



HEAVY DUTY

AFTERMARKET
PRODUCT
OVERVIEW



Sensata
Technologies



ABOUT SENSATA

Sensata Technologies is one of the world's leading suppliers of sensing solutions for Heavy-Duty (On-Road, Off-Road) and Automotive markets. Offering sensor-based solutions as well as controllers, software and other mission-critical products. These innovations create valuable business insights for customers and end-users.

Sensata is proud to call many of the world's leading Heavy-Duty equipment manufacturers its long-standing clients. With the mission of improving performance, increasing safety and reducing emissions, our sensors and switches can detect pressure, temperature and on / off controls for a variety of applications.

Sensata's advanced sensing technologies provide cutting-edge capabilities in systems like:

- Brake
- Cabin Comfort
- Chassis
- Engine
- Exhaust after-treatment
- Transmission

WHAT DRIVES SENSATA'S MARKETS?

CLEAN ENVIRONMENT

Emissions reduction in air and water

EFFICIENCY

More efficient use of fossil fuels and increased productivity

SAFETY

Injury and accident reduction

OUR BRANDS



Sensata
Technologies

AIRPAX®

DeltaTech
CONTROLS

NEWALL

BEI KIMCO

SPEAR

GIGAVAC

Qinex™

BEI SENSORS

KAYZEE

crydom®

Schrader
TPMS Solutions

LITHIUM BALANCE
BATTERY MANAGEMENT SYSTEMS



XIRGO

KLIXON®

**SENSOR
NITE**

cynergy3™

**MAGNUM
DIMENSIONS**

PRECO®
ELECTRONICS

SWINDON
SILICON SYSTEMS

Please contact your Sensata representative about aftermarket brand availability.

APPLICATION OVERVIEW



WHERE ARE SENSATA SENSORS?

IN ON-ROAD COMMERCIAL VEHICLE AND OFF-ROAD APPLICATIONS

Auxiliary

- ✓ Air System Pressure
- ✓ Hydraulic System & Implements Pressure
- ✓ Hydraulic Filter Pressure or Temperature

Cabin Comfort

- ✓ Air Conditioning Pressure and / or Temperature
- ✓ Cabin Air Pressure
- ✓ Cabin Air Filter Pressure
- ✓ Solar Twilight

Chassis & Safety

- ✓ Brake System Pressure
- ✓ Suspension System Pressure
- ✓ Tire Pressure Monitoring System
- ✓ Wheel Speed

Electrification

- ✓ Battery Current
- ✓ Battery Management Systems
- ✓ Circuit Breakers
- ✓ Contactors (High/Low Voltage)
- ✓ DC to AC Inverters
- ✓ Fuses (High/Low Voltage)
- ✓ Power Distribution Units
- ✓ Power Switches
- ✓ PyroTactor (Fuse + Contactor)
- ✓ Thermal Management Pressure and / or Temperature
- ✓ Thermal Runaway Pressure

Engine

- ✓ Air Filter Pressure
- ✓ Air Intake Pressure and / or Temperature
- ✓ Alternative Fuels Pressure and / or Temperature
- ✓ Cam / Crank Position / Speed
- ✓ Coolant Pressure
- ✓ Crankcase Pressure

- ✓ Engine Oil Filter Pressure or Temperature
- ✓ Engine Oil Pressure and / or Temperature
- ✓ Fuel Filter Pressure or Temperature
- ✓ Fuel Injection Pressure and / or Temperature
- ✓ Fuel Pump Pressure
- ✓ Fuel Tank Pressure

Exhaust

- ✓ EGR Pressure or Temperature
- ✓ Exhaust Back Pressure
- ✓ Particulate Filter Pressure & Temperature
- ✓ SCR Temperature
- ✓ Turbo Protection Temperature

Transmission

- ✓ Automated Transmission Control Pressure
- ✓ Gear Position
- ✓ Input / Output Speed
- ✓ Mode Switch
- ✓ Transmission Oil

50+
DEVICES PER
HEAVY VEHICLE

AC PRESSURE SENSORS / SWITCHES (ACP)



DESCRIPTION

Sensata's AC pressure sensors / switches monitor pressure levels to protect the Air Conditioning (AC) compressor against high (blockage) or low (no refrigerant) pressures.

POSITION

Sensors / switches are located on the high-pressure side after the AC compressor and / or low-pressure side before the AC compressor.

BENEFIT

Sensors / switches control the AC compressor, fan and expansion valve for an efficiently functioning Air Conditioning system.



AIR BRAKE PRESSURE SENSORS (ABP)



DESCRIPTION

Sensata's air brake pressure sensors provide accurate pressure inputs for ABS and EBS systems.

