

# Technical data

## VT900A Gas Flow Analyzer

The Fluke Biomedical VT900A is designed to accurately and reliably test all types of medical gas flow equipment—ventilators, insufflators, oxygen meters—especially those requiring high accuracy in ultra-low flow and ultra-low pressure measurements such as anesthesia machines, flow meters and neonatal ventilators.

### Accurate

The VT900A is Fluke Biomedical's high-accuracy premium gas flow analyzer. The single, full-range  $\pm 300$  lpm air flow channel offers built-in oxygen, temperature and humidity measurements to streamline testing and automatically compensate for environmental conditions. The VT900A features an external trigger input and special ultra-low flow and ultra-low pressure ports. These ultra low-flow and ultra-low pressure ports allow the highest accuracy for devices requiring crucial low volume and pressure testing such as anesthesia machines and flow meters. Designed and tested to world renowned Molbloc-L calibration specifications ensures traceability to global regulatory standards with reliable measurements you can count on.



### Key features

- Streamline your testing procedure, reduce errors and shorten your test time with the ability to create customized test profiles
- Avoid confusion and ensure accuracy with one-channel, full-range air flow functionality
- Reduce testing time with built-in line sensors which automatically test humidity, temperature and oxygen while compensating for atmospheric pressure and environmental conditions
- Ensure patient safety with ultra-low flow and ultra-low pressure for anesthesia machine and flow meter testing
- Have confidence that your measurements comply to global regulatory standards and adhere to SI units of measurement with the Molbloc-L calibration system
- Easily transport and store the lightweight (3.6 lb/1.6 kg), all-in-one device—no extra modules for different tests
- Have more control over your testing by selecting your own trigger point with the external trigger input
- Streamline your testing procedure by performing a complete anesthesia machine PM with the VAPOR Anesthesia Tester

**Traceable**

The large on-board memory of the VT900A allows both short and long term recording and storing of test data. Transfer data via USB to a PC and upload the generated test file to your CMMS system for simple reporting. This device can be easily adapted to specific testing needs. With the ability to create custom profiles and the capacity to take remote commands for automated testing, the VT900A helps to decrease risk and increase efficiency.

**Easy-to-use**

The VT900A offers a large 7" (17.8 cm) touch screen display, allowing you to view multiple measurements at once, and quickly access menu options. Review results in graphical or numerical data in real-time. The global user interface makes operating this device straightforward and uncomplicated.

**Portable**

Weighing only 3.6 lb (1.6 kg), this compact, all-in-one device is highly portable. The snap-in carrying handle/shoulder strap and rugged design allow you to easily test on-the-go, while its small unit size and bale (kick stand) allows comfortable viewing for benchtop testing. A universal VESA mount also gives you the option of mounting the device to save space. With AC/DC power options and an 8-hour battery life, this tester is perfect for laboratory, clinical or field environments where AC power may not be available.



Portable, light (3.6 lbs/1.6 kg) and rugged design with 8 hours of battery life

Onboard memory and USB for easy data transfer and test file upload to your CMMS

7" (17.8 cm) color touchscreen showing real-time graphs and test data. Allows for customizable test profiles (by user, test type, or model) and data logging



High and differential low pressure ports. All sensors have the best accuracies on the market, reliably calibrated using Fluke Molbloc-L system

Full-range ±300 lpm air flow channel with built-in oxygen, humidity, and temperature measurements

## Specifications

Features	
Battery life hours	8 hrs
Charge time in hours	5 hrs, typical
Memory	internal memory
Connection type	USB, Micro-B device port
Weight	3.6 lb (1.6 kg)
Display	7 in (17.8 cm)
Single full-range channel	✓
Ultra-low flow ports	±750 ml/min
Ultra-low pressure port	0 to 10 mbar
Flow	
Full range flow channel	
Range	±300 slpm
Accuracy (air)	1.7 % or 0.04 slpm
Ultra-low flow channel	
Range	±750 ml/min
Accuracy (air)	±1.7 % or 0.01 slpm
Volume	
Range	±100 l
Accuracy	±1.75 % or 0.02 l
Pressure	
High pressure	
Range	-0.8 to 10 bar
Accuracy	±1 % or ±0.007 bar
Differential low pressure	
Range	±160 mbar
Accuracy	±0.5 % or ±0.1 mbar
Ultra-low pressure	
Range	0 to 10 mbar
Accuracy	±1 % or ±0.01 mbar
Airway pressure	
Range	±160 mbar
Accuracy	±0.5 % or ±0.1 mbar
Barometric pressure	
Range	550 to 1240 mbar
Accuracy	±1 % or ±5 mbar
Other	
Temperature	
Range	0 to 50 °C
Accuracy	±0.5 °C
Resolution	0.1 °C
Humidity	
Range	0 to 100 % RH
Accuracy	±3 % RH (20 to 80 % RH) ±5 % RH (20 < or > 80 % RH)
Oxygen	
Range	0 to 100 %
Accuracy	±1 %

