RESPIRONICS®

www.respironics.com

PEOPLE. PRODUCTS. PROGRAMS.



Introducing the REMstar® Auto.
A simply smarter Smart CPAP.

By combining years of experience in developing and refining Smart CPAP systems with the popular look and feel of our newest REMstar® family of CPAPs, Respironics brings you what may be the **smartest Smart CPAP you've ever seen.** The **REMstar Auto** is a quiet, easy-to-use, **flow-based Smart CPAP** system that gives you more options than ever to use this unique treatment mode to improve compliance and outcomes. The REMstar Auto could be an extremely valuable part of any sleep management solution. You may also find that the greater flexibility of the REMstar Auto fits better with some patients' lives than traditional CPAP therapy. That's because its Auto CPAP therapy mode changes the way it **delivers therapy to match changes in the patients' lifestyle** – such as weight gain or loss, changing sleep schedule or travel.

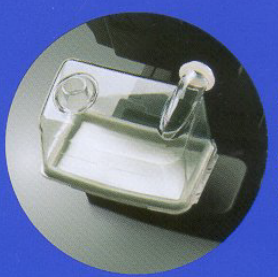


In all, we've redesigned every inch of the REMstar Auto to **help you make the most of Smart CPAP technology** – from its unique session meter all the way down to its new power supply and cord. It gives you greater treatment flexibility. And a large part of that flexibility comes from REMstar Auto's integrated humidification solutions. This gives you the option to transition patients from no humidification to heated humidification with one machine. With the REMstar family, you have **more flexibility** to help your business grow in today's healthcare environment.

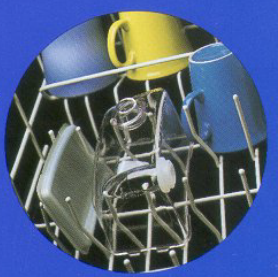
When we designed the **REMstar Heated Humidification System,** we set out to create a fully integrated unit that didn't sacrifice the aesthetics and operability of the individual CPAP systems. The result: an integrated approach to heated humidification that's as easy for you to stock as it is for patients to use. Like all REMstar units, the REMstar Auto uses our easy-to-use Heated Humidification System. The **lighted controls** are right on the REMstar Auto, so they're always easy to find. And since the platform plugs into the CPAP, there's only one plug to go into the wall. What's more, the transparent **water chamber is easy to fill, clean and care for** – so your patients get all of the benefits of upgrading to heated humidification, without any of the hassles.



The tubeless, transparent water chamber in REMstar's Heated Humidifier is easy for anyone to fill and attach.

