MEDUMAT Standard²

A clear new perspective
Maximum safety in an emergency

In an emergency, every second counts. Every move has to be perfect, especially where respiration support is concerned, which is when prompt correct action can be a key factor in saving lives. The demands on emergency medical services are high in such situations, and easy operation of the ventilator is critical for a successful outcome. MEDUMAT Standard² is the perfect partner for just this situation. It is intuitive to operate, reliable in use and its integrated hygiene filter protects it from contamination, ultimately guaranteeing an unbeatable degree of safety for the patient, the user and the device itself!
See for yourself: You can see more

MEDUMAT Standard² provides a completely new perspective on modern emergency and transport ventilation. It clearly displays all the important respiratory parameters and an overview of ventilation curves is an additional option. The familiar operation – patient selection, for example – allows intuitive handling, whilst the initiation of ventilation by inputting height ensures that ventilation starts simply and in compliance with guidelines. Controls and symbols are clearly arranged to provide an overview, with effective audible and visual alarms as further features to ensure maximum patient safety.

New outlook:
More functions for emergency medical personnel

MEDUMAT Standard² also provides a much better outlook in terms of 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 (for cardiopulmonary resuscitation), RSI (for support during induction of anesthesia), Demand and CPAP (optionally with ASB). Volume-controlled modes SIMV, S-IPPV and Inhalation, together with pressure-controlled modes PCV, aPCV, BiLevel + ASB and PRVC + ASB, can furthermore still be enabled as options along with CO₂ monitoring mode. All settings are based on current specifications, e.g. resuscitation in accordance with ERC Guidelines. However, they can also be customized on request.

Your benefits at a glance
• Quick and easy access to the right ventilation by inputting height or via emergency mode for adults, children and infants
• CPR mode for guideline-compliant cardiopulmonary resuscitation
• RSI mode for reliable support during induction of anesthesia
• CPAP mode with optional ASB pressure support for non-invasive respiratory treatment in a prehospital setting
• Hygiene filter provides protection from contamination

Optional functions
• Sidestream capnography for ideal monitoring of ventilation treatment
• Flow measurement for improved monitoring during ventilation, resuscitation or induction of anesthesia (MVe, Vte, ftotal, fspont, Vleak), curve display
• Pressure-controlled ventilation modes for more differentiated ventilation therapy
• Bluetooth® data transmission for digital documentation of ventilation data
• Innovative resuscitation ventilation with CCSV mode
More Than Pure Emergency Ventilation

Transport ventilation “light”
MEDUMAT Standard® is suitable not only for emergency ventilation, but also for optimal care during transport of patients already being ventilated. It is the smallest and lightest transport ventilator in its class. Equipped with pressure-controlled ventilation modes and monitoring options such as display of pressure, flow and CO₂ curves and display of major ventilation parameters, MEDUMAT Standard® is your compact partner for ground and air rescue services.

Your benefits at a glance
- Low weight of 2.5 kg makes it suitable for ground and air rescue services
- Battery life of 10 hours ensures a high level of mobility
- Simple, intuitive operation via flat menu structures
- Optimum setting and monitoring of ventilation using the Flow measurement + ASB, Capnography and Pressure-controlled ventilation modes options
- Customization and standardization of the device, e.g., by preconfiguring ventilation parameters
- Digital documentation of ventilation data using the Bluetooth® data transmission option

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 Medical Pad from Tech2go, for example. This facilitates seamless, paperless documentation.
Non-invasive ventilation

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, CPAP pressure can be fine-tuned at any time. The user also has the option of activating ASB pressure support with a 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.

Flow measurement + ASB option

- Monitoring of expiratory tidal and minute volume as well as of respiratory rate
- Pressure support in CPAP and SIMV modes provides optimal assistance for non-invasive ventilation
- Inspiration and expiration trigger can be set individually

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

FlowCheck sensor

- Particularly robust during use and hygienic reprocessing
- Available in disposable or reusable variants
- Unique chip technology ensures maximum precision
- Minimal dead space of just 9 ml makes it suitable for children and adults

**Sources:
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
CPR Mode

Cardiopulmonary resuscitation
MEDUMAT Standard™ guides you reliably 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 the critical information, e.g., when the patient was last ventilated or duration of CPR so far, 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.

