

AP²™ **AP squared Sensor™ Products**

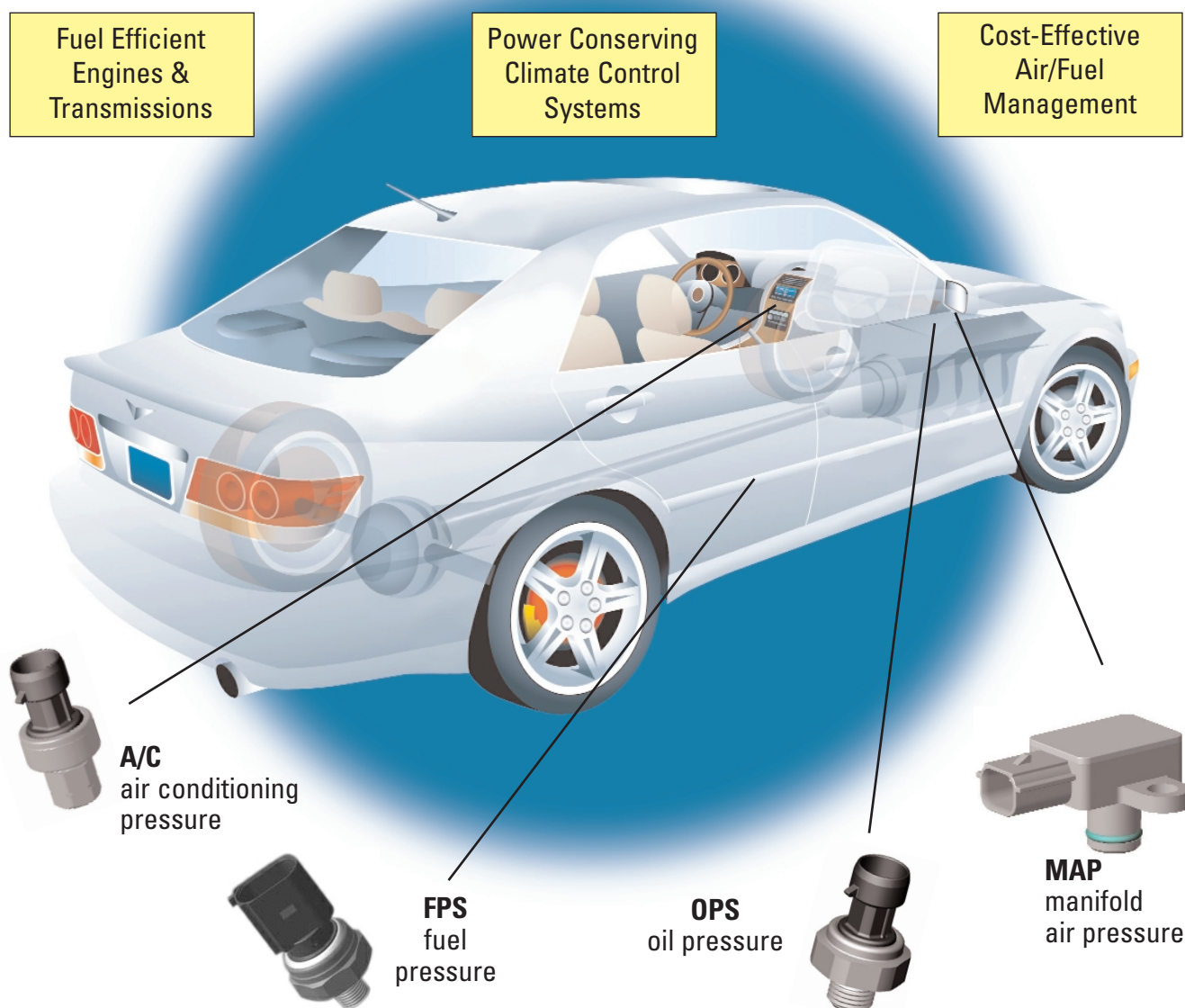
"Taking Pressure Sensing to a Higher Power"

