VENTI*logic* LS
VENTI*logic* plus

100 % mobility and reliability in IV and NIV

A Company of the Löwenstein Group
WEINMANN
medical technology

VENTI*logic* LS
VENTI*logic* plus

Your requirements for reliability and mobility are our benchmark.

VENTIlogic LS and VENTIlogic plus are the forerunners in the new generation of ventilators. They offer you a high degree of reliability and versatility every day at all times. Their practice-oriented monitoring and mobility concepts are supplemented by unique ventilation functions.

VENTIlogic LS and VENTIlogic plus have leakage and single patient circuits. In addition VENTIlogic LS offers a double patient circuit system with patient valve and volume-controlled ventilation modes (VCV, aVCV).

Single patient circuit
with patient valve

Double patient circuit with
patient valve
(only VENTI*logic* LS)

Areas of use

- *For treatment of adults and children starting with 50 ml tidal volume and 5 kg body weight*
- *Invasive and non-invasive ventilation*
- *In hospital and at home*
- *Stationary and mobile*

Use of several replaceable batteries allows unlimited independent operation.

Our concept assures more freedom

VENTI*logic* LS and VENTI*logic* plus are equipped with two options for mouthpiece ventilation, namely pressure-controlled (MPVp) and volume-controlled (MPVv). Both are available in all circuit systems. Mouthpiece ventilation gives the patient maximum freedom and independence in his therpay. The three ventilation program settings allow an ideal combination of daytime mouthpiece ventilation with night-time ventialtion means. The mobility concept ensures safety and reliability in the delivery of required ventilation.

- Mobile use for intra-hospital transfers: With 9 hours of battery power (internal rechargeable battery and optional replaceable battery* have a capacity of 4.5 hours each), the devices can adapt to any change of location.
- Mobile use at home: VENTI*logic* LS and VENTI*logic* plus give your patients freedom of movement.
- Sure in an unsure situation: Leakage is reliably compensated for in volume and pressure controlled modes.** The high-performance blower ensures continuous patient care in mobile use and difficult ventilation situations, even with imprecise fit of patient interface.

Special shock resistance

Shock and vibration resistance were specially tested against recognized standards to ensure device's compliance with demands in mobile hospital and domestic surroundings. (Shock test as per IEC 60068-2-27 and Vibration test as per IEC 60068-2-64).

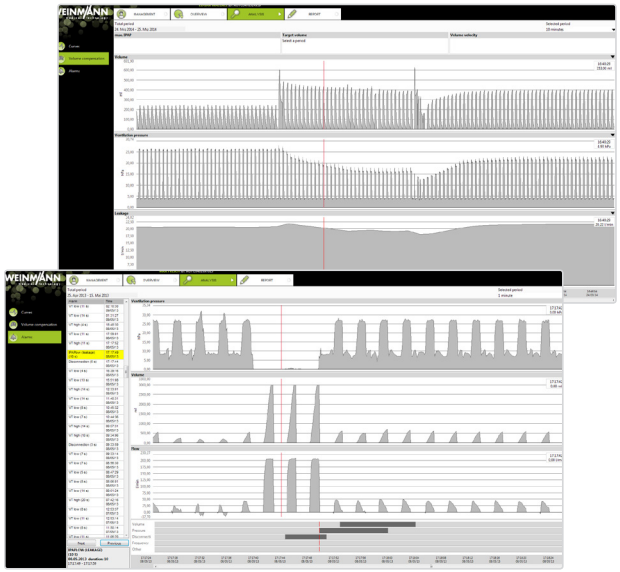
* The operating range of the rechargeable battery depends on the settings of the ventilation parameters and on the battery's age and charge level. The internal battery may be used only as an emergency source of power and not as a continuous primary source.

