

# MEDUMAT Transport

High-End Ventilation for Every Use

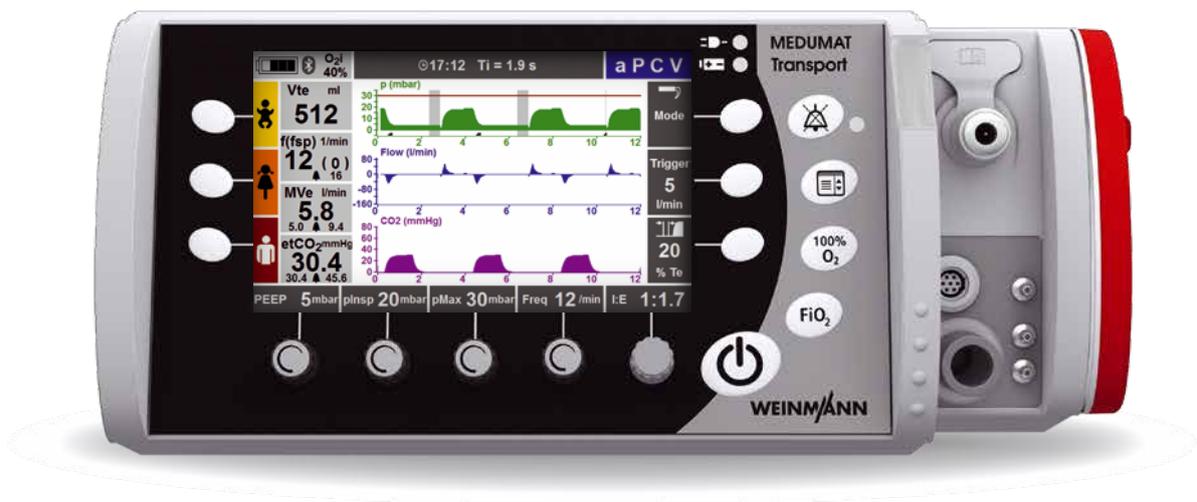




## Always on the Safe Side

From pre-hospital care to intensive care transport

You've just put on your uniform when the first alarm sounds, quickly followed by the call to a heart attack victim and transport of an intensive care patient. Everyday work in emergency medical services and hospitals poses one challenge after the other. The constant switching from one emergency to the next demands a ventilator you can rely on at all times. The technology has to adjust to your daily work, not the other way around. And it has to provide active assistance in every situation. MEDUMAT Transport can do it all. Furthermore, the high-end ventilator is economical when it comes to maintenance and oxygen consumption.



## Fast, simple, flexible

The WEINMANN Emergency ventilator covers a broad range of uses from pre-hospital treatment to intensive care transport and, thanks to its hygiene input filter, contamination transport too. It also features simple and intuitive operation. In an emergency, MEDUMAT Transport starts up quickly and lets you begin treatment immediately in emergency modes or by entering the patient's height. You can pre-configure MEDUMAT Transport to adapt it to your needs for intensive care transport and still adjust ventilation to the requirements of every single patient. The simple navigation puts the varied functions for differentiated ventilation at your fingertips.

## By all means

You are free to concentrate on the patient whether you are in the air, on the ground or in the hospital. Given its robust construction, MEDUMAT Transport complies with all major standards, such as RTCA/DO 160 and EN 1789. The ventilator also takes into account the increasing importance of epidemics and highly resistant microbes. Even in contaminated environments, the hygiene input filter reliably protects the device's interior from viruses and bacteria. To make sure that everything runs smoothly after your purchase, WEINMANN Emergency offers you a broad network of service partners for extensive training and excellent service.



## Your benefits at a glance

- Device ready for immediate use
- Simple, intuitive operation
- Ventilation of adults and children
- Hygiene input filter protects from contamination
- Several functions for different ventilation modes
- Wireless data transmission via Bluetooth (optional)
- Customized pre-configuration
- The portable systems meet your mobility requirements

# Many Ways to Achieve your Goal

MEDUMAT Transport is the device of choice wherever you need a ventilator with a broad range of functions. It meets the demands of pre-hospital treatment and secondary transport of emergency and intensive care patients, leaving you to concentrate on the work at hand.

