STÜWA
BRUNNENFILTER
BOHRBEDARF

PUMPS AND PRESSURE TANKS

from

Carl Hamm

Pipes | Pumps | Solutions

STÜWA · Konrad Stükerjürgen GmbH

CONTENTS

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PUMPS

Further submersible pump models are available in our separate program on request.

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FRANKLIN MOTORS

Application:
Franklin Electric 4"-motors are suited for the operation of submersible pumps with a diameter of 4" or larger. All motors are made by companies certified to ISO 9001:2000.

The Franklin Electric 2-wire-motor is a canned motor with integrated start-off and protective electronics. Franklin 4"- motors are equipped with water-lubricated radial- and axial bearings for a durable and maintenance-free operation. The factory-mounted filling with FES93 permits storage temperatures of up to -40 °C. A special membrane ensures pressure compensation in the motor.

1-Phase submersible motors					
Description	**Number of phases**	**Power**	**Voltage**	**Fre-quency**	**Weight**
		[kW]	[V]	[Hz]	[kg]
4" Submersible motor	1	0.37	230	50	7.8
	1	0.55	230	50	8.6
	1	0.75	230	50	10.0
	1	1.1	230	50	12.3
3-Phase submersible motors					
4" Submersible motor	3	0.37	380/415	50	7.2
	3	0.55	380/415	50	7.7
	3	0.75	380/415	50	8.7
	3	1.1	380/415	50	10.2
	3	1.5	380/415	50	11.2
	3	2.2	380/415	50	12.6
	3	3	380/415	50	15.0
4" Submersible motor/high thrust*	3	4	380/415	50	21.8
	3	5.5	380/415	50	28.7
	3	7.5	380/415	50	32.7

* acceleration 6500 N

Technical data:

4" NEMA Flange

Direction of rotation: anti-clockwise with view onto the pump shaft

Type of protection: IP 68

Insulation: class B

Voltage tolerance: –10%/+ 6%

Ambient temperature: 30 °C

Coolant speed:

- 2-wire and 3-wire/3 phases up to 2.1 kW: 8 cm/s
- 3-wire/3 phases 2.2 kW up to 3.7 kW: min. 8 cm/s

Starts/h: 20

Position of installation: vertical/horizontal

Motor protection:

- 2-wire – integrated
- 3-wire – selection thermal release according to EN 60947-4-1 release ≤ 10 s at 5 x I_N

Specifications

- Squirrel-cage motor with hermetically moulded windings, non-tracking stator insulation
- High efficiency for low operating costs
- Exchangeable motor cables by "Water bloc"-plug-connection
- Cable material corresponds to the German Drinking Water Ordinance (KTW-tested)
- Water-lubricated radial and thrust bearing
- All motors are primed and hundred per cent tested.
- FES93-filling, no contamination of the well

Optional accessories

- Motor cable, approved compliant to VDE/KTW (special length available on request)
- Integrated lightning protection (PSC)
- Integrated overload protection (PSC, 3-wire)

Additional motors and accessories on request:

- Sandfighter motors
- Motors 500 V
- 3-wire motors
- Stardelta connection
- 6" and larger on request

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PUMPS COMPACT CONTROLLER

Control for submersible pumps

Description:
Compact controller in robust ALU / ABS housing, with plain text display and keyboard, protection class IP66, with lockable repair switch, suited for controlling 1 piece of frequency-controlled submersible motor pump.

Power range:
2.2 kW / 1 PH 230 V 50/60 Hz +/- 15 %
Power range:
1.5 kW - 15 kW / 3 PH 400 V 50/60 Hz +/-15 %
Sensor connection:
1 x 4-20 mA
Field of application:
Pressure regulator, level controller, thermostat, geothermal energy control

Power range: 1.5 kW – 15 kW

Equipment:
- Freely parametrisable pressure regulator with keyboard and backlit plain text display.
- Display for all procedural messages, set values and commissioning values
- Two adjustable digital inputs
- One adjustable relay as changer
- Speed control system for 1 pump
- Password protection
- Connection for a sensor 4..20 mA
- Adjustable PI controller for quick pressure control
- Adjustable null set switching-off for switching off the pump to "standby".
- Safe start function for the safe filling of the pipelines after power failure.
- Manual operation with adjustable fixed speed for emergency supply in the case of sensor failure.
- U pump monitor for the operation with submersible pumps.
- Adjustable watchdog timer, adjustable leakage monitoring,
- Adjustable pressure reduction
- Adjustable electronic dry run
- Adjustable electronic pressure monitoring
- Sensor monitoring with emergency switchover to fixed speed.
- Adjustable operating mode
- Adjustable test run
- Adjustable motor characteristic
- Real-time clock with 8 error memory with time stamp
- Operating-hours meter, day hour counter
- Interface: RS 232 slave / GSM
- Temperature-dependent fan control
- Lockable repair switch

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E - BOX STU 7.5

Control for submersible pumps

Description:
Control for the operation of a submersible pump with AC motor, in-built circuit breaker and power contactor, fully wired to terminal. Quality verified via the CE mark.

