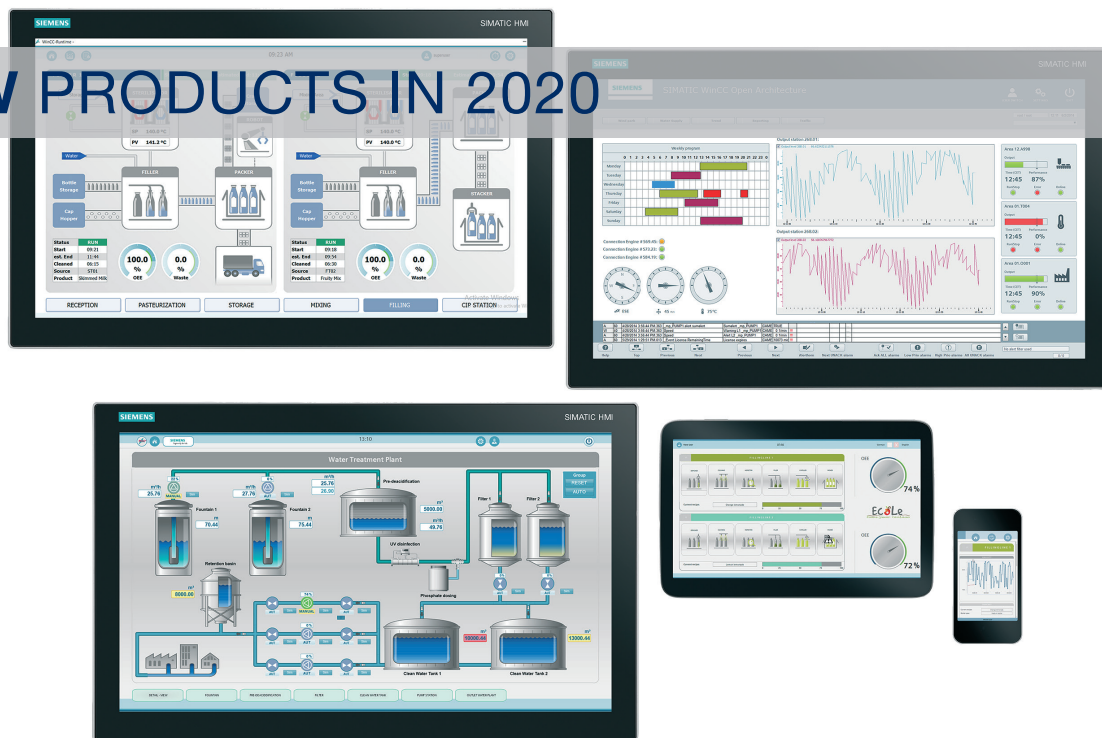


PRODUCT OVERVIEW

PRICE LIST 2020



NEW PRODUCTS IN 2020



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PROGRAMMABLE LOGIC CONTROLLER (PLC)

Many industrial applications require connection of the water treatment unit to the central process control system. The established microprocessor controller RO digital from Herco already offers the option to connect to higher-level process control systems via Profinet interface.

From now on, we can supply the reverse osmosis (UO) series UO-D ND, UO-D AS, UO KR, UO ND/P and UP independent of their standard controller with a PLC Siemens S7-1200 as a standardised option. This allows the process to be visualised and the unit to be completely integrated into an existing SCADA system on the client's side.

For more information, see page 27 and for the article description, see page 33.

NANOFILTRATION

The use of nanofiltration (NF) offers clear benefits compared to reverse osmosis (RO) in many applications. Nanofiltration membranes reject mainly divalent ions, so that the process results in a partial demineralisation of the feed water. The main advantages of this technology include:

- » Significantly lower energy costs of NF compared to RO
- » Partial softening without the use of chemicals
- » Retention of microorganisms (hygienisation)

We are pleased to be able to offer you our reverse osmosis units also in the nanofiltration version. Please contact us for details!

COOLCONTROL DATA

The 42nd BImSchV (Federal Immission Control Ordinance) established stricter requirements for the control of cooling circuits. We have developed our new blowdown controller Cooltroll data to comply with these requirements. The new controller has the same range of functions as the tried and tested blowdown controller Cooltroll and additionally allows data to be stored and read out using a micro SD card.

For more information, see page 60 / 61.

ECONOMY BRINING

Full brining of softeners is suitable for industrial applications, which require the soft water to have a residual hardness < 0.1 dH. However, our softening units are also used in commercial applications, where a certain residual hardness is acceptable or even desirable (and can be adjusted for example with a blending device).

Economy brining offers a monetary benefit: While the brining rate for regeneration is reduced by 40 %, the capacity of the softener is only lowered by 25 %. We offer you economy brining as an option for the softener series ECOTROL-E starting from unit size 200.

For more information, see page 13 / 14.

Nanofiltration

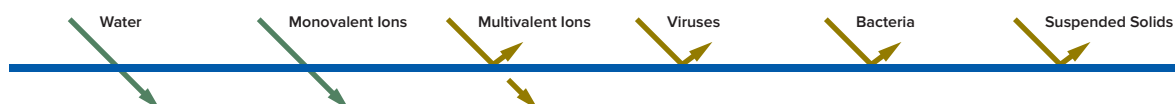


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Changes and errors excepted, illustrations may differ from the original (03/2020). **Price list is valid from 01.06.2020.**

FIELDS OF ACTIVITY



LASER COOLING TECHNOLOGY

State-of-the-art, high-efficiency lasers produce a lot of heat. This heat has to be dissipated in order to prevent components from overheating. Water cooling guarantees long-term laser wavelength precision and thus the desired laser beam quality. Thermal stress on the laser system is considerably reduced. Destillo demineralisation cartridges supply DI water of uniformly high quality, such as is needed for laser cooling.

COOLING WATER

The appropriate water treatment for an optimal operation of cooling circuits depends on the cooling technology used. In addition, new challenges regarding microbiological pollution have to be met because of the 42nd BImSchV (Federal Immission Control Ordinance), which make it necessary to regulate and monitor the cooling water with coordinated dosing and blowdown technology. In addition to hygienic softening and reverse osmosis plants, we also offer a blowdown control system with documentation function.

BOILER FEED WATER

Insufficient treatment of boiler feed water can cause operational problems of the boiler due to scale deposits, corrosion and waste of energy. In the worst case this leads to failure of the boiler. When it comes to operating costs, reverse osmosis units generally pay off, especially when energy cost plays an important role. We will be pleased to prepare an ROI calculation for you.

AIR CONDITIONERS, AIR WASHERS, HUMIDIFIER SYSTEMS

In building complexes such as open-plan offices and shopping centres, a continuous supply of fresh air is essential. For this purpose, air conditioning units (AC units) are used, which require upstream water treatment. Our counter-pressure reverse osmosis systems are specifically designed for this application. Often the contamination of AC systems must be avoided. We supply environmentally friendly UV disinfection systems for this purpose.





CAR WASHES

In order to avoid water stains on vehicles, the last rinse in a car wash is usually carried out with demineralized water. Depending on the water consumption and the requirements of the car wash manufacturer, Herco offers a combination of reverse osmosis technology and upstream water softening. Washing systems for buses, cabs and trains also need water treatment tailored to the washing station and the feed water.

ULTRAPURE WATER

Many industrial processes have special requirements with regards to water purity and water treatment equipment. In many cases, several treatment steps (e.g. reverse osmosis and electro-deionisation) have to be combined to obtain the required water quality. For instance, boilers with turbine operation require feed water with a conductivity $< 0.2 \mu\text{S}/\text{cm}$ and silica content $< 20 \mu\text{g}/\text{l}$.

PROCESS WATER

In many production processes, water is recirculated and treated between the individual production steps in order to increase economic efficiency.

Herco offers more than 25 years of experience with plants for the treatment and circulation of process water for a wide range of applications. The savings in water, energy and chemicals allow operating costs to be reduced considerably, which means that the plants pay for themselves in a very short time.

Typical application for process water treatment are painting, coating, electroplating and final cleaning in the optical industry or flat glass production.



FOOD & BEVERAGE

Requirements in the food and beverage industry are varied and need to be met responsibly. For example, RO permeate is used to dilute coca cola concentrate or to produce allergen-free water for baby food. In most cases, the production of brewing water also requires water treatment.

Herco customers benefit from our comprehensive catalogue along with our experience in made-to-measure system design. We help you find the perfect solution, supplying equipment suitable for your special application.

SURFACE WATER

For some industries, water from rivers and lakes is a cost-effective alternative to using city water. In this case, treatment is required before use.

By means of ultrafiltration, these water sources can be used, thereby lowering operating costs. Dirt particles are filtered out and the biological pollution of the water is reduced. The filtrate can be used directly or, if required, further treated by reverse osmosis.

BRACKISH AND SEA WATER DESALINATION

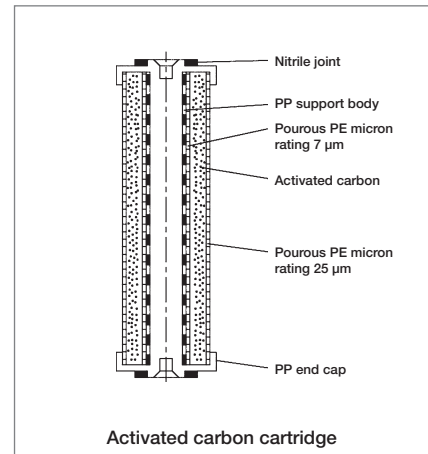
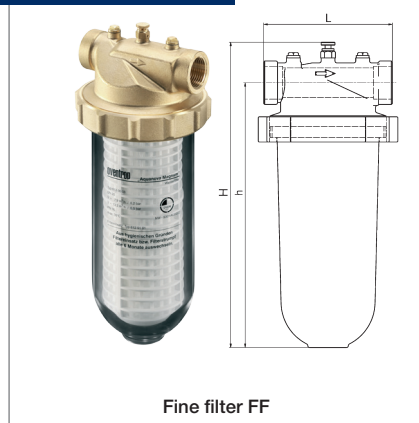
In arid areas near to the sea, drinking water can be obtained by desalination of sea water or brackish water. Salt concentration must be reduced from 45,000 ppm for sea water and from 5,000 ppm for brackish water to 500 ppm.

Herco supplies special reverse osmosis plants for this purpose which are characterised by a particularly high resistance to corrosion. Brackish water desalination plants can also be used for well or process water with high salt contents.



FINE FILTERS AND ACTIVATED CARBON FILTERS

DVGW approval



FINE FILTERS

APPLICATIONS

Rust and dirt particles, sand grains, scale and installation debris are held back, thus avoiding contact corrosion in the piping system and valve malfunctions.

For hygiene reasons, filter maintenance needs to be carried out at least once every 6 months, or earlier if the dirt deposits on the filter cartridge require this.

DESIGN

The water filter consists of

- » Housing made of Trogamid T (shock-proof, pressure surge resistant, permanently transparent, stress-resistant)
- » Cartridge made of polyamide support body with nylon fabric
- » Brass head piece and union nut
- » Connection for differential pressure gauge

All materials used are physiologically sound and comply with the German drinking water regulations. DVGW approval is available.

Fine filters FF

DIN / DVGW tested and approved – threaded connection 1" – 2"

Product name / Connection	Flow rate m³/h at dp = 0.2 bar	Hydraulic connection RW / Filtrate / WW	Dimensions in mm L x H	Micron rating µm	Item number
FF 1"	8.3	Rp 1" / Rp 1" / -	130 x 309	95 - 140	330 055
FF 1 ¼"	11.2	Rp 1 ¼" / Rp 1 ¼" / -	135 x 309	95 - 140	330 056
FF 1 ½"	11.2	Rp 1 ½" / Rp 1 ½" / -	150 x 323	95 - 140	330 057
FF 2"	13.1	Rp 2" / Rp 2" / -	160 x 336	95 - 140	330 058
Filter cartridge	-	-	-	95 - 140	335 113
Filter wrench	-	-	-	-	332 034

ACTIVATED CARBON FILTERS

APPLICATIONS

In general, activated carbon filters are used to adsorb impurities dissolved in the water. Such impurities include odorous substances, flavours and dyes as well as other organic matter. In the water treatment industry, activated carbon filters are also used to remove oxidants such as chlorine and ozone.

DESIGN

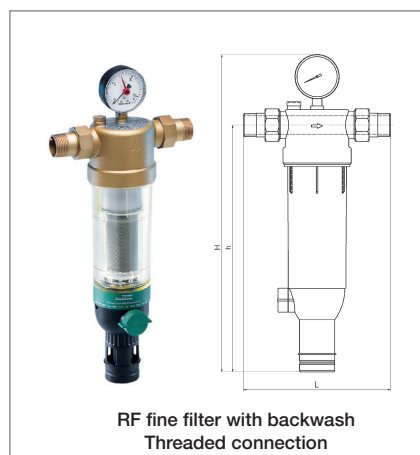
The activated carbon filter consists of a plastic filter housing with a vent screw. Its filter element consists of an activated carbon cartridge with an outer and inner envelope around a polypropylene body.

Activated carbon filters AF

Threaded connection ¾" – filter cartridge 10" – 20"

Product name / Cartridge length	Flow rate l/h at dp = 0.2 bar	Hydraulic connection RW / Filtrate / WW	Dimensions in mm L x H	Micron rating µm	Item number
AF 10"	780.0	Rp ¾" / Rp ¾" / -	130 x 330	7	310 038
AF 20"	1,560.0	Rp ¾" / Rp ¾" / -	130 x 590	7	310 039
Filter cartridge 10"	780.0	-	150 x 323	7	335 082
Filter cartridge 20"	1,560.0	-	160 x 336	7	335 083

FINE FILTERS WITH BACKWASH



DVGW approval

APPLICATIONS

Rust and dirt particles, sand grains, scale and installation debris are held back, thus avoiding contact corrosion in the piping system and valve malfunctions.

Backwash and filtered water supply can take place simultaneously, therefore plant operation is not interrupted.

For hygiene reasons, filter maintenance needs to be carried out at least once every 6 months.

DESIGN

Water filter with manual backwash (RF) – Threaded connection

- » Brass housing with pressure gauge
- » Clear plastic filter cup
- » Stainless steel fine filter
- » Memory ring to indicate timing of next backwash
- » Rinse water connection

Water filter with manual backwash (RFF-H) – Flange connection

- » Ductile iron housing with polyamide coating
- » Equipped with two pressure gauges
- » Stainless steel filter element
- » Rinse water connection

Fine filters with backwash RF

DIN / DVGW tested and approved – threaded connection 1" – 2" – flange connection DN 65 – DN 100

Product name / Connection	Flow rate m³/h at dp = 0.5 bar	Hydraulic connection RW / Filtrate / WW	Dimensions in mm L x H	Micron rating µm	Item number
RF 1"	7.5	R 1" / R 1" / HT	209 x 453	105 - 135	325 019
RF 1 1/4"	8.9	R 1 1/4" / R 1 1/4" / HT	222 x 453	105 - 135	325 020
RF 1 1/2"	15.6	R 1 1/2" / R 1 1/2" / HT	246 x 532	105 - 135	325 021
RF 2"	16.5	R 2" / R 2" / HT	267 x 532	105 - 135	325 022
RFF-H 65	48.0	DN 65 / DN 65 / HT	290 x 581	105 - 135	325 027
RFF-H 80	78.0	DN 80 / DN 80 / HT	310 x 665	105 - 135	325 028
RFF-H 100	100.0	DN 100 / DN 100 / HT	350 x 767	105 - 135	325 029

Options for automatic backwash of fine filters

Product name	Compatible with	Mains connection	Additional height in mm	Item number
RF-RAM	RF	10 W / 230 V / 50 - 60 Hz	ca. 30	332 174
RFF-RAM-H	RFF-H	10 W / 230 V / 50 - 60 Hz	ca. 150	332 175
DIFF-P	1" - 1 1/4" / DN 65 - 100	Dry contact for RAM	-	325 526
DIFF-P	1 1/2" - 2"	Dry contact for RAM	-	325 527

BACKFLOW PREVENTION DEVICES

DVGW approval



Backflow prevention device ST-C
Threaded connection



Backflow prevention device ST-H
Flange connection

APPLICATIONS

Backflow prevention devices are compulsory for systems connected to the public water supply network. They are used to prevent non-drinking water from entering the public drinking water network by back-siphonage, backflow or pressure backflow. Please consider the rules of DIN 1988-100, table A1, or local regulations. Our backflow prevention devices are DIN/DVGW tested.

The backflow prevention devices ST-C/ST-H protect the drinking water network against fluids up to and including fluid category 4 as defined by EN 1717 and EN 12729.

DESIGN

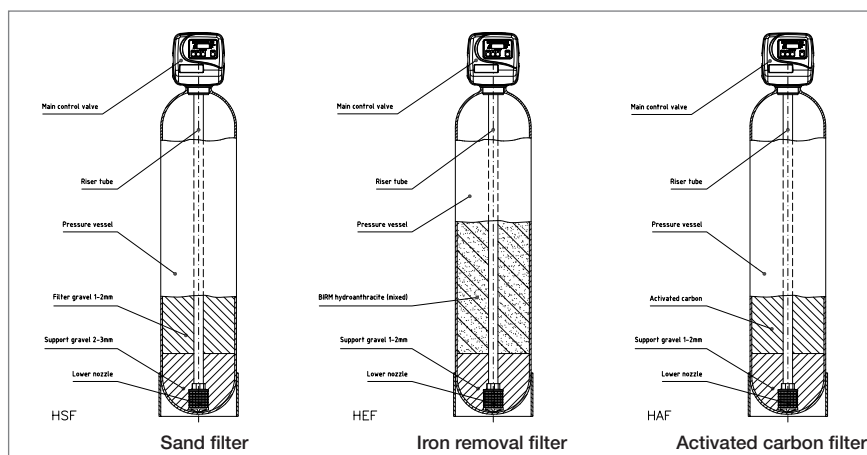
- » Housing made of dezincification-resistant brass / powder-coated ductile iron
- » Filter insert made of high-grade stainless steel with integrated check valve and discharge valve
- » Three brass ball valves for connection of differential pressure gauge

Backflow preventers

DIN / DVGW-tested and approved – mounting type 2 – threaded connection 1" – 2" – flange connection DN 65 – DN 100

Product name / Connection	Flow rate m ³ /h at dp = 1.0 bar	Hydraulic connection RW / Filtrate / WW	Dimensions in mm L x H x B	Response pressure bar	Item number
ST-C ¾"	4.0	R ¾" / R ¾" / HT	227 x 103 x 44.5	1.5	340 054
ST-C 1"	12.0	R 1" / R 1" / HT	280 x 100 x 72.5	1.5	340 053
ST-C 1 ¼"	15.0	R 1 ¼" / R 1 ¼" / HT	280 x 100 x 72.5	1.5	340 056
ST-C 1 ½"	25.0	R 1 ½" / R 1 ½" / HT	387 x 130 x 103.5	1.5	340 057
ST-C 2"	35.0	R 2" / R 2" / HT	395 x 130 x 103.5	1.5	340 058
ST-H DN 65	35.8	DN 65 / DN 65 / HT	365 x 152 x 246	1.0	340 061
ST-H DN 80	54.3	DN 80 / DN 80 / HT	440 x 167 x 275	1.0	340 062
ST-H DN 100	108.0	DN 100 / DN 100 / HT	530 x 185 x 296	1.0	340 063

SAND FILTERS, IRON REMOVAL FILTERS AND ACTIVATED CARBON FILTERS



DESIGN

- » Filter vessel made of GRP with fixtures
- » Main control valve with built-on microprocessor controller
- » Automatic, time-controlled backwash

FILLING

- » Unit sizes HEF 1C – 2C and HAF 1C – 2C are supplied completely filled
- » The media for unit sizes HSF 1C – 5C, HEF 3C – 5C and HAF 3C – 5C are supplied separately packed

Sand filters HSF for removal of mechanical impurities

Support medium: quartz gravel 2 – 3 mm / Filter medium: quartz gravel 1 – 2 mm

Product name	Flow rate m ³ /h at 20 m/h	Hydraulic connection RW / Filtrate / WW	Dimensions in mm W x D x H	Item number
HSF 1C	0.9	R 1 ½" / R 1 ½" / hose tail 20 mm	330 x 370 x 1,610	315 092
HSF 2C	1.6	R 1 ½" / R 1 ½" / hose tail 20 mm	370 x 390 x 1,600	315 093
HSF 3C	1.9	R 2" / R 2" / hose tail 20 mm	380 x 410 x 1,890	315 094
HSF 4C	2.3	R 2" / R 2" / hose tail 20 mm	410 x 420 x 1,890	315 095
HSF 5C	4.3	R 2 ¼" / R 2 ¼" / R 2 ¼"	890 x 560 x 1,960	315 096

Iron removal filters HEF for removal of small amounts of iron and manganese

Support medium: quartz gravel 1 – 2 mm / Filter medium: BIRM and Hydroanthracite N

Product name	Flow rate m ³ /h at 12 m/h	Hydraulic connection RW / Filtrate / WW	Dimensions in mm W x D x H	Item number
HEF 1C	0.6	R 1 ½" / R 1 ½" / hose tail 20 mm	330 x 370 x 1,610	320 065
HEF 2C	0.9	R 1 ½" / R 1 ½" / hose tail 20 mm	370 x 390 x 1,600	320 066
HEF 3C	1.2	R 2" / R 2" / hose tail 20 mm	380 x 410 x 1,890	320 067
HEF 4C	1.4	R 2" / R 2" / hose tail 20 mm	410 x 420 x 1,890	320 068
HEF 5C	2.6	R 2 ¼" / R 2 ¼" / R 2 ¼"	890 x 560 x 1,960	320 069

Activated carbon filters HAF for removal of free chlorine as well as of organic and mechanical impurities

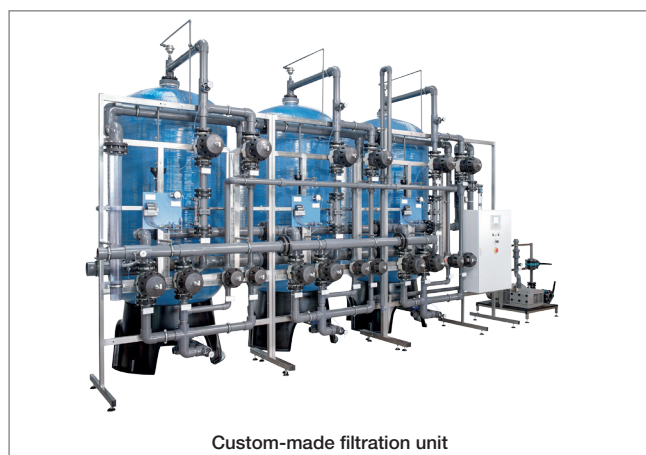
Support medium: quartz gravel 1 – 2 mm / Filter medium: activated carbon 0.5 – 2.5 mm

Product name	Flow rate m ³ /h at 20 m/h	Hydraulic connection RW / Filtrate / WW	Dimensions in mm W x D x H	Item number
HAF 1C	0.9	R 1 ½" / R 1 ½" / hose tail 20 mm	330 x 370 x 1,610	310 084
HAF 2C	1.6	R 1 ½" / R 1 ½" / hose tail 20 mm	370 x 390 x 1,600	310 085
HAF 3C	1.9	R 2" / R 2" / R 2"	380 x 410 x 1,890	310 086
HAF 4C	2.3	R 2" / R 2" / R 2"	410 x 420 x 1,890	310 087
HAF 5C	4.3	R 2 ¼" / R 2 ¼" / R 2 ¼"	890 x 560 x 1,960	310 088

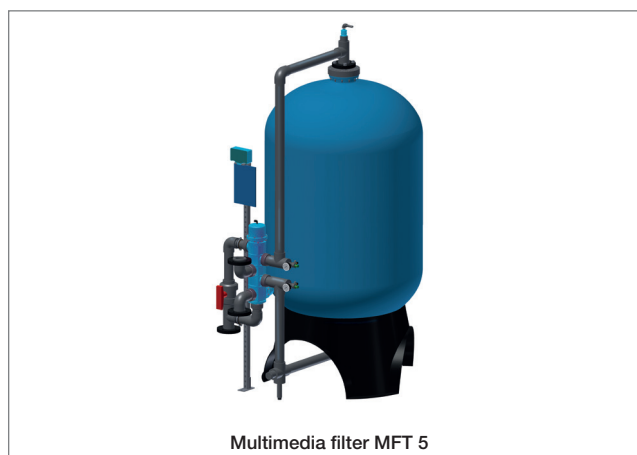
Options for HSF - HEF - HAF

Operating valve BV 1	Size 1C to 4C	Prevents raw water flow to the consumer during backwash	315 112
Operating valve BV 2	Size 5C	Prevents raw water flow to the consumer during backwash	366 015
BEV	Size 1C to 5C	Ventilation and air bleed valve	365 238
Skid-mounted version	Skid-mounted version with city water backwash		

MULTI-MEDIA FILTERS WITH DIFFERENT FILTER MEDIA



Custom-made filtration unit



Multimedia filter MFT 5

DESIGN

- » Filter vessel made of GRP
- » Fixtures for uniform flow
- » Front piping with main control valve
- » Fully automatic, time-controlled operation
- » Filter medium not included, please order separately

OPTIONS

- » Filter media flushing with filtrate / external water source
- » Automatic backwash triggered by adjustable differential pressure controller

Multi-media filter MFT

Automatic simplex multi-media filter units for well, surface, and process water

Product name	Flow rate m³/h at 20 m/h	Hydraulic connection RW / Filtrate / WW	Dimensions in mm W x D x H	Item number
MFT 1	4.3	DN 50 / DN 50 / DN 32	770 x 940 x 2,450	300 050
MFT 2	5.3	DN 50 / DN 50 / DN 32	830 x 1,000 x 2,660	300 051
MFT 3	8.4	DN 50 / DN 50 / DN 32	850 x 1,160 x 2,730	300 052
MFT 4	12.2	DN 50 / DN 50 / DN 32	930 x 1,320 x 2,770	300 053
MFT 5	21.3	DN 65 / DN 65 / DN 65 flanges	1,250 x 1,740 x 2,880	300 108

Option differential pressure controller for MFT simplex filter

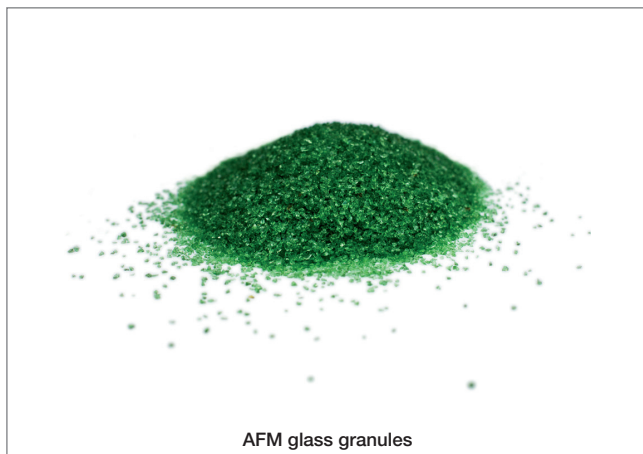
DIFF-P	Triggers backwash when a pre-set differential pressure is reached	325 525
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Filtration media for multi-media filter MFT

Item No. and price in € per complete filling

Size		Sand	Iron removal	Activated carbon	Multi-media
MFT 1	Item Number	300 210	300 225	300 220	300 215
MFT 2	Item Number	300 211	300 226	300 221	300 216
MFT 3	Item Number	300 212	300 227	300 222	300 217
MFT 4	Item Number	300 213	300 228	300 223	300 218
MFT 5	Item Number	300 214	300 229	300 224	300 219

SIDE-STREAM FILTERS FOR COOLING CIRCUITS (SAND / GLASS GRANULES)



DESIGN

- » Flow rate from 11 to 24 m³/h
- » Compact unit on a plastic Euro pallet, ready for connection
- » GRP filter tank, filled with either quartz gravel (SF) or glass granules (SF / AFM)
- » Feed pump housing and impeller made from plastic or stainless steel
- » ABS main control valve
- » PVC piping
- » Automatic, time-controlled backwash

Particle-free city water or compressed air at a pressure of 3 – 4 bar should be used as control medium.