## Ready to use within seconds

Switch on the device and press a key for pre-configured modes for infants, children or adults. It's that easy to start up ventilation in an emergency. You can instead initiate treatment by entering the patient's height. The ventilator automatically determines the exact tidal volume for the ideal weight in volume-controlled modes.

## A real-life example

Volume-controlled ventilation for a two-year-old child: Ideal length is 88 cm<sup>(1)</sup> according to WHO. For an Ideal Body Weight of about 12 kg<sup>(2)</sup> and a tidal volume of  $V_t = 6 \text{ ml/kg}^{(3)}$ , MEDUMAT Transport calculates:  $V_t = \text{IBW} \times V_t/\text{kg weight} = 12 \text{ kg} \times 6 \text{ ml/kg} = 72 \text{ ml}$

## All options for the best care

MEDUMAT Transport is a specialist in intensive care transport. The device is so easy to use that you won't lose any time at all. As an intensive care transport respirator, it offers differentiated ventilation modes that are pressure or volume-controlled or a combination of both.

Non Invasive Ventilation is possible in all pressure-controlled modes and in CPAP + ASB. Other settings are available for the pressure ramp or trigger. If complications develop during patient transport, you can switch to emergency mode with the press of a button.

(1) [http://www.who.int/childgrowth/standards/cht\\_lfa\\_boys\\_p\\_0\\_2.pdf](http://www.who.int/childgrowth/standards/cht_lfa_boys_p_0_2.pdf)

(2) TRAUB, S.L.; JOHNSON, C.E.: Comparison of methods of estimating creatinine clearance in children. In: American journal of hospital pharmacy 37, 1980, Nr.2, S. 195–201.

(3) Deakin, C. D. et al. Erweiterte Reanimationsmaßnahmen für Erwachsene (adult advanced life support) Section 4 of Resuscitation Guidelines 2010 from the European Resuscitation Council, Notfall + Rettungsmedizin, 2010, Nr. 7, P. 578.



# Everything in Sight

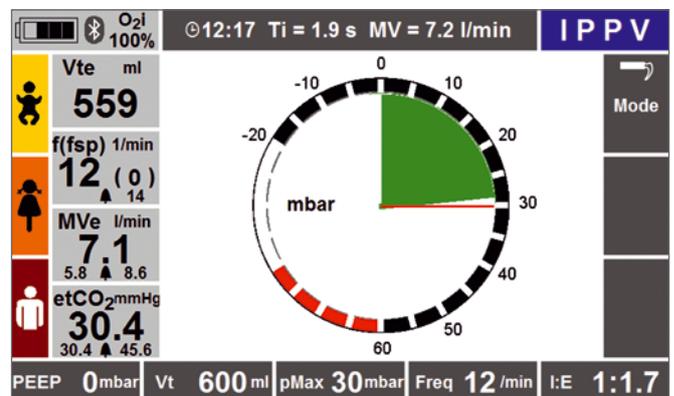
## MEDUMAT Transport ventilation modes

For purposes of patient monitoring, MEDUMAT Transport presents up to three curves (airway pressure, flow and etCO<sub>2</sub>) simultaneously along with other important measurements on the easy-to-read color display. The measurement of inspiratory oxygen concentration is made with a non-consuming sensor. A CO<sub>2</sub> measurement by means of sidestream capnography is optionally available. You'll be able to monitor all parameters with a glance and respond quickly at all times.



