INSPIRE - 100

An Emergency Ventilator

TekMedika Pvt. Ltd.

INSPIRE-100 is a patent-pending ventilator design tailored for adult patients, providing comprehensive ventilatory support from initiation to weaning.

It features a user-friendly Human-Machine Interface with a clear front panel and advanced remote monitoring capabilities accessible via laptops, desktops, tablets, or mobile devices.

This device is particularly suited for facilities without access to compressed gas or oxygen pipelines and is built to withstand challenging environmental conditions.

INSPIRE-100 supports four commonly used ventilation modes: CMV, ACV, SIMV, and PSV. It offers a full range of breath parameters across all modes, ensuring complete assistance for patient-initiated breathing.

- ✓ Unmatched Affordability
- ✓ Unmatched Remote Monitoring via WiFi
- ✓ Unmatched Ease-of-use
- ✓ Works without Compressed Air Pipeline
- ✓ Works with Oxygen Cylinder or Concentrator
- ✓ Field Upgradeable
- ✓ Complete Set of mainstream Parameters

Intended Use

Adult Patients only

- ✓ Acute Respiratory Distress Syndrome (ARDS)

- ✓ Chronic Obstructive Pulmonary Disease (COPD)

- ✓ Obese Hypoventilation Symptoms (OHS)

- ✓ Cheyne-Stokes breathing (CSR/CSA)

- ✓ Neuromuscular Diseases

- ✓ Pneumonia

- ✓ Asthma

- ✓ Drug Overdose

- ✓ Snake Bites

Technical Specs

Mode	Description
CMV	Continuous Mandatory
ACV	Synchronized Assist Control
SIMV	Synchronized Intermittent Mandatory
PSV	Pressure Supported (BiPAP equivalent)

Volume Control Parameter	Range
Tidal Volume (ml)	200 - 600
Respiration Rate (bpm)	10 - 30
I:E Ratio	1:1 - 1:3
PEEP (cmH2O)	4 - 15
FiO2 (System Managed)	External

Pressure Support Parameter	Range
Support Pressure (cmH2O)	5 - 35
Flow Trigger Termination (%)	10 - 60
Time Trigger Termination (secs)	1.0 - 3.0

Full Set of ALARMS	
Max Pressure	Pressure Leak
Pressure Loss	Airway Blockage
Cough / Hiccups	System Temperature
Inconsistent Parameters	Extreme Parameters
Replace BVM	BVM Size
and many more ...	

Power Consumption 120W

Breath Synchronization for Patient Comfort

Breath Synchronization in SIMV Mode
e.g. RR=15 bpm (4 secs per breath)

Mandatory — Mandatory — Mandatory

4 secs — 4 secs

Sync Window — Sync Window

Mandatory — Spontaneous — Cancelled — Mandatory — Spontaneous — Mandatory

4 secs — 4 secs
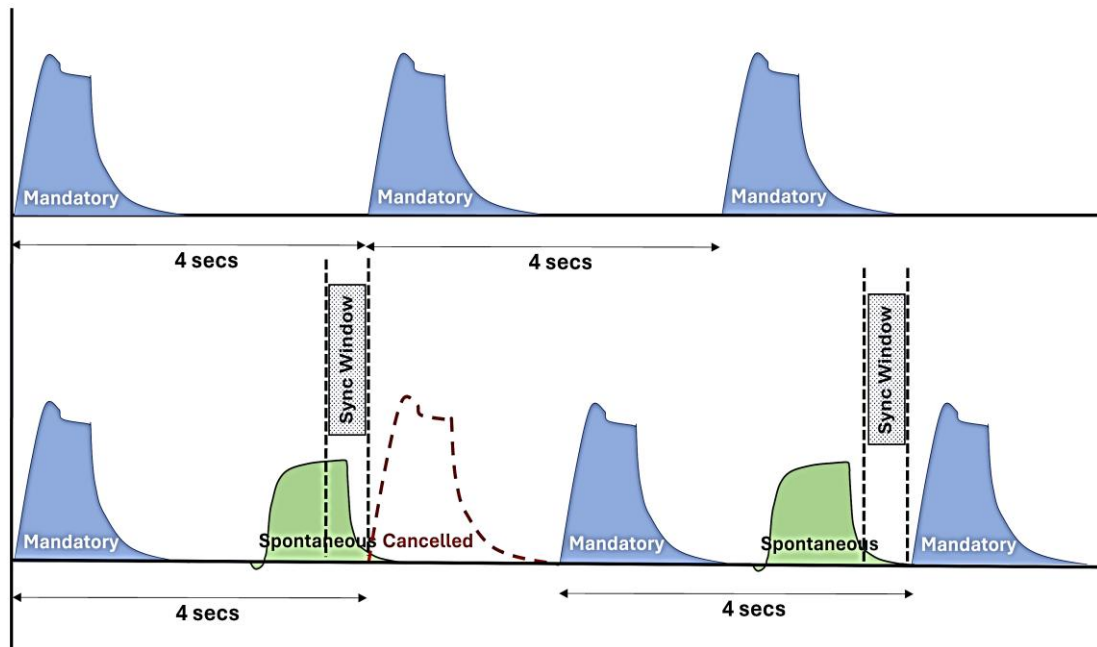
Breath Synchronization in ACV Mode
e.g. RR=15 bpm (4 secs per breath)

