



ROTARY ELECTRONICS

Solutions Engineered to Excel

Sensors

Actuators

Precisions Components



Established in 1987



Bangalore, India



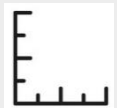
Home Grown Company



3 Manufacturing Facilities



230+ employees



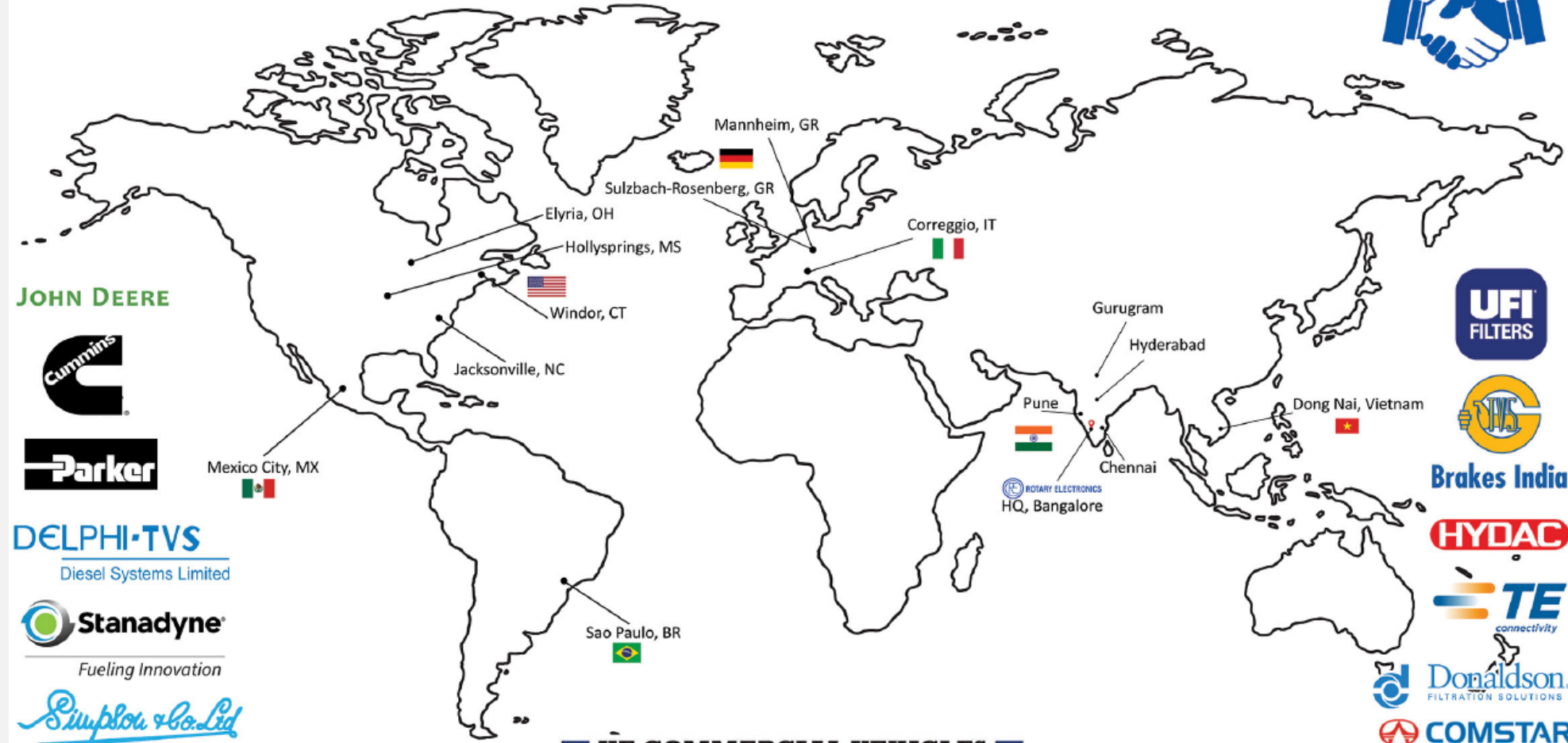
Area of 160,000 Sq.ft.

