

WSD12-4D

Capetti
ELETTRONICA

Wirecap



Wireless Smart Datalogger

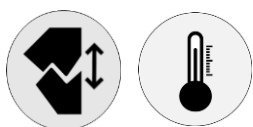
High stability and accuracy wireless datalogger to measure linear deformation and temperature. Free installation in any position. Excellent radio range and autonomy.

Suitable to monitor:


- Surface cracks on buildings, walls, bridges, viaducts, structural joints etc.
- Landslides movements
- Load tests

Main features

- 4 configurable channels
- Can be installed in any position
- Rugged and impact resistant case
- IP65
- Temperature measurement
- Up to 10 years of autonomy



General technical specifications

| | |
|--|---|
| Power supply | 8.5Ah - 3.6V type "C" lithium internal battery (BAT2) |
| Battery life (*) | Up to 10 years (<i>samples every 60 minutes and radio signal quality at least sufficient</i>) |
| Measures acquired (4 input channels) | <ul style="list-style-type: none">• Linear deformation• Proportional measure• Temperature |
| Sampling interval (*) | Selectable from one minute to 24 hours (<i>60 minutes default</i>) |
| Datalogger capacity | 64,000 samples (<i>for each channel</i>) |
| Working temperature | <ul style="list-style-type: none">• Operative: -30°C ÷ +60°C• Warehousing: -40°C ÷ +70°C |
| Radio frequency | ISM 868MHz |
| Radio coverage  | Up to 6Km in line of sight (<i>can be extended using WR12 battery powered repeaters</i>) |
| Sealing | IP65 |
| Dimensions | 90x160x50mm |
| Weight | 450g |
| Case material | ABS |
| Mounting | Fix on 4 points |
| Connections | Wireless, USB |
| Cable external diameter | 4.7mm maximum |
| Copper wire section | 0.05 ÷ 2.5mm ² / ÷ 14 AWG |

Temperature

| | |
|--------------------|---|
| Transducer type | NTC10KΩ |
| Measure range | -30°C ÷ +60°C |
| Measure accuracy | <ul style="list-style-type: none">• ± 0.5°C Range -30°C ÷ 0°C• ± 0.2°C Range 0°C ÷ +60°C |
| Measure resolution | 0.01°C |

Proportional measure

| | |
|--------------------|---------------|
| Transducer type | Potentiometer |
| Measure range | 0 ÷ 100% |
| Measure resolution | 0.01% |

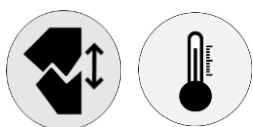
Linear deformation

| | |
|--------------------|--|
| Transducer type | Potentiometer |
| Measure range | Configurable using WineCapManager From 1mm up to 10,000mm |
| Measure accuracy | 0.1% analog input - Refer to potentiometer's technical sheet |
| Measure resolution | 14bit |

* battery life may be influenced by fieldwork conditions, sampling/measuring interval and system configuration.

** radio coverage can be extended using up to 32 [WR12 repeaters](#) (maximum 16 for each path) between the device and the gateway.

** refer to selected transducer's documentation. Setup DIP switches in proper way.



WSD12-4D

The **WSD12-4D** wireless datalogger, provided with 4 channels, is designed to acquire linear deformation (*up to 4 resistive potentiometers*) and temperature in the structural monitoring field. It takes extensive use in surface crack monitoring on buildings, walls, bridges, viaducts, structural joints, etc., landslide movements and load tests.

Device's main feature is the possibility to be installed **easily and rapidly in any position**. Can be fixed using dowels or directly glued on a surface.

The datalogger acquires 4 measure channels, configurable using **WineCapManager**, as showed in the following table:

| Channel 1 | Channel 2 | Channel 3 | Channel 4 |
|--------------------|--------------------|--------------------|--------------------|
| Temperature | Proportional | Proportional | Proportional |
| Proportional | Linear deformation | Linear deformation | Linear deformation |
| Linear deformation | - | - | - |

Where:

Temperature: the datalogger reports the case internal temperature or the temperature acquired by an external transducer (*NTC10K-FR*). The transducer selection (*internal/external*) is performed using jumpers.

Proportional: the datalogger reports a proportional value (*from 0% to 100%*) related to full scale of potentiometer installed, independently by the stroke.

Potentiometric: the datalogger reports the mechanical stroke of the installed potentiometer expressed in mm. The full scale is configurable for each channel using **WineCapManager** software.

The radio module High Reliability (*unique 868MHz radio technology. implementing frequency hopping on 11 channels*) based on **WINECAP™ LuPo** protocol (**Long Range**) provides an excellent radio range (*up to 6 Km in line of sight*), low battery consumption and the certainty of data recovery in any situation (*black out/signal obstacles*).

With a backup memory onboard may store the last 64,000 samples per channel even if the wireless link is down. Samples can be downloaded using a USB connection.

Using the configuration software, the sampling interval may be set and two thresholds per channel can be activated.

Can be interfaced with:

- all the **gateways** of **MWDG** product line
- all the **gateways** of **MWLI** product line

If necessary, radio coverage may be extended up to 16 times using **WR12 repeaters** (*battery powered repeaters with battery life up to 7 years*) between the datalogger and the **gateway**.

The features shown may be subject to change without notice.