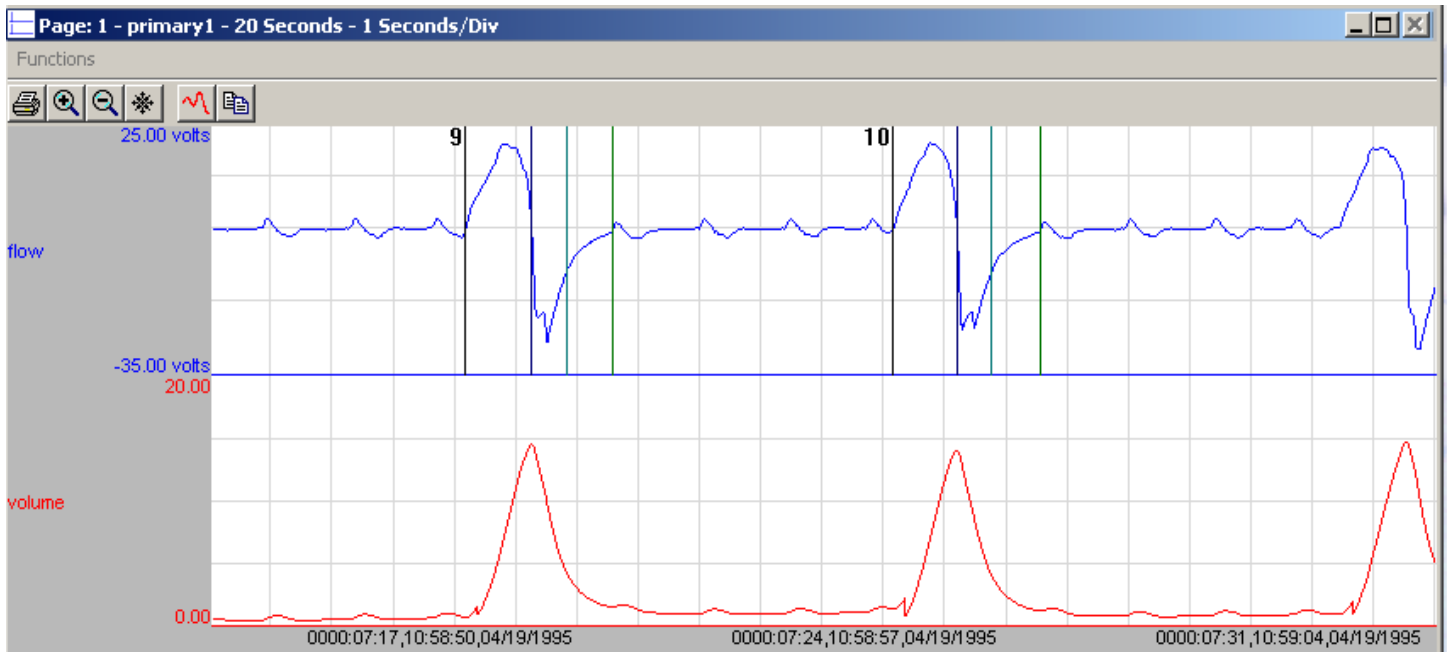




Pulmonary Air Flow and Airway Resistance

The Pulmonary Air Flow (PAF) and Airway Resistance Analysis Module is designed to compute physiologically meaningful parameters from digitized air flow data. The analysis functions by applying a series of logical tests to the digitized flow signal using criteria selected by the user. The software analysis module can analyze any pulmonary flow signal derived either from a plethysmography chamber or pneumotach. Values for these derived signals are calculated on a breath-to-breath basis for each respiratory cycle. The graph below represents a

typical pulmonary flow signal with its digitally integrated volume signal, as they would appear on the monitor. Automated validation marks for Start of Inspiration, Start of Expiration and Start of Apnea are shown (additional validation marks are available). The validation marks provide visual, on-line verification of the accuracy of the system. The list on the following page describes the parameters calculated by the analysis module either in real-time or during subsequent analysis.



Technical Data Sheet

Model PNM-PAF100W and Model PNM-AWR100W Pulmonary Air Flow and Airway Resistance Analysis Module

Name	Definition
Num	The number of the respiratory cycle.
PIF	Peak Inspiratory Flow is the maximum inspiratory flow that occurs during a valid breath.
PEF	Peak Expiratory Flow is the maximum expiratory flow that occurs during a valid breath.
TV	The Tidal Volume is the total volume of air that was inspired during a breath and is always reported in milliliters.
MV	The Minute Volume is the product of the tidal volume and the number of breaths-per-minute.
BPM	The number of breaths-per-minute is calculated on a breath-to-breath basis.
IT	The Inspiratory Time is calculated from the first zero crossing of the flow in the inspiratory direction to the zero crossing of the flow in the expiratory direction. The time is in milliseconds.
ET	The Expiratory Time is calculated from the zero crossing of the flow in the expiratory direction until flow reaches zero again. The time is in milliseconds.
TT	The Total Time is the time period, in milliseconds, from one valid breath to the next valid breath.
AT	The Apnea Time.
CaRaw (only AWR)	Specific Airway Resistance. This parameter is the product of Alveolar Compliance and Airway Resistance
Phase (only AWR)	Phase shift between mouth and chest volume, in degrees.
dT (only AWR)	The delay, in milliseconds, between the mouth and chest volumes.
PEnh	Enhanced Pause.
RT	Relaxation Time. This is the time from the start of expiration to the point where the volume signal drops by the Percent Relaxation value from its maximum value for the cycle.
TVe	This is the difference between the volume at the start expiration mark and the volume at the point prior to the next cycles start inspiration mark. It is always reported in milliliters.
IF50	IF50 reports the inspiratory flow value at the point where the volume signal rises to 50% of the tidal volume.
EF50	EF50 reports the expiratory flow value at the point where the volume signal drops to 50% of the tidal volume.
AVol	Accumulated Volume is the summed total of the Tidal Volume (TV) from a reset point forward and is reported in milliliters.

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