Mandatory — Mandatory — Mandatory

4 secs — 4 secs

Mandatory — Spontaneous — Cancelled — Mandatory — Mandatory

4 secs — 4 secs — 4 secs
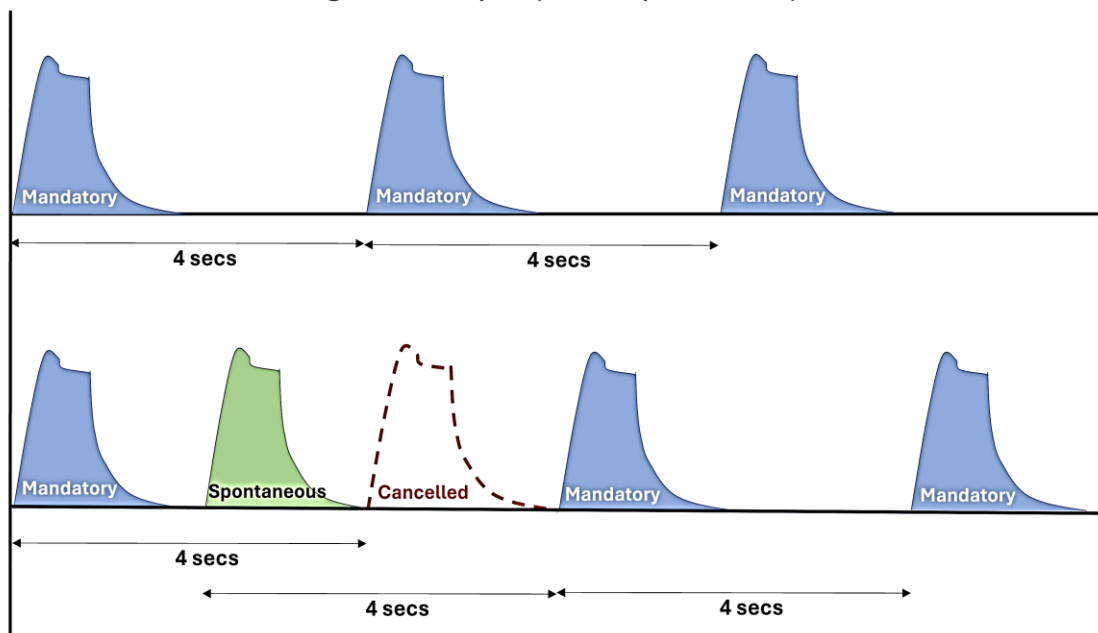
Breathing Circuit

