# AQA smart

Water softener

Product data sheet

8.15

AQA smart

AQA smart C mit grösserem Vorratsraum für Regeneriermittel

## Intended use

AQA smart is designed for softening or partially softening drinking and service water (in accordance with the relevant regulations – DIN 1988, parts 2 and 7 as well as DVGW [German Technical and Scientific Association for Gas and Water]).

AQA smart minimises malfunctions and damage due to calcification in water pipelines and the connected fittings, equipment, boilers etc.

## Function

**Capacity requirement-dependent unit controller**
Three capacity levels can be set on the controller, making the unit suitable for up to four residential units.

The unit operates according to the principle of intelligent regeneration.

**Intelligent quantity-dependent regeneration**
When the unit is started, the available supply of softened water is programmed (depending on the hardness of the untreated water).

At a user-defined time (e.g. at night), the unit checks whether the remaining supply of softened water is sufficient for the following day.
If this is not the case, the softening column is regenerated by only the exact percentage necessary to fully replenish the supply of softened water to 100%.
With intelligent regeneration, no remaining supply of softened water is discarded.

This intelligent regeneration method is only possible because of the precision flowmeter, which is able to allocate the low quantities of brine required for the partial regeneration.
The consumption of regenerative and water is reduced to the technically required minimum.

The unit is equipped with a battery to protect against power failure.
The unit is equipped with a device that disinfects the ion exchange resin during the regeneration.
Spring-loaded non-return valves protect all water connections on the inlet side of the unit (in compliance with DVGW [German Technical and Scientific Association for Gas and Water]).
This eliminates the need for a system or pipe separator.

**Time override**
If no water is used for four days, the electronic system triggers a regeneration.

The system complies with all relevant national and international standards.

## Scope of supply

**AQA smart water softener** with:

Microprocessor controller
Multiple-way control valve
Precision flowmeter for brine
Softening column with ion exchange resin
Cover
Storage area for regenerative
Power supply unit with cable and mains plug
Multiblock module A
Connection set DN 32/32 DVGW
2 m flushing water hose
2 m overflow hose 18 x 24
Fixing material
AQUATEST hardness tester

**Only AQA smart C**
Bigger Storage area for regenerative

**Optional extras** (not included in scope of supply):

| | |
|---|---|
| Aquastop 3/4" | Order no.: 11825 |
| Aquastop 1" | Order no.: 11826 |

Brine pumping station Bewasol
Order no.: 17080

**Regenerative**

| | |
|---|---|
| Sanitabs 8 kg | Order no.: 94241 |



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# Installation conditions

Observe all applicable installation regulations, general guidelines, hygiene requirements and technical specifications.

Water softeners may not be installed in water supply systems that provide water for fire extinguishing purposes.

The pipeline network must be flushed before the unit is installed.

The hard water to be fed into the unit must always meet the specifications of the Trinkwasserverordnung (German Drinking Water Ordinance) or EU Council Directive 98/83/EC. The total dissolved iron and manganese may not exceed 0.1 mg/l. The hard water to be fed into the unit must always be free of air bubbles. If necessary, a bleed device must be installed.

Continuous operation of the water softener with water containing chlorine or chlorine dioxide is possible if the concentration of free chlorine/chlorine dioxide does not exceed 0.5 mg/l.
However, continuous operation with water containing chlorine/chlorine dioxide causes the ion exchange resin to age prematurely. A water softener reduces the concentration of free chlorine and chlorine dioxide. In other words, the concentration in the outflow of a water softener is generally considerably lower than in the inflow.

The unit should be sized in such a way that regeneration is necessary at least once a day based upon the throughput. If water consumption is reduced, e.g. during holidays, a shut-off device must be fully opened for at least 5 minutes before water can be used again (DIN 1988 parts 4 and 8).

Use corrosion-resistant pipe materials for installation. Pay attention to corrosion-causing chemical properties when different pipe materials are combined (mixed installation), even in the direction of flow upstream of the water softener.

A protective filter must be installed in the direction of flow no further than **1 m** upstream from the unit. The filter must be functional before the water softener is installed. This is the only way to ensure that dirt and corrosion products do not enter the water softener.

You must check whether a mineral substance metering device needs to be installed downstream from the water softener for the purpose of preventing corrosion.

When installing the water softener, select a location where the unit can easily be connected to the water supply network. A connection to the sewage system (at least DN 50), a floor drain and a separate power supply (230 V/50 Hz) must be located in the immediate vicinity.

The emission of interference (voltage peaks, high-frequency electromagnetic fields, interference voltages, voltage fluctuations etc.) by the surrounding electrical systems may not exceed the maximum values specified in EN 61000-6-4.
The rated mains power (230 V/50 Hz) and the required operating pressure must be present at all times. A separate means of protection against a shortage of water is not provided and must be installed on site if desired.

