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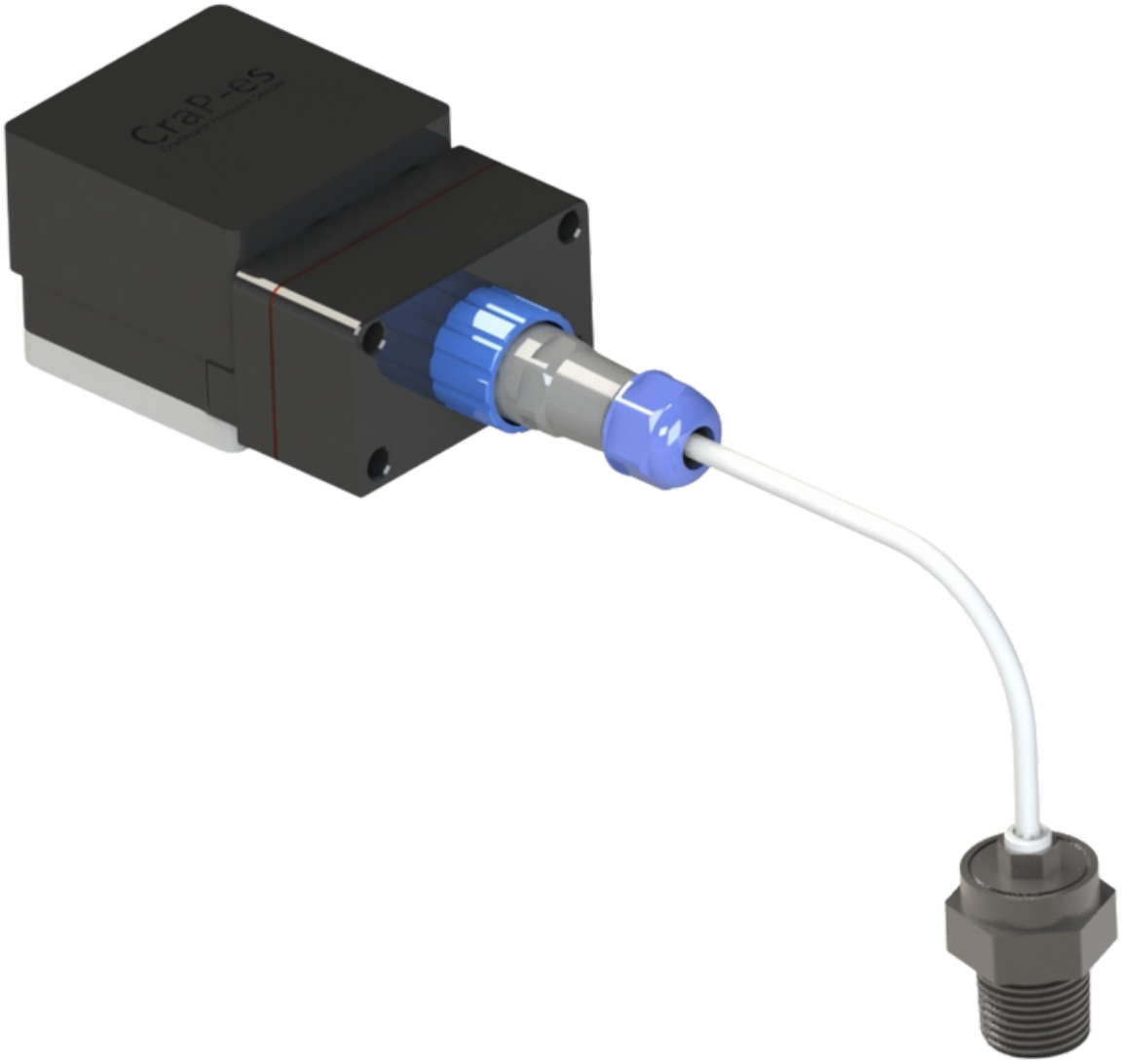

