ORELL

Product Overview

Hydraulics
Hydrogen H_2
Refrigeration technology
Pressure shock absorption

HISTORY

Foundation of OLAER (Switzerland) AG
1969

1976
Move to the company building in Düdingen

Foundation of Olaer Austria GmbH in Haid (AT)
1990

1995
Certification according to ISO 9001

Foundation of OLAER CZ s.r.o
1997

2011
Water Business „Forced Flow“ patented

Parker Hannifin acquires the Olaer Group
2012

CONTENT

Foundation of OA-Technik GmbH in Wels (AT)
2015

Takeover of the majority shares by the new management
2020

Move to a new company building ORELL Tec Austria GmbH
2021

2013
Management-Buy-out

2019
Introduction of the new brand

2021
Change of company name, OLAER (Schweiz) AG becomes ORELL Tec AG

ORELL TEC

WE SECURE YOUR PROCESSES

Engineering, sales and service of products and systems for the storage, cooling and measurement of liquids - this is what we have stood for since 1969!

In addition to our main products in hydraulics, refrigeration and flow measurement technology, we have specialized for decades in the calculation of pressure surges, the production and supply of the corresponding pressure surge dampers for drinking water and wastewater systems.

During this time, we have acquired a broad range of application knowledge that you can use without restriction. With our engineering, we offer you tailor-made solutions that meet today's requirements.

Proven technology and continuous further development are the basis of our products and guarantee their reliability. Compliance with the applicable regulations, directives and standards with the corresponding declarations of conformity and approvals is a matter of course for us.
We also focus on customer satisfaction, safety and service.

CUSTOMER CONSULTING

INDIVIDUAL, PERSONAL AND SOLUTION-ORIENTED

On-site visit, project discussion and monitoring of the project through to realization.

After the needs have been recorded on site or over the phone, we analyze your requirements, wishes and the corresponding system requirements.

Based on our in-depth expertise, we advise you, by showing you various system options. show you. We then work with you to find the best solution.

Our specialists are supported by state-of-the-art design, calculation and simulation software - Design of the individual product/system taking into account the complete system data and its applications as well as for optimizations using the finite element method (FEM).

SERVICE

PROFESSIONAL MAINTENANCE - YOUR ADDED SAFETY

Preventive maintenance pays off! Prevent unnecessary, cost-intensive repairs, unforeseeable downtimes and sometimes serious consequential damage in advance. ORELL TEC takes over the planning, coordination and maintenance of your systems on site and ensures the operational reliability of your system-relevant infrastructure.

YOUR ADVANTAGES

- Calculable, transparent costs thanks to individually tailored service concepts
- Relief for in-house service personnel, no internal maintenance and planning costs
- Minimize system downtimes. Ensure system safety in the event of an emergency
- Securing investments
- Regular instruction, training or training courses for operating personnel on request
- Long-term partnership