POSITION

Sensors are typically located on an air supply or braking lines or within the air supply panel.

BENEFITS

- High sensitivity
- Great endurance performance
- Meets functional safety standards



BOOST (BPS) / MANIFOLD ABSOLUTE PRESSURE SENSORS (MAP) / T-MAP



DESCRIPTION

Sensata's atmospheric, boost and manifold absolute pressure sensors measure pressure and temperature of intake air for optimized engine performance.

POSITION

Sensors are located near or directly on the air intake manifold for MAP and inside or on the compressor for BPS.

BENEFITS

- Optimize engine performance for emissions control, fuel economy and engine performance
- Measure airflow



CAM & CRANK POSITION SENSORS (CCS)



DESCRIPTION

Sensata's cam and crank position sensors measure the rotational speed and position to send the input to the engine control units. The crank position sensors control the timing of the regulation of fuel delivery and ignition. The cam position, sensors control the opening of the exhaust valves at the right time. The crank sensor can be used in combination with the cam sensor to monitor the relationship between the pistons and valves in the engine, which is particularly important in engines with variable valve timing.

POSITION

Crank sensors are located in the main crank pulley and the flywheel. It may also be positioned on the side or back of the engine. Cam sensors are located in the block or cylinder head.

BENEFITS

- Help to improve engine performance
- Help to reduce gas emission
- Prevent vehicle from going into limp mode



COOLANT PRESSURE SENSORS (CPS)



DESCRIPTION

Sensata's coolant pressure sensors provide accurate coolant pressure readings and help to detect engine problems.

POSITION

Sensors are typically installed on the header tank or radiator.

BENEFITS

- Proven and reliable design
- Low risk
- Flexible, many port material and connector options available
- Suitable for marine applications



DIFFERENTIAL PRESSURE SENSORS (DPS) / EXHAUST GAS PRESSURE SENSORS



DESCRIPTION

Sensata's differential pressure sensors measure the pressure difference across the particulate filter to enable the engine control unit to calculate the amount of soot and ash that is accumulated inside and to trigger timely regeneration.

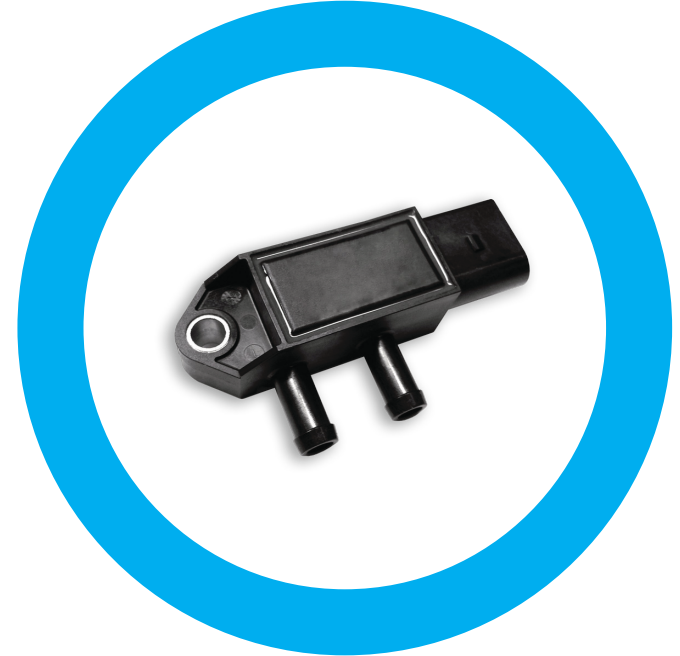
Sensata's exhaust gas pressure sensors measure the pressure difference across an Exhaust Gas Recirculation (EGR) system compressor.

POSITION

Sensors are located in the exhaust manifold outlet of the exhaust system.

BENEFITS

- Minimize the amount of soot, which is emitted from the vehicle's exhaust system
- Determine if filter needs to be cleaned or replaced to avoid clogs
- Ensure that the EGR system functions properly



EXHAUST BACK PRESSURE SENSORS (EBP)



DESCRIPTION

Sensata's exhaust back pressure sensors measure the exhaust back pressure directly after the cylinder, enabling the engine control unit to regulate valve timing and avoid knocking.

POSITION

In diesel engines, sensors are typically located before the turbocharger in the exhaust manifold for turbo control and protection.

In gasoline engines, sensors are typically located in the EGR loop before the EGR valve to measure the EGR flow in specific conditions (low flow).

