for conditioning of underground deposits

### Design

Conforms to current worldwide specifications:

- API 674 and API 675
- ASME, DIN, VDMA etc.
- Explosion-proof to ATEX
- Compliance with customised factory standards
- Versions of all components suitable for onshore and offshore applications
- Certified to ISO 9001

Based on its many years of experience, ProMinent is a reliable and competent partner for work involving the metering of liquids in the oil and gas industry.



## Specialists for Peak Performance

### ■ Diaphragm metering pump ProMinent EXtronic®

This series is approved for the metering of liquid media in gas-explosive operating sites as well as for firedamp-endangered mining operations. Proven liquid ends, either made of plexiglass, polypropylene (PP), PTFE Teflon® or stainless steel, depending on the requirements, guarantee the highest possible operating safety. The EXtronic® is factory mutual recognized and is both CSA and CE approved.



### ■ Hydraulic Teflon diaphragm metering pump ProMus

This series is a motor driven metering pump with a hydraulically actuated Teflon diaphragm. The plunger and diaphragm are hydraulically coupled and are precisely controlled by a mechanically actuated replenishment valve, which senses diaphragm position to admit coupling fluid as needed. The coupling fluid is continuously degassed to maintain accuracy. The drive case is protected from overload by a simple acting relief valve. Designed in accordance to the API 675 specification standards.



### ■ Diaphragm, hydraulic diaphragm plunger metering pumps Makro TZ and Makro/ 5

The right modular solution for every application, whether it be mechanical diaphragm pumps, high-tech hydraulic diaphragm pumps or extremely robust piston-type pumps. The low-pressure range – up to 145 psi – includes standard metering head versions in highly chemical resistant-plastics, e.g. PP, PVC, PTFE.



### ■ Hydraulic diaphragm metering pump ORLITA® MF

These pumps are modular in design and comprise transmission gear, crank and liquid end functions groups. The hydraulic diaphragm liquid end is equipped with a PTFE dual diaphragm system, as well as an integrated rupture indicator. An overflow valve protects the pump against overload.





#### ■ Hydraulic diaphragm metering pump Orlita® MH

Like the MF series, this pump can be used very flexibly however it is designed to work with the highest pressures (up to 43,500 PSIG). An overflow valve as well as an automatic vent valve for the hydraulic chamber are integrated in the pump end.



#### ■ Process diaphragm, process plunger TriPower®

Provides high performance with the smallest footprint. Delivers up to 10,030 g/hr at pressures of up to 5,800 psi, with the TriPower® P process plunger pump delivering up to 13,200 g/hr at pressures of up to 14,500 psi. The proven MF liquid end offers optimal safety with a PTFE dual diaphragm system and integrated overflow valve.



#### ■ Plunger metering pump Orlita® PS

Key features of the PS range of pumps are their exceptionally high hydraulic efficiency combined with outstanding self-cleaning and low pressure loss. PS pumps can be used in a wide range of temperatures (up to 750 °F) and are easy to maintain, attractively priced and robust.



#### ■ Valveless plunger metering pump Orlita® DR

Highly accurate metering of highly to extremely viscous media (up to 1,000,000 CPS). Even liquids with a high solid fraction are no problem for these valveless plunger metering pumps. Products with temperature of as low as -40 °F and up to +750 °F can be pumped with infinite 0-100 % capacity adjustment.



# Economical Package Solutions for the Chemical Industry

ProMinent offers economical package solutions for the handling of fluids in the chemical industry. This includes all the processes run through by a chemical in a company: from storing and transferring, to metering, measuring and controlling and ultimately to waste water treatment – everything from one-stop. With powerful process pumps and metering systems from ProMinent, the process and product quality can be optimised thanks to reliable metering. At the same time, the specific demands of the chemical industry and environmental protection can be met. Process safety during the metering and transferring of flammable, toxic, solids-containing or highly viscous fluids is guaranteed with a high level of availability.