CCSV – the ventilation mode that supports the heart
With Chest Compression Synchronized Ventilation (CCSV), WEINMANN Emergency has developed a ventilation mode specifically designed for resuscitation. CCSV applies a pressure-controlled mechanical breath synchronized with each chest compression. This revolutionary method is proven to improve gas exchange and hemodynamics.

Your benefits at a glance
- Increases patient safety compared to bag/mask ventilation
- Mask held securely in place with two hands, as breaths are triggered close to the patient by MEDUtrigger
- Individual activation/deactivation of alarms (and consequently fewer irritating alarms during CPR)
- Individual configuration options for CPR mode for greater flexibility

Optional functions
- Innovative resuscitation ventilation with CCSV mode
- Capnography for checking tube position and improved detection of ROSC
- etCO2 trend display to support detection of ROSC
Press CPR button to activate CPR mode

- 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

- Two hands free for ventilation and thus complete control of mask with Double-C grip
- Simultaneously simple and ergonomic manual triggering of mechanical breaths using the thumbs
- Safe use due to fixed tidal volume setting and pressure limit

Continuous ventilation

- etCO₂ display provides a reliable check of tube position
- Preset patient height automatically sets tidal volume and ventilation rate
- Ventilation can be paused to prevent artifacts during cardiac rhythm analysis

Innovative ventilation for resuscitation – CCSV mode

- Simplified operation for resuscitation: Display reduced to the essentials
- Compatible with automatic chest compression devices
- Compression rate and hands-off time displayed
RSI Mode

Reliable support for induction of anesthesia
MEDUMAT Standard reliably supports every treatment step in Rapid Sequence Induction mode. The patient is first preoxygenated via the DEMAND function. The operator can see the anesthesia-induced apnea directly on the monitor. MEDUtrigger close to the patient allows temporary manual ventilation - to enable the position of airway access to be checked, for example. 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.

Preoxygenation
- Supply of 100 % oxygen for the patient who is still breathing spontaneously
- 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 ventilated manually using MEDUtrigger and the Double-C grip

Position check of tube
- Following successful intubation, the user can check the position of airway access using MEDUtrigger and optional capnography
- Following 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 (uninterrupted) spontaneous respiration
- Adjustable pressure limit delivers increased safety
- Optional: Improved monitoring of spontaneous breathing via volume monitoring
- MEDUtrigger and optional capnography can be used to check tube position reliably by means of auscultation
- Option of switching directly to continuous ventilation improves ergonomics
More Freedom with More Options

MEDUMAT Standard² now offers an even better outlook in terms of flexibility. The device can be individually configured to suit your needs and can thus be used for a wide range of applications.

Flow measurement + ASB option
- Monitoring of expiratory tidal and minute volume, in addition to respiratory rate
- Pressure support in CPAP and SIMV modes to provide ideal assistance in non-invasive ventilation
- Inspiration and expiration trigger can be set individually

Curve display option
Condition: Flow measurement + ASB option is installed!
- Pressure and flow curves displayed for clear monitoring

Pressure-controlled ventilation modes option
Condition: Flow measurement + ASB option and Curve display option are installed!
- Improved transport of ventilated patients using the PCV, aPCV, BiLevel + ASB and PRVC + ASB ventilation modes
- Pressure and flow curve display for clear monitoring

Capnography option
- 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 support during CPR and RSI
- CO₂ measurement even with ventilation deactivated

CCSV mode option
Condition: Flow measurement + ASB option is installed
- Ventilation mode specifically for resuscitation
- For optimal ventilation synchronized with each chest compression

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

Other options: • SIMV mode • S-IPPV mode • Inhalation mode
**Intuitive Operation for Maximum Safety**

1. **Optimal screen arrangement**
   for a perfect view of all measurements and settings

2. **Accessories connection**
   for MEDUtrigger and connection cable to the FlowCheck sensor accessible from the front

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

4. **Data memory and updates**
   Device configuration and software updates can be transmitted with the aid of the SD memory card itself

5. **User-oriented operation**
   Rapidly-operated navigation buttons are simple and quick to use

6. **Connection for ventilation hose**
   connects the device to the patient circuit

7. **Connection for measuring tube system**
   measures pressure and CO$_2$ and manages PEEP

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

---

“Need to change the hygiene filter? It couldn't be simpler!”