Sectors:

- Automotive – Majority Tier -1s and OEMs
- Defence
- Aerospace
- Industrial
- Railways*

Certifications:

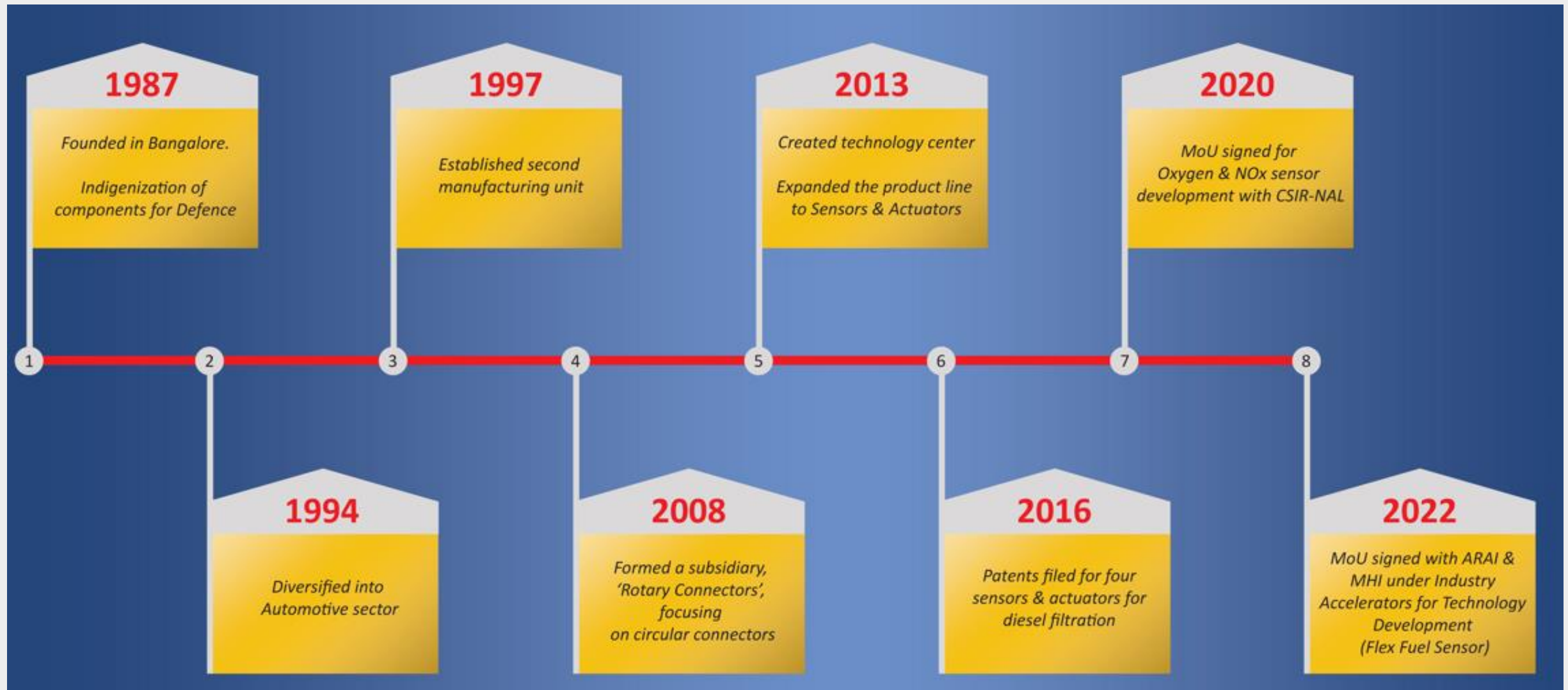
- ISO 9001:2015
- IATF 16949:2016
- ISO 14001:2015 (EMS)
- ISO 45001:2018 (OH & S)
- 'E' certified Products
- MIL-STD-790 DLA
- DGQA
- LCSO



VE COMMERCIAL VEHICLES
A VOLVO GROUP AND EICHER MOTORS JOINT VENTURE

Logos of various customers and partners:

