



WEINMANN
medical technology

MEDUMAT Standard²

Trusted Technology. Life Saving Performance.



MEDUMAT Standard²

Reliable and trusted

MEDUMAT Standard² has a very successful record in emergency and transport ventilation. The ventilator shows all important respiratory parameters clearly, with the additional option of ventilation curves. The familiar operation – during patient selection, for example – makes for intuitive handling. Initiation of ventilation by entering the patient's height ensures that ventilation starts simply and in compliance with guidelines. Audible and visual alarms are further details that ensure maximum patient safety.

More functions for EMS providers

MEDUMAT Standard² offers outstanding flexibility. Integration of robust flow measurement close to the patient, with sidestream capnography and a curve display, delivers optimal patient monitoring. The optional modes available allow MEDUMAT Standard² to be customized for individual circumstances and users. In addition to IPPV, the modes also encompass: CPR and CCSV (for cardiopulmonary resuscitation), RSI (for support during induction of anesthesia), Demand as well as CPAP (optionally with ASB). The volume-controlled modes of SIMV, S-IPPV and Inhalation and the pressure-controlled modes of PCV, aPCV, BiLevel + ASB and PRVC + ASB, as well as a CO₂ monitoring mode can still be enabled as options. All settings are based on current specifications, e.g. resuscitation according to ERC Guidelines. They can also be customized on request.

Transport ventilation lightened up

MEDUMAT Standard² is suitable not only for emergency ventilation, but also for ideal care during transportation of an already ventilated patient. Its handy size and light weight make the transport ventilator very user-friendly. Equipped with pressure-controlled ventilation modes, monitoring options such as pressure, flow and CO₂ curve display and the display of major ventilation parameters, MEDUMAT Standard² is your compact partner for ground and air rescue services.



Low weight of 2.5 kg makes it suitable for ground and air rescue services



Battery runtime of up to 10 hours ensures a high level of mobility



Clear menu structures for simple, intuitive operation



Optimum setting and monitoring of ventilation by means of the options Flow measurement + ASB, Capnography and Pressure-controlled ventilation modes



Customization and standardization of the device, e.g., via preconfiguration of ventilation parameters

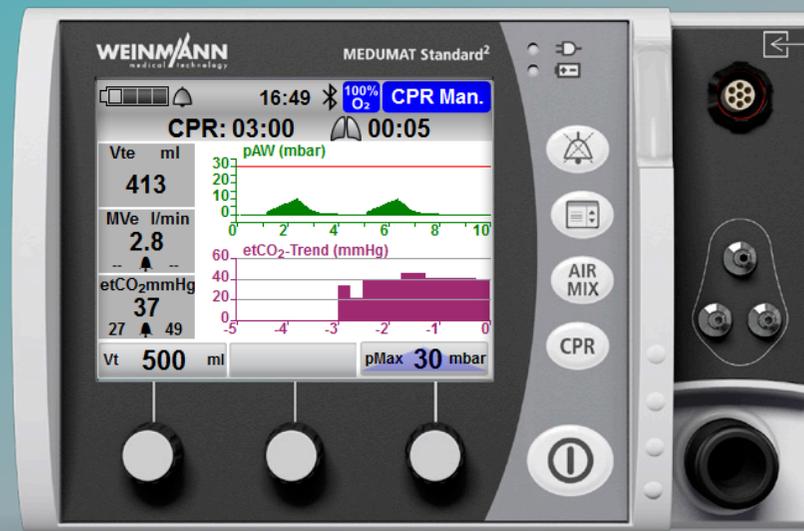


Digital documentation of ventilation data using the **Bluetooth**[®] data transmission option

Cardiopulmonary Resuscitation

CPR Mode

MEDUMAT Standard² reliably guides you through cardiopulmonary resuscitation. Following a quick start using the CPR button and selection of the patient group, ventilation starts automatically using preconfigured settings. Ventilation can be controlled manually by the MEDUtrigger close to the patient. Following intubation, it is then possible to switch easily to continuous ventilation. All critical information, e.g., when the patient was last ventilated or duration of CPR, is visible on the monitor. Optional display of etCO₂ in the form of curves or trends provides emergency medical services with an important parameter for the quality of resuscitation and intubation.



