



elisa 600 Specifications SW 2.10.x

Patient categories	
	Adults, children, neonates with a tidal volume of: 10–2600 ml (volume-controlled modes) 1–5000 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 8 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 6 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 , Pplateau and C stat)
	Expiratory hold manoeuvre (with measurement of PEEPi, Vtrap and MIP)
	Manual breath
	Bronchoscopy manoeuvre
Options	Mesh nebulizer interface
	Cuffscout
	Oesophageal and transpulmonary pressure measurement (Peso and TPP)
	IAP (Intra-abdominal pressure)
Weaning functions	Weaninganalyzer 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)

Ventilator settings		Adults / children	Neonates
Ventilation modes	Volume-controlled ventilation modes		
	VCV	☒	
	VC-SIMV	☒	
	Optional VCV	☒	
	PLV	☒	
	Pressure-controlled ventilation modes		
	PCV	☒	☒
	BiLevel	☒	☒
	BiLevel ST	☒	☒
	Mandatory BiLevel	☒	☒
	PC-SIMV	☒	☒
	PC-APRV	☒	☒
	Optional BiLevel	☒	
	Spontaneous ventilation modes		
	CPAP	☒	☒
	PSV	☒	☒
	Dynamic PSV	☒	
	Proportional PSV	☒	
	PAPS (adults only)	☒	
	Hybrid ventilation modes		
	VA BiLevel	☒	
	Dynamic BiLevel	☒	☒
	Dual BiLevel	☒	
	Dynamic BiLevel ST	☒	
	Dual BiLevel ST	☒	
	Flexible BiLevel	☒	
	Flexible VCV	☒	
	CPR (resuscitation mode)	☒	
	Closed loop modes		
	ALPV (adults only)	☒ (adults only)	
	WOBOV (adults only)	☒ (adults only)	
Nasal applications (NC)	HFOT	☒ up to 70 L/min	☒ up to 8 L/min
	nCPAP	☒ (children only)	☒
	nBiLevel	☒ (children only)	☒
Ventilation rate (Rate)	Adults	0–100 breaths/min	
	Children	0–120 breaths/min	
	Neonates	2–180 breaths/min	
Inspiratory time (T insp)	Adults	0.2–20 s	
	Children	0.2–20 s	
	Neonates	0.12–3 s	
Tidal volume (VT)	Adults, children, neonates with a tidal volume of: 10–2600 ml (volume-controlled modes) 1–5000 ml or 2600–5000 ml * (pressure-controlled modes)		

* without automatic patient detection APD

** compressible volume of device and tubing taken into account

I:E ratio	150:1 up to 1:299			
Inspiratory flow (Flow insp)	0–150 L/min **			
PS Endflow	5–70%			
Inspiratory pressure (Pinsp)	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			
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	3–30 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		
Oesophageal and transpulmonary pressure monitoring	TPP i (es)	P exp. (es)	PEEPi (es)	ΔP (es)
	TPP e (es)	Pmin (es)	Δ TPP (es)	POB spont. (es)
	P insp. (es)	Peak (es)	WOB (es)	ΔPeso/ΔPAW
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 _{lv}	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 /min		
	SpO ₂	0–99%		
Volume measurement	VT/IBW	all	0–49.9 ml/kg	
	MVe	Adults, Children Neonates	0–50 L 0–9.99 L	
	MVe spont.	Adults, Children Neonates	0–50 L 0–9.99 L	
	VT _i	Adults Children Neonates	50–5000 ml 20–5000 ml 1–999.9 ml	
	VT _e	Adults, Children Neonates	0–4000 ml 0–400 ml	
	VT _e spont.	all	0–4000 ml	
	V _{trap}	Adults, Children	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 Transpulmonary pressure curve TPP Trigger Tube compensation Plimit (baseline) Pleth Ptrach Pcuff Peso			
Configurable measurements				
Basic values	MVe	PEEP	C stat.	VT _e spont.
	P _{mean}	R exp.	ΔP (es)	I:E
	Leakage	ΔP	MVe mand.	Flow insp.
	VT/IBW	RR	P _{plateau}	Flow exp.
	VT _e	VT _i	RR spont.	C dyn.
	MIP	PEAK	P min	Cuff pressure
	T _{plateau}	MVe spont.	MVe spont. %	Flow insp.
	MV Leakage	RC exp.	RSBI	P0.1
	HR (pulse)	Flow exp.	RR mand.	SpO ₂
	RR sync.			