ADVANTAGES

- » Independent from operation of cooling water circuit due to integrated feed pump
- » High separation capacity thanks to quartz gravel with optimum grain size distribution
- » Alternative version with particularly effective filtering and germicidal action (AFM version)
- » Easy to mount thanks to ready-to-connect design
- » Can also be used in the main stream of the cooling circuit, as long as the maximum supply pressure is not exceeded

SF sand filters

Automatic side-stream filter for cooling circuits with quartz gravel and support gravel filling

Product name	Flow rate min./max. m ³ /h	Hydraulic connection RW / Filtrate / WW	Dimensions in mm W x D x H	Item number
SF 200-6.0 bar	7 - 11	DN 40 / DN 40 / DN 40	1,200 x 830 x 1,600	315 024
SF 320-6.0 bar	11 - 17	DN 65 / DN 40 / DN 40	1,200 x 820 x 1,490	315 051
SF 580-6.0 bar	17 - 24	DN 65 / DN 40 / DN 40	1,280 x 940 x 1,580	315 029

SF / AFM sand filters

Automatic side-stream filter for cooling circuits with glass granules filling

Product name	Flow rate min./max. m ³ /h	Hydraulic connection RW / Filtrate / WW	Dimensions in mm W x D x H	Item number
SF 200-6.0 bar / AFM	7 - 11	DN 40 / DN 40 / DN 40	1,200 x 830 x 1,600	315 121
SF 320-6.0 bar / AFM	11 - 17	DN 65 / DN 40 / DN 40	1,200 x 820 x 1,490	315 122
SF 580-6.0 bar / AFM	17 - 24	DN 65 / DN 40 / DN 40	1,280 x 940 x 1,580	315 123

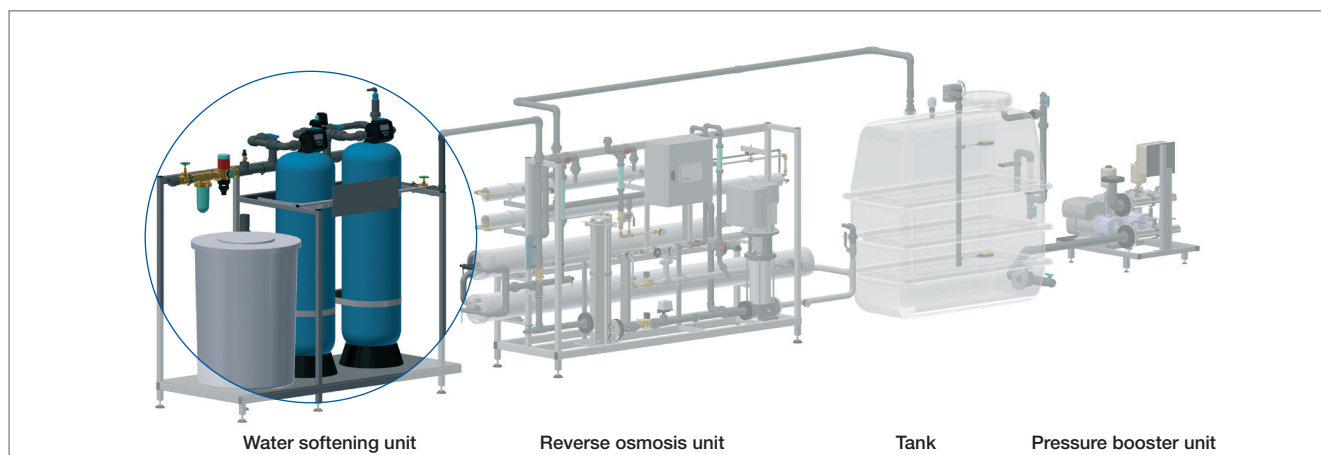
Option differential pressure controller for SF sand filter

DIFF-P	Triggers backwash when a pre-set differential pressure is reached	325 525
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Optional SF sand filter backwash with city water

SF-SW-6.0 - 200	For SF 200-6.0	315 060
SF-SW-6.0 - 320/580	For SF 320-6.0 / SF 580-6.0	315 109

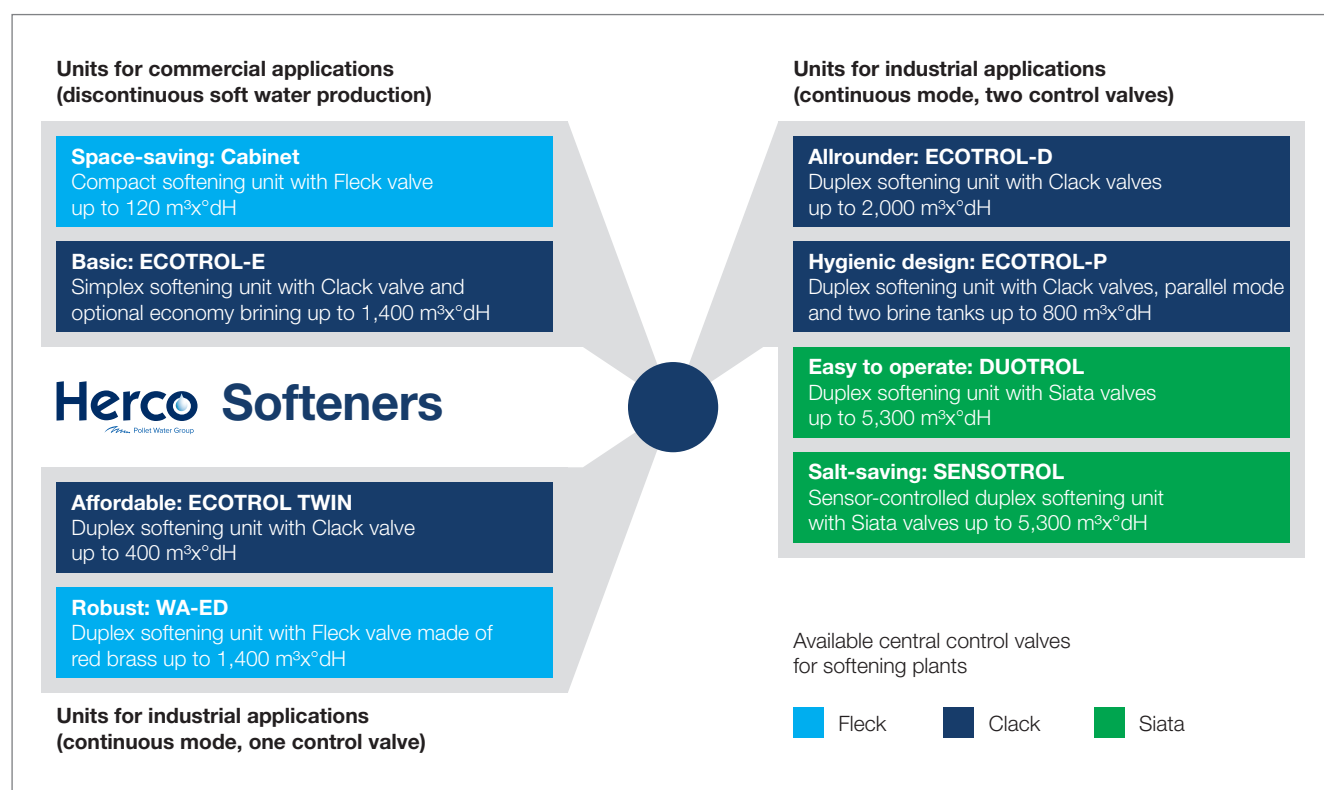
WATER SOFTENING UNITS – OVERVIEW



Our wide range of standardised softening units covers flow rates from 1.0 to 53.0 m³/h and capacities from 40 to 5,300 m³·x°dH. Our plants are equipped with tried and tested central control valves and use the co-current regeneration principle.

The softening plants can be used in combination with a Herco reverse osmosis or individually. We also supply a wide range of accessories such as blending devices, bypass arrangement, low salt switch, resin disinfection, hardness control units and interfaces (Profinet / Profibus).

We are pleased to offer you economy brining as a new option for our simplex softening series ECOTROL-E. We will gladly advise you on the selection of the right softening plant for your application.



DEFINITIONS

- » **Full brining:** regeneration with full brining regenerates almost 100 % of the resin capacity. The residual hardness of the soft water is < 0.1 °dH. When combining softening with reverse osmosis, full brining should always be chosen.
- » **Economy brining:** regeneration with economy brining regenerates about 75 % of the resin capacity. Only about 60 % of the salt quantity is required compared to full brining, which significantly reduces operating costs. In this case the softened water has a low residual hardness.

WATER SOFTENING UNITS – OVERVIEW



Capacity	K xx W	ECOTROL -E	ECOTROL TWIN	WA-ED	ECOTROL -D/-P	DUOTROL	SENSOTROL
Flow range [m³/h]	1 - 2.5	1 - 14	1 - 4	1 - 12	1 - 20	1 - 53	1 - 53
Capacity range [m³ x °dh]	40 - 120	60 - 1,400	60 - 400	60 - 1,400	60 - 2,000	60 - 5,300	120 - 5,300
Type							
Simplex water softener	✓	✓					
Duplex water softener			✓	✓	✓	✓	✓
Parallel water softener					only -P		
Regeneration controlled by							
Time	✓	✓	✓	✓	only -D	✓	✓
Volume	✓	✓	✓	✓	✓	✓	✓
Quality							✓
Equipment							
One control valve per vessel	✓	✓			✓	✓	✓
Controller	Fleck	Clack	Clack	Fleck	Clack	Siata	Siata
Inlet and outlet isolating valve					✓	✓	✓
Sample valves						✓	✓
Pressure gauge						✓	✓
Messages							
Operation or regeneration				✓			
Operation and regeneration		✓	✓		✓	✓	✓
Control of dosing pump						✓	✓
Ext. regeneration stop						✓	✓
Ext. regeneration initiation						✓	✓
Alarms							
System monitoring						✓	✓
Regeneration monitoring							✓
Lack of capacity						✓	✓
Flow rate monitoring						✓	✓
Salt empty						✓	✓
Accessories							
Blending valve	✓	optional	optional	optional	optional	optional	optional
Operating valve		optional	✓	✓	✓	✓	✓
Salt shortage switch		optional	optional	optional	optional	✓	✓
Data logger							✓
Economy brining		optional					
Resin disinfection system		optional (1 pc.)	optional (1 pc.)	optional (1 pc.)	optional (2 pc.)	optional (2 pc.)	optional (2 pc.)
Water recirculation pump						optional	optional
Operation with liquid brine						optional	optional
Skid assembly				optional	optional	optional	optional
Profinet interface							optional
Profibus interface							optional
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CABINET / SIMPLEX WATER SOFTENING UNITS – K XX W / ECOTROL-E



CHARACTERISTICS OF CABINET WATER SOFTENING UNITS

- » Time or volume-controlled regeneration start
- » Integrated blending
- » Raw water supply during regeneration

New: ECOTROL-E series starting from unit size 200 with option economy brining available!

See pages 20 – 21 for options and accessories.



CHARACTERISTICS OF SIMPLEX WATER SOFTENING UNITS ECOTROL-E

- » Time or volume-controlled regeneration start
- » Input for external regeneration start
- » User-friendly microprocessor control
- » Regeneration signal via potential-free changeover contact, two universal outputs (12 VDC)
- » Monodisperse quality exchange resin
- » From size 400 on resin in bags for on-site filling

CHARACTERISTICS ECONOMY BRINING ECOTROL-E

- » Economy brining uses 60 % of the salt amount for full brining, i.e. salt consumption is reduced by 40 %
- » Capacity of the softening unit with economy brining is 75 % of the capacity with full brining, i.e. only 25 % reduction
- » This results in significant reduction of salt consumption and production of soft water with low residual hardness

Cabinet water softening unit For soft water production				
Product name/ Max. capacity m³ x °dH	Hydr. capacity m³/h min. / max.	Hydraulic connection raw / soft water	Dimensions in mm W x D x H	Item number
K 40 W	0.05 / 1.0	R 1" / R 1"	300 x 430 x 670	352 053
K 60 W	0.08 / 1.5	R 1" / R 1"	300 x 430 x 1,130	352 054
K 100 W	0.13 / 2.2	R 1" / R 1"	300 x 430 x 1,130	352 055
K 120 W	0.15 / 2.5	R 1" / R 1"	300 x 430 x 1,130	352 056

Simplex water softening unit ECOTROL-E For soft water production with hardness < 0.1 °dH (> 0.1 °dH in case of economy brining)				
Product name/ Max. capacity m³ x °dH	Hydr. capacity m³/h min. / max.	Hydraulic connection raw / soft water	Dimensions in mm W x D x H	Item number
ECOTROL-E 60	0.10 / 1.00	R 1" / R 1"	750 x 500 x 1,100	350 143
ECOTROL-E 120	0.15 / 1.50	R 1" / R 1"	900 x 500 x 1,100	350 144
ECOTROL-E 200	0.25 / 2.00	R 1" / R 1"	1,000 x 550 x 1,600	350 145
ECOTROL-E 320	0.40 / 3.50	R 1" / R 1"	1,150 x 750 x 1,600	350 146
ECOTROL-E 400	0.50 / 4.00	R 1" / R 1"	1,150 x 750 x 1,850	350 147
ECOTROL-E 500	0.63 / 5.00	R 1" / R 1"	1,250 x 750 x 1,850	350 148
ECOTROL-E 600	0.75 / 6.00	Rp 1 ½" / Rp 1 ½"	1,300 x 750 x 2,000	350 149
ECOTROL-E 800	1.00 / 8.00	Rp 1 ½" / Rp 1 ½"	1,450 x 900 x 2,000	350 150
ECOTROL-E 1000	1.25 / 10.0	Rp 2" / Rp 2"	1,450 x 900 x 1,900	350 151
ECOTROL-E 1400	1.75 / 14.0	Rp 2" / Rp 2"	1,850 x 1,200 x 2,150	350 152

Given capacity is valid for full brining. For economy brining, capacity is reduced by 25 %.

DUPLEX WATER SOFTENING UNITS – ECOTROL TWIN



CHARACTERISTICS

- » Time or volume-controlled regeneration start
- » Input for external regeneration start
- » Regeneration signal via potential-free changeover contact (optional) and two universal outputs (12 VDC)
- » User-friendly microprocessor control
- » Operator can switch to the other vessel quickly, without starting regeneration
- » Monodisperse quality exchange resin
- » Size 400 with resin in bags for on-site filling

ADVANTAGES

- » Operational reliability thanks to a continuous supply of soft water
- » Quick replacement of the maintenance kit
- » Programmable forced regeneration
- » Suitable for both commercial and industrial applications
- » Ideal for low soft water consumption

See pages 20 – 21 for options and accessories.

ECOTROL TWIN – Duplex water softening unit

Alternating water softening unit for continuous soft water production with hardness < 0.1°dH

Product name/ Max. capacity m ³ x °dH	Hydr. capacity m ³ /h min. / max.	Hydraulic connection raw / soft water	Dimensions in mm W x D x H	Item number
ECOTROL TWIN 60	0.10 / 1.00	R 1" / R 1"	1,200 x 500 x 1,300	360 540
ECOTROL TWIN 120	0.15 / 1.50	R 1" / R 1"	1,300 x 500 x 1,300	360 541
ECOTROL TWIN 200	0.25 / 2.00	R 1" / R 1"	1,400 x 600 x 1,800	360 542
ECOTROL TWIN 320	0.40 / 3.50	R 1" / R 1"	1,500 x 800 x 1,800	360 543
ECOTROL TWIN 400	0.50 / 4.00	R 1" / R 1"	1,800 x 800 x 1,900	360 544

DUPLEX WATER SOFTENING UNITS – WA-ED



WA-ED 800



WA-ED 320 Skid option

CHARACTERISTICS

- » Time or volume-controlled regeneration start
- » Permanent soft water supply
- » Potential-free contact for production/regeneration message
- » Rugged design with red brass main control valve
- » Microprocessor controller with three function keys
- » Monodisperse quality exchange resin
- » From size 400 on resin in bags for on-site filling

ADVANTAGES

- » Simple design and reliable operation
- » Programmable forced regeneration, also manual
- » Suitable for example for water supply in boiler houses

See pages 20 – 21 for options and accessories.

WA-ED Duplex water softening units

Alternating water softening unit for continuous soft water production with hardness < 0.1 °dH

Product name/ Max. capacity m³ x °dH	Hydr. capacity m³/h min. / max.	Hydraulic connection raw / soft water	Dimensions in mm W x D x H	Item number
WA-ED 60	0.10 / 1.00	R 1" / R 1"	1,200 x 500 x 1,100	360 069
WA-ED 120	0.15 / 1.50	R 1" / R 1"	1,300 x 500 x 1,100	360 067
WA-ED 200	0.25 / 2.00	R 1" / R 1"	1,400 x 600 x 1,600	360 062
WA-ED 320	0.40 / 3.50	R 1" / R 1"	1,600 x 800 x 1,600	360 070
WA-ED 400 LC	0.50 / 4.00	R 1" / R 1"	1,600 x 800 x 1,900	360 065
WA-ED 400	0.50 / 4.00	Rp 1 ½" / Rp 1 ½"	1,900 x 800 x 1,900	360 071
WA-ED 500	0.65 / 5.00	Rp 1 ½" / Rp 1 ½"	1,900 x 800 x 1,900	360 072
WA-ED 600	0.75 / 6.00	Rp 1 ½" / Rp 1 ½"	2,100 x 800 x 2,000	360 068
WA-ED 800	1.00 / 8.00	Rp 1 ½" / Rp 1 ½"	2,300 x 900 x 2,000	360 059
WA-ED 1000	1.25 / 10.0	Rp 1 ½" / Rp 1 ½"	2,400 x 900 x 1,900	360 060
WA-ED 1400	1.75 / 12.0	Rp 1 ½" / Rp 1 ½"	2,600 x 1,200 x 2,100	360 073

DUPLEX WATER SOFTENING UNITS – ECOTROL-D AND -P



CHARACTERISTICS OF ECOTROL-D

- » Time or volume-controlled regeneration start
- » User-friendly microprocessor control
- » Regeneration signal via potential-free changeover contact (optional) and two universal outputs (12 VDC)
- » Operator can switch to the other vessel quickly, without starting regeneration
- » Monodisperse quality exchange resin
- » From size 400 resin in bags for on-site filling

ADVANTAGES OF ECOTROL-D

- » High operational reliability thanks to independent control valves (simplex operation in case of failure possible)
- » Continuous supply of soft water



CHARACTERISTICS OF ECOTROL-P

- » Water softening unit in parallel operation with volume-controlled regeneration
- » Other characteristics like ECOTROL-D, addition of second brine tank

ADVANTAGES OF ECOTROL-P

- » Thanks to simultaneous operation of both vessels, there is no water stagnation and microbial contamination is reduced
- » Especially suitable for applications with high hygiene requirements (hospital, cooling circuit according to 42nd BImSchV)

See pages 20 – 21 for options and accessories.

ECOTROL-D Duplex water softening units

Alternating water softening unit with two control valves for continuous soft water production with hardness < 0.1 °dH

Product name/ Max. capacity m ³ x °dH	Hydr. capacity m ³ /h min. / max.	Hydraulic connection raw / soft water	Dimensions in mm W x D x H	Item number
ECOTROL-D 60	0.10 / 1.00	DN 32 / DN 25	1,320 x 640 x 1,180	360 472
ECOTROL-D 120	0.15 / 1.50	DN 32 / DN 25	1,410 x 640 x 1,180	360 473
ECOTROL-D 200	0.25 / 2.00	DN 32 / DN 25	1,550 x 680 x 1,680	360 474
ECOTROL-D 320	0.40 / 3.50	DN 32 / DN 25	1,650 x 730 x 1,680	360 475
ECOTROL-D 400	0.50 / 4.00	DN 32 / DN 25	1,660 x 730 x 1,930	360 476
ECOTROL-D 500	0.65 / 5.00	DN 50 / DN 40	1,720 x 730 x 2,260	360 477
ECOTROL-D 600	0.75 / 6.00	DN 50 / DN 40	2,170 x 730 x 2,430	360 478
ECOTROL-D 800	1.00 / 8.00	DN 50 / DN 40	2,240 x 870 x 2,430	360 479
ECOTROL-D 1000	1.25 / 10.0	DN 50 / DN 50	2,240 x 870 x 2,370	360 480
ECOTROL-D 1400	1.75 / 14.0	DN 50 / DN 50	2,690 x 1,170 x 2,620	360 481
ECOTROL-D 2000	2.5 / 20.0	DN 65 / DN 50	3,100 x 1,300 x 2,750	360 482

ECOTROL-P Duplex water softening units

Water softening unit in parallel operation with two control valves for continuous soft water production with hardness < 0.1 °dH

Product name/ Max. capacity m ³ x °dH	Hydr. capacity m ³ /h min. / max. *	Hydraulic connection raw / soft water	Dimensions in mm W x D x H	Item number
ECOTROL-P 60	0.20 / 2 x 1.00	DN 32 / DN 25	2,080 x 640 x 1,100	360 560
ECOTROL-P 120	0.30 / 2 x 1.50	DN 32 / DN 25	2,080 x 640 x 1,100	360 561
ECOTROL-P 200	0.50 / 2 x 2.00	DN 32 / DN 25	2,080 x 640 x 1,680	360 562
ECOTROL-P 320	0.80 / 2 x 3.50	DN 32 / DN 32	2,080 x 640 x 1,680	360 563
ECOTROL-P 400	1.00 / 2 x 4.00	DN 32 / DN 32	2,350 x 680 x 2,190	360 564
ECOTROL-P 500	1.30 / 2 x 5.00	DN 40 / DN 40	2,420 x 740 x 2,190	360 565
ECOTROL-P 600	1.50 / 2 x 6.00	DN 50 / DN 50	2,770 x 750 x 2,230	360 566
ECOTROL-P 800	2.00 / 2 x 8.00	DN 50 / DN 50	2,770 x 750 x 2,230	360 567

* While one ion-exchange tank is regenerating, the maximum hydraulic capacity available is the rated capacity of the other tank.

DUPLEX WATER SOFTENING UNITS – DUOTROL



DUOTROL 320



DUOTROL 2000

CHARACTERISTICS

- » Time or volume-controlled regeneration start
- » Continuous supply of soft water
- » Monodisperse quality exchange resin
- » From size 400 resin in bags for on-site filling

ADVANTAGES

- » Microprocessor control for fully automatic operation
- » User-friendly text display of operating modes and parameters
- » Many freely programmable inputs/outputs for additional options
- » High-quality brine tank with salt shortage switch

See pages 20 - 21 for options and accessories.

DUOTROL Duplex water softening units

Alternating water softening unit with two control valves for continuous soft water production with hardness < 0,1 °dH

Product name/ Max. capacity m³ x °dH	Hydr. capacity m³/h min. / max.	Hydraulic connection raw / soft water	Dimensions in mm W x D x H	Item number
DUOTROL 60	0.10 / 1.00	Rp 1" / R 1"	1,250 x 600 x 1,250	360 080
DUOTROL 120	0.15 / 1.50	Rp 1" / R 1"	1,300 x 600 x 1,250	360 081
DUOTROL 200	0.25 / 2.00	Rp 1" / R 1"	1,300 x 600 x 1,800	360 082
DUOTROL 320	0.40 / 3.50	Rp 1" / R 1"	1,550 x 750 x 1,800	360 083
DUOTROL 400	0.50 / 4.00	Rp 1 1/4" / DN 32	1,750 x 750 x 2,250	360 084
DUOTROL 500	0.65 / 5.00	Rp 1 1/4" / DN 32	1,750 x 750 x 2,250	360 085
DUOTROL 600	0.75 / 6.00	Rp 2" / DN 40	2,050 x 750 x 2,450	360 086
DUOTROL 800	1.00 / 8.00	Rp 2" / DN 40	2,200 x 900 x 2,450	360 087
DUOTROL 1000	1.25 / 10.0	Rp 2" / R 1 1/2"	2,250 x 900 x 2,300	360 088
DUOTROL 1400	1.75 / 14.0	Rp 2" / R 1 1/2"	2,550 x 1,200 x 2,500	360 089
DUOTROL 2000	2.50 / 20.0	DN 65 / DN 50	3,350 x 1,300 x 2,700	360 090
DUOTROL 2900	3.70 / 28.0	DN 80 / DN 65	3,750 x 1,500 x 2,800	360 091
DUOTROL 3700	5.00 / 37.0	DN 100 / DN 80	6,100 x 2,000 x 3,000	
DUOTROL 5300	5.00 / 53.0	DN 150 / DN 100	6,300 x 2,000 x 3,000	

DUPLEX WATER SOFTENING UNITS – SENSOTROL



CHARACTERISTICS

- » Sensor-controlled alternating water softening units
- » Permanent soft water supply, sensor-controlled regeneration and automatic alternation to the other vessel upon depletion of the ion exchange resin
- » High operational safety thanks to monitoring of the operating conditions, regeneration and brine formation
- » Sophisticated SENSOTROL controller with Profinet option and optional process visualisation
- » Monodisperse quality exchange resin
- » From size 400 on resin in bags for on-site filling

ADVANTAGES

- » Lower water and salt consumption thanks to best possible utilisation of resin capacity
- » Particularly suitable and economical if raw water hardness fluctuates
- » Relevant operating parameters are logged
- » Many freely programmable inputs/outputs for additional options
- » High-quality brine tank with salt shortage switch

See pages 20 – 21 for options and accessories.

SENSOTROL Duplex water softening units

Sensor-controlled, Alternating water softening unit with two control valves for continuous soft water production with hardness < 0.1 °dH

Product name/ Max. capacity m³ x °dH	Hydr. capacity m³/h min. / max.	Hydraulic connection raw / soft water	Dimensions in mm W x D x H	Item number
SENSOTROL 120	0.15 / 1.50	Rp 1" / R 1"	1,300 x 600 x 1,400	361 002
SENSOTROL 200	0.25 / 2.00	Rp 1" / R 1"	1,300 x 600 x 1,550	361 003
SENSOTROL 320	0.40 / 3.50	Rp 1" / R 1"	1,550 x 750 x 1,750	361 004
SENSOTROL 400	0.50 / 4.00	Rp 1 ¼" / DN 32	1,800 x 750 x 2,300	361 005
SENSOTROL 500	0.65 / 5.00	Rp 1 ¼" / DN 32	1,800 x 750 x 2,300	361 006
SENSOTROL 600	0.75 / 6.00	Rp 2" / DN 40	2,050 x 750 x 2,500	361 007
SENSOTROL 800	1.00 / 8.00	Rp 2" / DN 40	2,200 x 900 x 2,500	361 008
SENSOTROL 1000	1.25 / 10.0	Rp 2" / R 1 ½"	2,250 x 900 x 2,350	361 009
SENSOTROL 1400	1.75 / 14.0	Rp 2" / R 1 ½"	2,600 x 1,200 x 2,600	361 010
SENSOTROL 2000	2.50 / 20.0	DN 65 / DN 50	3,350 x 1,300 x 2,700	361 011
SENSOTROL 2900	3.70 / 28.0	DN 80 / DN 65	3,750 x 1,500 x 2,800	361 012
SENSOTROL 3700	5.00 / 37.0	DN 100 / DN 80	6,100 x 2,000 x 3,000	
SENSOTROL 5300	5.00 / 53.0	DN 150 / DN 100	6,300 x 2,000 x 3,000	

Accessories

Product name	Description	Item number
Profinet module for SENSOTROL	For transmission of all relevant operating parameters to the central control room	541 844
Profibus module for SENSOTROL	and for remote system control, either via a Profinet or Profibus interface	542 200

SKID ASSEMBLY OF DUPLEX WATER SOFTENING UNITS – RECIRCULATION PUMPS



ECOTROL-D 600 RD

ADVANTAGES OF SKID MOUNTING

- » Ready-to-install unit for direct connection to the drinking water system. If the unit and skid are ordered simultaneously, mounting of the backflow prevention unit, fine filter, blending valve, etc. is included in the price (parts to be ordered separately)
- » Simple unit connection on site; only four connections required: drinking water, soft water, wastewater and electricity
- » Quick and easy commissioning: water softeners are filled with ion exchange resin and, if requested, delivered pre-set

Skid assembly of duplex water softening units

For the SENSOTROL, DUOTROL, ECOTROL-D and WA -ED series; for ECOTROL-P available on request

Product name	Hydraulic connection raw / soft water / WW	Dimensions in mm W x D x H	Item number
RD 60	Rp 1" / Rp 1" / HT 100	1,350 x 850 x 1,660	365 589
RD 120	Rp 1" / Rp 1" / HT 100	1,350 x 850 x 1,660	365 590
RD 200	Rp 1" / Rp 1" / HT 100	1,350 x 850 x 1,810	365 591
RD 320	Rp 1" / Rp 1" / HT 100	1,350 x 850 x 1,810	365 592
RD 400	Rp 1 ½" / Rp 1 ½" / HT 100	2,400 x 950 x 2,500	365 593
RD 500	Rp 1 ½" / Rp 1 ½" / HT 100	2,400 x 950 x 2,500	365 594
RD 600	Rp 2" / Rp 1 ½" / HT 100	2,400 x 1,050 x 2,660	365 595
RD 800	Rp 2" / Rp 1 ½" / HT 100	2,400 x 1,050 x 2,660	365 596
RD 1000	Rp 2" / Rp 2" / HT 100	2,850 x 1,250 x 2,500	365 913
RD 1400	Rp 2" / Rp 2" / HT 100	2,850 x 1,250 x 2,500	365 728

ADVANTAGES OF A WATER CIRCULATION PUMP

- » Safe operation of the softening unit by maintaining a minimum flow rate
- » Residual hardness breakthrough ($> 1^{\circ}\text{dH}$) is prevented effectively
- » Maintenance-free and quiet circulating pumps
- » Including shut-off valves and non-return valve
- » If ordered at the same time, the softening unit will be prepared for easy WUP assembly

WUP water recirculation pumps for DUOTROL and SENSOTROL

Ensures safe operation, even if soft water consumption is below the minimum flow rate

Product name	For unit series	Mains connection V / Hz	Capacity m³/h	Item number
WUP-D6	60 - 320	230 / 50	0.8	365 552
WUP-D7	400 - 500	230 / 50	0.8	365 536
WUP-D8	600 - 1400	230 / 50	3.5	365 618
WUP-D9	2000	230 / 50	6.5	365 619
WUP-D10	2900 - 5300	230 / 50	6.5	365 529

ACCESSORIES FOR WATER SOFTENING UNITS



We offer a wide range of accessories for water softening units. Please compare the Table on p. 13 to see which options are suitable for which softening unit.

