BLOG

HUMIDITY AND TEMPERATURE AT THE SERVICE OF MEDICINE QUALITY

The pharmaceutical industry is one of the main players in the healthcare sector, with a direct influence on the quality of life of citizens, taking into account a series of contents of extreme importance to a guarantee of the quality of its main asset, the medicine.

Narrow the involvement of pharmaceutical industry at drug research and development activity would be confine its involvement and relevance to the production process only. The pharmaceutical industry is one of the main players in the healthcare sector, with a direct influence on the quality of life of citizens, taking into account a series of contents of extreme importance to a guarantee of the quality of its main asset, the medicine.

Face industry demands, it must be taken into consideration by actors involved in post-production processes, such as transportation and storage, as a safeguard for the therapeutic purpose of the drugs and for the inherent risks in the logistics challenge associated to pharmaceutical industry.

There are two factors that have extreme influence on the drug stability preservation, temperature and humidity. The perishable nature of the medicinal product therefore requires tight control of these variables in order to avoid structural changes affecting its physico-chemical stability, preventing potential losses of degraded medicinal products, their economic impact and ensuring that all patients have access to the medicine with documented efficacy and safety.

World Health Organization specify, through an international guide, a whole set of good practices in the storage and the relevance that monitoring of above mentioned variables, in the correct preservation of the integrity of pharmaceutical product.

In order to keep the industry on an evolutionary path, track these indicators can be achieved by technological means in the many phases of product life cycle. Nowadays, technological solutions that meet the requirements of the task are countless, although it is necessary to frame the choice with the digital and technical overview that we are going through.

IoT (Internet of Things) technological concept combines the interoperability of the intermediaries in a systematic data flow, making up an information network which transmits us in real time the current status of the surrounding medicine environment. The technological valences acquired in IoT add value with a simplified access to the information, allowing a continuous analysis, opening doors to more efficient and safe processes for all professionals merged in the network.

DUOS HYGROTEMP – COMPLETE SOLUTION

Tekon Electronics aware of the industry requirements has introduced a technologic solution in its portfolio distinguished by a reply to the precision of the temperature and humidity indicators monitoring tasks – the **DUOS Hygrotemp** from the **DUOS Wireless System** family products.

Using **DUOS Hygrotemp** technology, it is possible to keep detailed records of these variables, in real time, enable to be consulted anywhere, through fixed and mobile devices, requiring only a web browser and an internet connection.

Data collection takes place through a probe and is transmitted by a gateway that deploys the information in a cloud system, making the data accessible at the moment in a configurable IoT platform, where all the query parameters of the collected information are defined. **Tekon IoT Platform** solution enables the possibility of working out a system of alarms with the intention to act preventively in the several processes, effectively reducing the risk of harmful actions for the products.

The use of wireless systems for the monitoring of these elements requires, from the device, an integrated power supply method. **DUOS Hygrotemp** embed in its structure, 3 lithium batteries providing an estimated autonomy of 3 years*.

*Considering a communication period of 10 minutes, and maximum transmission power (27 dBm) at 25°C, with PN EVE ER14505M batteries

Remarkable features of DUOS Hygrotemp:

- Measurement range: -40°C to 80°C;
- Up to 4 km distance communication (LoS);
- Battery status and signal quality monitoring;
- Water resistant (IP67 protection index);

BETTING ON SAFETY

The use of **IoT solutions** enables fast access to information that the industry today needs to respond on time to various challenges. This convenience reflects in a commitment that rises the **levels of excellence and safety** of the

several crucial moments that settle down the **pharmaceutical products** life cycle. The constant monitoring of processes guarantees the reliability and action potential of medicines until the moment of submission to the final customer.