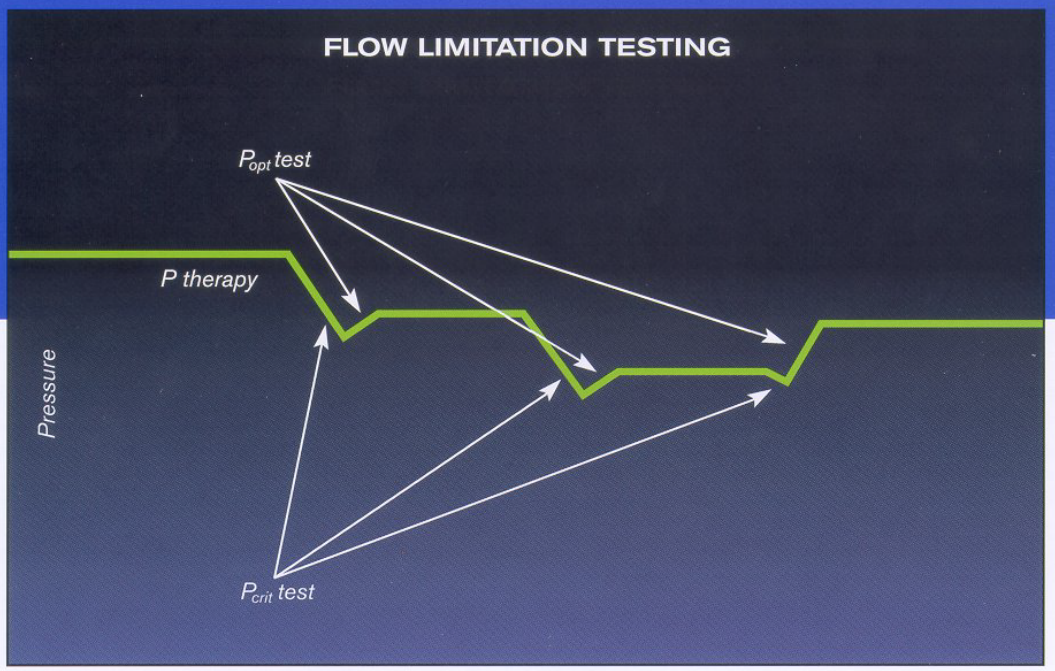


And it comes apart easily. Since it's dishwasher safe, the water chamber is easy to clean and care for, too.



The Science of Finding the Right Pressure.

At the core of the REMstar Auto's ability to adjust to a patient's pressure needs is a "**multi-level**" **algorithm.** Working primarily by **measuring instances of flow limitation,** the REMstar Auto utilizes systematic, subtle changes in pressure and assesses the impact of these changes on the patient's breathing patterns. These proactive changes in pressure and assessment of flow limitation are **continually searching for the best possible pressure level** for the patient. Supporting this primary analysis are secondary analysis parameters devoted to detecting major respiratory events and responding appropriately. These **secondary analysis parameters determine necessary levels of response** to eliminate events and position the patient with a more appropriate pressure level. Additional levels of analysis are devoted to elevated – or "big leak" – levels and variable breathing.



Throughout the night the Proactive Algorithm of the REMstar Auto subtly searches for the best pressure level for a patient's needs by cycling through the Pcrit, Popt and Ptherapy modes. Pcrit determines the critical pressure where the airway begins to collapse. Popt determines the optimal pressure level for a stable airway. Ptherapy provides an extended period of constant pressure at the ideal level.

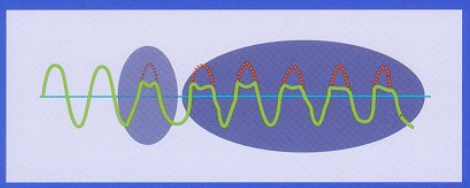
The REMstar Auto's **ability to find ideal pressure levels** makes it a particularly useful tool in a sleep lab setting. When used in conjunction with Respironics' Sleep Diagnostic products like our Analog Output Module and Clinical Remote, the REMstar Auto makes **diagnosing sleep disorders and determining patient prescription** pressure levels easier and more exact.

Breathing Pattern Recognition Ensures the Right Therapy.

As impressive as the Proactive Algorithm therapy is, it is made even more effective with the addition of REMstar Auto's Breathing Pattern Recognition ability. Breathing Pattern Recognition **proactively analyzes the shape curve** of a patient's airflow signal based on four parameters (roundness, flatness, peak and shape). Based on these parameters, Breathing Pattern Recognition can **seek out instances of flow limitation** – by cycling through the Pcrit, Popt, and Ptherapy modes – and act accordingly.

The Breathing Pattern Recognition also **performs a secondary analysis**, based on peak flow, to determine the occurrence of breathing problems like **apnea and hypopnea, and detects snoring** based on a frequency analysis of a pressure signal. Once it **detects one of these events**, the system immediately begins to **ramp up the pressure** level to resume normal breathing. Once **breathing returns to normal**, the REMstar Auto returns to the task of **delivering optimal therapy**.