Equipment:
- Selector switch for manual or automatic operation
- Electronic monitoring for overload and underload
- Integrated restart delay
- Notification of phase failure
- Connection for level control
- Connection for ext. input such as pressure switch, etc.

Specifications		
Supply voltage	[Volt]	3 x 400
Permitted voltage fluctuations	[%]	-20 to +30
Power	[kW]	0.37 to 7.5
Adjustment range Overload/ Underload	[A]	0.37 to 7.5
External connection	[Volt]	6 to 250 AC or DC
Reset time	[Min.]	Adjustable from 0 to 120
Protection class	[IP]	56
Input connecting terminals	[mm^2]	10
External input	[mm^2]	4
Operating temperature	[°C]	-10 to +55
Dimensions	[mm]	230 x 180 x 125 (L x W x H)
Weight	[g]	1820

Note:
Work on electrical equipment may only be carried out by trained personnel

Packaging unit:
1x in cardboard packaging

Storage:
Dry (well ventilated)

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CIRCUIT BREAKER

Application:
- Starts and stops the pump depending on the opening and closing of the load.
- Ensures steady, constant pressure.
- Stops the pump during water shortage (protection against dry running).
- Eliminates the effect of pressure surges.

Method of operation:
- Starts the pump, when water tap is opened (pressure falls below 1.5 bar).
- Stops the pump 5–10 seconds, after water tap has been closed.
- Reacts to water flow; if water flow stops, the circuit breaker turns off the pump after 5–10 seconds.
- The 'cut-off pressure' is the maximum pressure the pump can build up.

Construction characteristics:
- The circuit breaker consists of a hydraulic and an exchangeable electronic part.

The hydraulic part consists of:
- A compression-moulded and reinforced plastic body
- A membrane reacting to pressure variations, and a spring
- A valve reacting to flow rate variations
- A stop valve
- A safety valve to avoid water outlet if membrane is damaged

The electrical part consists of:
- A leak-proof box of self-extinguishing compression moulded plastic
- One single tested and checked electronic card with insulation-coated strip conductor
- A relay with special contacts and a cycle time of 300,000 cycles during no-break operation with a maximum load of 1.5 kW nominal power
- A varistor against voltage peaks

Scope of supply:
Including 1.5 m cable power side with plug and 0.5 m cable with coupling for receiving plug pump.

Technical data:
Voltage 1-phase 230 V ~
Permissable voltage fluctuations ± 10 %
Frequency 50/60 Hz
Maximum current 16 (8) A
For pumps up to 1.5 kW nominal power(P2) = 3.0 kW power input (P1)
Type of protection IP 65
Max. operating pressure 1 MP at 10 bar
Max. operating temperature 0–60 °C
Connections with thread 1" male thread
Class II – double electrical insulation n/a

For details of respective pressure switches, please see Operating Instructions!

Installation example and further information:

The height difference between Presscontrol and the last tap must not exceed 15 m. The height difference or rather the respective conduit length between pump and Presscontrol is not subject to any restrictions, apart from the delivery rate of the pump. Presscontrol must be mounted in a fully vertical position (neither horizontal nor bevel position), so as to ensure proper functioning. A correct switch-off is achieved if the pump supplies a minimum pressure of approx. 3 bar.

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PRESSURE SWITCH

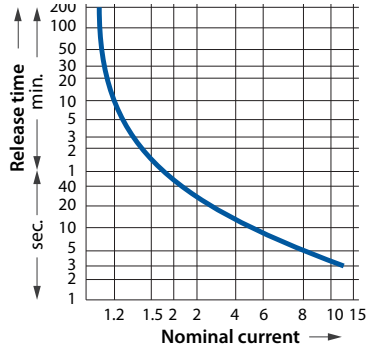
Application:
The pressure switch Condor shuts off when the set pressure inside the pressure vessel is reached. As soon as the pressure drops below a pre-set value, the pressure switch starts up again.

Adjustment:
When setting the switch points, the shut-down pressure is to be adjusted first, while the differential pressure is subsequently adjusted between switch-off point and cut-in point.