Texas Instruments creates product solutions

Vehicle manufacturers face multiple challenges

Fuel Economy • Emissions Legislation
Alternate Refrigerants • Safety • Comfort
Performance • Cost • Reliability

Vehicle engineers create system solutions



AP²™

AP *squared* Sensor™ Products

Features

- Square Sense Element
- Flexible packaging
- High reliability in noisy environments, balanced circuit design
- Generation II or III conditioning electronics
- Ratiometric output
- Designed for under-hood environment

Benefits

- Lower cost solution; lighter weight
- Available in a wide range of connectors and port fittings , 2X weight and 4X corrosion improvement
- Ease of system integration
- EMC protection to 200 V/m
- Accuracy $\pm 1\%$ Vcc, temperature compensation
- Ease of system integration, eliminates error in supply voltage fluctuation
- Operating temperature range -40°C to 135°C; fluid compatibility

OPS Oil Pressure



Sophisticated engine management systems like cylinder deactivation and accurate driver gauge feedback require superior oil pressure sensing. Texas Instruments oil pressure sensor (OPS) represents the first of the AP² product portfolio developed to meet the most stringent automotive pressure sensing applications. The AP² OPS uses a square sense element in a package that combines accuracy with a cost-effective design. The design minimizes temperature drift, allowing out-of-box accuracy over product life.

A/C Air Conditioning



Superior pressure sensing is required for highly efficient A/C loop systems that enable reduced fuel consumption and improved emissions. TI's AP (Automotive Pressure)² sensor is the low-cost, lightweight solution for accurate and robust pressure sensing in under-hood applications such as engine load management and compressor protection. With an aluminum port fitting and automotive grade connector, its corrosion protection is second to none. A patented square sense element and conditioning electronics provide field-proven EMC tolerance and reliability, as well as above-average performance in high-noise environments. Multiple packaging configurations are available for easy integration. For those looking to optimize A/C system control, the AP² sensor design ensures high-quality, world-class performance.

MAP Manifold Air Pressure



Air mass calculation is critical to engine calibrators to obtain optimal engine performance. The TI AP² manifold absolute pressure sensor is the low-cost solution for accurate and robust pressure sensing in turbo and normally aspirated intake air systems. With its impervious ceramic diaphragm, this sensor is robust to overpressure spikes and the acidic nature of recirculated exhaust gases. Multiple package styles are available including a two-sense element approach that combines signals to produce a differential output in applications where harsh media compatibility is extremely critical. For those looking for added control, the TI AP² MAP sensor design lends itself to easy integration of a thermistor probe, thereby enabling co-location of the pressure and temperature inputs.

FPS Fuel Pressure



With the market demands for tighter control of the fuel delivered to engine cylinders, the AP² fuel pressure sensor emerges as a simple and reliable solution. This TI sensor capitalizes on our wide range of available brass, steel and lighter aluminum hexports, which can be combined with any of our available electrical connectors to make it easy to integrate into any fuel line, fuel filter assembly or fuel pump. With the flexibility to provide a sensor with high accuracy levels and an optimized manufacturing strategy, this AP² sensor promises precision and high quality for advanced fuel delivery and fuel handling systems worldwide.

Important Notice: Texas Instruments (TI) reserves the right to make changes to or to discontinue any product or service identified in this publication without notice. TI advises its customers to obtain the latest version of the relevant information to verify, before placing orders, that the information being relied upon is current.

Texas Instrument assumes no responsibility for infringement of patents or rights of others based on Texas Instruments applications assistance or product specifications since TI does not possess full access concerning the use or application of customers' products. TI also assumes no responsibility for customers' product designs.

Texas Instruments Incorporated

Sensors & Controls
34 Forest Street
Attleboro, MA 02703-0964
Phone: 1-248-305-5721
Fax: 1-248-305-5734
email: auto-mktg@ti.com
website: www.tisensors.com