In case of the softening units Duotrol and Sensotrol, some accessories such as the salt shortage switch SMS are already included in the scope of supply.

Please contact us if you require other accessories or further information.

Accessories For ECOTROL-E

Product name	Description	Electric/ hydraulic connection	Item number
Economy brining (From unit size 200 on)	Economy brining version with 40 % reduced salt consumption at 75 % capacity of the standard full brining unit		366 283
Operating valve BV 1	Prevents hard water supply to the consumer during regeneration, for ECOTROL-E 60 – 500	12 V DC	315 112
	For ECOTROL-E 600 - 1400	-	-

Fittings and connection kits

Product name	Description	Electric/ hydraulic connection	Item number
VSE 1"	Blending device with isolating valves	Rp 1"	600 080
VSE 1 1/4"	Blending device for installation in a bypass pipe	Rp 1 1/4"	600 013
VSE 2"	Blending device for installation in a bypass pipe	Rp 2"	600 014
Bypass pipe 1"	Fitting for bypassing a water softening unit	Rp 1"	600 081
Connection hoses 1"	2 x length 1 m	Rp 1"	365 607
Connector kit 1"	Bypass pipe and connection hoses	Rp 1"	365 398
Connector kit VSE 1"	Blending device and connection hoses	Rp 1"	365 399

HDS PRO Resin disinfection system

Compatible with all series (except for cabinet units, only on request)

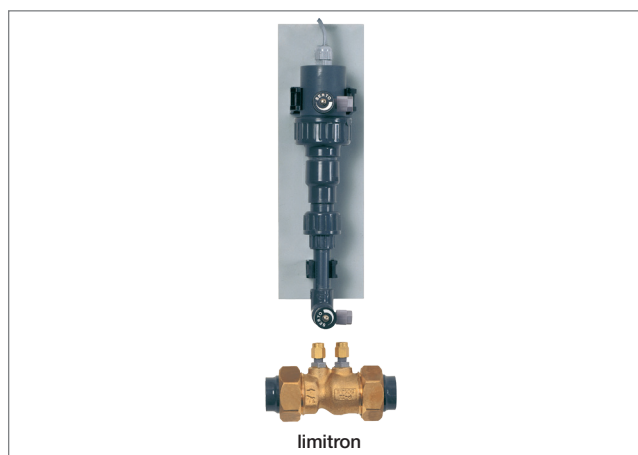
Product name	Description (One HDS PRO per control valve required!)	Mains connection V / Hz	Item number
HDS PRO	For automatic disinfection of the ion exchange resin during regeneration up to unit size 1400	230 / 50	366 270

Optional messages

Potential-free change-over contacts for messages to on-site central control room or for use as switching contact

Product name	Description	Item number
SMS	Change-over contact for alarm signal in case of salt shortage	365 978
Changeover contact	Regeneration signal. e.g. for switching an RO unit off For cabinet units K 40 - 120 W	365 605
Changeover contact CI	For ECOTROL-E /-D 60 - 800 and ECOTROL TWIN 60 - 400	365 855

AUTOMATIC HARDNESS MONITORING UNITS – LIMITENT AND LIMITRON



CHARACTERISTICS

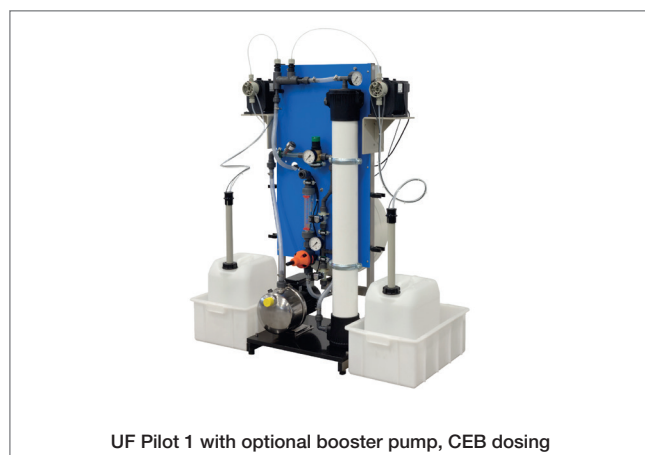
- » Automatic hardness monitoring unit for continuous control of the soft water downstream of water softening units
- » General fault signal as potential-free change-over contact

- in the event of hardness breakthrough, e.g. to switch off a downstream reverse osmosis unit
- » No need for water or chemicals, since no regeneration

limitent Automatic hardness monitoring unit with controller for installation downstream of water softeners				
Product name	Hydr. capacity m ³ /h min. / max.	Hydraulic connection	Mains connection V / Hz	Item number
limitent ¾"	0.025 / 2.5	R ¾"	230 / 50	370 037
limitent 1"	0.2 / 7.0	R 1"	230 / 50	370 067
limitent 1 ¼"	0.5 / 12.0	R 1 ¼"	230 / 50	370 043
limitent 1 ½"	1.5 / 16.0	R 1 ½"	230 / 50	370 068
limitent 2"	3.0 / 25.0	R 2"	230 / 50	370 055
Replacement sensor				370 031

limitron Automatic hardness monitoring unit without controller for the protection of HERCO reverse osmosis units				
Product name	Hydr. capacity m ³ /h min. / max.	Hydraulic connection	Suitable for RO sizes	Item number
limitron ¾"	0.025 / 2.5	R ¾"	U0 100 - 1500	370 038
limitron 1"	0.2 / 7.0	R 1"	U0 1650 - 3500	370 069
limitron 1 ¼"	0.5 / 12.0	R 1 ¼"	U0 3800 - 6000	370 044
limitron 1 ½"	1.5 / 16.0	R 1 ½"	U0 7000 - 10000	370 070
limitron 2"	3.0 / 25.0	R 2"	U0 11000 - 18000	370 063
Installation of limitron in RO unit				370 078
Replacement sensor				370 031

ULTRAFILTRATION UNITS UF



PLC

Skid-mounted, free-standing ultrafiltration unit for the filtration of surface or well water that has been pre-filtered or flocculated.

- » Considerable reduction of operating costs by using raw water (e.g. surface water or well water) instead of city water
- » Ultrafiltrate is the perfect raw water to supply reverse osmosis units
- » Fully automatic operation with cyclic backwash of the UF membranes with ultrafiltrate
- » Recommended for raw water with a high particle concentration between 20 and 0.2 μm and a turbidity of > 1 NTU
- » Fully automatic operation using PLC type Siemens S 7-1200 with convenient touch screen interface

» Backwash tank / cleaning tank with high-capacity, frequency-controlled backwash pump included

Pre-treatment of the raw water with flocculation / precipitation and gravel filter or disc filter (type DISC-UF) recommended.

Please check whether the produced wastewater needs to be treated.

Other unit sizes as well as pilot or project units available on request.

Ultrafiltration units UF

For removal of particles / microorganisms from raw water from different sources

Product name	Flow rate m^3/h at Flux (l/mh)	Hydraulic connection RW / Filtrate / WW	Dimensions in mm * W x D x H	Item number
UF 1D6	3.0 / 4.8 at 50 / 80	DN 32 / DN 32 / DN 50	2,200 x 1,150 x 2,050	428 044
UF 2D6	6.0 / 9.6 at 50 / 80	DN 50 / DN 50 / DN 80	3,050 x 1,850 x 2,100	428 054
UF 4D6	12.0 / 19.2 at 50 / 80	DN 65 / DN 65 / DN 100	4,200 x 2,500 x 2,200	428 064
UF 6D6	18.0 / 28.8 at 50 / 80	DN 80 / DN 80 / DN 125	4,800 x 2,800 x 2,200	428 074
UF 8D6	21.0 / 38.4 at 50 / 80	DN 100 / DN 100 / DN 150	5,450 x 3,000 x 2,300	428 084

* Depending on the position of the backwash tank.

Ultrafiltration pilot unit

Product name	Flow rate l/h at Flux (l/mh)	Hydraulic connection RW / Filtrate / WW	Dimensions in mm W x D x H	Item number
UF Pilot 1	300 / 500 at 50 / 80	DN 15 / DN 15 / DN 10	550 x 550 x 1,400	428 131

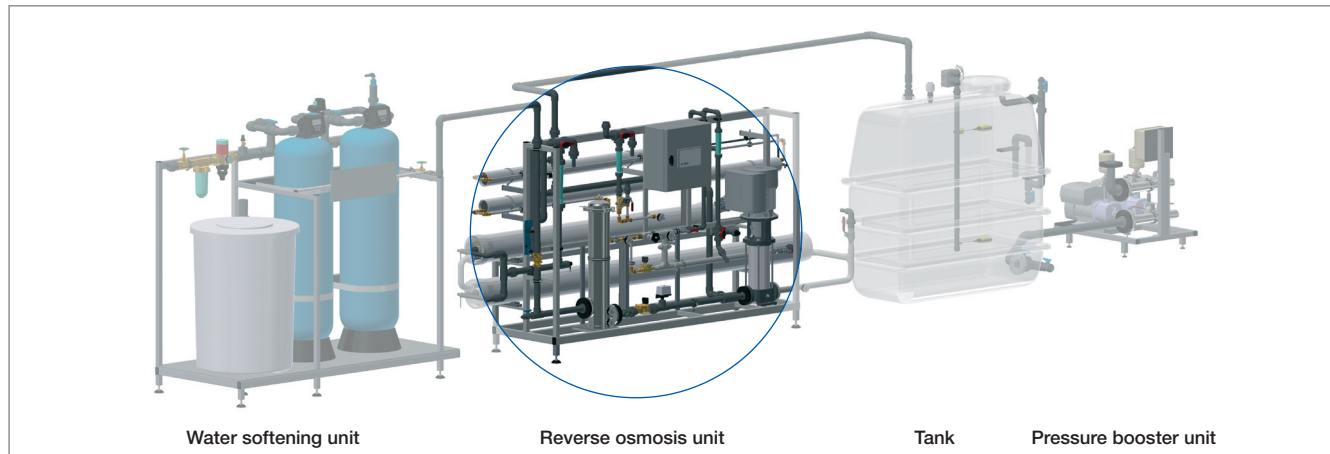
Option CEB

Chemically enhanced backwash

Product name	Description	Item number
CEB 1	For 1 chemical product, for UF Pilot 1	428 133
CEB 30	For 1 chemical product, for UF 1D6 to UF 6D6	428 129
CEB 50	For 1 chemical product, for UF 8D6	428 130

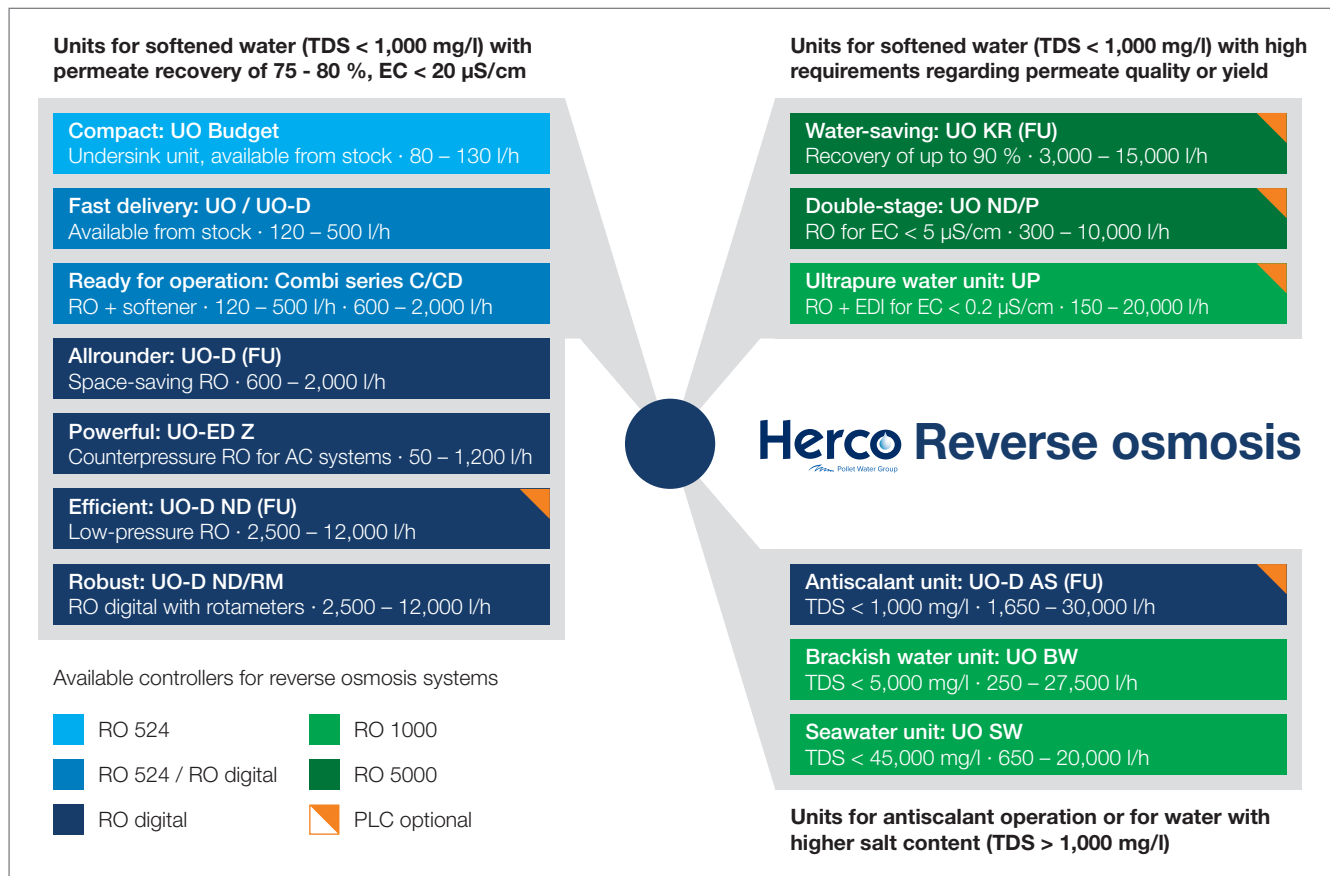
Please order the corresponding number of CEB units if more than one chemical product is used.

REVERSE OSMOSIS AND EDI UNITS – OVERVIEW



Our standardised range of reverse osmosis systems covers permeate capacities from 80 to 30,000 liters per hour. We offer a wide range of plants: from affordable undersink units and standard series with many applications to multi-stage project plants with accessories such as electro-deionisation (EDI) and membrane contactors (MEG). For capacities exceeding those mentioned here, please contact us.

The specific design of the various series offers the optimum system solution for every application:



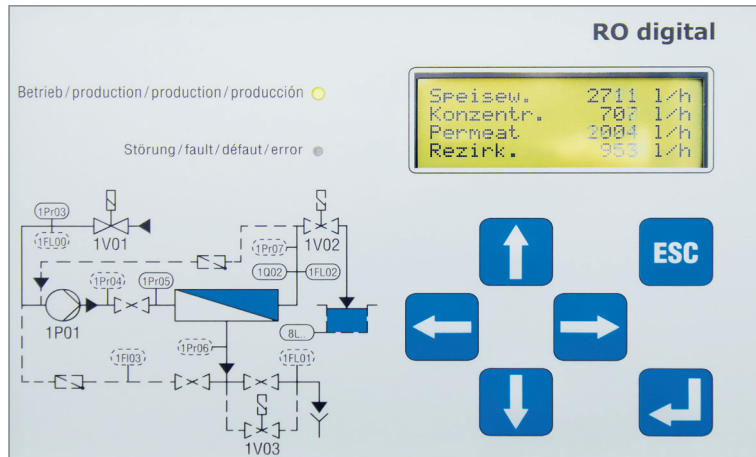
DEFINITIONS

- » **Soft water:** Water after pre-treatment with a softening unit. We would be pleased to offer you a matching system of softening unit and reverse osmosis.
- » **Hardness-stabilised drinking water:** dosing of a small amount of an antiscalant chemical into the feed water upstream of the reverse osmosis unit to prevent salt deposits on the membranes (scaling).
- » **FU:** Pump equipped with variable-frequency drive (VFD) to save electrical energy. These pumps comply at least with energy efficiency class IE3 and are up to 11 kW efficiency class IE5.

REVERSE OSMOSIS AND EDI UNITS – OVERVIEW

Overview units					
Feed water	Permeate l/h	Series	Controller	Comments	Page
Softened city water (free of chlorine)	80 and 130	Budget	RO 524	Undersink device, space-saving, delivery from stock (Fast Track)	28
		UO		Space saving, delivery from stock (Fast Track)	28
	120 - 500	combi UO C series		Incl. pre-filter, backflow preventer, simplex softener, hardness monitoring unit. Ready for operation ("plug & flow")	28
		combi UO CD series		Incl. pre-filter, backflow preventer, duplex softener, hardness monitoring unit. Ready for operation ("plug & flow")	28
	120 - 500	UO-D		Freely programmable controller, space saving, delivery from stock (Fast Track)	29
		combi UO-D C series		Incl. pre-filter, backflow preventer, simplex softener, hardness monitoring unit. Freely programmable controller, ready for operation ("plug & flow")	29
		combi UO-D CD series		Incl. pre-filter, backflow preventer, duplex softener, hardness monitoring unit. Freely programmable controller, ready for operation ("plug & flow")	29
	600 - 2,000	UO-D	RO digital	Flexible controller, universally applicable unit, Profinet interface optional	30
		UO-D FU		Like UO-D, energy-saving due to variable-frequency drive (VFD = FU)	30
		combi UO-D CD series		Incl. pre-filter, backflow preventer, duplex softener, hardness monitoring unit. Ready for operation ("plug & flow")	31
		combi UO-D FU CD series		Like UO-D CD, energy-saving due to variable-frequency drive (VFD = FU)	31
	50 - 1,200	UO-ED Z		Unit for permeate back pressure max. 7 bar (e.g. for cooling/air conditioning)	32
		UO-D ND	RO digital	Low-pressure membranes, freely programmable controller, Profinet interface optional	34
	2,500 - 12,000	UO-D ND/FU		Like UO-D ND, energy-saving due to variable-frequency drive (VFD = FU)	34
		UO-D ND/RM		Like UO-D ND, flow measurement with rotameters	35
	3,000 - 15,000	UO KR	RO 5000	Concentrate-staged, permeate recovery up to 90 %	36
		UO KR/FU		Like KR, energy-saving due to variable-frequency drive (VFD = FU)	36
	300 - 10,000	UO ND/P		Permeate-staged, typical permeate conductivity < 5 µS/cm	37
	150 - 20,000	UP	RO 1000	Ultrapure water production unit, RO + EDI, typical diluate conductivity < 0.2 µS/cm	40
	150 - 2,200	EP	Siemens LOGO!	EDI stage for demineralisation of RO permeate, typical diluate conductivity < 0.2 µS/cm	41
	900 - 12,500	MEG	-	MEG stage for degassing RO permeate, CO ₂ in product water < 5 mg/l	41
City water (free of chlorine, antiscalant dosing)	1,650 - 30,000	UO-D AS	RO digital	Freely programmable controller, incl. ARA, KSE, connection for DOSIN AS-K	42
		UO-D AS/FU		Like UO-D AS, energy-saving due to variable-frequency drive (VFD = FU)	43
		UO-D AS/FU + energy-saving kit		Like UO-D AS, particularly energy-saving due to special membranes and variable-frequency drive (VFD = FU)	43
Brackish water	250 - 27,500	UO BW	RO 1000	For raw water < 5,000 mg/l TDS Incl. ARA, KSE, connection for DOSIN AS-K	44
Sea water	650 - 20,000	UO SW		For raw water < 45,000 mg/l TDS Incl. flushing device with permeate KVP	45

MICROPROCESSOR CONTROLLERS FOR REVERSE OSMOSIS UNITS



RO digital

Microprocessor controllers for reverse osmosis units

Type	RO 524	RO 1000	RO digital	RO 5000
Display	2-digit	2 lines, 16 chars./line	4 lines, 20 chars./line	Graphic display
Conductivity measuring range	1 - 99 µS/cm	2 - 200 µS/cm	1 - 1,000 µS/cm	2 - 200 µS/cm
Further conductivity ranges (µS/cm)	-	0.5 - 50 20 - 2,000 100 - 10,000	-	0.5 - 50 20 - 2,000
Control voltage	24 VDC	230 V / 50 Hz	24 VDC	230 V / 50 Hz
Supply voltage	230 V / 50 - 60 Hz ± 10 %	230 V / 50 - 60 Hz ± 10 %	93 - 265 V / 50 - 60 Hz	230 V / 50 - 60 Hz ± 10 %
Dry running protection for RO pump	yes	yes	yes	yes
Connection for limitron	yes	yes	yes	yes
Forced stop RO	yes	yes	yes	yes
Operating signal	-	adjustable	adjustable	adjustable
Centralised alarm	yes	yes	yes	yes
Automatic mode (e. g. tank level)	yes	yes	yes	yes
Permeate conductivity limit	fixed	adjustable	adjustable	adjustable
Flow rate limits	-	-	adjustable	-
Pressure limits	-	-	adjustable	-
Behaviour if the limit is exceeded	fixed	adjustable	adjustable	adjustable
Constant permeate rate possible	-	-	yes, if FU available	-
Alternating pump activation	-	-	-	yes

Optional ports (inputs)

Concentrate flushing valve	yes (as an alternative)	yes	yes	yes
Permeate recirculation	yes (as an alternative)	yes	yes	yes
Double-staged RO unit	-	-	-	yes
Analogue level switch	-	-	yes	-
Feed water conductivity	-	-	-	yes, 3 measuring ranges
Programmable digital inputs	-	2	3	1
e.g. pre-alarm dosing tank empty	-	yes	yes	yes
e.g. external fault	-	yes	yes	yes

Optional ports (outputs)

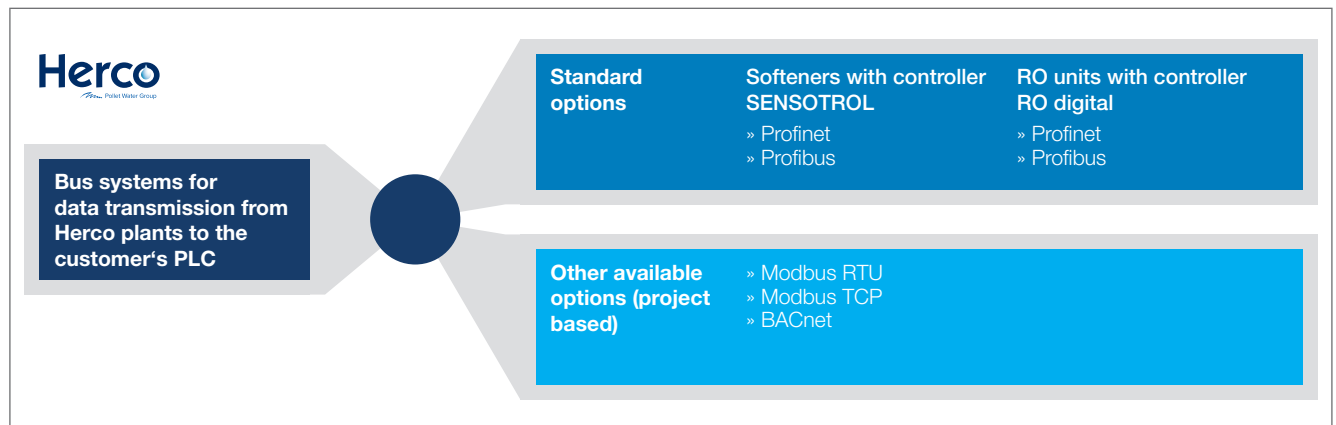
Permeate conductivity pre-warning	-	-	yes	yes
Analogue values	-	1	2	1
e.g. permeate conductivity	-	yes	yes	yes
e.g. permeate output	-	-	yes	-
Programmable digital outputs	-	1	1	1
e.g. operating signal	-	yes	yes	yes
Data logging	-	-	1,960 data sets approx. 10 days	1,145 data sets
Parameter setting	pre-configured	adjustable	adjustable	adjustable
Firmware update	at the factory	via update board	via RS232	via RS232
Profinet module	-	-	optional	-

PROGRAMMABLE LOGIC CONTROLLER (PLC) AND PROFINET INTERFACE FOR RO UNITS

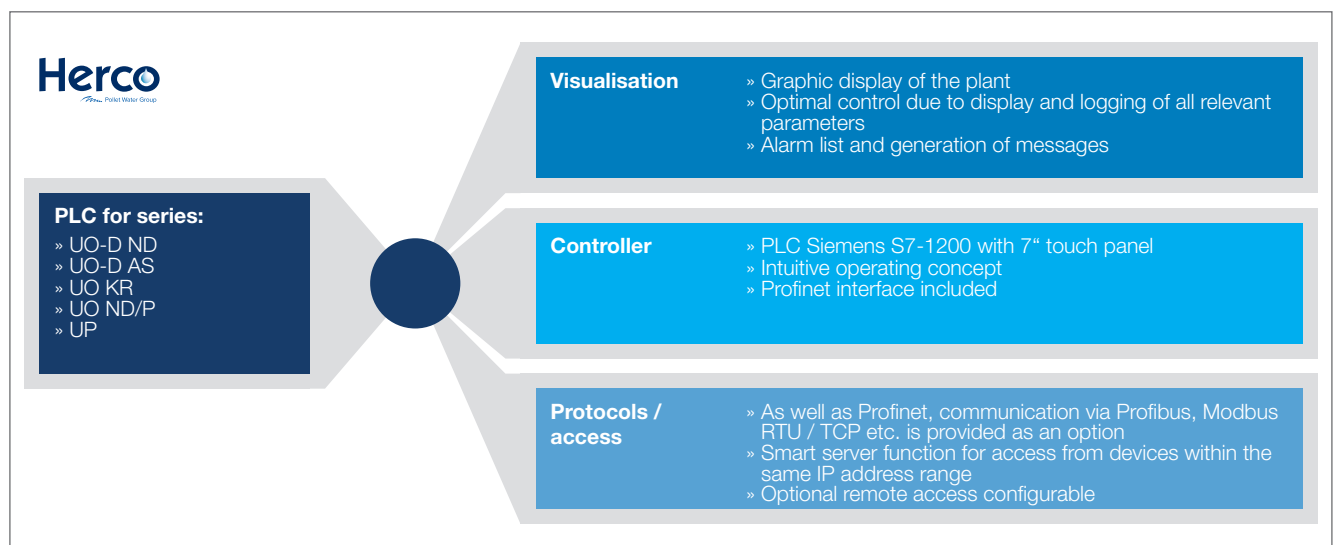


By default, our softening units and reverse osmosis units are equipped with efficient and user-friendly microprocessor controllers.

For some applications, this is not sufficient. An interface is required if the unit needs to communicate with the customer's central control system. The tried and tested Herco controllers SENSOTROL and RO digital are now optionally equipped with BUS interface modules. With this step, the entire plant data can be made available to the client's on-site PLC.



If visualisation of the process with a touch panel and extensive access to the unit is required, we recommend a PLC (programmable logic controller) instead of a microprocessor controller. From now on, we offer you the option to order RO plants with a PLC instead of a microprocessor controller for all units of the series UO-D ND, UO-D AS, UO KR, UO ND/P and UP. Further details on the scope of services and on the item numbers can be found on page 33.



COMPACT REVERSE OSMOSIS UNITS (PARTLY WITH SOFTENER)

Controller RO 524

Fast Track



UO Budget 130

CHARACTERISTICS OF THE BUDGET SERIES

- » Space-saving undersink unit
- » Operation without water softening unit possible
- » Measurement of permeate conductivity available as an option
- » Particularly good value

CHARACTERISTICS OF THE UO SERIES

- » Wall-mounted or free-standing
- » Particularly space-saving due to vertical arrangement of membrane housings
- » Equipped with efficient rotary vane pumps
- » Ready for operation because of pre-set controller
- » More options such as limitron, PR and VSE available

The series budget and UO 120 – 500 are available from stock (valid for units without options and without softener). If one of these reverse osmosis units is ordered until 15:00 with the comment "FAST TRACK", HERCO guarantees readiness for shipment within two working days.

See pages 22 and 46 – 50 for options and accessories.

Budget series: undersink units, permeate capacity 80 and 130 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO Budget 80	0.4 / 230 / 50	R ¾" AG / DN 10 / DN 10	800 x 360 x 360	381 900
UO Budget 130	0.4 / 230 / 50	R ¾" AG / DN 10 / DN 10	800 x 360 x 360	381 901
Measurement of permeate conductivity		Option for UO Budget, only installation ex works		381 903

UO series: wall/free-standing units, permeate capacity 120 – 500 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO 120	0.55 / 230 / 50	DN 20 / DN 10 / DN 10	400 x 340 x 1,190	381 921
UO 300	0.55 / 230 / 50	DN 20 / DN 10 / DN 10	400 x 340 x 1,190	381 922
UO 500	0.55 / 230 / 50	DN 20 / DN 10 / DN 10	400 x 340 x 1,190	381 923

Combi UO C series: RO units with simplex softening units, permeate capacity 120 – 500 l/h

Demineralisation of drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO 120 C	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 191
UO 300 C	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 192
UO 500 C	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 193

Combi UO CD series: RO units with duplex softening units, permeate capacity 120 – 500 l/h

Demineralisation of drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO 120 CD	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 201
UO 300 CD	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 202
UO 500 CD	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 203

Options

For RO series UO 120 - 500

Option	Salt rejection rate increased from 97 % to >98.5 %, slightly lower permeate capacity	383 767
HR modules		

COMPACT REVERSE OSMOSIS UNITS (PARTLY WITH SOFTENER)



The series UO-D 120 – 500 is available from stock (valid for units without options and without softener). If one of these reverse osmosis units is ordered until 15:00 with the comment “FAST TRACK”, HERCO guarantees readiness for shipment within two working days.