The hygiene filter is a 1:1 fit in the dust filter opening of your device.
Accessories and Replacement Parts

1. 2 m reusable patient circuit with flow measurement, with CO₂ measurement
   - WM 28860

2. 2 m disposable patient circuit
   - WM 28865

3. 2 m disposable patient circuit for adults and children
   - WM 28867

4. Reusable FlowCheck sensor
   - WM 29197

5. 2 m reusable patient circuit with flow measurement
   - WM 29195

6. 2 m disposable patient circuit with flow measurement
   - WM 29194

7. 2 m disposable patient circuit for adults and children, with flow measurement
   - WM 28905

8. 2 m reusable patient circuit with CO₂ measurement
   - WM 28907

9. 2 m disposable patient circuit with CO₂ measurement
   - WM 28904

10. 2 m disposable patient circuit for adults and children, with CO₂ measurement
    - WM 29190

11. 2 m disposable patient circuit with flow measurement, with CO₂ measurement
    - WM 29192

12. 2 m disposable patient circuit for adults and children, with flow measurement, with CO₂ measurement
    - WM 29199

1. Set of 5 reusable FlowCheck sensors
   - WM 28835

2. etCO₂/O₂ nasal cannula
   - WM 17850

3. 2 m MEDUtrigger
   - WM 1928

4. 2 m connection cable to FlowCheck sensor with MEDUtrigger
   - WM 28892

5. 2 m connection cable to FlowCheck sensor without MEDUtrigger
   - WM 32508

6. Hygiene filter
   - WM 28740

7. Set of 5 hygiene filters
   - WM 17865

8. MAG adapter for power supply
   - WM 28979

9. Battery charging station
   - WM 45190

10. Power supply unit and charger
    - WM 28937

11. Battery
    - WM 45045

12. Adapter for connection of oxygen inhalation
    - WM 28263

13. SD card
    - WM 29791

14. EasyLung for WEINMANN Emergency
    - WM 22162

15. Respiratory system filter
    - WM 28625
Examples of Configuration Options

1. Select your device, e.g.:
   - MEDUMAT Standard² with CO₂ measurement (WM 29500)
   - MEDUMAT Standard² without CO₂ measurement (WM 29300)
   - Can be combined with monitor/defibrillator system

2. Select your software options, e.g.:
   - Flow measurement (WM 28959)
   - Curve display (WM 28963)
   - Pressure-controlled ventilation modes (WM 28970)
   - CCSV mode (WM 28940)
   - Bluetooth® data transmission (WM 28945)
   - • SIMV mode (WM 28916)
   - • S-IPPV mode (WM 28915)
   - • Inhalation mode (WM 28920)

3. Select your preferred accessories, e.g.:
   - Reusable / disposable patient circuits
   - Hygiene filter
   - NIV / CPAP masks
   - Respiratory system filter

4. Select your portable system with or without oxygen cylinder, e.g.:
   - LIFE-BASE light XS portable system
   - LIFE-BASE 1 NG XS portable system
   - LIFE-BASE 3 NG portable system

5. Select pressure reducer and oxygen cylinder, e.g.:
   - OXYWAY pressure reducer
   - Steel or aluminum cylinder

Your individual configuration

- MEDUMAT Standard² on LIFE-BASE light XS portable system
- MEDUMAT Standard² on LIFE-BASE 1 NG XS portable system
- MEDUMAT Standard² with MEDUCORE Standard² on LIFE-BASE 3 NG
Remote diagnosis (telesupport) in the event of a fault
Safety and reliability day after day

With the fast and simple function check, you can assure yourself at any time that your device is trouble-free and ready for use. In less than 30 seconds, MEDUMAT Standard² performs the automatic function check and provides the user with a status report. If a device malfunction does ever occur, its cause may not be immediately apparent. For reporting purposes, MEDUMAT Standard² lets you save the service files from the device to an SD card and e-mail them to WEINMANN Emergency. Ideally, these data alone will be sufficient for our service specialists to resolve the fault with you via telesupport. Should this not be the case, we will take a closer look at your device and, if necessary, you will be provided with a replacement device to cover this down time.