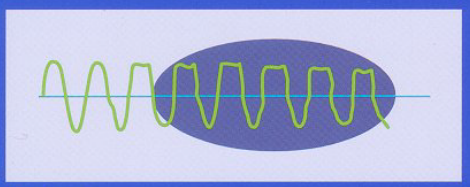
BREATHING PATTERN RECOGNITION NETWORK



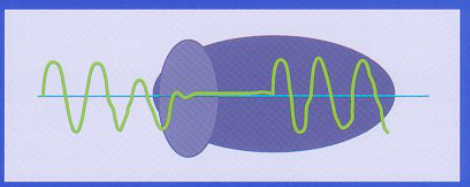
Flow Limitation (primary analysis method)

Respiratory events like apneas and snoring can be recognized by their effects on a patient's airflow signal. REMstar Auto's Breathing Pattern Recognition ability allows it to identify and take care of these events automatically.

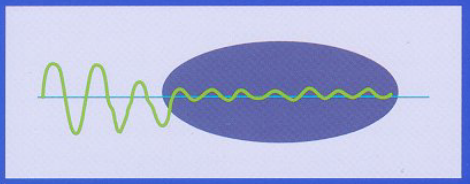
Secondary Analysis identifies and corrects breathing events such as these:



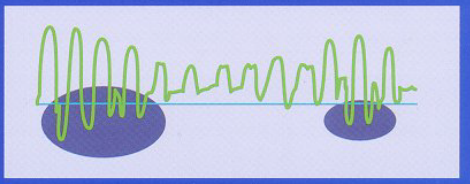
Snoring



Apnea



Elevated Leak Levels



Hypopnea

Encore® Pro: Power and Control from Truly Smarter Software.

Respironics has always been committed to offering the **newest, most advanced** innovations in **sleep technologies and data management tools** to help improve communications between the home healthcare provider, hospital/sleep lab and payer audience. The addition of the **REMstar Auto** to our family of sleep products is further proof that, for us, **compliance is more than a word, it's a way of life**. That fact is especially evident in the REMstar Auto with our new Encore Pro data management software.

The **Encore Pro data management system** is a totally new way of handling patient files, developing patient reports and tracking overall treatment progress of patient populations. The heart of this difference lies in Encore Pro's new **true database architecture** that gives you the power to manipulate and manage patient data in ways never before possible. In fact, now you can even compare the wellness trends of different patients to compare treatment effectiveness.



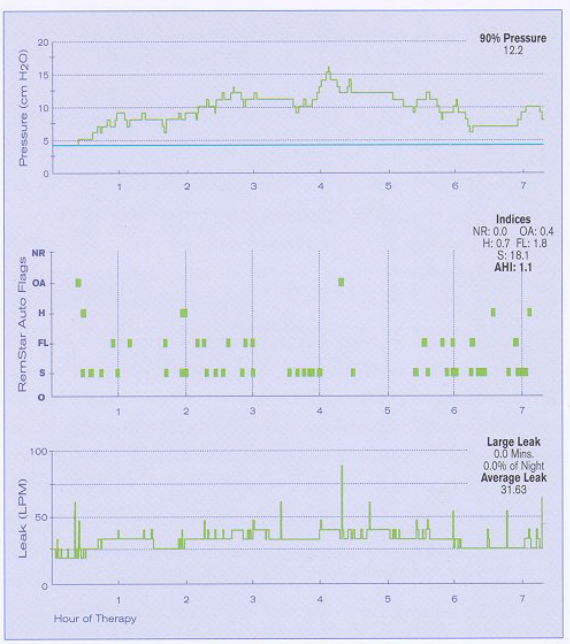
The Encore Pro SmartCard™ puts the power of our best thinking in your hands. It's easier than ever to record compliance and quality-of-life data with this simple mail-in card.

Working with the REMstar Auto, the Encore Pro data management system gives you a greater level of **power and control.** You can generate detailed daily reports that include information on mask leak, apnea/hypopnea index, flow limitation and snoring. Plus, there's an unprecedented **range of long-term reporting power** to give you a better picture of a given patient's improvement – including changes in **long-term compliance data** and the resulting changes in the patient's FOSQ (Functional Outcomes of Sleep Questionnaire) responses.