Your benefits at a glance

- Increases patient safety compared to bag-valve-mask ventilation
- Mask securely held in place with both hands thanks to the triggering of mechanical breaths close to the patient using the MEDUtrigger
- Individual activation/deactivation of alarms (and consequently fewer distracting alarms during CPR)
- Individual configuration options of the CPR mode for greater flexibility
- Optional: Innovative resuscitation ventilation with CCSV mode
- Optional: Capnography for checking tube position and improved detection of ROSC
- Optional etCO₂ trend display to support ROSC detection

CPR mode at the touch of a button

- CPR mode is activated at the touch of a button
- Ensures use within seconds
- Clear setup for successful CPR
- Optional: CCSV ventilation easily integrated in CPR mode

Manual ventilation with MEDUtrigger and double-C grip

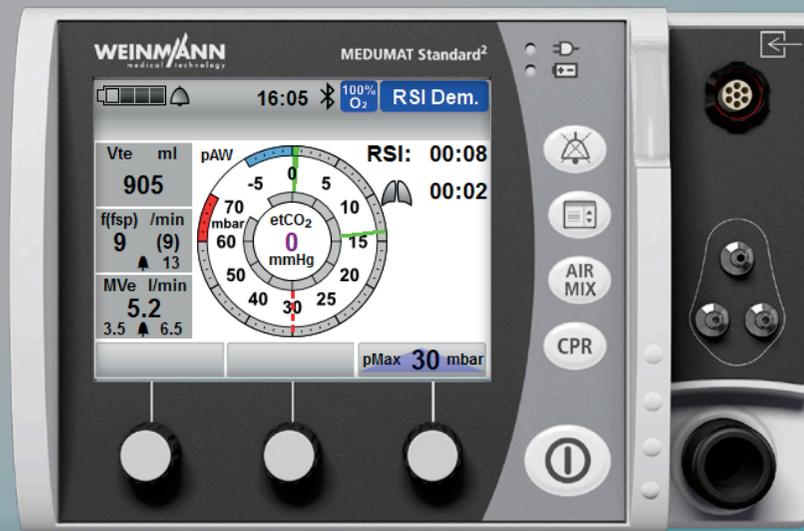
- Both hands free for ventilation, enabling complete control of mask with double-C grip
- Simultaneous simple and ergonomic manual triggering of mechanical breaths with the thumbs
- Safe use due to fixed tidal volume setting and pressure limit

Continuous ventilation

- Reliable check of tube position via display of etCO₂ value
- Automatic setting of tidal volume and ventilation rate by means of preset patient height
- Ventilation can be paused to prevent artifacts during cardiac rhythm analysis

Reliable Support for Induction of Anesthesia RSI Mode

MEDUMAT Standard² reliably supports every treatment step in Rapid Sequence Induction (RSI) mode. The patient is first pre-oxygenated via the Demand function. The operator can see the anesthesia-induced apnea directly on the monitor. MEDUtrigger allows temporary manual ventilation of the patient so that access to the airways can be checked. A switch to controlled ventilation can then be made at any time using all the preset parameters, with the adjustable pressure limit guaranteeing patient safety in every situation. CO₂ monitoring lets the user check the position of the tube, a feature that further enhances patient safety.



Pre-oxygenation

- Supply of 100% oxygen for the spontaneously breathing patient
- Reliable monitoring of spontaneous breathing by means of volume and frequency monitoring (optional)
- Reliable alarms for prolonged apneic phase

Manual triggering of mechanical breaths with MEDUtrigger

- In an emergency, the patient can be manually ventilated with the use of the double-C grip and MEDUtrigger

Position check of tube

- After successful intubation, the user can check the position of the airway access with MEDUtrigger and the optional capnography
- After a position check, the device can be switched to continuous ventilation (IPPV or BiLevel + ASB) at the touch of a button

Your benefits at a glance

- RSI mode provides optimal process support of prehospital induction of anesthesia
- Pressure gauge to visualize (interrupted) spontaneous breathing
- Adjustable pressure limit delivers increased safety
- Optional: Improved monitoring of spontaneous breathing via volume monitoring
- Safe checking of tube position by auscultation using MEDUtrigger and optional capnography
- Improved ergonomics thanks to option of switching directly to continuous ventilation



