



Sense Freely
Self-Powered
Wireless-Batteryless
Sustainable Solution for Industry 4.0

WIRELESS PRESSURE SENSOR



ESCOM Enhanced Solutions

The Future of Wireless - Batteryless Energy Harvesting Sensing Technologies

ESCOM-ES is the R&D center founded in 2018 and owned by ESCOM Power Plants Engineering Services. We are focusing on and developing Self Powered - Wireless - Batteryless Sensors which is eliminating all wiring and cabling cost and workmanship which can reach many kms in a simple industrial plant. And offering smart and green solutions getting rid of batteries and cables...

No Battery - No Cable - No Wiring

ESCOM-ES offers a wide range of domestic and industrial sensing systems that can be used in harsh environment harvests its own power from ambient sources such as motion, temperature, sunlight, magnetic fields, or where energy is available to scavenge...

Self-powered, wireless sensing technology, combined with engineering expertise and rich analytics provide real-time information for our customer's needs...



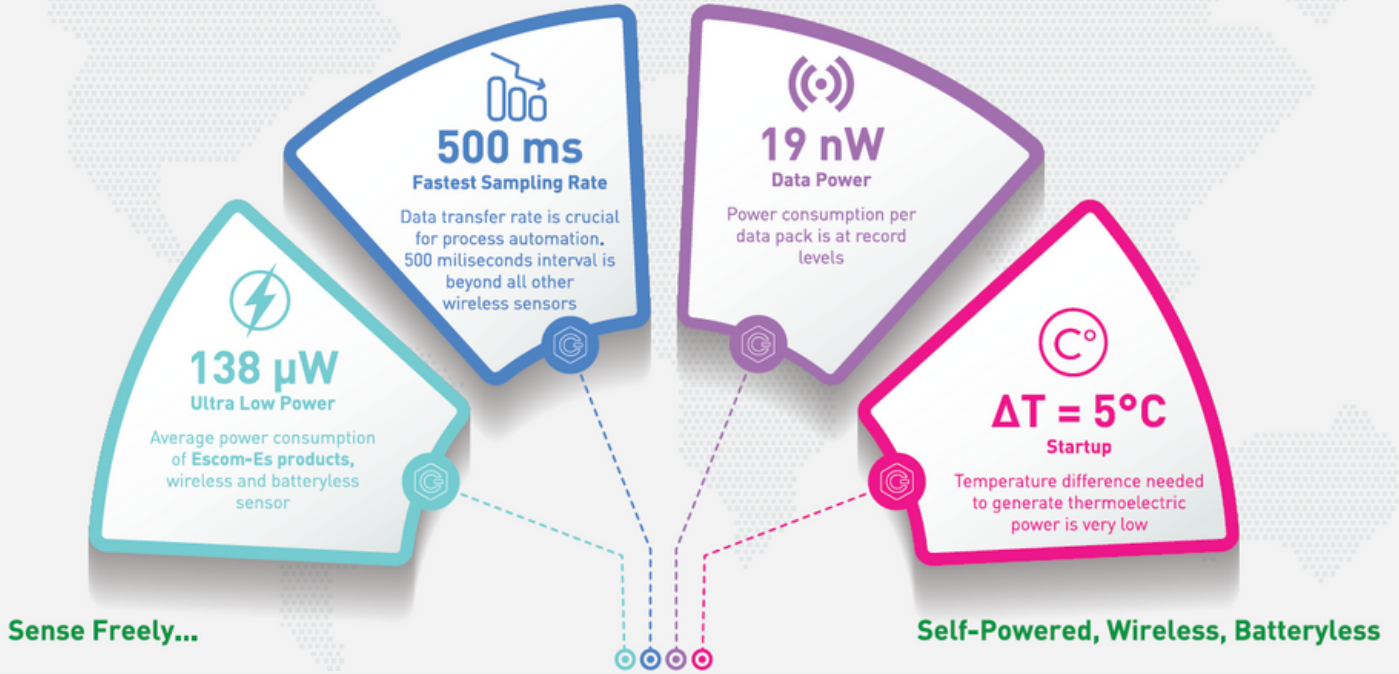
SUSTAINABLE MEASUREMENT TECHNOLOGY

Industry-specific Solutions

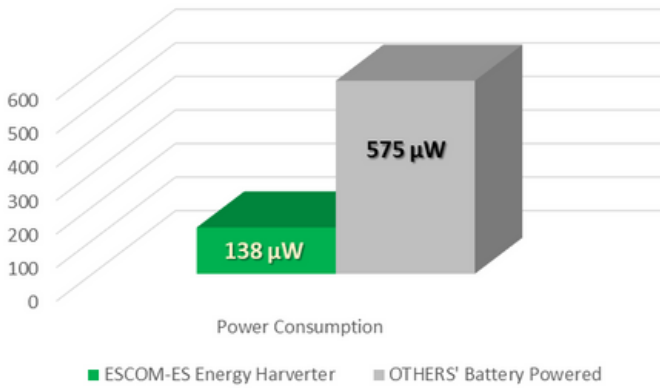