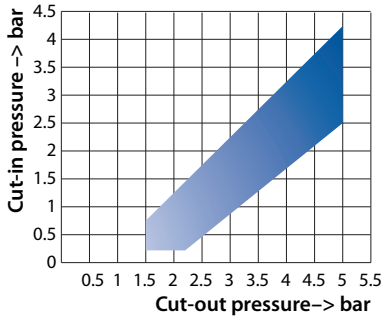
Use:
As pressure switches are activated immediately upon reaching the set pressures, they should only be installed if pressure can be "buffered". One typical application is to be found at domestic waterworks with pressure vessels.

Condor membrane switch 3–pole

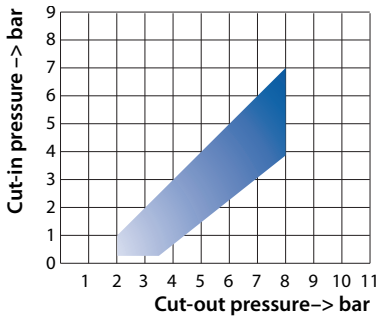
Tripping characteristic R5 (average values)



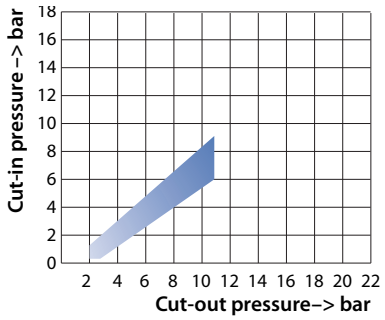
Type MDR 5/5	1.5–3 bar
25 Amp., 500 V–5.5 kW	Cut-in range up to 1.3–3 bar



Type MDR 5/8	7–8 bar
25 Amp., 500 V–5.5 kW	Cut-in range up to 7–8 bar



Type MDR 5/11	9–11 bar
25 Amp., 500 V–5.5 kW	Cut-in range up to 9–11 bar



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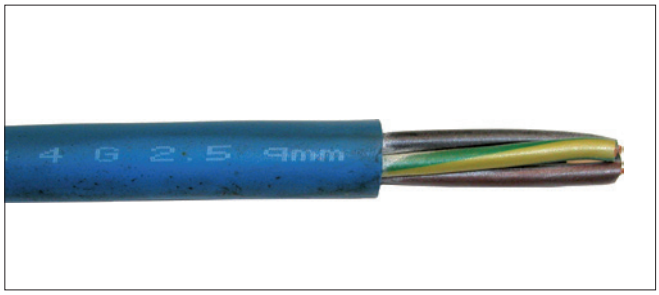
UNDERWATER CABLE

TML-J

Application:
Suitable for the continuous application in drinking water and for the connection of electrical equipment (submersible pumps) up to temperatures of 70 °C and a depth of 100 m. The conduits are chlorine-proof (31 °C, 1.0 mg/l).



TML-J	
Colour	blue
Nominal voltage U_0	450 V
Nominal voltage U	750 V
Test voltage	2.5 kV
Version	round
Protective earthing conductor	yes
Core identification	Colour VDE 0293
Conductor material	Cu, bare
Conductor class	Class 5 = stranded
Wire insulation	Rubber (EPR) 3GI3, halogen-free
Jacket material	Rubber (EPR) GM1a
Flame resistant	VDE 0482-332-1-2/IEC 60332-1
Max. permissible conduit temp.	90 °C

Type	CU	DA	Weight
	[kg/km]	[mm]	[kg/km]
3 x 1.5	43	11.1	150
3 x 2.5	72	12.1	220
4 x 1.5	58	11.5	190
4 x 2.5	96	13.5	250
4 x 4	154	15.5	380
4 x 6	230	18.1	520
4 x 10	384	23.9	950
4 x 16	614	27.5	1,400
4 x 25	960	33.1	1,950
4 x 35	1,344	35.2	2,700
4 x 50	1,920	42.2	3,600

Further cross-sections on request

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CABLE JOINTS

Application:
Suitable for connecting the motor cable of a submersible pump to the extending connection and supply lines

Set of shrink-on sleeves
(non-detachable connection)

Technical data	
for U-cables 4 x 1.5–4.0 mm²	
Nominal voltage (without armouring)	Uo/U = 0.6/1 kV
Dimensions	L = 250 mm, D = 27 mm
for U-cables 4 x 1.5–10.0 mm²	
Nominal voltage (without armouring)	Uo/U = 0.6/1 kV
Dimensions	L = 350 mm, D = 37 mm

Scope of delivery:
- Shrink-on sleeve
- Heat-shrinking interior sleeves
- Compression joints/crimp connectors
- Tin-plated butt-connector


1


2


3

1 Set of shrink-on sleeves
2 Grundfos cable couplers
3 Grundfos cable splices M

Grundfos cable couplers
(detachable connections)

