

# Technical Data Haemodialysis Machine 4008 S

## 4008 S

The next generation

### Technical Data (4008 S version V10, Article number M204001)

#### General data

**Dimensions** 1370 x 480 x 480 mm (H x W x D)  
(depth of pedestal 630 mm)  
Weight approx. 86kg

#### Water supply

Water inlet pressure 1.5 - 6.0 bar  
Water inlet temperature 5°C - 30°C  
Max. drain height 1 m

#### Concentrate supply

Supply pressure 1 m suction height

#### Electrical data

Power supply 230 V ± 10%, 47 - 63 Hz  
Current consumption max. 9 A  
Power supply 110 V ± 10%, 47 - 63 Hz  
Current consumption max. 15 A

#### External connections

"Alarm in": zero potential alarm inlet  
"Alarm out": zero potential alarm outlet

#### Extracorporeal circuit

##### Arterial pressure monitoring

Display range -300 mmHg to + 280 mmHg  
Accuracy ±10 mmHg  
Resolution 20 mmHg

##### Venous pressure monitoring

Display range -60 mmHg to + 520 mmHg  
Accuracy ±10 mmHg  
Resolution 20 mmHg

##### Transmembrane pressure monitoring

Display range -60 mmHg to + 520 mmHg  
Resolution 20 mmHg

##### Arterial blood pump

Blood flow range 15 to 600 mL/min in 8 mm bloodline systems  
Accuracy ±10 %

##### Air bubble detector

by ultrasound transmission, additional optical monitoring in venous clamp

##### Heparin pump

Delivery range 0 to 10 mL/h  
Bolus function max. 5 mL per bolus  
Syringe size 20 mL

#### Dialysis fluid circuit

##### Dialysis fluid flow range

Selectable 0 - 300 - 500 - 800 mL/min

#### Dialysis fluid temperature

Selectable 35°C to 39°C

#### Dialysis fluid conductivity

Range 12.8 to 15.7 mS/cm (25°C)  
Accuracy ±0.1 mS/cm

#### Acid concentration dialysis fluid

Default mixing ratio 1 + 34 (others possible)  
Range 125 to 150 mmol/L

#### Bicarbonate concentration dialysis fluid

Default mixing ratio 1 + 27.6 (other possible)  
Range -8 to +8 mmol/L bicarbonate

#### Bicarbonate dry concentrate

bibag® 5008

#### Ultrafiltration

UF rate 0 to 4.00 / h  
Accuracy ±1%  
Allowed dialyser UF factor unlimited  
Parameters displayed UF goal, UF time, UF rate, UF volume

#### Blood leak detector

Sensitivity ≤ 0.5 mL blood/min (Hct = 25)  
at max. flow 800 mL/min

#### DISAFE®plus - Dialysis fluid filter system

Balancing accuracy ± 0.1% of dialysate flow

#### OCM® - Online Clearance Monitor

Accuracy Clearance K ±5%

#### Disinfection and cleaning programmes\*

##### Rinse

Temperature/flow 37°C / 600 mL/min

##### Hot rinse (recirculation)

Temperature/flow 84°C / 450 mL/min

##### Integrated hot rinse

Temperature/flow 84°C / 450 mL/min

##### Cleaning Sporotal® (recirculation)

Temperature/flow 37°C / 600 mL/min

##### Hot disinfection Diasteril® (recirculation)

Temperature/flow 84°C / 450 mL/min

##### Disinfection Puristerial® 340 (recirculation)

Temperature/flow 37°C / 600 mL/min

\*Various programme combinations selectable.

