

medinCNO, medinCNOmini

Technical specification

The medinCNO/medinCNOmini is a CPAP driver that can be used in combination with the Medijet nCPAP generator to administer CPAP therapy. The medinCNOmini can additionally be used with a suitable Nuflow nasal cannula in High Flow mode. The role of the medinCNO/medinCNOmini in this CPAP system is to provide the necessary, possibly oxygen-enriched flow volume of the gas, which is fed to the nCPAP generator Medijet via the tubes connected to the patient and is converted into CPAP pressure within the generator. Or in case of the medinCNOmini to the suitable Nuflow nasal cannula in High flow mode.

The medinCNO/medinCNOmini must be used under the supervision of expert, specially trained staff in a clinical setting or during intrahospital transport, and the patient's oxygen saturation must be monitored at the same time.

Parameters and sensors

Dimensions (L x B x H)	29 x 23,5 x 18,5 cm
Weight	4,75 kg
Gas feed system	Computer-controlled electronic gas mixer with integrated oxygen sensor; flow-controlled Setting range: 0 l/min to 15 l/min Working range: 4 l/min to 10 l/min Accuracy: ±1 l/min (in working range) ± 2 l/min (outside of the working range)
Gas feed	Air supply: 300 to 600 kPa (= 3,0 to 6,0 bar) Oxygen: 300 to 600 kPa (= 3,0 to 6,0 bar)
Gas connection	Connector standard: DISS or NIST (as preferred)
Patient flow outlet	Dimensions M22 (OD) or F15 (ID)
CPAP pressure meter connection	Luer-type – 4,3 mm ID
Power supply	1x internal battery, 14.4 V DC, approx. 3 hours run time, rechargeable External power supply 100 to 240 V AC / 50 to 60 Hz
Display	7.0" – color, 800 x 480 pixel
Data	Patient pressure (diagram and measurement) Trend: CPAP, flow, FiO ₂ , RR, push frequency (among other things, up to 28 days)

CPAP	Measurement range 0 to 18 mbar (in 0.1 mbar increments) Verification: Redundant measurement by two sensors Accuracy: $\pm 1,3$ mbar
Push (inspiration support)	Setting range Additional flow during the inspiration push: Min: 0 l/min / Max: 17,5 l/min (basic flow + push flow) Duration 200 ms to 2 s Manual and automatic triggering of pushes Accuracy ± 1 l/min (if the total flow = basic flow + additional inspiration flow - is within the flow working range) ± 2 l/min (if the total flow = basic flow + additional inspiration flow - is outside of the flow working range)
Leak Assist	Leakage compensation (± 2 L/min to maintain the target pressure) in CPAP mode
RR (respirations rate)	Display of the measured respiratory rate, no breaths up to 120 breaths per minute, in CPAP and Apnea CPAP mode
Apnea time	medinCNO: 2 to 20 s (in 0,1 s increments) medinCNOmini: 2 to 30 s (in 0,1 s increments)
T _{insp}	0,2 to 2,0 s (in 0.1 s increments)
Triggering	Pressure trigger, based on the CPAP pressure sensitivity, ± 0.2 to ± 2.0 mbar (in 1.1 mbar increments)
FiO ₂	Oxygen concentration Setting range: 21 bis 100 % (in 1 % increments, in the flow working range) / Measurement range: 21 to 100 % Alarm settings: $\pm 2-5$ % difference medinCNO: O ₂ -Flush (level: +10, +20, +30 % (Vol.) above set target oxygen concentration or 100 % oxgen) for 60 s / medinCNOmini: O ₂ -Flush (level: +5, +10, +15 % (Vol.) above set target oxygen concentration) for 60 s Accuracy: ± 3 % (Vol.) / Oxygen measurement: Oxygen cell MLF-16: Response time < 7 s to 90 % of final value Oxygen cell OOM102: Response time < 12 s to 90 % of final value
Oscillation (only for medinCNO)	Frequency range 5 to 20 Hz (in 1 Hz increments) Amplitude range from increment 1 to 10 Measured average amplitude 0 to 15 mbar (in 0.1 mbar increments)
Alarms	Visual (LED & display) and acoustic (adjustable push alarm settings) Alarm countdown

