



SOPHIE

SPO₂ inside

THE INNOVATIVE
NEONATAL
VENTILATION SYSTEM

SO PRECISE. SO PERFECT. SOPHIE.

Sophie was developed to meet the demand of neonatologists for a sensitive ventilator. SOPHIE offers state-of-the-art ventilation technology with the option of using customized ventilation strategies for premature and newborn babies. Its high-tech trigger technology provides you with flexible synchronization for both invasive and non-invasive ventilation.

The major challenge in non-invasive ventilation (NIV) of newborn and premature infants is the adjustment of ventilation and oxygen saturation to the current, frequently changing patient situation.

This is one of SOPHIE's strengths; thanks to innovative sensor technology, the device immediately recognizes changes and adjusts therapy parameters accordingly. In addition, you have the option of activating high-frequency oscillation at the touch of a single button if the situation so requires. Plus: SOPHIE allows effective monitoring at every stage during therapy to ensure optimal supervision.

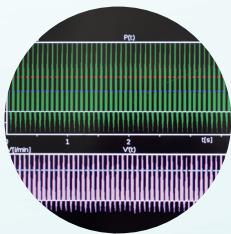


REDUCING THE RISK OF BRAIN DAMAGE AND BLINDNESS.

SOPHIE uses SPO₂C, an integrated oxygen saturation controller, which automatically maintains optimum oxygen saturation. By adjusting saturation in real time, SOPHIE helps reducing the risk of brain damage and blindness.

Monitoring the course of therapy is also simplified considerably, as all relevant parameters are continuously recorded and can be accessed in trend view at any time.

THESE FEATURES MAKE SOPHIE UNIQUE.



+ Integrated high-frequency oscillation



+ External respiration sensor for synchronized non-invasive ventilation and apnea detection



+ Automatic integrated respiratory humidification



+ Clearly arranged, user friendly touch panel



+ Heated electronic flow sensor



+ SpO₂ controller SPO₂C for optimum oxygen saturation

SOPHIE



SO INNOVATIVE. SO INTELLIGENT. SOPHIE.

SOPHIE not only automatically adapts the therapy to the patient's needs but also documents the entire course of therapy. This relieves the strain from care staff and creates space for the important aspects of care which cannot be automated. The advantages in everyday hospital life are obvious:

- + No manual recording of oxygen saturation
- + Reduction of manual therapy adjustments
- + Optimal ventilation of the little patients at all times

If required, simply activate high-frequency oscillation at the push of a button. Thanks to the integrated solution, there is no need for changing patient tubes.

Because little patients change their breathing pattern with every movement, SOPHIE is particularly flexible. The respiratory sensor converts abdominal movements into a trigger signal and ventilation is adapted automatically. The child's breathing and NIV ventilation are synchronized in real time. As a result, your benefit from significantly reduced re-intubation rates.

Another major advantage of SOPHIE is its electronic flow sensor. It allows accurate measurement of flow rates to record tidal volume (V_t) and flow with minimal dead space. The sensor is heated to prevent condensation. Respiratory gas is optimally humidified thanks to the integrated humidification system, which heats and humidifies respiratory gas for the little patients.