- SPAL** (www.spalusa.com)
- BOSCH**
- ASHOK LEYLAND**
- SONALIKA INTERNATIONAL**
- TAFE**
- HINDUJA TECH**
- FORCE MOTORS**
- MANITOU**
- CARRARO**
- KNORR-BREMSE**
- WIDESCAPE**
- Lucas-TVS Limited**
- elofic** (Traditionally Futuristic)
- pressure**
- HAL**
- beml** (NEW FRONTIERS. NEW CREATIONS)
- BHARAT ELECTRONICS** (भारत इलेक्ट्रॉनिक्स)
- ITI**
- UFD**



Unit-1

- Corporate functions
- Research and development
- Manufacturing of sensors and other electrical components
- In house tool room with design capability
- Built up area of 30,000 sq.ft
- Number of employees - 105
- Located in Rajajinagar Industrial town, Bangalore



Unit-2

- Manufacturing of precision auto components,
- Deep drawn and fine blanked components with fine finishing,
- Injection Molding
- Built up area of 100,000 sq.ft
- Number of employees – 130
- Located in Kodigehalli, Bangalore



Unit-3: To be inaugurated in August 2023, with Tech Center & Assembly



Capabilities – Research and Development

Number of engineers – 20

In house Electronic, mechanical Design capability

3D Modelling and 2 D design, SolidWorks- 5 licenses

Simulation, Mould flow, Maxwell

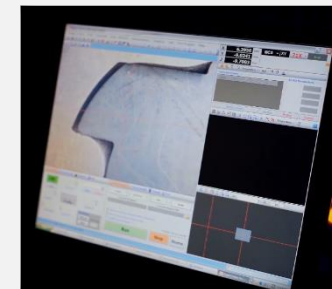
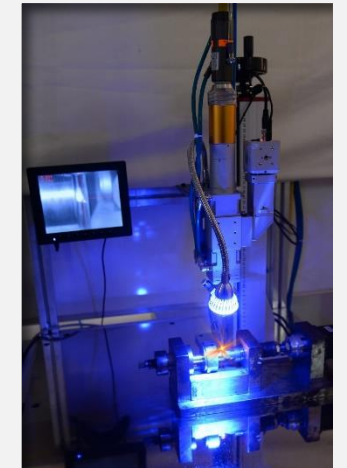
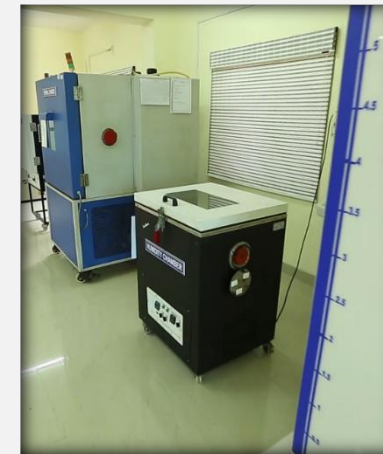
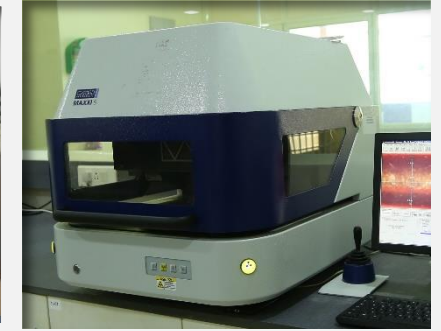
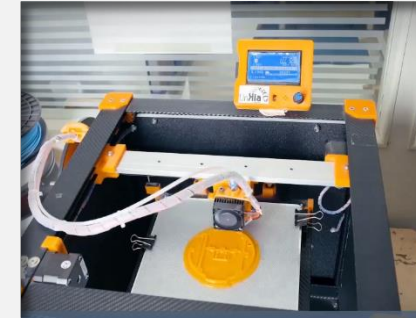
3D Printing