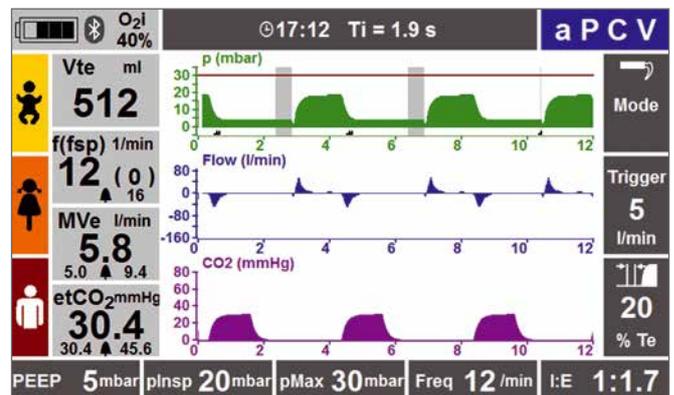
### Volume-controlled ventilation

IPPV	Intermittent Positive Pressure Ventilation (Volume-controlled, mandatory ventilation)
S-IPPV	Synchronized Intermittent Positive Pressure Ventilation (Assisted, volume-controlled ventilation)
SIMV + ASB	Synchronized Intermittent Mandatory Ventilation (Assisted, volume-controlled ventilation with optional pressure support at low pressure level)
PRVC + ASB	Pressure Regulated Volume Controlled (Assisted, volume-controlled ventilation with optional pressure support at low pressure level and inspiratory pressure regulation)



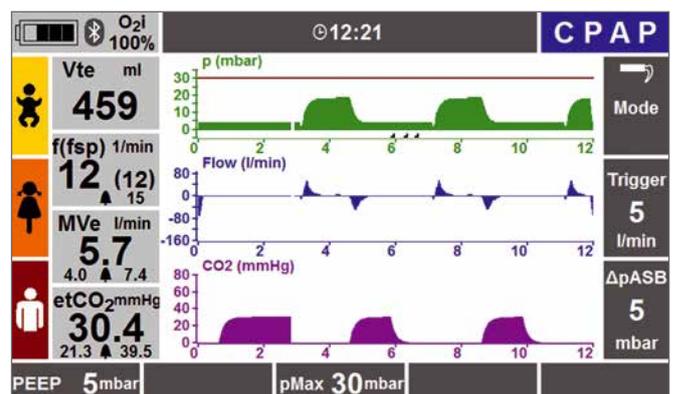
### Pressure Controlled Ventilation

PCV	Pressure Controlled Ventilation (Pressure-controlled, mandatory ventilation)
aPCV	assisted Pressure Controlled Ventilation (Assisted, pressure-controlled ventilation with adjustable trigger window)
BiLevel + ASB	Biphasic Positive Airway Pressure (Assisted, pressure-controlled ventilation with spontaneous breathing at two pressure levels with optional pressure support)



### Assisted Spontaneous Breathing

CPAP + ASB	Continuous Positive Airway Pressure + Assisted Spontaneous Breathing (Continuous positive airway pressure with optional pressure support)
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# Safe for Children and Adults

