

Certifier FA Ventilator Test Systems for Gas Flow Analysis



FLOW INSTRUMENTS

Biomedical Test Equipment



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Ideal For Hospital, Home-

Certifier FA Plus Ventilator Test System

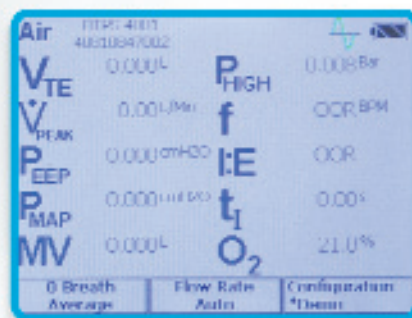
Certifier FA Plus is the full-feature system capable of testing virtually all models of ventilators: adult, pediatric, anesthesia, neonatal and high-frequency.

Highlights

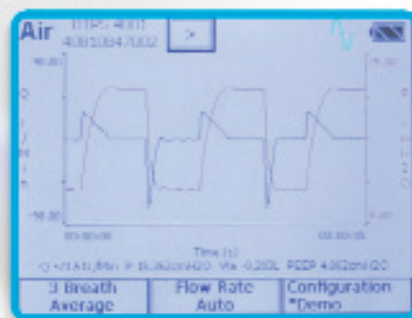
- Colour touch screen graphical user interface
- Real-time graphing mode
- Bi-directional flow measurement
- Data storage using SD Flash card and internal memory
- Access stored data through USB interface
- Report printing capability
- Rechargeable battery plus AC operation

Test Parameters

- Flow
- Peak & Minimum Flow
- Volume (Inhaled and Exhaled)
- Minute Volume
- Low Pressure (Differential)
- Peak & PEEP Pressure
- Mean Airway Pressure
- High Pressure
- Barometric Pressure
- Inspiratory Time
- Expiratory Time
- I:E Ratio
- Respiratory Rate
- Gas Temperature
- Oxygen Concentration (with optional 4073 Kit)



Displays up to 18 test parameters



Graph up to 2 test parameters

Certifier FA Plus

Air, O₂, Air/O₂ mixtures, N₂, CO₂, N₂O

Bi-Directional

STP, ATP, BTPS, BTPD, plus user-defined

Yes

1500 BPM

Yes

-10 to 150 PSI (-.7 to 10 bar) Gauge

-25 to 150 cmH₂O Differential

7 to 25 PSIA (500 to 1700 mbar)

Colour-Graphic Touch Screen

Li-Ion Rechargeable Battery Pack

Yes

1 MB

Included

USB

USB

Care, Field Service, Laboratory and Manufacturing



Certifier FA Ventilator Test System

Certifier FA is a low-cost test system capable of testing multiple parameters of ventilator performance.

Highlights

- Simple, easy to read, user interface
- Backlit LCD display
- Entire kit weighs less than 3 lbs (1.4 Kg)
- Volumes and flow in BTPS, ATP, or STP

Test Parameters

- Flow
- Peak Flow
- Volume
- Stacked Volume
- Minute Volume
- Low Pressure
- Peak & PEEP Pressure
- Barometric Pressure
- Inspiratory Time
- I:E Ratio
- Respiratory Rate
- Oxygen Concentration (with optional 4073 Kit)



Displays 2 test parameters

Features	Certifier FA
Gas Calibrations	Air, O ₂ , Air/O ₂ mixtures, N ₂ O
Flow Direction	Uni-Directional
Flow & Volume Modes	STP, ATP, BTPS
Temperature & Pressure Compensated	Yes
Max Breath Rate	120 BPM
High Frequency Ventilators	
High Pressure	
Low Pressure	-25 to 150 cm H ₂ O Gauge
Barometric Pressure	7 to 30 PSIA (500 to 2000 mbar)
Display	Fixed Segment LCD
Batteries	4-AA Alkaline Batteries
AC Adapter	
Internal Memory	
SD Flash Card	
Computer Interface	
Printing	