CCSV – the Ventilation Mode that Supports the Heart

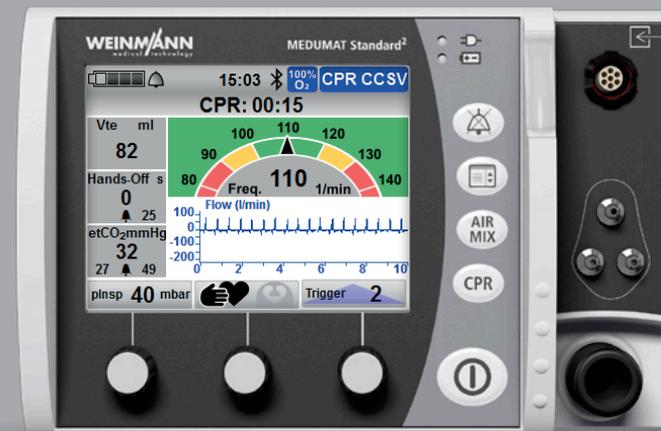
Chest Compression Synchronized Ventilation (CCSV) is a ventilation mode developed by WEINMANN specifically for cardiopulmonary resuscitation. CCSV applies a pressure-controlled mechanical breath synchronized with each chest compression. This revolutionary method demonstrably improves gas exchange and hemodynamics.

Your benefits at a glance

- Ventilation parameters are easy to set
- Hands-off time always in view
- Added assurance during chest compression: Frequency tachometer makes CPR in line with guidelines easier
- Ventilation and compression display optimized for CPR
- Flow curve provides feedback on pressure depth and relief during chest compressions



You can find more information about CCSV mode here:



Five Facts about Chest Compression Synchronized Ventilation



CCSV is a success! 90% of users would recommend CCSV to others. 93% of users rate CCSV as helpful in their work.¹



Remarkable fact: The longest CCSV ventilation time of a patient requiring CPR and able to leave hospital was over 3 hours.⁴



Initial publications are promising: Over 60% of CCSV patients in a study achieved ROSC upon hospital admission.²



Equally promising: 14.7% were discharged from hospital alive.²



Since the introduction of CCSV, this mode has already been used in over 150 emergency medical service organizations and hospitals – and the trend is rising!³

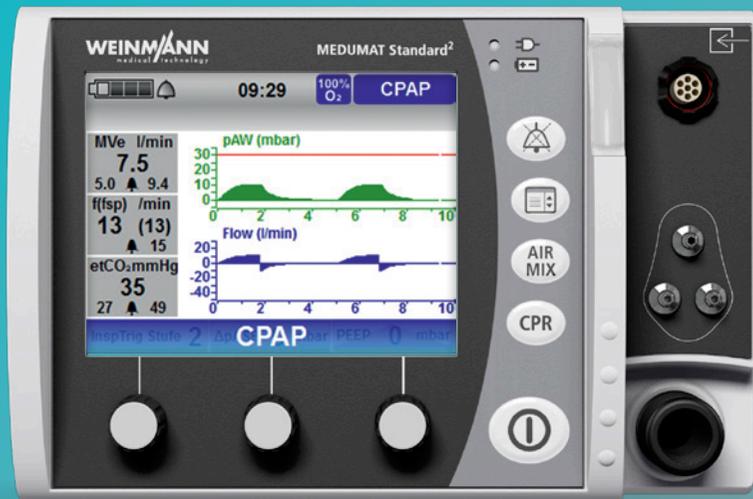
Sources:

- 1 WEINMANN Emergency GmbH+Co. KG: Results of a survey as part of the post-market clinical follow-up of CCSV, 10/2019.
- 2 Kill C, et al: Mechanical positive pressure ventilation during resuscitation in out-of-hospital cardiac arrest with chest compression synchronized ventilation (CCSV) In: Resuscitation 142, e42, <https://doi.org/10.1016/j.resuscitation.2019.06.102>
- 3 WEINMANN Emergency GmbH+Co. KG: Evaluation of the internal customer database, 11/2023.
- 4 van der Velde J, et al. Fully Automated Cardiopulmonary Resuscitation - a Bridge to ECMO. In: Resuscitation 192, SUPPLEMENT 1, p.52-53, Nov 2023. [https://doi.org/10.1016/S0300-9572\(23\)00467-7](https://doi.org/10.1016/S0300-9572(23)00467-7)



"It is a form of ventilation developed specifically for CPR and is easy to use. CCSV does what it's meant to, it doesn't interfere with the CPR. It not only ventilates the patient, but also has a positive effect on circulation."