Technical data	
for U-cables up to 4 x 2.5 mm² and 4“ motors up to 7.5 kW	
Nominal voltage	Uo/U = 1 kV
Dimensions	L = 230 mm, D = 25 mm
for U-cables up to 4 x 6 mm² and 4“ motors up ro 7.5 kW	
Nominal voltage	Uo/U = 1 kV
Dimensions	L = 230 mm, D = 30 mm

Scope of delivery:
- Grouting sleeve
- Plug incl. single conductor
- Sealing compound

Larger cable couplers upon request

Grundfos cable splices M
(non-detachable connections)

Technical data	
M0 for 4“ U-motors and U-cables up to 4 x 6 mm²	
Nominal voltage	Uo/U = 0.6/1 kV
Dimensions	L = 185 mm, D = 32 mm
M1 for 4“–6“ U-type engines and U-cables up to 4 x 10 mm² (minimum size for 6“ U-type-engines)	
Nominal voltage	Uo/U = 0.6/1 kV
Dimensions	L = 240 mm, D = 40 mm

Scope of delivery:
- Transparent plastic-moulds
- Feed- and air-vent hopper
- PUR-casting resin

Larger cable splices upon request

Service
A connection- or supply line to the motor cable for instant use can be arranged upon request and as a surchase charge.

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STAINLESS-STEEL CABLE

Application:
The safety cable made of stainless steel is suited for the lowering of the submersible pump into the drill hole and ensures its safety.

6 x 7 wires + SE
Material: 1.4401

Cable Ø	Max. tensile loading
[mm]	[kg]
2	225
3	508
4	907

Further dimensions available on request.

Stainless-steelcable clamps

Application:
Suitable for fastening of stainless-steel cables

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WELLMATE™ PRESSURE-COMPENSATING TANKS

Application:
Our WellMate™ pressure-compensating tanks made of composite materials are suitable for pressurised water reservoirs and for pressure increasing applications.

WellMate™ and the advantage of hydropneumatics:
Pressure-compensating tanks play a major role in most water systems, no matter if used commercially or in the private sector. They supply safe drinkable water, while the pressure remains constant. WellMate™, a brand of Pentair Water, offers a complete range of products of pressure-compensating tanks, which surpass conventional steel systems and systems based on gravity feed in terms of both efficiency and duration of functioning.

Advantages

- Closed sanitary system
- Constant water pressure
- Weldless construction
- Corrosion-proof construction of composite materials
- Exchangeable membranes for easy maintenance on-site
- Faster and more reasonable installation
- A wider range of achievable pressures: increased variability

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TECHNICAL DATA

WellMate™ pressure-compensating tanks

Model No.	Volume	Max. operating pressure	Drawdown 2.0/3.5 adjustment**	Ø	Total height	Distance in-/ outlet to bottom	Connection	Weight
	[l]	[bar]	[l]	[cm]	[cm]	[cm]		[kg]
WM0060	55	8.5	16.5	41	66	4.4	1" AG NPT	6.6
WM0075	75	8.5	22.5	41	81	4.4	1" AG NPT	8.1
WM0120	112	8.5	33.5	41	112	4.4	1" AG NPT	11.2
WM0150	153	8.5	45.8	41	145	4.4	1" AG NPT	13.6
WM0180	178	8.5	53.5	53	105	5.7	1 ¼" AG NPT	19.5
WM0235	235	8.5	68.1	61	105	5.7	1 ¼" AG NPT	22.7
WM0330	328	8.5	98.5	61	140	5.7	1 ¼" AG NPT	33.0
WM0450	453	8.5	135.9	61	189	5.7	1 ¼" AG NPT	43.1
WM0600	606	10	180	76	174	15	2" AG BSP	76.2
WM0750	757	10	225	76	206	15	2" AG BSP	89.0
WM1000	1.022	10	300	92	212	20	2" AG BSP	117.1

Note:	Max. external operating temperature 49 °C. Max. internal operating temperature 38 °C. Min. operating temperature 4 °C.	NPT = National Pipe Thread (NPT pipe thread) BSP = British Standard Pipe (Whitworth thread)

* Diameter, height and weight may vary slightly without prior notice.
** In accordance with current industry standards, the drawdown factors (regarding the sedimentation velocity) are based on Boyle's Law.
The actual drawdown sedimentation velocity is dependent on drawdown factors, including the precision and the operation of the pressure-switch, the manometer and the operating temperature of the system.

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PRESSURE VESSEL, HORIZONTAL

Application:
Suitable for the storage of sanitary and drinking water

ROBOPHOR
Type L (Loewe) Type H (OSNA)

Vessel Type L/H	
Suitable media	Drinking water
Material used	Steel, S235JRG2
Surface protection	In- and outside hot-dip galvanized
Operation temperature	0–50 °C
Acceptance	CE, type-tested
Test basis:	DGRL 97/23 EG
Specification	AD 2000

Our vessels are made in compliance with DIN 4810 regulations and are TÜV-certified (TÜV = German Association for Technical Inspection). Hot-dip galvanization suitable for use with drinking water ensures the durability of the water supply and its possible fields of application.

