



elisa 300

Specifications SW 2.10.x

Patient categories	
	Adults, children with a tidal volume of: 50–2600 ml (volume-controlled modes) 20–2600 ml or 2600–5000 ml * (pressure-controlled modes)
Intended use	
	Invasive and non-invasive ventilation, nasal applications (NC)
Special features	
Device configuration	Fully configurable, agile user interface
	Configurable, user-specific default settings
	Up to 6 live curves
	Configuration transfer between machines with USB stick
Device functions	Non-invasive ventilation (NIV)
	Invasive ventilation (IV)
	Nasal applications (NC)
	Tube compensation
	Documented monitoring of the replacement intervals of accessories which are in direct contact with the patient (hygiene function)
	Adjustment of the alarm volume to the ambient noise level
	Display brightness: day/night mode, configurable night screen
	Configurable default ventilation mode with analysis function
	Indication of the tidal volume according to patient height in real-time in ml/kg IBW
	Permanent indication of lung compliance and resistance
	Tabular trend (incl. storage function)
	Graphical trend
	Up to 5 loops (+ storage of up to 5 reference loops)
	Screenshot function
	Help function
	Expiratory pressure ramps
	Assistance feature for switching between volume- and pressure-controlled ventilation modes

* without automatic patient detection APD

Additional functions	O ₂ flush
	Automatic Suction Routine (ASR)
	Pneumatic nebulizer
	Hygiene function
	Reference loops
	Capnometry (with mainstream and sidestream sensors)
	Multi-gas measurement
	Pulse oximetry
	LeoClac (automatic closed-loop control of the inspiratory O ₂ concentration)
	Sedaconda function
	Nurse call
Manoeuvres	PEEPfinder with display of inflection points and stress index C20/C
	Recruitment manoeuvre
	Sigh (inspiratory and expiratory)
	Inspiratory hold manoeuvre (with measurement of ΔP , P plateau and C stat)
	Expiratory hold manoeuvre (with measurement of PEEPi, Vtrap and MIP)
	Manual breath
	Bronchoscopy manoeuvre
Weaning functions	Weaning analyzer with SAT and SBT
	Occlusion measurement P0.1
	WOB (Work of Breathing)
BF interface card with two LEMO connectors Configurable for:	mainstream CO ₂ sensor LEOCAP
	sidestream CO ₂ sensor LEOSTREAM
	CO ₂ sensor Masimo
	Multi-gas sensor LEOLYZER
	SpO ₂ sensor
	Nurse call
	PDMS/monitoring (Salvia protocol)
	PDMS/monitoring(Philips protocol)
	NO-A (EKU)
PDMS interface card with two LEMO connectors Configurable for:	PDMS/monitoring (Salvia protocol)
	PDMS/monitoring(Philips protocol)
Ventilator settings	
Ventilation modes	Adults
	Children
	Volume-controlled ventilation modes
	VCV
	VC-SIMV
	Optional VCV
	PLV

	Pressure-controlled ventilation modes		Adults	Children
	PCV		☒	☒
	BiLevel		☒	☒
	BiLevel ST		☒	☒
	Mandatory BiLevel		☒	☒
	PC-SIMV		☒	☒
	PC-APRV		☒	☒
	Optional BiLevel		☒	☒
	Spontaneous ventilation modes		Adults	Children
	CPAP		☒	☒
	PSV		☒	☒
	Dynamic PSV		☒	☒
	Proportional PSV		☒	☒
	PAPS (adults only)		☒	☒
	Hybrid ventilation modes		Adults	Children
	VA BiLevel		☒	☒
	Dynamic BiLevel		☒	☒
	Dual BiLevel		☒	☒
	Dynamic BiLevel ST		☒	☒
	Dual BiLevel ST		☒	☒
	Flexible BiLevel		☒	☒
	Flexible VCV		☒	☒
	CPR (resuscitation mode)		☒	☒
	Closed loop modes		Adults	Children
	ALPV		☒	
	WOBOV		☒	
	Nasal applications (NC)			
	HFOT		☒ up to 70 L/min	☒ up to 8 L/min
	nCPAP			☒
	nBiLevel			☒
	Ventilation rate (Rate)			
	Adults		0–100 breaths/min	
	Children		0–120 breaths/min	
	Inspiratory time (T insp)		Adults, children 0.2–20 s	
	Tidal volume (VT)		Adults, children with a tidal volume of: 50–2600 ml (volume-controlled modes) 20–2600 ml or 2600–5000 ml * (pressure-controlled modes)	
	I:E ratio		150:1 up to 1:299	
	Inspiratory flow (Flow insp)		0–180 L/min**	
	PS Endflow		5–70%	
	Inspiratory pressure (P_{insp})		0–(100 – PEEP) mbar	
	PEEP		OFF, 0.5–50 mbar	
	Switchflow for automatic release under PC-APRV		OFF, 1–80%	
	PAPS additional adjustment ranges		Resistance compensation: 5–95% Compliance compensation: 5–95%	
	Pressure support (PS)		0–(100 – PEEP) mbar	