Dr. Birgit Plöger is a senior consultant in the Center for Emergency Medicine of the University Hospital Gießen/Marburg. She has been an emergency physician and medical director for over 20 years as well as director of the Simulation Center in the DRK-Rettungsdienst Central Hesse emergency medical services. Emergency medicine is more than just a job for Dr. Plöger. Whether it's training colleagues or working with and on patients – she is passionate about everything she does. A passion that also comes across in our conversation.



Flow measurement + ASB option

- Monitoring of the expiratory tidal and minute volumes as well as of the respiratory rate
- Pressure support in CPAP and SIMV modes to provide ideal assistance in non-invasive ventilation
- Individual setting of inspiratory and expiratory trigger

FlowCheck sensor

- Particularly robust during use and in hygienic reprocessing
- Available in disposable and reusable variants
- Chip technology ensures top precision
- Low dead space of just 9 ml makes it suitable for children and adults

CPAP Mode

The proven CPAP mode allows the patient to breathe spontaneously at an elevated pressure level, e.g., during treatment of cardiac pulmonary edema. With MEDUMAT Standard² the PEEP can be finely adjusted at any time. The user also has the option of activating pressure support ASB with settable trigger. Optional volume and CO₂ monitoring ensure comprehensive monitoring, even during non-invasive ventilation. Any leakage at the mask is detected and compensated for by the device. All ventilation parameters can be adjusted via the monitor during ventilation.

Your benefits at a glance

- CPAP therapy improves patient outcome in cases of acute respiratory insufficiency* *
- ASB pressure support for more differentiated non-invasive ventilation available as an option
- Lower oxygen consumption compared to Flow CPAP systems
- Apnea ventilation provides high level of safety

**Sources:

Bakke SA et al.: Continuous positive airway pressure and noninvasive ventilation in prehospital treatment of patients with acute respiratory failure. A systematic review of controlled studies. *Scand J Trauma Resusc Emerg Med* 22: 69, 2014.

Goodacre S et al.: Prehospital noninvasive ventilation for acute respiratory failure: systematic review, network meta-analysis and individual patient data meta-analysis. *Acad Emerg Med* 21: 960-970, 2014.

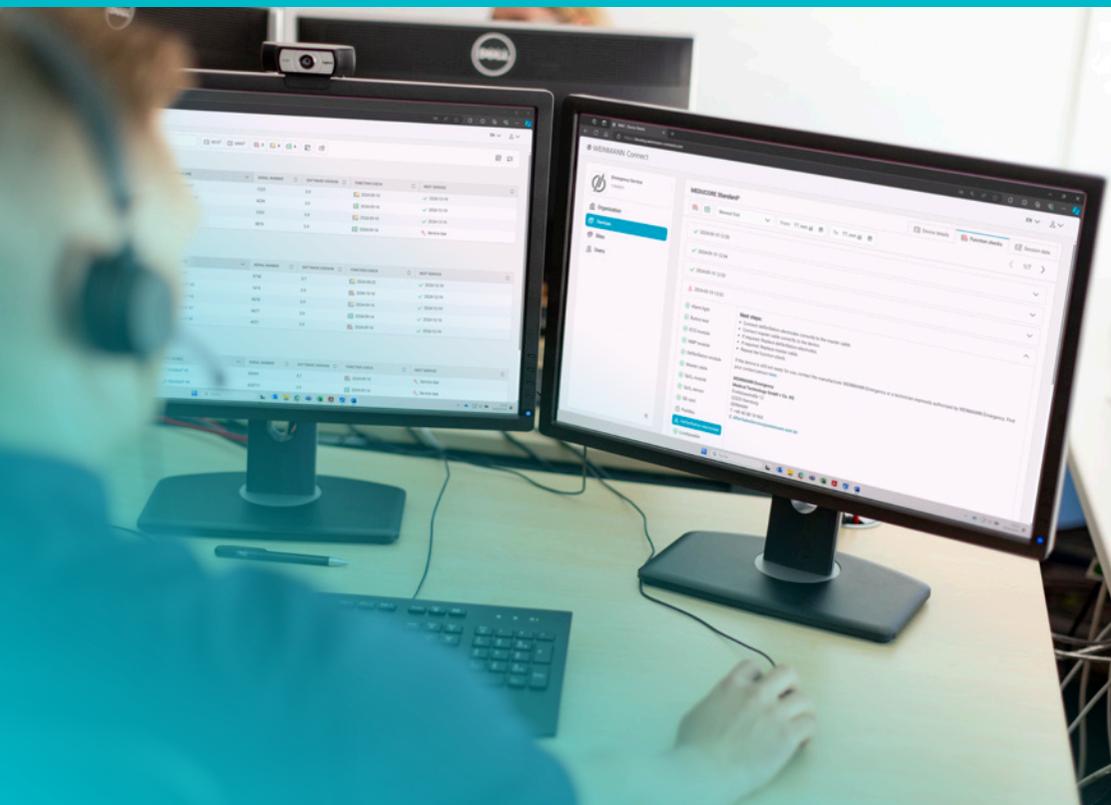
Williams, B. et al.: When pressure is positive: a literature review of the prehospital use of continuous positive airway pressure. In: *Prehospital and disaster medicine* 28 (2013), No. 1, pp. 52-60

