

HYDRO ION® Water softener Type: VAD – CS

Application

HYDRO ION® water softener used to soften / partly soften cold drinking and process water.

Duplex design to ensure a constant supply of soft water. Regeneration is possible either with full or reduced salt volume.

HYDRO ION® water softener suited to soften / partly soften water coming from boreholes, process plants, cooling plants, boiler-feed and air-conditioning systems.

Function

Our HYDRO ION® water softener operates according to the ion exchange process.

Our HYDRO ION® Duplex water softener VAD - CS is suited for installation sites with a demand of constantly softened water.

Sturdy and service-friendly central control valve actuated via a menu-controlled micro processor control in wall mount casing with the below operation modes:

- Volume control
- Forced regeneration
- Water-Refresh
- Automatic disinfection

Residual capacity, flow and failure detection are shown in the display. Service signal and failure record contact are forwarded to BMS.

A fully automatic regeneration is released by the micro processor control once the set soft water quality is achieved.

Description / Scope of supply

HYDRO ION® water softener consisting of:

- 2 x pressure vessels
- 2 x ion exchange resin with quartz gravel as support layer
- 2 x central control valves
 - 1" from noryle
 - 1,5" and 2" from brass with epoxy resin coating
- 1 x micro processor control in wall casing
- 1 x PE brine tank incl. sieve base
- 1 x brine safety valve
- 1 x turbine water meter
- 1 x internal PVC pipe connection
- 1 x disinfection system (chlorinator)
 - for softeners with salt saving mode
- 1 x brine alarm
- 1 x O&M
- 1 x measuring kit hardness control