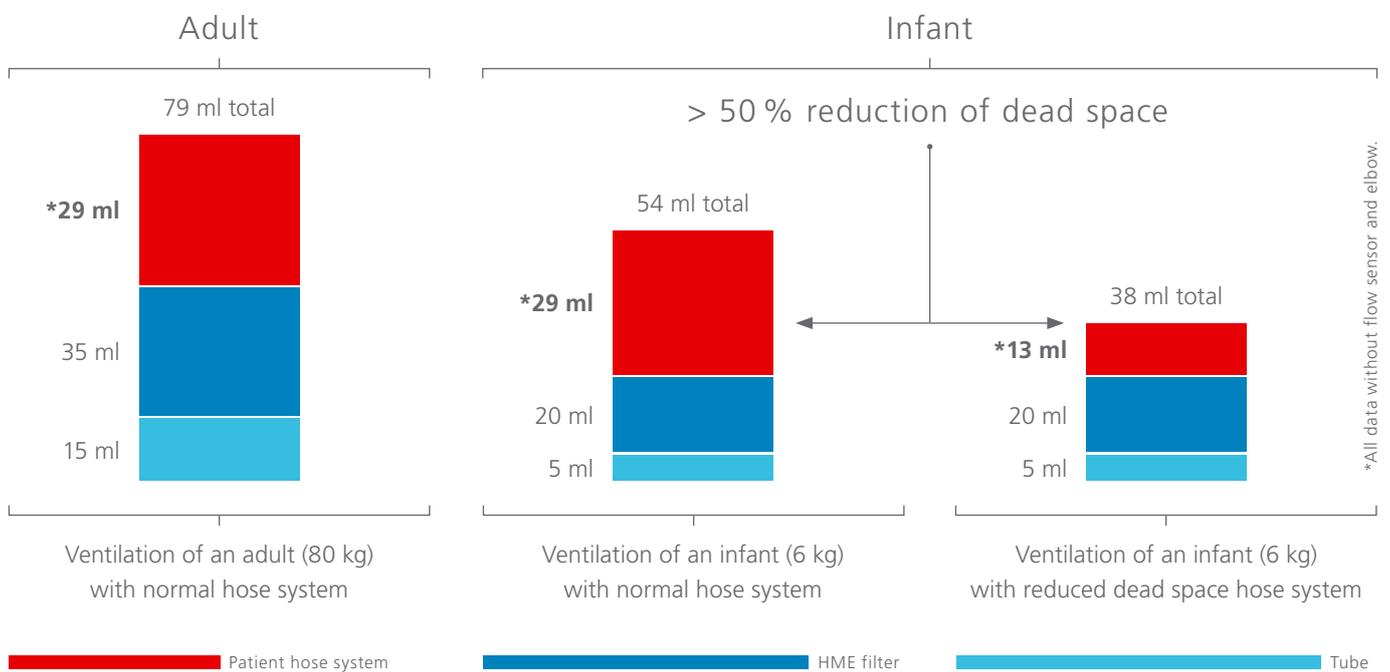
MEDUMAT Transport is suitable for all patients – from infants and children to adults. And not just because the ventilator has pre-configured modes customized for the requirements of each patient group.

With MEDUMAT Transport you can easily apply tidal volumes of less than 50 ml in pressure-controlled ventilation modes.

To meet the requirements for different uses, we offer you the normal disposable and reusable patient hose systems in two and three-meter lengths and a reduced dead space volume variant too. In contrast to ventilation of adults, dead space is crucial to little patients. The elimination of CO<sub>2</sub> is significantly affected by dead space. Consequently, we have

reduced dead space by 50% in the reduced dead space patient hose system for MEDUMAT Transport. For children and adults alike, the volume is 13 ml.

With this option MEDUMAT Transport offers you the greatest degree of flexibility in your treatment of adults, children and infants.



*"We conclude that dead space reduction is a means to achieve gentle ventilation and to reduce lung damage from artificial ventilation."*

Nolte S.; Klin Padiatr. 1992 Sep-Oct; 204(5):368-72

## Your benefits at a glance

- Infants and children can be ventilated with tidal volumes < 50 ml
- Patient hose system for children and adults with dead space reduced to 13 ml (-50% compared to normal hose systems)
- Ideal ventilation monitoring with proximal flow sensor and sidestream capnography

# Reliable Protection from Contamination



## Hygiene Input Filter

Multi-resistant bacteria pose a growing challenge to emergency medical services. As more and more epidemics occur around the world, greater demands for better hygiene increase too. Very often, however, an infection is detected only after a patient has been transported.

We have risen to this task and have made MEDUMAT Transport even safer. An optionally available hygiene filter at the input protects the device's interior not only from dust particles but also from contamination by bacteria or viruses. When ambient air is mixed with respiratory gas, the device reliably protects the device from microbes. The risk of cross-contamination is significantly reduced. Existing devices can be refitted with a hygiene input filter.

Especially helpful: MEDUMAT Transport reminds you after six months that it's time to change the filter. That too prolongs the service life of your device.