### Technical Data - Options

#### Single-Needle

Article no. M408641 With 2 blood pumps. Internal pressure/pressure control with variable stroke volume

#### Blood Pressure Monitor (BPM) Article no. M409281

Display range Systole: 30 - 280 mmHg  
Diastole: 10 - 240 mmHg  
MAP: 20 - 255 mmHg  
Accuracy: 1 mmHg

#### Central Delivery System for acid conc. Article no. M417651

Supply pressure 0 to 100 mbar; 1 m suction height with Central Delivery System: 0 - 500 mbar

#### Network

RJ45/Ethernet for data exchange with Therapy Data Management System/Finesse®



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# Adequacy Assured

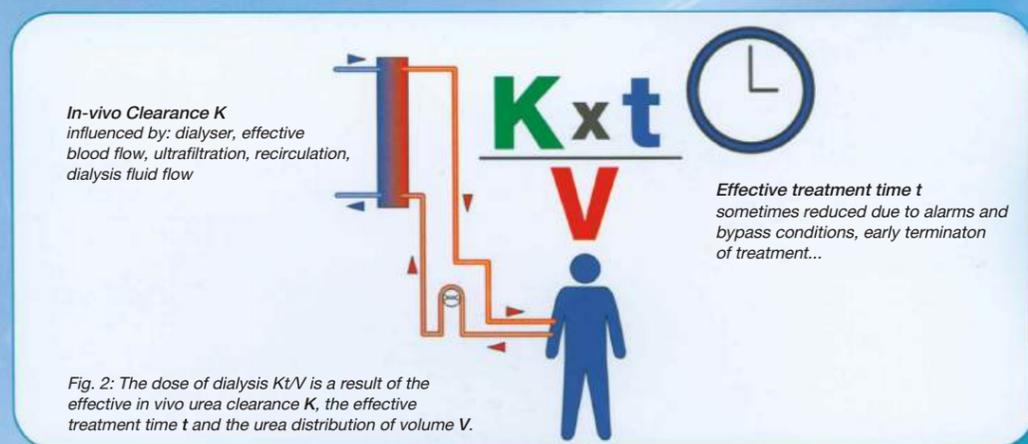


# Ease of Operation

The next generation 4008 S optimizes dialysis outcomes through the use of its revolutionary Online Clearance Monitor (OCM®). Numerous studies have demonstrated that morbidity and mortality rates are closely correlated to the delivered dialysis dose<sup>1,2</sup> (Kt/V).

The OCM® enables continuous monitoring of the:

- Real time values for the effective in-vivo urea clearance (K)
- Effective dialysis treatment time
- Accumulated cleared plasma (Kt)
- Plasma sodium concentration
- Current dialysis dose administered (Kt/V)



- > **Non-invasive and completely automatic**
- > **Requires no additional disposable, laboratory or staff effort**
- > **An effective quality assurance tool to monitor the delivery of dialysis dose**
- > **No extra costs per treatment**

An accurate assessment of the urea distribution volume (V) with the Body Composition Monitor (BCM) assures a precise target for dialysis dose prescription. Validated in renal patients, the BCM provides a convenient assessment to help deliver adequate dialysis. The BCM is available separately. Visit [www.bcm-fresenius.com](http://www.bcm-fresenius.com) for more details.



The next generation 4008 S dialysis machine is designed for ease of use while providing the highest standards of patient safety and treatment hygiene.

- Central allocation of all functions for easy handling of treatment parameters
- Traffic light clearly indicates the treatment status
- Built-in tray for user convenience
- Multi-colour graphical display viewable from any angle
- Easy cleaning of all surfaces



The integrated PatientCard provides easily accessible, automated data management.

- Helps avoid uncertainties in patient data collection
- Allows rapid retrieval of recent treatment prescriptions
- Ensures patient safety due to reduced input errors



The PatientCard facilitates long-term patient surveillance and can be used in conjunction with Therapy Data Management System (TDMS). For more details please contact your local representative.

