reventec

Liquid Level | Position | Temperature

MOTORSPORT SENSORS

SENSORS FOR EXTREME ENVIRONMENTS

For over a decade, Reventec has been a go-to sensor manufacturer for motorsport vehicle sensors competing in Formula One, IndyCar, IMSA and WEC. With a reputation built on the ability to react rapidly to support urgent custom design requests, many of our products are approved with FIA homologation status. Reventec designs and develops custom programmable sensors for use in harsh environments and has built a reputation upon delivering solutions for top-flight motorsport, automotive, defence and unmanned aerial applications.

Founded by Neville Meech, an experienced engineer with a proven track record of providing custom sensor solutions, Reventec is driven to manufacture technology that prioritises performance and provides race teams the edge they need to conquer on the track. From fuel level sensing in high vibration environments, to monitoring rapid suspension movements to the scorching heat of detecting engine temperatures, Reventec prides itself on solving challenging engineering problems.

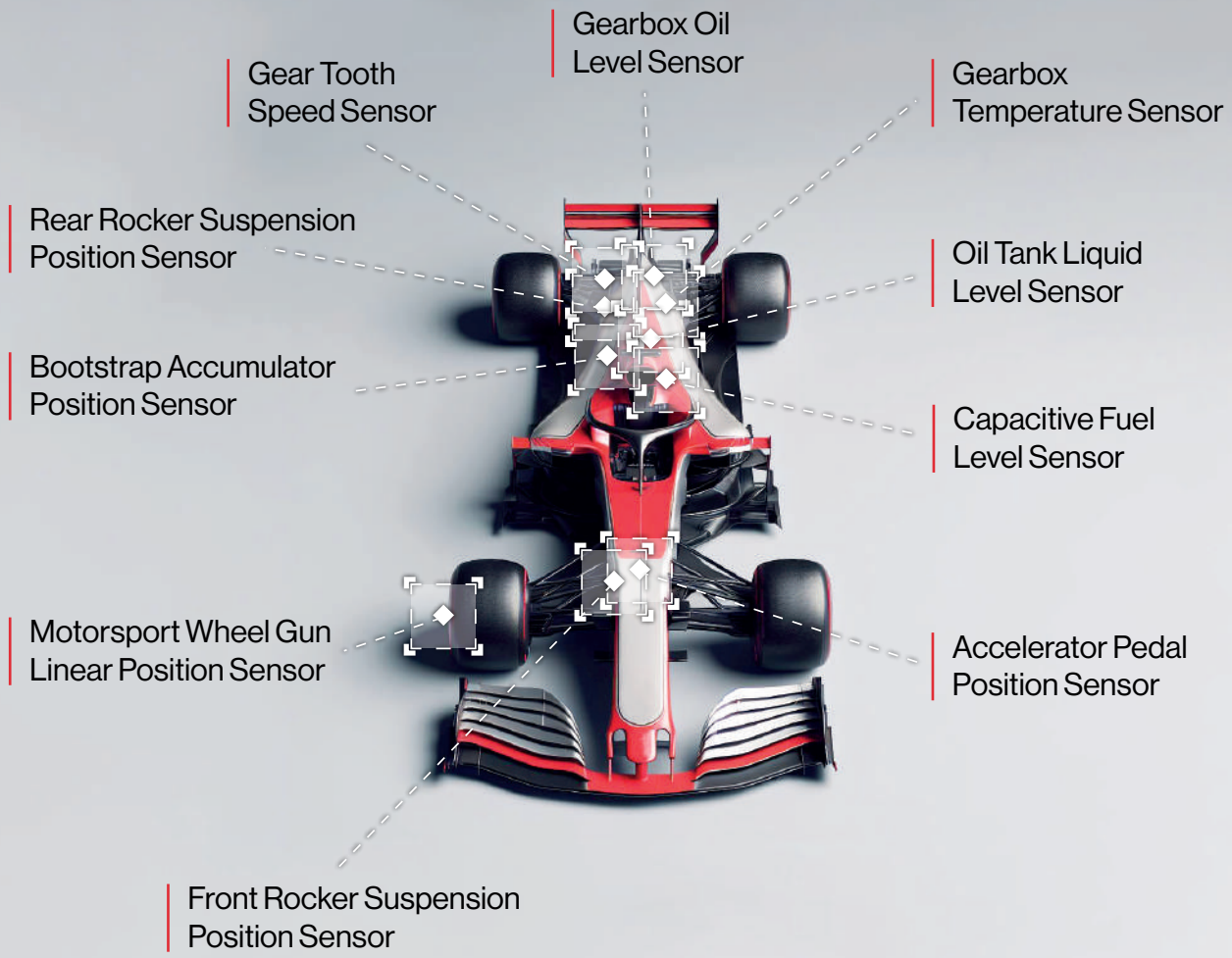
FULL CUSTOMISATION	Reventec is renowned for engineering bespoke sensor solutions tailored to team's specific requirements. Much of our work is focused on low quantity volumes.
RAPID PROTOTYPING	Manufacturing and R&D facilities are based alongside design and development headquarters ensuring that projects can make the jump from CAD screen to production in rapid time. With components kept in stock and Reventec's agile development process, turning concepts into reality is fast.
PROVEN TRACK RECORD	Reventec sensors have been instrumental in countless victories, with race teams continuing to use Reventec sensors season after season - a testament to their performance, effectiveness and reliability.
HARSH ENVIRONMENT EXPERTISE	All sensors are subjected to stringent temperature and pressure tests before they leave the workshop to ensure quality. Reventec sensors are built to perform in extreme environments and are vibration-tolerant, shock-resistant and high temperature rated.