Pressure is an important parameter for every industry. The quality and speed of pressure measurement directly affects the functioning of the industry. WiPr-es obtains its energy by using the temperature difference. It provides reliable and direct measurement for your application.



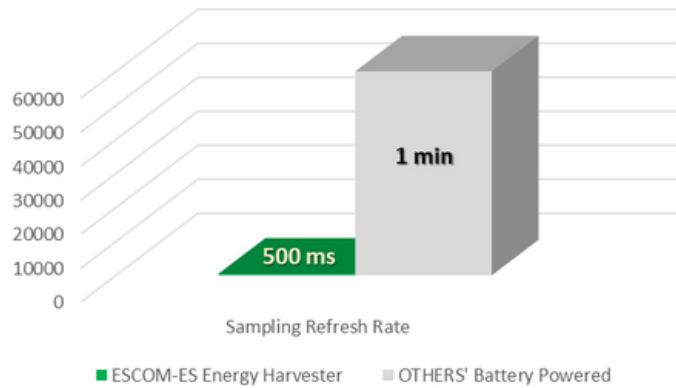
ENERGY HARVESTING for the FREEDOM of SENSORS



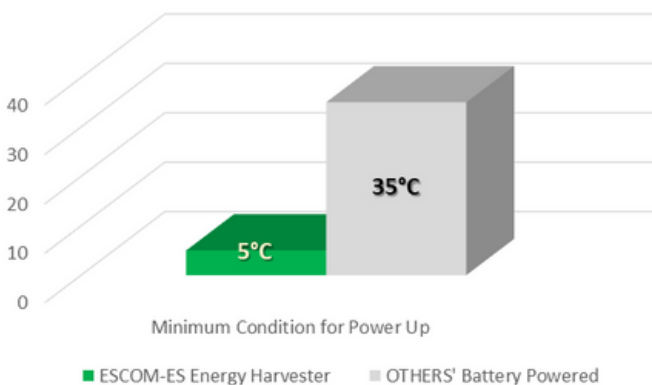
Ultra Low Power (μ W)



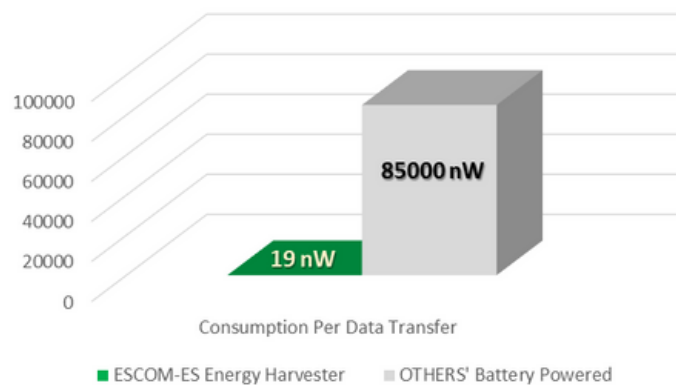
Sampling Rate (ms)



Min ΔT ($^{\circ}\text{C}$)



Power Cons. per Data (nW)



WiPr-es IN THE FIELD

Various sensors are tested in the power plants operated by ESCOM Power Plants Engineering Services. ESCOM-ES R&D center designs, develops and manufactures these sensors. WiPr-es, one of ESCOM-ES's most innovative and functional products, was assembled and tested in one of the mentioned power plants. According to the test results, WiPr-es, which works very efficiently, has been developed to be used in many industries.



HOW TO GET ENERGY

Harvesting Energy

Harvesting energy is the production of its own energy by using the difference between the temperature of the liquid in the pipe where the product is located and the temperature of the environment itself. Peltier is used while doing this. Peltier is a component made of ceramic that is hot on one side and cold on the other. This component, which generates energy from the temperature difference, is placed inside the product.