ROBOPHOR Type L (Loewe)

Capacity	D	Hand hole	~ Weight	
			4 bar	6 bar
[Litres]	[mm]	[mm]	[kg]	[kg]
100	400	100 x 150	33	35
150	450	100 x 150	42	49
200	500	100 x 150	48	56
245	550	100 x 150	60	74

ROBOPHOR Type H (OSNA)

Capacity	D	Hand hole	~ Weight	
			4 bar	6 bar
[Litres]	[mm]	[mm]	[kg]	[kg]
100	400	100 x 150	35	38
150	450	100 x 150	44	52
200	500	100 x 150	49	58

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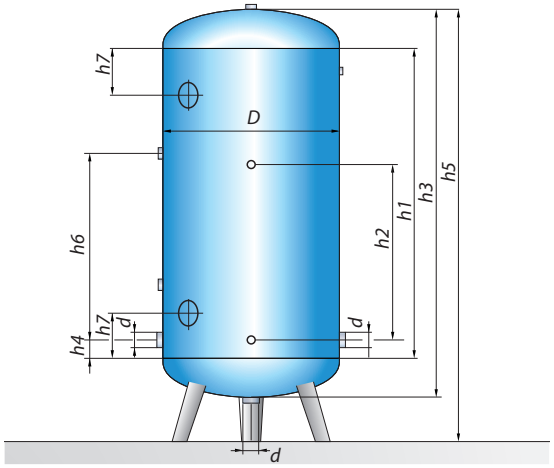
PRESSURE VESSEL, UPRIGHT

Application:
Suitable for the storage of sanitary and drinking water

Pressure Vessel DIN 4810	
Suitable medium of application	Drinking water
Material used	Steel, S235JRG2
Surface protection	Internal and external hot-dip galvanized
Operation temperature	0–50 °C
Acceptance	CE, up to 3,000 l type-tested
DIN	4810
Test basis	DGRL 97/23 EG
Specification	AD 2000

Our vessels are made in compliance with DIN 4810 and are TÜV-certified (TÜV = German Association for Technical Inspection). Hot-dip galvanization suitable for drinking water ensures the durability of the water supply and its possible fields of application.



Capacity	D	d	h1	h2	h3	h4	h5	h6	h7	Hand/man hole		~ Weight		
										Qty.	Size	4 bar	6 bar	10 bar
[Litres]	[mm]	[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[kg]	[kg]	[kg]
150	450	Rp 2"	790	500	1,010	85	1,230	500	210	1	100 x 150	40	42	50
300	550	Rp 2"	1,100	500	1,360	85	1,570	675	210	1	100 x 150	62	64	85
500	650	Rp 2"	1,310	700	1,610	85	1,810	800	210	1	100 x 150	85	100	130
750	800	Rp 2"	1,250	700	1,610	85	1,810	800	210	1	100 x 150	110	143	185
1,000	800	Rp 2"	1,750	1,000	2,110	85	2,310	1,050	210	2	100 x 150	135	178	230
1,500	1,000	Rp 3"	1,560	1,000	2,000	85	2,200	1,000	210	1	320 x 420	233	289	383
2,000	1,100	Rp 3"	1,770	1,000	2,250	85	2,450	1,125	210	1	320 x 420	304	353	470
3,000	1,150	Rp 3"	2,500	1,000	3,000	85	3,200	1,500	210	1	320 x 420	395	457	649

Additional sizes available on request

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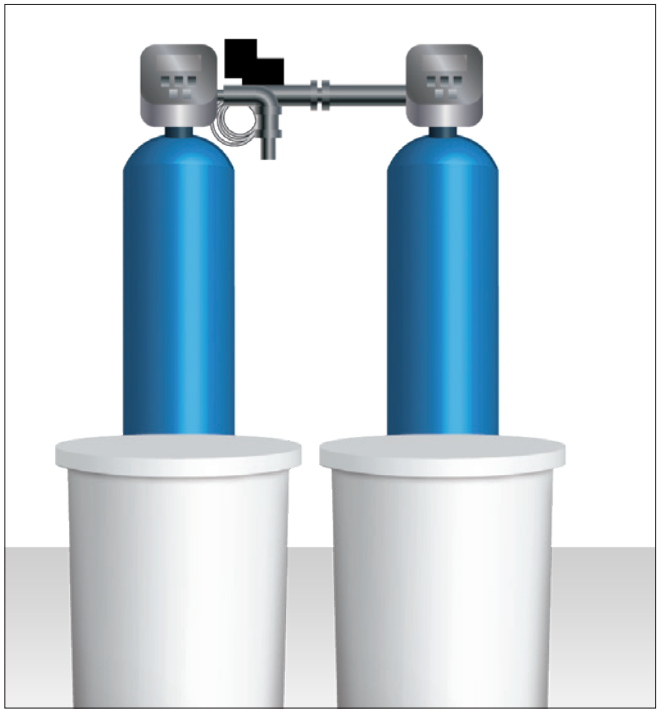
WATER SOFTENING PLANTS

Application:
For the softening of non-ferrous and manganese-free sanitary and drinking water.