Certifier FA PLUS	Gas/Mode	Range	Accuracy**
Flow—High Flow	Air, O ₂	-200 to +300 slpm*	±2% or ±0.075 slpm
	Air/O ₂ Mixtures	0 to 300 slpm	±4% or ±0.1 slpm
	N ₂	-200 to +300 slpm	±3% or ±0.1 slpm
	CO ₂	-40 to +40 slpm	±3% or ±0.1 slpm
Flow—Low Flow	Air, O ₂	0.01 to 20 slpm	±2% or ±0.01 slpm
	N ₂ , CO ₂	0.01 to 20 slpm	±3% or ±0.01 slpm
	N ₂ O	0.01 to 20 slpm	±4% or ±0.025 slpm
Volume-High Flow-Inhaled	Air, O ₂	0.01 to 10 litres STP	±2% Plus 0.02 litres
	Air/O ₂ Mixtures	0.01 to 10 litres STP	±4% Plus 0.02 litres
Volume-High Flow-Exhaled	Air, O ₂	0.01 to 10 litres STP	±3% Plus 0.03 litres
	Air/O ₂ Mixtures	0.01 to 10 litres STP	±4% Plus 0.04 litres
Volume-Low Flow-Inhaled	Air, O ₂	0.01 to 10 litres STP	±2% or ±0.01 litres
	N ₂ O	0.01 to 10 litres STP	±4% or ±0.01 litres
Minute Volume-High Flow		0.01 to 100 litres STP	±3%
Minute Volume-Low Flow		0 to 10 litres STP	±3%
Respiratory Times	Ti, Tip, Te	0.04 to 30 seconds	±2% or ±0.01 seconds
I:E Ratios	I:E, I:Ep	1:100 to 100:1	±4%
Respiratory Rate	f	1 to 1500 breaths per minute	±2% or 0.1 bpm
Low Pressure	All	-25 to +150 cm H ₂ O	±0.5% or ±0.15 cm H ₂ O
High Pressure		-10 to +150 PSI (-0.7 to 10 bar)	±1% or 0.1 PSI (7 mbar)
Barometric Pressure		7 to 23 PSI (500 to 1600 mbar)	±0.16 PSI (11 mbar)
Oxygen Concentration		21% to 100%	2% of concentration

*slpm = Standard Litres per Minute

**Accuracy stated as a percent of reading at TSI standard gas conditions. See operators manual for more complete specifications

To Order Certifier FA Plus

Model	Description
4080	High-Flow Standard Kit

Optional Modules and Accessories

Model	Description
4073	Oxygen Sensor Kit
4082	Low-Flow Module

Part #	Description
1208061	Extra battery pack and charger kit
1303860	Printer cable



4080 High-flow test system with 4082 Low-flow kit (sold separately)

Certifier FA	Gas	Range	Accuracy**
Flow—High Flow Module	Air, O ₂	0 to 300 slpm*	±2% or ±0.075 slpm
	Air/O ₂ Mixtures	0 to 300 slpm	±4% or ±0.1 slpm
Flow—Low Flow Module	Air, O ₂	0.01 to 15 slpm	±2% or ±0.01 slpm
	N ₂ O	0.01 to 15 slpm	±4% or ±0.025 slpm
Volume-High Flow-Inhaled	Air, O ₂	0.01 to 10 litres STP	±2% Plus 0.02 litres
	Air/O ₂ Mixtures	0.01 to 10 litres STP	±4% Plus 0.02 litres
Volume-Low Flow-Inhaled	Air, O ₂	0.01 to 9.999 litres STP	±2% or ±0.01 litres
	N ₂ O	0.01 to 10 litres STP	±4% or ±0.01 litres
Minute Volume-High Flow		0.01 to 99 litres STP	±7%
Minute Volume-Low Flow		0 to 9.999 litres STP	±7%
Inspiratory Time		0.25 to 60 seconds	±0.01 seconds
I:E Ratio— High Flow		1:100 to 100:1	±5%
I:E Ratio— Low Flow		1:15 to 15:1	±5%
Respiratory Rate		0.5 to 120 breaths per minute	±5%
Low Pressure		-25 to +150 cm H ₂ O	±0.75% or ±0.2 cm H ₂ O
Oxygen Concentration		21% to 100%	2% of concentration
Barometric Pressure		7 to 29 PSI (500 to 2000 mbar)	±0.16 PSI (11 mbar)

To Order Certifier FA

Model	Description
4070	High-Flow Standard Kit

Optional Modules and Accessories

Model	Description
4073	Oxygen Sensor Kit
4072	Low-Flow Module

Part #	Description
1319288	Hard shell carrying case



4070 High-flow test system with 4073 Oxygen sensor kit (sold separately)

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Contact your local TSI Distributor or visit our website www.tsi.com for more detailed specifications.