VEHICLE PERFORMANCE SENSORS

Real-time accuracy drives real confidence, enabling race teams to push their performance to new levels. Reventec's range of liquid level, position and temperature sensors are championship-winning and deliver vital data for split-second decisions and informs strategies that shape race results.

Vibration, water ingress, heat and dirt can all cause sensors to fail. A lack of accurate performance data for a vital component can be the difference between winning and losing. Reventec's game-changing sensors provide accurate data, even under the harshest conditions. It's the reason why so many Formula 1®, WEC and IMSA teams choose Reventec.

RACE CAR SENSORS



OUR TECHNOLOGIES

FUEL, OIL, COOLANT & WATER
LIQUID LEVEL SENSORS

LINEAR, ARC & ROTARY TMR
NON-CONTACT POSITION SENSORS

PROGRAMMABLE
TEMPERATURE SENSORS

CAPACITIVE LIQUID LEVEL SENSORS

Fuel | Oil | Coolant | Water

CONTINUOUS CAPACITIVE LIQUID LEVEL SENSING

Reventec Liquid Level Sensors leverage capacitive sensing technology to measure the capacitance of a contained fluid for reliable liquid level readings. Benefitting from no moving parts that may degrade over time, these reliable sensors can be used in any orientation whilst maintaining accurate measurement.

Sensors are manufactured from a range of materials including: robust anodised aluminium, lightweight carbon fibre and rugged stainless steel. With a compact sensor head and fully sealed electronics, the sensor is ideal for vareity of high vibration and challenging applications. The device has a typical operating temperature range of -40°C to 125°C (-40°F to 257°F), with additional 150°C (302°F) designs available. Temperature measurement can be added on select models. Our standard liquid level sensors have a variety of mounting formats, connector types and construction materials to choose from with fully customised designs available. All liquid level calibrations are completed in the intended fuel to achieve high accuracies of ±0.5% of reading. Continuous output options include analog 0-5V and CAN.

Suitable Applications

- Fuel Tank Level Sensors
- Engine Oil Level Sensors
- Gearbox Oil Level Sensors
- Engine Coolant Level Sensors

WATCH THE EXPLAINER VIDEO →

Technology Features

+ Analog and CAN output options
+ Compatible with a variety of dielectric fluids
+ Manufactured to length and calibrated in intended liquid for advanced accuracy
+ Insensitive to orientation
+ Accurate fluid volume sensing over a wide temperature range of -40°C to +150°C
+ Highly customisable designs to suit a range of applications

Solid-State Technology | Lightweight Construction | Integrated Electronics | Insensitive to Orientation | Vibration Tolerant | Fully Customisable

PRODUCT RANGE

LS100

VIEW PRODUCT →

LS145

VIEW PRODUCT →

LS200

VIEW PRODUCT →

LS245

VIEW PRODUCT →

LS300

VIEW PRODUCT

LS345

VIEW PRODUCT

LS500

VIEW PRODUCT

LS545

VIEW PRODUCT

LS570

VIEW PRODUCT

LS800

VIEW PRODUCT

LS845

VIEW PRODUCT

LS1000

VIEW PRODUCT

LS1045

VIEW PRODUCT

LSM100-MICRO

VIEW PRODUCT

LSM-MICRO

VIEW PRODUCT

CUSTOM

VIEW PRODUCT

CUSTOM SENSORS

Do you have an unusual requirement and can't use one of our existing designs? Reventec can develop a custom sensor to fit your application in a rapid timeframe.