Sense Freely
Self-Powered
Wireless-Batteryless

Sustainable Solution for Industry 4.0

CRANKCASE PRESSURE SENSOR

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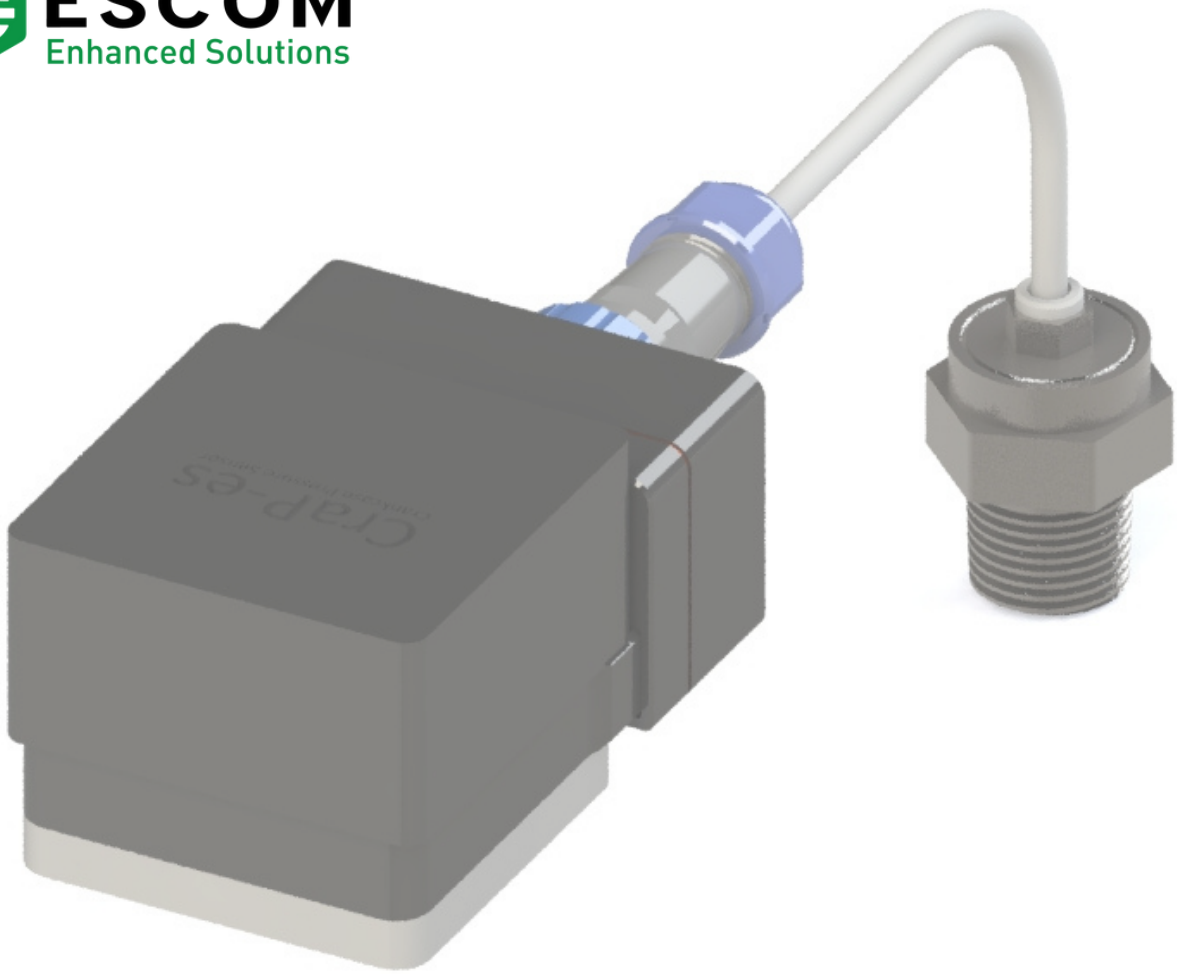

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The Future of Wireless - Batteryless Energy Harvesting Sensing Technologies

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…

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SUSTAINABLE MEASUREMENT TECHNOLOGY

Industry-specific Solutions

The crankcase pressure sensor plays a crucial role in ensuring optimal engine performance, detecting potential problems, and preventing damage to the engine. CraP-es can detect problems such as excessive pressure build-up, which could indicate a problem with the crankcase ventilation system or worn piston rings. It can also monitor for low crankcase pressure, which could indicate leaking or faulty components.

