

CP Series Product Brief

Pressure Sensor Subsystem for Sleep Apnea Applications

Key Features

- Dual-sensor air flow controller sub-system designed for BiPAP, APAP and CPAP machines
- Highly Integrated, combining two pressure sensors in one device: differential and gage
- Multi-Range™ – 4 calibrated ranges per sensor
- CP Series Subsystem Enables Selectable:
 - Differential Range (± 250 Pa to ± 2.5 kPa)
 - Gage Range (± 2 kPa to ± 6 kPa)
 - Bandwidth (25Hz to 250Hz)
- 16-bit resolution each channel range
- Ultra low noise, 17.5-bit Effective Resolution
- Very High Accuracy $\pm 0.05\%$ of Selected Range
- Excellent Long Term Stability
- Output Update Rate up to 500Hz
- Temperature Compensated 5°C to 50°C
- Supply Voltage Compensation
- Standard I2C and SPI Interface
- Available in 3-port (CP201) and 4-port (CP301) configurations
- Advanced multi-order filter to eliminate critical fan output noise (OPTIONAL)



Industry leading performance – The CP Series measures dry air and non-aggressive gas pressure with very high accuracy and a stable zero point. Non-linearity is also industry leading and typically within $\pm 0.15\%$ of selected range.

The CP Series employs the proprietary *NimbleSense™* architecture to create the industry's widest dynamic range and highest performing products supporting ranges as low as ± 250 Pa for the differential pressure sensor to as high as ± 6 kPa for the gage pressure sensor. Competing solutions degrade as the pressure ranges are lowered; but the CP Series with Multi-Range capability maintains optimal performance down to even ± 250 Pa.

Optional advanced filtering – With advanced filtering to remove unwanted noise from the fan output, noise induced mixing errors are virtually eliminated.

Constructed with a high reliability plastic enclosure, the CP Series family provides the ideal combination of very high performance and reliability while ensuring customers have a high volume, extremely cost-effective solution optimized for their Sleep Apnea system requirements.

For more information, please contact:
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Product Summary

Superior's CP Series sensor module family builds upon the industry's performance leading SP Series *NimbleSense™* architecture. For reference, the SP Series integrates an advanced piezoresistive sensing element, ADC, DSP and processor intelligence. Available in shared 3-port and dedicated 4-port configurations for maximum design flexibility, the CP Series is a true sub-system that integrates two distinct pressure sensors (Differential & Gage). With the industry's best performance, highest integration and lower system BOM, the CP Series is the ideal solution for Sleep Apnea and other respiratory applications.