

Mixed bed cartridge desaliQ:BA

Intended use

The desaliQ:BA mixed bed cartridge is intended, for instance, for the filling or make-up water feed of heating systems.

The mixed bed cartridge desaliQ:BA is designed to produce ultra-pure water and can be used in the sectors below:

- Full demineralisation of raw water of drinking water quality
- Residual demineralisation of partially demineralised permeate originating from reverse osmosis systems

The mixed bed cartridge desaliQ:BA **cannot** be used in the sectors below:

- Treatment of raw water to be used as drinking water
- Operation with gas cushions

Function

Physical

Via an internal distribution system, a mixed bed resin is steadily flown through from top to bottom.

Via a collecting element at the bottom of the mixed bed cartridge

and a riser pipe, the fully demineralised water (demi water) is directed to the pure water outlet of the mixed bed cartridge.

Chemical

Mixed bed resins consist of a highly acid cation exchanger resin and a highly alkaline anion exchanger resin. In the mixed bed cartridges, these two components are completely mixed already.

The cation exchanger resin removes all positively charged ions (cations) from the raw water. All cations contained in the raw water such as calcium, magnesium and sodium are exchanged for hydrogen cations (H^+).

In full demineralisation, the anion exchanger resin is used to filter off the negatively charged ions (anions). All anions contained in the raw water, such as nitrate, phosphate, sulphate, chloride and hydrogen carbonate are exchanged for hydroxide ions (OH^-).

Full demineralisation removes almost all undesired components from the inlet water. Thanks to the highly alkaline anion exchanger resin, silicic acid and carbon dioxide are also filtered off. The H^+ and OH^- ions generated during the exchange process combine to H_2O . The result is pure water.

Demineralisation of raw water

The desaliQ mixed bed cartridge is mainly used for the full demineralisation of raw water. The raw water is directed to the inlet of

the mixed bed cartridge via an optional system separator and a fine filter.

Secondary treatment of permeate

The residual demineralisation of permeate originating from reverse osmosis systems represents an additional application. The mixed bed cartridge is installed downstream of the reverse osmosis system. Thanks to the residual demineralisation, the permeate conductivity can be further reduced.

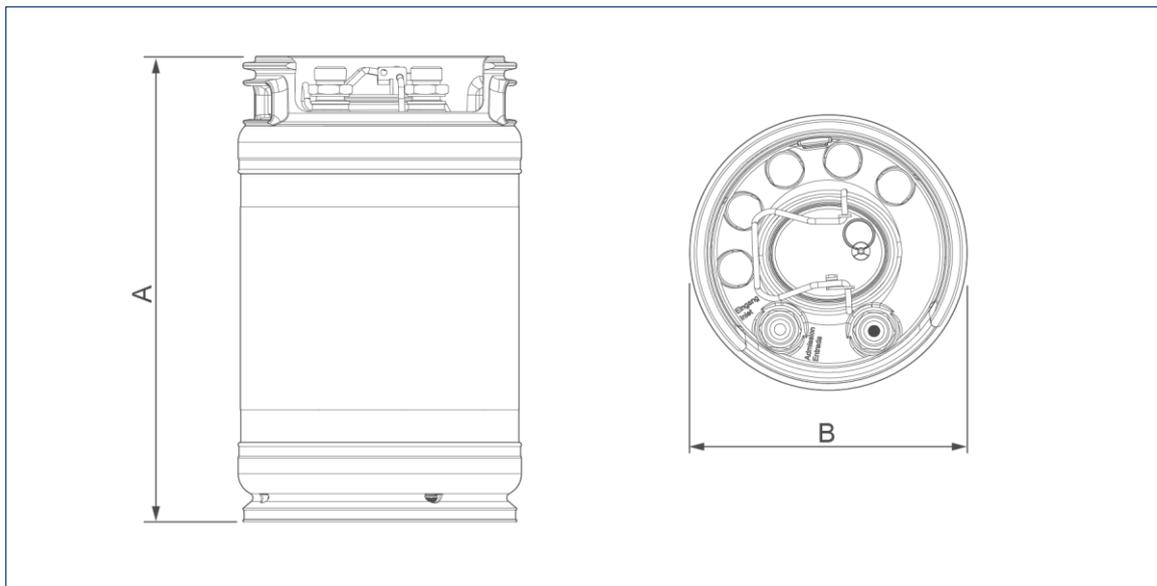
Design

- Stainless steel tank, filled with mixed bed resin
- Raw water connection with internal distribution system
- Pure water connection with internal riser pipe to the collecting element at the bottom of the tank
- Venting
- Plastic ring with carrying handles
- Plastic foot