It's very easy to refit your device with the hygiene input filter

Here's what you do:

- Contact your local WEINMANN Emergency service partner
- Make an appointment for the refitting  
Tip: Have the filter refitting done during regular maintenance. Then you'll have considerably less logistical effort and down-time for the device, but maximum readiness for use.
- That's it.
- After six months the device automatically reminds you to replace the filter.





## You Lead, MEDUMAT Transport Follows

With MEDUMAT Transport you are the captain. You activate the functions that you really need and make all the necessary pre-settings. All other functions remain invisible during daily work so that you can operate MEDUMAT Transport intuitively and safely.

### Your benefits at a glance

- Customization by means of pre-configuration of ventilation and device settings
- Reduced complexity with optional deactivation of functions and ventilation modes
- Standardization with transmission of settings via USB

Specifically, that means:

- You deactivate the ventilation modes you do not need
- You configure ventilation parameters for all ventilation modes and emergency modes for separate patient groups
- You set the alarm thresholds for all ventilation modes and patient groups in advance
- You can select IPPV or BiLevel ventilation as the default emergency mode
- You can activate or deactivate the initiation of ventilation with entry of patient height
- For ventilation with compressed air, you make a setting on the device for the type of gas used

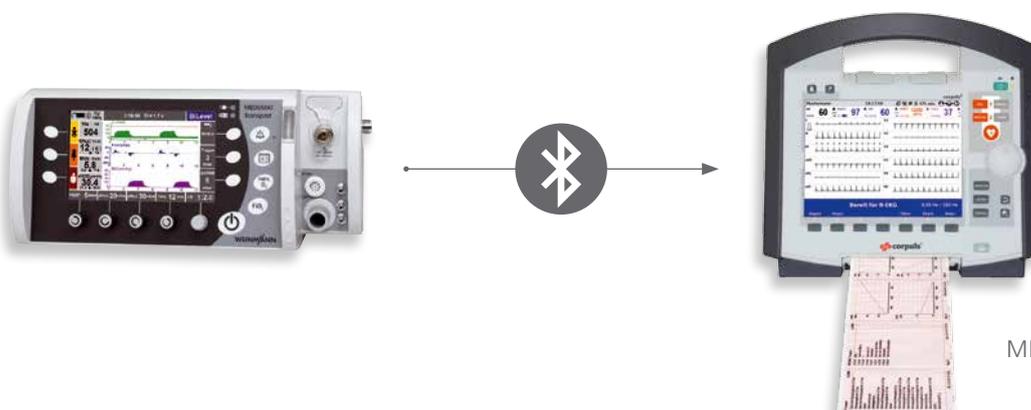


## Always on the Right Track with Bluetooth

Documentation is just as important as emergency treatment and safe transport. Immediately after patient transport, treatment data have to be made available. With Bluetooth, you can transmit ventilation parameters, changes in settings and trend data quickly and wirelessly to an external documentation system such as the Medical Pad from Tech2go. The defibrillator/monitor corpuls<sup>3</sup> from GS Stemple can also communicate with MEDUMAT Transport. To ensure that unauthorized persons do not have access to the data, the documentation system must

send a request for transmission. For emergency medical services, hospitals or armies, these data are then immediately available for further treatment or the next emergency response.

An open software development kit interface available for communication with mobile end-devices allows the use of MEDUMAT Transport with other external documentation systems. If you use an external documentation system that is not yet connected to MEDUMAT Transport, please contact us for more information.



# Service directly from the Manufacturer



## Repair and maintenance service – 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 just 30 seconds MEDUMAT Transport conducts the automatic function check and delivers a status report to the user. When a device malfunction occurs, its cause may not be immediately apparent.

In any case, you want to know the reason for the problem and put your device back to work as quickly as possible. To that end, MEDUMAT Transport lets you store the service files from the device on a USB stick and send them via e-mail to WEINMANN Emergency. In an ideal situation, our specialists can work with the data and resolve the problem with you over telesupport. If the data are insufficient, our technicians will take a look at the device and we'll provide a replacement device that you can use to bridge the downtime.