TECHNICAL DATA

General		Parameters	
Patient range	Neonates and pediatric patients up to 25 kg	Insp. pressure	-20 - 99 mbar (Pmax)
Classification	II b (according to 93/42 ECC)	End Expiration pressure	-20 - 99 mbar (PEEP)
Dimensions	470 x 342 x 332 mm (WxHxD)	Mean airway pressure	-20 - 99 mbar (Pmean)
Weight	26 / 42 kg (without/with trolley)	Osc. amplitude	0 - 120 mbar (Posc)
Function principle	time cycled, pressure controlled	Volume measurement	
Operational specifications		Ventilation time parameters	
Power supply	100-240 V AC, 50-60 Hz, 210 VA	Insp. tidal volume	0 - 999 l (VTins)
Battery backup	min. 80 min. (with internal, rechargeable Li-Ion-Battery)	Exp. tidal volume	0 - 999 l (VTexp)
Gas supply		Leak volume	0 - 999 l (VTleak)
AIR	2.7 - 6.5 bar	Exp. minute volume	0 - 999 l/min (MV)
O ₂	2.7 - 6.5 bar	Osc. minute volume	0 - 999 l/min (MVo)
Ventilation parameters		Breathing frequency (F)	
Ventilation modes		Inspiration	0 - 100% (Insp%)
Invasive	CPAP, PC-IMV, PC-Ass./Cont., PC-SIMV, PC-HFO (opt.), PC-IMV-HFO (opt.), PC-Ass./Con.-ITT, PC-SIMV-ITT	O ₂ measurement	
Non-invasive	nCPAP, NIPPV, SNIPPV (opt.), PC-HFO, PC-sHFO	FiO ₂	0 - 100%
Modifications	Volume guarantee (VtLim/VtTar) Inspiratory Time Termination (ITT) PSV	Breathing gas temperature	
Maneuver functions	Inspiration Hold / Manual, Pre-oxygenation, Medication nebulization	Proximal measurement	12 - 60° C
Flow sensor		Lung mechanics	
Single use or reusable, electronical, heated		Resistance (R)	0 - 999 mbar/l/s
Ventilation settings		Compliance (C)	0 - 999 ml/mbar
Frequency	1 - 300/min	SpO ₂	0 - 100%
Inspiration time	0.1 - 2 s	BaseFiO ₂	0 - 100%
Expiration time	0.1 - 60 s	Curve display	Paw(t), V'(t), V(P), V'(V), V'(P), Arbs(t)
Tidal volume	2 - 150 ml (VtTar/VtLim)	Trend display	Pmean(t), MV(t), VT(t), FiO ₂ (t), BaseFiO ₂ (t), SpO ₂ (t)
Pmax	5 - 60 mbar	Trend duration	0,5; 1; 2; 4; 12; 24 (h)
PEEP	0 - 30 mbar	Alarms / Monitoring	
Inspiration pattern	Rectangle, sinusoidal, linear	Airway pressure	high/low (Pmax)
Trigger sensitivity		Exp. minute volume	high/low (MV)
Flow	0.2 - 2,9 l/min	Exp. tidal volume	high/low (VT)
Pressure	0.2 - 2,9 mbar	Insp. O ₂ Conc. FiO ₂	high/low
Abdominal movement	0.2 - 2,9 Arbs	Breathing gas temp.	high/low
NIV MaxFlow	Off/20 - 6 l/min	End Exp. pressure	high (PEEP)
Breathing gas temp.	30 - 40° C	Mean airway pressure	high/low (Pmean)
FiO ₂	21 - 100%	Osc. amplitude	high/low (Posc)
Inspiratory Time Termination (ITT) PSV		Osc. tidal volume	high/low (Vosc)
Exp.-Trigger KV%	5 - 40% V' Peak	Osc. minute volume	high/low (MVosc)
High frequency oscillation HFO		Base FiO ₂	high
Frequency	5 - 15 Hz	FiO ₂ Limit	
Inspiration	33 - 50%	Disconnection	
MAP	0 - 30 mbar	Water level humidifier bottle	
Amplitude Posc	5 - 100%	Apnea	
Amplitude Vosc	max. 24 ml @ 10 Hz	Features	
Base FiO ₂	21 - 100%	Abdominal trigger (external)	
Backup FiO ₂	Base, 21 - 100%	SPO ₂ C (SpO ₂ -Controller)	
SpO ₂ UL	84 - 100%	Refill-System (automatically) for integrated humidification	
SpO ₂ LL	80 - 96%	Interfaces / Monitore	
Inspiration	Hold / Manual	RS232 (Vue Link, PDMS, IntelliBridge), USB, Ethernet	
Max. hold time	Tinsp 1 - 7 s	GE Healthcare	Patient monitor DASH, SOLAR, CARESCAPE
Medication nebulization			Unity Network Interface Device in connection with pulse oximeter option
Aerosol time	30 - 420 s	Masimo	Radical 7 Signal Extraction pulse CO oximeter
Pre-Oxygenation		Philips	IntelliVue X2, MP series, MX series
FiO ₂	FiO ₂ - 100%	Dräger	Infinity series
Preoxy time	0 - 420 s	Operating unit	
		Screen	12.1" Colour Touchscreen
		Color scheme	Day view / night view
		Input devices	Buttons + Turn-Push-Button, Touchscreen



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