BENEFITS

- Protect both the engine and the turbocharger from overpressure
- Increase fuel economy and performance



EXHAUST GAS TEMPERATURE SENSORS (EGTS / HTS*)



DESCRIPTION

Sensata's exhaust gas temperature sensors measure temperature of exhaust gas and send signals to the engine control unit.

POSITION

Sensors are located before the turbocharger, after the turbocharger, before / after Diesel Oxidation Catalyst (DOC), before / after Diesel Particulate Filter (DPF) and Selective Catalytic Reduction (SCR), before / after EGR Cooling System.

BENEFITS

- Monitor temperature for turbochargers, catalytic converters, particulate filters and nitrogen oxide reduction systems
- Protect key components from over-heating in both diesel and gasoline engines
- Ensure the exhaust system is functioning properly

* HTS stands for High Temperature Sensor.



FUEL DELIVERY PRESSURE SENSORS / FUEL TANK PRESSURE SENSORS (LFS*)



DESCRIPTION

Sensata's fuel delivery / fuel tank pressure sensors measure fuel flow pressure.

POSITION

Sensors are part of the fuel pump or mounted on the fuel line / fuel delivery module inside of the tank.

BENEFITS

- Support fuel pump speed to optimize injection strategy
- Prevent diesel filter from clogging and gasoline vaporization
- Enable CO₂ emission reduction
- Prevent engine from stalling



* Also referred to as Liquid Fuel Pressure Sensor.

GASOLINE DIRECT INJECTION SENSORS (GDI) / GASOLINE RAIL PRESSURE SENSORS



DESCRIPTION

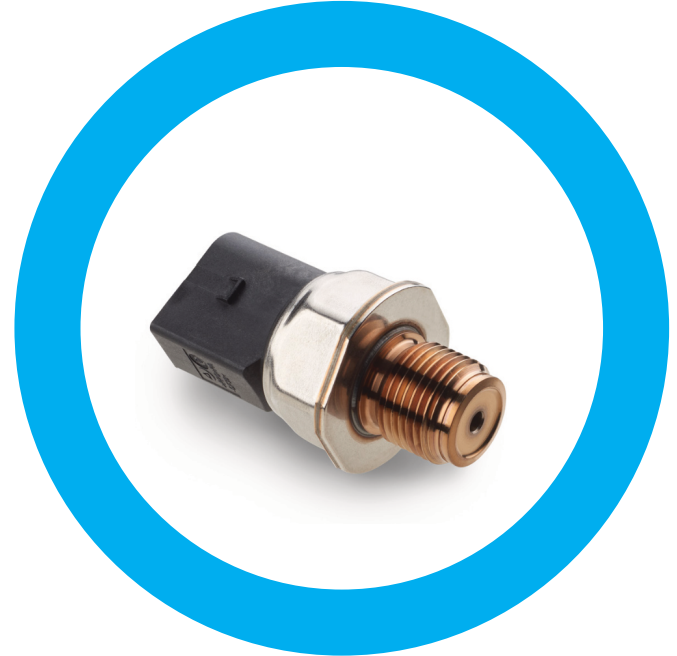
Sensata's gasoline direct injection / rail pressure sensors enable the system to provide the right pressure for optimal fuel injection.

POSITION

Sensors are located on the fuel rail of gasoline engines.

BENEFITS

- Increased fuel economy and reduced emissions
- Sensors prevent fuel rail pressure inconsistencies that cause engine stalling, poor acceleration and difficulties while starting the engine



INJECTION CONTROL PRESSURE SENSORS (ICP)



DESCRIPTION

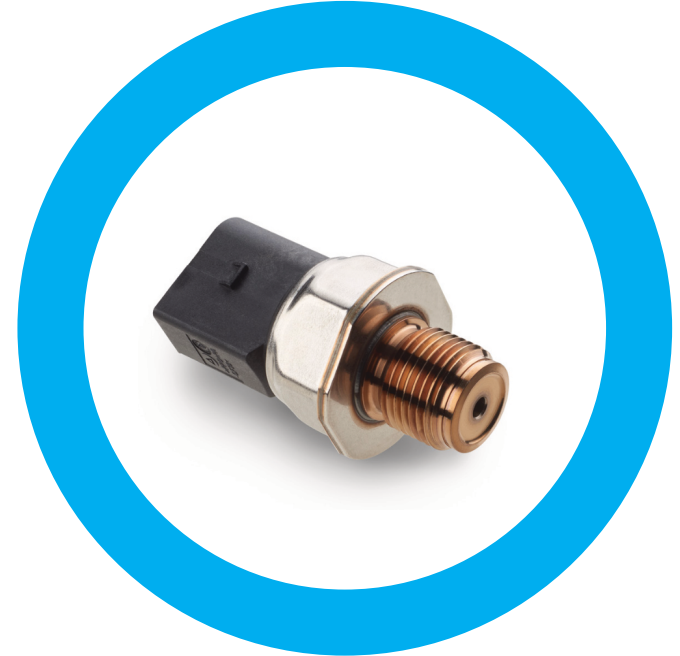
Sensata's injection control pressure sensors enable the system to provide the right pressure for optimal fuel injection.