Scope of supply

- Mixed bed cartridge
- Operation manual
- Mixed bed resin, can be regenerated

Technical specifications I



		desaliQ:BA				
Dimensions and weights		6	12	13	16	20
A Height	mm	400	755	605	820	1065
B Diameter	mm	240	240	410	410	410
Shipping weight	kg	~ 12	~ 23	~ 48	~ 68	~ 89
Volume of cartridge	l	13.5	28.5	58.7	85	115
Filling volume Mixed bed resin	l	12.5	25	50	75	100
Connection data		6	12	13	16	20
Nominal connection diameter		DN 20 (¾")				
Performance data		6	12	13	16	20
Nominal pressure		PN 10				
Operating pressure		≤ 10				
Nominal flow	[m³/h]	0.6	1.2	1.3	1.6	2.0
Flow at Δp 1 bar	[l/h]	480	850	1050	1080	1200
Capacity at a desired residual conductivity of < 10 μS/cm	μS/cm x m³	215	460	1040	1560	2080
Capacity at a desired residual conductivity of < 50 μS/cm	μS/cm x m³	340	800	1650	2475	3300
General		6	12	13	16	20
Water temperature *)	°C	5 – 80				
Ambient temperature	°C	5 – 40				
Order no.:		707 450	707 460	707 470	707 480	707 490

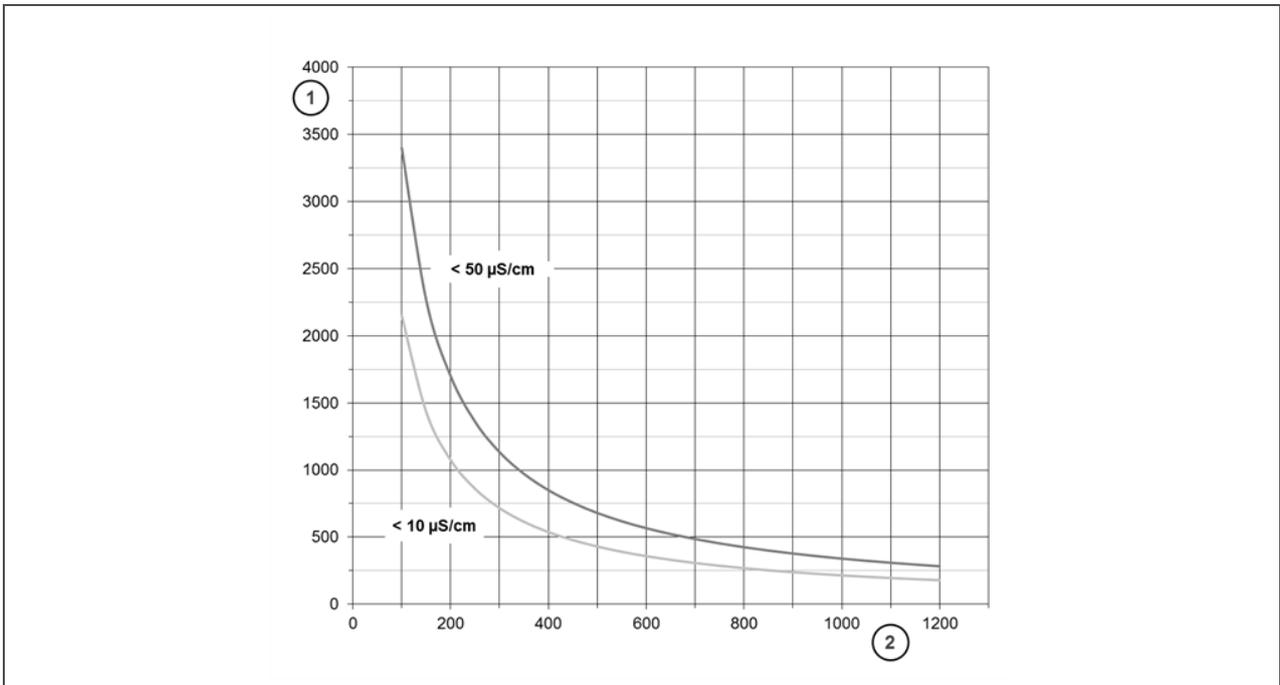
*) Prolonged periods of use with water temperatures exceeding 60 °C may damage the resin. A regeneration is no longer possible then.

