

DemcAir specifications.



DEMCAIR: A COMPLETE ICU VENTILATION SYSTEM

Demcon macawi respiratory systems developed the DemcAir during 2020 for the Dutch Government with the objective to support Covid-19 patients on ICU's. We offer a solution for a short time-to-market introduction of your own branded ICU ventilator, by licensing of the DemcAir. The DemcAir can be adapted to your own specifications and wishes in order to make an indigenous and unique ICU ventilator. We can also support you regarding CE and FDA certification and preparation of local production.

USAGE

Environment	Intensive and medium care
Patient groups	- Adults - Pediatrics

VENTILATION MODES

PC	Pressure controlled mode allowing the patient to trigger synchronized breaths or supportive breaths
PRVC	Pressure controlled mode allowing the patient to trigger synchronized breaths. The mode determines the driving pressure above peep as such to guarantee the expired volume, Vte
PS	Pressure Support mode allowing the patient to receive PS stroke with an adjustable pressure. Including settable apnea detection and PRCV backup ventilation
VC	Volume controlled mode allowing the patient to trigger synchronized breaths or supportive breaths

VENTILATION SPECIFICATIONS

	Range	Accuracy
Pressure delivery	1 - 90 mbar	± (2mbar + 5%)
Volume delivery	50 – 2000 ml	± (10ml + 10%)
Oxygen delivery	21 – 100 %	± (2.5vol% + 2.5%)
		Accuracy
Pressure monitoring		± (2mbar + 4%)
Volume monitoring		± (4ml + 15%)
Oxygen monitoring (based on galvanic separated measurement)		± (2.5vol% + 2.5%)

INTERFACES

Supply connections (backside of machine)

Mains inlet	100 - 230V, 50-60 Hz, IEC13
Oxygen inlet	3-6 bar, NIST
Nurse call	NO potential free relay contact, RJ11 (6p4c)
Ethernet	
USB-A	
Internal battery	> 2 hours

Patient connections (front side of machine)

Inspiration port	22mm OD/15mm ID, conical	
Patient sensor port	Pressure	6mm pneumatic line
	Flow	6mm pneumatic line
Expiration port		22mm ID, conical. Suitable to plug in pneumatic expiration valve
Nebulizer outlet port		8mm pneumatic line

ALARMING

All required alarms from standards are available including light and sound profiles. Alarm history of current patient available.

GUI

15.6 inch, ratio 16:9 capacitive touch screen GUI, usable with gloves

Available on GUI	Ventilation Settings	PC	PEEP, PSabove peep, PCabove peep, RR, I:E, O2, flow trigger
		PCVR	PEEP, Vt, RR, I:E, O2, flow trigger
		PS	PEEP, PSabove peep, FCT, O2
		VC	PEEP, PSabove peep, Vt, RR, I:E, O2, flow trigger
	Measurements and linked alarms (low and high)	PEEP, Ppeak, Mve, Vte, FiO2, RR, O2	
	Real-time curves	Pressure, flow, volume	
	Maneuvers	O2 boost, P0.1, Nebulizer, NIV ventilation	

ADDITIONAL FUNCTIONALITY

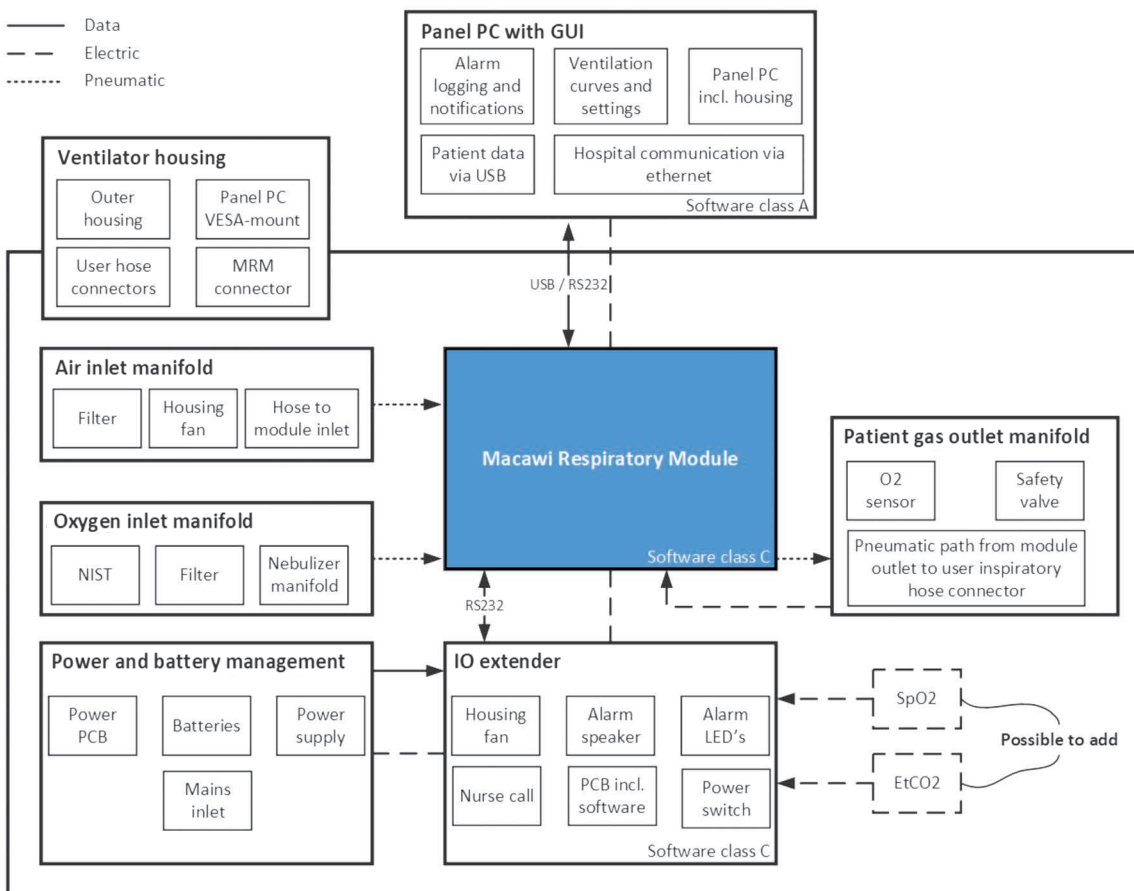
Ventilation mode swapping	Without ventilation interruption
O2 boost	Deliver 100% O2 to the patient for 2 minutes
P0.1	Execute P0.1 maneuver during PS mode
Nebulizer	Create synchronized nebulizer flow, 8lpm O2
Tidal volume calculation	Based on predicted body weight
Machine tests	System test Hose integrity and compliance test Patient flow sensor and hose calibration O2 cell calibration
NIV ventilation	Ability to adjust all monitoring data for NIV ventilation
Multi language	EN - NL

DIMENSIONS AND WEIGHT

Property	Value
Dimensions	≈ 410 x 390 x 430 mm
Volume	≈ 26,8 L
Weight	≈ 11,5 kg

Ready for CE-certification.

The conceptual system architecture below shows the required components to develop a complete ICU ventilation system.



The license will give you access to all hardware and software documentation, including the software source code, CAD files and Bill of Materials. The respiratory module will be supplied by Demcon macawi respiratory systems and is excluded from the license model.

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