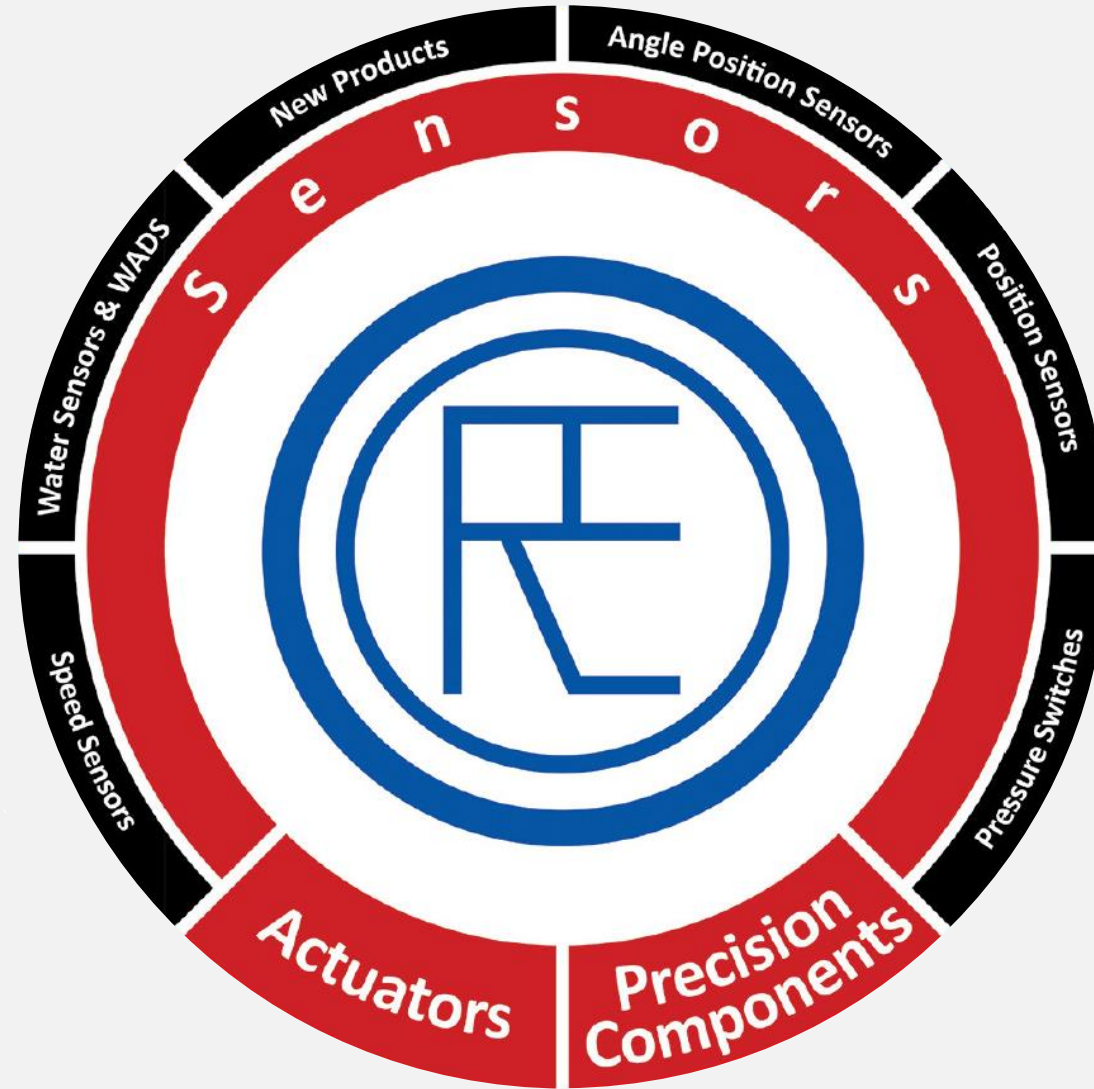
Laser welding

Prototyping

XRF Analyzer

Testing and Validation





Water In Fuel (WIF) sensors are used to indicate the presence of water separated in the diesel filtration system.