Sample calculation:

- Conductivity of filling water: 500 μS/cm
- Cartridge used: desaliQ:BA 6
- $215/500 = 0.43 \text{ m}^3$ (corresponds to 430 litres at 10 μS/cm)
- $340/500 = 0.68 \text{ m}^3$ (corresponds to 680 litres at 50 μS/cm)

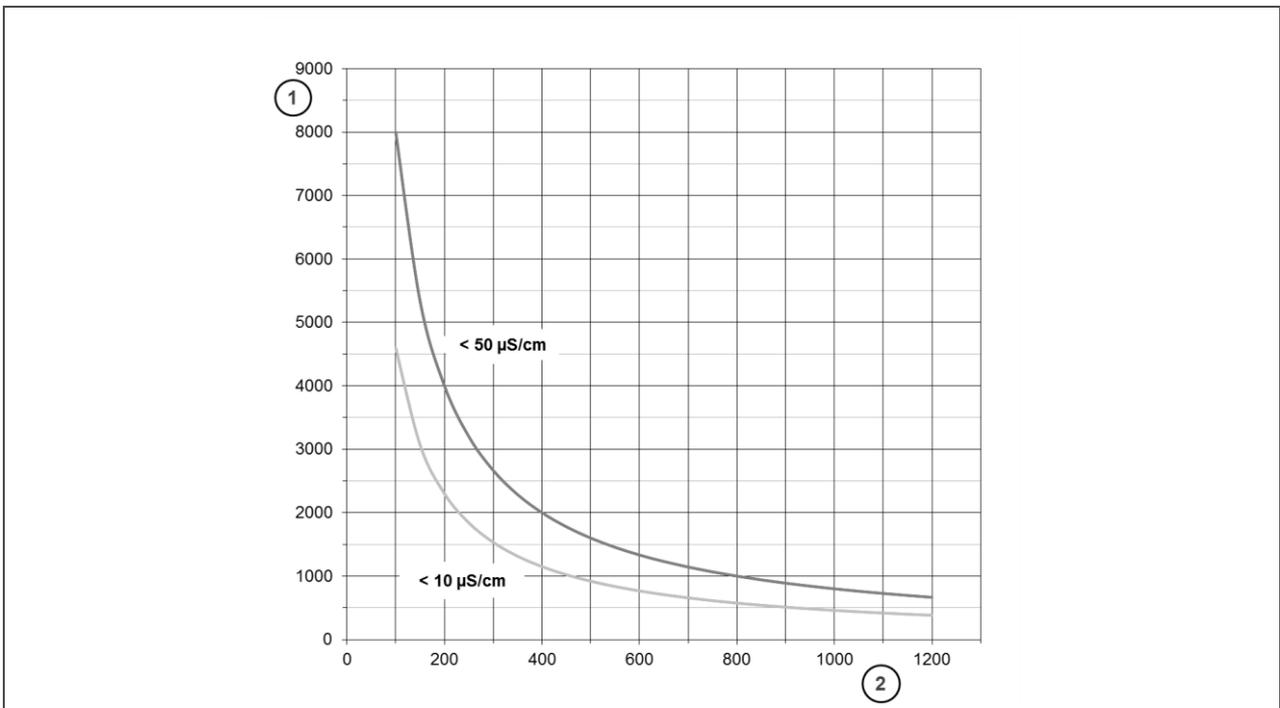
Capacity curves

desaliQ:BA 6



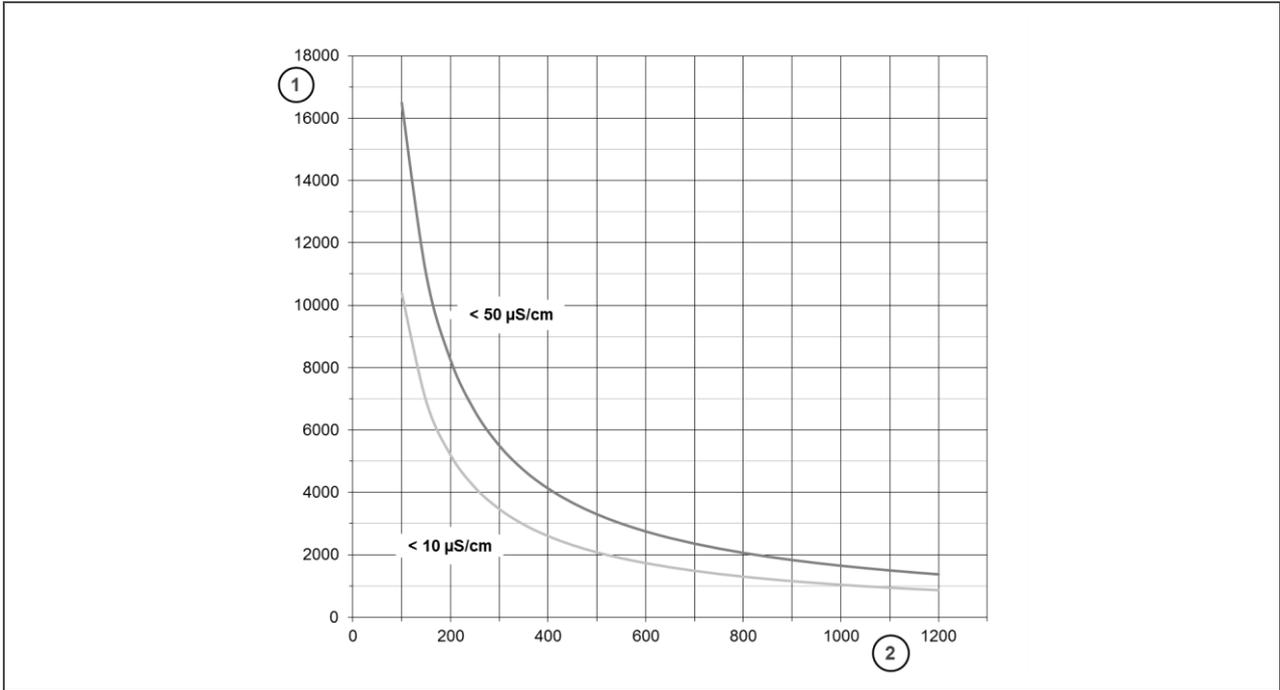
Item	Designation	Item	Designation
1	Volume of demineralised water in l	2	Conductivity of raw water in $\mu\text{S/cm}$