Micro Sensors

Utilising a next-gen microelectronics platform, Reventec can offer compact level sensor solutions for applications where size and weight are critical.

Remote Electronics

Oil and coolant applications can often experience temperatures exceeding 150°C. To overcome this the Reventec capacitive measurement platform is capable of remote mounting without the need for conditioning electronics in the probe head, giving design flexibility and easy installation.

- +200°C Max Operating Temperature
- Full Temperature Compensation

POSITION SENSORS

Linear | Arc | Rotary

NON-CONTACT PROGRAMMABLE POSITION SENSING

Reventec's Position Sensors are extremely versatile. The sensors are commonly designed and manufactured to fit specific customer spatial constraints and packaged in a variety of forms - ideal for the challenges that our motorsport customers face. Leveraging the latest advancements in Tunnel Magnetoresistance sensing, Reventec's state-of-the-art Quantum TMR technology offers superior accuracy compared to Hall Effect sensors and provides reliable, robust measurement in the toughest environments.

Capable of sensing across 40mm air gaps and through up to 20mm aluminuim or stainless steel walls, our non-contact position sensors use TMR technology to measure linear, angular and rotary movements. Reventec linear position sensors measure components linear movement across a configurable distance of up to 800mm, depending on sensing heads and target magnet. Reventec arc and rotary position sensors offer up to 360 degrees of measured rotary movement. As a solid-state, non-contact position measurement technology, the sensors can be packaged in a variety of materials, including; all plastics, aluminium, stainless steel, titanium, brass and carbon fibre. Our newest addition to the TMR position sensing lineup with blade shaft offers a drop in replacement for applications currently using a potentiometer.

Detect Through Stainless Steel | Solid-State Technology | Lightweight Construction | Vibration Tolerant | Integrated Electronics | Fully Customisable

Features

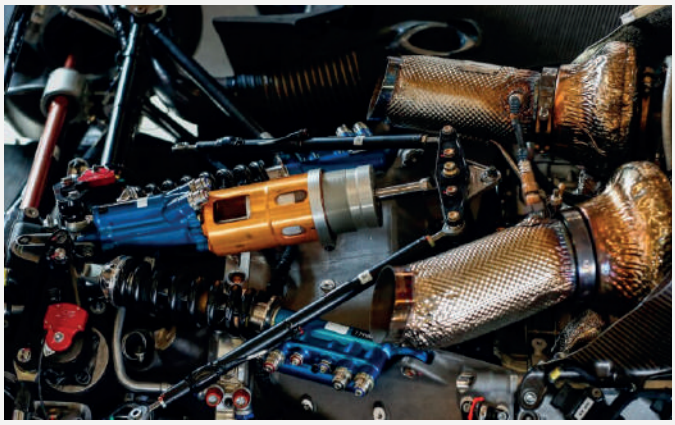
+ 0-5V Analog and CAN output options
+ Rapid response rate of 5kHz
+ Single channel, dual channel, and triple channel output options for reliability and redundancy
+ 12 bit resolution
+ Non-contact, solid-state position sensing for increased product lifespan
+ Highly customisable designs to suit a range of applications

Suitable Applications

Reventec's range of programmable linear, arc and rotary position sensors are ideal for dynamic racecar applications, including:

- Hydraulic Actuator Linear Position Sensor
- Throttle Position Sensors
- Suspension Position Sensor
- Steering Angle Position Sensor

Application Note



Porsche 963 hypercar © 2023 Dr. Ing. h.c. F. Porsche AG.

The Porsche 963 hypercar, shown here, has two Rear Rocker Position Sensors fixed on the suspension to closely monitor the movement of this mechanical assembly. Measuring the 80 degree arc movement of the suspension rocker, the instrument is developed to perform reliably in high vibration environments. The sensor is fixed to a static central mount whilst the magnet target is attached to the rocker that passes back and forth around the sensor when the suspension is engaged.