Simple, Off-the shelf, Single-limbed and compatible with Standard Accessories

INSPIRE-100

BVM Bag

Humidifier

Reservoir

Oxygen Source

Pressure Lines

NR

Patient Mask or Endotracheal Tube

HEPA/HME

Pressure Connector

PEEP Valve
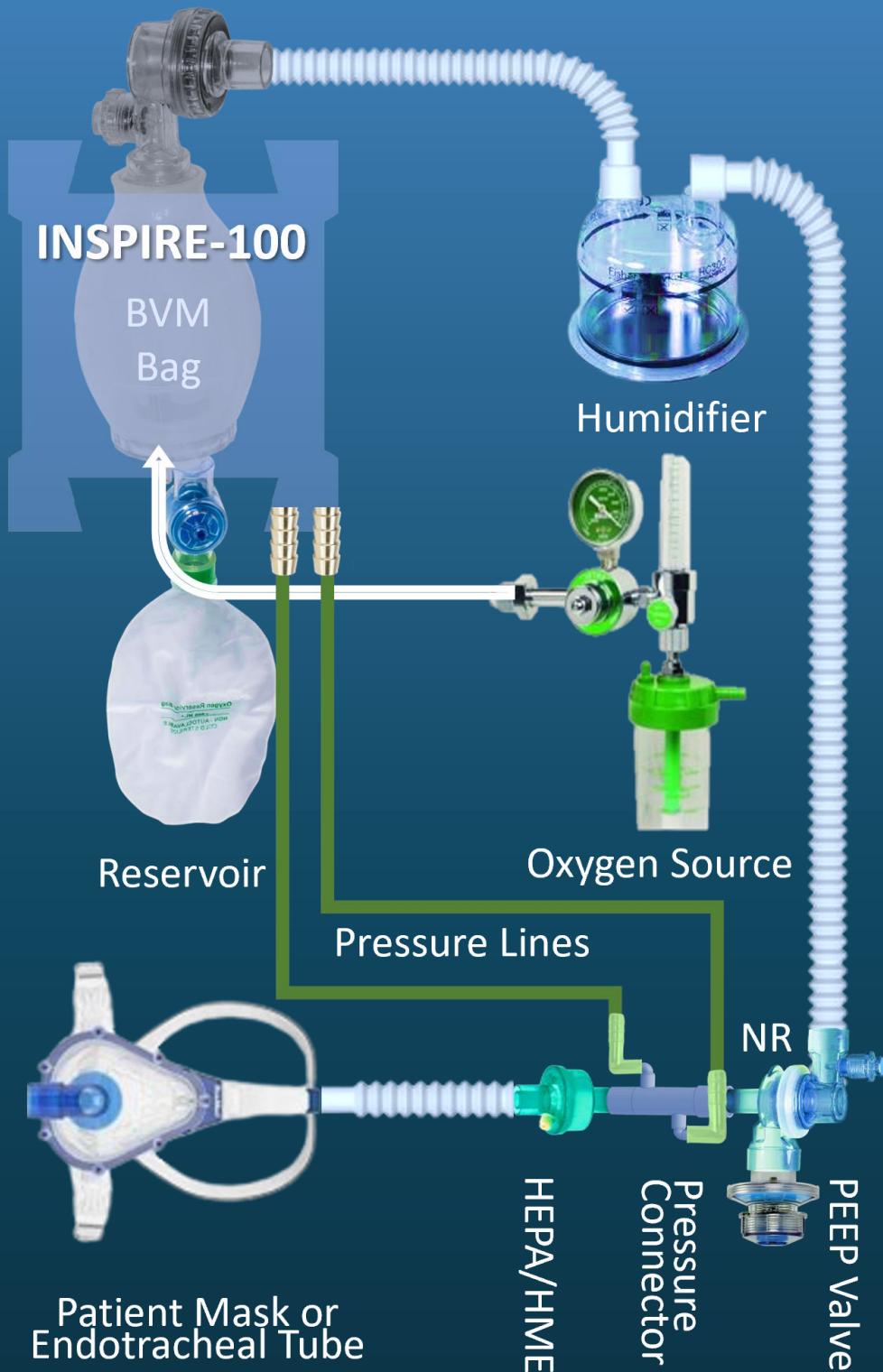