Breath parameters	
Inspiratory tidal volume range	0 to 60 l
Inspiratory tidal volume accuracy	±1.75 % or 5 ml
Expiratory tidal volume range	0 to 60 l
Expiratory tidal volume accuracy	±1.75 % or 5 ml
Minute volume range	0 to 100 l
Minute volume accuracy	±1.75 % or 5 ml
Breath rate range	1 to 1500 bpm
Breath rate accuracy	±1 %
Inspiratory to expiratory time ratio (I:E) range	1:300 to 300:1
Inspiratory to expiratory time ratio (I:E) accuracy	±2 % or 0.1
Peak inspiratory pressure (PIP) range	±160 mbar
Peak inspiratory pressure (PIP) accuracy	±0.75 % or 0.1 mbar
Inspiratory pause pressure range	±160 mbar
Inspiratory pause pressure	±0.75 % or 0.1 mbar
Mean airway pressure range	±160 mbar
Mean airway pressure accuracy	±0.75 % or 0.1 mbar
Positive end expiratory pressure (PEEP) range	±160 mbar
Positive end expiratory pressure (PEEP) accuracy	±0.75 % or 0.1 mbar
Lung compliance range	0 to 1000 ml/mbar
Lung compliance accuracy	±3 % or 0.1 ml/mbar
Inspiratory time range	0 to 60 s
Inspiratory time accuracy	0.02 s
Inspiratory hold time range	0 to 60 s
Inspiratory hold time accuracy	1 % or 0.1 s
Expiratory time range	0 to 90 s
Expiratory time accuracy	0.5 % or 0.01 s
Expiratory hold time range	0 to 90 s
Expiratory hold time accuracy	0.02 s
Peak expiratory flow range	±300 lpm
Peak expiratory flow accuracy	±1.7 % or 0.04 lpm
Peak inspiratory flow range	±300 lpm
Peak inspiratory flow accuracy	±1.7 % or 0.04 lpm
Environmental	
Operating temp	10 °C to 40 °C
Storage temp	-20 °C to 60 °C
Operating humidity	10 to 90 % non-condensing
Storage humidity	5 to 95 % non-condensing
Gas corrections	
	Gas types
ATP (ambient temp/pressure, actual humidity)	Air
ATPD (ambient temp/pressure, dry)	Nitrogen (N2)
ATPS (ambient temp/pressure, saturated)	Nitrous Oxide (N2O)
STP20 (20 °C temp/pressure 760 mmHg, actual humidity)	Carbon Dioxide (CO2)
STP21 (21 °C temp/pressure 760 mmHg, actual humidity)	Oxygen (O2)
STPD0 (0 °C temp/pressure 760 mmHg, dry)	Argon
STPD20 (20 °C temp/pressure 760 mmHg, dry)	Heliox (21 % O2, 79% He)
STP or STPD21 (21 °C temp/pressure 760 mmHg, dry)	Oxygen/Nitrogen
BTPS (body temp 37 °C/ambient pressure 760 mmHg, saturated)	Oxygen/Nitrous Oxide
BTPD (body temp 37 °C/ambient pressure 760 mmHg, dry)	Oxygen/Helium

## Ordering information

### Includes:

- Bacterial filter (1)
- 1.2 m (4 ft) silicon tubing (2)
- 22 mm ID x 22 mm ID tubing adapters (2)
- 22 mm OD x 22 mm OD tubing adapters (2)
- 15 mm ID x 22 mm ID tubing adapters (2)
- DISS hand tight nut/nipple to 6.4 mm (1/4 in ) ID hose barb adapter (1)
- USB serial cable
- AC power adapter
- Detachable carrying handle
- Detachable shoulder strap
- Certificate of Calibration with test data

### Optional accessories

- VAPOR Anesthesia Tester
- ACCU LUNG Test Lung
- ACCU LUNG II Test Lung
- VESA Mounting system/test arm



## About Fluke Biomedical

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. Highly credentialed and equipped with a NVLAP Lab Code 200566-0 accredited laboratory, Fluke Biomedical also offers the best in quality and customer service for all your equipment calibration needs.

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 test device manufacturer, we recognize and follow certain quality standards and certifications when developing our products. We are ISO 9001 and ISO 13485 medical device certified and our products are:

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