READ MORE →

PRODUCT RANGE

100mm Linear Position Sensor

VIEW PRODUCT

Low Pressure Actuator Linear Position Sensor

VIEW PRODUCT

Hydraulic Actuator Linear Position Sensor

VIEW PRODUCT

45mm Linear Wheel Gun Position Sensor

VIEW PRODUCT

Quantum TMR 100° Arc Position Sensor

VIEW PRODUCT

Quantum TMR 180° Arc Position Sensor

VIEW PRODUCT

Quantum TMR 200° Arc Position Sensor

VIEW PRODUCT

Rear Suspension Rocker Position Sensor

VIEW PRODUCT

360 TMR Rotary Position Sensor

VIEW PRODUCT

Dual Redundant Rotary Position Sensor

VIEW PRODUCT

360° Triple Channel Rotary Position Sensor

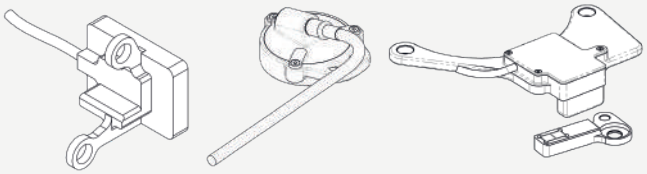
VIEW PRODUCT

Rotary Position Sensor with Blade Shaft

VIEW PRODUCT

CUSTOM SENSORS

Reventec specialises in unusual sensor requirements and can adapt our existing designs to fit your specific application and spatial limitations.



Any Shape, Any Size, Multiple Materials

Reventec's technology is extremely versatile and can be packaged in a variety of forms for direct integration in customer applications.

Multiple Channel Outputs

Available with single, dual and triple channel outputs for redundancy and allows engineers to utilise both a 0-5V analog output and a CAN output simulataneously.

TEMPERATURE SENSORS

Resistance Temperature Detectors | Thermocouples

PROGRAMMABLE TEMPERATURE SENSING

Reventec temperature sensors provide real-time, accurate temperature measurement of air and liquids. Designed for long-term reliability in harsh environments, Reventec temperature sensors feature solid-state construction and a wide temperature range of -50°C to +170°C. High temperature variants, capable of accurately detecting temperatures up to 250°C, are available. With a selection of resistance and programmable temperature sensors, the range offers multiple output formats including CAN, analogue 0-5V, and resistive. Bespoke programmable sensors feature integrated, semi-remote or fully remote electronics sensor solutions.

Temperature probes and electronics can be packaged within limitless design configurations offering a range of metric and imperial threads, temperature probe diameters, customised electronic housings and connector and flying wire interfaces to cover your exact requirements. As an experienced sensor design consultancy, Reventec is well equipped to engineer customised temperature sensor solutions from one-off prototypes to full scale production runs. Whether the requirement is for a 1000bar fluid pressure design or Mil-Std certification, Reventec can assist with an appropriate solution.

Features

+ Resistive, 0-5V Analog and CAN output options
+ Metric and imperial threads
+ Integrated, semi-remote or fully remote sensor solutions for programmable devices
+ High temperature variants available
+ Customisable designs for project requirements

Suitable Applications

Reventec's range of resistive and programmable RTD's and thermocouples are ideal for ever-changing racecar conditions, including:

- Gearbox Temperature Sensor
- Oil Temperature Sensor
- Engine Temperature Sensor
- Exhaust Gas Temperature Sensor
- Cockpit Temperature Sensor
- Coolant Temperature Sensor

PRODUCTS

Resistance Temperature Sensor

VIEW PRODUCT →

Long Resistance Temperature Sensor

VIEW PRODUCT →

Programmable Temperature Sensor

VIEW PRODUCT →

Submersible Exhaust Thermocouple

VIEW PRODUCT →

TALK TO OUR TEAM

CONTACT US →

Ready to discuss your motorsport sensor requirements? Get in touch with a Reventec Sensor Specialist to find the best sensor for your application.

Reventec Limited,
Unit 34, Downton Business Centre,
Downton, Salisbury,
Wiltshire, SP5 3HU,
United Kingdom

Tel.: +44 (0)1725 510321
Email: info@reventec.com

www.reventec.com