PRESSURE MEASUREMENT

Instant and Continuous

Accurate pressure measurement is critical in industrial processes. Reliable and high quality measuring devices are required for these measurements. ESCOM-ES continues its efforts to always be at the top of reliability and quality. WiPr-es is a product that demonstrates its quality with instant and continuous pressure measurement. It works wirelessly and without batteries

Cooler Case

Cooler case is a component with a cooler and inside a cap. The cooler is in contact with the peltier and is used to prevent overheating.

Circuit Box

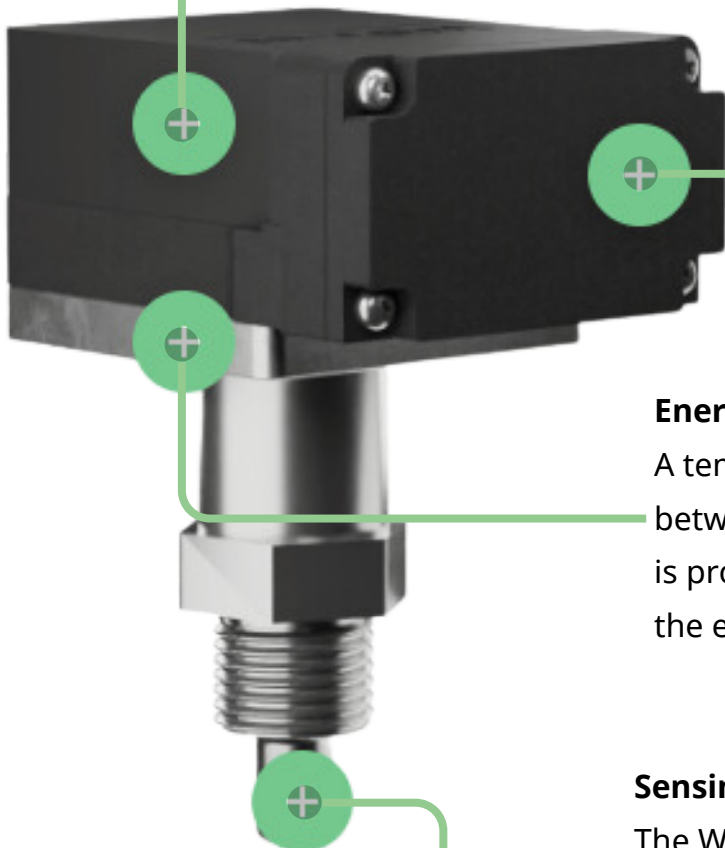
It is the box where all the electronic embedded circuits and connections of the product are located.

Energy Harvester

A temperature difference is created between the two surfaces and electricity is produced. This is the part that harvests the energy.

Sensing Point

The WiPr-es device houses pressure sensors within a stainless steel connection for direct fluid contact. These sensors offer enhanced reliability and accuracy for simultaneous operation. This design showcases ESCOM Enhanced Solutions' dedication to providing advanced, dependable pressure monitoring solutions.