REMstar Auto Daily Events Per Hour

11/7/2001 11:25 PM — **TOTAL AHI : 1.1**

Pressure (cm H_2O)	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Minutes at Pressure	24.0	12.0	9.0	57.0	57.0	51.0	56.0	88.0	61.0	7.0	12.0	3.0	0.5	0.0	0.0	0.0	0.0
% of Night	5.5	2.7	2.1	13.0	13.0	11.7	12.8	20.1	13.9	1.6	2.7	0.7	0.1	0.0	0.0	0.0	0.0
Flow Limitation	0.0	0.0	13.3	3.2	3.2	2.1	1.2	2.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Snore	5.0	40.0	46.7	8.4	17.9	27.1	23.6	8.9	7.9	19.1	5.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Responsive Apnea/Hypopnea	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Obstructive Apnea	2.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hypopnea	0.0	5.0	0.0	1.1	1.1	1.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AHI	2.5	10.0	0.0	1.1	1.1	1.2	1.1	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
									90%								



Legend: NR - Non-Responsive Apnea/Hypopnea, OA - Obstructive Apnea, H - Hypopnea, FL - Flow Limitation, S - Snore

specifications

PRESSURE RANGE	4 to 20 cm H_2O
RAMP TIME (CPAP MODE ONLY)	0 to 45 min. (5-min. increments)
STARTING RAMP PRESSURE (CPAP MODE ONLY)	4 to CPAP pressure; patient-adjustable
DIMENSIONS	9.45" (l) x 6.69" (w) x 4.72" (h); 24 cm (l) x 17 cm (w) x 12 cm (h)
WEIGHT	3.96 lbs (1.8 kg)
FILTERS	Pollen and optional ultra-fine
DEVICE SET-UP	On-board keypad and SmartCard
DATA STORAGE CAPACITY (minimum)	6 months @ 3 usage sessions/day; 7-9 days in-depth data analysis
DATA STORAGE CONTENT	Date/time, duration at pressure, patient event histograms, short-term detailed events, long-term trends, FOSQ tests
COMPLIANCE METER	Breathing detection; sessions > 4 hours
ALTITUDE COMPENSATION	Automatic
ELECTRICAL REQUIREMENTS	100 – 240 AC, 12 VDC
DC POWER	Direct-connect cord
WARRANTY	2 years
MISC.	Integrated heated humidification control, lighted keys on pad, automatic on/off, mask off alert

products

CPAP Systems	Part #
REMstar AUTO (NORTH AMERICA)	1007381
REMstar AUTO (INTERNATIONAL)	1007382

Encore Pro Software and SmartCard	Part #
ENCORE PRO SOFTWARE	1009583
ENCORE SHIELDED COMMUNICATIONS CABLE (6 ft./1.83 m)	1000814
ENCORE 9 TO 25 PIN CABLE ADAPTER	532348
SMARTCARD READER STATION (Incl: universal supply, 115 VAC cord, and interface cable. 220V cord sold separately.)	1003543
PACK OF SMARTCARDS (10 cards)	1003304
FOSQ CLINICAL REPRINT (Sleep, 20(10): 835-843)	1000141
FOSQ QUESTIONNAIRE, ENGLISH (Call Customer Service for other languages.)	1004550

CPAP Accessories	Part #
POLLEN FILTERS (Reusable; 2 per pack)	1005964
ULTRA-FINE FILTERS (Disposable; 2 per pack)	1005945
SILENCER CAP	1005962
CARRYING CASE	1005965
DC ADAPTER CORD	1001956
SHIELDED DC CORD SYSTEM (Incl: shielded DC cord and battery adapter cable.)	1001979
REUSABLE PATIENT TUBING (1.8 M (6 FT), GRAY)	622038

Humidifiers	Part #
REMstar HEATED HUMIDIFIER	1005792
REMstar HEATED HUMIDIFIER CHAMBER (Replacement)	1008619

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