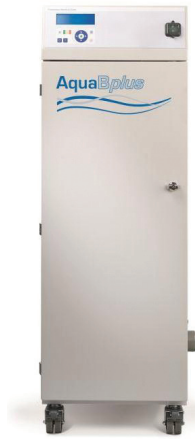


AquaBplus Data Sheet



Compliance with ISO Standards

The AquaBplus reverse osmosis system streamlines compliance with ISO dialysis water quality standards.

- | | |
|-------------|--|
| ISO 23500-1 | Part 1: addresses general requirements for the preparation and quality management of fluids for hemodialysis and related therapies |
| ISO 23500-2 | Part 2: covers water treatment equipment for hemodialysis applications and related therapies |
| ISO 23500-3 | Part 3: specifies minimum requirements for water used in hemodialysis and related therapies |

The AquaBplus system delivers the operational benefits and technical advantages that renal care facilities demand.

Features

Economical

- Modular design to fit individual needs

Protective

- High permeate quality facilitated by a dead-space free tubing connection

Convenient

- Remote online monitoring available
- Initial self-testing of all safety-relevant actuators and sensors

Functional

- Comprehensive data cleansing, quality documentation, and trend monitoring
- Data logging (service data recording)

- Detailed error reporting
- Initial self-testing of all safety-relevant actuators and sensors
- Internal leakage sensor and integrated leakage monitoring
- Permeate safety (ring base)
- Semiautomatic decalcification
- Ring base for safety
- Semiautomatic chemical disinfection with HD integration possible
- Soft membrane start-and-stop capabilities
- Visual LED indicator

Options

- External leakage sensor
- Infrastructure data management system
- Fresenius Medical Care Service Software
- Heat disinfection of up to four dialysis machines in parallel or up to 2.4 L/m of consumption*

* When equipped with HF option

Technical Data

Specifications

Hemodialysis Device	Up to 50 machines running at 800 mL/h per device
Permeate Capacity	500-3000 L/h
Efficiency/Yield	Up to 75%
Dimensions (h x w x d)	150 x 55 x 95 cm
Weight (filled)	160-370 kg
Concentrate Pressure	Max. 25 BAR
Permeate Operating Pressure	Max. 6 BAR
Noise Level	Noise level in SUPPLY mode: 62-73 dB (distance of 1 m) <i>(depending on system capacity and features)</i>

Electrical Supply

Electrical Supply/Three-phase Current	208 V 3/N/PE, 60 Hz, 20 A
Power Consumption	AquaBplus 500-1000: 3 kVA AquaBplus 1500-3000: 4-4.5 kVA
Radiated Heat/Loss	AquaBplus 500-1000: 0.5 kVA AquaBplus 1500-3000: 0.65 kVA
Overcurrent Protection	20 A tripping characteristic (depending on voltage/version) D or K or similar recommended (due to high starting currents) Residual current circuit breaker RCD 30 mA recommended
Socket	208 V: hardwired
Type of Protection Against Electric Shock	Protection Class I
Applied Parts Classification	Type B
Degree of Ingress Protection Against Liquids	Drip-proof
Leakage Currents	According to EN 60601-1
Overvoltage Category	II
Pollution Severity	II
Material Group	III b
Operating Mode	Continuous operation (standby)

Product Water Quality

Bacteria (CFU) and Endotoxins (EU)	>99%
Total Dissolved Solids Product water quality depends on inlet water quality	>96%

Technical Data

Specifications

Feed Pressure	Dynamic 2-6 BAR
Minimum Inlet Flow Minimum inlet flow in liters per hour at maximum outlet capacity and a yield of 75%	AquaBplus 500: min. 1000 L/h AquaBplus 1000: min. 2000 L/h AquaBplus 1500: min. 3000 L/h AquaBplus 2000: min. 4000 L/h AquaBplus 2500: min. 5000 L/h AquaBplus 3000: min. 6000 L/h
Permeate Connection	Direct PE-Xa connector 25 x 3.5 (feed and return) on the system
Inlet Water Connection	1 1/4" external thread, stainless steel
Drain Water Connection	DN 70 (HT pipe)

Operating Conditions

Water Hardness	<1.0 °dH
Iron	<0.1 mg/L
Manganese	<0.1 mg/L
Chloride	<100 mg/L
Silicate	<25 mg/L
Total Chlorine	0.1 mg/L
Feed Water Conductivity	<2500 uS/cm
Total Salt Content	1500 mg/L
pH	6-8
Silt Density Index	<3
Feed Water Temperature	Min. 5°C/max. 35°C
Atmospheric Pressure	Ambient pressure: 700-1150 hPa
Ambient Temperature Range	+5°C to +35°C
Relative Humidity	Up to 80% at 20°C (non-condensing)

External Connection Options

Ethernet	Electrically isolated interface for data exchange (RJ45) CAT5 The system can be connected to the in-house network
External Start/Stop	Isolated inputs to start the AquaBplus in SUPPLY mode or to stop all operating modes
Volt-free Contacts: Warning, Alarm, Supply	24V AC/DC/1A
External Failure	Electrically isolated input as "collective alarm" from ext. equipment
External Leakage Any additional equipment connected to this system must comply with the applicable IEC or ISO standards (such as IEC 60950-1 for information technology equipment). Plus, all system configurations must comply with the requirements for medical systems (according to Annex I to EN 60601-1).	e.g., AquaDETECTOR

Technical Data

Transport and Storage Conditions

Storage Temperature Range	+5°C to +40°C (protect from freezing)
Storage Time	Storage time of preserved system: maximum 12 months
Atmospheric Pressure	Ambient pressure: 500-1150 hPa
Relative Humidity	Up to 80% at 20°C (non-condensing)

Materials in Contact with Dialysis Water

Type	Material	
Polymers	PP	Polypropylene
	PE	Polyethylene
	PSU	Polysulfone
	PPO	Polyphenylene oxide
	PVDF	Polyvinylidene fluoride
Rubber	EPDM	Ethylene propylene diene monomer Silicone
	Metals	1.4571
1.4404		Stainless steel
Ti		Titanium
Ceramics	Al2O3	Ceramic

Indications for Use

The **AquaBplus** Water Purification Systems are reverse osmosis units intended for use with hemodialysis systems to remove organic and inorganic substances and microbial contaminants from the water used for treating hemodialysis patients or other related therapies. These devices are intended to be a component in a complete water purification system, and are not complete water treatment systems. Each reverse osmosis unit must be preceded by pre-treatment devices, and may need to be followed by post-treatment devices as well, to meet current AAMI/ANSI/ISO and federal (U.S.) standards.

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