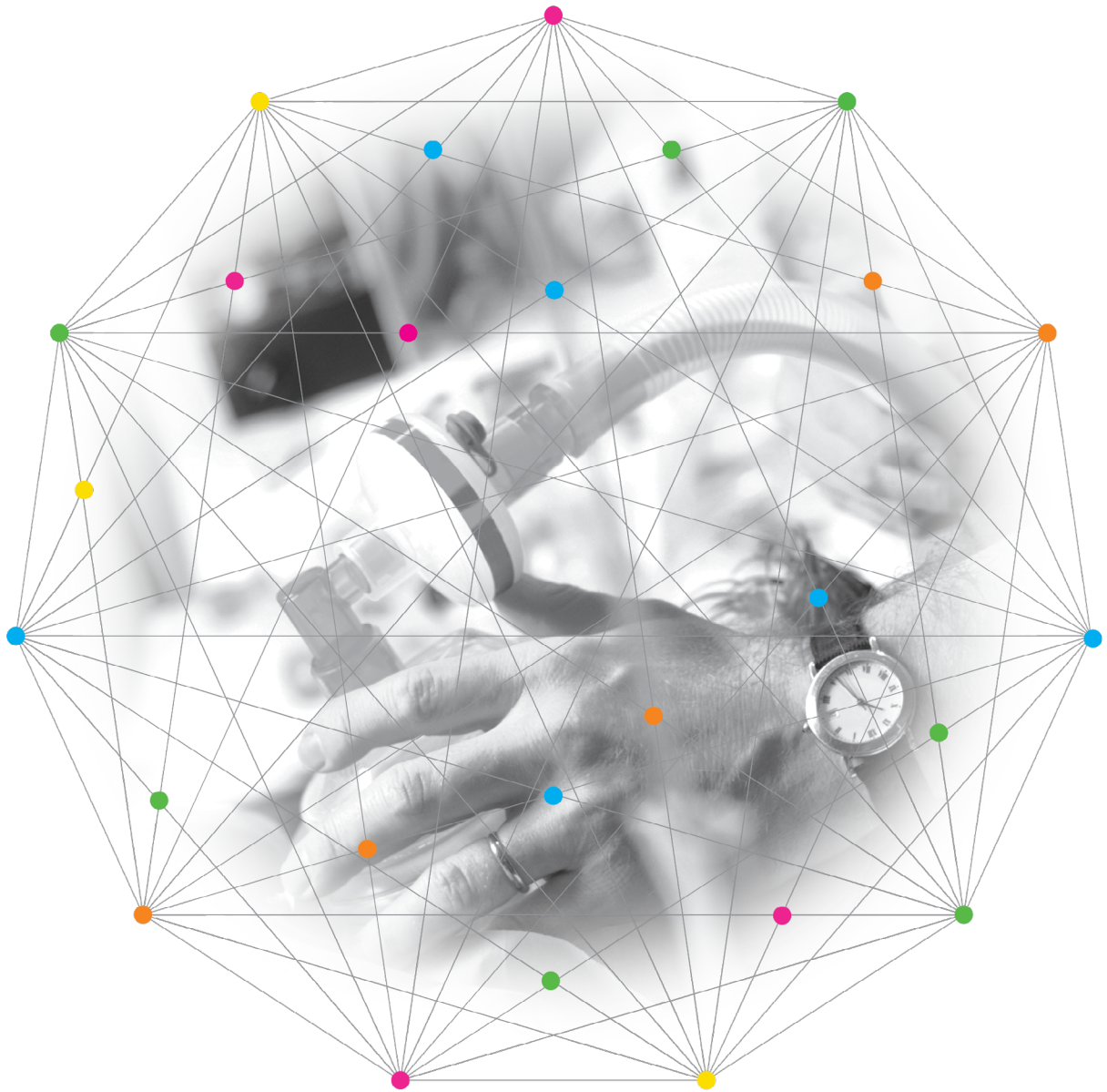


CERTIFIER[®] FA VENTILATOR TEST SYSTEMS

FOR GAS FLOW ANALYSIS



UNDERSTANDING, ACCELERATED

IDEAL FOR HOSPITAL, HOME-CARE, FIELD SERVICE, LABORATORY AND MANUFACTURING

CERTIFIER® FA PLUS VENTILATOR TEST SYSTEM

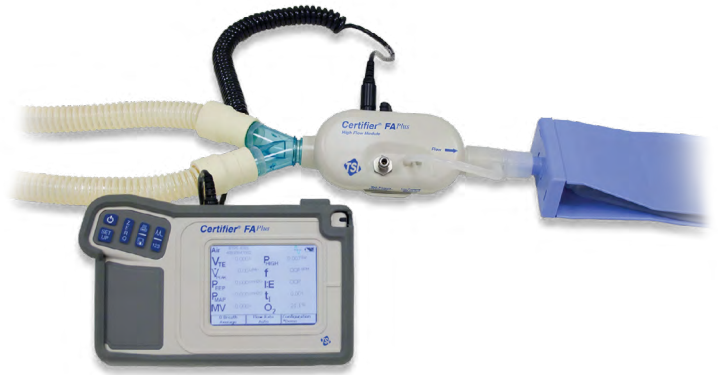
Certifier® FA Plus is the full-feature system capable of testing virtually all models of ventilators: adult, pediatric, anesthesia, neonatal and high-frequency.