** Reliable leakage compensation in volume-controlled

Our monitoring concept ensures safe and reliable therapy

The comprehensive and clear monitoring concept provides the best support of your treatment:

- Intuitive operation for fast check of ventilation settings
- Simple and direct monitoring of oxygen saturation and pulse with the SpO_2 module.
- Unique alarm management (highly visible, large alarm window) for top safety: You can concentrate completely on therapy without any stress.
- VENTI*views*: PC software for Weinmann ventilators reads out, displays, analyzes, archives and generates reports on patient and compliance data and their clinical application:
  - Focus on ventilation requirements
  - Process-oriented operation matches procedures in hospital



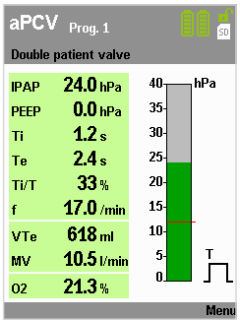
VENTI*views*
(Software)

The fast and simple way to ideal therapy settings – with innovative features by Weinmann

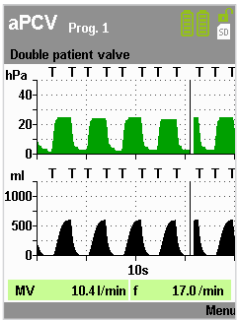
- Doctors can configure three storable ventilation programs for patients who need varying degrees of ventilation support. With the simple press of a key, the doctor, nurse or patient can select the individual programs to satisfy the patient's needs.
- LIAM (Lung Insufflation Assist Maneuver): the integrated cough support is easy to use and requires no change of masks. The patient himself or a nurse can activate the function.
- Volume compensation: Function to guarantee a pre-set target volume. The speed can be set in three levels.

Particularly suitable for COPD patients

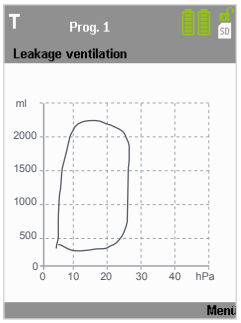
- AirTrap Control: Exhalation pressure relief to prevent dynamic hyperinflation. Thanks to AirTrap Control, VENTI*logic* LS and VENTI*logic* plus automatically regulate pressure to a frequency and expiration time ideal for the patient. The titration process is thereby significantly simplified.
- Trigger lockout: effective protection from false triggering and trigger artefacts at higher trigger sensitivity. The fast way to perfectly synchronized ventilation.
- Expiratory pressure ramp: temporary pneumatic splint in airways at the start of expiration to counteract expiratory collapse of airways. The expiratory flow remains larger on average, the volume can be exhaled more easily and respiratory position can be lowered.



Fast and simple monitoring of ventilation settings



Pressure and volume curves with auto-scaling function



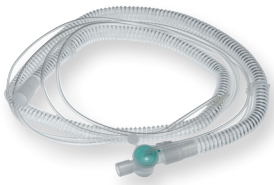
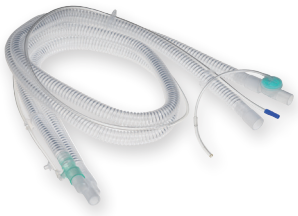
Pressure/volume Loop with auto-scaling axes










Accessories for VENTIlogic LS and VENTIlogic plus

1 **Replaceable battery**
WM 27919

2 **Bacteria filter (for leakage circuit)**
WM 24148

3 **Bacteria filter (for valve ventilation) Teleflex Iso-Gard**
WM 27591

4 **Bacteria filter (for valve system)**
WM 24476

5 **O_2 measurement set**
WM 15732
consists of:
- **O_2 sensor connection line – WM 27792**
- **O_2 sensor – WM 27128**
- **O_2 sensor T-piece – WM 27143**

6 **VENTI*remote* alarm (10 m)**
WM 27745 (10 m)
WM 27755 (30 m)

7 **SpO_2module**
WM 27280

8 **Adapter for automobile**
WM 24616

9 **Analogbox D/A**
WM 27560

10 **Leakage circuit**
WM 24130 (can be disinfected)
WM 24120 (can be sterilized)

11 **Single patient circuit with patient valve**
WM 27181

12 **Double patient circuit with patient valve**
WM 27182

13 **Water-resistant transport bag**
WM 27976
for mobile usage of VENTI*logic* LS and VENTI*logic* plus

Set, mouthpiece ventilation (not shown)
WM 27647

Test adapter, packed (not shown)
WM 27140

VENTI*views* (not shown), PC-Software
WM 27870

Connection cable for nurse call
WM 27780 (10 m)
WM 27790 (30 m)

CE 0197

Certified Quality Management System meeting EC directive 93/42/EEC Annex II (EN ISO 13485)

