



# multiFiltratePRO

The multiFiltratePRO has been carefully designed and equipped with a wide range of features intended to support your ICU team in patient care and to offer you state-of-the-art therapies.



## multiFiltratePRO specifications and features

| General  |  |
|--|--|
| Medical device name  | multiFiltratePRO   |
| Medical device type  | Hemofiltration device  |
| Manufacturer   | Fresenius Medical Care AG<br>Else-Kröner-Str. 1<br>61352 Bad Homburg |
| Intended purpose of the medical device   | Control, operation and monitoring of extracorporeal treatment        |
| Risk class (according to Annex VIII Medical Device Regulation 2017/745)  | IIb  |
| Notified body number   | 0123   |
| Dimensions H x W x D   | Approx. 167 x 65 x 69 cm (not counting filter holder)                |
| Floor space  | Approx. 59 x 69 cm   |
| Weight   | Approx. 95 kg w/o fluid bags, safe working load: 45 kg               |
| Certification  |  |
| According Medical Devices Regulation ((EU) 2017/745), IEC 60601-1-1, IEC 60601-1-2, IEC 60601-1-6, IEC 60601-1-8, IEC 60601-1-9, IEC 60601-2-16, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, IEC 60950-1, IEC 60364-7-710, SO 15223-1, ISO 80369-7, ISO 20417, applicable for multiFiltratePRO-HL7-Connector: IEC 62368-1, EN 300328, EN 301489-1, EN 301489-17, EN 301893 |  |
| Therapy modalities   |  |
| Systemic anticoagulation   | CVVHD, Pre or Post CVVHDF, Pre and/or Post CVVH, pCVVHD, TPE         |
| RCA  | Ci-Ca CVVHD, Ci-Ca postCVVHDF  |

| Electrical data  |  |
|--|--|
| Line voltage   | 100–240 VAC, 50/60 Hz  |
| Current consumption (incl. integrated fluid heating system)        | Max. 4.4 A (240 V AC)<br>Max. 12 A (100 V AC)  |
| Internal power supply  | +24 V DC, 35 A short-circuit-proof, 800 W max. total output power  |
| Average power consumption  | < 105 W plus fluid heaters with approx. 4 W per 100 ml/h dialysate and substitute flow                                       |
| Battery for emergency operation                                    | 2 x 12 V/7.2 Ah, maintenance-free, lead-acid, > 15 min (blood circulation)   |
| Type of protection against electrical shock                        | Protection class I   |
| Level of protection against electrical shock                       | Type CF (200 to 230 V, 50 Hz), (100 to 127 V, 50 Hz), (100 to 127 V, 60 Hz)<br>Type BF (240 V, 50 Hz), (200 to 240 V, 60 Hz) |
| Degree of protection against ingress of foreign bodies and liquids | IP21   |
| External connections   | Potential free remote alarm/nurse call, RJ-45 Ethernet port for data exchange  |
| Connectivity to HIS/PDMS   | Via multiFiltratePRO-HL7-Connector (optional)  |



Floor space: approx. 59 × 69 cm

| User interface                                     |   |
|--|---|
| Monitor  | 15", TFT LCD, high resolution touchscreen, 1024 × 768, horizontally/vertically adjustable         |
| Event storage                                      | Events of approx. 2 years   |
| Service menu                                       | Access via ServiceCard  |
| Flow rate ranges*                                  |   |
| <b>Blood:</b>                                      |   |
| CKRT   | 10 to 500 ml/min, ± 10 %  |
| Pediatric mode 8 kg/16 kg                          | 10 to 100 ml/min/200 ml/min, ± 10 %   |
| TPE  | 30 to 300 ml/min, ± 10 %  |
| <b>Substitute/replacement:</b>                     |   |
| CKRT   | 0; 600 to 4,800 ml/h  |
| TPE  | 0; 10 to 50 ml/min  |
| <b>Dialysate:</b>                                  |   |
| CKRT   | 0; 600 to 4,800 ml/h  |
| Pediatric mode 8 kg/16 kg                          | 380 to 1,000 ml/h/1,500 ml/h  |
| Effluent   | Up to 10,800 ml/h, automatically adjusted   |
| <b>Patient fluid removal:</b>                      |   |
| CKRT   | 0; 10 to 990 ml/h   |
| Pediatric mode 8 kg/16 kg                          | 0; 10 to 200 ml/h/400 ml/h  |
| Citrate (Ci)                                       | 10 to 600 ml/h, ± 10 %  |
| Calcium (Ca)                                       | 0; 1 to 100 ml/h, ± 10 %  |
| Heparin via integrated syringe pump                | Continuous:<br>0.5 to 25 ml/h, ± 5 %<br>Bolus function: 0.1 to 5 ml<br>Syringe size: 30 ml, 50 ml |
| Fluid  |   |
| Measurement principle                              | Gravimetric fluid management based on four scales   |
| Load capacity per scale                            | Max. 12 kg  |
| Resolution per scale                               | 1 g   |
| Linearity deviation                                | Max. ± 1 %  |
| Maximum cumulated balancing error during treatment | 500 g (within up to 72 h)<br>Pediatric mode: 50 g   |
| Integrated heating system                          |   |
| Substitute temperature                             | Off, 35 to 39°C   |
| Dialysate temperature                              | Off, 35 to 39°C   |
| Alarm threshold                                    | 42°C  |
| Access pressure                                    |   |
| Display range                                      | -300 to +300 mmHg   |
| Accuracy   | 10 mmHg   |

| Return pressure                                    |  |
|--|--|
| Display range                                      | -100 to +500 mmHg  |
| Accuracy   | 10 mmHg  |
| Pre-filter pressure                                |  |
| Measurement range                                  | -50 to +750 mmHg   |
| Accuracy   | 10 mmHg  |
| Transmembrane pressure                             |  |
| Display range CKRT                                 | -300 to +500 mmHg  |
| TPE  | -60 to +270 mmHg   |
| Accuracy   | 20 mmHg  |
| Filtrate pressure                                  |  |
| Measurement range                                  | -50 to +750 mmHg   |
| Air detector                                       |  |
| Measurement principle                              | Ultrasound transmission  |
| Sensitivity  | Blood flow < 100 ml/min:<br>Alarms single air bubble ≥ 20 µl<br><br>Blood flow ≥ 100 ml/min:<br>Alarms single air bubble ≥ 50 µl<br>or 10 air bubbles between<br>20 µl to 50 µl each |
| Optical detector                                   |  |
| Measurement principle                              | Infrared transmission  |
| Function   | Detection of blood in extracorporeal circuit   |
| Blood leak detector                                |  |
| Measurement principle                              | Optical  |
| <b>Sensitivity:</b>                                |  |
| CKRT/TPE   | ≤ 0.5 mL blood/min (32 % Hct)  |
| Pediatric mode                                     | ≤ 0.1 mL blood/min (32 % Hct)  |
| Cassette detector                                  |  |
| Optical sensor to differentiate therapy modality   | Heparin CKRT, Ci-Ca CKRT, Pediatric CKRT   |
| Disinfection                                       |  |
| Method of disinfection (depending on disinfectant) | Wipe disinfection, scrub and wipe disinfection   |
| Disinfectants                                      | Incidin Extra N, Freka-NOL, ClearSurf, ClearSurf Wipes   |

\*Flow rate ranges, limits and increments vary depending on the therapy modality selected.