

TERTIUM
— technology

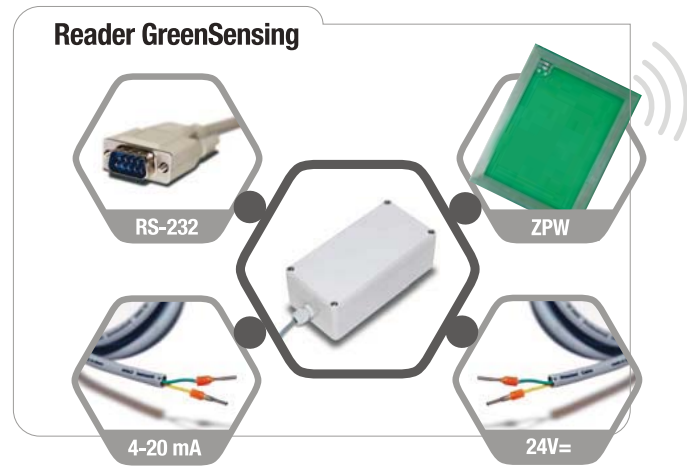
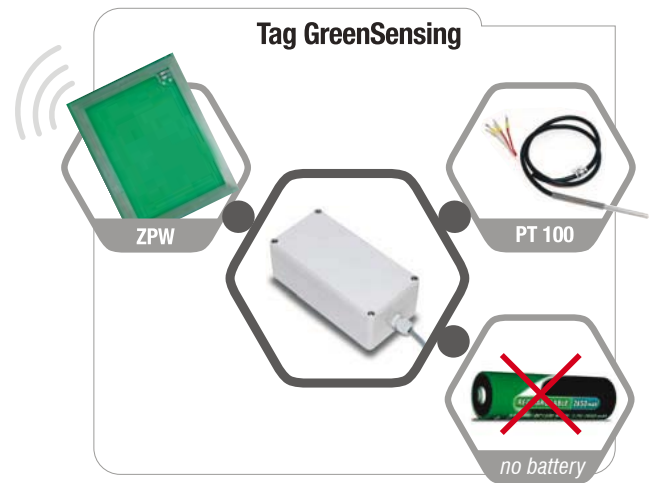


ZPW Temperature Sensors Inside tanning tumblers

Italprogetti, an engineering company established in the 1970s in the industrial tanning district of Santa Croce sull'Arno, offers leading-edge solutions to various manufacturing industries, especially leather production and water treatment.



A tumbler



The need

The problem was to constantly monitor the temperature of the liquid inside tumblers during tanning, a chemical and mechanical process whereby leather becomes imputrescible and resistant to several substances. The continuous rotary motion, the difficult conditions of the environment where monitoring should take place, and the need of frequent temperature measurements required applying a measuring device inside the tumbler, capable of wireless transmission to the outside without being powered by a fixed network or batteries.

The solution

To meet this need, TERTIUM Technology developed a solution with the GreenSensing platform based on ZPW (Zero Power Wireless) technology. To monitor the liquid's temperature effectively, a Greensensing PT1000 – a transponder that reads PT100 temperature probes – was placed on each tumbler.

This device has no on-board batteries and is activated only when stimulated by the reader. Its function is to log data from the temperature probe (placed through a hole in the tumbler) and transmit them by radio to the reader continuously as long as it is powered. The GreenSensing reader is placed near the tumblers' structure to read data every time the transponder approaches it (approximately 5 cm when the transponder is closest). Each log is then transmitted by the reader by serial interface to the machinery's control unit.