POSITION

Sensors are located on the injector pump or fuel rail.

BENEFITS

- Increase fuel economy and reduce emissions
- Prevent fuel rail pressure inconsistencies that cause engine stalling, poor acceleration and difficulties while starting the engine



INTERNAL MODE SWITCHES (IMS)



DESCRIPTION

Sensata's internal mode switches let the Transmission Control Module know which gear is selected and then send a signal to the dashboard.

POSITION

Switches are attached to the control valve body or shift detent lever shaft within the transmission.

BENEFITS

- Ensure that transmission goes into selected gear smoothly
- Prevent vehicle from going into limp mode
- Provide the driver with a display of the selected gear



OIL PRESSURE SENSORS / SWITCHES (OPS)



DESCRIPTION

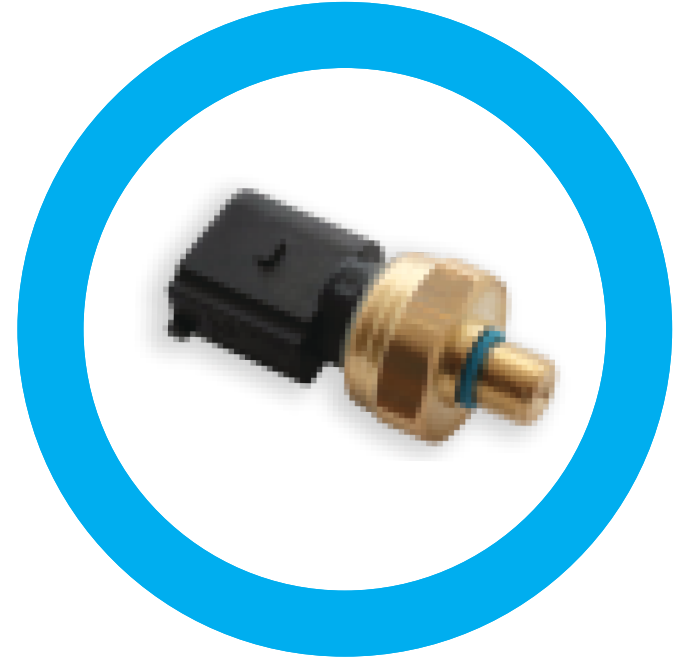
Sensata's oil pressure sensors / switches measure the engine oil flow pressure and report the pressure values to the engine control unit to regulate the oil flow.

POSITION

Sensors / switches are located near the top and back of the engine compartment bolted into the engine block.

BENEFITS

- Ensure the proper amount of oil to prevent major engine damage
- Enable oil pump control to reduce fuel consumption and CO₂ emissions



PEDAL POSITION SENSORS (PPS) / PEDAL AND SENSOR ASSEMBLY



DESCRIPTION

Sensata's pedal position sensors are used to monitor the position of the throttle pedal and send an electronic signal to open the throttle body as you depress the accelerator. They sense the position of the throttle valve or butterfly valve and transmit the information to the Engine control unit. It's also an input for Electronic Throttle Control (ETC).

POSITION

Sensors are located inside the vehicle cabin.

BENEFITS

- Have two electrical outputs, including redundancy
- Simple to mount
- Offer a wide operational temperature range



POWER STEERING PRESSURE SENSORS / SWITCHES (PSS)



DESCRIPTION

Sensata's power steering pressure sensors / switches provide information about demand on the power steering system to the vehicle's computer.

POSITION

Sensors / switches are located on the high-pressure side of the power steering system.

BENEFIT

Sensors / switches protect the engine from suddenly slowing down or speeding up, as well as stalling when the power steering pressure is not correct.



PRESSURE & TEMPERATURE SWITCHES



DESCRIPTION

Whether providing reliable on / off control or offering an accurate safety switch function, Sensata's family of pressure and thermal switches meet the demanding needs of Heating, Ventilation, Air Conditioning and Refrigeration applications.

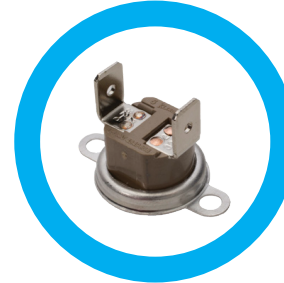
TYPES OF SWITCHES

PS80

Pressure switch designed to meet the unique challenges of refrigerant CO₂-based air conditioning and heating equipment.