TECHNICAL SPECIFICATIONS

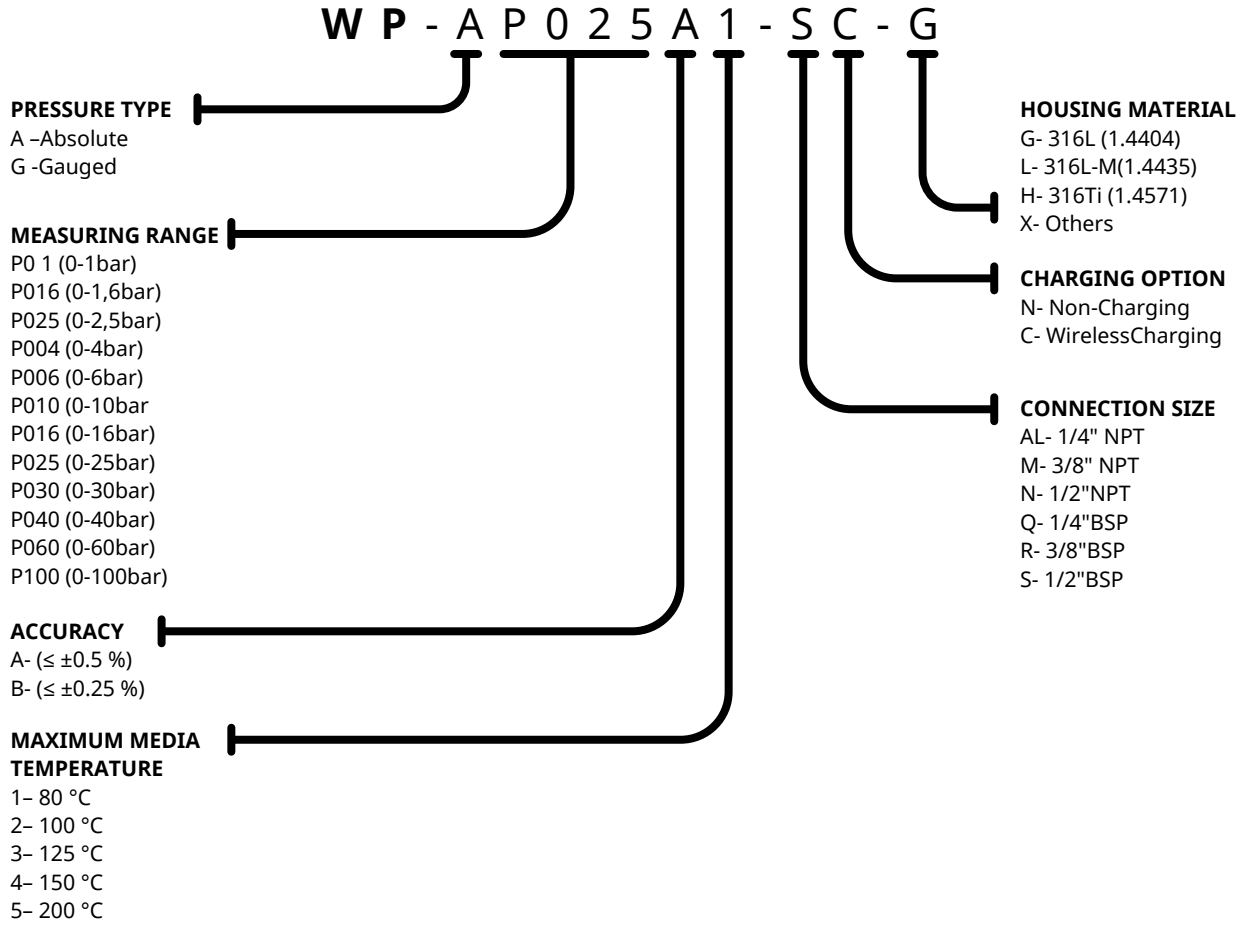
Sensor Types	GAUGE	ABSOLUTE
Measuring Ranges	0-1 bar 0-1,6 bar 0-2,5 bar 0-4 bar 0-6 bar 0-10 bar	0-16 bar 0-25 bar 0-30 bar 0-40 bar 0-60 bar 0-100 bar
RF Transmission Power		+8dBm
Working Temperature		-20°C...+105°C
Sampling Refresh Rate		500 ms
Data Transmission Protocol		BLE
Power Consumption		184 μ W

Innovative Energy Harvesting for the Enhanced Industrial Sensing Solutions

Our innovative energy harvesting, *ultra low power consumption*, and wireless data transmission technologies are paving the way for a smarter, more connected future. Explore our cutting-edge solutions and revolutionize the way you collect and process data in your industrial systems



Order Code Coding System



COMPLEMENTARY EQUIPMENTS

For Wireless Control Systems

- Temperature
- Wireless Charging



Wi-CaM

Wireless Charging and Monitoring

Wi-CaM is a versatile wireless charging and monitoring solution for self-powered sensors like WiT-es and WiPr-es. It enables efficient initial commissioning and energy harvesting when fluid temperature is insufficient, charges the sensor in just 2 seconds, and offers real-time monitoring.

- Wireless Gateway



Wi-GaTe

Wireless Gateway

Wi-GaTe is a wireless gateway for WiT-es and WiPr-es sensors, transmitting data to PLC and SCADA systems. It supports RS485, Modbus, Profibus, Profinet, Wi-Fi, and BLE communication, with a 30dBm transmission power and capacity for 128 MAC addresses, offering a reliable and scalable solution for wireless sensing applications.