* without automatic patient detection APD

** compressible volume of device and tubing taken into account

Insp. Ramp Insp. pressure ramp, mandatory	0.05–3 s (or 0.8 * Tinsp)		
PS Ramp Insp. pressure ramp, spontaneous	0.05–2 s		
Exp Ramp mand Exp. pressure ramp, mandatory	OFF, –100 mbar/s, –80 mbar/s, –50 mbar/s, –20 mbar/s,		
Exp Ramp spont Exp. pressure ramp, spontaneous	OFF, –100 mbar/s, –80 mbar/s, –50 mbar/s, –20 mbar/s,		
O ₂ concentration	21–100%		
Flow trigger	OFF, 0.1–20 L/min		
Pressure trigger	OFF, –0.1 to –10 mbar		
Tube compensation	Tube, tracheostomy tube, inspiration, expiration, Degree of compensation 25–100% Tube diameter 4.0–12.0 mm		
Byflow	10–30 L/min		
Available measurements			
Airway pressure	Peak	–50 to 150 mbar	
	Plateau	–50 to 150 mbar	
	PEEP	–50 to 150 mbar	
	Pmean	–50 to 150 mbar	
	Pmin	–50 to 150 mbar	
Rate measurement	Respiratory rate (RR)		
	Spontaneous respiratory rate (RR spont.)		
	Mandatory respiratory rate (RR mand.)		
	Synchronised respiratory rate (RR sync.)		
O ₂ measurement	18–100%		
CO ₂ measurement (option)	Mainstream, sidestream		
Multi-gas measurement (option)	CO ₂ (sidestream) Isoflurane Sevoflurane		
Unit of measurement (configurable)	vol.%	(0.0–25.0)	
	kPa	(0.0–25.5)	
	mmHg	(0–185)	
Volumetric capnography Measurements (option)	VT _{alv}	Functional dead space volume	
	VT _{ds}	Anatomic dead space volume	
	V'CO ₂	Measured volume of the eliminated CO ₂ /ml	
SpO ₂ measurement	HR (pulse)	18–321 beats/min	
	SpO ₂	0–99%	
Volume measurement	VT/IBW	all	0–49.9 ml/kg
	MV _e	all	0–50 L
	MV _e spont.	all	0–50 L
	VT _i	Adults Children	50–5000 ml 20–5000 ml
	VT _e	all	0–4000 ml
	VT _e spont.	all	0–4000 ml
	V _{trap}	all	0–1000 ml
	Leakage	all	0–75%

Compliance (C dyn.)	0–500 ml/mbar			
Resistance (R exp.)	0–500 mbar/(l/s)			
Static compliance (C stat.)	0–500 ml/mbar			
C20/C stat.	0–9.9			
Rapid Shallow Breathing Index	0–999			
Surrogate measurements in PAPS mode	WOB vent	(J/L)		
	WOB spont.	(J/L)		
	Resistance	(mbar/l/s)		
	Compliance	(ml/mbar)		
Curve presentation	Pressure Flow Volume etCO ₂ Trigger Tube compensation Plimit (baseline) Ptrach			
Configurable measurements				
Basic values	MVe	PEEP	C stat.	VTe spont.
	Pmean	R exp.	SpO ₂	I:E
	Leakage	ΔP	MVe mand.	Flow insp.
	VT/IBW	RR	P plateau	Flow exp.
	VTe	VTi	RR spont.	C dyn.
	MIP	PEAK	P min	RR sync.
	T plateau	MVe spont.	MVe spont. %	Flow insp.
	MV Leakage	RC exp.	RSBI	P0.1
	HR (pulse)	Flow exp.	RR mand.	
Advanced measurements	PEEPi	Vtrap	POB	POB spont.
	WOB spont.	WOB vent		
Volumetric capnometry	VTds (%)	VTds (ml)	VTalv (%)	VTalv (ml)
Gases	O ₂	inISO	inSEV	exSEV
	etCO ₂	exISO	inCO ₂	V´CO ₂
Weaning functions				
Fastwean Recommended measurements	RSBI			
	P0.1			
	VTe spont.			
	RR spont.			
Fastprotect Recommended measurements	ΔP			
	VT/IBW			
	P plateau			
WOB (Work of Breathing) Measurements	WOB spont.			
	WOB vent.			
	POB spont.			
	POB			