desaliQ:BA 12



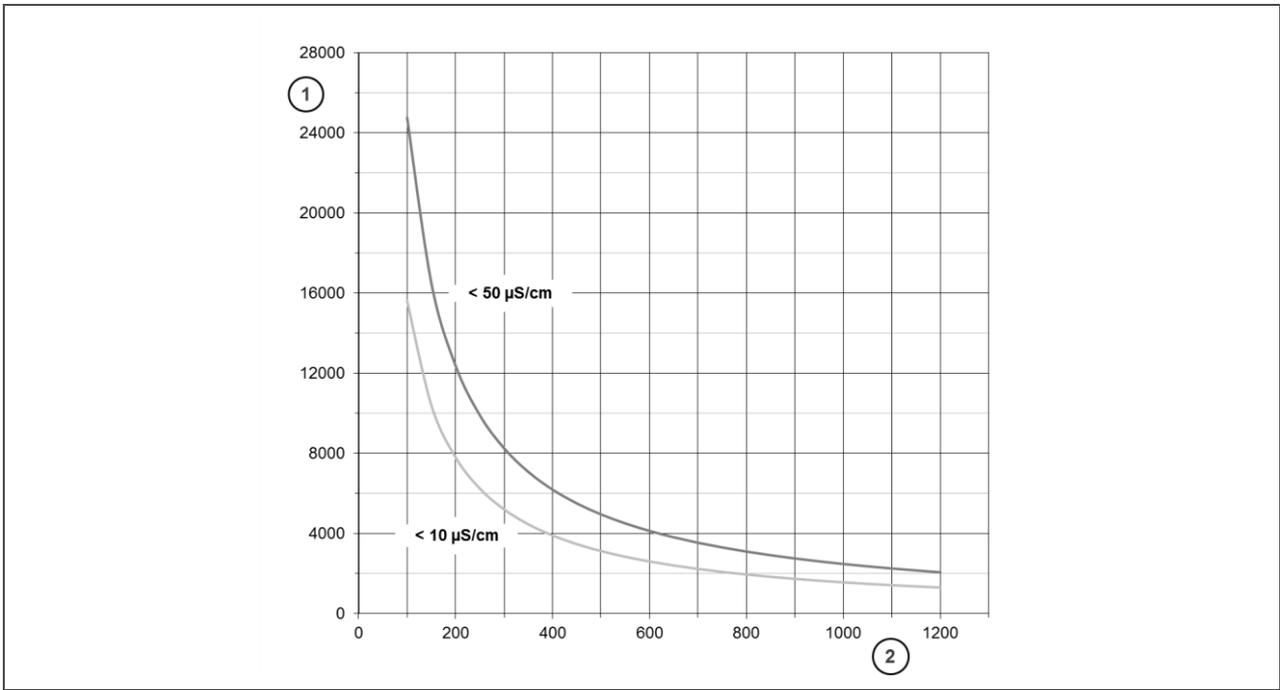
Item	Designation	Item	Designation
1	Volume of demineralised water in l	2	Conductivity of raw water in $\mu\text{S/cm}$

desaliQ:BA 13



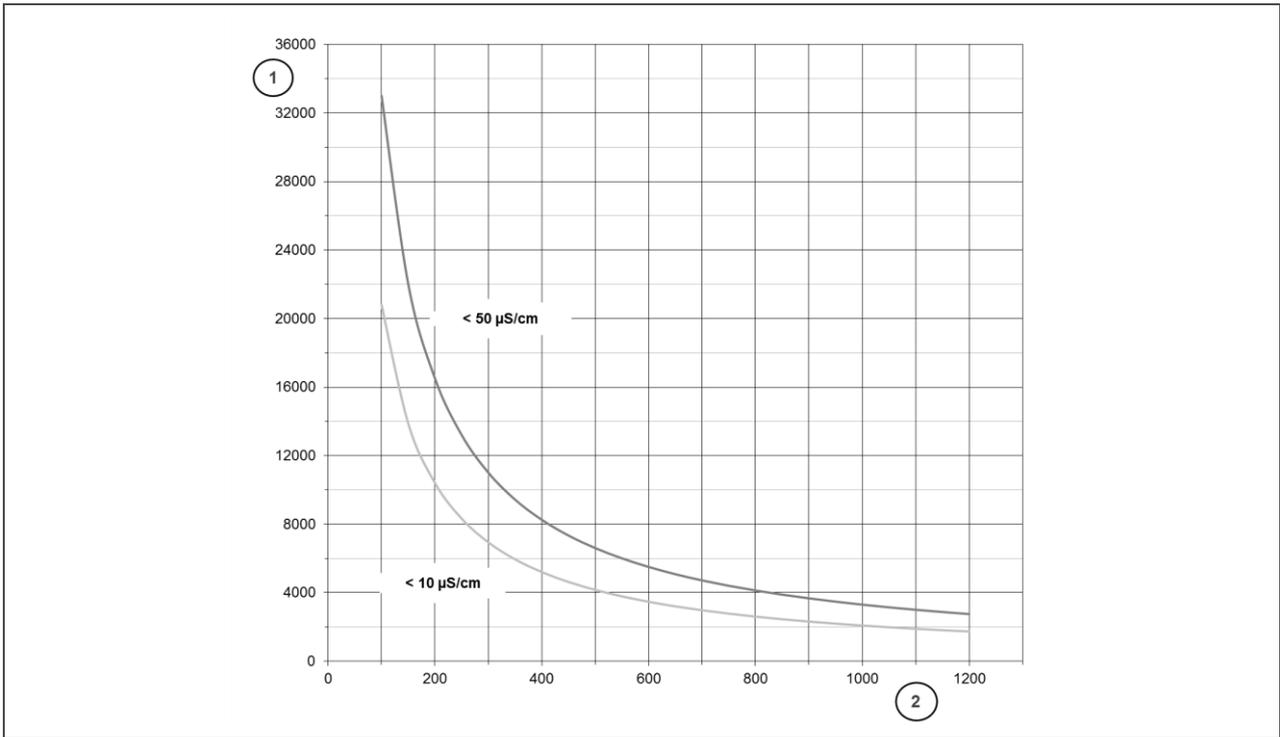
Item	Designation	Item	Designation
1	Volume of demineralised water in l	2	Conductivity of raw water in µS/cm

