METEOGRAPH – WEB SOFTWARE FOR DATA MANAGEMENT OF GEOVES MONITORING STATIONS WITH GPRS TRANSMISSION (Rev.0 010719)

MeteoGraph is a web application for the numerical and graphic display of data transmitted via GPRS on FTP area from environmental monitoring stations with Geoves datalogger.

The software relies on an FTP Geoves area where data is sent autonomously by the control units at fixed times and are available in standard text format with fields separated by commas (**CSV format**). The data is therefore **always usable** without the need to use proprietary communication protocols or specific programs for data decoding; furthermore, the software does not require any installation as Internet access is sufficient and a username and password must be entered to enter the dedicated web page and display the measurements from a PC, tablet or smartphone.

The data in text format are processed by MeteoGraph to obtain on the web page both the measurement in numeric format (eg average minimum maximum trend, etc.) and in graphic format that can be downloaded in jpg bitmap format.

The representation of the data on the screen can be managed by selecting a desired observation period.

The graphs currently available are:

- **Linear** multi-line for measurements where the arithmetic average is applied (eg temperature, humidity, pressure, etc.) with representation also of the minimum and maximum values
- **Histogram** for the measures where the summation processing is applied (eg monthly precipitation)
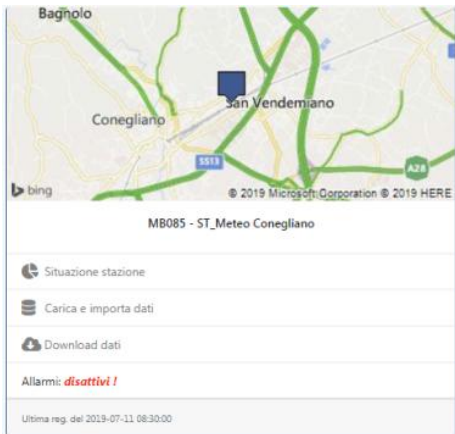- **Windrose** for anemometer measurements
- **Daily table**

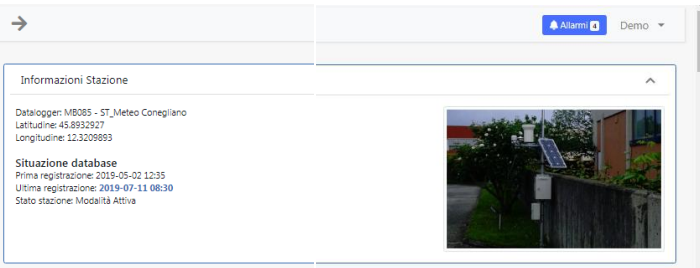For each monitoring station it is also possible to report the following information:

- Geographic coordinates
- Site map
- Photos of the station
- General information and comments

The data loaded on the web page can come from two primary sources:

- online, when the station is connected to the internet via GPRS
- off-line, when data from SD Card recordings must be transferred

The data can then be downloaded in text format to perform aggregations (eg monthly) using the free Geodesk Geoves software. Optionally the MeteoGraph web software can manage alarm logics on measurements. Upon exceeding the set thresholds it will be possible, for example, to send an alert email to the available personnel.

Picture	Menu/command description
MB085 - ST_Meteo Conegliano	**Station dashboard** The available functions are: • *Station situation*: access to the graphic processing page and to the station's synoptic • *Load and import data*: the data saved on the datalogger SD card are imported, or on a PC folder (or other support) • *Data download*: data are downloaded in text format with fields separated by commas for simple backups or subsequent processing with other applications (eg Excel, Access, external databases or other commercially available software) • *Alarms*: access to the station alarm management menu (optional on request)

Station situation - *Station information*
The parameters displayed are:
- Station unique identifier (ID)
- Name of the station
- Geographic coordinates (Latitude and Longitude)
- Data base status:
  - Date and time of Start data storage
  - Date and time Last data storage
  - Operation status of the station
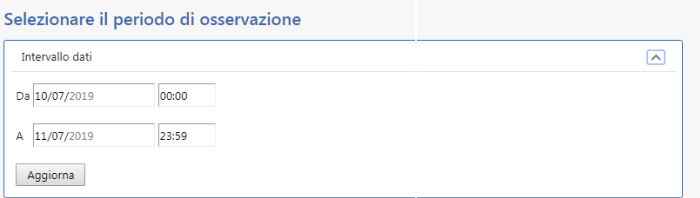- Photos of the station
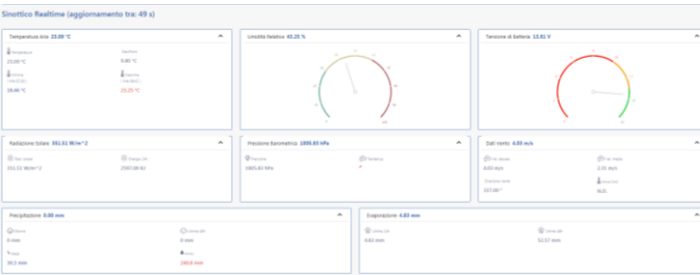
Real-time synoptic of the station
The synoptic is a very useful tool for assessing the situation of the latest measurements taken by the monitoring station and assessing the meteorological or environmental situation of the site. For each measurement it is possible to associate one or more dedicated processes. For example, for the temperature it is possible to indicate the minimum and maximum value and the time in which it occurred in addition to other calculated measures such as the dew point.
The synoptic also shows:
- calculated measures
- Diagnostic data (eg battery voltage)
- Significant data for the interpretation of the measure (eg barometric tendency, wind chill, monthly precipitation, etc.)