CHARACTERISTICS OF THE C AND CD COMBI SERIES

- » Units ready for connection, incl. pre-filter, backflow preventer, simplex (C) or duplex (CD) softening unit and hardness monitoring device limitron
- » Equipped with efficient rotary vane pumps
- » Ready for operation because of pre-set controller
- » More options such as HR modules, PR and VSE available

CHARACTERISTICS OF THE SERIES UO-D

- » Freely programmable controller with adjustable limit values
- » Logging of all relevant operating parameters
- » Profinet module available as an option
- » More options such as HR modules, PR and VSE available
- » Cover included in scope of delivery of all UO-D 120 – 500 units

See pages 22 and 46 – 50 for options and accessories.

UO-D series: Wall/free-standing, permeate capacity 120 - 500 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 120	0.55 / 230 / 50	DN 20 / DN 10 / DN 10	400 x 340 x 1,190	387 141
UO-D 300	0.55 / 230 / 50	DN 20 / DN 10 / DN 10	400 x 340 x 1,190	387 142
UO-D 500	0.55 / 230 / 50	DN 20 / DN 10 / DN 10	400 x 340 x 1,190	387 143

Combi UO-D C series: RO units with simplex softening unit, permeate capacity 120 - 500 l/h

Demineralisation of drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 120 C	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 211
UO-D 300 C	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 212
UO-D 500 C	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 213

Combi UO-D CD series: RO units with duplex softening unit, Permeate capacity 120 - 500 l/h

Demineralisation of drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 120 CD	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 221
UO-D 300 CD	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 222
UO-D 500 CD	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 223

Options

For RO series UO-D 120 - 500

Option	Salt rejection rate increased from 97 % to >98.5 %, slightly lower permeate capacity	383 767
HR modules		

REVERSE OSMOSIS UNITS FOR SOFT WATER

Controller RO digital



UO-D 900



UO-D 2000

CHARACTERISTICS OF THE UO-D SERIES

- » Equipped with high-quality centrifugal pumps
- » Freely programmable controller with adjustable limit values
- » Logging of all relevant operating parameters
- » Profinet module available as an option
- » Higher salt rejection with HR membrane modules (optionally available without charge)
- » More options such as limitron, PR, KSE and VSE available

ADVANTAGES OF THE VARIABLE-FREQUENCY DRIVE (FU VERSION)

- » Energy savings of up to 30 %
- » Automatic regulation PKR for constant permeate production already included
- » Protection of the unit due to soft start
- » Particular quiet operation

See pages 22 and 46 – 50 for options and accessories.

UO-D series: Permeate capacity 600 - 2,000 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 600	1.5 / 3 x 400 / 50	DN 25 / DN 20 / DN 15	610 x 810 x 1,800	387 151
UO-D 900	1.5 / 3 x 400 / 50	DN 25 / DN 20 / DN 15	610 x 810 x 1,800	387 152
UO-D 1200	2.2 / 3 x 400 / 50	DN 25 / DN 20 / DN 15	610 x 810 x 1,800	387 153
UO-D 1500	2.2 / 3 x 400 / 50	DN 25 / DN 20 / DN 15	610 x 810 x 1,800	387 154
UO-D 2000	3.0 / 3 x 400 / 50	DN 32 / DN 20 / DN 15	610 x 810 x 1,830	387 155

UO-D FU series: Permeate capacity 600 - 2,000 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 600 FU	2.2 / 3 x 400 / 50 - 60	DN 25 / DN 20 / DN 15	610 x 810 x 1,800	387 161
UO-D 900 FU	2.2 / 3 x 400 / 50 - 60	DN 25 / DN 20 / DN 15	610 x 810 x 1,800	387 162
UO-D 1200 FU	2.2 / 3 x 400 / 50 - 60	DN 25 / DN 20 / DN 15	610 x 810 x 1,800	387 163
UO-D 1500 FU	2.2 / 3 x 400 / 50 - 60	DN 25 / DN 20 / DN 15	610 x 810 x 1,800	387 164
UO-D 2000 FU	4.0 / 3 x 400 / 50 - 60	DN 32 / DN 20 / DN 15	610 x 810 x 1,830	387 165

Options

For RO series UO-D 600 - 2000

Option	Salt rejection rate increased from 97 % to >98.5 %, slightly lower permeate capacity	383 777
HR modules		

COMBI REVERSE OSMOSIS UNITS FOR CITY WATER



CHARACTERISTICS OF THE UO-D CD COMBI SERIES

- » Units ready for connection, incl. shut-off valve, pre-filter, backflow preventer, duplex (CD) softening unit ECOTROL TWIN and hardness monitoring device limitron
- » Equipped with high-quality centrifugal pumps
- » Freely programmable controller with adjustable limit values
- » Logging of all relevant operating parameters
- » Profinet module available as an option
- » Higher salt rejection with HR membrane modules (optionally available without charge)
- » More options such as brine tank skid SLB, PR, KSE and VSE available

ADVANTAGES OF THE VARIABLE-FREQUENCY DRIVE (FU VERSION)

- » Energy savings of up to 30 %
- » Automatic regulation PKR for constant permeate production already included
- » Protection of the unit due to soft start
- » Particular quiet operation

See pages 22 and 46 – 50 for options and accessories.

Combi UO-D CD series: RO units with duplex softening unit, permeate capacity 600 - 2,000 l/h

Demineralisation of drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 600 CD	1.5 / 3 x 400 / 50	DN 25 / DN 20 / HT 100	1,760 x 810 x 1,860	420 231
UO-D 900 CD	1.5 / 3 x 400 / 50	DN 25 / DN 20 / HT 100	1,760 x 810 x 1,860	420 232
UO-D 1200 CD	2.2 / 3 x 400 / 50	DN 25 / DN 20 / HT 100	1,940 x 810 x 2,000	420 233
UO-D 1500 CD	2.2 / 3 x 400 / 50	DN 25 / DN 20 / HT 100	1,940 x 810 x 2,000	420 234
UO-D 2000 CD	3.0 / 3 x 400 / 50	DN 32 / DN 20 / HT 100	1,940 x 810 x 2,000	420 235

Combi UO-D FU CD series: RO units with duplex softening unit, permeate capacity 600 - 2,000 l/h

Demineralisation of drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 600 FU CD	2.2 / 3 x 400 / 50 - 60	DN 25 / DN 20 / HT 100	1,760 x 810 x 1,860	420 241
UO-D 900 FU CD	2.2 / 3 x 400 / 50 - 60	DN 25 / DN 20 / HT 100	1,760 x 810 x 1,860	420 242
UO-D 1200 FU CD	2.2 / 3 x 400 / 50 - 60	DN 25 / DN 20 / HT 100	1,940 x 810 x 2,000	420 243
UO-D 1500 FU CD	2.2 / 3 x 400 / 50 - 60	DN 25 / DN 20 / HT 100	1,940 x 810 x 2,000	420 244
UO-D 2000 FU CD	4.0 / 3 x 400 / 50 - 60	DN 32 / DN 20 / HT 100	1,940 x 810 x 2,000	420 245

Options

For RO series UO-D 600 - 2000

Option HR modules	Salt rejection rate increased from 97 % to >98.5 %, slightly lower permeate capacity	383 777
Option skid SLB	Base frame for brine tank	630 x 810 x 170 366 146

COUNTERPRESSURE REVERSE OSMOSIS UNITS FOR SOFT WATER

Controller RO digital

Hygienic operation



UO-ED 300 Z



UO-ED 300 Z-CD

CHARACTERISTICS OF THE UO-ED Z SERIES

- » Designed for a counterpressure of 4 bar, operation with up to 7 bar possible
- » Hygienic operation due to direct supply of permeate to consumer
- » Design with minimal dead zones on permeate side due to flow-through expansion vessel
- » Permeate recirculation PR inklusive
- » Optionally available as combi unit with softener
- » Higher salt rejection with HR membrane modules (optionally available without charge)
- » More options such as limitron and VSE available

Air conditioning (AC) systems keep the air in buildings within a desired range of temperature and humidity. In many cases, humidification of the supply air is necessary. The reverse osmosis series UO-ED Z is especially designed to produce water for air conditioning systems.

ADVANTAGES:

- » Design with minimal dead zones and hygienic operation make this series ideally suited for air conditioning applications
- » High permeate pressure allows transport of permeate over several floors
- » Flexible setup of the unit – ideal for confined spaces

See pages 22 and 46 – 50 for options and accessories.

UO-ED Z series: Counterpressure reverse osmosis units, permeate capacity 50 - 1,200 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-ED 50 Z	0.25 / 230 / 50	DN 20 / DN 10 / DN 10	610 x 500 x 1,530	380 620
UO-ED 150 Z	0.55 / 230 / 50	DN 20 / DN 10 / DN 10	610 x 500 x 1,530	380 621
UO-ED 300 Z	1.5 / 3 x 400 / 50	DN 20 / DN 15 / DN 15	710 x 790 x 1,630	380 622
UO-ED 600 Z	1.5 / 3 x 400 / 50	DN 20 / DN 15 / DN 15	710 x 790 x 1,630	380 623
UO-ED 900 Z	2.2 / 3 x 400 / 50	DN 20 / DN 15 / DN 15	710 x 790 x 1,630	380 624
UO-ED 1200 Z	2.2 / 3 x 400 / 50	DN 20 / DN 15 / DN 15	710 x 790 x 1,630	380 625

Options

For RO series UO-ED Z

Option HR modules	Salt rejection rate increased from 97 % to >98.5 %, slightly lower permeate capacity, max. backpressure 4 bar	383 829
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OPTIONS FOR REVERSE OSMOSIS UNITS: PROFINET INTERFACE AND PLC

NEW



SPS S7-1200 incl. extension modules
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CHARACTERISTICS OF THE PROGRAMMABLE LOGIC CONTROLLER (PLC)

- » PLC Siemens S7-1200 with 7" Comfort Colour Touchpanel (TP700C) and all required electrical components, I/O cards etc.
- » Adaptation of the RO instrumentation for operation with PLC
- » Logging of all relevant parameters and messages / faults
- » Automatic storage of data on a SD card in csv format
- » Graphical representation of the unit and measured values / operational status
- » Connection to central control system via Profinet interface included
- » Further interfaces such as Profibus, Modbus, BacNet optionally available
- » Smart server function for remote access (for access from same IP address range)

ADVANTAGES OF THE PLC

- » Self-explanatory menu navigation and intuitive operating concept
- » Optimal control and assessment of the operating status
- » Controller complies with current industry standard, thus a complete integration in the control system on the client's side is possible
- » Setup of remote access to plant possible (optional)
- » Optionally, an extension or adaptation of the controller is easily achievable (e.g. further measurements, integration of pre-treatment or peripherals such as tanks, etc.)

Programmable logic controllers can be chosen as an option for all RO units of the series UO-D ND, UO-D AS, UO KR, UO ND/P and UP.

When a RO unit is ordered with optional PLC, the standard microprocessor controller is not included in the scope of supply.

Profinet interfaces can be chosen as an option for all RO units with controller RO digital.

Option Profinet interface for standardised transfer of all measured and logged data to the on-site PLC

For all UO units with RO digital control

		Item number
Profinet	For series UO-D 120 - 500 (C/CD)	542 070
Profinet	For all other series UO-D with the RO digital controller (detailed listing on page 47)	541 842
Further BUS interfaces on request (e.g. Profibus, BacNet, etc.)		

Option equipment with PLC Siemens S7-1200

For RO series UO-D ND (FU) and UO-D AS (FU), UO KR (FU), UO ND/P (FU) and UP

		Item number
SPS	For series UO-D ND (FU) and UO-D AS (FU)	800 002
SPS	For series UO KR (FU)	800 003
SPS	For series UO ND/P	800 004
SPS	For series UP	800 005

REVERSE OSMOSIS UNITS FOR SOFT WATER

Controller RO digital



UO-D 4300 ND/FU

CHARACTERISTICS OF THE UO-D ND SERIES

- » Energy-efficient low-pressure membrane elements
- » Freely programmable controller with adjustable limit values
- » Logging of all relevant operating parameters
- » Profinet module available as an option
- » PLC instead of RO digital available as an option
- » More options such as limitron, PR and KSE available
- » Unit sizes 2500 and 3000 optionally available as space-saving versions with vertical arrangement of membrane housings

ADVANTAGES UO-D ND SERIES

- » Series optimised for low operating pressure
- » Suitable for most industrial applications
- » Modern microprocessor controller RO digital
- » Space-saving version available as an option

ADVANTAGES OF THE VARIABLE-FREQUENCY DRIVE (FU VERSION)

- » Energy savings of up to 30 %
- » Automatic regulation PKR for constant permeate production already included
- » Protection of the unit due to soft start
- » Particular quiet operation

See pages 22, 33 and 46 – 50 for options and accessories.

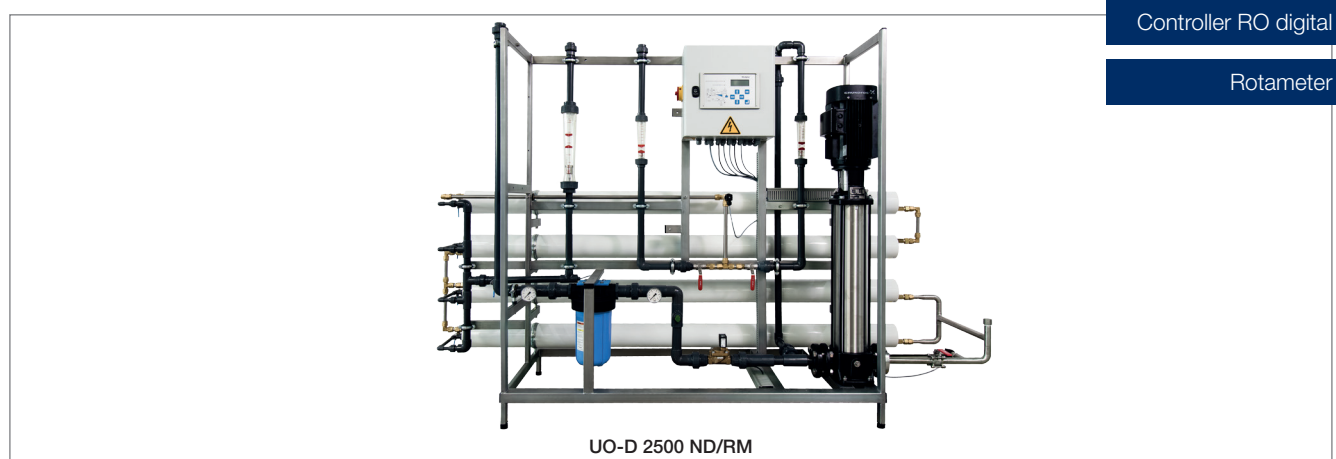
UO-D ND and ND/FU series: Permeate capacity 2,500 - 3,500 l/h Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 2500 ND	3.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	2,480 x 710 x 1,650	387 016
UO-D 2500 ND/FU	4.0 / 3 x 400 / 50-60	DN 32 / DN 25 / DN 25	2,480 x 710 x 1,650	387 017
UO-D 3000 ND	4.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	387 019
UO-D 3000 ND/FU	4.0 / 3 x 400 / 50-60	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	387 020
UO-D 3500 ND	4.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	387 022
UO-D 3500 ND/FU	4.0 / 3 x 400 / 50-60	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	387 023

UO-D ND and ND/FU series: Permeate capacity 4,300 - 12,000 l/h Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 4300 ND	5.5 / 3 x 400 / 50	DN 32 / DN 32 / DN 32	2,850 x 790 x 1,790	387 025
UO-D 4300 ND/FU	5.5 / 3 x 400 / 50-60	DN 32 / DN 32 / DN 32	2,850 x 790 x 1,790	387 026
UO-D 5400 ND	5.5 / 3 x 400 / 50	DN 40 / DN 32 / DN 32	2,850 x 790 x 1,790	387 028
UO-D 5400 ND/FU	5.5 / 3 x 400 / 50-60	DN 40 / DN 32 / DN 32	2,850 x 790 x 1,790	387 029
UO-D 6000 ND	5.5 / 3 x 400 / 50	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,830	387 031
UO-D 6000 ND/FU	5.5 / 3 x 400 / 50-60	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,830	387 032
UO-D 7000 ND	7.5 / 3 x 400 / 50	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,830	387 034
UO-D 7000 ND/FU	7.5 / 3 x 400 / 50-60	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,830	387 035
UO-D 8000 ND	11.0 / 3 x 400 / 50	DN 50 / DN 40 / DN 32	3,870 x 790 x 1,810	387 037
UO-D 8000 ND/FU	11.0 / 3 x 400 / 50-60	DN 50 / DN 40 / DN 32	3,870 x 790 x 1,810	387 038
UO-D 10000 ND	11.0 / 3 x 400 / 50	DN 50 / DN 50 / DN 32	4,890 x 790 x 1,900	387 043
UO-D 10000 ND/FU	11.0 / 3 x 400 / 50-60	DN 50 / DN 50 / DN 32	4,890 x 790 x 1,900	387 044
UO-D 12000 ND	11.0 / 3 x 400 / 50	DN 50 / DN 50 / DN 50	4,060 x 840 x 1,860	387 046
UO-D 12000 ND/FU	11.0 / 3 x 400 / 50-60	DN 50 / DN 50 / DN 50	4,060 x 870 x 1,860	387 047

REVERSE OSMOSIS UNITS FOR SOFT WATER



UO-D 2500 ND/RM

CHARACTERISTICS OF THE UO-D ND/RM SERIES

- » Energy-efficient low-pressure membrane elements
- » Freely programmable controller with adjustable limit values
- » Logging of operation parameters (conductivity permeate, pressure values)
- » Logging of flow rates via analogue signal generator possible (optional)
- » Profinet module available as an option
- » More options such as limitron, PR and KSE available

ADVANTAGES OF THE UO-D ND/RM SERIES

- » Modern microprocessor controller RO digital is combined with robust rotameters for flow measurement
- » Flow rates visible at a glance in passing
- » With the analogue signals option, flows can also be recorded, thus providing a complete record of the operating data

See pages 22 and 46 – 50 for options and accessories.

UO-D ND/RM series: Permeate capacity 2,500 - 3,500 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 2500 ND/RM	3.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	2,450 x 710 x 1,650	387 175
UO-D 3000 ND/RM	4.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	387 176
UO-D 3500 ND/RM	4.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	387 177

UO-D ND/RM series: Permeate capacity 4,300 - 12,000 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 4300 ND/RM	5.5 / 3 x 400 / 50	DN 32 / DN 32 / DN 32	2,900 x 790 x 1,790	387 178
UO-D 5400 ND/RM	5.5 / 3 x 400 / 50	DN 40 / DN 32 / DN 32	2,910 x 790 x 1,790	387 179
UO-D 6000 ND/RM	5.5 / 3 x 400 / 50	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,830	387 180
UO-D 7000 ND/RM	7.5 / 3 x 400 / 50	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,830	387 181
UO-D 8000 ND/RM	11.0 / 3 x 400 / 50	DN 50 / DN 40 / DN 32	3,870 x 790 x 1,810	387 182
UO-D 10000 ND/RM	11.0 / 3 x 400 / 50	DN 50 / DN 50 / DN 32	4,900 x 790 x 1,820	387 183
UO-D 12000 ND/RM	11.0 / 3 x 400 / 50	DN 50 / DN 50 / DN 50	4,060 x 840 x 1,860	387 184

Option analogue signals

For RO units UO-D 2500 – 12000 ND/RM

Option analogue signals RM1	For UO-D 2500 – 3500 ND/RM	383 892
Option analogue signals RM2	For UO-D 4300 – 12000 ND/RM	383 893

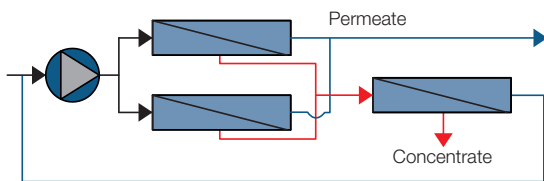
CONCENTRATE-STAGE REVERSE OSMOSIS UNITS FOR SOFT WATER

Controller RO 5000

Recovery up to 90 %



UO 8500 KR/FU



CHARACTERISTICS OF THE UO KR SERIES

- » Low water consumption thanks to high permeate recovery up to 90 %
- » Optimal permeate quality through special membrane selection
- » Including KSE concentrate flushing unit and ARA connection kit for cleaning unit
- » Proven controller RO 5000 with line display
- » PLC instead of RO 5000 available as an option
- » More options such as limitron and PR available
- » Amortisation often already after 4,000 operating hours

Due to the savings in fresh water and wastewater, amortisation is usually possible after a few months. We will be pleased to prepare an operating cost calculation for you. Contact us for further details!

ADVANTAGES OF THE VARIABLE-FREQUENCY DRIVE (FU VERSION)

- » Energy savings of up to 30 %
- » Automatic regulation PKR for constant permeate production optional available
- » Particular quiet operation

See pages 22, 33 and 46 – 50 for options and accessories.

KR and KR/FU series: Concentrate-staged RO units, permeate capacity 3,000 - 15,000 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO 3000 KR	5.5 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	3,490 x 710 x 1,680	381 820
UO 3000 KR/FU	5.5 / 3 x 400 / 50-60	DN 32 / DN 25 / DN 25	3,490 x 710 x 1,640	381 827
UO 3500 KR	5.5 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,680	381 830
UO 3500 KR/FU	5.5 / 3 x 400 / 50-60	DN 32 / DN 25 / DN 25	3,520 x 710 x 1,650	381 837
UO 4000 KR	7.5 / 3 x 400 / 50	DN 32 / DN 32 / DN 32	2,850 x 710 x 1,810	381 840
UO 4000 KR/FU	7.5 / 3 x 400 / 50-60	DN 32 / DN 32 / DN 32	2,850 x 710 x 1,810	381 847
UO 5000 KR	7.5 / 3 x 400 / 50	DN 40 / DN 32 / DN 32	2,900 x 790 x 1,810	381 850
UO 5000 KR/FU	7.5 / 3 x 400 / 50-60	DN 40 / DN 32 / DN 32	2,900 x 790 x 1,810	381 857
UO 6000 KR	7.5 / 3 x 400 / 50	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,810	381 860
UO 6000 KR/FU	7.5 / 3 x 400 / 50-60	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,810	381 867
UO 7000 KR	7.5 / 3 x 400 / 50	DN 40 / DN 40 / DN 32	3,680 x 790 x 1,810	381 870
UO 7000 KR/FU	7.5 / 3 x 400 / 50-60	DN 40 / DN 40 / DN 32	3,680 x 790 x 1,810	381 877
UO 8500 KR	11.0 / 3 x 400 / 50	DN 50 / DN 40 / DN 32	4,880 x 790 x 1,810	381 880
UO 8500 KR/FU	11.0 / 3 x 400 / 50-60	DN 50 / DN 40 / DN 32	4,880 x 790 x 1,810	381 887
UO 10000 KR	11.0 / 3 x 400 / 50	DN 50 / DN 50 / DN 32	4,150 x 840 x 1,900	381 890
UO 10000 KR/FU	11.0 / 3 x 400 / 50-60	DN 50 / DN 50 / DN 32	4,150 x 840 x 1,900	381 897
UO 15000 KR	15.0 / 3 x 400 / 50	DN 65 / DN 50 / DN 32	5,080 x 1,030 x 1,900	381 893
UO 15000 KR/FU	15.0 / 3 x 400 / 50-60	DN 65 / DN 50 / DN 32	5,080 x 1,030 x 1,900	381 894

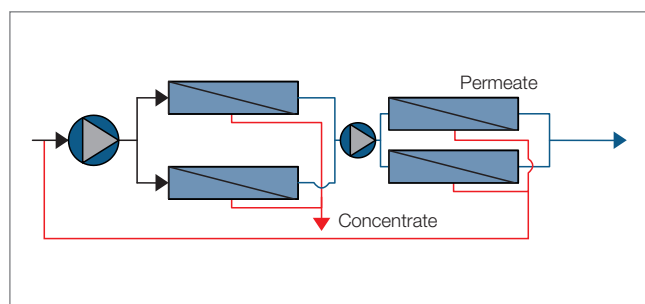
PERMEATE-STAGED REVERSE OSMOSIS UNITS FOR SOFT WATER



Controller RO 5000

Typical conductivity permeate < 5 µS/cm

UO 1000 ND/P



CHARACTERISTICS OF THE UO ND/P SERIES

- » Permeate-staged plant, i.e. permeate of the first RO stage flows through a second RO stage, whereby a significantly lower conductivity is achieved than with single-stage plants
- » Compact design
- » Proven controller RO 5000 with line display
- » PLC instead of RO 5000 available as an option
- » More options such as limitron and PR available

ADVANTAGES OF THE UO ND/P SERIES

- » Very good permeate quality is achieved through two-stage design (typical conductivity < 5 µS/cm)
- » Ideal for applications with strict requirements on permeate conductivity (e.g. in surface technology, chemical industry, laboratory technology etc.)

See pages 22, 33 and 46 – 50 for options and accessories.

ND/P series: Permeate-staged RO units, permeate capacity 300 - 2,000 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO 300 ND/P	1.1 / 230 / 50	DN 20 / DN 10 / DN 10	940 x 800 x 1,810	385 655
UO 600 ND/P	3.0 / 3 x 400 / 50	DN 20 / DN 20 / DN 20	1,080 x 800 x 1,810	381 107
UO 800 ND/P	3.7 / 3 x 400 / 50	DN 20 / DN 20 / DN 20	1,080 x 800 x 1,810	385 851
UO 1000 ND/P	3.7 / 3 x 400 / 50	DN 20 / DN 20 / DN 20	1,080 x 780 x 1,810	385 692
UO 1500 ND/P	4.5 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	2,620 x 910 x 1,730	381 139
UO 2000 ND/P	5.2 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	2,610 x 910 x 1,730	385 792

ND/P series: Permeate-staged RO units, permeate capacity 3,000 - 10,000 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO 3000 ND/P	8.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	2,610 x 910 x 1,730	385 906
UO 5000 ND/P	13.0 / 3 x 400 / 50	DN 40 / DN 32 / DN 32	3,900 x 1,100 x 2,000	386 235
UO 8000 ND/P	18.5 / 3 x 400 / 50	DN 50 / DN 40 / DN 32	4,890 x 1,240 x 1,990	386 220
UO 10000 ND/P	22.0 / 3 x 400 / 50	DN 50 / DN 40 / DN 32	4,740 x 1,240 x 2,040	385 800

CUSTOMISED PLANTS

SPECIAL APPLICATION? OUR TEAM OF EXPERTS IS HAPPY TO ADVISE YOU.

EDI CONCENTRATE RECIRCULATION

The EDI is equipped with a concentrate recirculation to the RO stage in order to comply with the customer's strict specifications concerning system yield.

MEMBRANE CONTACTORS

The membrane contactor is installed between RO and EDI. It reduces dissolved CO₂ to further improve the quality of the ultrapure water.

REVERSE OSMOSIS UNIT

The reverse osmosis stage is equipped with high rejection membranes to guarantee the lowest possible conductivity in the inlet to the EDI.