desaliQ:BA 16



Item	Designation	Item	Designation
1	Volume of demineralised water in l	2	Conductivity of raw water in µS/cm

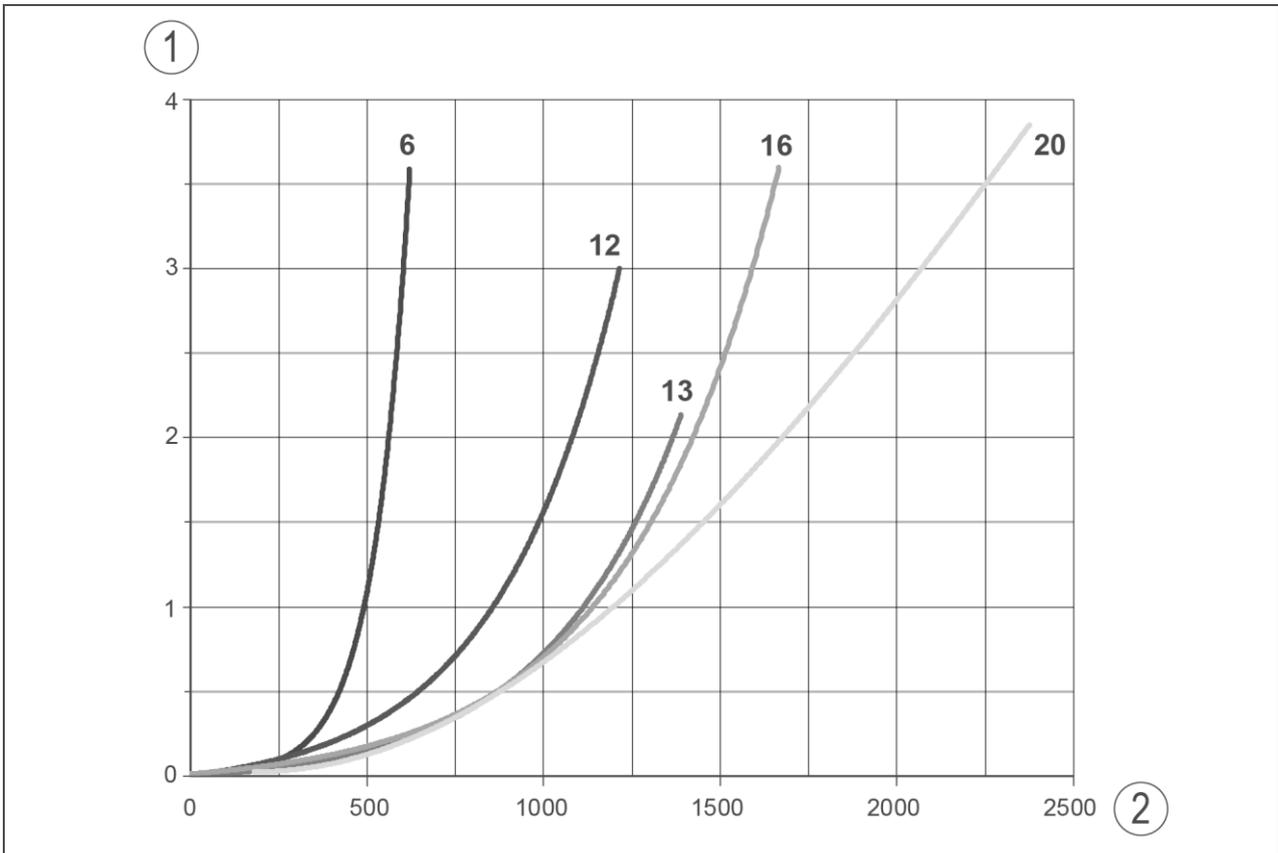
desaliQ:BA 20



Item	Designation	Item	Designation
1	Volume of demineralised water in l	2	Conductivity of raw water in $\mu\text{S/cm}$