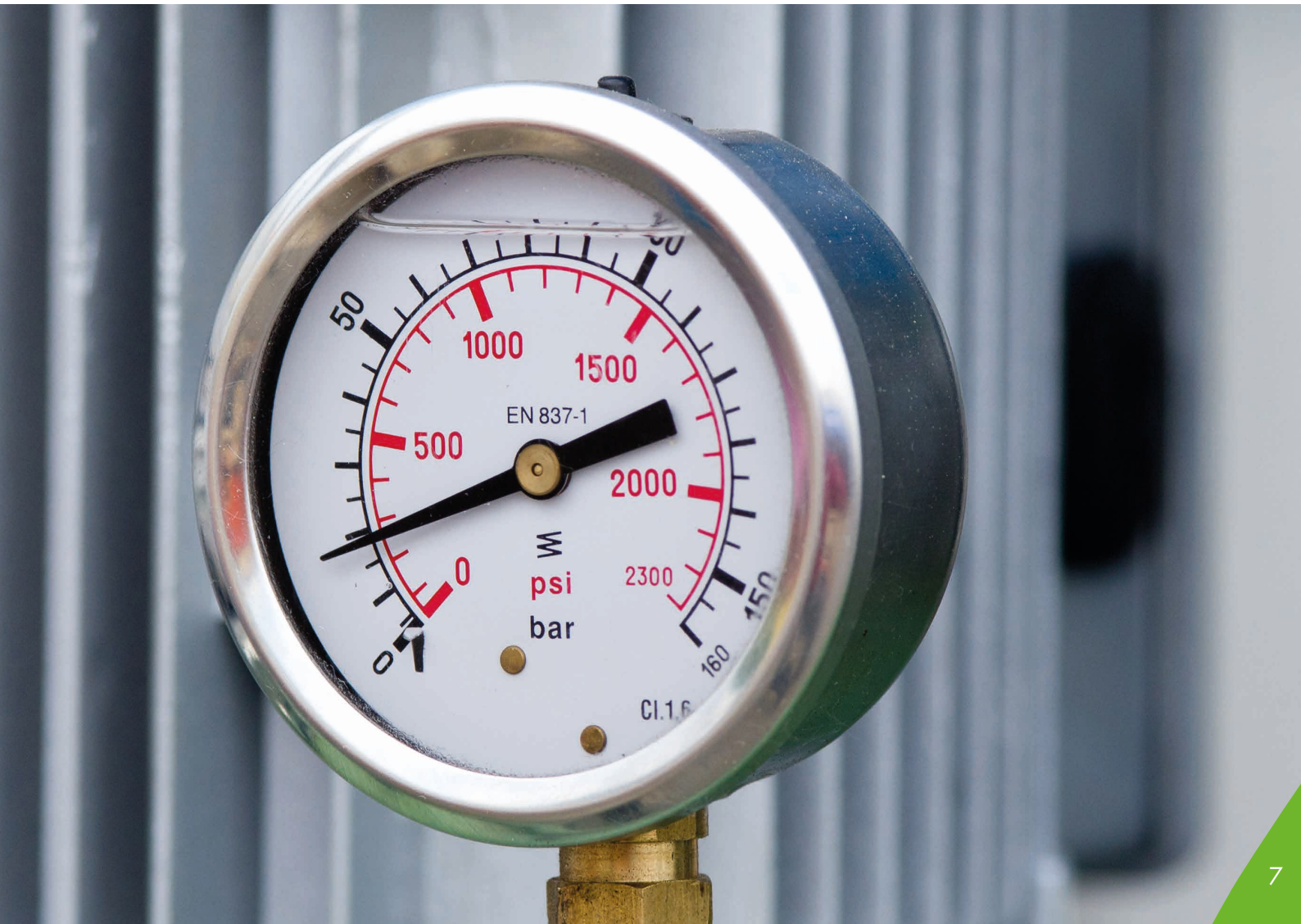
ORELL

HYDRAULICS

Since 1969 we have a extensive expertise in the development and implementation of hydraulic sub of hydraulic sub-systems for storing, cooling and measuring liquids.

We can rely on our high-quality components from our own production as well as products from our strong, long-standing partners.

From traditional industry to agricultural technology, energy and environmental technology through to the oil and gas industry our solutions are used.



HYDRAULICS Hydraulic accumulator technology

Our core competence for more than 60 years. Formerly known as OLAER, we now manufacture our own hydraulic accumulators under the brand name ORELL Tec in the usual high quality. We offer you a comprehensive solution with the necessary approvals, from individual standard accumulators from low pressure to high pressure, through to customer-specific accumulator levels.

Standard pressure bladder accumulator

Volume:	0.2 to 200 liters
Pressure:	up to 330/350 bar

Advantages

- Bladder accumulator with liquid valve, pressure vessel made of forged steel, seamless, robust gas valve, demountable
- Short delivery times due to large stocks
- Extensive international approvals (including PED 2014/68/EU, ASME U-Stamp, SELO, NR13, CU-TR)

High-pressure bladder accumulator

Volume:	2.5 to 57 liters
Pressure:	up to 760 bar

Advantages

- Bladder accumulator with liquid valve, pressure vessel made of forged steel, seamless, robust gas valve, removable
- Cheaper version of the piston accumulator for demanding applications
- PED 2014/68/EU or ASME U-Stamp approved

Low-pressure bladder accumulator

Volume:	0.14 to 10,000 liters
Pressure:	up to 100 bar

Advantages

- Standard 40 bar, 10 to 50 liters in stainless steel available from stock
- Individual and customized solutions
- Numerous international and maritime approvals (e.g. PED 2014/68/EU, ASME U-Stamp, SELO, NR13, CU-TR, DNV-GL, BV-Marine...)

Membrane accumulator

Volume:	0.075 to 3.5 liters
Pressure:	up to 350 bar

Advantages

- Short delivery times due to large stocks
- Excellent price-performance ratio

Piston accumulator

Volume:	0.1 to 1,500 liters
Pressure:	up to 3500 bar

Advantages

- Large selection of piston position indicators
- Extensive international approvals
  e.g. PED 2014/68/EU, ASME U-Stamp, DNV-GL, BV, ABS...)