- Wireless Control



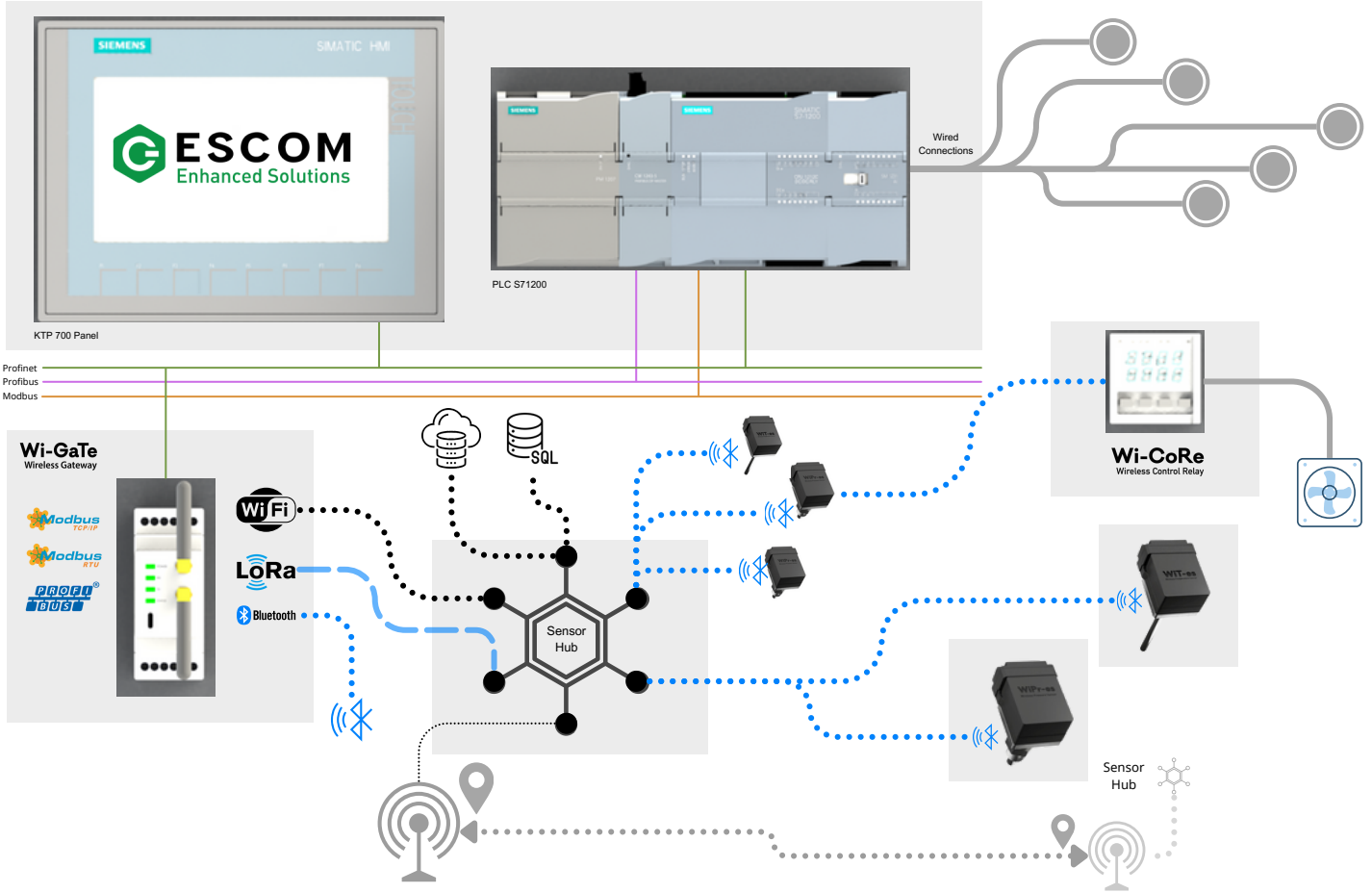
Wi-CoRe

Wireless Control Relay

Wi-CoRe is a wireless control relay designed to work with WiT-es sensors, switching according to the received temperature information. It features adjustable upper and lower limits for set and alarm values, a minimum 500ms sampling time, a 220V supply voltage, a 0-20mA output, and two NO/NC relay outputs (10A).

INDUSTRIAL IoT

Wireless BatteryLess Sensors & Network



Vibration Rotation Motion

Mechanical Energy

Solar Indoor Light

Photovoltaic Energy

Energy Harvesting Methods

Wireless Energy

Magnetic Field Electric Field

Thermal Energy

Acoustic Noise Energy



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