DESIGN:

Customised plant with redundancy for maximum operational reliability, consisting of two parallel units:

- » 2 x Reverse osmosis
- » 2 x Membrane contactor
- » 2 x Electro-deionisation EDI
- » 2 x Mixed bed polisher
- » 1 x EDI concentrate recirculation
- » Skid-mounted
- » Low-pressure PP piping
- » Control by PLC

APPLICATION:

Boiler feed water for turbine steam, thermal waste utilisation

CAPACITY:

2 x 5 m³/h ultrapure water



Unit for SIWatec Wassertechnik GmbH & Co. KG

EDI ELECTRO-DEIONISATION

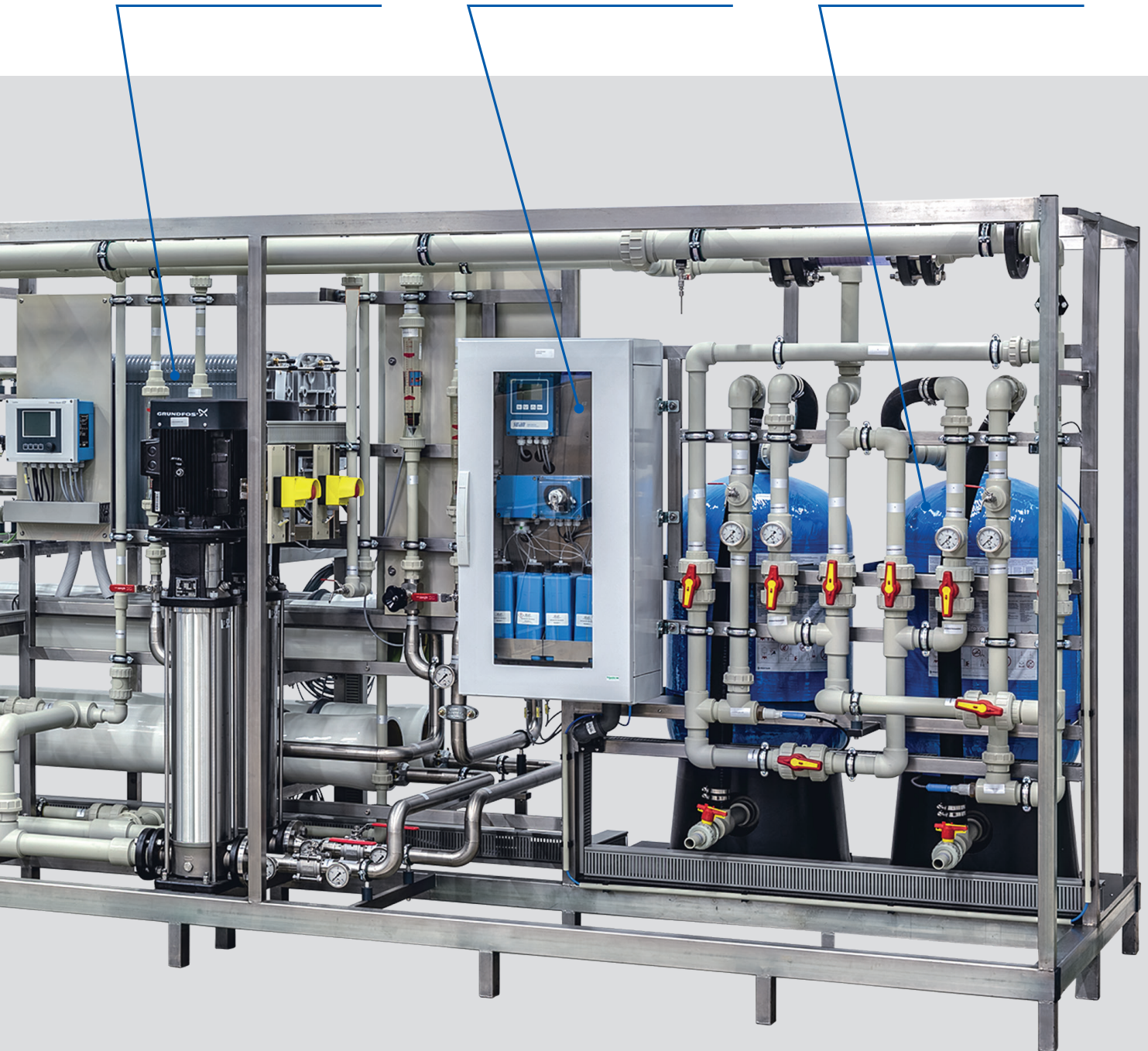
The EDI further reduces salts and silica to meet the requirements of the steam boiler. The resistance of the ultra pure water is $> 10 \text{ M}\Omega \times \text{cm}$.

SILICA MEASUREMENT

The plant is equipped with an online silica measurement system to continuously monitor the quality of the ultrapure water.

POLISHER

Downstream mixed-bed ion exchangers serve as polisher to ensure that the limit values are always met reliably. Both serial and parallel connection is possible.



ULTRA-PURE WATER UNITS (RO WITH EDI)

Controller RO 1000

Typical cond. diluate
< 0.2 µS/cm



UP 1500

CHARACTERISTICS OF THE UP SERIES

- » Electro-deionisation with upstream RO unit
- » Diluate (product water) with typical conductivity < 0.2 µS/cm
- » Continuous operation
- » PR permeate recirculation included
- » Piping in PVC and stainless steel
- » PLC instead of RO 1000 available as an option
- » Wide range of options, such as membrane degassing, available to further lower diluate conductivity

ADVANTAGES OF THE UP SERIES

- » Excellent product water quality due to downstream EDI (typical conductivity < 0.2 µS/cm)
- » No chemicals required (unlike ion exchange plants, which require chemicals for regeneration)
- » Ideal for applications with very strict requirements on permeate conductivity (e.g. clean steam and sterile steam generators, microelectronics, etc.)

See pages 22, 33 and 46 – 50 for options and accessories.

UP series: Reverse osmosis units with Electro-deionisation, diluate capacity 150 - 3,000 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Diluate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/diluate/conc.	Dimensions in mm W x D x H	Item number
UP 150	1.3 / 230 / 50	DN 20 / DN 10 / DN 50	1,160 x 690 x 1,710	425 082
UP 250	1.3 / 230 / 50	DN 20 / DN 10 / DN 50	1,160 x 690 x 1,710	425 092
UP 550	4.1 / 3 x 400 / 50	DN 25 / DN 20 / DN 50	1,340 x 890 x 2,000	425 002
UP 800	4.1 / 3 x 400 / 50	DN 25 / DN 20 / DN 50	1,340 x 890 x 2,000	425 012
UP 1100	4.1 / 3 x 400 / 50	DN 25 / DN 20 / DN 50	1,340 x 890 x 2,000	425 022
UP 1500	4.1 / 3 x 400 / 50	DN 32 / DN 25 / DN 50	2,530 x 890 x 2,030	425 042
UP 2200	6.1 / 3 x 400 / 50	DN 32 / DN 25 / DN 50	2,530 x 890 x 2,030	425 052
UP 3000	11.5 / 3 x 400 / 50	DN 32 / DN 25 / DN 25+15	3,490 x 820 x 1,900	425 075

UP series: Reverse osmosis units with Electro-deionisation, diluate capacity 4,100 - 20,000 l/h

Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l

Product name / Diluate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/diluate/conc.	Dimensions in mm W x D x H	Item number
UP 4100	13.5 / 3 x 400 / 50	DN 40 / DN 32 / DN 32+20	3,140 x 850 x 2,180	425 076
UP 6000	18.5 / 3 x 400 / 50	DN 50 / DN 40 / DN 32+20	3,870 x 850 x 2,210	425 077
UP 8200	20.0 / 3 x 400 / 50	DN 50 / DN 40 / DN 32+20	4,750 x 850 x 2,210	425 078
UP 11000	26.0 / 3 x 400 / 50	DN 50 / DN 50 / DN 50+20	3,865 x 1,000 x 2,200	425 079
UP 20000	45.0 / 3 x 400 / 50	DN 80 / DN 65 / DN 50+20	4,750 x 1,500 x 2,200	425 080

ULTRA-PURE WATER COMPONENTS (EDI AND MEG)



EP 900

CHARACTERISTICS OF THE EP SERIES

- » Electro-deionisation (EDI) for demineralisation of RO permeate
- » Diluate (product water) with typical conductivity < 0.2 µS/cm
- » Prepared for direct connection to an RO unit
- » Piping in PP



Membrane degasifier (contactor) module

CO₂ < 5 mg/l

CHARACTERISTICS OF MEMBRANE DEGASIFIER MEG

- » Reduction of dissolved CO₂ in the permeate from 30 mg/l to < 5 mg/l, thereby significant reduction of conductivity
- » Compact installation on skid of UO-ND/P and UP units is included
- » Scope of supply includes accessories such as air filter, pressure reducer and air flow meter
- » MEG DL is supplied with pressurised air provided by the customer, MEG SV is supplied with air from a side-channel compressor (included in scope)
- » For special applications such as oxygen degassing, degassing with FDA approved modules or permeate with CO₂ values > 30 mg/l please contact us

ADVANTAGES OF MEMBRANE DEGASIFIER MEG

- » Improves efficiency of downstream EDI (particularly important, if very low silica concentrations are required in the diluate)
- » Sturdy and reliable physical process, no chemical consumption

EP series: Electro-deionisation (EDI), diluate capacity 150 - 2,200 l/h For RO permeate demineralisation

Product name / Diluate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/diluate/conc.	Dimensions in mm W x D x H	Item number
EP 150	0.8 / 230 / 50	DN 15 / DN 15 / DN 50	1,040 x 690 x 1,610	425 161
EP 300	2.1 / 3 x 400 / 50	DN 20 / DN 20 / DN 50	1,040 x 690 x 1,610	425 101
EP 900	2.1 / 3 x 400 / 50	DN 20 / DN 20 / DN 50	1,040 x 690 x 1,610	425 121
EP 1500	2.1 / 3 x 400 / 50	DN 20 / DN 20 / DN 50	1,040 x 690 x 1,610	425 141
EP 2200	3.1 / 3 x 400 / 50	DN 20 / DN 20 / DN 50	1,040 x 690 x 1,610	425 151

MEG series: Membrane contactor

For the removal of dissolved CO₂ from reverse osmosis permeate with a CO₂ concentration of up to 30 mg/l in the permeate

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Compatible with	Item number
CO ₂ contactor MEG 900 DL	-	UO 300 - 800 ND/P & UP 150 - 800	425 228
CO ₂ contactor MEG 2500 DL	-	UO 1000 - 2000 ND/P & UP 1100 - 2200	425 229
CO ₂ contactor MEG 6600 DL	-	UO 3000 - 5000 ND/P & UP 3000 - 6000	425 230
CO ₂ contactor MEG 12500 SV	1.5 / 3 x 400 / 50	UO 8000 - 10000 ND/P & UP 8200 - 11000	425 231

REVERSE OSMOSIS UNITS FOR ANTISCALANT DOSING

Controller RO digital

Antiscalant



UO-D 30000 AS

CHARACTERISTICS OF THE UO-D AS FU SERIES

- » Operation with dosing of antiscalant instead of upstream softening unit
- » Connection for antiscalant injection point
- » Signal output for dosing unit DOSIN AS-K
- » Antiscalant (AS) suction lance emits low level warning
- » KSE concentrate flushing device and ARA connection kit for MRA manual cleaning unit included
- » Freely programmable controller with adjustable limit values
- » Logging of all relevant operating parameters
- » Profinet module available as an option
- » PLC instead of RO digital available as an option
- » More options and accessories such as PR, KVP and DOSIN AS-K available

ADVANTAGES OF THE UO-D AS SERIES

- » Low space requirements, since upstream softening unit is not required
- » No salt and water consumption for regeneration of softening unit
- » Options KSE and ARA are already included
- » Robust plant, easy to operate

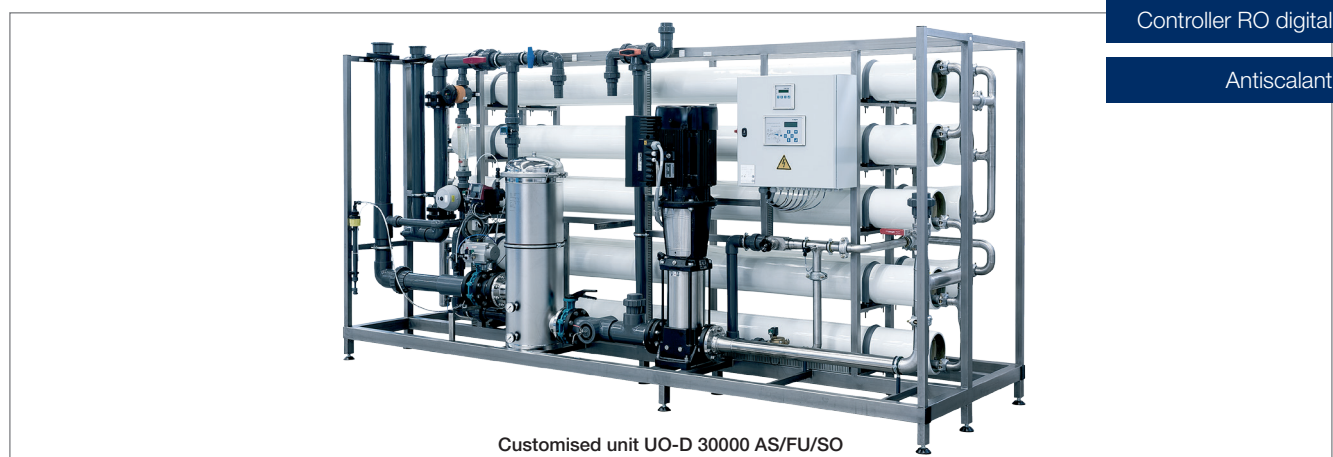
See pages 22, 33 and 46 – 50 for options and accessories.

UO-D AS series: Permeate capacity 1,650 - 30,000 l/h

Demineralisation of hardness-stabilised drinking water with a salinity of up to 1,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 1650 AS	2.2 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	2,480 x 700 x 1,660	387 049
UO-D 2200 AS	2.2 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	2,480 x 700 x 1,650	387 052
UO-D 2500 AS	3.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	387 055
UO-D 3100 AS	3.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	387 058
UO-D 3800 AS	5.5 / 3 x 400 / 50	DN 32 / DN 32 / DN 32	2,900 x 790 x 1,790	387 061
UO-D 5000 AS	5.5 / 3 x 400 / 50	DN 40 / DN 32 / DN 32	2,890 x 790 x 1,790	387 064
UO-D 6000 AS	5.5 / 3 x 400 / 50	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,830	387 067
UO-D 7000 AS	7.5 / 3 x 400 / 50	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,830	387 070
UO-D 8000 AS	7.5 / 3 x 400 / 50	DN 50 / DN 40 / DN 32	4,880 x 790 x 1,830	387 073
UO-D 10000 AS	11.0 / 3 x 400 / 50	DN 50 / DN 50 / DN 32	4,060 x 840 x 1,880	387 076
UO-D 12000 AS	11.0 / 3 x 400 / 50	DN 50 / DN 50 / DN 50	4,930 x 840 x 1,860	387 079
UO-D 15000 AS	11.0 / 3 x 400 / 50	DN 65 / DN 65 / DN 50	5,080 x 840 x 1,920	387 082
UO-D 18000 AS	15.0 / 3 x 400 / 50	DN 65 / DN 65 / DN 50	6,190 x 840 x 1,880	387 085
UO-D 20000 AS	15.0 / 3 x 400 / 50	DN 65 / DN 65 / DN 50	4,990 x 840 x 2,230	387 088
UO-D 25000 AS	18.5 / 3 x 400 / 50	DN 80 / DN 65 / DN 50	5,170 x 940 x 2,200	387 091
UO-D 30000 AS	22.0 / 3 x 400 / 50	DN 100 / DN 80 / DN 50	6,070 x 990 x 2,360	387 094

REVERSE OSMOSIS UNITS FOR ANTISCALANT DOSING



ADVANTAGES OF THE VARIABLE-FREQUENCY DRIVE (FU VERSION)

- » Energy savings of up to 30 %
- » Automatic regulation PKR for constant permeate production already included
- » Protection of the unit due to soft start
- » Particular quiet operation

ADVANTAGES OF THE ENERGY-SAVING KIT

- » Low operation cost (energy consumption in combination with variable-frequency drive up to 50% lower)
- » Standard membrane modules are replaced with more energy-efficient version

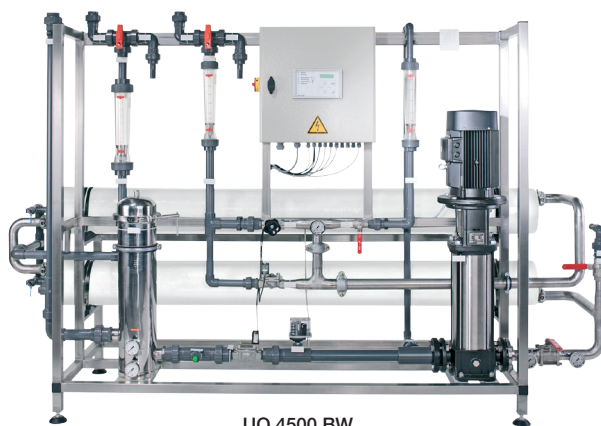
See pages 22, 33 and 46 – 50 for options and accessories.

UO-D AS/FU series: Permeate capacity 1,650 - 30,000 l/h Demineralisation of hardness-stabilised drinking water with a salinity of up to 1,000 mg/l				
Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO-D 1650 AS/FU	2.2 / 3 x 400 / 50 - 60	DN 32 / DN 25 / DN 25	2,480 x 700 x 1,660	387 050
UO-D 2200 AS/FU	2.2 / 3 x 400 / 50 - 60	DN 32 / DN 25 / DN 25	2,480 x 700 x 1,650	387 053
UO-D 2500 AS/FU	3.0 / 3 x 400 / 50 - 60	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	387 056
UO-D 3100 AS/FU	3.0 / 3 x 400 / 50 - 60	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	387 059
UO-D 3800 AS/FU	5.5 / 3 x 400 / 50 - 60	DN 32 / DN 32 / DN 32	2,900 x 790 x 1,790	387 062
UO-D 5000 AS/FU	5.5 / 3 x 400 / 50 - 60	DN 40 / DN 32 / DN 32	2,890 x 790 x 1,790	387 065
UO-D 6000 AS/FU	5.5 / 3 x 400 / 50 - 60	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,830	387 068
UO-D 7000 AS/FU	7.5 / 3 x 400 / 50 - 60	DN 40 / DN 40 / DN 32	3,870 x 790 x 1,830	387 071
UO-D 8000 AS/FU	7.5 / 3 x 400 / 50 - 60	DN 50 / DN 40 / DN 32	4,880 x 790 x 1,830	387 074
UO-D 10000 AS/FU	11.0 / 3 x 400 / 50 - 60	DN 50 / DN 50 / DN 32	4,060 x 840 x 1,880	387 077
UO-D 12000 AS/FU	11.0 / 3 x 400 / 50 - 60	DN 50 / DN 50 / DN 50	4,930 x 840 x 1,860	387 080
UO-D 15000 AS/FU	11.0 / 3 x 400 / 50 - 60	DN 65 / DN 65 / DN 50	5,080 x 840 x 1,920	387 083
UO-D 18000 AS/FU	15.0 / 3 x 400 / 50 - 60	DN 65 / DN 65 / DN 50	6,190 x 840 x 1,880	387 086
UO-D 20000 AS/FU	15.0 / 3 x 400 / 50 - 60	DN 65 / DN 65 / DN 50	4,990 x 840 x 2,230	387 089
UO-D 25000 AS/FU	18.5 / 3 x 400 / 50 - 60	DN 80 / DN 65 / DN 50	5,170 x 940 x 2,200	387 092
UO-D 30000 AS/FU	22.0 / 3 x 400 / 50 - 60	DN 100 / DN 80 / DN 50	6,050 x 990 x 2,360	387 095
Energy-saving membranes For UO-D AS/FU units				
Energy-saving kit 1	For version 1,650 - 3,100			383 778
Energy-saving kit 2	For version 3,800 - 10,000			383 779
Energy-saving kit 3	For version 12,000 - 30,000			383 780

REVERSE OSMOSIS UNITS FOR BRACKISH WATER DESALINATION

Controller RO 1000

TDS feed water
up to 5,000 mg/l



UO 4500 BW

Because of the use of high-grade materials, brackish water units are designed to meet special requirements, especially to resist high salt concentrations (particularly on the concentrate side).

CHARACTERISTICS OF THE UO BW SERIES

- » Permeate recovery 50 - 75 %, depending on feed water salinity and the desired desalination rate
- » Significantly reduced energy consumption for BW/FU units (available on request)
- » Space-saving version with vertical membrane housings for sizes 250 to 1,250 l/h

BW AND BW/FU UNITS INCLUDE ALREADY

- » ARA connection kit for manual cleaning unit
- » KSE concentrate flushing device
- » Connection for an injection point
- » Signal output for DOSIN AS-K dosing pump

APPLICATIONS

- » Well water and process water with elevated salt content
- » Concentrates of an existing reverse osmosis (process design check-up required)
- » Brackish water (water with TDS ≤ 5,000 mg/l)

Operation with antiscalant dosing available on request!

See pages 48 – 49 for options and accessories.

BW series: Brackish water units, permeate capacity 250 - 27,500 l/h For salt concentrations of up to 5,000 mg/l

Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO 250 BW	2.2 / 3 x 400 / 50	DN 20 / DN 20 / DN 20	660 x 710 x 1,710	384 500
UO 500 BW	2.2 / 3 x 400 / 50	DN 20 / DN 20 / DN 20	660 x 710 x 1,710	384 510
UO 750 BW	2.2 / 3 x 400 / 50	DN 20 / DN 20 / DN 20	660 x 710 x 1,710	384 520
UO 1000 BW	2.2 / 3 x 400 / 50	DN 20 / DN 20 / DN 20	660 x 710 x 1,710	384 530
UO 1250 BW	2.2 / 3 x 400 / 50	DN 20 / DN 20 / DN 20	660 x 710 x 1,710	384 540
UO 1500 BW	3.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	2,480 x 700 x 1,650	384 550
UO 2000 BW	4.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	2,480 x 700 x 1,650	384 560
UO 2500 BW	4.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	384 570
UO 3000 BW	4.0 / 3 x 400 / 50	DN 32 / DN 25 / DN 25	3,500 x 710 x 1,650	384 580
UO 3500 BW	5.5 / 3 x 400 / 50	DN 40 / DN 32 / DN 32	2,840 x 790 x 1,790	384 590
UO 4500 BW	5.5 / 3 x 400 / 50	DN 40 / DN 32 / DN 32	2,840 x 790 x 1,790	384 600
UO 5500 BW	7.5 / 3 x 400 / 50	DN 50 / DN 40 / DN 40	3,850 x 790 x 1,810	384 610
UO 6500 BW	11.0 / 3 x 400 / 50	DN 50 / DN 40 / DN 40	3,850 x 790 x 1,830	384 620
UO 8500 BW	11.0 / 3 x 400 / 50	DN 50 / DN 40 / DN 40	5,020 x 790 x 1,830	384 630
UO 10000 BW	11.0 / 3 x 400 / 50	DN 65 / DN 50 / DN 50	4,050 x 840 x 1,860	384 640
UO 11500 BW	15.0 / 3 x 400 / 50	DN 65 / DN 50 / DN 50	5,060 x 840 x 1,860	384 650
UO 13500 BW	18.5 / 3 x 400 / 50	DN 65 / DN 65 / DN 65	5,070 x 840 x 1,900	384 660
UO 17500 BW	22.0 / 3 x 400 / 50	DN 80 / DN 65 / DN 65	5,050 x 890 x 2,170	384 670
UO 22000 BW	30.0 / 3 x 400 / 50	DN 100 / DN 65 / DN 65	6,070 x 990 x 2,050	384 680
UO 27500 BW	30.0 / 3 x 400 / 50	DN 100 / DN 80 / DN 80	6,050 x 1,000 x 2,200	384 690

REVERSE OSMOSIS UNITS FOR SEA WATER DESALINATION



SERIE UO SW

All SW series units feature automatic concentrate displacement with permeate (KVP) in order to protect the components from downtime corrosion. This feature may also be used for occasionally required system CIP.

All components are made of corrosion-proof material (PVC or duplex stainless steel). The skid is made of powder-coated stainless steel.

CHARACTERISTICS OF THE UO SW SERIES

- » Total salt concentration (TDS) up to 45,000 mg/l in the feed water
- » Stainless steel skid with seawater-resistant coating
- » Permeate quality < 500 mg/l TDS
- » Permeate recovery approx. 33 %
- » Turbocharger energy recovery system for UO 5000 SW and larger units
- » Alternative energy recovery systems (e.g. iSave) available on request

Operation with antiscalant dosing available on request!

See page 49 for options and accessories.

SW series: Sea water desalination units, permeate capacity 650 - 20,500 l/h

For salt concentrations of up to 45,000 mg/l

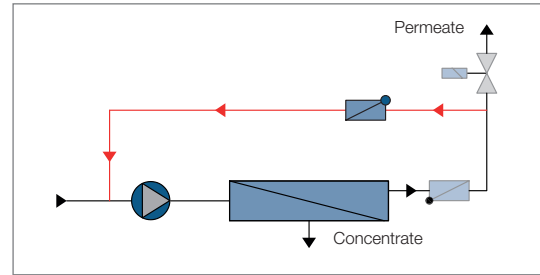
Product name / Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection feed/permeate/conc.	Dimensions in mm W x D x H	Item number
UO 650 SW	5.5 / 3 x 400 / 50	DN 25 / DN 20 / DN 25	2,400 x 840 x 1,900	384 001
UO 850 SW	7.5 / 3 x 400 / 50	DN 25 / DN 20 / DN 25	3,000 x 840 x 1,900	384 011
UO 2500 SW	22.0 / 3 x 400 / 50	DN 40 / DN 32/ DN 40	5,950 x 1,000 x 1,900	384 021
UO 5000 SW	30.0 / 3 x 400 / 50	DN 65 / DN 32 / DN 40	5,950 x 1,000 x 1,900	384 031
UO 10000 SW	60.0 / 3 x 400 / 50	DN 80 / DN 50 / DN 65	5,950 x 1,000 x 1,900	384 041
UO 20000 SW	110.0 / 3 x 400 / 50	DN 100 / DN 65 / DN 80	5,950 x 2,000 x 1,900	384 051

INSTALLABLE OPTIONS FOR REVERSE OSMOSIS UNITS

PR – PERMEATE RECIRCULATION

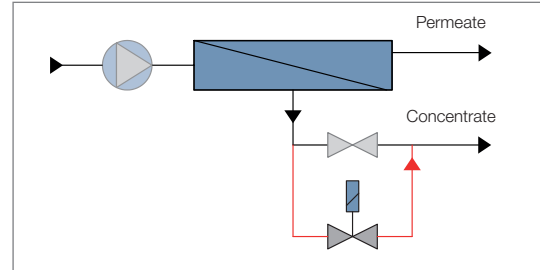
During the start-up of a RO, permeate with slightly higher conductivity is produced first. The option PR prevents this water from reaching the consumer / tank. The permeate is circulated until the desired conductivity is reached. Then the permeate valve is automatically opened and the system switches over to the consumer / tank.

The PR option is useful if there is a fixed limit value for the permeate conductivity and this may not be exceeded even for a short time.



KSE – CONCENTRATE FLUSHING UNIT

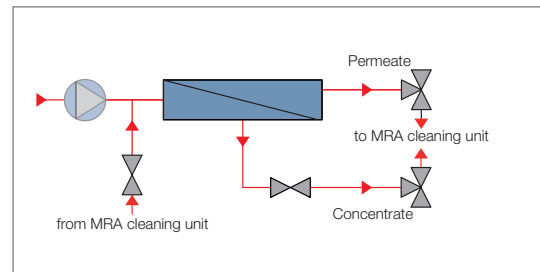
During shutdown of the RO, scaling and fouling can occur especially on the concentrate side of the membrane, as this is where the highest salt and organic contents are found. The option KSE displaces the concentrate with the pressure of the RO feed water when the plant is shut down via an automatic bypass valve. The KSE option is particularly useful for feed waters with a potential for precipitation or corrosion and for the operation with antiscalant. In both cases, it extends the lifetime of the RO.



ARA – CONNECTION KIT FOR MANUAL CLEANING UNIT

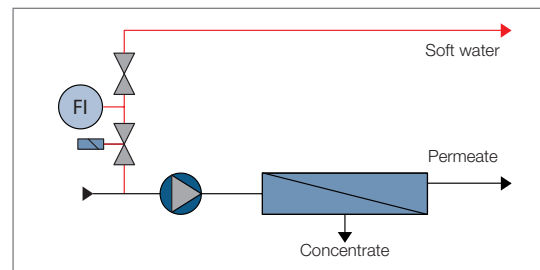
Installation of ball valves for easy connection of a manual cleaning unit e.g. for acid or alkaline cleaning of the RO membranes.

This option is recommended if regular cleaning of the membranes is to be expected, e.g. due to difficult raw water or due to antiscalant operation.



VSE – BLENDING DEVICE

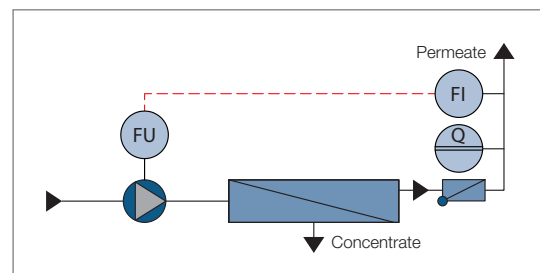
Automatic bypass of the RO plant for mixing the permeate with RO feed water in the tank. With this option a defined residual hardness or a defined residual salt content in the permeate tank can be set.



PKR – CONSTANT PERMEATE FLOW CONTROL

During normal operation of a RO plant, the pressure increases slowly over time due to membrane clogging. Without readjustment, this automatically results in a decreasing permeate production over time.

With the PKR option, the permeate output can be kept constant in plants with a variable-frequency drive (VFD = FU) by adjusting the pressure with the help of the FU, thus eliminating the need for manual readjustment. This option is also recommended if the inlet pressure fluctuates.



PROFINET INTERFACE

With a Profinet interface, all measured and logged data can be transferred to the on-site PLC (e.g. central control system of factory). For further information see page 33.

Further BUS interfaces on request, e.g. Profibus, BacNet etc.