If no floor drain and/or structural waterproofing compliant with DIN 18195-5 is present, a separate safety device (e.g. a hydrostop) must be used.

The installation site must be protected from frost and be kept free of chemicals, paints, solvents and fumes, and the ambient temperature must not be too high.

If the softened water is intended for human consumption as defined in the Trinkwasserverordnung (German Drinking Water Ordinance), the ambient temperature must not exceed 25 °C.
If the softened water is intended for technical purposes only, the ambient temperature must not exceed 40 °C.

The hose attached to the overflow of the brine container and the flushing water hose must be routed at an incline to the sewage system or connected to a pump. According to DIN 1988, the flushing water hose must be secured at a distance of at least 20 mm from the highest possible waste water level (unimpeded drainage).

If flushing water is fed into a pump, it must be designed for a water volume of at least 2 $m^3$/h or 35 l/min. If the pump is used for other units concurrently, it must be sized larger appropriate to the units' water output volumes.
The pump must be salt-water resistant.

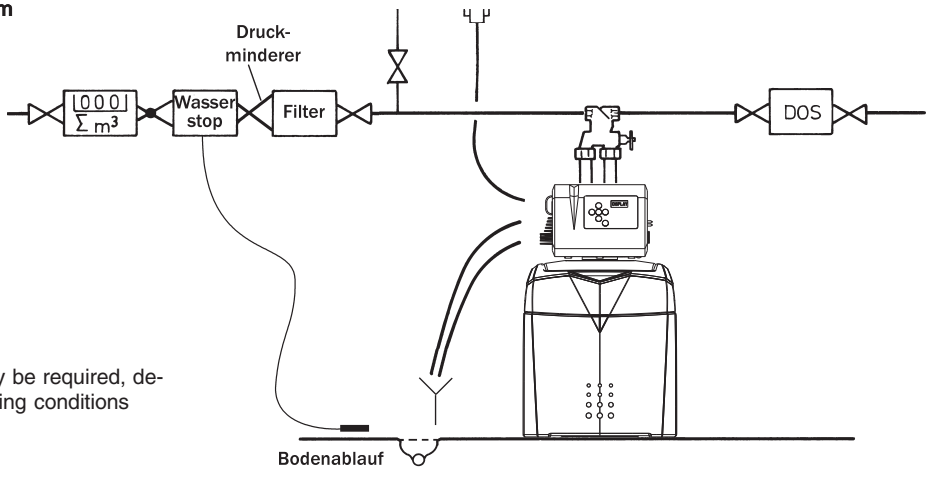
The unit's maximum operating pressure must never be exceeded (see technical specifications). If the network pressure is higher, a pressure reducer must be installed upstream from the unit.

The unit requires a minimum operating pressure to function (see tech. specifications).
During pressure fluctuations or surges, the sum of the pressure surge and the standing pressure is not to exceed the nominal pressure. The positive pressure surge must not be greater than 2 bar and the negative pressure surge must not be less than 50% of the self-adjusting flow pressure (see DIN 1988 part 2.2.4).

**Non-compliance with the installation conditions voids the warranty**
BWT provides no warranty or guarantee if the unit fails or if the capacity becomes deficient due to incorrect material selection/combination, floating corrosion products or iron and manganese deposits, or any resulting damage thereof.

**Functional and warranty conditions**
Water softeners and ion exchange units require regular functional monitoring, maintenance and replacement of important parts after certain intervals.
The amounts of regenerative necessary are subject to the level of consumption, which depends on operating conditions.
Water softeners must be cleaned regularly and also disinfected if necessary.
See the installation and operating instructions for the maintenance intervals.
We recommend that you enter into a maintenance agreement.