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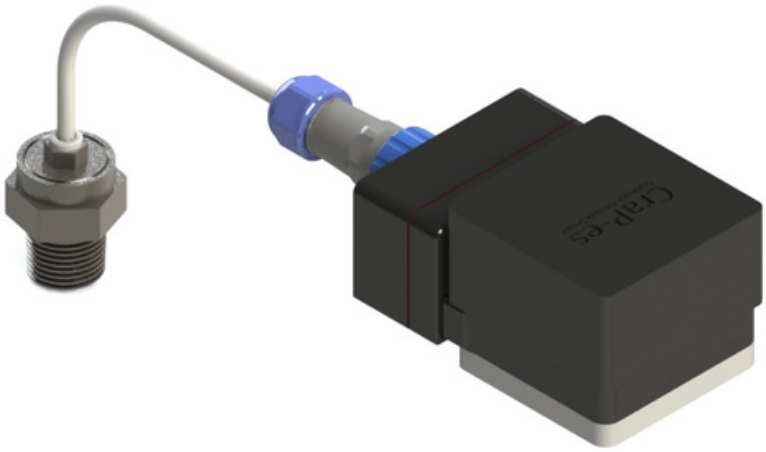
HOW TO GET ENERGY

Harvesting Energy

Harvesting energy is the production of its own energy by using the difference between the temperature of the liquid 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. CraP-es is a product that demonstrates its quality with instant and continuous crankcase pressure measurement. It works wirelessly and without batteries.

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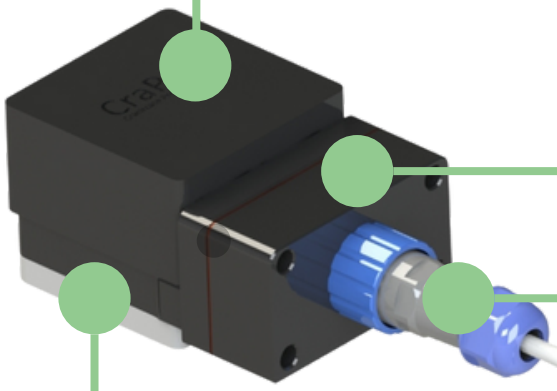
Cooler Case
Cooler case is a component with a cooler and inside a cap. The cooler is in contact with the peltier and is used to prevent overheating.



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

Connector

Extension Cable

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 CraP-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.

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TECHNICAL SPECIFICATIONS

Sensor Types	Analog Sensor	Digital Sensor
Measuring Ranges	-1,25 ~ +1,25 mbar -1,6 ~ +1,6 mbar -2,5 ~ +2,5 mbar -5 ~ +5 mbar -10 ~ +10 mbar -15 ~ +15 mbar -25 ~ +25 mbar -40 ~ +40 mbar -60 ~ +60 mbar -160 ~ 160 mbar -250 ~ +250 mbar -400 ~ +400 mbar -600 ~ +600 mbar -1 ~ +1 bar	-1,25 ~ +1,25 mbar -1,6 ~ +1,6 mbar -2,5 ~ +2,5 mbar -5 ~ +5 mbar -10 ~ +10 mbar -15 ~ +15 mbar -25 ~ +25 mbar -40 ~ +40 mbar -60 ~ +60 mbar -160 ~ 160 mbar -250 ~ +250 mbar -400 ~ +400 mbar -600 ~ +600 mbar -1 ~ +1 bar
RF Transmission Power	+8dBm	
Working Temperature	-20°C...+85°C	
Sampling Refresh Rate	10s	
Data Transmission Protocol	BLE	
Power Consumption	30 µW	

