



THE VENTILATOR
PROJECT

Continuous Ventilatory Support Solution



TVPHEALTH.ORG

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Built to Breathe



Our Story

The Ventilator Project (TVP) is a non-profit organization based in Boston. At the onset of the Covid-19 pandemic our founders realized the massive impact that the virus would have on the world. It was evident that there was a major mismatch in the number of people who were projected to need ventilators for treatment and the supply of these life-saving devices globally. After figuring out why the ventilator shortage existed in the first place, TVP brought together some of the brightest minds from across the globe to develop a low-cost ICU-style ventilator.

Our team of medical professionals, engineers, and supply chain experts has redefined the traditional medical supply chain and medical device business model. In turn, TVP's team has developed an innovative solution to the global ventilator emergency, AIRA.

DISCLOSURES

The Ventilator Project, Inc. has received its Emergency Use Authorization (EUA) from the FDA.

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No material is intended to provide medical or other professional advice. All designs are intended for investigational use only.

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AIRA OVERVIEW

EASY TO USE

AIRA comes equipped with an LCD user interface that allows operators to change settings simply, along with graphs that document the patients recent historical performance.

PRESSURE CONTROL (PCV)

Allows the practitioner to control ventilatory pressure throughout the cycle in order to generate the pressure necessary to expand the collapsed alveoli.

INNOVATIVE SUPPLY CHAIN

AIRA doesn't rely on the overwhelmed medical supply chain. Designed to manufacture, AIRA can be rapidly produced in high quantity.

VOLUME CONTROL (VCV)

Defines the volume administered to the patient (tidal volume V_t as the control variable). Airway pressure results from the compliance of the lungs and the inhaled volume.

SIMPLE INTEGRATION

A simple & intuitive ventilator that eliminates the need for robust onboarding training. In line with what Respiratory Therapists are used to, AIRA can be integrated almost instantly into operation.

PRESSURE SUPPORT (PSV)

A flow-cycled modality in which, as in A/C ventilation, every breath is assisted and the positive pressure is automatically terminated at the end of inspiration.

TECHNICAL SPECIFICATIONS

DIMENSIONS

- Height: 110 mm
- Width: 306.5 mm
- Depth: 305 mm
- Weight: 9.5 kg
- Screen Size: 10.1 in

CONTROLS

- Breath Rate: 10 - 30 BPM
- PEEP: 5 - 20 cmH2O
- FI_{O2}: 21% - 100%
- I:E Ratio: 3:1 - 1:3
- Pressure Control: 10 - 45 cmH2O
- Pressure Support: 10 - 45 cmH2O
- Tidal Volume: 200mL - 850mL

OPERATING

- Ventilation Modes:
- Pressure Control (PCV)
 - Volume Control (VCV)
 - Pressure Support (PSV)

Battery Backup: 2 Hrs.

MONITORS

- Breath Rate : 0 -100 BPM
- PEEP: 0 - 75 cmH2O
- Peak Inspiratory Pressure: 0 - 75 cmH2O
- Graphic Waveforms:
 - Pressure: 0 - 75 hPa
 - Volume: 0 - 2000 mL
 - Flow: 0 - 120 L/min

ALARMS

PATIENT ALARMS

High Pressure (Over Pressure)

- Not settable by user
- 35 cmH2O
- High Priority
- Alarm Delay: 200ms

PIP (Peak Inspiratory Pressure) not achieved

- Not settable by user
- PIP - 2 cmH2O
- Medium Priority

PIP (Peak Inspiratory Pressure) Exceeded

- Not settable by user
- PIP - 2 cmH2O
- Medium Priority

PEEP (Positive End Expiratory Pressure) not achieved

- Not settable by user
- PEEP - 2 cmH2O
- Medium Priority

PEEP (Positive End Expiratory Pressure) exceeded

- Not settable by user
- PEEP - 2 cmH2O
- Medium Priority

Tidal Volume not achieved

- Not settable by user
- Tidal Volume - 50mL
- Medium Priority

Tidal Volume not achieved

- Not settable by user
- Tidal Volume - 50mL
- Medium Priority

Apnea (Low Minute Volume)

- Set with breath rate and pressure in pressure support
- Activates when mandatory breaths must be performed
- Medium Priority

MACHINE ALARMS

AC Power Lost

- Medium Priority
- Indicates switchover to internal electrical power source

Low Battery

- Medium Priority
- Indicates 15 minutes of internal electrical power left.

Critically Low Battery

- Medium Priority
- Indicates 15 minutes of internal electrical power left

Power off in Mandatory Ventilation Mode

- Medium Priority
- Indicates 15 minutes of internal electrical power left

ENVIRONMENTAL SPECS

Temperature: +5 °C to 40 °C (+41 °F to 104 °F) (operating);
-40 °C to +70 °C (-40 °F to +158 °F) (storage and transport)

Relative Humidity: +5 °C to 40 °C (+41 °F to 104 °F) (operating);
-40 °C to +70 °C (-40 °F to +158 °F) (storage and transport)

Barometric Pressure: 600 hPa to 1100 hPa (8.7 psi to 16.0 psi) (operating);
-40 °C to +70 °C (-40 °F to +158 °F) (storage and transport)

Altitude: -152 m to 2000 m (-500 ft to 6562 ft)

POWER BATTERY BACKUP

EXTERNAL AC POWER SUPPLY

Input voltage: 100-240V

Input frequency: 2-1A

Input current: 50-60 Hz

INTERNAL BATTERY

Quantity of batteries: One

Battery type: SLA1104 Battery Lead acid (AGM)

Input current: 50-60 Hz

Battery run time: 2 hours (powered by one new fully-charged battery in standard working condition)



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For more information, please contact us.

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www.OxVent.org



Unit G3 Kingston Business Park, Abingdon UK OX13 5FE

info@oxvent.org