20PS

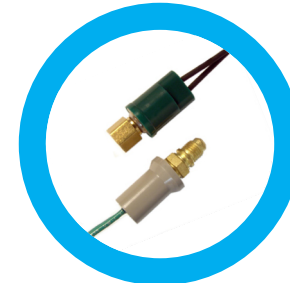
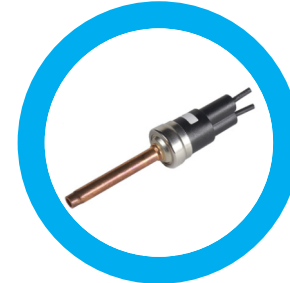
Automatic reset pressure switch designed to meet the unique challenges of refrigerant CO₂-based air conditioning and heating equipment.



KLIXON®



AIRPAX®



SOLAR TWILIGHT SENSORS (STW)



DESCRIPTION

Sensata's twilight sensors have the ability to sense when headlights should be turned on or off due to changes in sky conditions. The Twilight Sensor's advanced optical technology improves driver safety by making the vehicle more visible to other vehicles and pedestrians.

POSITION

Sensors are located at the base of the windshield under the defogger grill.

BENEFITS

- Accurate light measurement
- Remain stable over temperature and time
- Customizable output
- Custom interconnect
- Capable of adding additional functions such as solar sensing, tunnel sensing, interior fog sensing and an LED indicator



SUSPENSION PRESSURE SENSORS (SPS)



DESCRIPTION

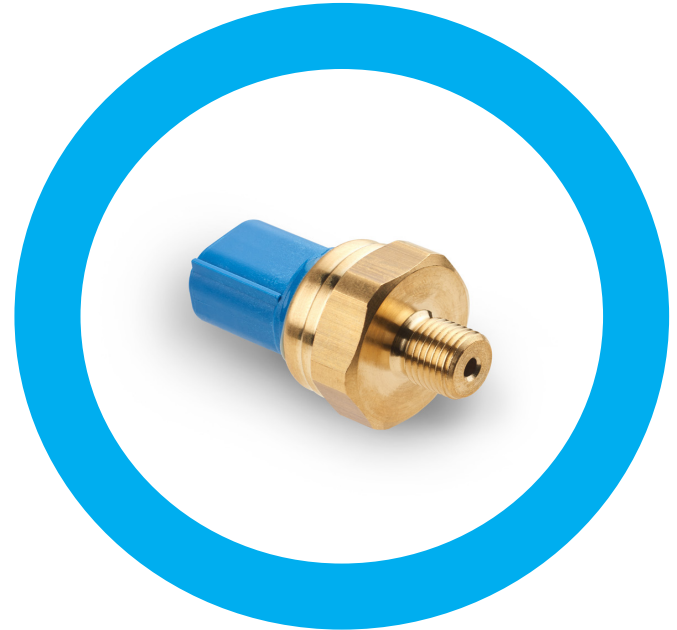
Sensata's suspension pressure sensors measure air and hydraulic pressure in advanced suspension and chassis control modules. The sensors provide accurate pressure feedback for suspension valve and / or pump control.

POSITION

Sensors are located on auxiliary air or hydraulic system and control units.

BENEFITS

- Compatible with moisture and hydraulic fluids
- Improve ride height, fuel economy and tire wear



TIRE PRESSURE MONITORING SENSORS (TPMS)



DESCRIPTION

Sensata's tire pressure monitoring sensors measure pressure and temperature in real-time for all tires. TPMS is a mandated vehicle safety feature for passenger cars and light trucks sold in the United States, Europe and China.

POSITION

Sensors are located inside of each tire, attached to the rim through the valve hole.

BENEFITS

- Increase road safety
- Reduce fuel consumption
- Reduce tire service related costs
- Reduce CO₂ emissions
- Improve tire life and performance



TRANSMISSION PRESSURE SENSORS (TPS)



DESCRIPTION

Sensata's transmission pressure sensors measure the hydraulic oil pressure in different transmission applications.

POSITION

Sensors are located in / on gearboxes.

BENEFITS

- Ensure smooth gear change
- Determine line, pulley or clutch pressure precisely and reliably



TRANSMISSION SPEED SENSORS (TSS)



DESCRIPTION

Sensata's transmission speed sensors provide a position input to the transmission control units so that the transmission can be properly controlled according to the position commanded by the sensor.

POSITION

Sensors are located on the front or back of the transmission shaft.

BENEFITS

- Ensure that transmission goes into selected gear
- Prevent vehicle from going into limp mode





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