



Datasheet

MeteoLink

A Meteorological or HydroMeteorological station, normally consists of a set of sensors, depending on the required parameters and a central collection (conditioning, translator, data logger) unit. In high-demanding markets each of the sensors has its own specific location in order to obtain the highest accuracy.

MeteoLink gives users the ability to 'link' these sensors into one chain and has one combined output containing measurements as well as sensor specific information, such like type, serial number and runtimes. Adding sensors, analogue or provided with a serial output, was never easier using the internal browser of MeteoLink. MeteoLink uses two kind of nodes:

- A basic node, able to read in two RS422 signals and a sensor specific signal.
- A smart node, used at the last in chain and provided with the internal browser, in which the total chain-output is created, including parameter-labelling, calculations, output format and baud-rate.

Features

- DNV type approved ready
- Basic node:
 - Inputs: 2 pcs RS422 NMEA0183; 0..5 Vdc; 0/4..20 mA; serial (RS232, RS422, RS485 and CMOS)
 - Output: 2x NMEA0183 (with standardized or XDR identifier and node specific information added to this)
- Smart node:
 - Inputs: same as basic node, additionally: 0..5 Vdc, pulse and RS485
 - Optional OIC-9001 Add-On Analogue input PCB, to be build into the SmartNode, two extra 4-20mA inputs and two extra 0-5VDC inputs.
 - Optional OIC-9002 Add-On NMEA input PCB, to be build into the SmartNode, 4 NMEA inputs.
 - Outputs: RS422 NMEA0183, ethernet
 - Internal web browser
- Preconfigured sensor-nodes
 - OIC-406 Temperature, humidity node
 - OIC-505(-2) Barometric smart node
 - OIC-504(-2) Barometric smart node
 - OIC-506 Barometric smart node
 - OIC-604 Solar radiation node, with internal incline measurement

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General

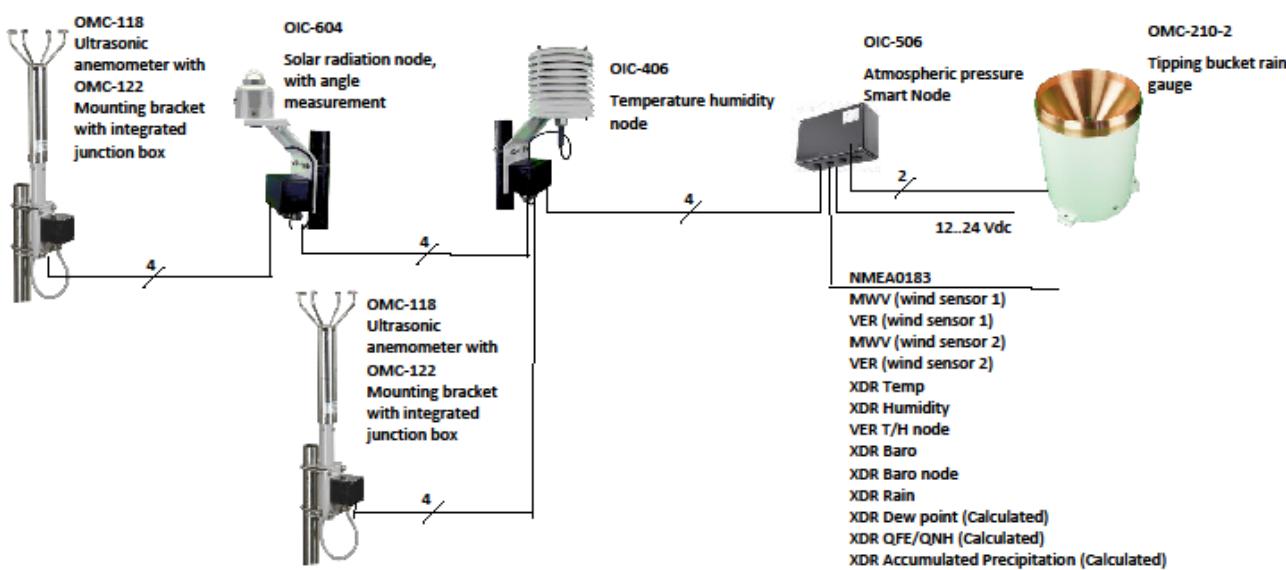
MeteoLink is a new concept from Observator for the interconnection of meteorological and hydrological sensors. As professionals within this field, you are aware that each sensor requires its own specific installation location to achieve its optimal performance. Recommendations on sensor locations are also given and recommended by organizations such as the WMO and the CAA.

Additionally, MeteoLink offers the flexibility to create a chain of different sensors and measuring devices which are individually field replaceable, resulting in a lower cost of ownership. Sensors with either a serial output or an analogue output (4-20mA) can be integrated into a MeteoLink chain.