**Installation diagram**



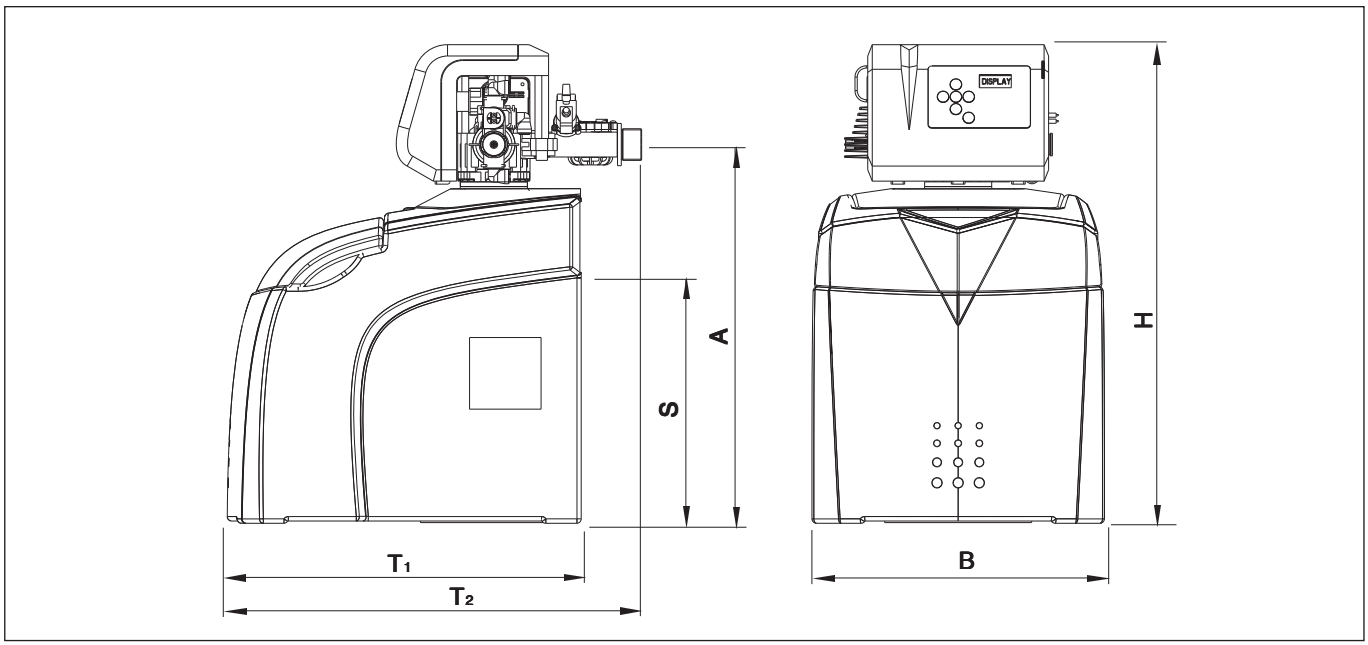

Hydrostop
Pressure reducer
Metering unit
Optional – but may be required, depending on operating conditions

# Technical specifications

| Water softener | Model | AQA smart | AQA smart C |
|---|---|---|---|
| Nominal connection width | DN | 32 (G 1 1/4" AG) | |
| Nominal pressure (PN) | bar | 10 | |
| Operating pressure | bar | 2,5 - 8,0 | |
| Nominal flow in accordance with EN 14743 (DIN 19636) | m³/h | 1,4 (1,7) | |
| Pressure drop at nominal flow | bar | 0,7 | |
| | | These specifications for capacity and consumption are the same for both units | |
| Capacity control settings | tP | 1 | 2 | 3 |
| Recommended range of application | residential units | 1-2 | 3 | 4 |
| Nominal capacity in accordance with EN 14743 | m³ x °d (mol) | 9 (1,6) | 13 (2,4) | 18 (3,2) |
| Approx. consumption of regenerative per regeneration | kg | 0,35 | 0,5 | 0,8 |
| Approx. regenerative water requirement | litres | 27 | 39 | 50 |
| Maximum flow ** | m³/h | 1,4 | | |
| Quantity of resin | litres | 7 | | |
| Max. supply of regenerative | kg | 15 | | 50 |
| Power supply | V/Hz | 230/50 | | |
| Electrical connection capacity | Watts | 4,0 | | |
| Unit voltage | V | 0,0013 | | |
| Permissible voltage peaks, max. | KV | 18 ~ | | |
| Protection class | | IP 53 | | |
| Water/ambient temperature | °C | 5 - 30 / 5 - 40 | | |
| Humidity | | nicht kondensierend | | |
| Height | **H** mm | 630 | | 1090 |
| Width | **B** mm | 390 | | 390 |
| Depth, approx. | **$T_1$** mm | 470 | | 470 |
| Depth, approx. | **$T_1$** mm | 570 | | 570 |
| Height of overflow | **S** mm | 283 | | 650 |
| Connection height | **A** mm | 495 | | 960 |
| Connection width | mm | 60 | | 60 |
| Min. sewage system connection | DN | 50 | | 50 |
| Operating weight, approx. | kg | 40 | | 100 |
| **Order no. with Multiblock X** | | **11321** | | **11370** |
| **Order no. without Multiblock X** | | **11359** | | |

* Dependent on system pressure

** Maximum flow rate: short term flow rate, with which the softener unit can be operated. At the maximum flow rate and completely closed blending, the soft water hardness is less than 10% of the inlet water hardness.



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