Customized storage stations

Advantages

- Individual, customized solutions according to your wishes and specifications

HYDRAULICS Accessories

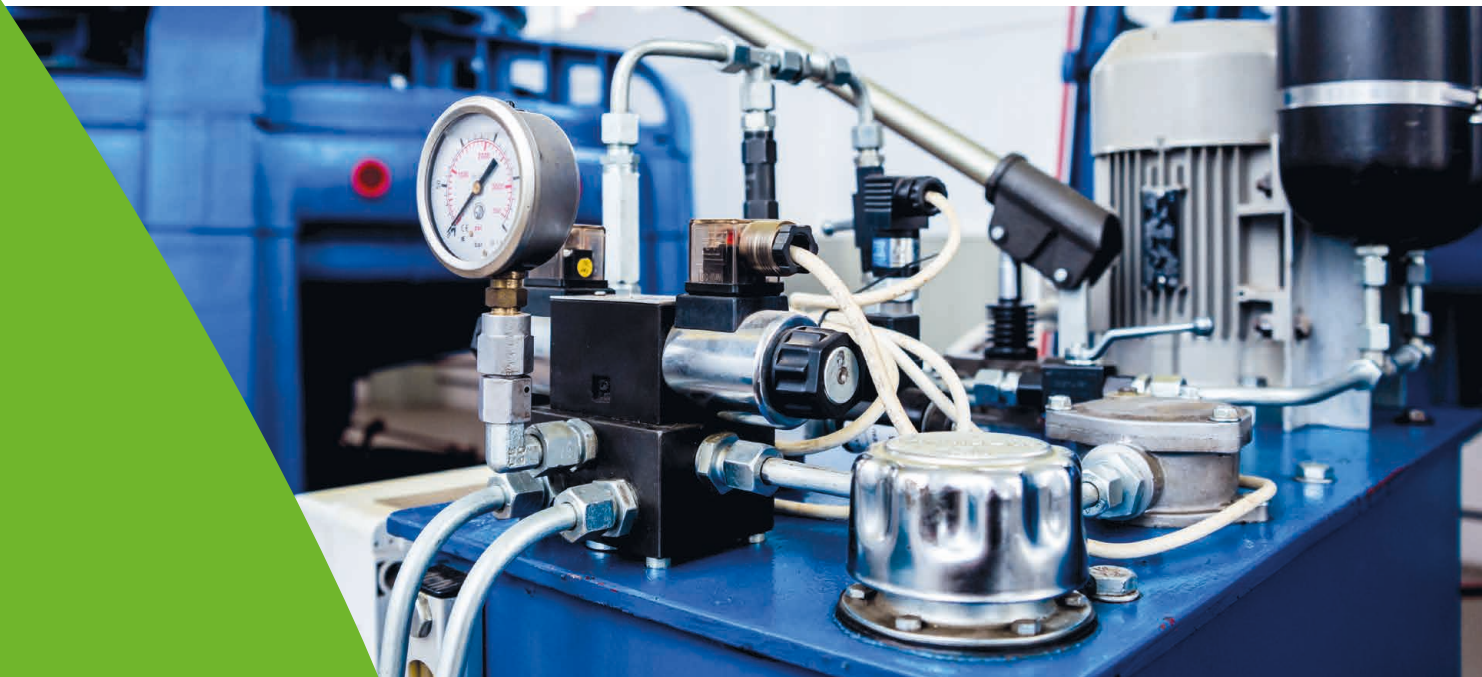
Nitrogen chargers

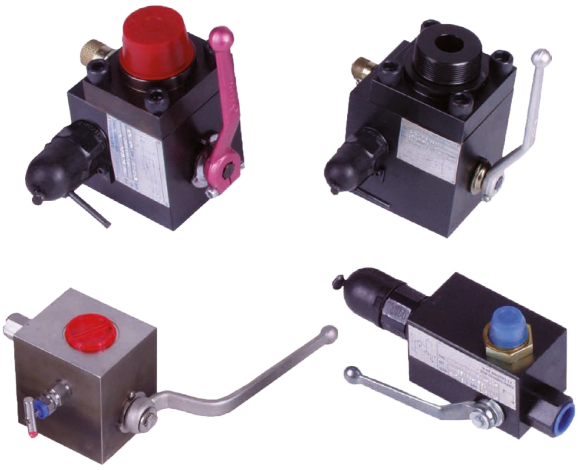
- Better utilization of nitrogen cylinders and filling up to 400 bar possible
- Commercially available nitrogen cylinders have a pressure of 200 bar. Hydraulic accumulators with a pre-filling pressure >200 bar can therefore not be filled from cylinders
- At pre-filling pressures between 100 and 150 bar, the nitrogen cylinders are not optimally utilized

Test and filling device / pressure reducing valves

Advantages

- For easy checking, filling and draining of hydraulic accumulators
- The test and filling device is screwed onto the filling valve and connected to the nitrogen source nitrogen source (with pressure reducing valve)
- No hose is required for nitrogen monitoring or reduction





Safety and shut-off blocks

Safety and shut-off units from ORELL are used to enhance safety, block and balance the pressure of hydraulic accumulators and consumers. They meet the safety regulations for hydraulic accumulators in the various countries, in particular the pressure vessel regulations in force in Germany.