Deutsche Gesellschaft für Pneumologie und Beatmungsmedizin e.V. (ed.): S3-Leitlinie: Nichtinvasive Beatmung als Therapie der akuten respiratorischen Insuffizienz [S3 Guidelines: non-invasive ventilation as treatment of acute respiratory insufficiency]. Hannover, 2008

Thompson, J. et al.: Out-of-hospital continuous positive airway pressure ventilation versus usual care in acute respiratory failure: a randomized controlled trial. In: *Annals of emergency medicine* 52 (2008), No. 3, pp. 232-241

The new duo: MEDUMAT Standard² and WEINMANN Connect

WEINMANN Connect is already in successful use with our MEDUCORE Standard² monitor/defibrillator. Now you can also combine MEDUMAT Standard² with WEINMANN Connect and manage your device data more efficiently. Test your devices at any time to make sure they are fully functional, and document your checks effortlessly. Then simply transfer the results of your function checks via QR code. In the event of a service incident, device information can be transferred straight to WEINMANN for troubleshooting. That way you can be sure of the fastest possible, targeted help.

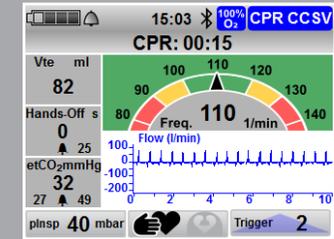
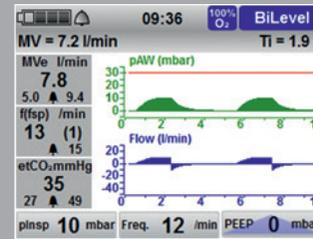
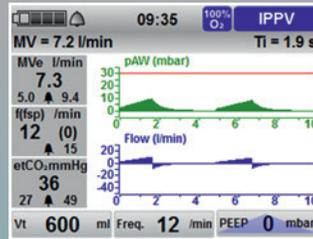
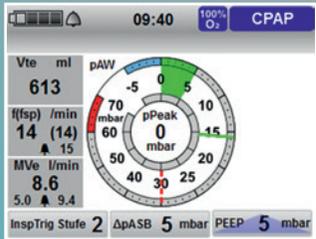


Digitally en route – with the Bluetooth[®] data transmission option

Documentation is just as important as rescue and safe transport. Bluetooth[®] technology makes it possible to transmit ventilation parameters, settings and trend data wirelessly and quickly to digital documentation systems – to the NIDApad from medDV, for example. This makes seamless, paperless documentation a breeze.

More Freedom with More Options

MEDUMAT Standard² can be individually configured to suit your needs and can thus be used for a wide range of applications.



Flow measurement + ASB

- Monitoring of the expiratory tidal and minute volumes as well as of the respiratory rate
- Pressure support in CPAP and SIMV modes to provide ideal assistance in non-invasive ventilation
- Individual setting of inspiratory and expiratory trigger

Curve display

- Clearly structured monitoring by the display of pressure and flow curves
- (Prerequisite: Flow measurement + ASB option is installed.)