Observation period
It is possible to select the observation period in which to carry out all the elaborations that are displayed by MeteoGraph
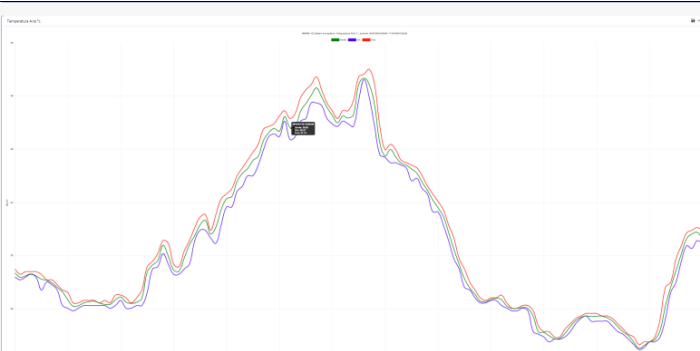
Graphic elaborations
- **Linear multi-line** for measurements where the arithmetic average is applied (eg temperature, humidity, pressure, etc.) with representation of the minimum and maximum value
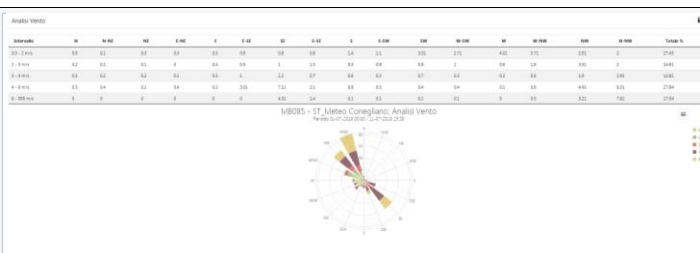
Graphic elaborations
- **Wind-rose** for the anemometer measurements
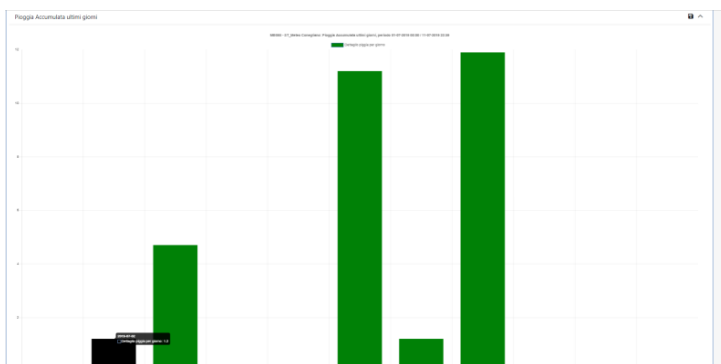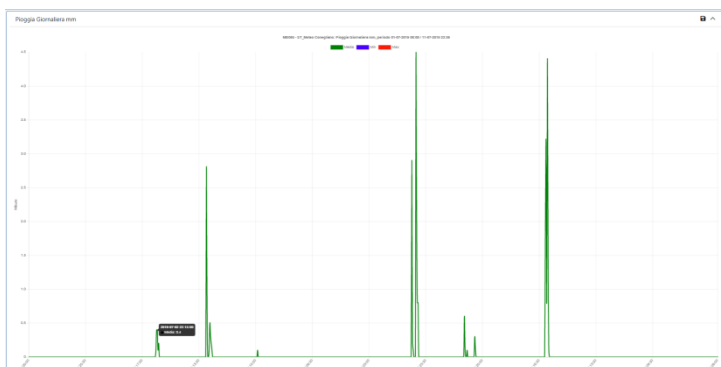
Graphic elaborations for precipitation

- Graph with hourly summation
- Monthly or annual precipitation histogram
- Other graphs are available on request or can be customized with simple filters

Tabular elaborations

- Daily data table can be downloaded both in text and in .png image format