Advanced measurements	PEEPi	Vtrap	POB	WOB (es)
	P exp. (es)	P insp. (es)	POB spont. (es)	WOB spont.
	TPP e (es)	TPP i (es)	POB spont.	WOB vent
	PEEPi (es)	Δ TPP (es)	IAP	Pmin (es)
	Peak (es)	Δ Peso/ Δ PAW		
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
	VT _{spont.}
	RR spont.
Fastprotect Recommended measurements	Δ P
	VT/IBW
	Pplateau
	TPP i (es)
	TPP e (es)
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
	PAW – Peso
	CO ₂ – V
	Flow – P _{trach}

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		
	Pplateau	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 (neonates 5–60 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 O ₂ 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	VT _e spont.	PEEP _i	MVe spont.
	Pmean	I:E	P exp. (es)	RC exp.
	Leakage	Flow insp.	TPP e (es)	Flow exp.
	VT/IBW	Flow exp.	PEEP _i (es)	P min
	VT _e	C dyn.	Vtrap	MVe spont. %
	P insp. (es)	C stat.	VT _{alv} (ml)	RSBI
	ΔP _{eso} /ΔP _{AW}	O ₂	inISO	RR mand.
	MVe mand.	etCO ₂	TPP i (es)	Cuff pressure
	Pplateau	inCO ₂	ΔTPP (es)	Flow insp.
	RR spont.	VT _{alv} (%)	POB	P0.1
	PEEP	MIP	POB spont. (es)	inSEV
	R exp.	Tplateau	POB spont.	exSEV
	ΔP	MV Leakage	IAP	V'CO ₂
	RR	VTds (%)	HR (pulse)	exISO
	VT _i	VTds (ml)	PEAK	WOB (es)
	Pmin (es)	ΔP (es)	WOB spont.	RR sync.
	Peak (es)	SpO ₂	WOB vent	

Electrical supply		
Mains power	100–240 VAC, 50 / 60 Hz	
Power consumption	170 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 (O ₂)	Pressure range: 200 to 600 kPa (29 to 87 PSI)	
Air supply (AIR)	Pressure range: 200 to 600 kPa (29 to 87 PSI)	
Inspiratory O ₂ measurement	Maintenance-free paramagnetic O ₂ sensor	
Dimensions and weight		
elisa 600	Width x depth x height:	400 x 350 x 220 mm
	Weight, net:	23 kg (incl. control unit)
Control unit 18.5"	Width x depth x height:	480 x 90 x 300 mm
elisa 600 with control unit	Width x depth x height:	480 x 350 x 560 cm
Cart	Width x depth x height: with turned in wheels:	720 x 840 x 920 mm 580 x 700 x 920 mm
	Weight, net:	17 kg
Total	width x depth x height:	720 x 840 x 1480 mm
	Weight, net:	46 kg
Control unit		
Screen type	16:9 LCD display, resolution 1920 x 1080 pixels	
Screen diagonal	18.5"	
Input system	Touch screen (capacitive multi-touch)	
Mounting system	detachable	
Hardware connections		
elisa 600	1 x connection for control unit 1 x BF interface card with two LEMO connectors	
Options	1 x connection for mesh nebulizer 1 x RJ45 interface Up to 5 additional interfaces via data interface elisaATmegs	
Control unit	2 x USB interface 1 x display port (video interface for service purposes)	
Software version		
SW	2.10.x	