Perform software updates yourself
– Your benefits as the operator:
  • Always up-to-date with the latest software
  • You decide when to update
    – no appointment pressure, no waiting
  • Remain ready for use – no need to ship device for update
  • You decide who makes the update at your site - password-protected operator menus make this possible
  • No risk – performing the update is simple and safe

Active support of your quality management and documentation processes
Important information is saved automatically and can be exported to the SD card quickly and easily. Data included:
• Up to 6,000 function checks, including many details
• Software update history as a documentation sheet
• Error-free standardization: Customized device configurations can be transferred from one device to another by SD card

Never miss a safety check or service interval again
MEDUMAT Standard² gives you reliable help with the planning of required servicing. Every device reminds you in good time of due servicing/safety check dates. At the end of the function check, the device tells the user the exact date of upcoming servicing/safety checks. If the recommended interval is exceeded, MEDUMAT Standard² also displays a small spanner symbol on the start-up screen. MEDUMAT Standard² uses these reminders to support you in your responsibility as device operator.

Service data: MEDUMAT Standard²

<table>
<thead>
<tr>
<th>Service Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer's warranty</td>
<td>2 years</td>
</tr>
<tr>
<td>Safety check interval</td>
<td>Every 2 years</td>
</tr>
<tr>
<td>Servicing interval</td>
<td>Every 2 years</td>
</tr>
<tr>
<td>COMFORT Plus service package with fixed annual fees available</td>
<td>✔</td>
</tr>
<tr>
<td>Automatic function check with clear summary</td>
<td>✔</td>
</tr>
<tr>
<td>Duration of function check</td>
<td>Approx. 25 seconds</td>
</tr>
<tr>
<td>Software update can be performed by operator/user</td>
<td>✔</td>
</tr>
<tr>
<td>User training without O₂ consumption (free simulation software in the device/on PC)</td>
<td>✔</td>
</tr>
<tr>
<td>Password-protected operator menu</td>
<td>✔</td>
</tr>
<tr>
<td>Removable rechargeable battery system¹</td>
<td>✔</td>
</tr>
<tr>
<td>Battery status</td>
<td>Display also on battery itself</td>
</tr>
<tr>
<td>Telesupport</td>
<td>✔</td>
</tr>
<tr>
<td>External charging base for removable battery</td>
<td>Available as an option</td>
</tr>
<tr>
<td>Service reminder in device display</td>
<td>E.g., of scheduled safety check / servicing</td>
</tr>
</tbody>
</table>

(¹) You can use the removable rechargeable battery for both MEDUMAT Standard² and MEDUCORE Standard to support your logistical processes and simplify device handling during use.