Remote Monitoring
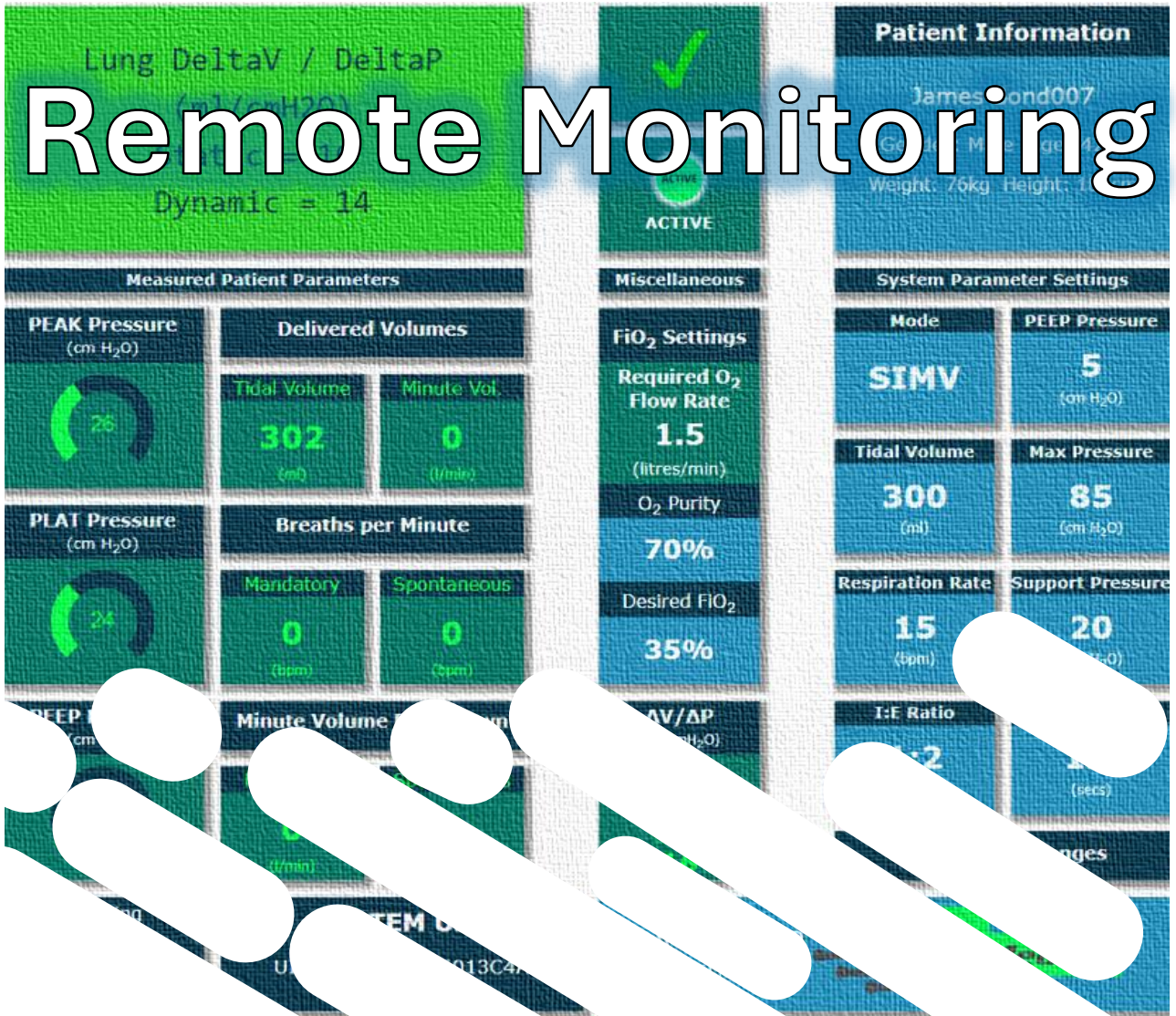
- ✓ Accessible on Laptops & Mobile devices
- ✓ Search & Range Selection
- ✓ Snapshots View
- ✓ Waveforms View
- ✓ Charts View
- ✓ Statistics View
- ✓ Recording and Playback
- ✓ Multi-system Display

