



**Temperature monitoring sensors inside materials**

Sensor to monitor temperature inside compost heaps during the bio oxidation process or in bio-filters or any other aggressive material located at the waste management facility. The sensor is particularly sturdy and has been designed to be used in corrosive materials and in continuous measurements as well. Sensors measure temperature at two levels along their rod. Wireless version (via radio) and cabled version having analog (4-20 mA) or digital (RS-485-Modbus) outputs are available. All signals can be received and managed by LSI-LASTEM data acquisition systems (M/E-Log).

- To obtain a RS-485 output from radio versions, they must be connected to a data logger (M/E-Log), featuring Modbus-RTU configurable serial output.
- To obtain 4-20 mA signals from radio versions to the receiving side, they must be connected by radio to EXP304 (n.8 4-20 mA outputs) receivers/converters.
- To run by radio 4-20 mA signals generated by versions with 4-20 mA output, it is needed to connected these sensors to EXP820 unit, which sends – via radio – signals to EXP304 (n.8 4-20 mA outputs) receivers/converters.

| Order numb.                                 | EXP830   | EXP420  | EXP485   |
|---|--|---|--|
| Output                                      | Radio  | 2x4÷20 mA   | RS-485   |
| Measurement levels                          | N.2: puntale + H.1 m   |   |  |
| Radio frequency                             | 869,450 MHz  | NA  | NA   |
| Canalization                                | 25 kHz   | NA  | NA   |
| Radio Transmission Power                    | 25 ± 3 mW  | NA  | NA   |
| Radio Transmission distance (line-of-sight) | 600 m  | NA  | NA   |
| Radio Bit rate                              | 9600 bps   | NA  | NA   |
| Transmission Rate                           | 10'  | NA  | NA   |
| Radio Antenna                               | Housed in box  | NA  | NA   |
| Configuration                               | Dip switch   | Via RS-232 with Terminal Emulation program  |  |
| Battery                                     | AA 3,6 V<br>non rechargeable<br>lithium battery                        | NO  |  |
| Battery life                                | >2 years   | NA  |  |
| Power Supply                                | Battery  | 9÷30 Vca/cc   |  |
| Consumption                                 | <10 µW stand-by<br>250 mW n transmission                               | < 0.4 W   |  |
| Signal and power supply connector           | NO   | Waterproof male connector for DWA3xx cables   |  |
| Radio receiver                              | EXP301 output RS-232   | NA  |  |
| Output values                               | Temperature 1<br>Temperature 2<br>Battery voltage, %<br>Battery charge | Temperature 1<br>Temperature 2  |  |
| Electric protections                        | NO<br>(electrically insulated system)                                  | Against power supply polarity inversion;<br>electrostatic discharge on sensors line and power supply line | Against power supply polarity inversion;<br>electrostatic discharge on sensors line and on RS-485 communication line |

continued 



**Common features**

|                     |                                |   |
|---------------------|--------------------------------|---|
| Temperature         | <i>Principle</i>               | Pt100 1/3 DIN A   |
|                     | <i>Measuring range</i>         | 0÷100 °C  |
|                     | <i>Accuracy</i>                | 0,12 °C (@ 0 °C)  |
|                     | <i>Resolution</i>              | 0,03 °C   |
|                     | <i>Response time (T90 air)</i> | 5' (air speed 0,2 m/s)                                  |
| General information | <i>Protection</i>              | IP66  |
|                     | <i>Operating Temperature</i>   | -20÷70 °C<br>(sensor surface temperature)               |
|                     | <i>Dimensions</i>              | H. 2000 mm Ø 50 mm                                      |
|                     | <i>Wheight</i>                 | 8 Kg  |
|                     | <i>Material</i>                | Electronics box: reinforced polyester<br>Shank: AISI304 |
|                     | <i>Mounting</i>                | Vertically inserted with BYA500 handle                  |