Technical Data

Product class as per directive 93/42/EEC:	II b
Dimensions (W x H x D):	240 x 153 x 340 mm
Weight	
■ without replaceable battery:	about 5.9 kg
■ with replaceable battery:	about 6.5 kg
Temperature range	
■ Operation:	+5 °C to +35 °C
■ Storage:	-40 °C to +70 °C
Air pressure range:	600 – 1100 hPa (below 700 hPa leakage is to be kept low because the device may not be able to compensate for high ventilation pressures)
Electrical connections:	110 – 230 V AC, 50 – 60 Hz Tolerance -20 %, +10 %

Power consumption at	**230 V**	**110 V**
■ Operation:	0,35 A	0,8 A
■ Standby:	0,05 A	0,13 A

Maximum power consumption:	120 W
Switching capacity Remote alarm connection:	60 V DC/2 A; 42 V AC/2 A
Battery capacity*)	
■ internal rechargeable battery:	4.5 hours
■ replaceable/rechargeable battery:	4.5 hours

*) The capacity depends on the ventilation parameter settings and the battery's age and state of charge.

Classification as per EN 60601-1	
■ Protection from electric shock:	Protection class II
■ Degree of protection from electric shock:	Type BF
Time required to charge battery:	
■ Charge via ventilator:	about 6 hours per battery
Leakage modes in both devices:	CPAP, S, ST, T, MPVp, MPVv
Valve ventilation modes in both devices:	PSV, PCV, aPCV, SIMV, MPVp, MPVv
and only VENTI*logic* LS:	VCV, aVCV

Special therapeutic functions:

- AirTrap Control
- Trigger lockout
- Expiratory pressure ramp
- three ventilation programs
- LIAM
- Volume compensation
- Mouthpiece ventilation

Electromagnetic Compatibility	
■ Radio interference suppression:	EN 55011
■ Radio interference resistance:	EN 61000-3-2, EN 61000-3-3, EN 61000-4-2 to 6, EN 61000-4-8, EN 61000-4-11
Mean sound level / operation as per EN ISO 17510 with 1 m distance between device and patient position:	about 28 dB(A) at 10 hPa
Sound level of alarm:	about 69 dB(A) as per EN 60601-1-8

IPAP pressure range:	6 to 40 hPa (leakage circuit) 4 to 40 hPa (valve system)
PEEP/EPAP pressure range:	4 to 20 hPa (leakage circuit) 0 to 20 hPa (valve system)
CPAP pressure range:	4 to 20 hPa (leakage circuit)
Pressure accuracy:	to 35 hPa ± 0.8 hPa from 35 hPa ± 1.5 hPa
Increment:	0.2 hPa (1 hPa = 1 mbar ≈ 1 cm H_2O)
Tidal volume:	50 – 3000 ml
Minimum pressure limit stability (PLSmin) (min. pressure in case of device failure):	≥ 0 hPa
Maximum pressure limit stability (PLSmax) (max. pressure in case of device failure):	≤ 60 hPa
Respiratory rate:	5 to 45 bpm
Accuracy:	± 0.2 bpm
Increment:	0.5 bpm
I:E-ratio	
■ Inspiration time:	15 % to 67 % of breathing period
■ Increment:	1 %
■ Accuracy:	±1 %
Trigger level:	adjustable in 8 stages for inspiration and 14 stages for exhalation (from 5 % to 95 % of maximum flow), can be switched off for exhalation in ST mode
Pressure increase speed:	Can be set in 6 levels
Pressure decrease speed	
■ Leakage system:	Can be set in 6 levels
■ Valve system:	One permanently set level
Accuracy Volume measurement:	at 23 °C: ±20 %, at least 25 ml
Max. allowable flow with oxygen feed:	15 l / at ≤ 1000 hPa
Max. heating of respiratory air at 35°C ambient temperature:	41°C
Pressure constancy measured as per DIN EN ISO 17510 in CPAP mode:	< 10 hPa: Δp ≤ 0.5 hPa > 10 hPa: Δp ≤ 1.0 hPa
Fine filter separation level to 2 µm:	≤ 99.7 %
Fine filter service life:	1000 hours in normal ambient air
Allowable humidity Operation and storage:	≤ 95 % rF (no condensation)
Flow at max. speed at 0 hPa:	Leakage ventilation: 350 l/min Single patient circuit with patient valve: 345 l/min Double patient circuit with patient valve (only VENTI*logic* LS): 345 l/min ±15 l/min
Tolerance:	± 15 l/min