Powerful Search for Combination of Events

Range Selector to Navigate Any View Back and Forth in Time

Charts for All Parameters

Volumes

Events
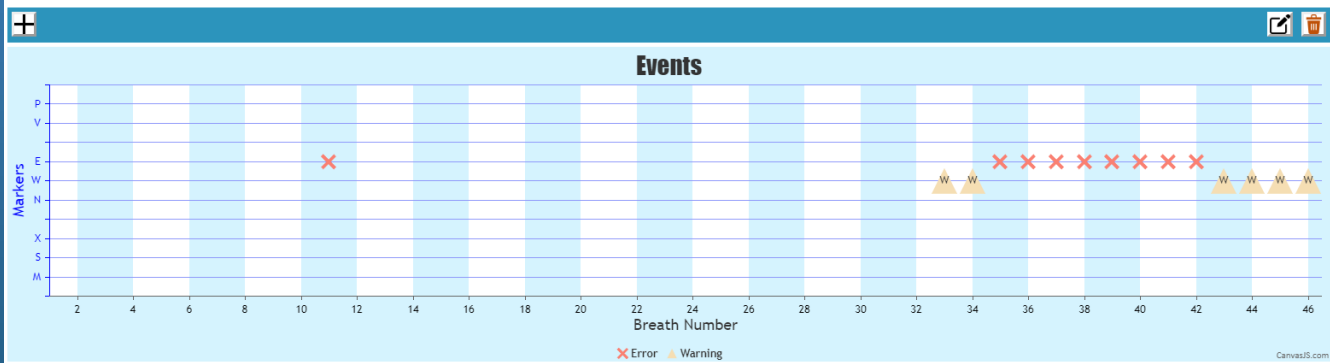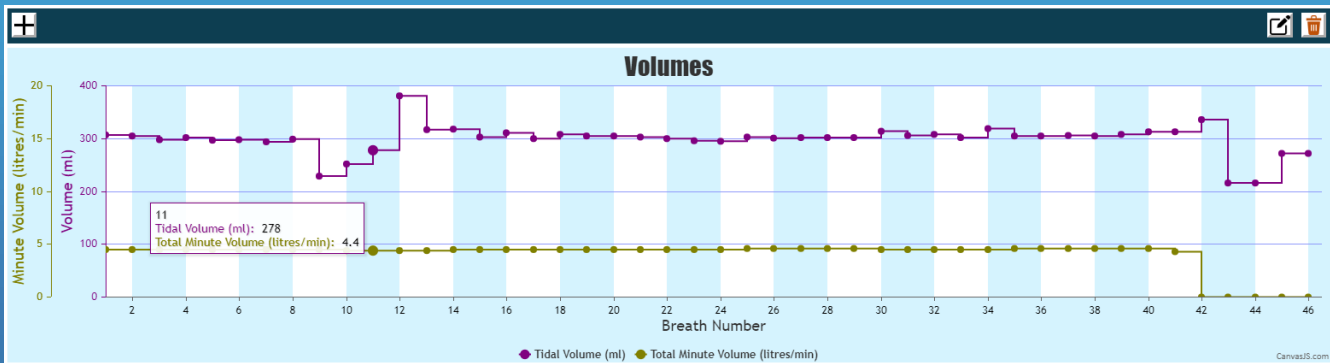
Pressure & Flow Waveforms

Breath Range Selector

Normal Breaths			Maintenance Breaths			Exception Breaths	
Mandatory Volume Control	Spontaneous Volume Control	Spontaneous Pressure Control	Mandatory Volume Control	Spontaneous Volume Control	Spontaneous Pressure Control	Abnormal Seeming Breath	Error Causing Breath

Broken lines indicate few missing datapoints
Red label indicates too many missing datapoints

Snapshots for each Breath

Breath Range Selector

Breaths per minute
Mandatory BPM=16
Spontaneous BPM= 0
Breath #44869

Measured Patient Parameters

PEAK Pressure (cm H2O): 22

Delivered Volumes
Tidal Volume	Minute Vol.
390 (ml)	6.2 (l/min)

PLAT Pressure (cm H2O): 16

Breaths per Minute
Mandatory	Spontaneous
16 (bpm)	0 (bpm)