Depending on the version, the presssure in the accumulator and/or consumers is balanced manually or electrically using a solenoid-operated two-way valve. A current control valve that regulates the amounts of pressure fluids in or out can also be installed.

Oil service units, particle counting (monitoring)

Advantages

- Simple filling of hydraulic and lubricating oil systems and cleaning in the bypass flow
- Reduction of the risk of damage to the system due to dirt particles and minimization of the service costs
- Exact control

Hydraulic filter

Oil purity is a basic requirement for reliable system functions.
A wide-ranging program with suction, pressure, high-pressure, return, bypass and ventilation filters in optimally graded sizes and finenesses guarantees the right filter for every application:

- Suction filters
- Spin-on
- Pressure filters
- Filler strainers
- Return-flow filters
- Return-flow suction filter
- Partial-flow filter
- Breather filters

HYDRAULICS Pumps and coolers

Low pressure pumps

Delivery rate:	20 to 80 l/min
Pressure:	up to 10 bar
Nominal sizes:	80, 90, 100, 112

Advantages

- Compact, lightweight gerotor circulation pumps with high performance, low noise level and low energy consumption
- Safe operation due to double shaft bearing and elastic connection

Air/Oil cooler

Advantages

- For reducing and stabilizing the operating temperature in hydraulic and lubrication systems and cooling circuits
- Quiet thanks to selectable fan speeds
- Optionally with three-phase, direct current or hydraulic motor
- Off-line cooler LOC (three-phase motor + integrated circulation pump) enable constant volume flow in the bypass flow without pressure surges

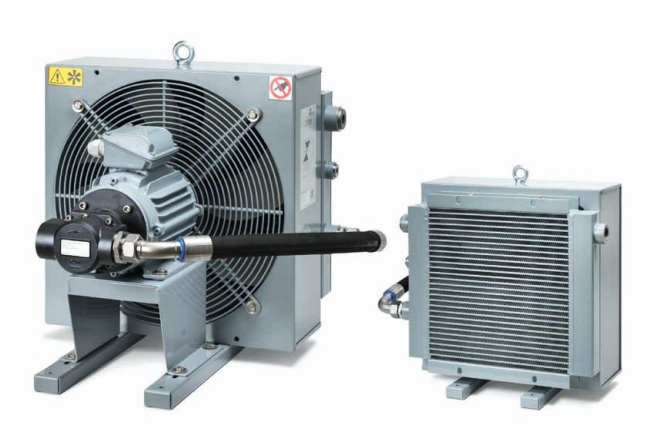


Plate cooler

Execution:	soldered or screwed
Pressure range:	30, 45

Advantages

- Brazed plate heat exchangers - efficient solution for hydraulic systems and cooling circuits
- Screwed version for cleaning purposes
- Compact design - available in various materials (AISI 304, AISI 316, SMO 254, titanium, copper or nickel plumb bobs).
- Double-walled safety design possible to prevent the media from mixing

Customized cooling units

Execution: based on customer requirements

Advantages

- Selection of the best possible components for the customer application
- Special designs: Skids with several plate heat exchangers including changeover valves, special tank-pump units, passive cooling units for tank-pump units, passive cooling units for integrated solutions

HYDROGEN Storage

Standard or customised, we offer solutions for the storage of compressed hydrogen.

With the help of a highly qualified team, we develop and realise innovative projects in the field of gas and hydrogen storage that meet the highest quality and safety standards.

Using filament winding technology, we offer type II gas cylinders up to 1000 bar.

Vertical bundles with 1 to 16 cylinders

Safe solution for vertical storage of gas cylinders.
For an easy access and handling of gas cylinders.

Advantages

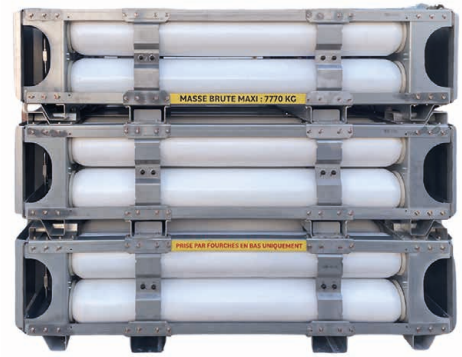
- Forged steel cylinders
- Pressure range up to 1000 bar
- Volume per cylinder 53 or 57 litres
- With inline valves, safety valves, pressure indicator and maintenance valves

Horizontal bundles with 12 to 48 cylinders

Safe solution for horizontal storage of gas cylinders.
For an easy access and handling of gas cylinders.