1. Hakim R, Breyer J, Ismail N, Schulmann G: Effects of dose of dialysis on morbidity and mortality. Am J Kidney Dis (1994); 23:661-669  
 2. Port F, Ashby Vm, Dhingra R, Roys E, Wolfe R: Dialysis dose and body mass index are strongly associated with survival in hemodialysis patients. J Am Soc Nephrol (2002); 12:1061-1066

## Safety, Convenience and Reliability

### DIASAFE<sup>®</sup>plus - ensures ultrapure dialysate

- Quality and purity of dialysis fluid are critical to successful dialysis
- HD patients are typically exposed to 12,000 - 19,000 litres of dialysate per year
- Micro-contaminants such as endotoxin fragments can enter the blood compartment with undesirable consequences such as inflammation and other acute complications such as hypotension
- Ultrafiltration of fresh dialysate by the DIASAFE<sup>®</sup>plus is performed immediately upstream of the dialyzer: this removes the risk of patient exposure to bacterial microcontaminants
- Whether performing high-flux or low-flux dialysis, the risk of endotoxin transfer can be minimized by using the DIASAFE<sup>®</sup>plus



AVAILABLE  
as  
STANDARD

### Blood Pressure Monitoring using the BPM (optional feature)

- Fully automated and non-invasive, operating on the principles of oscillometry
- Programmable measurement interval of 5 - 15 - 30 - 60 minutes and quick measurement
- Measurement of Systolic and Diastolic blood pressure, Mean Arterial Pressure (MAP) and Pulse rate



### Volumetrically controlled ultrafiltration and closed-system hydraulics

- Fresenius Medical Care innovation for precise control of fluid removal

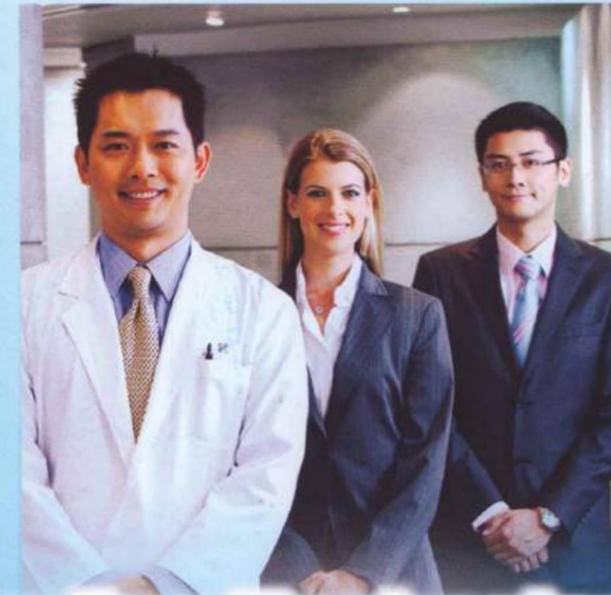
### UF and Sodium profiling

- Six pre-programmed ultrafiltration profiles and/or balance-neutral sodium profiles may improve tolerance to fluid removal while minimizing intradialytic complications and preventing intradialytic sodium loading

## Service Excellence

Fresenius Medical Care recognizes that the finest technology is only as good as the attention it receives in service and maintenance.

When choosing Fresenius Medical Care as your partner, you are assured of ongoing support essential to meeting the demands of caring for your equipment and for your patients. This is our commitment.



**Leading Technologies**  
**Local Expertise**



## Outstanding value

The 4008 series from Fresenius Medical Care is the world's most trusted dialysis machine platform. The next generation 4008 S is the latest addition to the 4008 family and continues our heritage of quality and safety.

The 4008 series offers industry leading lifetime ownership costs\* through its proven track record for durability and reliability.

With its ergonomic new design, the next generation 4008 S is easy to use with all functions centrally located.

The next generation 4008 S ensures standards of care are achieved for all patients. The OCM® and the DIASAFE®*plus* are standard features delivering assured adequacy and ultrapure dialysate with every treatment.

\* Lifetime Ownership Costs = Purchase Price + Running Costs



Modern ergonomic design with

## Highest Standards of Patient Care



central allocation of all functions

Assured adequacy with the OCM®

Dialysate ultrafiltration with DIASAFE®*plus*

Compatible with all types of HD disposables

Integrated **PatientCard**\*

Multilanguage capability\*

Proven reliability

Backed by Fresenius Medical Care service excellence

\*Available from 2011



Modern ergonomic design with central allocation of all functions