

VT Mobile

Portable Gas-Flow Analyzer

Technical Data



The VT Mobile is a compact and portable general purpose gas-flow analyzer designed to meet the needs of the traveling technician or engineer. This versatile tool evaluates performance of a wide variety of medical gas-flow/pressure devices and measures 16 ventilator parameters.

The easy-to-use front panel has onboard graphing ability, allowing technicians to view waveforms right on the tool's screen. Test results can be stored in the unit and uploaded to a computer later for viewing or printing using VT for Windows. The VT for Windows PC software provides, among other features, simultaneous display of all 16 ventilator parameters to speed performance testing and other evaluations. EC.6.20 now requires completion of 100 % of life-support device preventive maintenance every year. VT MOBILE can help you meet those requirements.

The base unit measures high- and low-flow ranges, volume, pressure, and oxygen concentration. Additionally, the temperature and relative humidity option can be ordered separately to ensure the most accurate gas-flow measurements.

Key features

- Bidirectional flow (high- and low-flow ranges), volume, vacuum, pressure and oxygen concentration measurements
- 16 ventilator parameter measurements
- Trending and statistical analysis of all measured values
- Onboard graphical display
- Portable and compact
- RS-232 for computer control
- Memory for storing results
- VT for Windows PC software
- Optional sensor assembly for temperature and humidity measurements

Technical specifications

Display

64 pixels x 128 pixels, reflective LCD, blue on yellow

Operational modes

Standalone without any PC software or with the VT for Windows PC software

Gas types

Air, N₂, N₂O, CO₂, O₂, N₂O bal O₂, N₂ bal O₂

Battery power supply

Maximum over-voltage

15 VDC

Input voltage range

9 VDC

Power consumption

< 70 mA

Battery life

> 7 hours

External power supply

Maximum over-voltage

264 V ac

Input voltage range

100 V ac to 240 V ac

Input frequency range

50/60 Hz

Output voltage

12 V to 15 V

Output current

1.2 A

Fuse rating

N/A

Dimensions (WxDxH)

10 cm x 20 cm x 3.8 cm
(4 in x 8 in x 1.5 in)

Weight

0.45 kg (1 lb)

Low-pressure port

Maximum applied pressure

5 psi

Operating pressure (differential)

-20 cmH₂O to 120 cmH₂O

Operating pressure (common-mode)

N/A

Span accuracy

+ 2 % of reading or 1.5 mmHg

Frequency response

> 10 Hz

Resolution

0.1 mmHg

Sample rate

100 Hz

Fittings

Flow connector with 2 tubes "T" connected to a single Luer fitting

Note: No fluid may be applied to port

High-pressure port

Maximum applied pressure

125 psi

Operating pressure

-2 psi to 100 psi

Span accuracy

+ 2 % of reading or + 0.2 psig

Frequency response

> 10 Hz

Resolution

0.1 psi

Sample rate

100 Hz

Fittings

Single port, Luer lock, stainless steel

Note: No fluid may be applied to port

Airway pressure

Maximum applied pressure

5 psi

Operating pressure

-20 cmH₂O to 120 cmH₂O

Span accuracy

+ 2 % of reading or + 0.5 cmH₂O

Frequency response

> 25 Hz

Resolution

0.1 cmH₂O

Sample rate

100 Hz

Fittings

Internally connected to flow-sensor pressure lines

High-flow port

Maximum flow rate (absolute value)

200 lpm

Operating flow range

± 200 lpm

Accuracy

± 3 % of reading or ± 2 % of range

Floor for absolute accuracy

25 lpm

Resolution

0.01 lpm

Frequency response

> 25 Hz or t₁₀₋₉₀ < 40 ms

Sample rate

100 Hz

Dynamic resistance

< 2 cm H₂O @ 60 lpm

Low-flow dropout

2.5 lpm

Breath-detect threshold

4 lpm

Volume range

> ± 60 l

Tidal volume accuracy

± 3% of reading or ± 20 ml, whichever is greater

Fittings

15 mm OD/ID, 1:40 conical male

Low-Flow Port

Maximum flow rate (absolute value)

35 lpm

Operating flow range

+ 25 lpm

Accuracy

+ 3 % of reading or + 1 % of range

Floor for absolute accuracy

3 lpm

Resolution

0.01 lpm flow > 1 lpm

Frequency response

> 25 Hz or t₁₀₋₉₀ < 40 ms

Sample rate

100 Hz

Dynamic resistance

< 2.5 cmH₂O @ 5 lpm

Low-flow dropout

0.24 lpm

Breath-detect threshold

1 lpm

Volume range

+ 60 l

Volume accuracy

+ 3 % of reading or + 2 ml

Fittings

15 mm OD/ID, 1:40 conical male

Oxygen measurement

Range

0 % to 100 %

Accuracy

+ 2 % full-scale output

Resolution

0.1 % O₂

Frequency response

> 15 s (t₁₀₋₉₀)

Sample rate

100 Hz

Sensor technology

Galvanic fuel cell

Calibration

Allows user calibration using air and 100 % O₂

Notes:

- Automatic partial pressure compensation for barometric and airway pressure changes
- Recommended interval for changing oxygen sensor is one year. However, sensor may last longer. During user calibration of the sensor, the VT MOBILE can detect if the sensor needs to be replaced

