

# FlowAnalyser PRO

Premium Gas Flow Analyzer

analyser

the art of measuring

Distributed by:



The FlowAnalyser PRO, with ultimate performance and configurability, enables a wide range of professionals to push the limits of what is possible.

Thanks to its extreme precision and reliability, the FlowAnalyser PRO is capable of testing a wide range of medical devices such as respiratory and anesthesia devices, oxygen flow meters, pressure gauges and suction devices.

Ultra-Low Flow

Automatic Breath Detection



Flow, Pressure, Oxygen,  
Temperature, Humidity

## Features

- Automatic Breath Detection
- Highest Flow Accuracy
- Ultra-Low Flow Measurement
- Fast Sampling Rate of 1000Hz
- Pressure & Vacuum Measurements
- High Resolution Multi-touch Display
- Lightweight Portability
- 16-Hour Battery Life
- Integrated Apps with Guided Test Sequences
- Premium Platform for Future Updates
- Swiss Quality and Precision
- Accredited ISO 17025 Calibration

# Direct Access

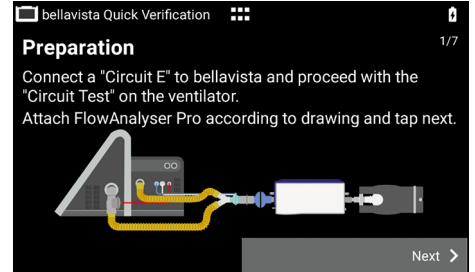


## Easy to Use Interface

The FlowAnalyser PRO offers a beautiful, high resolution multi-touch user interface that is completely configurable.

## Apps with Test Sequences

Run tests easier and faster with our apps. The FlowAnalyser PRO ventilator tester supports you with apps for testing and calibrating many devices. The apps enable safe and fast testing. Entire test sequences are displayed with images and texts and measured automatically. The test results are recorded in a PDF report, which can be signed directly on the screen.



## Versatility

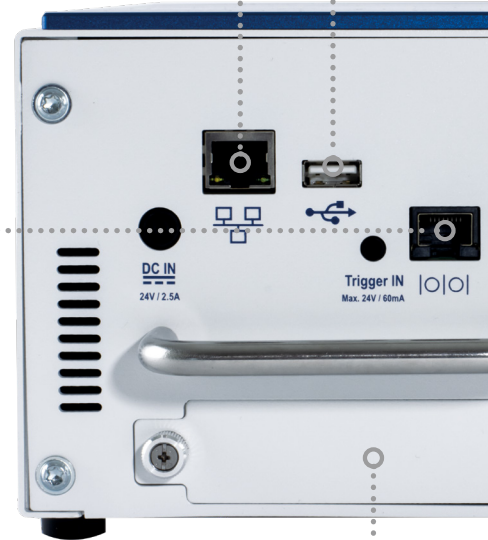
Tests a wide range of medical devices such as respiratory and anesthesia devices, oxygen flow meters, pressure gauges, suction devices, pneumatic systems, and Capnography monitors.

- Remote Control via USB or RS232
- Pairs with our Anesthesia Gas Sensor
- Utilizes our Test lungs

# USB Drive

# Webserver

# Remote Control

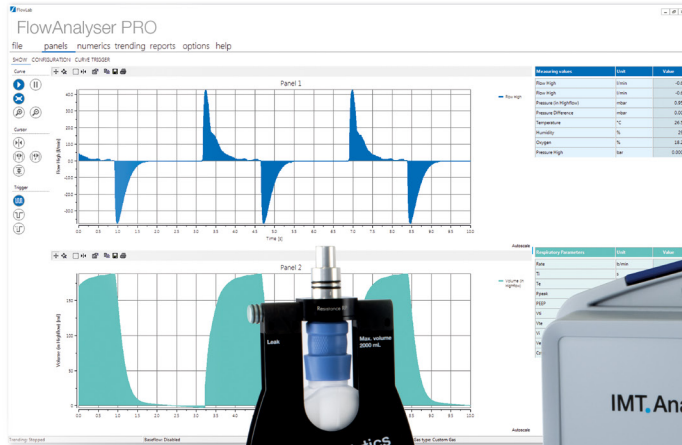


# 16h Battery



## Automatic Breath Detection

Measure breath based respiratory parameters with automatic trigger detection for conventional and high-frequency medical ventilators.



### Quality & Reporting

- Accredited ISO 17025 Calibration
- FlowLab PC Software Reporting Tool
- Test Sequence Editor
- Data Recording



## Reporting Software

### MultiGasAnalyser OR-703

Smallest multi-gas sensor in the world.

FlowAnalyser PRO, in combination with the MultiGasAnalyser, offers the best and easiest solution for testing anesthesia devices. The MultiGasAnalyser OR-703, paired with the FlowAnalyser PRO, can measure CO<sub>2</sub>, N<sub>2</sub>O, Halothane, Enflurane, Isoflurane, Sevoflurane and Desflurane.