## Service data: MEDUMAT Transport

Manufacturer's warranty	2 years
Maintenance interval	every two years
Includes maintenance after eight years	✓
Time for function check	about 30 seconds
O <sub>2</sub> consumption during function check	about 3 liters
Maintenance-free internal oxygen sensor	✓
Maintenance-free device display	✓
Software update can be made by operator / user	✓
User training without O <sub>2</sub> consumption*	✓
Operator menu with password protection	✓
Remote diagnosis of device malfunction	✓
Fixed annual fee	✓

\* Free simulation software in the device / on PC



Manufacturer's service  
Hotline: +49 40 88 18 96 122



## Make software updates yourself – Your benefits as operator

- You are always up-to-date with the latest software
- You decide when to update – no deadline pressure, no waiting
- You remain ready for action – no need to send in device for update
- You decide who makes the update at your site, thanks to password-protected operator menu
- You have no risk – the update procedure is simple and safe

# MEDUMAT Transport is Economical

MEDUMAT Transport also turns out to be very economical. Not just because it comes with a manufacturer's warranty of two years. Non-invasive ventilation and pressure-controlled ventilation modes are supplied from the start. You do not need to buy them separately.

Because the device itself uses so little oxygen, you'll save there too. During ventilation treatment, MEDUMAT Transport uses an average of only 0.3 liters per minute and only three liters for the function check.

Sample calculation:  
How you save the first € 900.

Other manufacturers tell you to replace the O<sub>2</sub> sensor every year. Our experience shows that the replacements can cost you about € 90\*. And that's year after year. For a total service life of 10 years, the costs add up to € 900. With MEDUMAT Transport, you save that money because the O<sub>2</sub> sensor is not consumed during the device's lifecycle.

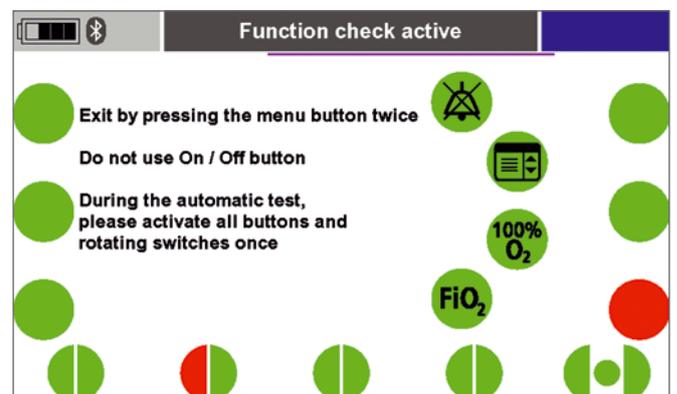


## Low maintenance, low costs

Added to that is the low expenditure for maintenance. Every two years maintenance is performed on the entire device, but the oxygen sensor is maintenance-free. Because it is not consumed with use, the sensor does not have to be replaced (see sample calculation on this page). When it's time for a software update, the device does not have to be taken out of service by authorized technicians. In just a few seconds, you can update the software yourself on your site. Thanks to our worldwide network of partners, you can find competent support quickly everywhere. That saves time.

You'll also save time with the device's simple operation and rapid function check (only 30 seconds). Time that not only helps you to concentrate on your patient, but contributes to making the high-end ventilator MEDUMAT Transport economical too.

## Simple, automated function check



\* <http://www.ventilatorsplus.com/Oxygen-Sensors.html>

# Intuitive Operation Ensures High Level of Safety



**1. Clear seven-inch color display**  
for presentation of up to three monitoring curves and optimum patient monitoring

**2. Large, highly visible alarm lights**  
for safe operation

**3. USB interface**  
to transmit settings, for example, or to make a software update on your own

**4. Two compressed gas connections**  
for an uninterrupted supply of oxygen

**5. Li-ion removable, rechargeable battery**  
with operating time of up to 7.5 hours in normal operations

**6. User-friendly operation**  
easy-to-use function keys simplify and speed up device operation

**7. All major connections accessible on front of device**  
for greater safety and ideal connection of patient hose system, flow sensor and compressed gas supply

**8. Hygiene input filter**  
An optionally available hygiene filter at the input of the device protects the interior from dust particles and contamination by bacteria or viruses.