Barometric pressure measurement

Range

8 psia to 18 psia
(400 mmHg to 900 mmHg)

Accuracy

+ 2 % of reading

Resolution

0.1 mmHg

Frequency response

< 5 s (t₁₀₋₉₀)

Sample rate

N/A

Calibration

Not required; however, device allows user calibration of offset

Secondary parameter-accuracy specifications

Inspiratory and expiratory tidal volume resolution

0.1 ml

Range

> 10 l

Accuracy

± 3 % expiratory minute volume

Resolution

0.001 lpm

Range

0 l to 60 l

Accuracy

± 3 %

Breath rate

Resolution

0.1 BPM

Range

2 BPM to 150 BPM

Accuracy

± 1 % inspiratory-to-expiratory time ratio (I:E ratio)

Resolution, 0.01 range

0.25 to 9.99

Accuracy

± 2 % or 0.1 s

Peak inspiratory pressure

Resolution

0.1 cmH₂O

Range

± 120 cmH₂O

Accuracy

+ 3 % or 1 cmH₂O

Inspiratory pause pressure

Resolution

0.1 cmH₂O

Range

± 120 cmH₂O

Accuracy

+ 3 % or 1 cmH₂O

Mean airway pressure

Resolution

0.1 cmH₂O

Range

+ 80 cmH₂O

Accuracy

+ 3 % or 0.5 cmH₂O

Positive-end expiratory pressure (PEEP)

Resolution

0.1 cmH₂O

Range

-5 cmH₂O to 40 cmH₂O

Accuracy

+ 3 % or 0.5 cmH₂O

Peak expiratory flow

Resolution

0.01 lpm

Range

0 lpm to 150 lpm

Accuracy

± 3 % or 2 % of range

Peak inspiratory flow

Resolution

0.01 lpm

Range

0 lpm to 150 lpm

Accuracy

± 3 % or 2 % of range

Temperature

Resolution

0.1 °C

Range

0 °C to 50 °C

Accuracy

± 1 °C

Units

°C, °F, °K

Humidity

Resolution

0.1 %

Range

0 % to 100 %

Accuracy

± 5 %



VT MOBILE Tilt Stand in low-tilt position

RS-232 serial communications

4-pin modular connector located on upper-left side of panel. RS-232 compatible with the VT Plus for Windows software application (version 2.01.00 or higher)

Environmental specifications

Operating temperature
10 °C to 40 °C (50 °F to 104 °F)

Storage temperature
-25 °C to 50 °C (-13 °F to 122 °F)

Operating humidity
0 % to 80 % non-condensing at temperatures to 31 °C, decreasing linearly to 50 % relative humidity at 40 °C (104 °F)

Storage humidity
0 % to 95 % non-condensing

Operating barometric
7 psia to 18 psia

Storage barometric
-1000 ft to 10000 ft (787.9 mmHg to 522.7 mmHg)

Ordering information

Models

- 2427911 VT MOBILE US, English Overlay
- 2553550 VT MOBILE FRA, French Overlay
- 2542531 VT MOBILE DEU, German Overlay
- 2542546 VT MOBILE ITAL, Italian Overlay
- 2542554 VT MOBILE SPAN, Spanish Overlay
- 2553610 VT MOBILE JPN, Japanese Overlay
- 2553605 VT MOBILE CHI, Chinese Overlay

Standard accessories

(included with each of the above models)

- 2548405 Accessory Kit
- 2544903 CD, includes: Quick-Reference Card, Operators Manual, Getting-Started Manual, other matter
- 2544892 Getting-Started Manual (hard copy and .pdf file on CD)
- 2544630 Quick-Reference Card (hard copy and .pdf file on CD)
- 2548431 High-Flow Sensor
- 2548422 Low-Flow Sensor
- 2548315 High-Pressure Adapter, male to female
- 2454175 Low-Pressure Adapter
- 2457028 Oxygen-Sensor Cable, 6 ft
- 2448051 T Adapter for Oxygen Sensor
- 2448801 Oxygen Sensor
- 614487 9 V dc Battery (alkaline)
- 2075257 Serial Communications Cable (RS-232), 6 ft
- 2558269 VT for Windows PC Software
- 2551236 Soft Carrying Case

Optional accessories

- 2548303 High-Pressure Adapter, male to male
- 2387318 ACCU Lung Portable Precision Test Lung
- 2541622 Temperature and RH Sensor, Cable and T Adapter, 6 ft
- 2547455 Power Adapter, Universal (USA and International)

Fluke Biomedical.
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Fluke Biomedical is the world's leading manufacturer of quality biomedical test and simulation products. In addition, Fluke Biomedical provides the latest medical imaging and oncology quality-assurance solutions for regulatory compliance.

Today, biomedical personnel must meet the increasing regulatory pressures, higher quality standards, and rapid technological growth, while performing their work faster and more efficiently than ever. Fluke Biomedical provides a diverse range of software and hardware tools to meet today's challenges.

Fluke Biomedical Regulatory Commitment

As a medical device manufacturer, we recognize and follow certain quality standards and certifications when developing our products. We are ISO 9001 certified and our products are:

- FDA Compliant
- CE Certified, where required
- NIST Traceable and Calibrated
- UL, OSA, ETL Certified, where required
- NRC Compliant, where required