Specifications

- ▶ Configurations 2 pin Passive and 3 pin Active
- ▶ Connectors Integrated standard/customized
- ▶ Operating Voltage: 5V, 12V & 24V
- ▶ Temperature range: -40°C to 140°C
- ▶ Module : Direct lamp drive module and ECU
- ▶ Sensing Electrode lengths : 20 mm, 25 mm, 30 mm, 40 mm & 50 mm
- ▶ Thread sizes: M8, M10, M12, M14 & 3/8"
- ▶ Pressure range: -1bar to 10bar, with burst pressure upto 20bar
- ▶ Vibration resistance : Designed for engine under-hood and chassis
- ▶ No electrolysis in electrodes in active type for long life & higher reliability

Applications

- ▶ Commercial Vehicles
- ▶ Passenger Vehicles
- ▶ Off-highway Equipment
- ▶ Generators



The Water Auto Drain System (WADS) is a patented product that enables automatic draining of water from the diesel filter. This prevents the entry of water into the fuel injection system.

Specifications

- ▶ Available in two variants:
 - WADS & Independent Controller: WADS for filter & controller for cabin mounting
 - WADS with Integrated Controller for filter mounting
- ▶ Capable of operating independently Or can be integrated with vehicle engine ECU
- ▶ Operating Voltage: 12V & 24V

Applications

- ▶ Commercial Vehicles
- ▶ Passenger Vehicles
- ▶ Off-highway Equipment
- ▶ Generators



WADS with Integrated Controller



WADS & Independent Controller



Pressure switches are available in mechanical and Hall-effect technology to sense the defined absolute pressure or differential pressure. The hall-effect switches are completely programmable for ON-OFF state and can maintain low hysteresis.

Specifications

- ▶ Configurations: 2 wire or 3 wire
- ▶ Temperature range: -40°C to +125°C
- ▶ Operating range:
 - Positive pressure : 0.2 to 40 bar
 - Negative Pressure : 400 to 50 mbar
 - Differential Pressure : 0.6 to 7 bar
- ▶ Burst pressure: Upto 120 bar
- ▶ Supply Voltage: 5V-12V

Applications

- ▶ Engine oil pressure
- ▶ Brake oil pressure
- ▶ Transmission oil pressure
- ▶ Axle lift
- ▶ Diesel filtration system
- ▶ Air filtration system

Sectors

- ▶ Passenger Vehicle
- ▶ Commercial Vehicle
- ▶ Off-Highway Equipment
- ▶ Generators
- ▶ Process Industries



Mechanical Pressure Switches



Hall Effect Pressure & Vacuum Switch

Differential Pressure Switches

Speed sensors are available in Variable reluctance and Hall-effect technology to measure RPM, sense direction of rotation and position. Mounting and connector configurations are customizable.

Applications

- ▶ Camshaft position sensing
- ▶ Crankshaft speed sensing
- ▶ Vehicle speed sensing
- ▶ Wheel speed sensing

Sectors

- ▶ Passenger Vehicles
- ▶ Commercial Vehicles
- ▶ Off Highway Equipment
- ▶ Generator

Specifications

Parameters	Magnetic Pick-up	Hall effect
Temperature Range	-40°C to +180°C	-40°C to +150°C
Air gap	0.2mm-2mm	0.2mm-3mm
Supply Voltage	—	6V-28V
Sensing direction	Unidirectional	Forward / Reverse
Sensitivity	—	Capable of detecting low speed
True Zero Speed Sensing	No	Yes
Configuration	2 - Wire	3 - Wire
Vibration resistance	Immune to engine and chassis vibrations	



Hall effect based directional speed sensors



Hall effect based omni directional speed sensors



Variable Reluctance speed sensors

Position sensors are available for linear position & angular position sensing.

- Linear Position sensors are available in mechanical & Hall-effect technology
- Angular Position sensors are available in Hall-effect technology

The Hall-effect sensors have accurate position sensing with low hysteresis, good linearity & are fully programmable. Mounting and connector configurations are customizable.

Linear Position Sensor

Senses the absolute position of the object or its relative linear travel.