Safety	Mechanical overpressure valve (opening pressure 4 kPa (= 40 mbar)) Electronic shut-off valve (in the event of an error, interrupts the flow supply to the patient and opens the tubing system to the atmosphere)
Operating time	The medinCNO/medinCNOmini can be used for continuous, long-term operation up to 4 weeks without a restart in the interim.

Software settings

Languages	EN, DE, FR, IT, NL, ES, EL, CS, PL, NO, DA, SV, RU, LT, ZH, TR, JA, RO, FI
Pressure units	mbar or cmH ₂ O
Pressure scale	Three settings: 0 to 10, 0 to 15 and 0 to 20 mbar

Description of modes

CPAP	Pure CPAP mode in which a constant CPAP pressure in the Medijet is generated by a constant flow. This mode operates without automatic pushes. However, operators can trigger manual pushes if necessary. In addition, the Leak-Assist can additionally be switched on.
Apnea CPAP	In this mode, the basic CPAP mode described under CPAP is combined with apnea monitoring. The medinCNO/medinCNOmini assesses the CPAP pressure signal and recognizes from this information whether or not respiratory activity is taking place. If no respiratory activity can be detected for a length of time that can be set, the medinCNO/medinCNOmini automatically triggers a push to stimulate the patient.
NIPPV	In contrast to CPAP mode, ventilation is provided here on two different flow and pressure levels. The intensity of the second level as well as the changeover frequency and the time spent at the higher level can be adjusted by the user. In medinCNOmini NIPPV is a separate CPAP mode. In medinCNO NIPPV is a special case of Apnea mode and can be activated there.
SNIPPV (only medinCNO)	(=synchronized non-invasive positive pressure ventilation) In the SNIPPV mode, the medinCNO has the capability not only of automatically triggering pushes during the apnea phases but also of synchronizing them with the patient's inspiration. This means that the patient can be stimulated by automatic pushes both during apnea and when he or she is breathing normally. In addition, it is possible to use the backup function. Nevertheless, the SNIPPV mode is only a CPAP mode and is not a substitute for ventilator respiratory support by a mechanical ventilator that the patient might need.
Oszillation (only medinCNO)	The oscillation mode offers a Medijet pressure of varying frequency within a range of 5 to 20 Hz instead of constant CPAP pressure.

High Flow (only medinCNOmini, Nuflow nasal cannula mode)	A suitable Nuflow nasal cannula must be used instead of the Medijet. The flow emission is limited to a maximum of 12 L/min. When starting High Flow mode, the user can only set a flow up to a maximum of 8 L/min, for safety reasons. If he/she wishes to utilize the entire range up to 12 L/min, this must be done deliberately by selecting the flow button, pressing it once again and holding it down and thus setting the flow greater than 8 L/min.
Standby	Standby mode can be used for the time between preparation of the medinCNO/ medinCNOmini and its actual use as well as for pauses in the CPAP therapy for a patient.

Warranty and services

Information on warranty can be found on our homepage www.medin-medical.com under the general terms and conditions.

In addition, medin offers two different warranty extensions:

- 3 years (REF 39-912) from the date of production
- 5 years (REF 39-913) from the date of production

These warranty expansions only relate to components with defects caused by production, wear parts, as well as software problems.
In addition, the customer must demonstrate that all required maintenance was performed.

The medinCNO/medinCNOmini must undergo maintenance and a device check in accordance with the manufacturer’s instructions in the service manual every 12 months. This must be carried out by trained specialists using appropriate measuring and testing equipment.

Accessories and configuration

Suitable accessories and possible configurations of the device can be found in the instructions for use.



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