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

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Order Code

Coding System

CraP-AP025A1-TC

PRESSURE TYPE
A –Analog
D -Digital

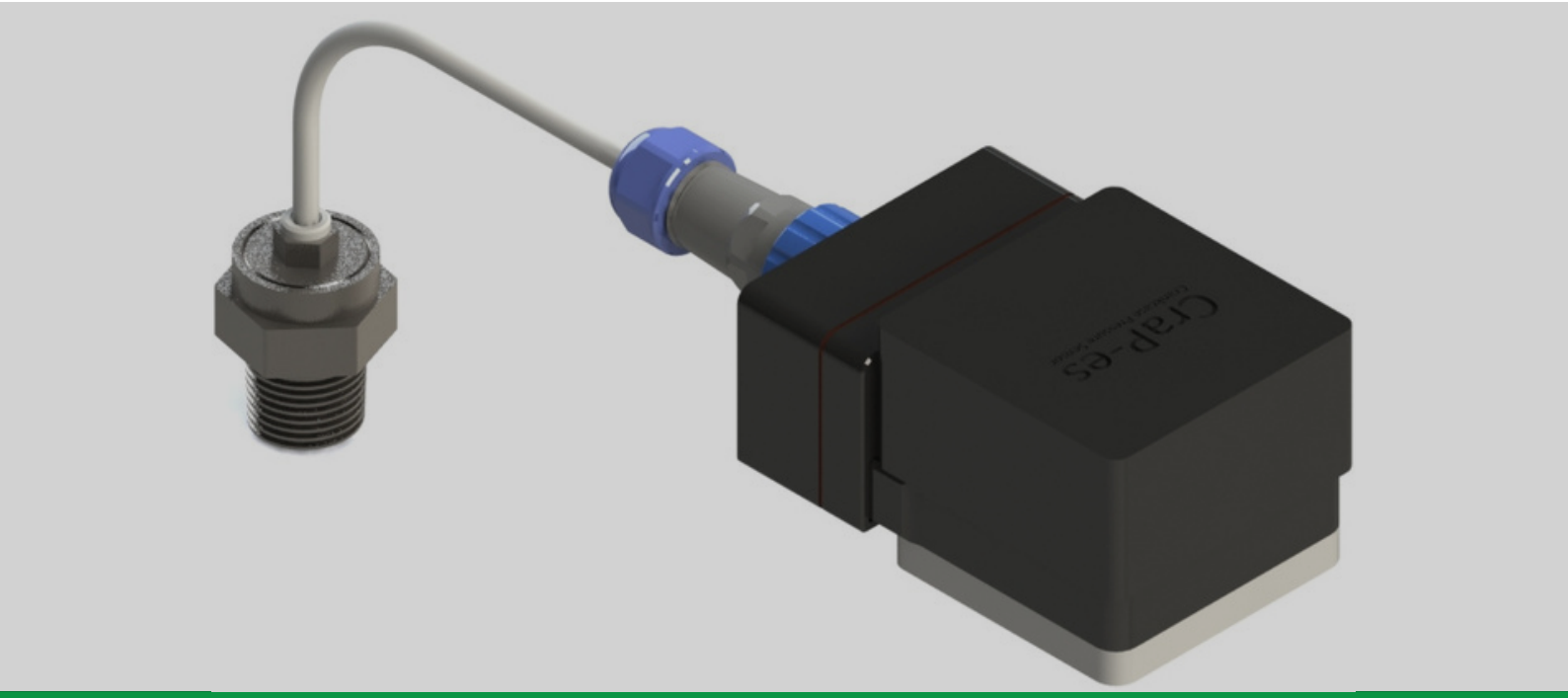
MEASURING RANGE
P01,25(-1,25 ~ +1,25 mbar)
P01,6(-1,6 ~ +1,6 mbar)
P02,5(-2,5 ~ +2,5 mbar)
P005(-5 ~ +5 mbar)
P010(-10 ~ +10 mbar)
P015(-15 ~ +15 mbar)
P025(-25 ~ +25 mbar)
P040(-40 ~ +40 mbar)
P060(-60 ~ +60 mbar)
P160(-160 ~ 160 mbar)
P250(-250 ~ +250 mbar)
P400(-400 ~ +400 mbar)
P600(-600 ~ +600 mbar)
P1000(-1 ~ +1 bar)

ACCURACY
A- (≤ ±0.25 %)
B- (≤ ±0.5 %)
C- (≤ ±1 %)
D- (≤ ±1.5 %)
E- (≤ ±2 %)
F- (≤ ±3 %)

CHARGING OPTION
N- Non-Charging
C- WirelessCharging

CONNECTION
T:Tube Conneciton
M:Manifold Connection

MAXIMUM MEDIA TEMPERATURE
1– 50 °C
2– 85 °C



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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).