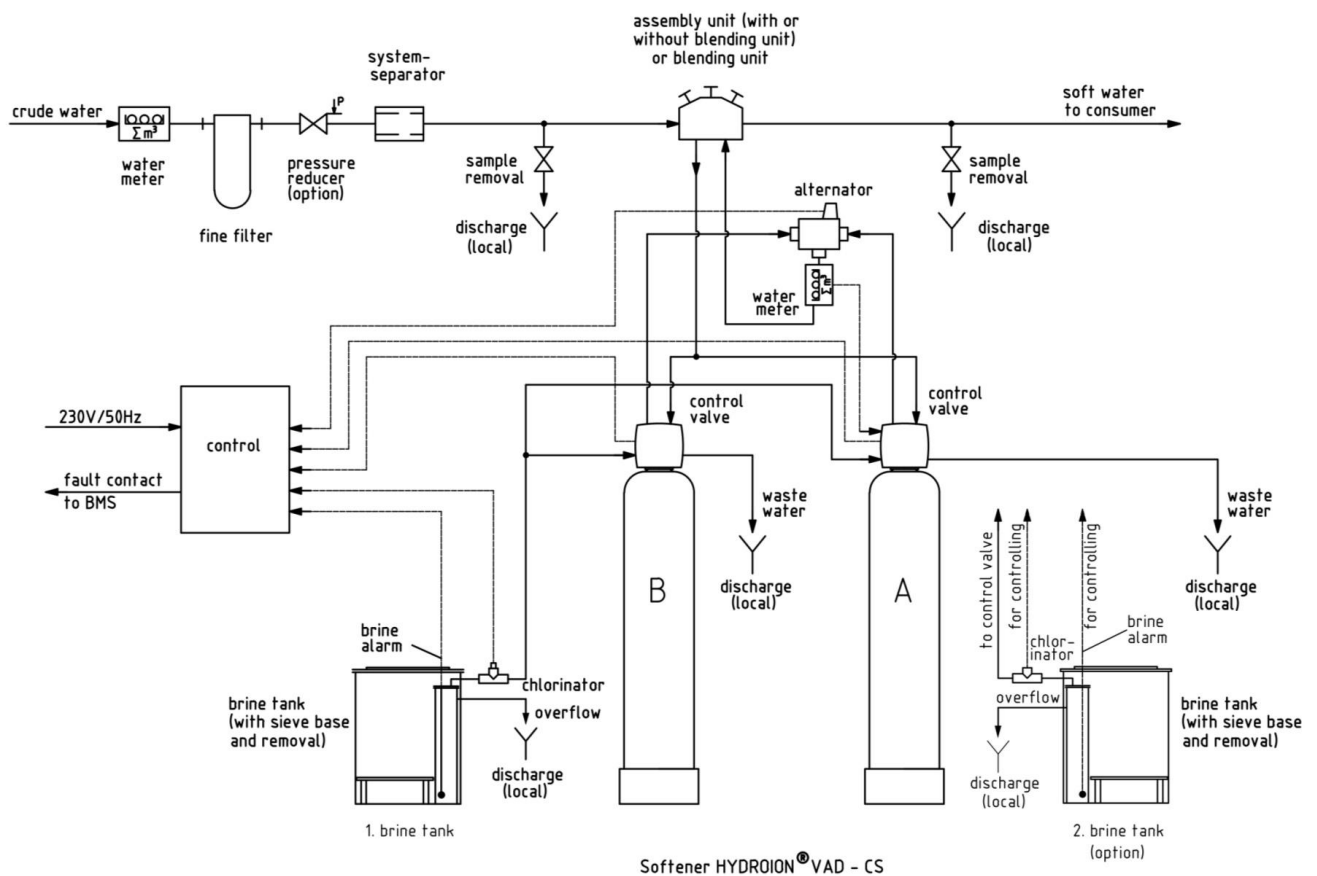


Accessories

- Assembly mount DN 25 (incl. blending) - art.-no. 511.000
- Assembly mount DN 25 (excl. blending) - art.-no. 510.016
- Assembly mount DN 40 (incl. blending) - art.-no. 511.102
- Assembly mount DN 40 (excl. blending) - art.-no. 511.100
- Flexible hoses 1" - art.-no. 001.034
- Flexible hoses 1 ½" - art.-no. 001.038
- External blending DN 32 - art.-no. 530.035
- External blending DN 50 - art.-no. 530.036

Note / Installation conditions

- Technical Data and general technical regulations as well as the local installation regulations shall be kept.
- The regulations as per DIN 1988 part 4 require a safety stop against backflow (system separation).
- A fine filter shall be installed before the softener to avoid particles dragged along from the pipe to penetrate the system.
- The ambient temperature shall not exceed 40°C. Any radiation heat shall not exceed a temperature of 40°C as well.
- Installation site shall be frost-free.
- The installation site shall be free from solvent, colour, lacquer and chemical vapour.
- Connection for the micro processor control shall be provided adjacent to the softener (230 V / 50 Hz).
- A channel drain shall be provided (min. DN50) to discharge the wash water.
- Any lifting appliance shall be resistant to seawater.



Technical Data – Full salt rate [A]