A complete MeteoLink system may, for example, consist of 3 basic nodes and 1 smart node resulting in a chain of sensors for gathering up to 24 measurement parameters. Depending on the application and installation it may be decided to achieve this with one or more linked chains.

Although the heart of MeteoLink is based on two PCB's (being the basic node and smart node) which can be used as separate data collection units, Observator offers several pre-configured sensor nodes (see next page). These can easily be chained together in order to produce a customized installation with one central power supply and one combined output.

Besides measurement and calculated outputs sensor node specific data is also collected, such as hardware and software versions as well as runtime and sensor specific status data.



Example of a small MeteoLink configuration

Name	Date	Approved	OBSERVATOR	
Drawn			Quote	
Checked			Customer	
Last rev.			Customer Project No.	
			Email	Sheet 1 of 1
Observator Instruments B.V. Rietdekerstraat 6, 2984 BM Ridderkerk The Netherlands Internet: www.observator.com				



Preconfigured sensor nodes

OIC-406 Temperature & Humidity Node

The OIC-406 is MeteoLink's Temperature & Humidity node and is provided with a field replaceable heated probe. Commonly this node, which includes a basic node-pcb, is placed second in the chain and is also able to read in two additional NMEA based sensors. The power supply to these additional sensors (except for heating) is supplied from this node.

- Temperature range: -50°C..+100°C
Accuracy: $\pm 0.1^\circ\text{C}$ (10-30 °C)
- Humidity: 0..100%RH
Accuracy: $\pm 0.8\%$ RH (10-30 °C)
- Long term drift: <1%RH/annum



OIC-406 Temperature Humidity Node

OIC-604 Global Solar Radiation Node

The OIC-604 is MeteoLink's Global solar radiation node and is provided with a field replaceable pyranometer. The node is further provided with a clinometer. The node should be mounted on a movable platform such as a vessel, measurements taken at an angle of $>5^\circ$ will not be transmitted and the last value within $0..5^\circ$ will be represented in the XDR output. The node is provided with an additional single NMEA input and therefore able to be used in a MeteoLink chain.

- Range: 0..1600 W/m²
- Second class: ISO9060



OIC-604 Global Solar Radiation Node



Preconfigured sensor nodes

OIC-506 Barometric pressure (smart) node

The final component in a MeteoLink chain is a smart node. This node can be programmed by using the RJ45 connector via the internal browser. In this node non-predefined sensors signals (such as digital or analogue signals) are converted, labeled and scaled.

Furthermore, some parameter specific calculations may be added to the output string. The custom string converter within the smart node offers the possibility to connect any input signal such as serial or 4-20mA analogue sensors. A selection can be made as to which part of the sensor output should be present in the combined NMEA output string.

Since barometric pressure sensor(s) are usually placed close to the processing unit (conforming to CAP437) this smart node can be supplied with one or two barometric pressure sensors within the unit.

- The OIC-504/5/6 are MeteoLink's standard smart node with a single atmospheric pressure sensor
- The OIC-504-2 and 505-2 are MeteoLink's standard smart node with a dual atmospheric pressure sensor
- Range: 800..1100 hPa
- Resolution: 0.01 hPa
- Accuracy: 0.3(OIC-505)/0.5 hPa(OIC-506), (@20°C)
- Temperature range: -40°C..+120°C
- Long term stability: 0.1 hPa/annum



OIC-504 Barometric pressure (smart) node

Same as OIC-506 but with a other specification:

- Range: 750..1150 hPa
- Resolution: 0.01 hPa
- Accuracy: 0.2 hPa over temperature compensated range of -40°C..+85°C
- Long term stability: 0,01% FS/annum

OIC-505 Barometric pressure (smart) node

Same as OIC-506 but with a other specification:

- Range: 800..1100 hPa (on request 500-1100 hPa)
- Resolution: 0.01 hPa
- Accuracy: 0.3 hPa (@20°C)
- Temperature range of -40°C..+60°C
- Long term stability: 0.1 hPa/annum

More preconfigured sensor-nodes will follow in due course. On request from other meteorological sensor suppliers Observator are able to include their sensors to this product line.

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Solutions beyond expectations. That's what sets Observator apart. We believe in taking the extra step. Retaining our competitive edge, through innovation and uncompromised support, are key to success. As an ISO 9001:2015 certified company, we apply the highest quality standards to our products and systems.

Since 1924 Observator has evolved to be a trend-setting developer and supplier in a wide variety of industries. From instruments for meteorological and hydrological solutions, air and climate technology, to high precision mechanical production, window wipers and sunscreens for shipping and inland applications.

Solutions beyond expectations

Originating from the Netherlands, Observator has grown into an internationally oriented company with a worldwide distribution network and offices in Australia, Germany, the Netherlands, Singapore and the United Kingdom.

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