Pressure-controlled ventilation modes

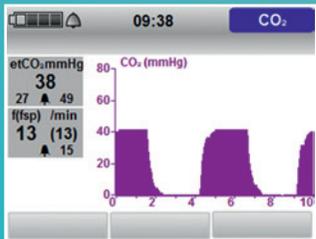
- Lung-protective ventilation provided by PCV, aPCV, BiLevel + ASB and PRVC + ASB ventilation modes

(Prerequisite: Flow measurement + ASB option and Curve display option are installed.)

CCSV mode

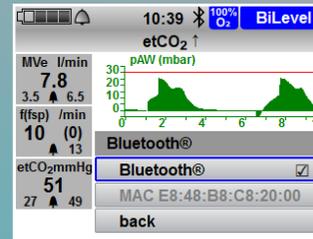
- Ventilation mode specifically for resuscitation
- For optimal ventilation synchronized with each chest compression

(Prerequisite: Flow measurement + ASB option is installed.)



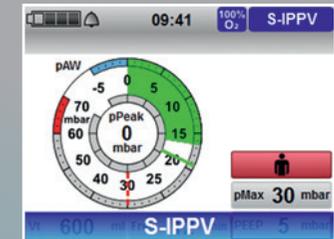
WEINMANN Connect

- Monitoring the functional readiness of devices
- Documentation of function checks
- Transfer of service data for speedy assistance in the event of a service incident



Bluetooth® data transmission

- Wireless transmission of ventilation data to an external documentation system
- Simplified documentation



Other options

- SIMV mode
- S-IPPV mode
- Inhalation mode

Capnography

- End-tidal CO₂ displayed in the form of a measured value, a curve and as a trend over an extended period
- Improved monitoring of ventilation treatment and assistance during CPR and RSI
- CO₂ measurement also with deactivated ventilation

Technical Data

Device dimensions	W: 206 mm x H: 138 mm x D: 130 mm
Weight, incl. battery	Approx. 2.5 kg
Product class according to Directive 93/42/EEC	IIb
Operating conditions	<ul style="list-style-type: none"> • Temperature range: -20°C to +50°C • Humidity: 0% RH to 95% RH without condensation • Air pressure: 540 hPa to 1,100 hPa • Height above sea level up to 5,000 m
Rechargeable battery	<ul style="list-style-type: none"> • Operating time: up to 10 hrs (depending on device and options) • Charging time (0% - 95%): 3.5 h
Display	TFT color display 5"
Data storage	Internal and on SD card
Ventilation modes	<ul style="list-style-type: none"> • Volume-controlled: IPPV, CPR, RSI, SIMV (with SIMV mode option), SIMV + ASB (with SIMV mode and Flow measurement + ASB options), S-IPPV (with S-IPPV mode option), Inhalation (with Inhalation mode option) • Pressure-controlled: PCV, aPCV, BiLevel + ASB, PRVC + ASB (with option of pressure-controlled ventilation modes), CCSV (with Flow measurement + ASB and CCSV mode options) • Spontaneous: CPAP, CPAP + ASB (with Flow measurement + ASB option)
Operating gas	Medical-grade oxygen or concentrator oxygen (90% - 69% O ₂)
Operating pressure range	2.7 bar to 6 bar
Monitoring	<ul style="list-style-type: none"> • Displayed measurements: pPeak, pPlat, pMean, Vte, MVe, f, fsp, Vleak (with Flow measurement + ASB option), etCO₂ (with Capnography option) • Curves: airway pressure (with Curve display option or Capnography option), Flow (with Curve display option), CO₂ (with Capnography option), etCO₂ trend (with Capnography option) • Gauge: pressure gauge
Maximum outlet flow	80 l/min at inlet pressure of 4.5 bar in Air Mix and in No Air Mix operation
Tidal volume	50 ml to 2,000 ml
Ventilation frequency	5/min to 50/min
Inspiratory pressure	3 mbar to 60 mbar (with Pressure-controlled ventilation modes option)
ASB pressure support	0 mbar to 35 mbar above PEEP level (with Flow measurement + ASB option)
PEEP	0 mbar to 30 mbar
Pressure limit (pMax)	10 mbar to 65 mbar
Inspiratory trigger	1 l/min to 15 l/min (with Flow measurement + ASB option)
Expiratory trigger	5% to 80% flow max. (with Flow measurement + ASB option)
I:E	1:4 - 4:1
Pressure ramp	Steep, medium, flat (with Flow measurement + ASB option)
Standards applied	EN 60601-1, EN 1789, EN 794-3, ISO 10651-3, RTCA DO-160 G, MIL STD 810 G