Advantages

- Forged steel cylinders
- Pressure range up to 1000 bar
- Volume per cylinder 53 or 57 litres
- With inline valves, safety valves, pressure indicator and maintenance valves



Horizontal bundles according to TPED

Safe solution for the transport and horizontal storage of gas cylinders.

Advantages

- Short delivery times
- Modularity to increase storage capacity
- Ready-to-use solutions - plug and play
- Forged steel cylinders
- Pressure range up to 500 bar
- Volume per cylinder 50 litres

ORELL REFRIGERATION TECHNOLOGY

Our range of standard products is designed for different applications. This gives us a wide range of options to meet the different requirements of our customers.

Every unit is made from high-quality raw materials, and we attach great importance to a long product lifetime, maximum energy efficiency and a low environmental impact. Our technical department has specific expertise for different sectors, enabling us to guarantee first-class support throughout the entire project, from project development to implementation. We deliver tailor-made solutions based on our customers' wishes and needs.

Chiller

Enclosure air conditioning

Air conditioners

Chiller

Active process cooling systems

Cooling capacity: 0.9 kW to 150 kW

Target value accuracy: +/- 0.1 K to +/- 2 K

Advantages

- Industrial coolers for process cooling for stable process temperatures
- For coolants: Water, water-glycol, emulsion, lubricating and hydraulic oils
- Optionally available with tank and circulation pump. Air-cooled or water-cooled versions

Tailor-made blast chillers

Cooling capacity: 150 kW to 1500 kW

Low GWP refrigerant: R513A, R32, R290, R454B, R1234ze

Advantages

- Large chillers for outdoor installations for industrial cooling applications
- Verschiedene Kältemittel (niedriger GWP), unterschiedliche Kompressortypen (Scroll, Schraubenkompressor mit Inverter-antrieb) oder TurboCor (ölfreier Kompressor)

Outdoor cooling systems with Free Cooling

Cooling capacity: 100 kW to approx. 1500 kW

Alternative refrigerants with low GWP:
R513A, R1234ze, R32, R290, R454B

Advantages

- Large chillers with integrated kit for free cooling for industrial and commercial applications
- Sustainable energy saving
- Available in different versions:
  with integrated Free Cooling kit, various refrigerants with low GWP, different types of compressors (scroll, inverter-driven screw compressor or oil-free TurboCor compressor)

REFRIGERATION TECHNOLOGY

Enclosure air conditioning

The correct enclosure operating temperature is a prerequisite for high operational reliability and a long service life for the electronics. The electronics in today's control technology are becoming ever smaller and more powerful. As a result, the installed power losses in the control cabinets are increasing. However, the sensitivity of the electronic components in the control cabinets to temperature and external influences such as dust and moisture is also increasing.

It is therefore necessary to have an uniform, stable temperature distribution in an enclosure. The correct enclosure operating temperature is the prerequisite for a long service life of the electronic components. Downtimes are avoided. Because: downtime of a production plant means production downtime, and production downtime is always associated with high costs. The correct operating temperature in an enclosure is between 30 and 50 °C, depending on the components installed. For the designer or electrical engineer, the question of temperature behavior in the subsequent application area already arises during the design and development phase.

Air conditioning units for enclosure cooling

Cooling capacity:	300 to 15,150 W
Assembly methods:	on the side (wall/door) or on the roof

Advantages

- Stabilization of operating temperatures in enclosures
- Achieving a high level of operational reliability and a long service life for the installed electrical components

Air-to-air heat exchanger

Heating capacity: 22 to 80 W / K

Advantages

- Two completely separate air circuits
- Installed components are protected from external influences
- Heat exchanger package transfers the heat absorbed from the enclosure to the cooler ambient air

Air-water heat exchanger

Cooling capacity: 1,000 to 15,000 W

Assembly methods: Wall or roof structure

Advantages

- High degree of protection up to IP55
- Heat in the control cabinet is dissipated via the customer's cooling water
- The waste heat does not remain in the room

Filter fan / Roof fan

Air performance: from 36 to 4,520 m3/h

Advantages

- Filterfans in combination with identical outlet filters guarantee stable temperatures in the enclosure
- Dissipation of small heat outputs
- Limitations of filter fans: environments with high levels of dust, humidity or chemical substances; better: use of air-to-air heat exchangers

FLOW MEASUREMENT TECHNOLOGY

Our flow meters are ideal for measuring, dosing, controlling, regulating and monitoring liquids and gases. We offer customized solutions for individual measuring tasks, always with a focus on the greatest possible customer benefit.