Manufacturer Service
Hotline: +49 40 88 18 96 122
## Technical Data

### MEDUMAT Standard²

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Device dimensions</strong></td>
<td>W: 206 mm x H: 137 mm x D: 130 mm</td>
</tr>
<tr>
<td><strong>Weight, incl. battery</strong></td>
<td>Approx. 2.5 kg</td>
</tr>
<tr>
<td><strong>Product class according to Directive 93/42/EEC</strong></td>
<td>IIb</td>
</tr>
<tr>
<td><strong>Operating conditions</strong></td>
<td>• Temperature range: -18 °C to +50 °C</td>
</tr>
<tr>
<td></td>
<td>• Humidity: 0 % rh to 95 % rh, no condensation</td>
</tr>
<tr>
<td></td>
<td>• Air pressure: 540 hPa to 1,100 hPa</td>
</tr>
<tr>
<td></td>
<td>• Altitude above MSL: up to 5,000 m</td>
</tr>
<tr>
<td><strong>Rechargeable battery</strong></td>
<td>• Operating time: up to 10 hrs (depending on device and options)</td>
</tr>
<tr>
<td></td>
<td>• Charging time (0 % - 95 %): 3.5 h</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>TFT color display 5&quot;</td>
</tr>
<tr>
<td><strong>Data storage</strong></td>
<td>Internal and on SD card</td>
</tr>
<tr>
<td><strong>Ventilation modes</strong></td>
<td>• Volume-controlled: IPPV, CPR, RSI, SIMV (with SIMV mode option),</td>
</tr>
<tr>
<td></td>
<td>SIMV + ASB (with SIMV mode and Flow measurement + ASB options),</td>
</tr>
<tr>
<td></td>
<td>S-IPPV (with S-IPPV mode option), Inhalation (with Inhalation mode option)</td>
</tr>
<tr>
<td></td>
<td>• Pressure-controlled: PCV, pCPCV, BiLevel + ASB, PRVC + ASB (with pressure-controlled ventilation modes option),</td>
</tr>
<tr>
<td></td>
<td>CCSV (with Flow measurement + ASB option and CCSV mode option)</td>
</tr>
<tr>
<td></td>
<td>• Spontaneous breathing: CPAP, CPAP + ASB (with Flow measurement + ASB option)</td>
</tr>
<tr>
<td><strong>Operating gas</strong></td>
<td>Medical-grade oxygen or concentrator oxygen (93 % O₂)</td>
</tr>
<tr>
<td><strong>Operating pressure range</strong></td>
<td>2.7 bar to 6 bar</td>
</tr>
<tr>
<td><strong>Monitoring</strong></td>
<td>• Displayed measured values: pPeak, pPlat, pMean,</td>
</tr>
<tr>
<td></td>
<td>Vte, MVe, f, fsp, Vleak (with Flow measurement + ASB option),</td>
</tr>
<tr>
<td></td>
<td>etCO₂ (with Capnography option)</td>
</tr>
<tr>
<td></td>
<td>• Curves: Airway pressure (with Curve display option or Capnography option),</td>
</tr>
<tr>
<td></td>
<td>Flow (with Curve display option), CO₂ (with Capnography option),</td>
</tr>
<tr>
<td></td>
<td>etCO₂ trend (with Capnography option)</td>
</tr>
<tr>
<td></td>
<td>• Gauge: Pressure gauge</td>
</tr>
<tr>
<td><strong>Maximum outlet flow</strong></td>
<td>80 l/min at inlet pressure of 4.5 bar in Air Mix and in No Air Mix operation</td>
</tr>
<tr>
<td><strong>Tidal volume</strong></td>
<td>50 ml to 2,000 ml</td>
</tr>
<tr>
<td><strong>Ventilation rate</strong></td>
<td>5 min⁻¹ to 50 min⁻¹</td>
</tr>
<tr>
<td><strong>Inspiration pressure</strong></td>
<td>3 mbar to 60 mbar (with Pressure-controlled ventilation modes option)</td>
</tr>
<tr>
<td><strong>ASB pressure support</strong></td>
<td>0 mbar to 30 mbar (with Flow measurement + ASB option)</td>
</tr>
<tr>
<td><strong>PEEP</strong></td>
<td>0 mbar to 30 mbar</td>
</tr>
<tr>
<td><strong>Pressure limit (Pmax)</strong></td>
<td>10 mbar to 65 mbar</td>
</tr>
<tr>
<td><strong>Inspiration trigger</strong></td>
<td>1 l/min to 15 l/min (with Flow measurement + ASB option)</td>
</tr>
<tr>
<td><strong>Expiration trigger</strong></td>
<td>5 % to 80 % flow max. (with Flow measurement + ASB option)</td>
</tr>
<tr>
<td><strong>I:E</strong></td>
<td>1:4 – 4:1</td>
</tr>
<tr>
<td><strong>Pressure ramp</strong></td>
<td>Steep, medium, flat (with Flow measurement + ASB option)</td>
</tr>
<tr>
<td><strong>Standards applied</strong></td>
<td>EN 60601-1, EN 1789, EN 794-3, ISO 10651-3, RTCA DO-160 G, MIL STD 810 G</td>
</tr>
</tbody>
</table>

We reserve the right to make changes to the technical specifications without notice.
Simply Professional

WEINMANN Emergency is a family-owned, internationally active medical technology company. With our mobile system solutions for emergency, transport and disaster medicine, we set standards for saving human lives. In close collaboration with professional users in emergency medical services, hospitals and military medical corps, we develop innovative medical products for ventilation and defibrillation. For more than 100 years we have offered our customers a high degree of reliability, extensive experience and quality made in Germany.