INSTALLABLE OPTIONS FOR REVERSE OSMOSIS UNITS

Options with item number and price in € per unit							
	Series/permeate capacity	PR	KSE	ARA	VSE	PKR	Profinet
RO 524	UO 120-500 C + CD	383 764	-	Incl.	383 765	-	-
	UO-D 120-500 C + CD	383 764	-	Incl.	383 765	-	542 070
	UO-D 600-1500, FU, CD	383 775	383 774	Incl.	383 805	Incl. with FU	541 842
	UO-D 2000, FU, CD	383 775	383 774	Incl.	383 776	Incl. with FU	541 842
	UO-ED 50-150 Z	Incl.	-	Incl.	On request	-	On request
	UO-ED 300-1200 Z	Incl.	-	Incl.	On request		541 842
	UO-D 2500 ND, FU, RM	383 621	382 873	382 113	On request	Incl. with FU	541 842
	UO-D 3000-3500 ND, FU, RM	383 622	382 873	382 113	On request	Incl. with FU	541 842
	UO-D 4300-5400 ND, FU, RM	382 957	382 878	382 114	On request	Incl. with FU	541 842
	UO-D 6000 ND, FU, RM	383 623	382 878	382 122	On request	Incl. with FU	541 842
RO digital	UO-D 7000-8000 ND, FU, RM	382 881	382 878	382 122	On request	Incl. with FU	541 842
	UO-D 10000 ND, FU, RM	382 881	382 878	382 138	On request	Incl. with FU	541 842
	UO-D 12000 ND, FU, RM	382 908	382 905	382 138	On request	Incl. with FU	541 842
	UO 3000-3500 KR, FU	382 901	Incl.	Incl.	On request	383 169	-
	UO 4000-5000 KR, FU	382 902	Incl.	Incl.	On request	Only FU Up to 5000	-
	UO 6000 KR, FU	382 903	Incl.	Incl.	On request	383 170	-
	UO 7000-10000 KR, FU	382 373	Incl.	Incl.	On request	Only FU Up to 10000	-
	UO 300 ND/P	382 305	-	-	-	-	-
	UO 600-1500 ND/P	382 369	382 370	382 096	-	-	-
	UO 2000 ND/P	382 900	382 372	382 113	-	-	-
RO 5000	UO 3000 ND/P	382 901	382 372	382 113	-	-	-
	UO 5000 ND/P	382 902	382 374	382 122	-	-	-
	UO 8000 ND/P	382 373	382 374	382 138	-	-	-
	UO 10000 ND/P	382 373	382 139	382 138	-	-	-
	UO-D 1650-2500 AS, FU	383 621	Incl.	Incl.	On request	Incl. with FU	541 842
	UO-D 3100 AS, FU	383 622	Incl.	Incl.	On request	Incl. with FU	541 842
RO digital	UO-D 3800-5000 AS, FU	382 957	Incl.	Incl.	On request	Incl. with FU	541 842
	UO-D 6000 AS, FU	383 623	Incl.	Incl.	On request	Incl. with FU	541 842
	UO-D 7000-10000 AS, FU	382 881	Incl.	Incl.	On request	Incl. with FU	541 842
	UO-D 12000-15000 AS, FU	382 908	Incl.	Incl.	On request	Incl. with FU	541 842
	UO-D 18000-25000 AS, FU	382 904	Incl.	Incl.	On request	Incl. with FU	541 842
	UO-D 30000 AS, FU	382 904	Incl.	Incl.	On request	Incl. with FU	541 842

ACCESSORIES FOR REVERSE OSMOSIS UNITS



MRA 300

Back-up / alternating / parallel RO operation

For RO units

Product name	Description	Item number
Back-up / alternating / parallel RO operation	For 2 units, digital level, potential-free change-over contact	383 705
Back-up / alternating / parallel RO operation	For 2 units, analogue level, 4 –20 mA	545 852

Fouling index measurement device

Product name	Description	Item number
VIM	Manual tester with pressure reducer and 0.45 µm filter for SDI measurement	382 284

Manual cleaning unit

For RO series UO/UO-D, UO-D ND, KR, AS and BW

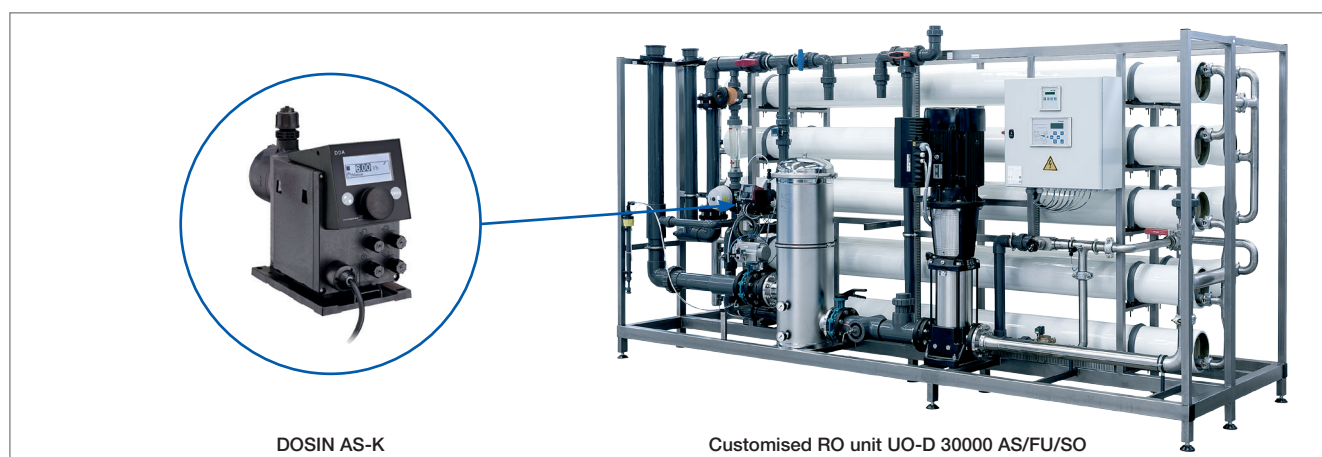
Product name / Volume l	Compatible with	Mains connection kW / V / Hz	Dimensions in mm W x D x H	Item number
MRA 100	UO 50 - 1500	0.80 / 230 / 50	640 x 810 x 1,400	382 026
MRA 200	UO 1650 - 3500	0.46 / 400 / 50	640 x 810 x 1,470	382 095
MRA 300	UO 3800 - 9500	1.30 / 400 / 50	800 x 1,010 x 1,740	382 332
MRA 500	UO 10000 - 17000	2.20 / 400 / 50	800 x 1,010 x 1,900	382 407
MRA 1000	UO 18000 - 30000	4.00 / 400 / 50	1,110 x 1,405 x 1,850	382 809
Heater for MRA	MRA 200 - 1000	9 kW heating power, with thermostat		383 178

Automatic concentrate displacement with permeate

For difficult raw water (water components that are highly corrosive or hard to condition), in RO units UO-D AS/ UO BW

Product name / Volume l	Compatible with	Mains connection kW / V / Hz	Dimensions in mm W x D x H	Item number
KVP 300 / 24	UO-D 3800 - 8000 AS	1.50 / 3 x 400 / 50	1,000 x 800 x 1,600	383 896
KVP 500 / 24	UO-D 10000 - 15000 AS	2.20 / 3 x 400 / 50	1,000 x 800 x 1,800	383 897
KVP 1000 / 24	UO-D 18000 - 30000 AS	4.00 / 3 x 400 / 50	1,500 x 1,100 x 1,800	383 898
KVP 100	UO 250 - 1250 BW	0.46 / 3 x 400 / 50	640 x 800 x 1,400	384 700
KVP 200	UO 1500 - 3500 BW	0.46 / 3 x 400 / 50	640 x 800 x 1,450	384 701
KVP 300	UO 3500 - 8500 BW	1.50 / 3 x 400 / 50	1,000 x 800 x 1,600	384 702
KVP 500	UO 10000 - 13500 BW	2.20 / 3 x 400 / 50	1,000 x 800 x 1,800	384 703
KVP 1000	UO 17500 - 27500 BW	4.00 / 3 x 400 / 50	1,500 x 1,100 x 1,800	384 704

DOSING STATIONS FOR REVERSE OSMOSIS



DOSIN AS-K

Customised RO unit UO-D 30000 AS/FU/SO

CHARACTERISTICS OF DOSING STATIONS

Dosing stations already include:

- » Special pumps that can dose smallest amounts
- » Dosing accessories (suction lance, injection fitting, cable)
- » Mounting on RO unit skid (AS, BW and SW series)

ADVANTAGES OF DOSING STATIONS

- » Mounting on RO skid is already included if dosing station is ordered with RO unit
- » Dosing station is mechanically and electrically integrated in reverse osmosis unit
- » No changes in dimensions of RO skid

Antiscalant dosing station

For RO units AS, BW and SW

Product name	Description	Dosing tank	Item number
DOSIN AS-K	Dosing pump with dosing control	From 25 kg drum	450 301

DOSING STATIONS FOR CHEMICAL DOSING

For RO units ND, AS, ND/P, KR and 3 UP

Product name	Description	Volume l Dosing tank	Item number
DOSIN UO-DB75	With dosing control up to 7,000 l/h permeate	75	450 302
DOSIN UO-DB100	With dosing control for regulated operation	100	450 303
DOSIN UO-DB100REG	Without dosing control for regulated operation	100	450 304

Options for DOSIN dosing stations

Product name	Description	Item number
SAW 35	Safety drip tray for DOSIN AS-K, 1 x 25 kg drum	453 099
SAW 100	Safety drip tray for DOSIN DB75 and DB100	450 089

MEMBRANE ELEMENTS



PWG membrane elements

PWG membrane elements for reverse osmosis units

Tested quality for a long service life – in stock

Product name	Description (comparable with)	Permeate m ³ /day	Salt rejection rate % nom.	Item number
2540 ND	Low-pressure element 2540 ND (ESPA 1)	3.3	99.1	395 142
4040 BW	Brackish water element 4040 BW (CPA 2)	8.7	99.5	395 144
4021 HF	Low pressure element 4021 HF	5.5	99.0	395 229
4040 ND	Low pressure element 4040 ND (ESPA 1)	9.8	99.3	395 146
4040 HR	Low pressure element 4040 HR (ESPA 2)	7.2	99.6	395 147
4040 ES	Low pressure element 4040 ES (ESPA 4)	9.8	99.2	395 149
8040 ND	Low pressure element 8040 ND (ESPA 1)	45.4	99.3	395 151
8040 HR	Low pressure element 8040 HR (ESPA 2)	34.1	99.6	395 152
8040 ES	Low pressure element 8040 ES (ESPA 4)	45.4	99.2	395 154

Hydranautics membrane elements for reverse osmosis units

Tested quality for a long service life – in general in stock

Product name	Description	Permeate m ³ /day	Salt rejection rate % nom.	Item number
ESPA1-4040	Low pressure element ESPA1-4040	9.8	99.3	395 066
ESPA2-LD-4040	Low pressure element ESPA2-LD-4040	7.2	99.6	395 091
ESPA4-4040	Low pressure element ESPA4-4040	9.8	99.2	395 107
ESPA1-8040	Low pressure element ESPA1-8040	45.4	99.3	395 119
ESPA2-LD-8040	Low pressure element ESPA2-LD-8040	34.1	99.6	395 204
ESPA4-LD-8040	Low pressure element ESPA4-LD-8040	45.4	99.2	395 155

Cleaning chemicals

For membrane units

Product name	Description	Unit	Item number
Membrane cleaner S 2	Acid membrane cleaner, pH level 2	5 kg	530 183
Membrane cleaner A 12	Alkaline membrane cleaner, pH level 12	5 kg	530 177

DOCUMENTATION SYSTEM, KNOW-HOW AND CERTIFICATION

HERCO DOCUMENTATION SYSTEM

Download all available product documents and illustrations comfortably from the Herco online documentation system. Request your personal login details on:

www.herco-wt.de/en/customer-login

Use the comfortable search function to find brochures, tender texts and photos by entering the item number or keywords!

We are happy to answer questions regarding your application.

HERCO KNOW-HOW

Our engineering staff will gladly provide you with the following documents for your project:

- » CAD drawings
- » Declarations of conformity
- » Electrical circuit diagrams
- » Flow charts / P&I diagrams
- » Layout / floor plan
- » Operating instructions in several languages

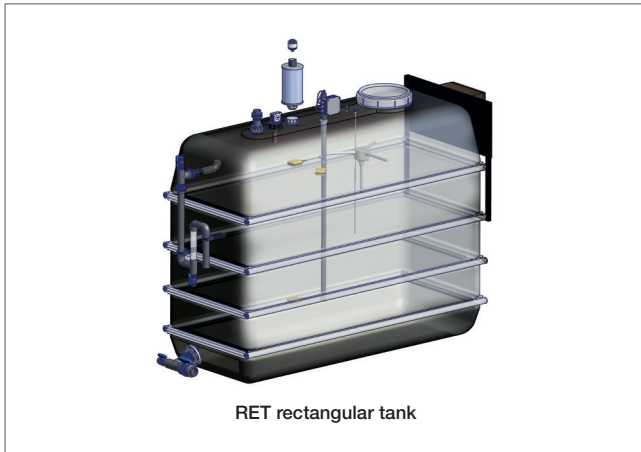
We would be happy to train your sales and service staff! Please contact us for details.

CERTIFIED QUALITY MADE IN GERMANY

DIN ISO 9001
EN ISO 13485
EC certificate



RECTANGULAR AND CYLINDRICAL TANKS



RET rectangular tank



RUT cylindrical tank

GENERAL CHARACTERISTICS

- » All tanks are suitable for non-pressurised storage of pure water (soft water, permeate, totally demineralised water)
- » Scope includes connections for inlet, withdrawal, overflow as well as manhole (RET type) or handhole (RUT type) with cover

RECTANGULAR TANKS, BLACK

CHARACTERISTICS

- » Material: opaque, black HD-PE
- » Optional: transparent design, at no extra charge
- » Storage capacity can be increased by connecting several tanks
- » We recommend HERCO connection kits for easy withdrawal pipe connection and for interconnecting several tanks

CYLINDRICAL TANKS, BLACK

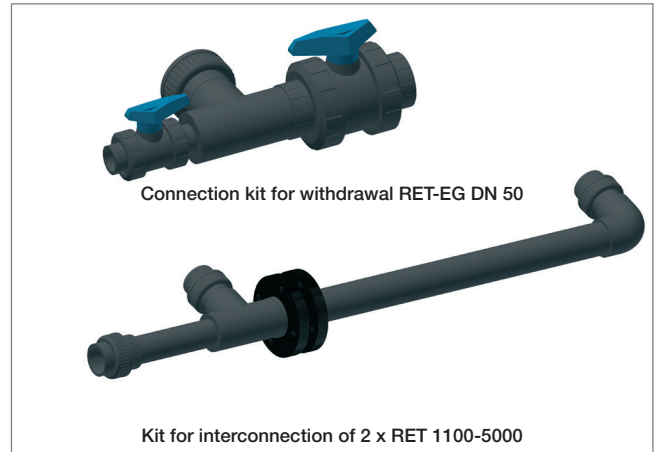
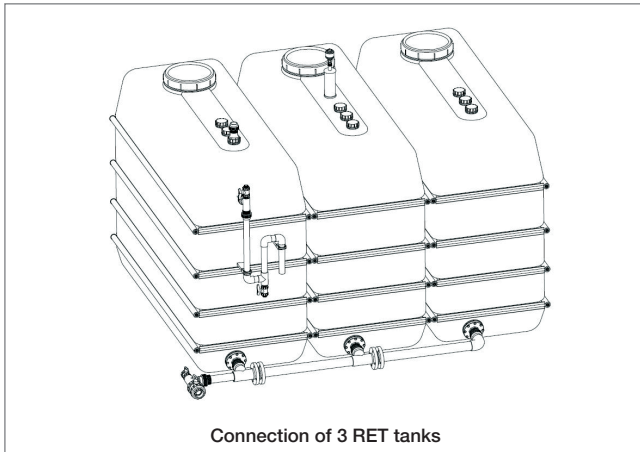
CHARACTERISTICS

- » Material: opaque, black PE
- » Includes two PVC ball valves for withdrawal and drain; drain port equipped with hosetail d 25

RET series, black Volume 1,100 - 5,000 liter				
Product name / Volume l	Manhole Ø in mm	Hydraulic connection inlet / outlet / overflow	Dimensions in mm W x D x H	Item number
RET 1100 S	400	DN 25 / DN 50 / d 50	1,560 x 720 x 1,500	430 264
RET 1500 S	400	DN 25 / DN 50 / d 50	1,670 x 770 x 1,730	430 265
RET 2000 S	400	DN 25 / DN 50 / d 50	2,230 x 770 x 1,800	430 266
RET 2500 S	400	DN 40 / DN 50 / d 50	2,000 x 990 x 1,760	430 395
RET 3000 S	400	DN 40 / DN 50 / d 50	2,380 x 1,030 x 1,760	430 268
RET 3000 S/DN100	400	DN 65 / DN 100 / DN 100	2,370 x 1,030 x 1,670	430 579
RET 4000 S	400	DN 40 / DN 50 / d 50	2,590 x 1,040 x 2,080	430 269
RET 4000 S/DN100	400	DN 65 / DN 100 / DN 100	2,550 x 1,040 x 2,010	430 530
RET 5000 S	400	DN 40 / DN 50 / d 50	2,390 x 1,350 x 1,980	430 374

RUT series, black Ball valves for withdrawal and drain included				
Product name / Volume l	Handhole Ø in mm	Hydraulic connection inlet / outlet / overflow	Dimensions in mm Ø x H	Item number
RUT 200 S	150	DN 20 / DN 25 / d 40	595 x 875	430 277
RUT 300 S	150	DN 20 / DN 25 / d 40	675 x 995	430 278
RUT 500 S	150	DN 20 / DN 25 / d 40	840 x 1,230	430 279

WITHDRAWAL KIT AND KIT FOR INTERCONNECTION OF RET TANKS



CONNECTION KIT FOR WITHDRAWAL FROM RET RECTANGULAR TANK

CHARACTERISTICS

- » Pre-mounted withdrawal kits with manual valves
- » Consisting of:
 - › DN 50: 1 ball valve DN 50 (withdrawal) and 1 ball valve DN 25 (drain)
 - › DN 100: 1 butterfly valve DN 100 (withdrawal) and 1 ball valve DN 25 (drain)
 - › DN 150: 1 butterfly valve DN 150 (withdrawal) and 2 ball valves DN 25 (drain)
- » The kit is connected to the tank at no extra charge if ordered together with a tank.

Connection kit for withdrawal from RET rectangular tank				
Product name / Nennweite	Max. withdrawal m³/h	Hydraulic connection outlet / drain	Compatible with RET / RET conn. kit	Item number
RET-EG DN50	11	DN 50 / DN 25	1100 - 5000 / DN 50	435 128
RET-EG DN100	30	DN 100 / DN 25	3000 & 4000 / DN 100	435 246
RET-EG DN150	60	DN 150 / DN 25	- / DN 150	435 247

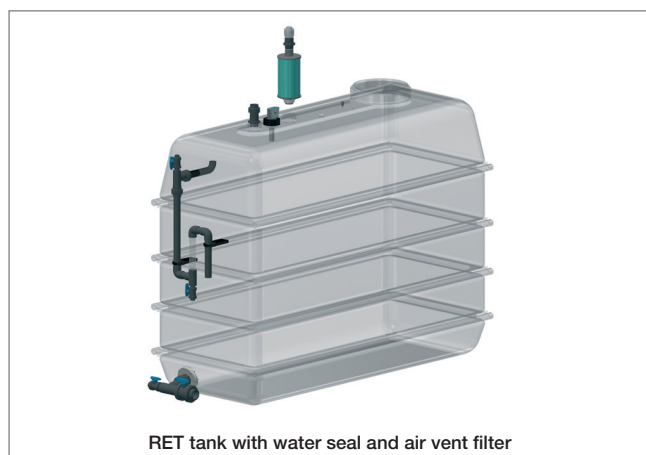
KIT FOR INTERCONNECTION OF RET RECTANGULAR TANKS

CHARACTERISTICS

- » Pre-mounted kit for interconnection of 2 tanks (RET type) with connection for a compatible withdrawal fitting
- » If ordered together with 2 tanks, the kits are pre-mounted / connected to the tank at no extra charge
- » Optional: extension kit complementing the connection kit for interconnection of up to 4 RET tanks (1 connection and 1 extension kit for 3 tanks, 1 connection and 2 extension kits for 4 tanks)

Kit for interconnection of RET rectangular tanks				
Basic version for interconnection of 2 RET tanks; please order extension kit if you wish to connect more tanks				
Product name / Nominal diameter	Max. withdrawal m³/h	Hydraulic connection inlet / inlet / withdrawal	Compatible with RET / RET connection kit	Item number
RET connection kit DN50	11	DN 50 / DN 50 / DN 50	2 x 1100 - 5000 DN 50	435 127
Expansion kit DN50	11	DN 50 / DN 65 / DN 65	- / DN 50	435 289
RET connection kit DN100	30	DN 100 / DN 100 / DN 100	2 x 3000 & 4000 DN 100	435 244
Expansion kit DN100	30	DN 100 / DN 100 / DN 100	- / DN 100	435 249
RET connection kit DN150	60	DN 100 / DN 100 / DN 150	2 x 3000 & 4000 DN 100	435 245
Expansion kit DN150	60	DN 100 / DN 150 / DN 150	- / DN 150	435 250

WATER SEALS AND AIR VENT FILTERS FOR TANKS



RET tank with water seal and air vent filter

CHARACTERISTICS

- » Water seal for tank overflow; required if an air vent filter or a CO₂ absorption filter for tank ventilation are fitted. Prevents the entry of ambient air through the overflow orifice
- » CO₂ absorption filter with granule filling; depletion is indicated by colour change.

Important note: for safe CO₂ absorption the filter may only be charged with 50 % of the maximum air volume stated in the specifications

- » Air vent filters (also sterile air filters) protect the pure water from particles and microorganisms in the ambient air

Water seals

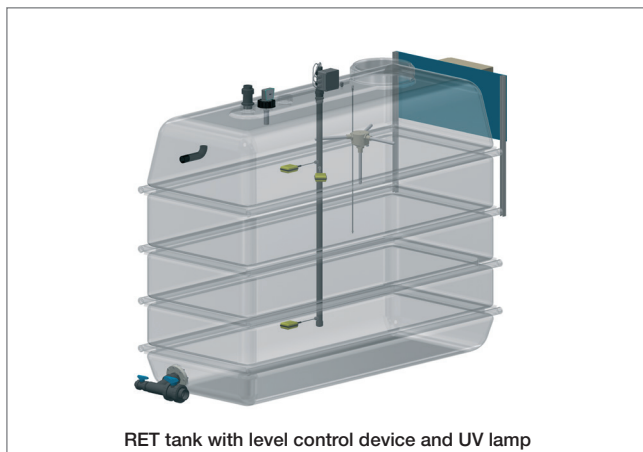
Product name	Compatible with tank	Hydraulic connection tank / overflow / drain	Item number
Water seal WS-40	RUT	DN 32 / d 40 / DN 15	383 101
Water seal WS-50	RET	DN 50 / d 50 / DN 20	382 419
Water seal WS-100	RET	DN 100 / d 100 / DN 20	435 248

Air vent filters

Absorption filters for CO₂ separation / fine filters for particle separation

Product name	Max. capacity Nm ³ /h / dp mbar	Connection tank / atmosphere	Dimensions in mm Ø x H	Micron rating µm	Item number
CO ₂ absorp. filter CAF 1	1.5 / 10	R ¾" / R ¾"	100 x 350		435 066
CO ₂ absorp. filter CAF 5	5 / 10	R 2" / R 2"	170 x 410		435 057
CO ₂ absorp. filter CAF 15	15 / 10	DN 80 / DN 80	270 x 520		435 191
Refill for CAF 1					435 068
Refill for CAF 5					435 059
Refill for CAF 15					435 193
Air vent filter BF 03	3 / 10	DN 32 / -	100 x 120	0.3	300 020
Sterile air vent filter BF 02 S	6 / 10	R ½" / -	70 x 91	0.2	300 001
Sterile air vent filter BF 30 S	30 / 10	DN 65 / -	200 x 400	0.2	300 113
Replacement for BF 03					330 047
Replacement for BF 02 S					330 077
Replacement for BF 30 S					335 180

LEVEL CONTROL DEVICES AND SUBMERSIBLE UV LAMPS FOR TANKS



LEVEL CONTROL DEVICES

CHARACTERISTICS

The level controller detects the fluid level in tanks and transmits the reading to an external control unit. Up to 5 different levels can be detected, depending on the number of switching points featured, for example:

- » TLS – dry running protection for the extraction pump
- » MIN – minimum level, tank refilling starts
- » NIV – tank full / tank empty; water supply control
- » Fluid level – 50 %, 70 %, 100 %
- » MAX – tank full, stop filling
- » FULL – overflow warning

Between 1 and 5 float switches (depending on the version) with cable and cable glands on PVC pipe, holder with screw connection and terminal box with terminals, float switch with switching hysteresis of 300 mm (± 150 mm) each.

SUBMERSIBLE UV LAMPS

CHARACTERISTICS

- » For sterile storage of ultrapure water in containers
- » The water and the container walls are irradiated with UV radiation above and below the water level, so that no biofilm can develop, and a permanent prevention of germs is ensured.
- » Suitable for RET tanks up to 6 m³ volume with fluctuating water level
- » Consists of 4 UV lamps in a quartz tube, which are attached to the float by means of screw connections. Flexible antennas centralise the system in the tank.

Level control devices For tanks series RUT and RET					
Product name	Mains connection	Signal	Signal source / quantity	Tank height max. in m	Item number
Visual level indicator			Opt. indicator / 1	2	630 208
TLS	24 V/DC ; max 1 A	Floating change-over contact	Float switch / 1	2.5	435 308
NIV	24 V/DC ; max 1 A	Floating change-over contact	Float switch / 1	2.5	435 301
TLS/NIV	24 V/DC ; max 1 A	Floating change-over contact	Float switch / 2	2.5	435 302
TLS/MIN/MAX	24 V/DC ; max 1 A	Floating change-over contact	Float switch / 3	2.5	435 307
TLS/NIV/FULL	24 V/DC ; max 1 A	Floating change-over contact	Float switch / 3	2.5	435 303
TLS/MIN/MAX/FULL	24 V/DC ; max 1 A	Floating change-over contact	Float switch / 4	2.5	435 306
TLS 50 % / 70 % / 100 %	24 V/DC ; max 1 A	Floating change-over contact	Float switch / 4	2.5	435 304
TLS 50 % / 70 % / 100 % / FULL	24 V/DC ; max 1 A	Floating change-over contact	Float switch / 5	2.5	435 305
NIV 420/2	11 - 30 V	4 - 20 mA	Analogue level sensor / 1	2	435 218

Submersible UV lamps					
Product name	Mains connection W / V / Hz	UV capacity at 254 nm	Lamp dimensions Ø x H	Number of lamps	Item number
T-UV RET	44 / 230 / 50	ca. 4 x 3 W	580 x 390	4	455 092

SIMPLEX PRESSURE BOOSTER UNITS, DEFU X S SERIES, FREQUENCY CONTROLLED



CHARACTERISTICS

- » Pipes and valves made entirely of stainless steel
- » With diaphragm pressure vessel, non-return valve, pressure sensor, pressure gauge
- » Pumps made of stainless steel 1.4301
- » With stainless steel skid
- » All electric connections for the customer in a single terminal box (power supply, potential-free contacts for production/fault message, connection of external dry run protection device)
- » Increases the pressure in the water supply pipe to a constant value, can be installed upstream or downstream of water softening or other water treatment installations
- » The unit keeps the selected operating pressure constant by adjusting the frequency, even in the event of varying flow requirements, so that continuous partial load operation is ensured within a wide flow rate range

ADVANTAGES

- » Energy-saving and quiet operation
- » The latest generation of intelligent controls prevents water hammers in the system
- » Better monitoring of the required minimum flow rate, integrated in the FU unit
- » Integrated media temperature control
- » All pump drives used in DEFU pressure booster units meet the requirements of Energy Efficiency Class IE5

OPTIONAL ON REQUEST

- » Pumps made of stainless steel 1.4404
- » BUS communication systems
- » Adapter kit for connecting stainless steel pipes to PVC pipes
- » Pressure pipe installation

Series DEFU X S					
Frequency-controlled pressure booster units					
Product name / Nom. Vol. m³/h	Mains connection kW / V / Hz	Hydraulic connection suction/pressure	Dimensions in mm W x D x H	Capacity Q / p m³/h / m w.c.	Item number
DEFU 1 S	1.1 / 380 - 500 / 50 - 60	Rp 1" / Rp 1"	310 x 560 x 937	0.2 - 2.2 / 65 - 40	440 388
DEFU 3 S	1.1 / 380 - 500 / 50 - 60	Rp 1" / Rp 1"	310 x 560 x 937	0.4 - 4.5 / 65 - 39	440 389
DEFU 5 S	1.5 / 380 - 500 / 50 - 60	Rp 1 ¼" / Rp 1"	310 x 560 x 937	0.5 - 7.0 / 55 - 36	440 390
DEFU 10 S	4.0 / 380 - 500 / 50 - 60	Rp 1 ½" / Rp 1 ½"	310 x 560 x 937	1.0 - 16.0 / 68 - 42	440 391
DEFU 15 S	4.0 / 380 - 500 / 50 - 60	Rp 2" / Rp 2"	380 x 710 x 1,520	2.0 - 24.0 / 48 - 34	440 409
DEFU 25 S	7.5 / 380 - 500 / 50 - 60	Rp 2" / Rp 2"	380 x 710 x 1,520	3.0 - 32.0 / 48 - 36	440 410