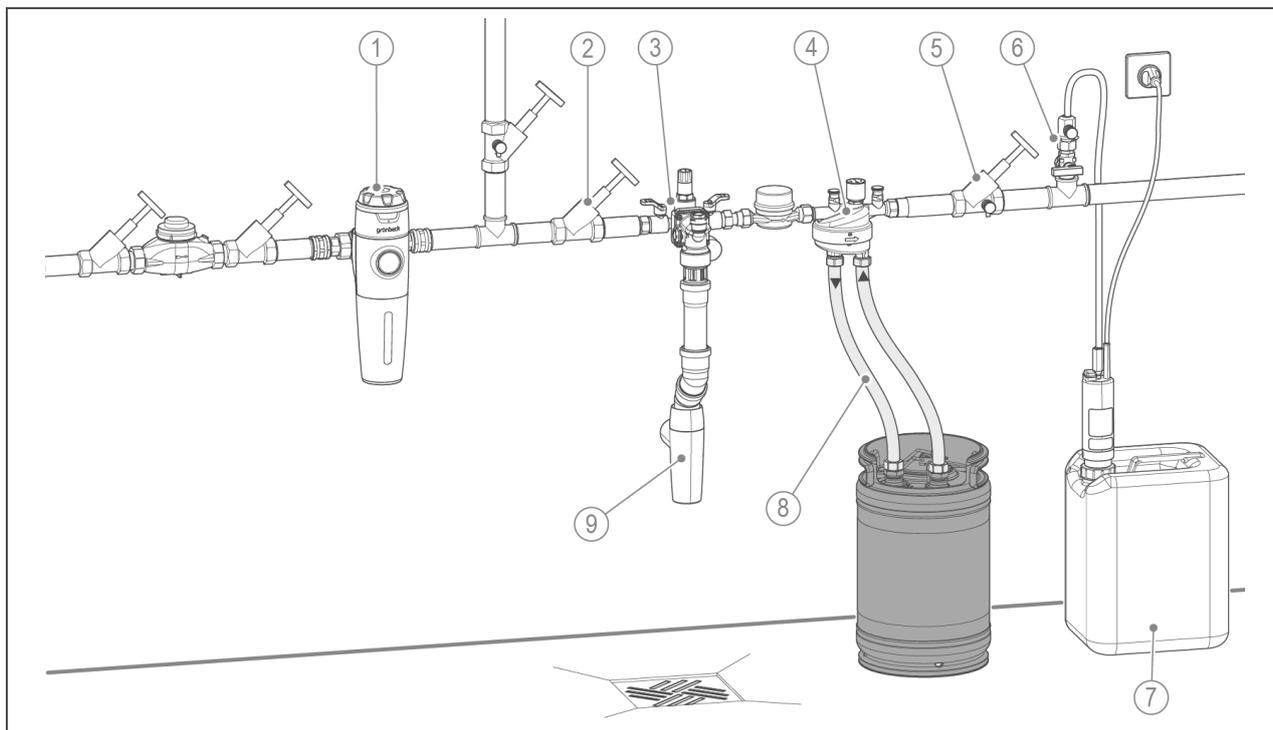
Pressure loss curves

Mixed bed cartridges desaliQ:BA



Item	Designation	Item	Designation
1	Pressure loss in bar	2	Flow in l/h

Installation example for residential applications



Item	Designation	Item	Designation
1	Drinking water filter, e.g. pureliQ	2	Inlet shut-off valve
3	Euro system separator GENO-DK 2-Mini of filling section thermalIQ:FB13i	4	Connection block with adapter and optional conductivity measuring cell
5	Outlet shut-off valve	6	KFE boiler fill and drain shut-off valve with injection point for thermalIQ filling pump
7	Dosing solution for heating protection thermalIQ safe or cleaning agent for heating systems thermalIQ clean	8	desaliQ hose kit
9	Drain connection DN 50 with integrated siphon according to DIN EN 1717		

Requirements for the installation site

Observe local installation directives, general guidelines and technical specifications.