Highlights

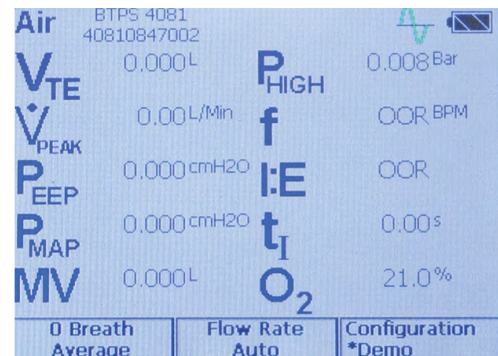
- + Color touch screen graphical user interface
- + Real-time graphing mode
- + Bi-directional flow measurement
- + Data storage using SD Flash card and internal memory
- + Stored data accessible through USB interface
- + Report printing capability
- + Rechargeable battery plus AC operation

Test Parameters

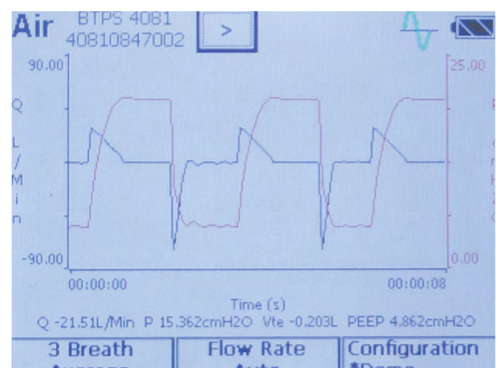
- + Flow
- + Peak & Minimum Flow
- + Volume (Inhaled and Exhaled)
- + Minute Volume
- + Low Pressure (Differential)
- + Peak & PEEP Pressure
- + Mean Airway Pressure
- + High Pressure
- + Barometric Pressure
- + Inspiratory Time
- + Expiratory Time
- + I:E Ratio
- + Respiratory Rate
- + Gas Temperature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



| Features | Certifier FA Plus |
|------------------------------------|--|
| Gas Calibrations | Air, O ₂ , Air/O ₂ mixtures, N ₂ , CO ₂ , N ₂ O |
| Flow Direction | Bi-Directional |
| Flow & Volume Modes | STP, ATP, BTPS, BTPD, plus user-defined |
| Temperature & Pressure Compensated | Yes |
| Max Breath Rate | 1500 BPM |
| High Frequency Ventilators | Yes |
| High Pressure | -10 to 150 PSI (-.7 to 10 bar) Gauge |
| Low Pressure | -25 to 150 cm H ₂ O Differential |
| Barometric Pressure | 7 to 25 PSIA (500 to 1700 mbar) |
| Display | Color-Graphic Touch Screen |
| Batteries | Li-Ion Rechargeable Battery Pack |
| AC Adapter | Yes |
| Internal Memory | 1 MB |
| SD Flash Card | Included |
| Computer Interface | USB |
| Printing | USB |



Displays up to 18 test parameters



Graph up to 2 test parameters

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)



| 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 | - |



Displays 2 test parameters



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

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 liters STP | ±2% Plus 0.02 liters |
| | Air/O ₂ Mixtures | 0.01 to 10 liters STP | ±4% Plus 0.02 liters |
| Volume-High Flow-Exhaled | Air, O ₂ | 0.01 to 10 liters STP | ±3% Plus 0.03 liters |
| | Air/O ₂ Mixtures | 0.01 to 10 liters STP | ±4% Plus 0.04 liters |
| Volume-Low Flow-Inhaled | Air, O ₂ | 0.01 to 10 liters STP | ±2% or ±0.01 liters |
| | N ₂ O | 0.01 to 10 liters STP | ±4% or ±0.01 liters |
| Minute Volume-High Flow | - | 0.01 to 100 liters STP | ±3% |
| Minute Volume-Low Flow | - | 0 to 10 liters STP | ±3% |
| Respiratory Times | Ti, Tip, Te | 0.04 to 30 seconds | ±2% or ±0.01 seconds |
| I:E Ratios | I:E, I:Eip | 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 Liters per Minute

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

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4070 High-flow test system with
4073 Oxygen sensor 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 liters STP | ±2% Plus 0.02 liters |
| | Air/O ₂ Mixtures | 0.01 to 10 liters STP | ±4% Plus 0.02 liters |
| Volume-Low Flow-Inhaled | Air, O ₂ | 0.01 to 9.999 liters STP | ±2% or ±0.01 liters |
| | N ₂ O | 0.01 to 10 liters STP | ±4% or ±0.01 liters |
| Minute Volume-High Flow | - | 0.01 to 99 liters STP | ±7% |
| Minute Volume-Low Flow | - | 0 to 9.999 liters 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 |
| Barometric Pressure | - | 7 to 29 PSI (500 to 2000 mbar) | ±0.16 PSI (11 mbar) |
| Oxygen Concentration | - | 21% to 100% | 2% of concentration |

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 |

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 |



UNDERSTANDING, ACCELERATED

TSI Incorporated - Visit our website www.tsi.com for more information.

| | | | |
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| France | Tel: +33 4 91 11 87 64 | Singapore | Tel: +65 6595 6388 |
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