## Examples:

- Laboratories: Metering of smallest quantities (0.0079 – 0.26 g/h) of heptane at 870 psi. Metering of water, toluene, and cyclohexane at 7250 psi and 0.026 – 0.26 g/h. Automatically controlled metering of organic solvents in extraction process, 3 x 10.567 g/h at 1450 psi
- Pilot plant systems: Metering of tar and pitch at 1450 psi and approx. 750 °F. Metering of diesel with polyethylene at up to 390 °F and 290 psi
- Production, e.g. plastics production: 6-end mixing pump for 6 different components with a metering quantity of 3.5 - 168 g/h at 29 psi. Addition of chemicals during caprolactam production with 580 psi at 320 °F
- Industry/process engineering: Metering of paraffin / amine at increased temperatures with a metering quantity of 317 g/h at 145 psi. Delivery and metering of resin at 390 °F. Metering of H<sub>2</sub>O + acetone + phenol
- Detergents/cleaning agents: Metering of soap compounds at 265 °F. Canning of skin care cream. Bottling of hair shampoo in bulk containers with an output of > 528 g/h
- Finishing chemicals paints/varnishes: System for metering and mixing of resins, paints, catalysts and hardeners with multiplex pumps. The largest liquid end meters 790 g/h, the smallest one approx. 2.4 g/h





- 1 Laboratory/basic research
- 2 Pilot plant system
- 3 Production, e.g. plastics production
- 4 Industry/process plants
- 5 Detergents/cleaning agents
- 6 Finishing chemicals paints/varnishes

- 1 Valveless plunger metering pump Orlita® DR
- 2 Diaphragm metering pump ProMinent EXtronic®
- 3 Multiplex metering pump
- 4 Process diaphragm, process plunger pump TriPower®
- 5 Plunger metering pump Orlita® PS
- 6 Hydraulic diaphragm metering pump Orlita® MH and MF
- 7 Hydraulic diaphragm metering pumps ProMus, Makro TZ and Makro/ 5

# Safe Complete Solutions for the Oil & Gas and Petrochemical Industries

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**ProMinent provides tailor-made solutions for all metering applications in the oil and gas industry: from pumps through skids and storage tanks to control equipment – all from a single source. That doesn't just save our customers around the world time and money but also guarantees them the one thing that really matters in oil and gas handling: the greatest possible availability.**