Fully-automatic, water-meter controlled double-tank system with separate container for regeneration agents in order to ensure a continuous water supply by alternating operation.

These systems are also available as cabinet units.



Type of plant		DWK-0730	DWK-0844	DWK-1044	DWK-124	DWK- 1354
Amount of resin per tank	[Litres]	12	25	37	50	75
Capacity per pressure tank	[°dH x m^3]	45	95	140	190	286
Flow rate output max.*	[m^3/h]	0.5	1.0	1.5	2.0	3.0
Connections inflow/outflow	[inch]	1				
Rinse water connection	[inch]	½ hose				
Pressure vessel connection		Hose				
Salt/brine container Ø	[mm]	470		570		
Height	[mm]	800		830		
Content	[l]	105		200		
Softening pressure tank Ø	[mm]	190	210	260	310	340
Height	[mm]	950	1,290		1,410	1,540
Salt requirement/regeneration	[approx. kg]	2.4	5	7.4	10	15

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NITRATE REDUCTION PLANTS

Application:
Suitable for the nitrate reduction of non-ferrous and manganese-free sanitary- and drinking water.

Fully-automated, time-controlled single-tank plants with integrated container for regeneration agents.

These installations are also available as double-tank plants.

Type of plant		KAZN SM	KAZN FN18	KAZN FN30	KAZN FN36
Amount of resin	[Litres]	3	6	12	25
Capacity	[g NO^3 x m^3]	60	120	240	500
Nom. flow rate *	[m^3/h]	0.9	1.1	1.2	1.3
Total constr. height	[mm]	520	660	970	1,120
Container width	[mm]	230	320	320	320
Container depth	[mm]	400	520	520	520
Salt requirement/regeneration	[approx. kg]	0.7	1.4	2.9	6

* If applicable, the total flow rate output allows an increase up to just below the limit value by blending. Thus, a smaller unit can be used while brine/rinse water consumption is reduced.

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OPEN STAINLESS-STEEL FILTER SYSTEMS

Application:
Filter systems for drinking and sanitary water purification by de-ferrisation, de-manganisation and de-acidification