**PC simulation free of charge**  
Become acquainted with MEDUMAT Transport. Simply download the free PC simulation from:  
[weinmann-emergency.com/downloads/multimedia](http://weinmann-emergency.com/downloads/multimedia)



# LIFE-BASE Portable Systems

With the LIFE-BASE portable systems from WEINMANN Emergency you can use MEDUMAT Transport continuously from an emergency response to intra-hospital transfers. The three different systems are exactly tailored to MEDUMAT Transport and because they are so robust, they can also be put to use in helicopters. Of course you can simply attach the ventilator with LIFE-BASE to the patient's bed.



- 1. Portable system LIFE-BASE 4 NG**  
robust portable system with accessory bags
- 2. MEDUMAT Transport**  
Emergency ventilator, component for LIFE-BASE portable system

- 3. Side flaps**  
for quick and easy access to device
- 4. Oxygen cylinder**  
Cylinder for up to 400 liters of oxygen

- 5. BiCheck flow sensor**  
to monitor expiratory volume
- 6. OXYWAY pressure reducer**  
Pressure reducer with or without oxygen inhalation (up to 15 liters/minute)



**Portable system LIFE-BASE light**  
- Small, lightweight and functional  
Your mobile solution when you draw oxygen from bags, cylinders or central gas system. There's no need for a BASE-STATION wall mounting.



**Portable system LIFE-BASE 1 NG**  
- Quick, lightweight, flexible  
Your mobile system when you mechanically ventilate a patient with help of an external oxygen source. Fits in WEINMANN Emergency BASE-STATION wall mounting.



**Portable system LIFE-BASE 4 NG**  
- Everything at a glance, everything at your fingertips  
Your mobile system for times when you need direct access to your oxygen cylinders. Fits in WEINMANN Emergency BASE-STATION wall mounting.

WM 28350 with MEDUMAT Transport with CO<sub>2</sub> measurement  
WM 28340 with MEDUMAT Transport without CO<sub>2</sub> measurement

WM 9625 with MEDUMAT Transport with CO<sub>2</sub> measurement  
WM 9635 with MEDUMAT Transport without CO<sub>2</sub> measurement

WM 9605 with MEDUMAT Transport with CO<sub>2</sub> measurement  
WM 9600 with MEDUMAT Transport without CO<sub>2</sub> measurement

# Accessories and Replacement Parts



- Reusable Patient Hose System, complete:
    - 2 m long WITH CO<sub>2</sub> measurement WM 28425
    - 3 m long WITH CO<sub>2</sub> measurement WM 28676
    - 2 m long WITHOUT CO<sub>2</sub> measurement WM 28295
    - 3 m long WITHOUT CO<sub>2</sub> measurement WM 28694
  - Disposable Patient Hose System, complete:
    - 2 m long WITH CO<sub>2</sub> measurement WM 28435
    - 3 m long WITH CO<sub>2</sub> measurement WM 28688 + WM 15529
    - 2 m long WITHOUT CO<sub>2</sub> measurement WM 28285
    - 3 m long WITHOUT CO<sub>2</sub> measurement WM 28691 + WM 15529
  - Disposable Patient Hose System, reduced dead space, complete:
    - 2 m long WITH CO<sub>2</sub> measurement WM 28215
    - 2 m long WITHOUT CO<sub>2</sub> measurement WM 28255
  - BiCheck flow sensor WM 22430
  - Set of 5 BiCheck flow sensors WM 15685
  - 1. EasyLung for WEINMANN Emergency WM 28625
  - Oxygen inhalation set for MEDUMAT Transport, consisting of: Adapter to connect oxygen inhalation, Cover for measurement port WM 15925
  - 2. Inhalation adapter WM 28263
  - 3. Respiratory system filter for MEDUMAT ventilators WM 22162
  - 4. 12-volt supply lead WM 28356
  - 5. Power supply unit WM 28305
  - 6. Rechargeable battery WM 28384
  - 7. Rechargeable battery PLUS WM 28385
  - 8. Hygiene input filter for MEDUMAT Transport, one item WM 28252
    - Mounting set for hygiene input filter for MEDUMAT Transport from serial number 8000, consisting of: Filter holder, two hygiene input filters WM 15824
- Software Options:**
- Wireless data transmission WM 28269