PEEP Pressure (cm H2O): 8

Minute Volume Breakdown
Mandatory	Spontaneous
6.2 (l/min)	0 (l/min)

- Warning
- Error
- Recording
- Dashboard

SYSTEM UID
UID_28DBA879A201038B
(BENGALURU)

Miscellaneous

✓ ACTIVE

FiO2 Settings
Required O2 Flow Rate
0.0
(litres/min)

O2 Purity
19%

Desired FiO2
19%

ΔV/ΔP (ml/cmH2O)
Dynamic 28
Static 48

INSPIRE-100 Dashboard — TekMedika

Patient Information

Jane Bonda

Gender: Female Age: 32yr
Weight: 62kg Height: 170cm

System Parameter Settings

Mode	PEEP Pressure
SIMV	8 (cm H2O)

Tidal Volume	Max Pressure
400 (ml)	45 (cm H2O)

Respiration Rate	Support Pressure
16 (bpm)	20 (cm H2O)

I:E Ratio	Support End
1:2 (ratio)	20% (% Peak Flow)

No Pending Changes

INSPIRE - 100

Breaths per minute
Mandatory BPM=16
Spontaneous BPM= 0
Breath #44869

PEAK	PLAT	PEEP
22 cm H2O	16 cm H2O	08 cm H2O

VT (MV)	E:I	RR
400 ml	2 ratio	16 bpm

PEEP	PMAX	PS	TPS
08 cm H2O	45 cm H2O	20 cm H2O	20 flow/sec

START PAUSE MENU NO CANCEL SELECTOR YES MUTE RESET

TOTAL DURATION	TOTAL BREATHS
46:53 (Hrs:Mins)	44869

Detailed Statistics

Parameters Measured

Parameter	Units	Min	Max	Avg
Peak Pressure	cmH20	21	26	25.7
Plateau Pressure	cmH20	19	24	23.7
PEEP Pressure	cmH20	3	6	5.0
Tidal Volume Delivered	ml	284	966	311.9
Total Minute Volume	litres/min	0	5.8	4.3
Mandatory Minute Volume	litres/min	0	4.6	4.1
Spontaneous Minute Volume	litres/min	0	1.9	0.2
Mandatory BPM	bpm	0	15	13.8
Spontaneous BPM	bpm	0	2	0.2
FIO2	%	35	35	35.0
Static ΔV/ΔP	ml/cmH20	0	18	15.9
Dynamic ΔV/ΔP	ml/cmH20	0	16	14.4
System Temperature	degC	35	35	35.0

Miscellaneous Information

Information	Value
Number of Breaths	120
Number of Mandatory Breaths	118
Number of Spontaneous Breaths	2
Number of Maintenance Breaths	0
Number of CMV Spontaneous Breaths	0
Number of Missing Intervals (Packet loss)	0
Number of WiFi Disconnects	0
Number of Notifications	0
Number of Warnings	0
Number of Errors	0

