



## WATTECO series

The **WATTECO** series benefits from a know-how in the development of communication systems based on the **6LoWPAN** standard, the adaptation of **IP** layers to constrained networks in buildings where radio bandwidths are limited and where optimising the consumption of equipment is imperative.

**WATTECO** distinguishes its product offering by providing a range of all-**IP** wireless **sensors** - based on the **6LoWPAN** (IPv6) technology standardised by the IETF - and **Box** (sensors optionally non battery-operated). The deployment of **IP networks** for low-power automation applications allows "Internet" uses to be generalised to sensor networks.

## ADVANTAGES

- > Long Range Radio Technology (LoRa) up to 4km in free field.
- > Standardised protocol IPv6 6LoWPAN
- > Significant optimisation of energy consumptions for battery-operated sensors, or even energy self-sufficiency for energy harvesting sensors

## IP TECHNOLOGY

IP technology is a clear alternative to fieldbuses usually operated in the sectors of construction and energy efficiency. The layer model as per the OSI standard ensures network constraints are isolated from user applications.

Operating over IP in sensor networks provides many options in terms of configurations or application functionalities. Thanks to this solution, all the elements that make up the network can communicate natively over IP without the need for specific network software layers.



# Actuator : SMART PLUG

## Presentation

- Wall socket connected to a mains outlet (230V/110V)
- Used to control (switch on and off) a load (13.7A max. at 250V) connected to this socket and to measure the power consumption of this load.
- Measurement of active and reactive power, voltage and mains frequency
- Dimensions: 62 x 114 x 40 mm
- Interfaces: 1 button (reset, ON/OFF), 1 LED (configuration and pairing)
- Material: PC UL94 V0



## Communication

- Radio frequency link to the PAN Router: ultra long range radio technology using a specific spread spectrum modulation in the 868 MHz band (up to 4 km in free field).
- Possibility to use a compressed batch feedback mode.

## Specifications

- Software
  - OS: Contiki
  - Physical Layer: LORA™-868MHz
  - MAC Layer: IEEE 802.15.4-2006 or LoRaWAN
  - Network: IPv6 / 6LoWPAN
  - Star topology: LoRaWAN
  - Transport/presentation: UDP
  - Application: pseudo ZCL
- Hardware
  - power measurement component ADE7953
  - accuracy: <0.1% above 40W  
>0.1% below 40W
  - resolution: 1W
  - bistable relay
  - measurement and control: 3500W - 13.7 A max. over a purely resistive load
- Self-organizing network/