### Order information

700.300.000	FlowAnalyser PF-300 PRO
700.300.001	Biomedical Test-Set "Ventilation" FlowAnalyser PF-300 PRO
700.300.002	Biomedical Test-Set "Ventilation & Anaesthesia" FlowAnalyser PF-300 PRO

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# Technical Specification FlowAnalyser PF-300 PRO

Flow and pressure measurements		Range	Accuracy
Flow	Measuring direction	Bidirectional	
	Temperature compensated	Automatic	
	Pressure compensated	Automatic	
	Humidity compensated	Automatic	
	O <sub>2</sub> compensated	Automatic	
	Flow	± 300 L/min	± 1.65 %* or ± 0.04 L/min (for 10..40°C)**
Ultra-Low Flow	± 1 L/min	± 1.65 %* or ± 0.01 L/min (for 10..40°C)**	
Pressure	High Pressure & Vacuum (P <sub>High</sub> )	-1 – 10 bar	± 1 %* or ± 7 mbar**
	Differential Pressure (P <sub>Diff</sub> )	± 250 mbar	± 0.5 %* or ± 0.1 mbar**
	Low Differential Pressure (P <sub>Diff Low</sub> )	-10 – 10 mbar	± 1 %* or ± 0.01 mbar**
	Pressure in Flow Channel (P <sub>Channel</sub> )	-50 – 160 mbar	± 0.5 %* or ± 0.1 mbar**
	Atmospheric Pressure (P <sub>Atmo</sub> )	500 – 1240 mbar	± 1 %* or ± 5 mbar**
Units	Flow	L/min, L/s, cfm, mL/min, mL/s	
	Pressure	bar, mbar, cmH <sub>2</sub> O, inH <sub>2</sub> O, Torr, inHg, hPa, kPa, mmHg, PSI	
Additional measurements		Range	Accuracy
Oxygen	Concentration	0 – 100 %	± 1 % O <sub>2</sub> **
	Pressure compensated	≤ 150 mbar	
Temperature	In Flow Channel	0 – 50 °C	± 1.75 %* or ± 0.5 °C**
Dew point	In Flow Channel	-10 – 50 °C	± 2 %* or ± 1 °C**
Humidity	In Flow Channel	0 – 100 % RH (non condensing)	± 3 % RH ** from 10 % RH to 80 % RH ± 5 % RH ** for <10 % and >80 % RH
CO <sub>2</sub>	Concentration (with optional OR-703)	0 – 15 vol%	± (0.2 vol% + 2 % of reading)
		15 – 25 vol%	unspecified
N <sub>2</sub> O	Concentration (with optional OR-703)	0 – 100 vol%	± (2 % vol% + 2 % of reading)
HAL, ISO, ENF	Concentration (with optional OR-703)	0 – 8 vol%	± (0.15 vol% + 5 % of reading)
		8 – 25 vol%	unspecified
SEV	Concentration (with optional OR-703)	0 – 10 vol%	± (0.15 vol% + 5 % of reading)
		10 – 25 vol%	unspecified
DES	Concentration (with optional OR-703)	0 – 22 vol%	± (0.15 vol% + 5 % of reading)
		22 – 25 vol%	unspecified
Gas types	Air, O <sub>2</sub> , Air/O <sub>2</sub> , N <sub>2</sub> O/O <sub>2</sub> , He, He/O <sub>2</sub> , N <sub>2</sub> , N <sub>2</sub> O, CO <sub>2</sub> , customised gas types		
Gas standards	ATP, ATPD, ATPS, AP21, AP25, STR, STPD0, STPD20, STPD21, STPH, BTPS, BTPS-A, BTPD, BTPD-A, 0/1013, 20/981, 15/1013, 25/991, 20/1013, 23/1013, NTPD, NTPS		
Respiratory parameters		Range	Accuracy
Breath rate	Rate	1 – 2000 bpm	± 1 bpm or ± 1 %**
Time	Inspiratory time (T <sub>i</sub> )	0 – 60 s	± 0.01 s
	Expiratory time (T <sub>e</sub> )	0 – 90 s	± 0.01 s
	Inspiratory hold time	0 – 60 s	± 0.01 s
	Expiratory hold time	0 – 90 s	± 0.01 s
	Post-inspiratory pause (% T <sub>P</sub> )	0 – 100 %	± 0.1 %
Ratio	I:E	1:300 – 300:1	± 2 %*
	T <sub>i</sub> /T <sub>total</sub>	0 – 100 %	± 5 %*
Breath volume	V <sub>ti</sub> , V <sub>te</sub>	± 60 L	± 1.75 %* or ± 0.10 mL
Minute volume	V <sub>i</sub> , V <sub>e</sub>	0 – 300 sL/min	± 1.75 %* or ± 5 mL
Pressure	P <sub>Peak</sub> , P <sub>Mean</sub> , PEEP, P <sub>Plateau</sub>	0 – 160 mbar	± 0.75 %* or ± 0.1 mbar**
Peakflow	PF <sub>Insp</sub> , PF <sub>Exp</sub>	± 300 sL/min	± 1.65 %* or ± 0.04 sL/min**
Compliance	C <sub>stat</sub>	0 – 1000 mL/mbar	± 3 %* or ± 0.01 mL/mbar**
Trigger	Automatic, Adult, Pediatric, HFO, ext. Trigger	Adult, Pediatric, HFO; Adjustable on flow or pressure curves with user-defined limits.	
General information			
Power	100 – 240 VAC, 50 – 60 Hz		
Battery operation	16 hours		
Power consumption	Typical 5VA, max. 25VA (during battery charging)		
Weight	3.2 kg		
Dimensions (w × d × h)	24 × 26 × 13 cm		
Data Storage	Internal, USB stick		
Display	High resolution touch-screen display 5" (800 × 480px)		
Interfaces	USB-A for USB stick, USB-B for FlowLab Software, individual communication, TTL for external trigger, RS232		
Calibration	Annually		
Operating temperature	10 – 40 °C (50 – 104°F)		
Operating Humidity	10 – 90 % R.H.***		
Approvals	CE, CSA (North America), IEC 61010-1:2010, IEC 61326-2:2012		

The greater tolerance is valid:

\*Tolerance related to the measured value, \*\* Absolute tolerance, with steady air flow, \*\*\* Non-condensing, \*\*\*\* The unit sL/min is based on ambient conditions of 0 °C and 1013.25 mbar (DIN 1343).