Specifications

- ▶ Voltage: 12V / 24V
- ▶ Current: 4 Amps
- ▶ Operating Temperature: -40 to 125 °C

Sectors

- ▶ Passenger Vehicles
- ▶ Commercial Vehicles
- ▶ Off-Highway Equipment

Applications

- ▶ Gear Position Sensing



Mechanical Type



Hall Effect Type

Angle Position Sensor

Senses the relative angular travel of the object.

Specifications

- ▶ Voltage: 5V DC
- ▶ Operating Temperature: -40 to 125°C
- ▶ Electrical Angle: Programmable for multiple linearity

Sectors

- ▶ Passenger Vehicles
- ▶ Commercial Vehicles
- ▶ Off-Highway Equipment

Applications

- ▶ Throttle position sensing
- ▶ Steering angle position sensing
- ▶ EGR valve position sensing



Hall Effect Type



Determines the throttle demand by sensing the pedal travel using an Angle position sensor. The pedal modules can be customized for installation position, size and electrical outputs.

Specifications

- ▶ Operating Voltage: 5V DC
- ▶ Operating temperature: -40°C to +85°C
- ▶ Redundancy : Dual channel output
- ▶ Output : Analog ratiometric & Digital PWM

Applications

- ▶ Foot throttle
- ▶ Hand throttle

Sectors

- ▶ Passenger Vehicles
- ▶ Commercial Vehicles
- ▶ Off-Highway Equipment



Fluid level sensor indicates the level of fluids using reed switch and magnetic float technology. Customizable connector and mounting interface.

Specifications

- ▶ Operating Voltage: 12V & 24V DC
- ▶ Operating Temperature: -40° to +125°C
- ▶ Pipe length up to 1,000 mm
- ▶ Output: Analog Voltage / Resistance change

Sectors

- ▶ Passenger Vehicle
- ▶ Commercial Vehicle
- ▶ Off-Highway Equipment
- ▶ Generator

Applications

- ▶ Coolant level sensing
- ▶ Fuel level sensing



Temperature sensors for measuring the temperature of fluids and ambient environment with customizable R-T characteristics and packaging requirements.

Specifications

- ▶ Operating range : -40 °C to 150 °C
- ▶ Sensing technology : Negative temperature coefficient (NTC)

Applications

- ▶ Engine coolant temperature
- ▶ Fuel temperature
- ▶ Cabin temperature
- ▶ Transmission oil temperature

Sectors

- ▶ Passenger Vehicle
- ▶ Commercial Vehicle
- ▶ Off-Highway Equipment
- ▶ Process Industry



Heater with customised heating element, thermostat & thermal fuse.

Specifications

- ▶ Voltage : 12 and 24volts
- ▶ Avg. Power Rating : 250 Watts

Applications

- ▶ Diesel Fuel Heating

Sectors

- ▶ Passenger Vehicle
- ▶ Commercial Vehicle
- ▶ Off Highway Equipment
- ▶ Generator



Compact design having two pole graphite pancake commutator.
Hermetically sealed Armature windings

Specifications

- ▶ Operating Voltage : 12 and 24 volts DC
- ▶ Power output : 40 watts
- ▶ Speed : upto 6000 rpm
- ▶ Motor Diameter : upto 70mm
- ▶ Current Rating : 4 A

Applications

- ▶ Electric Fuel Pump
- ▶ Linear actuator



Armature

Electric Fuel Pump

The electric fuel pump is used to lift the fuel from the fuel tank and supply fuel at the desired pressure.

Specifications

- ▶ Flow Rate: upto 300 LPH
- ▶ Pressure: upto 4 bar
- ▶ Voltage : 12V / 24V
- ▶ Current : 8A

Sectors

- ▶ Off-highway Equipment
- ▶ Diesel Generator
- ▶ Three wheeler
- ▶ Commercial Vehicles



Fuel Pump with integrated DC motor



Fuel Pump Module

Customized solenoid coils for the required voltage, magnetic field, shape & size.
Dual coil capability for reduced power consumption.

