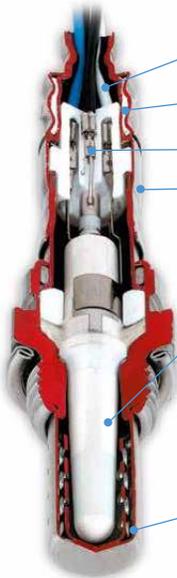


# F&S Always Oxygen Sensors

## OVERALL ADVANTAGE

- Designed and manufactured to the strictest OEM Standards.
- Subjected to rigorous quality and performance tests.
- These are the exceptional standards behind F&S Always's Oxygen Sensors; guaranteed to match each vehicle perfectly every time.
- That advanced engineering, OE quality and superior performance is now available to aftermarket customers in our F&S Oxygen Sensors programme.
- Which is why, when you need a replacement Oxygen Sensor, there's only one name to choose: F&S Always



**Steel core in wires:** The Teflon isolated wires have a core of stainless steel strands for extra strength, surrounded by nickel coated copper wires for good conductivity and low resistance.

**Porous PTFE filter:** Allows atmospheric oxygen to enter the Sensor without permitting water or engine contaminants to seep into the casing.

**Robotic laser welded connection:** Ensures long and reliable operation.

**Stainless steel housing:** Resists corrosion and contamination with a rugged, watertight body.

**Aluminium-oxide double trap layer :** F&S Always Lambda Sensors feature a unique protective coating of aluminium oxide on the ceramic element to help ensure the Sensor takes accurate measurements and ensure a long lifetime. The coating helps to:

- > Filter contamination out of the exhaust gases
- > Keep unwanted pollution away from the ceramic element
- > Prevent an early clogging of the Sensor element and/or damage to the platinum electrode (of particular value for cars running with low quality fuel).

The aluminium oxide trap layer therefore plays an active role in delivering optimal emissions, fuel economy, engine performance and prevention of engine damage.

**Double protection cover:** Maintains proper unit temperature for quicker response times and protects the ceramic element against silicone and lead poisoning.

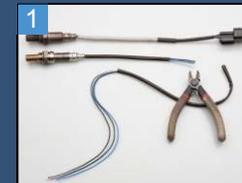
## FITTING

**Direct Fit Sensor - With OEM connector fitted, ready for installation.**



For reliability reasons, adapters for lambda sensors are often gold plated on the contact side and tinned on the cable connection side

**Universal Fit Sensor - Without a connector, enabling you to re-use(recycle!)the old part's connector.**



OXYGEN SENSORS

# F&S Always Oxygen Sensors

## PERFORMANCE ADVANTAGE

Product parameters	F&S Always oxygen sensor	National standard	LSH oxygen sensor produced by BOSCH
Operating temperature	350°C~850°C	350°C~850°C	350°C~850°C
Response time	<150ms	<150ms	<150ms
Sensor voltage (mV) Rich mixture at $\lambda=0.93\sim0.97$	At 350°C $U_{out}=750\sim910mV$ ; At 850°C $U_{out}=625\sim785mV$	At 350°C $U_{out}=750\sim910mV$ ; At 850°C $U_{out}=625\sim785mV$	At 350°C $U_{out}=770\sim910mV$ ; At 850°C $U_{out}=640\sim780mV$
Sensor voltage (mV) Lean mixture at $\lambda=1.05\sim1.10$	At 350°C $U_{out}=-30\sim70mV$ ; At 850°C $U_{out}=20\sim90mV$	At 350°C $U_{out}=-30\sim70mV$ ; At 850°C $U_{out}=20\sim90mV$	At 350°C $U_{out}=-30\sim70mV$ ; At 850°C $U_{out}=25\sim85mV$
Internal resistance	<2k $\Omega$	—	<1k $\Omega$
Activation time of zirconium unit	<12s	—	<25s
Current of heater	1.0 $\pm$ 0.1A	—	0.95 $\pm$ 0.15A
Air tightness	Leakage rate <0.8 ml/min	Leakage rate <1ml/min	—

## OXYGEN SENSORS

### Premium A/F(AIR/FUEL) Oxygen Sensors



Wideband/Air-Fuel sensors perform the same function as a regular O2 sensor, but they precisely measure the amount oxygen in the exhaust rather than just switching between rich (too much fuel, not enough oxygen) and lean (too much oxygen, not enough fuel). Our Wideband sensors use a more sophisticated sensing element that provides a signal to the vehicle's ECU that is proportional to the amount of oxygen in the exhaust.

- Advanced Wideband sensing element for exact air/fuel measurement
- Robust sensor design increases sensor longevity
- Sealed protection tube due to 100% functional quality test
- 'True Direct-fit' OE connectors and harness
- Pre-coated threads with anti-seize compound right out of the box

OXYGEN SENSORS