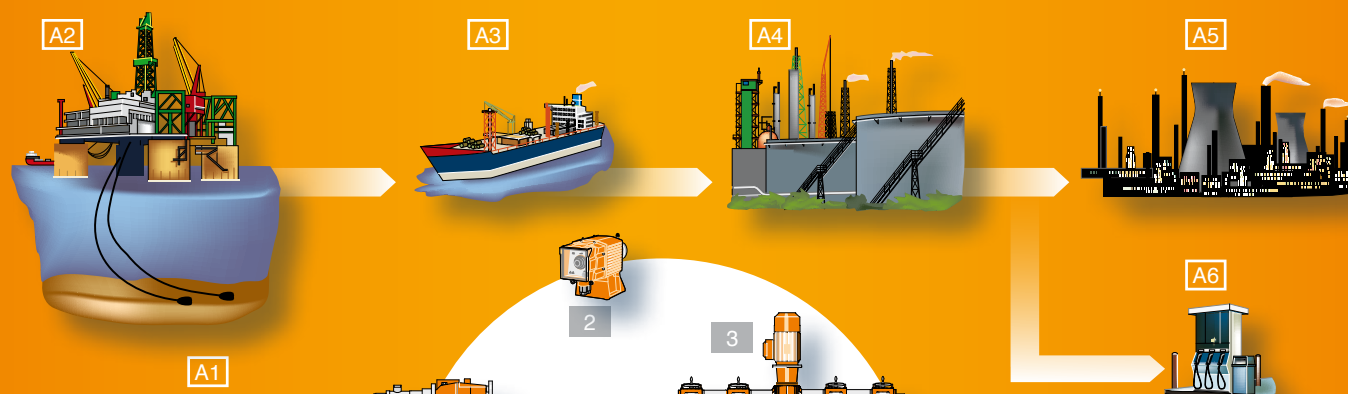
## **Oil industry**

- Wells: metering of various chemicals/MF, MH pumps
- Platforms: metering of inhibitors, methanol and additives/MF, MH pumps
- Transportation: metering of inhibitors, drag reducers, etc./all pump types
- Refineries: metering of inhibitors, additives, catalysts, colorants, etc./all pump types
- Petrochemicals: metering of various chemicals for support and initiation of chemical and physical processes/all pump types

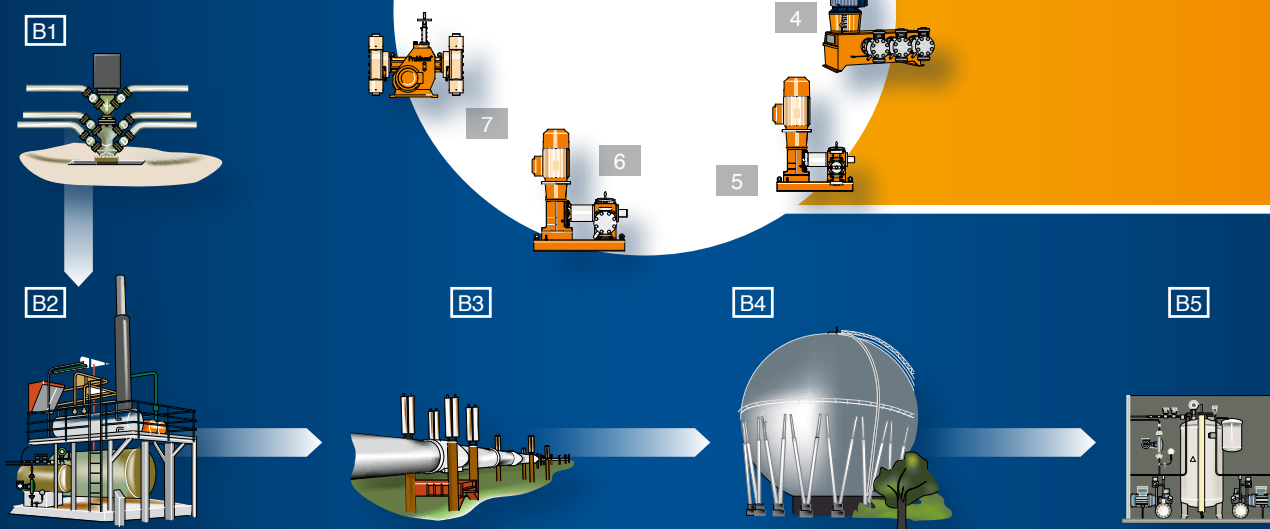
## **Gas industry**

- Wells: metering of various chemicals/MF, MH pumps
- Gas treatment/gas drying: metering of inhibitors, methanol and glycol/MF, MH pumps
- Transportation: metering of inhibitors, methanol etc. in gas pipelines and removal of residue from LPG tankers/MF, MH pumps
- Gas storage tanks, mainly underground: metering of methanol, glycol, acids and other chemicals/MF, MH pumps
- Local distribution: natural gas odourisation

**A**



**B**



**A Oil industry**

- A1** Well
- A2** Platform
- A3** Transportation (tanker, pipeline)
- A4** Refinery
- A5** Petrochemical
- A6** Filling stations