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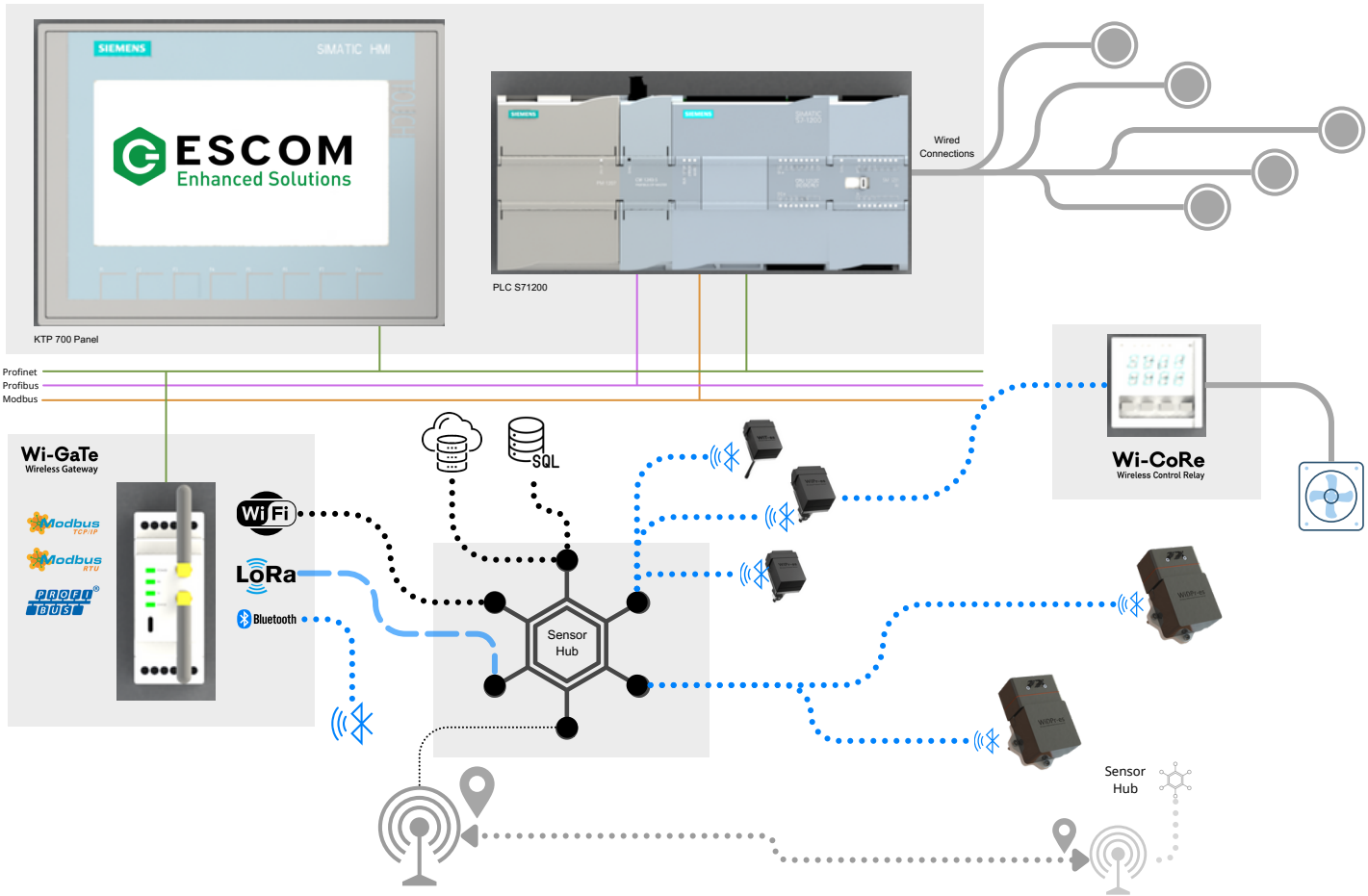
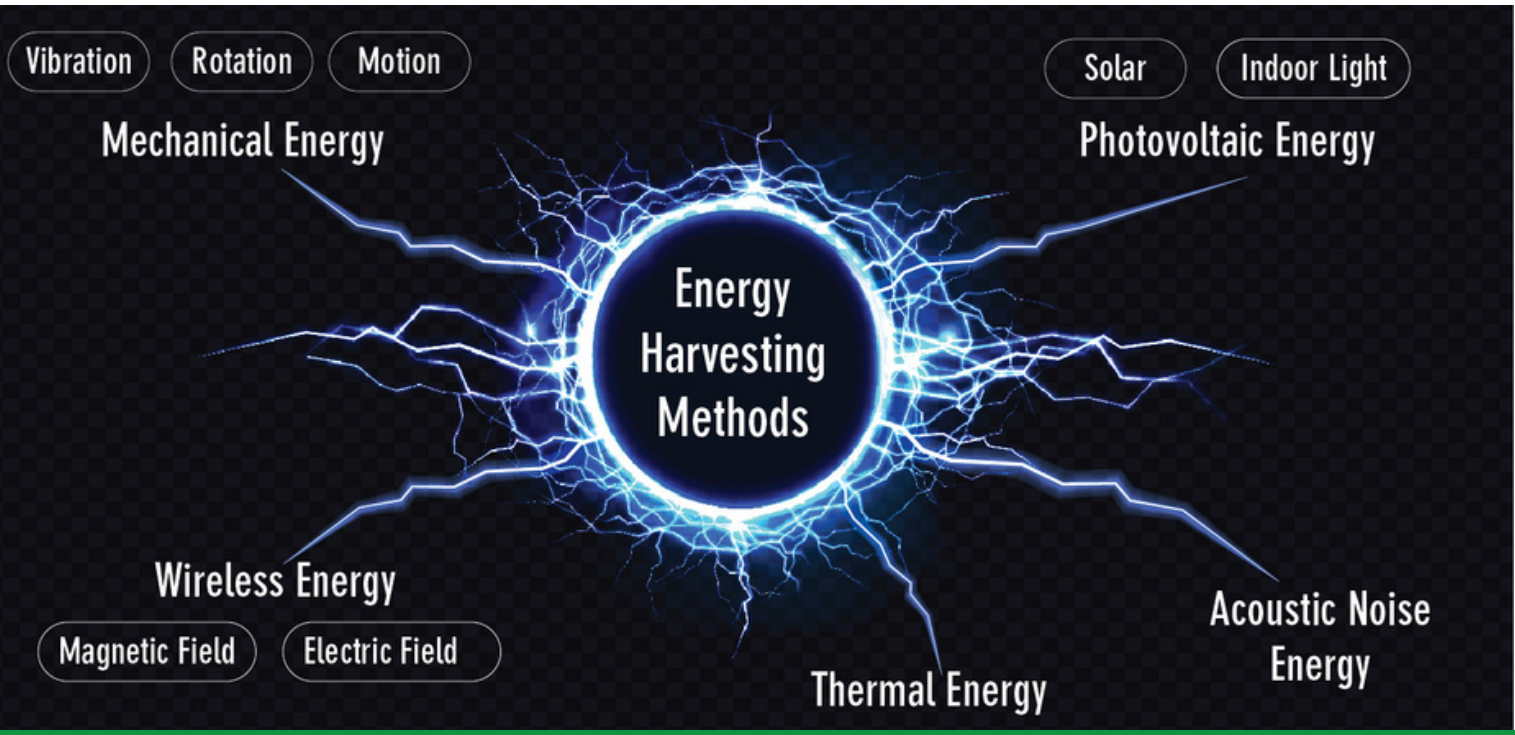
INDUSTRIAL IoT

Wireless BatteryLess Sensors & Network





innovative

ideas

development

imagination

technology

vision

inspiration

teamwork

research

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