# Technical Data



## MEDUMAT Transport

Management	Time and trigger-operated, pressure-controlled or volume-controlled
Dimensions (W x H x D in mm)	345 x 163 x 149
Weight	about 4.4 kg/4.6 kg (with CO <sub>2</sub> option)
Operation	<ul style="list-style-type: none"> <li>• Temperature: -18° C to +50° C</li> <li>• Humidity: 15 % to 95 % without condensation</li> <li>• Air pressure: 54 kPa to 110 kPa</li> </ul>
Monitoring	<ul style="list-style-type: none"> <li>• Expiratory volume and flow measurement with hot wire transit time method (BiCheck)</li> <li>• Airway pressure</li> <li>• Inspiratory O<sub>2</sub> concentration by means of non-consuming O<sub>2</sub> sensor</li> <li>• Capnography (optional) in sidestream method</li> </ul>
Gas supply	2.7 to 6 bar, ideal at 4.5 bar with 145 l/min
Gas types	Medical-grade oxygen, medical grade compressed air (AIR), concentrator oxygen (93 % O <sub>2</sub> )
Power supply	<ul style="list-style-type: none"> <li>• Removable battery, external or internal charging</li> <li>• Device power supply 12 to 15 volts DC</li> <li>• Voltage for external power pack 100-240 V AC, 50/60 Hz</li> </ul>
Product class according to Directive 93/42/EEC	IIb
Emergency ventilation modes	<ul style="list-style-type: none"> <li>• Emergency ventilation, infants (IPPV or BiLevel can be pre-configured)</li> <li>• Emergency ventilation, child (IPPV or BiLevel can be pre-configured)</li> <li>• Emergency ventilation, adult (IPPV or BiLevel can be pre-configured)</li> </ul>
Differentiated ventilation modes	BiLevel + ASB, aPCV, PCV, CPAP + ASB, PRVC, IPPV, S-IPPV, PRVC + ASB, NIV available in all pressure-controlled ventilation modes and in CPAP + ASB
Type of battery	Li-Ion
Operating time	7.5 hours in normal operations
Charging time from 0 to 100 %	about 4 hours in stand-by mode
Stand-by time	about 14 days
Tidal volume (Vt)	50 to 2000 ml
Frequency	0 to 60 min <sup>-1</sup>
ΔpASB	0 to 30 mbar
pInsp	3 to 60 mbar
PEEP	0 to 30 mbar
I:E	59:1 to 1:59
Maximum outlet flow	150 l/min
Inspiration trigger	1 to 15 l/min
Expiration trigger	5-50 % of maximum flow
FiO <sub>2</sub>	40 to 100 %
Preoxygenation over ventilation hose system	<ul style="list-style-type: none"> <li>• Selection: Levels 5, 10, 15, 20 and 25 liters/minute</li> <li>• Oxygen inhalation over inhalation hose system: 1-10 liters/minute</li> </ul>
Major standards used	ISO 10651-3, EN 794-3, EN 1789, RTCA-DO 160 E, EN 60601-1
Transport and attachment systems for	<ul style="list-style-type: none"> <li>• Emergency vehicles</li> <li>• Intensive care transport vehicles</li> <li>• Helicopter</li> <li>• Aircraft for intensive care transport</li> <li>• Hospital carts</li> <li>• Gurneys and hospital beds</li> <li>• Standard hospital rails</li> <li>• Fixed wall mounting</li> </ul>

## 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 armies, 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.

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