

T-BOX METEO

The predictive weather system



T-BOX METEO is the only **integrated predictive weather system** for **thermal and refrigeration plants** that really eliminates energy waste in real time, continuously, via the web.

It is able to **reduce the energy consumption** of air-conditioned buildings **from 15% to over 30%**.

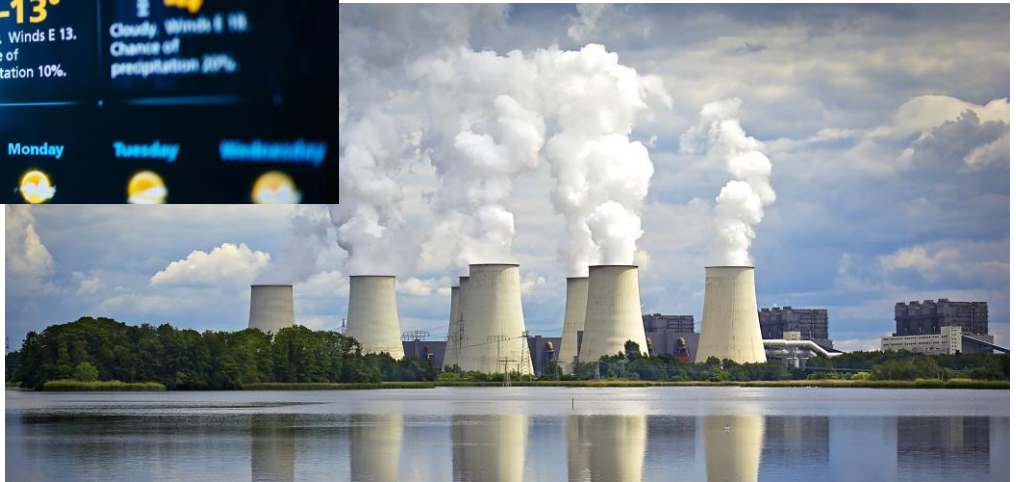
Taking advantage of the knowledge of weather changes in real time and in the following 24 hours, T-BOX METEO automatically guarantees constant indoor temperatures of comfort, from the villa to the condominium to the large private, public, service industry or industrial building.



TONALI E.A.
Energia & Ambiente

A unique patented system in the IoT sector

The energy waste of energy production plants is caused not only by incorrect sizing of the system, but mainly by plant regulations that are often asynchronous with respect to external climatic dynamics. A feature common to all traditional regulation systems, even of the latest generation. The plant programming does not take into account external climatic phenomena, which are increasingly irregular and variable in the short term, which must be foreseen in advance, before waste is generated.



TONALI E.A. proposes the **T-BOX METEO predictive weather system** with **immediate, controllable and quantifiable economic savings**, automatically eliminating unnecessary hours of operation of the air conditioning systems. This system makes use of an **Italian, European and US patent** and makes it possible to guarantee constant temperatures inside buildings, simultaneously generating savings that can reach 15% to 30% of the bill from the day after application.



Reduce the hours of operation of the power generation plants automatically from 300 to over 800 hours per year

In collaboration with **Meteo Expert** (Centro Epon Meteo), a leading company in applied research and forecasting in the meteorological and climatological field among the most accredited in Europe, **T-BOX METEO** interactively exchanges sensitive weather data referable to the correct management of summer air conditioning systems and winter and the consequent environmental impacts. Weather data (mainly the external air temperature) are transmitted from the local T-BOX device to Meteo Expert in real time and continuously through a cloud server. The transmitted data is compared with that elaborated by the mathematical models of Meteo Expert which can then **refine them for the specific location concerned by projecting them over the next 24 hours**. This continuous process of comparison and correction allows the apparatus to establish, using algorithms, the ideal time to turn on / off the air conditioning systems, while maintaining optimal comfort conditions. This procedure has proved extremely effective in limiting the period of operation of the air conditioning systems to the bare essentials, also exploiting a factor that is normally considered a harmful event, namely climate change. Operational tests confirm and exceed the theoretical evaluations of Meteo Expert which indicated an average value of 15% of the reduction in operating hours compared to standard systems managed by climate control units and electromechanical or digital clocks.



An innovative technological revolution in the IoT world that abandons the traditional logic of direct control from the plant. **T-BOX METEO**, with real-time analyzes on weather data, calculates the **Real Day Degrees continuously, makes decisions with ON / OFF or modulating commands, thus eliminating unnecessary hours of plant operation**. All this while guaranteeing the constant internal temperatures programmed according to the UNI EN and the DPR 74/2013 (ex DPR 412/1993), with total control on the TONALI E.A. web platform.

T-BOX METEO is also **wireless**: the first fully battery-powered Mesh network with an extended life (5 years on average).



The self-healing intelligent network with FPCC technology is with a wide frequency spectrum for efficient and fast data flow. No repeaters are required and they can be integrated, extended and moved easily, always with high performance.



by PRODUAL

Connection: up to 100 wireless transmitters

Gateway communication:

- Not point-to-point MESH network, without repeaters
- Modbus RTU and Modbus TCP/IP
- Bacnet MSTP and Bacnet IP
- 6x 0-10v output
- Cloud connection



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