Technical data			HYDROION® VAD – CS – A								
Systems with full salting (Type A)			25 - CS 1 - A	50 - CS 1 - A	75-CS 1 - A	125-CS 1,5 -A	150-CS 1,5 -A	200-CS 1,5 -A	250-CS 2 - A	375-CS 2 - A	600-CS 2 - A
Connection mains / soft water line			DN 25 (1")			DN 40 (1 1/2")			DN 50 (2")		DN 80
Drain line (min.)			DN 50			DN 50			DN 70		
Mains electrical connection			230 V / 50 Hz AC			230 V / 50 Hz AC			230 V / 50 Hz AC		
Electrical connection (secondary)			12 V AC			12 V AC			12 V AC		
Water temperature (min./max.)			5 °C / 30 °C			5 °C / 30 °C			5 °C / 30 °C		
Ambient temperature (min./max.)			5 °C / 40 °C			5 °C / 40 °C			5 °C / 40 °C		
Operational pressure (min./max.) ²⁾			2 bar / 8 bar			2 bar / 8 bar			2 bar / 8 bar		
Performance data											
Flow rate < 0,1°dH ¹⁾	m³/h		2,5	3,5	4,5	6,5	8,0	10,5	13,5	17,0	24,0
Flow rate at blending (356 ppm to 151 ppm)	m³/h		4,3	6,1	7,8	11,3	13,9	18,3	23,5	29,6	41,7
Pressure loss at rated flow ¹⁾	bar		0,49	0,79	1,09	0,88	0,8	1,39	1,18	1,55	2,18
Capacity at 300 ppm CaCO ₃ ¹⁾	m³		5,3	10,8	16,2	27,3	32,2	43,5	54,9	82,8	132,3
Salt consumption	kg		5	10	15	25	30	40	50	75	120
Waste water volume per regeneration	m³		0,17	0,36	0,55	0,88	1,06	1,40	1,73	2,62	4,20
Volume and weights											
Resin vessel volume	Ltr.		38,4	79,5	115	153	277	277	344	473	704
Resin volume	Ltr.		2 x 25	2 x 50	2 x 75	2 x 125	2 x 150	2 x 200	2x250	2x375	2x600
Support gravel volume	kg		2 x 4	2 x 7	2 x 10	2 x 17	2 x 40	2 x 40	2 x 40	2 x 58	2 x 40
Brine tank volume	Ltr.		140	190	340	460	460	670	920	1000	1500
Regeneration salt supply	kg		50	75	125	175	162	250	325	375	525
Operational weight (complete unit) max..	kg		200	350	520	750	1100	1220	1500	2020	3000
Dimensions											
Height (max.) ± 30 mm	H	mm	1300	1600	1750	1600	1700	1700	2000	2200	2220
Ceiling height (min.)		mm	1800	1800	1900	1900	2000	2000	2200	2400	2500
Width (min.) with 1. brine tank	B	mm	1400	1430	1570	2165	2450	2560	2800	2835	3500
Width (max.) with 2. brine tank	B	mm	2050	2090	2450	3075	3330	3630	4020	4200	4910
Depth (max.)	T	mm	600	600	750	850	850	1000	1150	1050	1450
Depth (mind.) without brine tank	T	mm	430	430	450	600	750	750	750	880	1050
Clearance tank/tank	A1	mm	460	460	460	720	855	855	855	930	1080
Clearance brine tank/tank	A2	mm	510	530	630	760	820	900	1020	1070	1340
Diameter pressure tank	D1	mm	258	310	363	413	555	555	555	635	779
Diameter brine tank (min. / max.)	D2	mm	460 / 565	460 / 565	594 / 723	703 / 833	703 / 833	847 / 973	997 / 1123	1015/ 1120	1050/ 1150
Height pressure tank	H1	mm	897 ± 6	1232 ± 6	1344 ± 6	1341 ± 15	1434 ± 15	1434 ± 15	1721 ± 15	1918 ± 15	1892 ± 15
Height top control valve	H2	mm	1080	1420	1530	1570	1665	1665	1930	2130	2160
Height brine tank	H3	mm	843	1123	1200	1196	1196	1196	1206	1340	1500
Height feed (mains water) / discharge (soft water)	H4	mm	960	1295	1400	1430	1520	1520	1810	2010	2040
Height VAD (incl. Alternator)	H5	mm	1080	1600	1700	1570	1660	1660	1970	2170	2200
Control box (B x H x T)	mm	240 x 170 x 110									
Mounting board (B x H x T)	mm	330 x 200 x 10									

¹⁾ Values dependent on operation mode and mains water quality

²⁾ The flow pressure is relevant for min. operating pressure and the stagnation pressure for max. operating pressure

Technical Data – Salt saving mode [B]