Static Information

Patient Name: James Bond007
Gender: Male Age: 42yr
Weight: 76kg Height: 185cm

System Location: Bengaluru
Location Altitude: 3000 ft
Location Atmospheric Pressure: 930 cmH2O
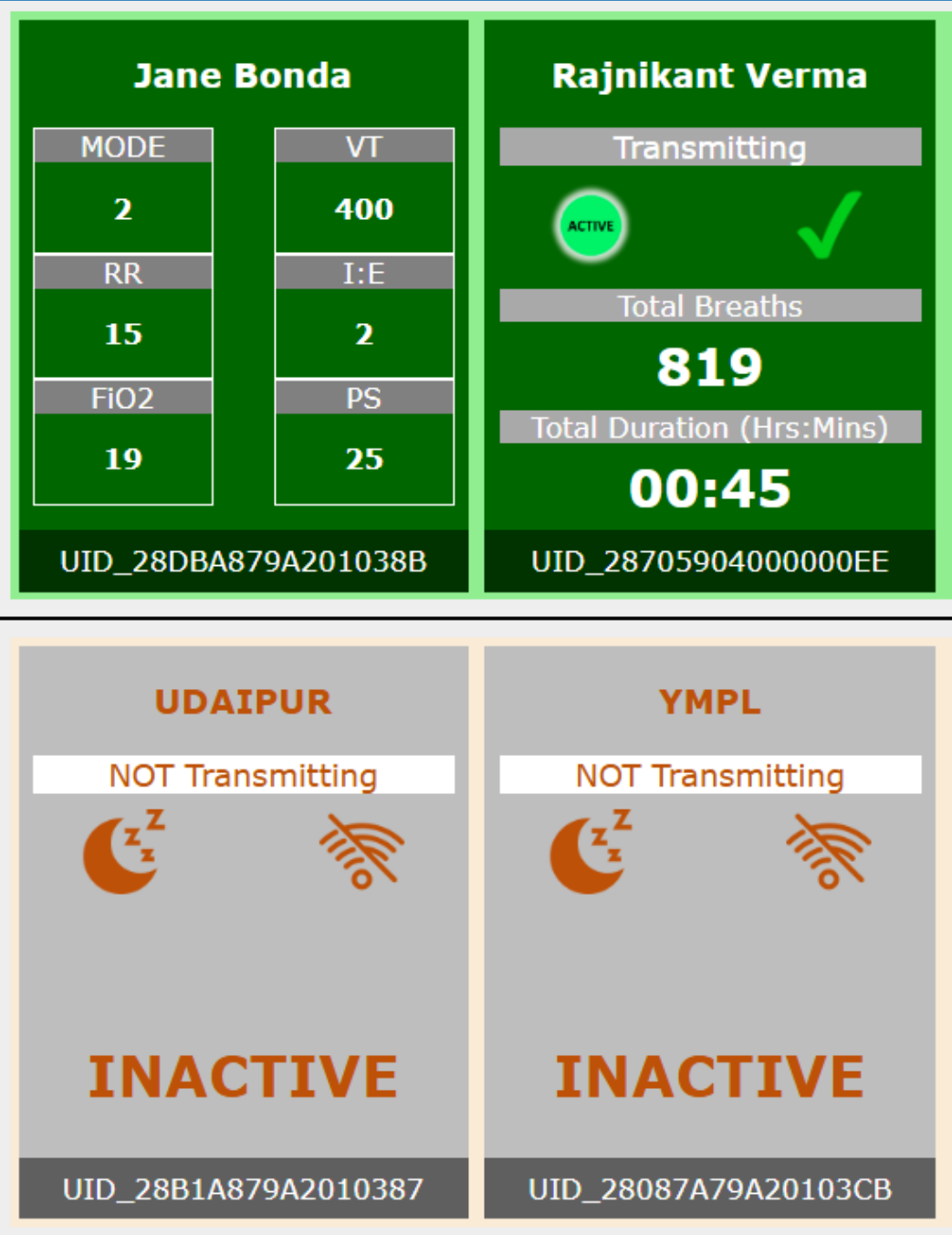Location Atmospheric Oxygen: 19%

Parameter Settings Used

Parameter	Units	Values
Ventilation Mode	mode	SIMV
Tidal Volume	ml	300
Minute Volume	l/min	2
Respiration Rate	bpm	15
I:E Ratio	ratio	1:2
PEEP Pressure	cmH20	5
Maximum Pressure	cmH20	85
Support Pressure	cmH20	20
Support Pressure Termination	%flow,secs	1.5
FIO2	%	35

Sequence of Parameter Combinations

MODE	VT/MV	RR	I:E	PEEP	PMAX	PS	TPS	FIO2	#BREATHS	Before#
SIMV	300	15	1:2	5	85	20	1.5	35	119	2

Multi-system Monitoring For Nurses Station

Jane Bonda

MODE		VT
2		400
RR		I:E
15		2
FiO2		PS
19		25

UID_28DBA879A201038B

Rajnikant Verma

Transmitting

ACTIVE ✓

Total Breaths

819

Total Duration (Hrs:Mins)

00:45

UID_28705904000000EE

UDAIPUR

NOT Transmitting

INACTIVE

UID_28B1A879A2010387

YMPL

NOT Transmitting

INACTIVE

UID_28087A79A20103CB

A summary state of all systems can be displayed on one screen. Each system is shown as a tile.

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