Our product portfolio ranges from mechanical meters such as turbine or oval gear meters to electronic flow meters such as the ultrasonic measuring principle or electromagnetic measuring principle. With our ultrasonic clamp-on meters, we measure the flow in pipelines from the outside without opening the pipeline system. We also offer various services, such as test measurements, rental service, support with installation and commissioning.

With our product portfolio, we are able to offer measuring devices for almost all measuring tasks in flow flow measurement technology.

- Magnetic flow meters
- Turbine meter
- Oval gear meter
- Ultrasonic flowmeters
- Displays

Electromagnetic flow meter

Nominal sizes:	from DN 15 to DN 2000 (calibrated)
Flow range:	0.025 – 10 m/s
Temperature range:	0 – 150°C
Pressure range:	from PN 6 to PN 40

Advantages

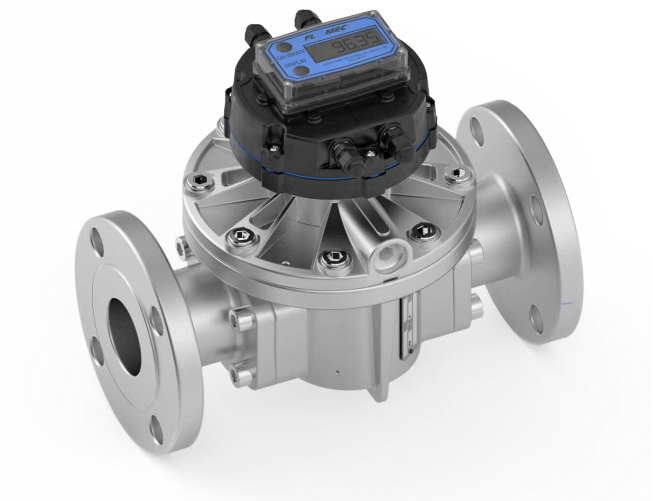
- Available in various materials
- With MID approval
- Low investment and operating costs
- Measuring accuracy ± 0.15% of the measured value
- Non-invasive, no moving parts that wear out
- Low maintenance and repair costs
- Optionally with ATEX approval

Precision turbine meter

Nominal sizes:	from 1/2" to 4"
Flow range:	1,00 to 4,500 l/min
Temperature range:	-268 °C to 426 °C
Pressure:	3.40 to 340.00 bar

Advantages

- Measuring device designed for thin liquids < 100 cp
- Internal parts are easy to replace for simple maintenance
- Lithium battery life: 5 years



Precision oval gear meter

Nominal sizes:	from 1/8" to 4"
Flow range:	0.02 to 2,500 l/min
Temperature range:	40 °C to 150 °C
Pressure:	5 to 400 bar

Advantages

- High accuracy and repeatability, direct volumetric reading
- Measures liquids with high and low viscosity
- Optional Exd I/IIB approval (ATEX, IECEx)