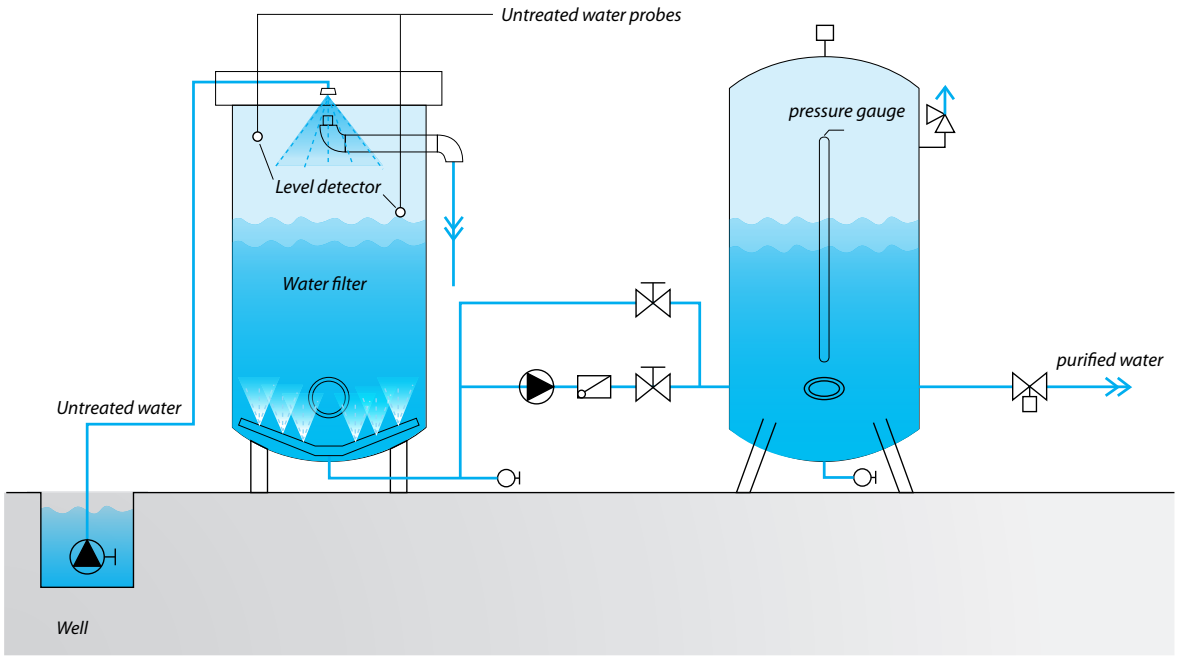
Accessories

- Flush-back automatic
- Flush-back valve
- Filter material
- Piston pump
- Centrifugal pump

System type: OEF		500	650	800	900
Container contents	[approx. l]	300	450	700	850
Flow rate output	[max. l]	2,500	3,500	5,500	7,500
Container diameter	[mm]	500	650	800	900
Container height	[mm]	1,900	1,900	1,900	1,900

Available in plastic version

Open stainless-steel filter systems



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CLOSED STAINLESS-STEEL FILTER SYSTEMS

Application:
Filter system for drinking and sanitary water purification by de-ferrisation, de-manganisation and de-acidification

Our GEF filter type is characterised by the following properties:

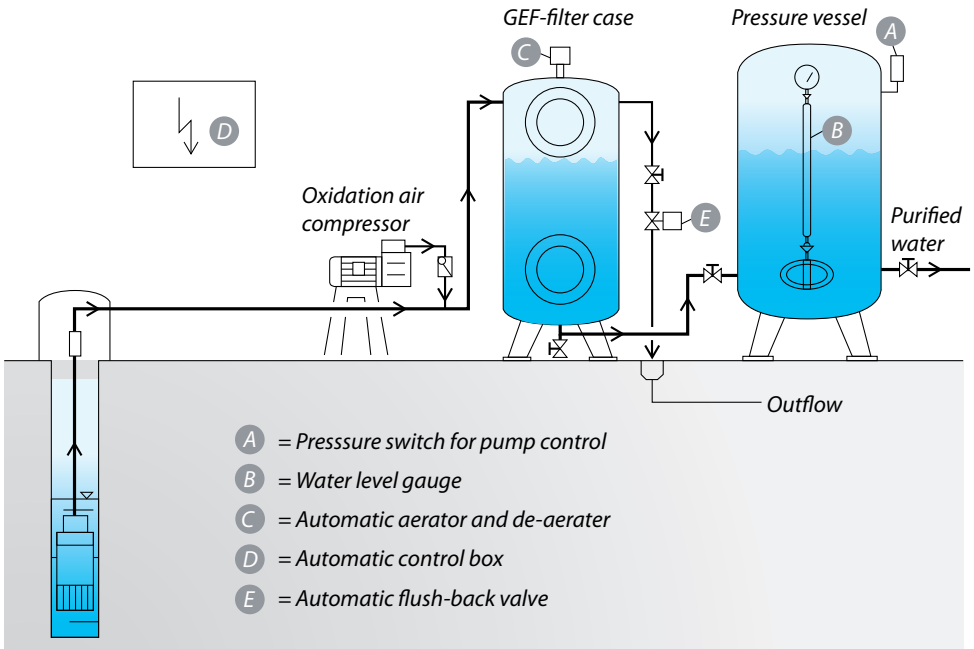
- Durable stainless-steel construction,
- Extremely efficient gravel filtering,
- High-service life,
- Flexibly scaleable, due to different sizes.

The water purification installations equipped with our GEF filter type convince by reliable filter output and favourable operating costs.

System type: GEF		400	500	650	800
Container contents	[approx. l]	200	300	500	750
Flow rate output	[max. l]	1,500	2,500	4,000	6,500
Container diameter	[mm]	400	550	650	800
Container height	[mm]	1,700	1,700	1,700	1,850

Available zinc-coated

Closed stainless-steel filter systems



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COMPACT DE-FERRISATION SYSTEMS

Application:
For the removal of iron, manganese and hydrogen sulphite from untreated or well water

Fully-automatic, time-controlled single installation with separate container for oxidising agents

Maximum untreated water concentrations:
iron: approx. 3.5 mg/l;
manganese: approx. 1 mg/l;
hydrogen sulphite: approx. 5 mg/l.