DUPLEX PRESSURE BOOSTER UNITS, DEFU X M SERIES, FREQUENCY CONTROLLED



CHARACTERISTICS

- » Pipes and valves made entirely of stainless steel
- » Each pump has its own diaphragm pressure vessel and pressure probe for high operational safety
- » Industrial standard stainless-steel isolating valves, stainless steel non-return valves, pressure gauge
- » Pumps made of stainless steel 1.4301
- » Ready for connection, mounted on a stainless-steel skid and preconfigured ex works
- » All electric connections for the customer in a single terminal box (power supply, potential-free contacts for operating and fault message for each pump, connection for external dry run protection)
- » Increases the pressure in the water supply pipe to a constant value, e.g. upstream or downstream of water softeners or other water treatment units
- » The unit keeps the selected operating pressure constant by adjusting the frequency, even in the event of varying flow requirements, so that continuous partial load operation is ensured within a wide flow rate range
- » Fully automatic controller with master-master-function

- » Automatic changeover in case of back-up or alternating operation
- » Automatic activation of the second pump in the event of increased water consumption, offering double nominal volumetric capacity. Activation with start-up ramp in order to avoid pressure surges

ADVANTAGES:

- » Energy-saving and quiet operation
- » The controller prevents water hammers in the system
- » Better monitoring of the required minimum flow rate, integrated in the FU unit
- » All pump drives used in DEFU pressure booster units meet the requirements of Energy Efficiency Class IE5
- » Integrated media temperature control

OPTIONALLY AVAILABLE ON REQUEST

- » Pumps made of stainless steel 1.4404
- » BUS communication systems
- » Adapter kit for connecting stainless steel pipes to PVC pipes
- » Pressure pipe installation

DEFU X M series:

Frequency-controlled pressure booster units

Product name / Nom. Vol. m³/h	Mains connection kW / V / Hz	Hydraulic connection suction/pressure	Dimensions in mm W x D x H	Capacity Q / p m³/h / m w.c.	Item number
DEFU 2 x 1 M	2 x 1.1 / 380 - 500 / 50 - 60	Rp 1 ½" / Rp 1 ½"	620 x 810 x 937	0.2 - 4.4 / 65 - 40	440 392
DEFU 2 x 3 M	2 x 1.1 / 380 - 500 / 50 - 60	Rp 1 ½" / Rp 1 ½"	620 x 810 x 937	0.4 - 9.0 / 65 - 39	440 393
DEFU 2 x 5 M	2 x 1.5 / 380 - 500 / 50 - 60	Rp 2" / Rp 1 ½"	620 x 810 x 937	0.5 - 14.0 / 55 - 36	440 394
DEFU 2 x 10 M	2 x 4.0 / 380 - 500 / 50 - 60	Flange DN 65 / DN 65	660 x 910 x 937	1.0 - 25.0 / 68 - 54	440 395
DEFU 2 x 15 M	2 x 4.0 / 380 - 500 / 50 - 60	Flange DN 100 / DN 100	740 x 1,010 x 1,100	2.0 - 40.0 / 48 - 39	440 407
DEFU 2 x 25 M	2 x 7.5 / 380 - 500 / 50 - 60	Flange DN 100 / DN 100	740 x 1,010 x 1,100	3.0 - 60.0 / 50 - 38	440 408

Accessories for DEFU

Product name	Configuration of FU in:	Required on site	Item number
Communication adapter	DEFU-S / DEFU-M	Android or iOS device with Bluetooth & Grundfos App	390 766

SIMPLEX PRESSURE BOOSTER UNITS, DE X S/ JP4 C SERIES



DE 3 S



JP4 C (pump without pressure control unit)

NEW

SIMPLEX PRESSURE BOOSTER UNITS DE X S

CHARACTERISTICS

- » Pipes and valves made entirely of stainless steel
- » With diaphragm pressure vessel, non-return valve, pressure switch and pressure gauge
- » Pumps made of stainless steel 1.4301
- » Adjustable follow-up time
- » Connection port for external dry running protection device

ADVANTAGES

- » Rugged and corrosion-proof industrial design
- » Suitable for permeate delivery

OPTIONALLY AVAILABLE ON REQUEST

- » Pumps made of stainless steel 1.4404
- » Adapter kit for connecting stainless steel pipes to PVC pipes

DE X S series:

Simplex pressure booster units

Product name / Nom. Vol. m ³ /h	Mains connection kW / V / Hz	Hydraulic connection suction / pressure	Dimensions in mm W x D x H	Capacity Q / p m ³ /h / m w.c.	Item number
DE 1 S	0.46 / 380 - 415 / 50	Rp 1" / Rp 1"	380 x 560 x 1,087	1 / 43	440 396
DE 3 S	0.65 / 380 - 415 / 50	Rp 1" / Rp 1"	380 x 560 x 1,087	3 / 39	440 397
DE 5 S	1.5 / 380 - 415 / 50	Rp 1 ¼" / Rp 1"	380 x 560 x 1,087	5 / 45	440 398
DE 10 S	2.2 / 380 - 415 / 50	Rp 1 ½" / Rp 1 ½"	380 x 560 x 1,087	10 / 38	440 399

PRESSURE BOOSTER UNIT JP4 C

CHARACTERISTICS

- » Self-priming rugged pump
- » Suction connection and discharge connection made of corrosion-resistant stainless steel
- » Internal hydraulics made of highly wear-resistant composite material
- » Composite handle
- » Aluminium base with cataphoresis coating

- » Pressure control unit for consumption-based activation of the pump, including check valve
- » Optional accessories: auxiliary control for connection of an external dry running protection device (extra-low voltage)

ADVANTAGES

- » Small and compact device
- » Robust entry-level model

Pressure booster unit

Product name	Mains connection kW / V / Hz	Hydraulic connection suction / pressure	Dimensions in mm W x D x H	Capacity Q / p m ³ /h / m w.c.	Item number
JP4 C (Replacement for JP5 C)	0.75 / 230 / 50	G 1" IG / G 1" AG	210 x 490 x 510	2.2 / 25	440 437
Auxiliary control for JP4 C	- / 230 / 50		170 x 101 x 135		382 339

DUPLEX PRESSURE BOOSTER UNITS, DE X M SERIES



CHARACTERISTICS

- » Pipes and valves made entirely of stainless steel
- » With diaphragm pressure vessel, isolating and non-return valves, pressure switch, pressure gauge
- » Pumps made of stainless steel 1.4301
- » Controller with changeover for alternating or back-up operation
- » Adjustable follow-up time
- » Connection port for external dry running protection device
- » Connection port for external release contact

ADVANTAGES

- » Rugged and corrosion-proof industrial design
- » Suitable for permeate delivery
- » 100% redundancy guarantees reliable supply to the consumer
- » Summary alarm message to the central control room

OPTIONALLY AVAILABLE ON REQUEST

- » Pumps made of stainless steel 1.4404
- » Adapter kit for connecting stainless steel pipes to PVC pipes

DE X M series: Duplex pressure booster units

Product name / Nom. Vol. m³/h	Mains connection kW / V / Hz	Hydraulic connection suction / pressure	Dimensions in mm W x D x H	Capacity Q / p m³/h / m w.c.	Item number
DE 1 M	0.46 / 380 - 415 / 50	Rp 1 ½" / Rp 1 ½"	550 x 810 x 1,537	1 / 43	440 400
DE 3 M	0.65 / 380 - 415 / 50	Rp 1 ½" / Rp 1 ½"	550 x 810 x 1,537	3 / 39	440 401
DE 5 M	1.5 / 380 - 415 / 50	Rp 2" / Rp 1 ½"	550 x 810 x 1,537	5 / 45	440 402
DE 10 M	2.2 / 380 - 415 / 50	Flange DN 65 / DN 65	660 x 910 x 1,537	10 / 38	440 403

BLOWDOWN CONTROLLERS – OVERVIEW



NEW

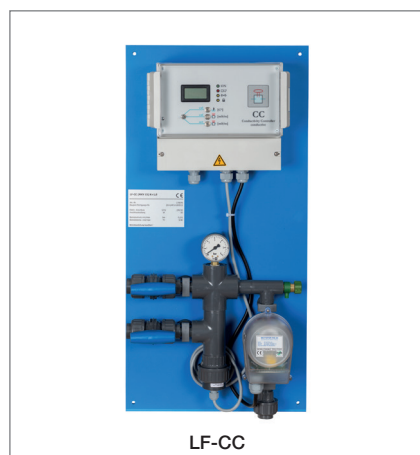
Overview blowdown controllers

Controllers	LF-CC		Cooltrol			Cooltrol data	
Compatible measuring probe	Conductive LFK-E, LFK-ES		Conductive LFK-E, LFK-ES		Inductive LFI	Conductive LFK-E	Inductive LFI
Cell constant C [1/cm]	0,1	1,0	0,1	1,0	-	1,0	-
Measuring range [mS/m]	1 - 50	10 - 500	1 - 50	10 - 500	10 - 300	10 - 500	10 - 500
Power supply	230 V / 50 - 60 Hz		95 - 260 V / 50 - 60 Hz			100 - 240 V / 50 - 60 Hz	
Controller	Analogue		Microprocessor			Microprocessor	
Multiple languages			✓			✓	
Cable breakage monitoring probe			✓			✓	
Adjustable parameters	limited		✓			✓	
Interfaces	4..20 mA		4..20 mA			4..20 mA, micro SD card	
Blowdown features							
Blowdown lock-out	✓		✓			✓	
Forced blowdown			✓			✓	
Analogue output 4..20 mA	✓		✓			✓	
Fault indicator output (alarm)	✓		✓			✓	
Warning indicator output						✓	
Operating output						✓	
Blowdown valve voltage	Mains voltage		Mains voltage			Mains voltage	
Dosing features							
Max. no. of dosing pumps			2			2	
Volume-controlled dosing			✓			✓	
Biocide dosing			✓ ✓			✓	
Activation of circulation pump			✓			✓	
Dosing tank empty message			✓			✓	
Inputs							
Conductive sensing probe	✓		✓			✓	
Inductive sensing probe			✓			✓	
Water meter input			✓ ✓			✓ ✓	
Empty message input			✓ ✓			✓ ✓	
Remote off input			✓			✓	
Universal input			✓				
Outputs							
Blowdown valve output	✓		✓			✓	
Fault output	✓		✓			✓	
Warning output						✓	
Output Dosing 1			✓			✓	
Output Dosing 2			✓			✓	
Output recirculation pump			✓			✓	
Output 4..20 mA	✓		LF or T			LF or T	
Universal output			✓			✓	
Item No.	175 042		175 105			542 375	

*1 mS/m = 10 µS/cm

BLOWDOWN SYSTEMS

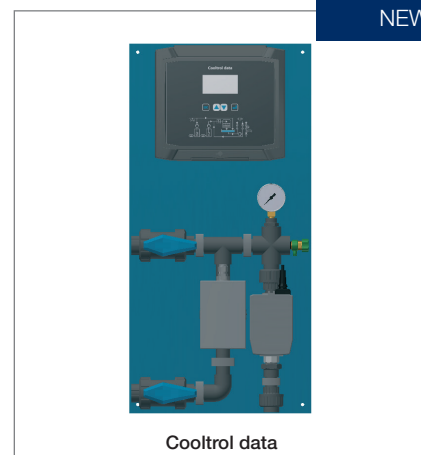
NEW



LF-CC



Cooltrol



Cooltrol data

LF-CC

CHARACTERISTICS

- » Blowdown controller for open cooling systems and scrubbers
- » Conductive EC measurement with temperature compensation
- » Backlit LCD display
- » Visual indication of all operating states via LEDs

- » Conductive or inductive EC measurement with temperature compensation
- » Start-up wizard
- » User-friendly design due to context-sensitive function keys
- » Graphic display with menu navigation in several languages

COOLTROL

CHARACTERISTICS

- » Blowdown controller for open cooling systems and scrubbers
- » Can control up to three dosing pumps
- » Can control a circulation pump during biocide dosing
- » Automatic blowdown lock-out in the event of biocide dosage

COOLTROL DATA

CHARACTERISTICS

- » Blowdown controller for open cooling systems and scrubbers with documentation function (according to 42nd BImSchV)
- » Data can be read out from micro SD card
- » Conductive or inductive EC measurement with temperature compensation
- » Graphic display with German and English menu navigation

LF-CC – Blowdown units and bypass measuring sections

Conductivity controller limiting the concentration of dissolved solids in open cooling circuits and scrubbers

Product name	Measuring range mS/m	Blowdown valve	Hydraulic connection supply / return / blowdown	Item number
LF-CC (MV 15) K = 1.0	10 - 500	MV DN 15	DN 15 / DN 15 / DN 15	170 074
LF-CC (MKV 15) K = 1.0	10 - 500	MKV DN 15	DN 15 / DN 15 / DN 15	170 076
LF-CC-BP K = 1.0	10 - 500	-	DN 15 / DN 15 / -	170 078

Cooltrol – Blowdown units and bypass measuring sections

Conductivity and dosing controller limiting the concentration of dissolved solids in open cooling circuits and scrubbers

Product name	Measuring range mS/m	Blowdown valve	Hydraulic connection supply / return / blowdown	Item number
Cooltrol-K (MKV 15) K = 1.0	10 - 500	MKV DN 15	DN 20 / DN 20 / DN 15	170 121
Cooltrol-I (MKV 15)	10 - 300	MKV DN 15	DN 20 / DN 20 / DN 15	170 120
Cooltrol-K BP K = 1.0	10 - 500	-	DN 20 / DN 20 / -	170 125
Cooltrol-I BP	10 - 300	-	DN 20 / DN 20 / -	170 124

Cooltrol data – Blowdown units and bypass measuring sections

Conductivity and dosing controller limiting the concentration of dissolved solids in open cooling circuits and scrubbers with data logging according to 42nd BImSchV

Product name	Measuring range mS/m	Blowdown valve	Hydraulic connection supply / return / blowdown	Item number
Cooltrol data K (MKB 15) K = 1.0	10 - 500	MKB DN 15	DN 20 / DN 20 / DN 15	170 156
Cooltrol data I (MKB 15)	10 - 500	MKB DN 15	DN 20 / DN 20 / DN 15	170 157
Cooltrol data K BP (K = 1.0)	10 - 500	-	DN 20 / DN 20 / -	170 158
Cooltrol data I BP	10 - 500	-	DN 20 / DN 20 / -	170 159

COMPONENTS FOR BLOWDOWN SYSTEMS



Blowdown unit in a WSG weatherproof casing

Measuring probes and accessories

Product name	Measuring range mS/m	Cable length m	For controller	Item number
LFK 1.0-E	10 - 500	1.2	Cooltrol, LF-CC	175 043
LFK 1.0-ES	10 - 500	Refer to "Connection cable"	Cooltrol, LF-CC	175 044
LFK 0.1-E	1 - 50	1.2	Cooltrol, LF-CC	175 045
LFK 0.1-ES	1 - 50	Refer to "Connection cable"	Cooltrol, LF-CC	175 046
LFI	10 - 300	Refer to "Connection cable"	Cooltrol	175 097
Measuring probe LFK 1.0 for Cooltrol data	10 - 500	2	Cooltrol data	175 143
Inductive measuring probe LFI for Cooltrol data	10 - 500	2	Cooltrol data	175 145
Flow assembly LFI / 5	-	-	Cooltrol	175 039
Connection cable 1.2 m	-	1.2	Cooltrol, LF-CC	175 027
Connection cable 5.0 m	-	5	Cooltrol, LF-CC	175 028
Connection cable 10.0 m	-	10	Cooltrol, LF-CC	175 029

Blowdown controllers and weater-proof casing

Product name	Description	Item number
LF-CC-RG	Blowdown controller for blowdown systems and bypass measuring sections	175 042
Cooltrol	Dosing and blowdown controller for blowdown systems and bypass measuring sections	175 105
Cooltrol data	Dosing and blowdown controller for blowdown systems and bypass measuring sections with data logging according to 42nd BimSchV	542 375
WSG	Protective weather-proof plastic casing with heating	175 041

Blowdown valves

MV = Solenoid valve, MKB = Motorised ball valve (NC), MKV = Motorised ball valve

Product name	Mains connection V / Hz	Hydraulic connection	Material	Item number
MV 15	230 / 50	R ½"	Brass, SS, NBR	175 047
MKB 15 NC	100 - 230 / 50 - 60	Rp ½"	Nickel-plated brass, SS, EPDM	410 231
MKB 20 NC	100 - 230 / 50 - 60	Rp ¾"	Nickel-plated brass, SS, EPDM	410 232
MKB 25 NC	100 - 230 / 50 - 60	Rp 1"	Nickel-plated brass, SS, EPDM	410 233
MKV 15	230 / 50	DN 15	Nickel-plated brass / hard chrome plated	175 066

Larger solenoid valves available on request.

OVERVIEW DOSING PUMPS



Dosing pump series	DDE	DDC	DDA	
Type	DDE-PR	DDC-AR	DDA-AR	DDA-FC
Suitable for:				
General water treatment applications	✓	✓	✓	✓
Volume-controlled dosing	✓	✓	✓	✓
Biocide dosing	✓	✓	✓	✓
Dosing of outgassing biocides			✓	✓
Dosing in closed systems (high concentrations, low make-up volumes)		✓	✓	✓
Antiscalant dosing		✓	✓	✓
General features				
Digital controller	✓	✓	✓	✓
Mounting plate (base/wall mounting)	✓	✓	✓	✓
Control elements				
Mechanical button for capacity control 0 – 100 %	✓			
Start/stop switch		✓	✓	✓
Operating mode selector (remote on/off or contact)	✓			
100 % switch (vent)	✓	✓	✓	✓
Graphic display		✓	✓	✓
Push-turn button for easy navigation and setting		✓	✓	✓
Plain text menu in various languages		✓	✓	✓
Operating mode				
Remote on/off	✓	✓	✓	✓
Water-meter-controlled operation	✓	✓	✓	✓
Water-meter-controlled operation with idle run time		✓	✓	✓
Analogue control (0 / 4 – 20 mA)		✓	✓	✓
Features				
Automatic vent			✓	✓
Flow control (dosing control)				✓
Memory function for incoming pulses		✓	✓	✓
Pressure monitoring (min./max.)			✓	✓
Calibration mode		✓	✓	✓
Service information		✓	✓	✓
Programmable outputs	✓	✓	✓	✓
Inputs/outputs				
Input for remote on/off	✓	✓	✓	✓
Input for water meter pulse	✓	✓	✓	✓
Input for analogue control (0 / 4 – 20 mA)		✓	✓	✓
Input for low level message	✓	✓	✓	✓
Input for empty message	✓	✓	✓	✓
Output for relay	✓	✓	✓	✓
Output for analogue signal (0 / 4 – 20 mA)		✓	✓	✓

DOSING / ACCESSORIES



DDC



DDE



Dosing stations DOS

Dosing stations

With 75, 100 or 200 l dosing tanks – wetted materials: PP / PE / PTFE / EPDM / FKM / ceramic

Product name/ Vol. / Dosing pump type	Volumetric delivery l/h min. / max.	Backpressure bar min. / max.	Connection PE hose mm	Item number
DOS 75/DDE 6-10 PR	0.006 - 6.00	1 / 10	4 / 6	450 305
DOS 75/DDE 15-4 PR	0.015 - 15.0	1 / 4	9 / 12	450 307
DOS 75/DDC 6-10 AR	0.006 - 6.00	1 / 10	4 / 6	450 333
DOS 75/DDC 15-4 AR	0.015 - 15.0	1 / 4	9 / 12	450 334
DOS 75/DDA 7.5-16 AR	0.003 - 7.50	1 / 16	4 / 6	450 306
DOS 100/DDE 6-10 PR	0.006 - 6.00	1 / 10	4 / 6	450 308
DOS 100/DDE 15-4 PR	0.015 - 15.0	1 / 4	9 / 12	450 309
DOS 200/DDE 6-10 PR	0.006 - 6.00	1 / 10	4 / 6	450 312
DOS 200/DDE 15-4 PR	0.015 - 15.0	1 / 4	9 / 12	450 313

ClO₂ dosing unit

For feeding stabilised chlorine dioxide directly from the drum

Product name	Description	Material	Electric / hose connection mm	Item number
DDA 7.5 - 16 AR ClO ₂	Diaphragm dosing pump	PVDF / PTFE / PTFE / ceramic	100 - 240 V / 50 - 60 Hz 4 / 6 or 9 / 12 hose	453 551
SL 25/75 ClO ₂	Suction lance (for 25 l drum)	PVC / PVDF / FKM / ceramic	4 / 6 or 9 / 12	453 555
ISI ClO ₂	Injection fitting PN10	PVDF / PTFE / ceramic	4 / 6 or 9 / 12	453 357
Dosing hose	Dosing hose, 20 bar	ETFE	4 / 6	560 445
Dosing hose	Dosing/suction hose, 13 bar	ETFE	9 / 12	560 475

Biocide dosing units

Unit for shock dosing of biocides directly from the original packaging

Product name / Dosing pump type	Controller	Volumetric delivery l/h min. / max.	Backpressure bar min. / max.	Item number
BIODOS-C DDA 7.5-16 AR	Cooltrol	0.003 - 7.5	1 / 16	450 324
BIODOS-DUO DDA 7.5-16 AR	Duo-SG	0.003 - 7.5	1 / 16	450 325

Dosing controllers

Accessories for dosing stations DOS and BIODOS

Product name	Controller	Item number
Cooltrol	Dosing controller for up to 2 dosing pumps, with blowdown controller	175 105
Cooltrol data	Dosing and desalination control for blowdown units and bypass measuring pipes with data logging according to 42nd BimSchV	542 375
Duo-SG	Two-channel 7-day timer, with blowdown lock-out option	453 112
ZA Mono timer	Timer	453 254
BG 4 pulse multiplier	Multiplies water meter pulses and forwards them to up to 4 devices	453 114

DOSING / ACCESSORIES

Injection fittings

Product name	Description	Material	Connection mm	Item number
ISI	Injection fitting, PN 16	PP / EPDM	4 / 6 and 9 / 12	453 148
ISI-K	Injection fitting with ball valve, PN 10	PP / EPDM	4 / 6 and 9 / 12	453 149
ISI-K (PVC)	Injection fitting with ball valve, PN 16	PP / PVC / EPDM	4 / 6 and 9 / 12	453 526
Lip valve injection	Injection fitting for NaOCl dosing, PN 16	PVC / FKM / ceramic	4 / 6 and 9 / 12	450 221
HISI	Hot water injection fitting, PN 16	VA / PP / EPDM	4 / 6 and 9 / 12	453 153
DL	Dosing lance for HISI (for extension), PN 16	VA	R ½"	453 108

Safety drip trays

Product name	Compatible with	Dimensions in mm W x D x H	Item number
SAW 35	1 x 25 kg drum	600 x 350 x 220	453 099
SAW 100	60, 75 and 100 l dosing tank	557 x 557 x 540	450 089
SAW 200	200 l dosing tank	735 x 735 x 730	453 076
SAW 140	6 x 25 kg drum, 2 x 120 kg drum	1,200 x 800 x 315	453 100
SAW 400	16 x 25 kg drum, 2 x 200 kg drum	1,200 x 800 x 330	453 101

Electric mixing agitators and hand mixer

If ordered together with a dosing station, installation is carried out at no extra charge

Product name	Description	Mains connection V / Hz	Item number
ERWI 75	Electric mixing agitator for DB 75	220 - 240 / 50 - 60	453 285
ERWI 200	Electric mixing agitator for DB 200	220 - 240 / 50 - 60	453 109
HM 75	Hand mixer for DB 75	-	450 076

Valves

Product name	Description	Material	Connection mm	Item number
DV	Pressure sustaining valve 3 bar, adjustable	PP	4/6 or 9/12	453 043
SV	Overflow valve 10 bar, adjustable	PP	4/6 or 9/12	453 464
MFV	Multifunction valve 3/10 bar, adjustable	PVDF / PTFE	4/6 or 9/12	453 465
Pressure valve	Pressure valve 3 bar		4/6 or 9/12	453 448

Water meter for dosing units

Water volume detection with pulse emission

Product name Q (m³/h) / pulse interval	Nominal flow m³/h	Minimum flow m³/h	Dimensions mm L x H	Connection	Item number
WMT 5/0.5	2.5	0.10	288 x 155	R ¾"	453 535
WMT 5/1.0	2.5	0.10	288 x 155	R ¾"	453 536
WMT 10/2.5	6	0.24	378 x 170	R 1"	453 537
WMT 20/2.5	10	0.40	438 x 190	R 1 ½"	453 275
WMT 30/2.5	15	0.60	270 x 248	DN 50	453 530
WM 90/10	25	0.10	300 x 232	DN 65	453 135
WM 110/10	40	1.58	300 x 282	DN 80	453 136
WM 180/10	60	2.50	360 x 303	DN 100	453 137

DOSING / COMPONENTS

Dosing pumps

Product name Vol. delivery / back-pressure	Mains connection V / Hz	Material	Connection PE hose mm	Item number
DDE 6-10 PR	100 - 240 / 50 - 60	PP / PTFE / EPDM / ceramic	4/6 or 9/12	453 413
DDE 15-4 PR	100 - 240 / 50 - 60	PP / PTFE / EPDM / ceramic	4/6 or 9/12	453 414
DDC 6-10 AR	100 - 240 / 50 - 60	PP / PTFE / EPDM / ceramic	4/6 or 9/12	453 375
DDC 15-4 AR	100 - 240 / 50 - 60	PP / PTFE / EPDM / ceramic	4/6 or 9/12	453 377
DDA 7.5-16 AR	100 - 240 / 50 - 60	PP / PTFE / FKM / ceramic	4/6 or 9/12	453 378

Dosing tank

Including suction lance with 5 m connection cable and PE dosing hose 4/6 mm

Product name Volume / connection	Material	Dimensions in mm Ø x H	Item number
DB 75 4/6	PE / EPDM / FKM / ceramic	460 x 670	453 435
DB 100 4/6	PE / EPDM / FKM / ceramic	460 x 790	453 436
DB 200 4/6	PE / EPDM / FKM / ceramic	600 x 880	453 437

Suction lances

Including connection cable, 5 m

Product name	Compatible with	Material	Connection PE hose mm	Item number
SL 25	25 l drum	PE / EPDM / FKM / ceramic	4/6 or 9/12	453 443
SL 75	DB 75	PE / EPDM / FKM / ceramic	4/6 or 9/12	453 423
SL 100	DB 100	PE / EPDM / FKM / ceramic	4/6 or 9/12	453 424
SL 200	DB 200	PE / EPDM / FKM / ceramic	4/6 or 9/12	453 425
SL F 200	200 l drum	PE / EPDM / FKM / ceramic	4/6 or 9/12	453 444
SL IBC	IBC Container	PE / EPDM / FKM / ceramic	4/6 or 9/12	453 462
SL flexible		PE / EPDM / FKM / ceramic	4/6 or 9/12	453 428

Hoses

Product name	Connection mm	Item number
PE dosing hose	4 / 6	560 308
PE dosing hose	9 / 12	560 315

Connection cables and adapters

Product name	Description	Item number
Control cable	Connection of water meter/dosing pump, 2 m	453 029
Control cable	Connection of water meter/dosing pump, 5 m	453 030
Alarm cable	Connection of dosing pump/central control room, 2 m	453 031
Alarm cable	Connection of dosing pump/central control room, 5 m	453 032
Suction lance adapter flat/round	Connection of suction lance SLI (for DPI/DPS/DPSV) to DDE/DDC/DDA pumps	453 368
Suction lance adapter round/flat	Connection of suction lance SL to DPI/DPS/DPSV dosing pumps	453 449
Shorting plug	For permanent release of the DDE / DDC / DDA dosing pumps	453 460
WKI	Stainless steel wall bracket for dosing pumps	453 116

UV DISINFECTION SYSTEMS

ADVANTAGES

- » Environmentally friendly, chemical-free disinfection
- » Electronic ballast for perfect operating conditions, thus increasing the service life of the UV lamp
- » Very reliable thanks to permanent monitoring of the UV intensity
- » Dry running protection thanks to integrated pressure switch
- » Output for operating and fault messages



UV disinfection units

UVE monitor, UVE lamp and UVE reactor with sensor for assembly on site

Product name	Hydr. capacity m³/h 400 J/m² - 250 J/m²	UV-C capacity W	Hydraulic connection	Item number
UVE 20	3.3 / 5.3	24	R 1"	455 038
UVE 35	4.2 / 6.7	30	R 1"	455 039
UVE 45	5.4 / 8.6	36	DN 50	455 040

UV disinfection units

With piping and pressure switch, ready for connection and mounted on a board

Product name	Hydr. capacity m³/h 400 J/m² - 250 J/m²	UV-C capacity W	Hydraulic connection	Item number
UVE 20 P	3.3 / 5.3	24	DN 25	455 041
UVE 35 P	4.2 / 6.7	30	DN 25	455 042
UVE 45 P	5.4 / 8.6	36	DN 50	455 043

UV disinfection and blowdown systems for scrubbers

For continuous disinfection of the water recirculating in scrubbers and air humidifiers

Product name	Hydr. capacity m³/h 400 J/m² - 250 J/m²	Blowdown valve	Hydraulic connection On / Off / Blowdown	Item number
UVE 20 P-CC (MV 15)	3.3 / 5.3	Solenoid valve	DN 25 / DN 25 / R ½"	455 044
UVE 20 P-CC (MKV 15)	3.3 / 5.3	Motorised ball valve	DN 25 / DN 25 / R ½"	455 045
UVE 35 P-CC (MV 15)	4.2 / 6.7	Solenoid valve	DN 25 / DN 25 / R ½"	455 046
UVE 35 P-CC (MKV 15)	4.2 / 6.7	Motorised ball valve	DN 25 / DN 25 / R ½"	455 047