FLOW MEASUREMENT TECHNOLOGY

Displays

Available communication options

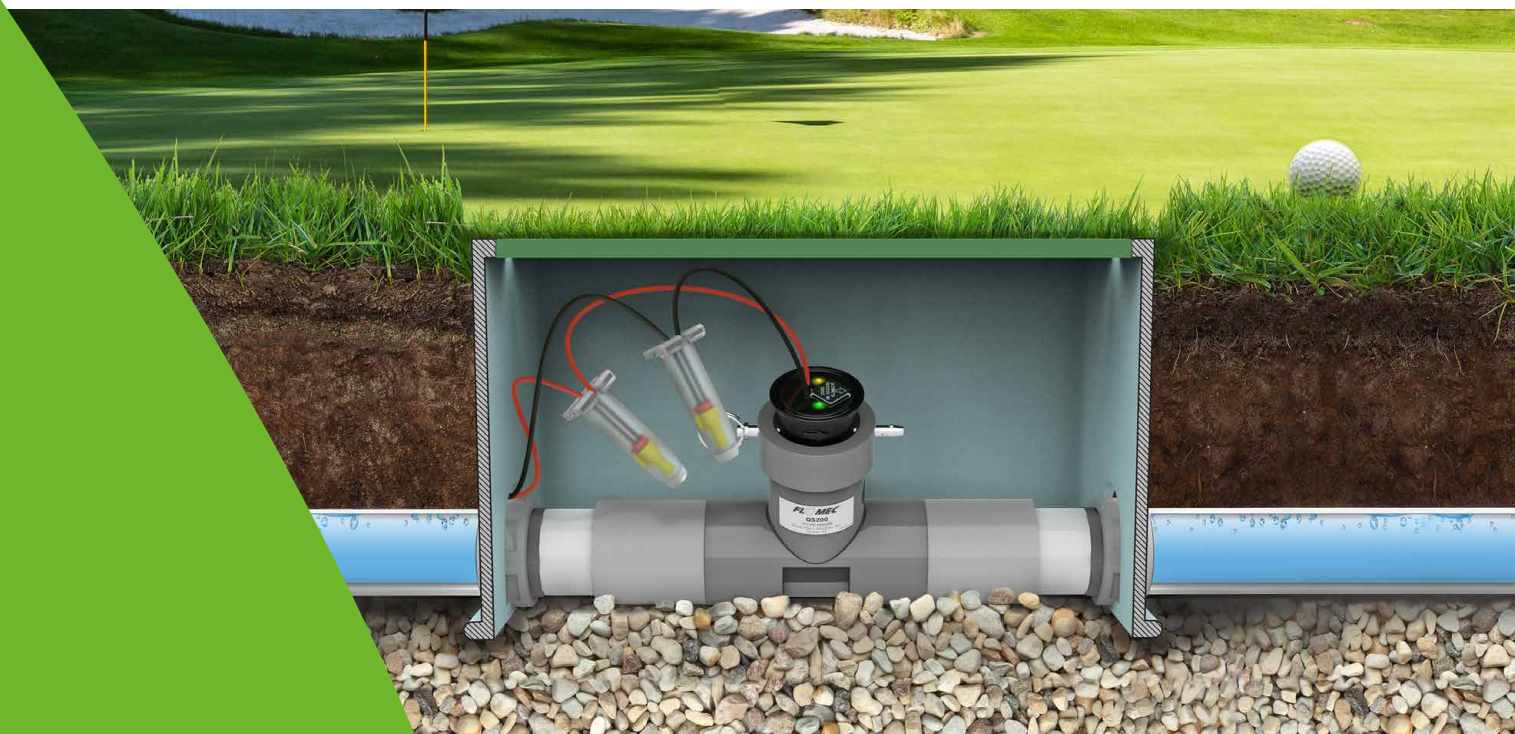
- Modbus® RTU and BACnet® MS/TP Integrated Bluetooth® wireless technology
- External programming FLOMEC® app available for mobile devices
- Receive firmware updates on site
- Standard process outputs: Pulse output and 4-20 mA data logger
- Temperature inputs BTU (heat) calculator

Installation of ultrasonic flow meter

Nominal sizes:	from DN 150 to DN 300
Flow range:	0.03 to 4.6 m/s
Temperature range:	0 – 60°C
Pressure:	10 bar at 23°C

Advantages

- Suitable for irrigation systems
- Low investment and operating costs
- Measuring accuracy ± 2% of the measured value
- Non-invasive, no moving parts that wear out
- Simple tool-free installation



Clamp-on ultrasonic flow and energy meter

For nominal pipe diameters:	DN 13 – DN 2000
Flow range:	0.1 to 20 m/s
Temperaturbereich:	-20 to +200°C

Advantages

- Cost-effective, fast and non-invasive installation
- Low investment and operating costs
- Measuring accuracy ± 0.5 to ±3 % of the measured value
- Low maintenance and repair costs
- Can be used on various pipe materials
- With integrated data logger

Portable clamp-on ultrasonic flow and energy meter

For nominal pipe diameters:	DN 13 – DN 2000
Flow range:	0.1 to 20 m/s
Temperaturbereich:	-20 to +200°C

Advantages

- Integrated data logger (CSV file)
- For mobile use
- Measuring accuracy ± 0.5 to ±3 % of the measured value
- Cost-effective, fast and non-invasive installation
- Can be used on various pipe materials

Doppler ultrasonic flowmeter for contaminated media

For nominal pipe diameters:	DN 13 – DN 4500
Flow range:	0.03 to 12.2 m/s
Temperaturbereich:	-40 to +150°C

Advantages

- Optional: Data logger / ATEX approval
- For contaminated or bubbly liquid media
- Measuring accuracy ± 2 % of the measured value
- Cost-effective, fast and non-invasive installation
- Can be used on various pipe materials

ORELL PRESSURE SHOCK ABSORPTION

A pressure surge is a brief high pressure increase or pressure drop. It lasts only fractions of a second, whereby the pressure peaks that occur can reach a multiple of the operating pressure. The resulting peak values can occur both as positive pressure and as negative pressure (cavitation). The propagation speed of the pressure waves can be up to 1400 m/s and depends on the material and wall thickness of the pipe.

Pressure surges can occur in any piping system, whether when pumps are switched on or off, in the event of a power failure in pumping stations, when hydrants are used in extinguishing lines, in filling or dosing systems (concrete production, chemical plants, industrial laundries, etc.). Pressure surges can cause damage to built-in instruments and fittings, burst pipes, noise and vibrations as well as loosening or leaking joints.