- 1** Valveless plunger metering pump Orlita® DR

- 2** Diaphragm metering pump ProMinent EXtronic®

- 3** Multiplex metering pump

- 4** Process diaphragm, process plunger pump TriPower®

- 5** Plunger metering pump Orlita® PS

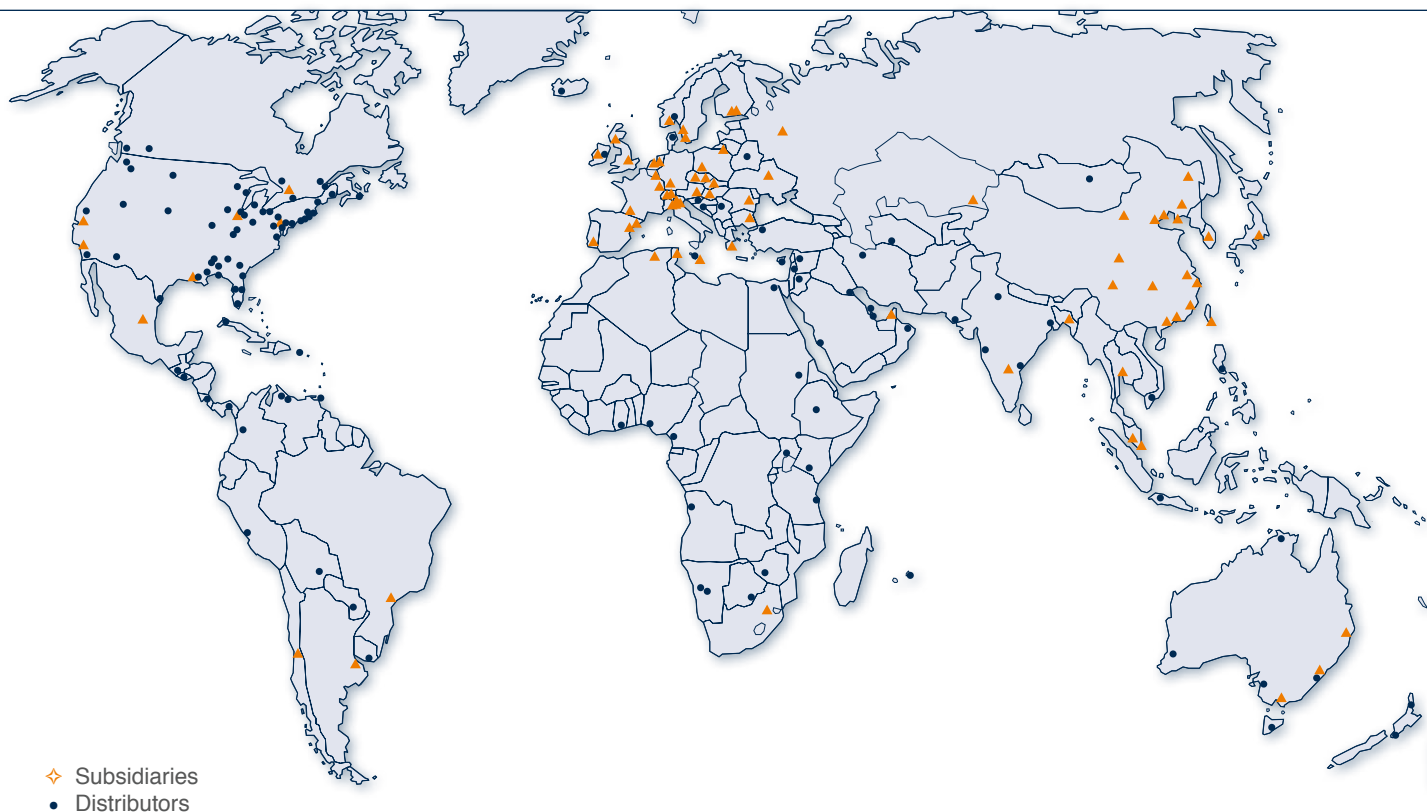
- 6** Hydraulic diaphragm metering pump Orlita® MF and MH

- 7** Hydraulic diaphragm metering pumps ProMus, Makro TZ and Makro/ 5

**B Gas industry**

- B1** Well
- B2** Gas treatment/gas drying
- B3** Transportation (tanker, pipeline)
- B4** Gas storage tank
- B5** Local distribution/odorisation





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