Measuring range 10 – 500 mS/m or, as an alternative, 1 – 50 mS/m

Accessories for UVE

Product name	Description	Hydraulic connection inlet / outlet	Item number
UVE monitor	Replacement monitor for UVE 20, UVE 35 and UVE 45		457 002
UVE sensor	Replacement sensor for UVE 20, UVE 35, and UVE 45		457 075
UVE 20-L	Replacement lamp for UVE 20		457 003
UVE 35-L	Replacement lamp for UVE 35		457 004
UVE 45-L	Replacement lamp for UVE 45 until approx. 1998 and from approx. July 2011 (length = 480 mm)		457 024
UVE 45-L	Replacement lamp for UVE 45 from approx. 1998 until approx. June 2011 (length = 425 mm)		457 005
Circulation pump U20/2 (replacement for U20)	Circulation pump for UVE 20	G 1" IG / G 1" IG	440 434
Circulation pump U35	Circulation pump for UVE 35	R 1 ¼" / R 1"	457 076

CLEANING/DESCALING PUMPS



EKP 45-W / II



EKP 90-W / II

CHARACTERISTICS

- » Mechanism: Cleaning of water-bearing pipe and circulation systems using a circulating process
- » Often used in the descaling of heat exchangers and cooling systems
- » Multi-control valve for infinitely variable regulation of pressure and volumetric delivery, and for feed and return side control
- » Wetted components are made of acid and alkali-proof material
- » Operation with cold and warm fluid up to 50 °C possible
- » System ready for connection, with 2 x 2 m woven hose with hosedails and union nuts

Cleaning and descaling pumps					
For scale and rust removal in water systems with storage tank and multi-control valve					
Product name	Mains connection kW / V / Hz	Hydraulic connection	Dimensions in mm W x D x H	Tank volume l	Item number
EKP 45-W / II	0.3 / 230 / 50	R ¾"	640 x 490 x 620	50	392 002
EKP 90-W / II	0.3 / 230 / 50	R ¾"	650 x 500 x 820	100	392 005

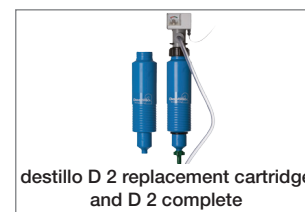
DESTILLO MIXED-BED WATER DEMINERALISATION UNITS

GENERAL CHARACTERISTICS

- » Production of demineralised water from drinking water
- » Pure water quality up to < 0.1 µS/cm
- » Capacity stated for feed water with approx. 300 µS/cm (3.57 mmol/z, approx. 10 °dH) and conductivity of up to 20 µS/cm in the pure water
- » The capacity decreases if the salt content in the feed water is higher and/or the required pure water conductivity is lower
- » All hydraulic connections: R ¾"

ADVANTAGES

- » Compact and simple system – easy to install
- » Quick and easy cartridge replacement
- » No wastewater
- » Regeneration service from destillo D 10 on at HERCO (see p. 71)



CHARACTERISTICS OF MIXED-BED WATER DEMIN UNITS / REPLACEMENT CARTRIDGES FOR FREE OUTLET

- » destillo D 2 complete unit (cpl): Demineralisation cartridge with non-regenerable resin, incl. conductivity meter, raw and pure water hose, wall bracket, fixing material
- » destillo D 10 complete unit (cpl): Demineralisation cartridge with permanently regenerable mixed bed resins, incl. conductivity meter, raw and pure water hose
- » Replacement cartridges (EP): Plastic cartridges with resin filling

CHARACTERISTICS OF MIXED-BED WATER DEMIN UNITS / REPLACEMENT CARTRIDGES, STAINLESS-STEEL VERSION

- » Stainless steel version, pressure-proof up to 10 bar, for direct supply to pure water consumers (e.g. industrial dishwashers, sterilisers, air humidifiers), SS water distribution system
- » Permanently regenerable quality resin
- » destillo complete units (cpl) incl. conductivity meter with connection cable, connection hoses, wrench

Mixed-bed water demineralisation systems and replacement cartridges for free pure water outlet Plastic tank, small devices for unpressurised operation

Product name / Mixed bed resin vol. l	Capacity l/h	Capacity at 300 µS/cm l	Dimensions in mm Ø x H	Max. temperature °C	Item number
destillo D 2 cpl	50	320	115 x 515	30	010 001
destillo D 2 EP	50	320		30	010 002
destillo D 10 cpl	250	1,200	170 x 475	30	010 005
destillo D 10 EP	250	1,200		30	010 006

Mixed-bed water demineralisation units and replacement cartridges Pressure resistant, made of stainless steel

Product name / Mixed bed resin vol. l	Capacity / dp l/h / bar	Capacity at 300 µS/cm l	Dimensions in mm Ø x H	Max. temperature °C	Item number
destillo D 12 dE cpl	300 / 1.3	1,400	237 x 590	30	020 001
destillo D 12 dE	300 / 1.3	1,400	237 x 404	50	020 002
destillo D 17 dE cpl	700 / 1.4	2,000	237 x 670	30	020 054
destillo D 17 dE	700 / 1.4	2,000	237 x 484	50	020 055
destillo D 22 dE cpl	950 / 2.0	2,800	237 x 785	30	020 056
destillo D 22 dE	950 / 2.0	2,800	237 x 600	50	020 057
destillo D 26 dE cpl	1,000 / 2.0	3,500	237 x 885	30	020 058
destillo D 26 dE	1,000 / 2.0	3,500	237 x 700	50	020 059
destillo D 46 dE cpl	1,600 / 2.5	6,000	237 x 1,337	30	020 060
destillo D 46 dE	1,600 / 2.5	6,000	237 x 1,150	50	020 061
destillo D 100 dE cpl	2,500 / 4.0	13,000	363 x 1,207	30	020 007
destillo D 100 dE	2,500 / 4.0	13,000	363 x 1,100	50	020 008

Demineralisation cartridge accessories

Product name	Description	Connection	Length in mm	Item number
Hose set for SS cartridges	Raw and pure water hose, wrench	Rp ¾"	2 x 1,000	020 048
Connection hose	For connection of 2 destillo dE cartridges	Rp ¾"	1 x 1,000	020 014
Hose set for plastic cartridges (D 2 EP and D 10 EP) available on request				

CONDUCTIVITY METERS – ANALOGUE AND DIGITAL



CHARACTERISTICS OF DIGITAL CONDUCTIVITY METERS LWM 358

- » High-precision conductivity meters with digital display for cabinet or wall mounting
- » Three limit relays and two digital inputs
- » Conductivity, temperature and switching status of the relay switches and digital inputs displayed
- » Automatic temperature compensation to 25 °C

Analogue conductivity meters					
Standard device for installation on top of a destillo mixed-bed demineralisation unit					
Product name	Suitable for destillo	Measuring range µS/cm	Mains connection V / Hz	Limit value contact	Item number
LWM 325-S	D 2	220 / 50	0.2 - 100	None	060 001
LWM 330-S	D 10	220 / 50	0.1 - 100	None	060 002
LWM 330 dE	D 12 dE - D 100 dE	220 (240) / 50 (60)	0.1 - 100	None	060 003
LWM 335 dE	D 12 dE - D 100 dE	220 (240) / 50 (60)	0.1 - 100	1 x non-floating 230 V	070 002
LWM 336 dE	D 12 dE - D 100 dE	220 (240) / 50 (60)	0.1 - 100	1 x floating changeover-contact	070 009

Digital conductivity meters					
For cabinet (S) or wall (W) mounting					
Product name	Mains connection V / Hz	Measuring range µS/cm	Dimensions in mm W x D x H	Outputs	Item number
LWM 358-S	230 / 50 - 60	0.1 - 10	131 x 60 x 131	3 x floating / 1 x 0/4 – 20 mA	090 032
LWM 358-S	230 / 50 - 60	1 - 100	131 x 60 x 131	3 x floating / 1 x 0/4 – 20 mA	090 042
LWM 358-S	230 / 50 - 60	0.2 - 20	131 x 60 x 131	3 x floating / 1 x 0/4 – 20 mA	090 033
LWM 358-S	230 / 50 - 60	2 - 200	131 x 60 x 131	3 x floating / 1 x 0/4 – 20 mA	090 043
LWM 358-S	230 / 50 - 60	20 - 2,000	131 x 60 x 131	3 x floating / 1 x 0/4 – 20 mA	090 034
LWM 358-S	230 / 50 - 60	100 - 10,000	131 x 60 x 131	3 x floating / 1 x 0/4 – 20 mA	090 035
LWM 358-W	230 / 50 - 60	0.1 - 10	131 x 60 x 220	3 x floating / 1 x 0/4 – 20 mA	090 036
LWM 358-W	230 / 50 - 60	1 - 100	131 x 60 x 220	3 x floating / 1 x 0/4 – 20 mA	090 046
LWM 358-W	230 / 50 - 60	0.2 - 20	131 x 60 x 220	3 x floating / 1 x 0/4 – 20 mA	090 037
LWM 358-W	230 / 50 - 60	2 - 200	131 x 60 x 220	3 x floating / 1 x 0/4 – 20 mA	090 047
LWM 358-W	230 / 50 - 60	20 - 2,000	131 x 60 x 220	3 x floating / 1 x 0/4 – 20 mA	090 038
LWM 358-W	230 / 50 - 60	100 - 10,000	131 x 60 x 220	3 x floating / 1 x 0/4 – 20 mA	090 039

Accessories					
For digital conductivity meters, type LWM 358-S/W					
Product name	Measuring range µS/cm	Description	Connection / length in mm	Item number	
Analogue module 4 - 20 mA		For 2nd analogue output 4 – 20 mA		090 041	
Conductivity cell EMZ 1 1/2"	0.1 - 10 / 1 - 100	With 6 m cable	1 1/2" / 72 mm	100 047	
Conductivity cell EMZ 1 1/2"	0.2 - 20 / 2 - 200	With 6 m cable	1 1/2" / 72 mm	100 020	
Conductivity cell EMZ 1 1/2"	20 - 2,000	With 6 m cable	1 1/2" / 64 mm	100 059	
Conductivity cell EMZ 1 1/2"	100 - 1,000	With 6 m cable	1 1/2" / 60 mm	100 060	
Flow assembly		For EMZ 1 1/2"	3/4"	100 019	
GMH 3431	0.2 - 19,990	Handheld conductivity meter		630 074	

REGENERATION SERVICE / AFTER-SALES SERVICE



REGENERATION SERVICE

Regeneration of depleted, regenerable mixed-bed quality resins that have been in contact with drinking water.
Additional costs such as packaging, shipment and delivery are not included.

Regeneration charges for other cartridges as well as coupon books available on request.

AFTER-SALES SERVICE

Charges for maintenance, assembly and commissioning services. Preparation, travelling, waiting and remote maintenance time will be charged as working time.

Payment for after-sales-service and regeneration services is due immediately, without discount. For returns of new goods, we reserve the right to deduct the costs incurred by us with a testing and re-storage deduction, amounting to 25 % of the value of the goods, but no less than 50 €.

Regeneration service	
Product name	Item number
Regeneration D 10-MB	150 004
Regeneration D 12 dE-MB	150 009
Regeneration D 17 dE-MB	150 028
Regeneration D 22 dE-MB	150 029
Regeneration D 26 dE-MB	150 030
Regeneration D 46 dE-MB	150 031
Regeneration D 100 dE-MB	150 015

Customer service	
Product name	Item number
Service technician	221 002
Service engineer	221 003
Hourly allowance	221 011
Surcharges for work under difficult conditions	221 009

Overtime surcharges	
Product name	Item number
Monday to Friday 5:00 pm to 9:00 pm	221 016
Monday to Friday 9:00 pm to 6:00 am	221 017
Saturday 6:00 am to 9:00 pm	221 018
Saturday 9:00 pm to 6:00 am	221 019
Sunday	221 020
Public holidays	221 021
Mileage allowance for assembly / service vehicle	221 226
Overnight allowance	221 222
Overnight accommodation expenses will be reimbursed against receipt	221 223

WE ARE HERE FOR YOU!



SALES DEPARTMENT

Please feel free to contact us if you have technical questions about reverse osmosis units as well as pre- and post-treatment equipment, if you need support with unit design based on the water analysis or if you have any other questions! We are happy to support you in any way possible.

Telephone +49 7141 7095-133

E-Mail sales@herco-wt.de

ORDER PROCESSING

If you have any questions about your order, order confirmation, delivery note and invoice or customs clearance and transport organisation, please feel free to contact us! We are here to help you whenever you need us.

Telephone +49 7141 7095-123

E-Mail order@herco-wt.de

CUSTOMER SERVICE

If you have any questions about your unit after delivery, if you would like to make an appointment for commissioning, service, maintenance or for technical support, please contact us via the hotline. We are here for you!

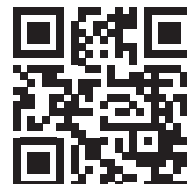
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GENERAL TERMS AND CONDITIONS HERCO WASSERTECHNIK GMBH

General Terms of delivery and payment status March 2015 – Page 1 of 2

1. Scope of Application of these General Terms and Conditions

1.1 All deliveries, services and quotations provided by HERCO Wassertechnik GmbH (hereinafter referred to as HERCO) shall be made solely on the basis of these General Terms and Conditions. These General Terms and Conditions shall be deemed accepted at the latest upon receipt of the goods or services. These General Terms and Conditions shall also apply to all future business relationships of HERCO with the purchaser, even if they are not once again expressly agreed upon. Conflicting or contradictory General Terms and Conditions or purchase terms and conditions of the purchaser are herewith rejected. Conflicting or contradictory General Terms and Conditions or purchase terms and conditions of the purchaser shall also not apply if they are part of a confirmation letter by the purchaser sent subsequent to our confirmation of the contract and even if we do not separately object to same.

1.2 Unless employees of HERCO do not hold any power of attorney vested in them by statute, said employees shall not be authorized to enter into ancillary agreements or make warranties. Any verbal agreements made with employees of HERCO holding respective power of attorney shall only be effective if they have been confirmed in writing.

2. Offer, Execution of the Agreement

2.1 All offers made by HERCO shall be subject to change, prior sale and non-binding. For any acceptance declarations and orders to be legally effective, same shall require a written order confirmation from HERCO. An agreement shall have been finalized only upon issuance of said written order confirmation.

2.2 HERCO's written order confirmation shall govern the contents and scope of the agreement. Documents that are part of the offer, such as figures, drawings, size and dimension information shall be approximate and non-binding, unless expressly identified as binding.

2.3 For the entire delivery time, HERCO reserves the right to implement design and form changes resulting from the further development of technology or statutory mandates.

2.4 The scope of delivery and the delivery object shall be stipulated in the order confirmation as well as, if applicable, our service and product descriptions, provided same have been made objects of the contractual agreement.

3. Intellectual Property Rights, Reservation of Right to Modify

3.1 HERCO reserves all property and intellectual property rights in all figures, drawings, calculations and other documents. Same shall neither be duplicated nor made accessible to any third parties without HERCO's written consent.

3.2 HERCO shall have the right to perform expedient modifications and improvements on its products and services at all times; it shall, however, be under no obligation to make such changes.

4. Prices

4.1 Unless otherwise stated in the order confirmation, HERCO's prices shall be quoted ex factory, net. Prices do not include sales/value added tax. Same shall be added separately to the invoice in the statutory amount on the day the invoice is issued.

4.2 Prices do not include packaging and shipping costs and are quoted without the cost of transportation insurance. The afore-mentioned costs shall be billed to the purchaser separately. Transportation insurance shall be obtained only upon purchaser's express written request.

4.3 For orders less than EUR 50.00 net we charge EUR 20.00 extra handling fee (+ VAT).

5. Delivery, Transfer of Risks

5.1 The delivery time shall begin only upon posting of the order confirmation, however, no earlier than at the time all documents required have been provided by the purchaser and all technical issues have been clarified. Delivery dates or times, which may be agreed upon as binding or non-binding dates and times, shall be agreed in writing.

5.2 Herco shall not be liable for delays in delivery or services due to force majeure or due to events that make it substantially more difficult or impossible for HERCO to perform the delivery/service – in particular due to events such as strike, lockouts, government agency mandates, etc., including those that occur at the end of HERCO's suppliers, even if delivery times and dates have been agreed upon as binding. In these cases, HERCO shall have the right to delay the delivery or service for the duration of the encumbrance, plus a reasonable start-up period or to rescind from the part of the contract pertaining to the unfulfilled part of same in full or in part. In the event that the hindrance should last more than three months, the purchaser shall, after having set a reasonable deadline for remedial action, have the right to rescind from the contract pertaining to the unfulfilled part. The purchaser shall not have the right to construe any claims for damages in the event that the delivery time is extended or in the event that HERCO is released from its obligations.

5.3 In the event that the purchaser should be in default of acceptance, HERCO shall have the right, upon setting a reasonable deadline for remedial action, to take control of the object and to make delivery to the purchaser within the reasonable extended remedial time period or to rescind from the agreement. In the event that the purchaser is in default of delivery or if the former breaches any other participation obligations, HERCO shall also have the right to demand reimbursement of any additional expenditures incurred.

5.4 The risk shall transfer to the purchaser as soon as the shipment has been handed over to the transportation carrier or as soon as it has left the warehouse for the purpose of shipping. In the event that shipping becomes impossible for reasons

beyond HERCO's control, the risk shall transfer to the purchaser upon notification that the delivery is ready for shipment. This shall apply in particular if shipment is delayed upon purchaser's request after a notice that the consignment is ready for shipment has been sent. In this case the risk of accidental loss or accidental damages shall also transfer to the purchaser. In the event that claims can be filed against liable third parties and/or insurance providers (insurance shall be arranged only upon purchaser's request and at the latter's expense), any claim purchaser might have against HERCO shall be limited to our assignment of the receivable to the purchaser.

5.5 Incidentally, shipment shall be made at purchaser's cost and risk (same shall also apply to any return shipments). This shall also apply if we deliver goods in our own vehicles.

5.6 HERCO shall have the right to make partial shipments and render partial services.

6. Retention of Title

6.1. Until satisfaction of all claims (including any current account balance claims) to which HERCO is entitled against the purchaser now or in the future, HERCO is hereby granted the following securities which HERCO shall release on request at its discretion once their value permanently exceeds the claims by more than 10 %.

6.2. The subject of purchase shall remain the property of HERCO until full payment has been made. Processing or transformation shall always be carried out for HERCO but without giving rise to any obligations for HERCO. If HERCO's (co)ownership ceases to exist as a result of combining, it is agreed now in advance that the (co)ownership of the purchaser in the new uniform product shall pass to HERCO in proportion to the value (invoice value). The purchaser shall keep HERCO's (co)owned product free of charge.

6.3. Goods for sale in which HERCO has (co)ownership shall be referred to as the retained goods („Retained Goods“). The purchaser is entitled to process and sell the Retained Goods in the ordinary course of business providing the purchaser is not in default and only subject to the purchaser receiving payment from its customer or providing that title shall only pass to the customer once it has met its payment obligations.

6.4. Pledging or transferring such items as security is not permitted. The purchaser hereby assigns to HERCO now in advance as security all claims in full with respect to the Retained Goods which result from selling goods on or which arise on other legal grounds (insurance, tort). HERCO hereby revocably authorises the purchaser to collect the claims assigned to HERCO in its own name for HERCO's account. This collection authorisation can only be revoked if the purchaser does not properly meet its payment obligations or in the event that the purchaser files an application for the institution of insolvency proceedings or for protective shield proceedings under the German Insolvency Act (Insolvenzordnung).

6.5. If third parties obtain access to the Retained Goods, particularly as a result of pledges, the purchaser shall point out that they are HERCO's property and inform it without undue delay so that HERCO can assert its title rights. For the event that the third party is not in a position to reimburse HERCO for in or out-of-court costs arising in this regard, the purchaser shall be liable herefor.

6.6. In the case of breaches of duty by the purchaser, particularly in the case of default with payment, HERCO is entitled to rescind the agreement and repossess the goods after fruitless expiry of a reasonable period granted to the purchaser for performance. The statutory provisions regarding when setting such a period is unnecessary shall remain unaffected. The purchaser shall be obliged to surrender the goods.

6.7. HERCO does not consent to sale of the Retained Goods in the event that an application is filed for the institution of insolvency proceedings or for protective shield proceedings under the German Insolvency Act.

6.8. If before or during delivery justified doubts arise regarding the solvency of the purchaser, HERCO can request further securities from the purchaser to secure future payment obligations over and above the retention of title and refrain from providing the deliveries and services until such securities have been furnished. Should the purchaser be unable to furnish the required securities, HERCO is entitled to rescind the agreement.

6.9. The purchaser shall treat the Retained Goods with care and shall, in particular, sufficiently insure these at their new value at its own costs against fire, water and theft. Where maintenance and inspection work is necessary, the purchaser shall have this carried out by HERCO in due time at its own cost.

7. Payment Terms

7.1 Unless otherwise agreed upon, all HERCO invoices shall be due for immediate payment, net, without any deductions. HERCO shall have the right to set off any payments made against older debts of the purchaser, regardless of any instructions to the contrary from the purchaser. In the event that costs and interest have already been incurred, HERCO shall have the right to set off payments in the following order: first against costs, next against interest and subsequently against the principal. All payments shall be made at our domicile, all costs prepaid by purchaser. Payments via deferred bank draft shall not be accepted unless expressly agreed otherwise in writing.

7.2 A payment shall be deemed made only upon credit of the amount to one of HERCO's accounts.

7.3 In the event that the purchaser should be in default of payment, HERCO shall have the right to charge interest in the amount of 8 % above the applicable prime rate published by the European Central Bank for companies and in the amount of 5 % above the applicable prime rate published by the European Central bank for consumers as of the due date.

7.4 In the event that purchaser should fail to meet purchaser's payment obligations or if HERCO should learn of other circumstances that give rise to misgivings about

purchaser's creditworthiness, HERCO shall have the right to make any remaining balance due payable immediately. In this case, HERCO shall also have the right to demand advance payments or collateral. In the event that the entire balance of debts is not paid immediately, the purchaser shall lose the right to utilize the object delivered. HERCO shall have the right to either seize the delivered object until fulfillment or to rescind from the agreement – without waiving any of its entitlements. In the event of seizure of the delivered object, all costs shall be for the account of the purchaser. In the event of rescission from the agreement, the purchaser shall pay to HERCO not only remuneration for the use of the delivered object, but also reimburse any decline in value incurred.

7.5 The purchaser shall have the right to set off counter entitlements against our receivables only if said counter entitlements are undisputed or have been finally adjudged by a court of law.

7.6 The purchaser shall have the right to execute withholding rights against our receivables only if said counter entitlements are undisputed or have been finally adjudged by a court of law.

8. Warranty

8.1 In the event that the goods delivered have not been manufactured by us in-house, but have been procured from a supplier, we shall fulfil our warranty obligations by assigning all of our own warranty entitlements against our supplier to the purchaser. The purchaser accepts said assignment as fulfillment. In the event that such rights should not be enforceable or if their execution should fail, the subsidiary warranty entitlements shall be rendered entitlements against us pursuant to subsequent Article 8.2.

8.2 The delivered goods shall be in the condition described in the product description and if not, in standard trade condition. Explanations pertaining to the condition of the goods shall not constitute warranties unless expressly denoted as such in writing. In general, no other obligations than those regarding elimination of deficiencies and remedial action warranties shall be assumed according to these General Terms and Conditions. The purchase shall examine the goods received for deficiencies and condition immediately. Deficiencies shall be reported to us within one week after delivery by written notification. This shall be without prejudice to additional statutory provisions. Concealed deficiencies shall be reported to us in writing not later than one week after their discovery. In all cases of deficiency claims, the purchaser shall undertake to provide us with the goods subject to the complaint for verification immediately.

In the event of culpable refusal to do so or delay all entitlements shall be rendered null and void. The aforementioned reporting obligation shall also apply if the purchaser finds out about deficiencies in our delivered goods or parts from purchaser's customers. In the event that purchaser's claim is justified, purchaser shall have the right to demand repair or replacement of the delivery within the scope of remedial action. We shall have the right to reject the chosen mode of remedial action if same should be possible only at disproportional costs or if the chosen type of remedy is more costly than an alternative and the latter would not translate into any disadvantages for the purchaser in comparison to the remedial option purchaser has elected. In the event of remedial action by way of repair, our repair attempts shall be limited to two in regard to a concrete defect and to four in regard to all deficiencies in the delivery object that is the object of the complaint. If the purchase object is to be moved to another location than the original place of delivery upon performance of the remedial action the purchaser shall absorb any additional costs incurred. The same shall apply if the purchaser sends the deficient object back to us from a different location than purchaser's domicile/the original place of delivery.

The purchaser shall have the right to claim further warranty entitlements only after setting us a reasonable deadline for the performance of the repairs or replacement shipment and same has expired to no avail. In the event that the deficiency is only minor, purchaser shall not have the right to rescind from the agreement. This shall be without prejudice to the right to reduce the purchase price.

8.3 No warranty obligations shall exist if a) the deficiency is the result of improper use, operation or care or inadequate maintenance, faulty assembly and start-up, violation or non-adherence to our operating, user and installation instructions or of forced manipulation and other external influences (e.g. chemical, electro-magnetic, electrical, etc.), provided we are not responsible for same, b) the deficiency is the result of an improper modification to the object of delivery, in particular of the use of inadequate, in particular third party spare parts, and the damage was incurred originally in connection with the modification or utilization. Natural wear and tear, or damages resulting from negligent or improper operation or handling shall be excluded from warranty coverage.

8.4 The product subject to the claim must be sent to us along with the original delivery note or a copy of same. The fact that we engage in negotiations on claims shall not constitute our waiver of raising the objection of claims filed late or improperly.

8.5 The purchaser shall have the right to withhold payments or invoke entitlements for deficiencies only insofar as such claims are proportionate to the claimed defect based on good faith, i.e. up to a maximum of the purchase price portion of the concrete item the deficiency claim pertains to.

8.6 In the event that the purchaser or a third party should perform any improper remedial action, we shall not assume any liability for consequential damages. The same shall apply to any modifications made to the delivery object without our prior written consent.

8.7 Article 9 shall apply in supplement to any damage compensation claims.

8.8 In the event that the delivery scope should include software or other products subject to intellectual property rights and related licenses, the purchaser shall be

awarded a nonexclusive license to utilize the delivered software along with all related documentation in conjunction with the delivery objects. The purchaser shall be permitted to utilize and process the software only within the scope permitted by law and shall undertake not to remove manufacturer information or to change same without our prior written consent. Without our prior written consent, purchaser shall not be permitted to transfer the software or rights to it, for instance via licenses, to any third parties.

8.9 For business transactions with commercial entities, the warranty period for material defects shall be one year as of the delivery of the goods. This shall not apply if we are liable due to acts of intent or malicious concealment of a defect we are aware of. In these cases we shall be liable pursuant to statutory requirements. The warranty period for wear and tear parts shall be limited to the time period by which these parts would begin to become subject to normal wear and tear based on ordinary use measured by its concrete frequency and duration.

8.10 The purchaser shall not be authorized to carry out advertising activities we have not approved with our goods. In the event that customers of the purchaser should file claims for deficiencies based on deviations of the purchased goods from advertising statements of the purchaser, which have not been approved by HERCO, the purchaser shall not have the right to establish entitlements from us based on such circumstances.

9. Liability

9.1 For damages of the purchaser, regardless of the legal grounds, and in particular based on breaches of obligations under the agreement and based on illegal acts or pursuant to the Product Liability Act we shall assume liability only in the event of intent or gross neglect unless a) we are liable for loss of life, personal injury or health damages, b) we are liable for the breach of cardinal contractual obligations.

9.2 Entitlements to damage compensation based on the breach of cardinal contractual obligations shall, however, be limited to contract typical, regularly foreseeable damages.

9.3 This shall also apply in the event of liability of deficiencies.

9.4 The liability limitations pursuant to Articles 8 and 9 shall also apply in regards to any liability for erroneous consulting, faulty installation instructions and the breach of any other ancillary obligation breaches.

9.5 If permitted by law, any other entitlements for damage compensation shall be excluded.

9.6 Article 8.9 shall apply to the statute of limitations pertaining to the above entitlements.

10. Governing Law, Jurisdiction, Severability

10.1 These General Terms and Conditions and all legal relationships between HERCO and the purchaser shall be governed by the laws of the Federal Republic of Germany under exclusion of the UN Convention on the International Sale of Goods (CISG), even if the purchaser's domicile is in a foreign jurisdiction.

10.2 Provided the purchaser is a commercial entity pursuant to the German Trade Law, or a legal entity of public law or a public-legal special entity, the headquarter location of HERCO shall be the sole place of jurisdiction for all litigation arising directly or indirectly from the contractual relationship.

10.3 Unless otherwise provided in the order confirmation, the headquarter location of HERCO shall be the sole place of fulfillment.

10.4 In the event that one of the provisions in these General Terms and Conditions or within the scope of other agreements should be or rendered ineffective, this shall not affect the effectiveness of all other provisions or agreements.

10.5 For any changes, additions and ancillary arrangements pertaining to these General Terms and Conditions or to the individual agreements to become effective, same shall be made in writing. This shall also apply if the requirement of written form is waived in changes. Verbal ancillary agreements have not been made.

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The English version of the General Terms and Conditions of HERCO Wassertechnik GmbH is only a courtesy translation; for interpretation, the German version shall prevail.

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Made in Germany

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