Acquisition unit CEA520 is the key portion of automatic weather stations. It insures signals acquisition, measurements, processing and data storage, in real time and with a high metrological accuracy, even in harsh climate conditions. It performs the data transmission on a variety of communication supports: phone network PSTN/GSM/GPRS, BLU radio and satellites METEOSAT/GOES etc...

Benefits

An innovative technology

- Reduced power consumption due to MicroAmps technology used
- Excellent reliability given by the system overview: the components option, their integration, their protective design and the minimized connectics used

An unmatched operation

- The central processing unit is multi task: The measurement is continuously done while the whole tasks works simultaneously
- Excellent quality of the metrology over the chain process from measurement to low-level signals
- Acquisition back-up and data storage for three weeks (without external charging of the internal battery)

A functional use

- Secured operation under any environmental conditions even harsh (corrosion-free and protection against lightning)
- No systematic technical maintenance
- Instant commissioning without programming
The use of the MicroAmps technology developed by Cimel characterizes this acquisition unit in many assets:

- The optimized procedure for exchange mode between sensors guaranties a remarkable metrological reliability
- A single leak-resistant, dehydrated box protects connectics and the tiny battery against all threats (environmental, electromagnetic and corrosion)
- Plug-in terminal box supporting all connectors for output /input connections and their protections
- Overvoltage protection and peak clipper protect the output and input
- Securized solar generator: battery monitoring and ageing detection
- Minimized number of internal and external connections
- Very reduced power consumption

This acquisition unit is designed to operate for long lifetime in severe environmental conditions without any systematic technical maintenance

### Compatible sensors

The sensors are easy to plug and play on the plug-in terminal via a pre-wired connector

<table>
<thead>
<tr>
<th>Sensor name</th>
<th>Sales reference</th>
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<tbody>
<tr>
<td>Air temperature and humidity under cover</td>
<td>CES600</td>
</tr>
<tr>
<td>Opto-electronic anemometer</td>
<td>CES155</td>
</tr>
<tr>
<td>Opto-electronic wind vane</td>
<td>CES157</td>
</tr>
<tr>
<td>Air temperature under cover</td>
<td>CES185</td>
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<tr>
<td>Pavement temperature</td>
<td>CES185C</td>
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<tr>
<td>Automatic rain gauge</td>
<td>CES189</td>
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<tr>
<td>Thermopile pyranometer</td>
<td>CES180</td>
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<tr>
<td>Wetness</td>
<td>CES187</td>
</tr>
<tr>
<td>Actinometric index</td>
<td>CES185I</td>
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<tr>
<td>Pyrheliometer</td>
<td>CES183</td>
</tr>
</tbody>
</table>
The acquisition unit performs these functions:

**Configuration**
- Temperature sensors configuration and correction
- Configuration of humidity sensor constants
- Pyranometer sensitivity configuration

**Processing**
- Acquiring and measuring the signals produced by each sensor and sensors sampling once per minute or more
- Raw data processing: measurement outliers erasing, electronic filter, errors detection, scaling operation, each sensor linearization
- Various data types storage on several steps: minute, hourly, daily
- Transmitting the data in real time via one or more simultaneous communication supports

**Control**
- Real time display on box screen: Instant values of measured parameters, all registered data, configuration parameters
- Self-diagnostic is available without interruption locally or remotely

**Commissioning and running**

The acquisition unit is simply put on a holder inside the protection box that is fixed on the weather station main infrastructure

- Completely fitted and preprogrammed at workshop
- All the cables to be connected are equipped with plug and play connectors tagged to match the labelled plug-in terminal
- The operation validation on site or remotely is performed through a local screen display editing data and through evolutive tools (self-test, remote maintenance, automatic diagnosis)