Pressure surges can, however, be prevented. In any system in which pressure surges are expected or already present, they can be prevented by installing a correctly dimensioned and low-maintenance ORELL Tec damper.

Drinking water

Raw waste water

Pressure maintenance and expansion vessels

Level display

Non-return flaps

Venting

Pressure shock absorber for drinking water

Volume:	50 to 5,000 liters standard Sizes up to 35m³ on request
Pressure:	16, 25 and 40 bar standard other pressures on request
Execution:	Steel protected or stainless
Bladder material::	depending on the liquid

Advantages
With patented forced flow and SVGW/DVGW approval, in vertical and horizontal versions.

Pressure shock absorber for raw waste water

Volume:	100 to 5,000 liters standard Sizes up to 35m³ on request
Pressure:	10, 12 and 25 bar standard other pressures on request
Execution:	Steel protected or stainless

Advantages
Without bladder with float switch.

Pressure maintenance and expansion vessels

Volume:	100 to 5,000 liters standard Sizes up to 35m³ on request
Pressure:	16 or 25 bar other pressures on request
Execution:	Coated steel other versions on request
Bladder material:	depending on the liquid

Pressure maintenance vessels are used to maintain pressure in pressure boosting systems and to optimize the start-up of pumps. Expansion vessels absorb the expansion of media during temperature fluctuations.

PRESSURE SHOCK ABSORPTION

Pressure shock and pulsation dampers

For domestic and industrial installations

These dampers are used to prevent pressure surges in sanitary installations (e.g. in kitchens, bathrooms, laundry rooms, etc.) caused by the rapid closing of mixer taps or valves.

They are also used as pressure maintenance and expansion vessels in the heating sector and as energy storage and pulsation dampers.

Volume range from 0.1 to 50 liters, pressure range up to 64 bar.

Level indicator

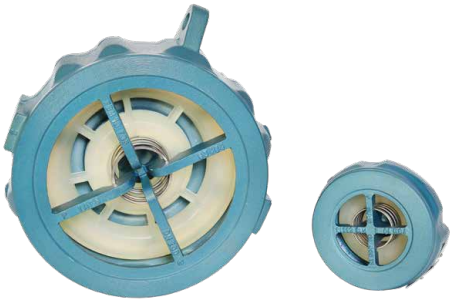
The digital level indicator makes it easy to monitor the water level in the pressure shock absorber.

The water column in the tank is displayed in centimetres via a differential pressure measurement. The display unit is powered by an internal battery or via an interface with an external power supply for permanent monitoring.

The separating diaphragm in the pressure sensor prevents the nitrogen from escaping when the water is drained from the tank.

Non-return flaps without flap impact

The non-return valves are available for pipe diameters from DN 80 to DN 1800 and operating pressures from PN 10 to PN 50.



Combination air valves for drinking water

Ventilation:	55 m3/h to 27,000 m³/h other ventilation capacity on request
Pressure stage:	6, 10, 16 and 25 bar standard other pressures on request
Connections:	Thread or flange

Advantages

Various requirements are placed on air release valves. They are primarily used for venting when filling and emptying pipes. However, they should also degas under pressure.

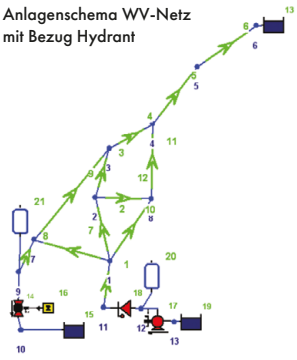
Combination air valves for waste water

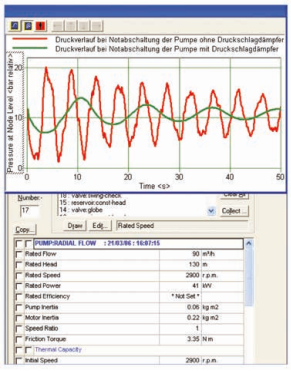
Ventilation:	72 m3/h to 2,500 m³/h other ventilation capacity on request
Pressure stage:	6, 10, 16 and 25 bar standard other pressures on request
Connections:	Thread or flange

Advantages

Various requirements are placed on air release valves. They are primarily used for venting when filling and emptying pipes. However, they should also degas under pressure.

Anlagenschema WV-Netz
mit Bezug Hydrant





Water hammer calculation

From the analysis to the solution!

Using our flow simulation software, we calculate and simulate the actual state of your system with regard to the pressure variations that occur (pressure surges, negative pressures).

A proposed solution is developed - all from a single source.

System diagram of water supply network with hydrant reference

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