Intuitive Operation for a High Safety Level



1. Ideal monitor layout for best view of all measurements and settings



2. Front accessories connection for MEDUtrigger and connection line to FlowCheck sensor



3. Hygiene filter protects the device from viral and bacterial contamination



4. You can transfer device configurations and perform software updates yourself with the help of the SD memory card



5. User-oriented operation: Rapidly-operated navigation knobs for simple and fast use



6. Connection for ventilation hose connects the device to the ventilation hose of the breathing circuit



7. Connection for measuring circuit enables pressure and CO₂ measurement plus PEEP management



8. Li-Ion removable rechargeable battery with a runtime of up to 10 hours

Accessories and Spare Parts

- | | |
|--|----------|
| 1. 2 m reusable breathing circuit with flow measurement, with CO ₂ measurement | WM 29190 |
| 2. 2 m disposable breathing circuit with flow measurement, with CO ₂ measurement | WM 29192 |
| 3. 2 m disposable breathing circuit for adults and children, with flow measurement, with CO ₂ measurement | WM 29199 |
| 4. Reusable FlowCheck sensor | WM 28835 |
| • Set of 5 reusable FlowCheck sensors | WM 17850 |
| 5. etCO ₂ /O ₂ nasal cannula | WM 1928 |
| 6. 2 m MEDUtrigger | WM 28992 |
| 7. 2 m connection line to FlowCheck sensor with MEDUtrigger | WM 32508 |
| 8. 2 m connection line to FlowCheck sensor without MEDUtrigger | WM 32506 |
| 9. Hygiene filter | WM 28740 |
| • Set of 5 hygiene filters | WM 17865 |
| • Charging adapter for power supply | WM 28979 |
| 10. Battery charging station | WM 45190 |
| Power supply unit and charger | WM 28937 |
| 11. Battery | WM 45045 |
| • Adapter for connection of oxygen inhalation | WM 28263 |
| • SD card | WM 29791 |
| 12. Breathing system filter | WM 22162 |
| • EasyLung | WM 28625 |



Examples of Configuration Options

1

Select your preferred device:



MEDUMAT Standard²
with CO₂
measurement
(WM 29500)



MEDUMAT Standard²
without CO₂
measurement
(WM 29300)



Can be combined
with monitor/
defibrillator



MEDUCORE Standard²

2

Select your
software options:



- Flow measurement + ASB (WM 28959)
- Curve display (WM 28963)
- Pressure-controlled ventilation modes (WM 28970)
- SIMV mode (WM 28916)
- S-IPPV mode (WM 28915)
- Inhalation mode (WM 28920)
- CCSV mode (WM 28940)
- Bluetooth® data transmission (WM 28945)
- WEINMANN CONNECT (WM 29423)

3

Select your preferred accessories:



NIV / CPAP masks



Reusable / disposable
breathing circuits



Hygiene filter



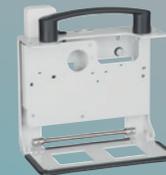
Breathing system filter

4

Select your portable
unit with or without
oxygen cylinder:



LIFE-BASE light XS
portable unit



LIFE-BASE 1 NG XS
portable unit



LIFE-BASE 3 NG
portable unit

5

Select your pressure
reducers and
oxygen cylinders:



OXYWAY
pressure reducers



Steel or aluminum
cylinder

✓

Your individual
configuration:



MEDUMAT Standard²
on LIFE-BASE light XS
portable unit



MEDUMAT Standard²
on LIFE-BASE 1 NG XS
portable unit



MEDUMAT Standard² &
MEDUCORE Standard²
on LIFE-BASE 3 NG



RESCUE-Pack Plus



 We Simplify Saving Lives

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