Specifications

- ▶ Operating voltage: 12V/24V DC & 230 AC
- ▶ Magnetic flux: upto 10000 Gauss

Applications

- ▶ Control Valve
- ▶ Linear Actuator

Control Valves

Specifications

- ▶ Operating Pressure: upto 55 bar
- ▶ Media : Air & Liquid refrigerant
- ▶ Armature size: Ø3mm to Ø20mm

Sectors

- ▶ Commercial Vehicle
- ▶ Off highway equipment
- ▶ Process Industry

Linear Actuator

Specifications

- ▶ Force: upto 100 N
- ▶ Stroke: upto 35mm
- ▶ Dual coil with timer
 - Reduced power consumption

Sectors

- ▶ Off highway equipment
- ▶ Generators
- ▶ Process Industry



Shut-Off Solenoid with Timer

Oxygen Sensor

Senses the condition of Air/Fuel ratio in engine exhaust using Nernst Cell principle.

Specifications

- ▶ Type : Narrow Band
- ▶ Construction : Planar – Heated
- ▶ Output : 70 to 900 mV
- ▶ Response time : <100ms
- ▶ Operating range : - 40 to 850°C

Sectors

- ▶ Gasoline Two-wheeler
- ▶ Gasoline Passenger Cars
- ▶ Gasoline Gensets



Applications

- ▶ Gives feedback to ECU to optimize the air: fuel ratio
- ▶ Catalytic converter monitoring

NOx Sensor

Measures the concentration of oxygen and the oxides of nitrogen in the diesel engine exhaust using Nernst Cell principle. It comprises of a sensor and a sensor control unit.

Specifications

- ▶ Range : NO_x upto 1500 PPM
O₂ upto 20.9%
- ▶ Communication : SAE J1939 Protocol
- ▶ Operating range : - 40 to 800°C

Sectors

- ▶ Diesel Passenger Vehicles
- ▶ Diesel Commercial Vehicles
- ▶ Off-Highway Equipment



Applications

- ▶ Gives feedback to ECU to regulate Urea dosing.
- ▶ Monitoring of SCR

Pressure sensor measures the pressure of fluids using Ceramic Piezo Resistive technology with an inbuilt signal conditioner.

Specifications

- ▶ Operating Voltage : 5V DC
- ▶ Operating Temperature : -40°C to +125°C
- ▶ Operating Pressure : upto 100 bar
- ▶ Proof Pressure: upto 200 bar
- ▶ Burst Pressure : upto 300 bar
- ▶ Output: Analog / PWM

Applications

- ▶ Engine oil pressure
- ▶ Hydraulic oil pressure
- ▶ Hydrogen pressure

Sectors

- ▶ Passenger Vehicle
- ▶ Commercial Vehicle
- ▶ Off-Highway Equipment
- ▶ Generators
- ▶ Process Industries



Measures the concentration of ethanol and the temperature of the ethanol-gasoline fuel blend.

Specifications

- ▶ Measurement Range
 - Ethanol concentration: 0 to 50%
 - Temperature range: - 40 to 110°C
- ▶ Output - PWM with variable frequency
 - Duty cycle represents Temperature
 - Variable frequency represents Ethanol concentration

Applications

- ▶ Flex Fuel vehicles

Sectors

- ▶ Two-wheeler
- ▶ Three-wheeler
- ▶ Passenger Vehicles



Customized Wiring Harnesses and Connectors for OBD and customized applications.

Sectors

- ▶ Passenger Vehicles
- ▶ Commercial Vehicles
- ▶ Off Highway Equipment



OBD Connector



Wiring Harness

Fine Blanking

Thickness upto 8mm

Press Tonnage Upto 200 tons



Deep Drawing

Ferrous & Non-Ferrous Metals

Thickness – 0.2 mm to 6 mm

Draw depth upto 275 mm

Press Tonnage upto 250 tons



Fine Finishing

Double Disc Grinding

Double Disc Lapping



Injection Moulding

All types of Polyimides with 50% fillers

Polybutylene terephthalate (PBT)

Polyphenylene sulfide (PPS upto 40%)

Polyetherimide (PEI)



Air Dryer Cartridge

Compression Moulding

O-rings

Diaphragms



Thank you