The installation site must be frost-proof and protect the product from direct sunlight, chemicals, dyes, solvents and their vapours.

The installation site must be sufficiently illuminated and ventilated.

A floor drain suitable for the system size must be available at the installation site or a protection device such as a protectliQ, or a protection device with water stop of the same quality must be installed.

The sufficiently dimensioned installation surface for the product must be even (level) and have sufficient strength and load-bearing capacity to ensure the product's stability/tilt resistance.

Always install a drinking water filter and, if required, a pressure reducer (e.g. fine filter pureliQ:KD) upstream of the product.

Install a Euro system separator upstream of the product.

Accessories for heating water

desaliQ hose kit DN 12 Order no. 707 850

For connecting upright full demineralisation systems with the filling sections thermaliQ:FB2 or thermaliQ:FB13i

Filling section thermaliQ:FB2 Order no. 707 760

Consisting of:

- Filling group with system separator thermaliQ:SB13
- Treatment group thermaliQ:HB2 with connection adapter

Filling section thermaliQ:FB13i Order no. 707 770

Consisting of:

- Filling group with system separator thermaliQ:SB13
- Water meter with double screw connection
- Treatment group thermaliQ:HB2 with connection adapter

Filling group thermaliQ:SB13 Order no. 707 750

To secure the drinking during the initial filling and make-up feed of closed heating systems

Connection block with adapter Order no. 707475000100

The connection block with adapter is used in the heating sector for filling cartridges or mixed bed cartridges of the desaliQ product series

desaliQ connection adapter Order no. 707 276

Adapter for connecting the mixed bed cartridge to the treatment group thermaliQ:HB2

GENO-Multi-LF Order no. 702 842

The conductivity meter is designed for measuring the conductivity of fully demineralised water (demi water)

GENO-therm solenoid valve complete Order no. 707 055

The solenoid valve (closed when de-energised) interrupts the pure water line if the set conductivity limit value is exceeded

thermaliQ conductivity measuring cell II with adapter Order no. 707 015

Thanks to the conductivity measuring cell, the capacity of the filling cartridge or mixed bed cartridge can be monitored easily and reliably

Water meter with connection material Order no. 702 845

Water meter with connection material and double screw connection for connection to the raw water inlet line by means of a 3/4" male thread

Euro system separator GENO-DK 2-Mini Order no. 133 100

Euro system separators prevent backflow, back pressure and back siphonage of modified drinking water into the public drinking water system according to DIN EN 1717

Safety device protectliQ:A20 Order no. 126 400

Product to protect against water damage in one- and two-family homes

GENO-therm case Premium Order no. 707 170

Sortimo case with desaliQ hose kit, water meter with connection material and conductivity meter GENO-Multi-LF

GENO-therm analysis case Order no. 707 190

Sortimo case with water test kits for pH value, conductivity, total hardness and molybdenum concentration

GENO-therm analysis case Order no. 707 192

Sortimo case with water test kits for pH value, conductivity and total hardness

Combined measuring device for pH and conductivity incl. accessories Order no. 170000010000

To measure pH value and conductivity

Digital, manual measuring device Order no. 170 185

To measure pH value, Redox, temperature and conductivity

Accessories for membrane technology

desaliQ connection kit Order no.: 703 575

To connect the mixed bed cartridge, consisting of:

- 2 Flexible connection hoses DN 20 of 1.5 m in length
- Connection adapter 3/4" made of PP for the conductivity meter

desaliQ Adapter 3/4" Order no. 703 576

Adapter for conductivity meter

Conductivity meters

Measuring devices to indicate the conductivity

D 100 LED (0 - 100 µS/cm) Order no.: 703 530

D 10 AN (0 - 10 µS/cm) Order no.: 703 545

D 100 AN (0 - 100 µS/cm) Order no.: 703 535

D 10 ANR (0 - 10 µS/cm) Order no.: 703 555

D 100 ANR (0 - 100 µS/cm) Order no.: 703 540

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