Loops (5 reference loops can be saved)

Paw – V
V – Flow
Flow – Paw
CO ₂ – V
Flow – Ptrach

Languages

English	Norwegian	Polish	Portuguese
German	Slovenian	Spanish	Danish
French	Italian	Russian	Czech
Dutch	Turkish	Finnish	Chinese
Swedish	Hungarian	Serbian	Greek
Japanese (in separate software)			

Adjustable alarms

Ventilation	Minute volume MV	min/max
	Tidal volume VT	min/max
	Respiratory rate RR	min/max
	PEEP	min/max
	Plimit (relative or absolute)	max
	Pmin	min
	Leakage	5–95%
Gas	FiO ₂ concentration	min/max
	O ₂ ctrl.	min/max
	etCO ₂ concentration	min/max
	inCO ₂ concentration	max
	inISO concentration	min/max
	exISO concentration	min/max
	inSEV concentration	min/max
	exSEV concentration	min/max
Additional alarms	RR spont.	min/max
	Pmean	min/max
	P plateau	max
	HR (pulse)	min/max
	SpO ₂	min/max
	SpO ₂ ctrl.	min/max
Alarms with adjustable delay	T VTmax	0–15 s
	T VTmin	0–15 s
	T Pmin	0–30 s
	T Backup ventilation	5–120 s
	T Leakage high	0–15 s
	T Apnoea alarm	5–60 s
	T Disconnection	0–30 s

Advanced safety functions

Automatic patient detection (APD)
 Confirmation prompt before ending ventilation
 Backup modes
 O₂ flush

Trend displays

Tabular trend

Configurable trend display
 Storage capacity: up to 90 days (depending on respiration, equivalent to over 1,500,000 entries)
 Export function to USB stick

Graphical trend

Storage capacity:
 Up to 30 days
 Graphical display of the measurements (configurable):

MVe	VTe spont.	PEEPi	MVe spont.
Pmean	I:E	SpO ₂	RC exp.
Leakage	Flow insp.	VTds (%)	Flow exp.
VT/IBW	Flow exp.	VTds (ml)	P min
VTe	C dyn.	Vtrap	MVe spont. %
MVe mand.	C stat.	VTalv (ml)	RSBI
P plateau	O ₂	inISO	RR mand.
RR spont.	etCO ₂	WOB spont.	HR (pulse)
PEEP	inCO ₂	WOB vent	Flow insp.
R exp.	VTalv (%)	POB	P0.1
ΔP	MIP	PEAK	V'CO ₂
RR	T Plateau	POB spont.	exISO
VTi	MV Leakage	RR sync.	

Electrical supply

Mains power

100–240 VAC, 50 / 60 Hz

Power consumption

160 VA

Internal power supply

Rechargeable lithium ion battery (1 or 2)
 Automatic switch-over when mains supply fails
 Replacement possible during operation
 Operating time of up to 2 h with each fully charged battery
 Charging time < 4 h for each depleted battery

Gas supply

Oxygen supply (O₂)

Pressure range: 200 to 600 kPa (29 to 87 PSI)

Air supply (AIR)

From turbine, noise level 46 dB(A)

Maximum inspiratory flow

Up to 300 L/min

Inspiratory O₂ measurement

Maintenance-free paramagnetic O₂ sensor

Dimensions and weight

elisa 300

Width x depth x height: 315 x 245 x 405 mm
 Weight, net: 10 kg

Cart

Width x depth x height: 720 x 840 x 920 mm
 with turned in wheels: 580 x 700 x 920 mm
 Weight, net: 17 kg

Total

Width x depth x height: 720 x 840 x 1327 mm
 Weight, net: 27 kg

Control unit

Screen type

4:3 LCD display, tilt angle of 35°

Screen diagonal

12.1"

Input system

Touch screen (capacitive multi-touch)

Hardware connections	
elisa 300	2 x USB interface 1 x RJ45 1 x DVI (interface for service purposes) 1 x BF interface card with two LEMO connectors 1 x PDMS interface card with two LEMO connectors Up to 5 additional interfaces via data interface elisaATmegs
Software version	
SW	2.10.x



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