Technical data			HYDROION® VAD – CS – B								
Systems with economic salting (Type B)			25-CS 1 - B	50-CS 1 - B	75-CS 1 - B	125-CS 1,5 - B	150-CS 1,5 - B	200-CS 1,5 - B	250-CS 2 - B	375-CS 2 - B	600-CS 2 - B
Connection mains / soft water line			DN 25 (1")			DN 40 (1 1/2")			DN 50 (2")		DN 80
Drain line (min.)			DN 50			DN 50			DN 70		
Mains electrical connection			230 V / 50 Hz AC			230 V / 50 Hz AC			230 V / 50 Hz AC		
Electrical connection (secondary)			12 V AC			12 V AC			12 V AC		
Water temperature (min./max.)			5 °C / 30 °C			5 °C / 30 °C			5 °C / 30 °C		
Ambient temperature (min./max.)			5 °C / 40 °C			5 °C / 40 °C			5 °C / 40 °C		
Operational pressure (min./max.) ²⁾			2 bar / 8 bar			2 bar / 8 bar			2 bar / 8 bar		
Performance data											
Flow rate < 0,5 °dH ¹⁾	m³/h		2,5	3,5	4,5	6,5	8,0	10,5	13,5	17,0	24,0
Flow rate at blending (356 ppm to 151 ppm)	m³/h		4,3	6,1	7,8	11,3	13,9	18,3	23,5	29,6	41,7
Pressure loss at rated flow ¹⁾	bar		0,49	0,79	1,09	0,88	0,8	1,39	1,18	1,55	2,18
Capacity at 300 ppm CaCO ₃ ¹⁾	m³		3,9	7,8	11,8	19,9	23,4	31,6	39,9	60,2	96,2
Salt consumption	kg		2	4	6	10	12	16	20	30	48
Waste water volume per regeneration	m³		0,15	0,31	0,46	0,76	0,92	1,22	1,52	2,28	3,66
Volume and weights											
Resin vessel volume	Ltr.		38,4	79,5	115	153	277	277	344	473	704
Resin volume	Ltr.		2 x 25	2 x 50	2 x 75	2 x 125	2 x 150	2 x 200	2 x 250	2 x 375	2 x 600
Support gravel volume	kg		2 x 4	2 x 7	2 x 10	2 x 17	2 x 40	2 x 40	2 x 40	2 x 58	2 x 40
Brine tank volume	Ltr.		140	190	190	340	340	460	460	670	920
Regeneration salt supply	kg		50	75	75	125	125	175	175	250	337
Operational weight (complete unit) max.	kg		200	350	460	690	1050	1150	1350	1900	2900
Dimensions											
Height (max.) ± 30 mm	H	mm	1300	1600	1750	1600	1700	1700	2000	2200	2220
Ceiling height (mind.)		mm	1800	1800	1900	1900	2000	2000	2200	2400	2500
Width (min.) with 1. brine tank	B	mm	1400	1430	1430	2100	2300	2400	2500	2770	3200
Width (max.) with 2. brine tank	B	mm	2050	2090	2150	2845	3120	3350	3430	3865	4465
Depth (max.)	T	mm	600	600	600	750	750	850	850	1000	1150
Depth (min.) without brine tank	T	mm	430	430	450	600	745	750	750	880	1050
Clearance tank/tank	A1	mm	460	460	460	720	855	855	855	930	1080
Clearance brine tank/tank	A2	mm	510	530	560	700	770	830	870	980	1130
Diameter pressure tank	D1	mm	258	310	363	413	555	555	555	635	779
Diameter brine tank (min. / max.)	D2	mm	460 / 565	460 / 565	460 / 565	594 / 723	594 / 723	703 / 833	703 / 833	847 / 973	997 / 1123
Height pressure tank	H1	mm	897 ± 6	1232 ± 6	1344 ± 6	1341 ± 15	1434 ± 15	1434 ± 15	1721 ± 15	1918 ± 15	1892 ± 15
Height top control valve	H2	mm	1080	1420	1530	1570	1665	1665	1930	2130	2160
Height brine tank	H3	mm	843	1123	1123	1200	1200	1196	1196	1196	1206
Height feed (mains water) / discharge (soft water)	H4	mm	960	1295	1400	1430	1520	1520	1810	2010	2040
Height VAD (incl. Alternator)	H5	mm	1260	1600	1700	1570	1660	1660	1970	2170	2200
Control box (B x H x T)	mm	240 x 170 x 110									
Mounting board (B x H x T)	mm	330 x 200 x 10									

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