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VT Mobile
Portable Gas-Flow Analyzer

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
- RS232 for computer control
- Memory for storing results
- VT for Windows PC software
- Optional sensor assembly for temperature and humidity measurements

Datasheet

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.

Technical Specifications

Display
64 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, N_2, N_2O, CO_2, O_2, N_2O bal O_2, N_2 bal O_2

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 Vac
Input Voltage Range: 100 to 240 Vac
Input Frequency Range: 50/60 Hz
Output Voltage: 12 to 15 V
Output Current: 1.2 A
Fuse Rating: N/A

Dimensions
8" L x 4" W x 1.5" H (20 cm L x 10 cm W x 3.8 cm H)

Weight
1 lb (0.45 kg)

Low-Pressure Port
Maximum Applied Pressure: 5 psi
Operating Pressure (Differential): – 20 to 120 cm H_2O
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 cmH_2O to 120 cmH_2O
Span Accuracy: + 2 % of reading or + 0.5 cmH_2O
Frequency Response: > 25 Hz
Resolution: 0.1 cmH_2O
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 cmH_2O @ 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 cmH_2O @ 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 % O_2
Frequency Response: > 15 s (t10–90)
Sample Rate: 100 Hz
Sensor Technology: Galvanic fuel cell
Calibration: Allows user calibration using air and 100 % O_2

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 to 18 psia (400 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 to 60 l
Accuracy ± 3 %

Breath Rate
Resolution: 0.1 BPM
Range: 2 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 cmH_2O
Range: ± 120 cmH_2O
Accuracy: + 3 % or 1 cmH_2O

Inspiratory Pause Pressure
Resolution: 0.1 cmH_2O
Range: ± 120 cmH_2O
Accuracy: + 3 % or 1 cmH_2O

Mean Airway Pressure
Resolution: 0.1 cmH_2O
Range: + 80 cmH_2O
Accuracy: + 3 % or 0.5 cmH_2O

Positive-End Expiratory Pressure (PEEP)
Resolution: 0.1 cmH_2O
Range: – 5 to 40 cmH_2O
Accuracy: + 3 % or 0.5 cmH_2O

Peak Expiratory Flow
Resolution: 0.01 lpm
Range: 0 to 150 lpm
Accuracy: ± 3 % or 2 % of range

Peak Inspiratory Flow
Resolution: 0.01 lpm
Range: 0 to 150 lpm
Accuracy: ± 3 % or 2 % of range

Temperature
Resolution: 0.1 °C
Range: 0 to 50 °C
Accuracy: ± 1 °C
Units: °C, °F, °K

Humidity
Resolution: 0.1%
Range: 0 to 100%
Accuracy: ± 5 %

RS232 Serial Communications
4-pin modular connector located on upper-left side of panel. RS232 compatible with the VT Plus for Windows software application (version 2.01.00 or higher.)

Environmental Specifications
Operating Temperature: 50 to 104 °F (10 to 40 °C)
Storage Temperature: -13 to 122 °F (-25 to 50 °C)
Operating Humidity: 0 to 80 % non-condensing at temperatures to 31 °C, decreasing linearly to 50 % relative humidity at 104 °F (40 °C)
Storage Humidity: 0 to 95 % non-condensing
Operating Barometric: 7 to 18 psia,
Storage Barometric: -1000 to 10000 ft (787.9 to 522.7 mmHg)

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Ordering Information

Model

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'
2448051:	T adapter for oxygen sensor
2448801:	Oxygen sensor
614487:	9 VDC battery (alkaline)
2075257:	Serial communications cable (RS232), 6'
2558269:	VT for Windows PC software
2551236:	Soft carrying case

Optional Accessories

2548405:	Accessory kit
2548431:	High-flow sensor
2548422:	Low-flow sensor
2548303:	High-pressure adapter, male to male
2548315:	High-pressure adapter, male to female
2454175:	Low-pressure adapter
2541622:	Temperature and RH sensor, cable and T adapter, 6'
2457028:	Oxygen-sensor cable, 6'
2448051:	T adapter for oxygen sensor
2558269:	VT for Windows PC software
2075257:	Serial communications cable (RS232), 6'
2547455:	Power adapter, universal (USA and international)
2551236:	Soft carrying case

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Better products. More choices. One company.

Fluke Biomedical
PO Box 9090, Everett, WA 98206-9090 USA

Fluke Biomedical Europe AS
Vegamot 8, N-7048 Trondheim, Norway

For more information, contact us:
In the U.S.A. (800) 648-7952 or
Fax (425) 446-5629
In Europe/M-East/Africa +47 73954700 or
Fax +47 73954701
From other countries +1 (425) 446-6945 or
Fax +1 (425) 446-5629
Email: sales@flukebiomedical.com
Web access: http://www.flukebiomedical.com

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