System type:		MG-10	MG-12	MG-13	MG-14	MG-16
Amount of filtering medium	[Litres]	28	56	70	99	127
Flow rate output	[max. m^3/h]	0.7	0.9	1.1	1.4	1.8
Container for oxidising agents Ø	[mm]	270	270	270	270	270
Height	[mm]	420	420	420	420	420
De-ferrisation pressure vessel Ø	[mm]	260	310	340	370	410
Height	[mm]	1,320	1,430	1,570	1,840	1,840
Required flush-back output	[m^3/h]	1.5	2	2.5	3.0	3.5

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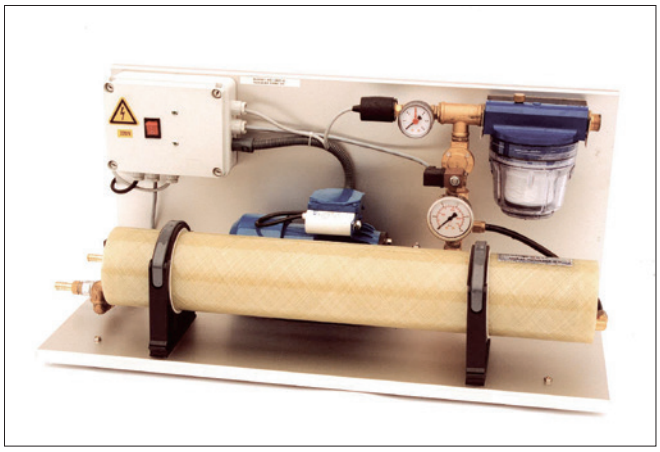
COMPACT REVERSE-OSMOSIS SYSTEMS

Application:
Compact system for the desalination of softened or hardness-stabilised drinking water according to the principle of reverse osmosis for the discontinuous production of a limited amount of water (duty cycle < 20 h/day)



System type:		Compact-UO 80	Compact-UO 130
Permeating efficiency *	[1/h]	80	130
El. connected load	[kW]	0.4	

* The systems are consigned for a salt content of 1,000 mg/l, a water temperature of 15 °C and a colloid index of max. 3. The permeating yield depends on the untreated water quality and the pre-treatment. Prices for spare modules and pre-filter cartridges according to our price-list.

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COMPACT REVERSE-OSMOSIS SYSTEMS

Application:
Upright frame systems for the desalination of hardness-stabilised drinking water according to the German Drinking Water Ordinance based on the principle of reverse osmosis.

System type		UO 4,000	UO 5,000	UO 6,000	UO 7,000
Permeating efficiency *	[l/h]	4,000	5,000	6,000	7,000
Feed water connection	[DN]	32	32	40	50
Permeating/ concentrate connection	[DN]	32/ 25	32/ 25	40/ 32	40/ 32
Membrane element	[typ]	8040	8040	8040	8040
Quantity	[pcs.]	4	5	6	7
Excess operating pressure	[bar]	13	13	13	13
Connected load	[kW]	5.5	5.5/ 7.5	5.5/ 7.5	7.5
System height	[approx. mm]	1,800	1,800	1,800	1,800
System width	[approx. mm]	2,700	3,500	4,000	3,500
System depth	[approx. mm]	750	750	750	750

System type		UO 8,000	UO 10,000	UO 12,000	UO 15,000
Permeating efficiency *	[l/h]	8,000	10,000	12,000	15,000
Feed water connection	[DN]	50	50	65	65
Permeating/ concentrate connection	[DN]	50/ 40	50/ 40	65/ 50	65/ 50
Membrane element	[typ]	8040	8040	8040	8040
Quantity	[pcs.]	8	9	11	12
Excess operating pressure	[bar]	13	13	13	13
Connected load	[kW]	7.5	11	11	15
System height	[approx. mm]	1,800	1,800	1,800	1,800
System width	[approx. mm]	5,000	4,000	5,000	5,000
System depth	[approx. mm]	1,000	1,000	1,000	1,000

* The systems are consigned for a salt content of 1,000 mg/l, a water temperature of 15 °C and a colloid index of max. 3. The permeating yield is dependent on the untreated water quality and the pre-treatment. Price for spare modules and pre-filter cartridges according to our price list.

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DOSING SYSTEMS

Application:
For the adjustable, flow-rate dependable dosage of different liquid media in the drinking water line.

Proportional dosing unit with separate dosing pump as a complete system for the volume control from supply units.

Separate proportional dosing unit		DOS NG 10 W	DOS NG 20 W
Upper working limit/nom. flow rate	[m^3/h]	10.5	20
Lower working limit	[m^3/h]	0.08	0.08
Dosing distance	[l]	1.8	3.2
Dose rate 50–100 %	[ml/m^3]	70–165	70–165
Operating pressure of dosing pump max.	[bar]	10	8
Δp in turbine meter at upper working limit	[bar]	0.15	0.50
Flow rate at 0.2 bar pressure drop	[m^3/h]	13	13

Further systems such as e.g. activated carbon filters, compact systems are available on request.