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Meteo Service

The Meteo Service coordinates the retrieval of data from the various modules. This service expects the input of the user data of the API and has a time interval after which the child components would be updated.

Data Input

Name	Description	Unit
Client	Username of your API	-
Key	Key or Password of your API	-
Update Period	Update period of child components	time

Temperature Forecast (24h)

The temperature forecast is intended for intelligent heating controls and provides temperature forecast and actual values. With these forecast values, for example, underfloor heating systems can be switched on in advance in order to reach the setpoint temperature after inertia. The averaged outdoor temperature over 24 hours in the forecast helps to switch on the generation systems early enough for the upcoming heating operation.

Data Input

Name	Description	Unit
Latitude	Latitude of the position for which you want to get the data	-
Longitude	Longitude of the position for which you want to get the data	-

Data Output

Name	Description	Unit
Actual Temperature	Current temperature	°C
Maximum Temperature next 24h	Maximum temperature within the next 24h	°C
Minimum Temperature next 24h	Minimum temperature within the next 24h	°C
Actual Dew Point	Current dew point temperature	°C
Average Temperature next 24h	Average temperature within the next 24h	°C
Average Temperature next 12h	Average temperature within the next 12h	°C
Average Temperature next 6h	Average temperature within the next 6h	°C
Temperature in 1h	Expected temperature within the next hour	°C
Temperature in 2h	Expected temperature in 2 hours	°C
Temperature in 3h	Expected temperature in 3 hours	°C
Temperature in 4h	Expected temperature in 4 hours	°C
Temperature in 5h	Expected temperature in 5 hours	°C
Temperature in 6h	Expected temperature in 6 hours	°C
Temperature in 7h	Expected temperature in 7 hours	°C
Temperature in 8h	Expected temperature in 8 hours	°C
Temperature in 9h	Expected temperature in 9 hours	°C
Temperature in 10h	Expected temperature in 10 hours	°C
Temperature in 11h	Expected temperature in 11 hours	°C
Temperature in 12h	Expected temperature in 12 hours	°C
Temperature in 13h	Expected temperature in 13 hours	°C
Temperature in 14h	Expected temperature in 14 hours	°C
Temperature in 15h	Expected temperature in 15 hours	°C
Temperature in 16h	Expected temperature in 16 hours	°C
Temperature in 17h	Expected temperature in 17 hours	°C

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Temperature in 18h	Expected temperature in 18 hours	°C
Temperature in 19h	Expected temperature in 19 hours	°C
Temperature in 20h	Expected temperature in 20 hours	°C
Temperature in 21h	Expected temperature in 21 hours	°C
Temperature in 22h	Expected temperature in 22 hours	°C
Temperature in 23h	Expected temperature in 23 hours	°C
Temperature in 24h	Expected temperature in 24 hours	°C

Weather (Actual value)

The weather component contains a mixture of measurement and forecast data. This allows awnings to be retracted in good time before a storm or blinds to be lowered when the sun is shining. The rain data can also help to protect awnings from impending wetness and to prevent the formation of mould.

Data Input

Name	Description	Unit
Latitude	Latitude of the position for which you want to get the data	-
Longitude	Longitude of the position for which you want to get the data	-

Data Output

Name	Description	Unit
Actual Temperature	Current temperature	°C
Maximum Temperature next 24h	Maximum temperature within the next 24h	°C
Minimum Temperature next 24h	Minimum temperature within the next 24h	°C
Average Temperature next 24h	Average temperature within the next 24h	°C
Actual Relative Humidity	Current relative humidity	%RH
Total Rain Rate next 24h	Total amount of rain within the next 24h	mm
Probability of Rain next 24h	Probability of rain within the next 24h	%
Probability of Snow Fall next 24h	Probability of snowfall within the next 24h	%
Actual Wind Direction	Current wind direction	0-360°
Average Wind Speed next 24h	Average wind speed within the next 24h	km/h
Wind Gusts next 24h	Maximum gust speed within the next 24h	km/h
Sunshine Duration next 24h	Sunshine duration of the next 24h	min
Sun Azimut	Current sun azimuth	°
Sun Elevation	Current sun elevation	°
Global Radiation	Current global radiation	W/m^2

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Solar Forecast (24h)

The Solar Forecast can help to recognise an upcoming high-yield day and to control the systems connected to solar installations (PV or thermal) in such a way that the energy is needed when it is also produced. In this way, optimisation of energy consumption and energy-saving systems can be optimally realised.

Data Input

Name	Description	Unit
Latitude	Latitude of the position for which you want to get the data	-
Longitude	Longitude of the position for which you want to get the data	-
Solar Panel Tilt	Inclination of the solar panels relative to the horizontal	0-90°
Solar Panel Orientation	Orientation of the solar panels (0/360=N, 90=E, 180=S, 270=W)	0-360°
Solar Plant Power	Peak power of the solar system (PV only)	kW

Data Output

Name	Description	Unit
Actual Temperature	Current temperature	°C
Global Radiation	Current global radiation	W/m^2
Direct Radiation	Current direct radiation	W/m^2
Diffuse Radiation	Current diffuse radiation	W/m^2
Clear Sky Radiation	Current clear sky radiation	W/m^2
Direct Energy Radiation	Current direct energy radiation	Wh/m^2
Estimated Power actual Hour	Expected solar power within the actual hour	kW
Estimated Power in 1h	Expected solar power within the next hour	kW
Estimated Power in 2h	Expected solar power in 2 hours	kW
Estimated Power in 3h	Expected solar power in 3 hours	kW
Estimated Power in 4h	Expected solar power in 4 hours	kW
Estimated Power in 5h	Expected solar power in 5 hours	kW
Estimated Power in 6h	Expected solar power in 6 hours	kW
Estimated Power in 7h	Expected solar power in 7 hours	kW
Estimated Power in 8h	Expected solar power in 8 hours	kW
Estimated Power in 9h	Expected solar power in 9 hours	kW
Estimated Power in 10h	Expected solar power in 10 hours	kW
Estimated Power in 11h	Expected solar power in 11 hours	kW
Estimated Power in 12h	Expected solar power in 12 hours	kW
Estimated Power in 13h	Expected solar power in 13 hours	kW
Estimated Power in 14h	Expected solar power in 14 hours	kW
Estimated Power in 15h	Expected solar power in 15 hours	kW
Estimated Power in 16h	Expected solar power in 16 hours	kW
Estimated Power in 17h	Expected solar power in 17 hours	kW
Estimated Power in 18h	Expected solar power in 18 hours	kW
Estimated Power in 19h	Expected solar power in 19 hours	kW
Estimated Power in 20h	Expected solar power in 20 hours	kW
Estimated Power in 21h	Expected solar power in 21 hours	kW
Estimated Power in 22h	Expected solar power in 22 hours	kW
Estimated Power in 23h	Expected solar power in 23 hours	kW
Estimated Power in 24h	Expected solar power in 24 hours	kW

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Data origin and API

All meteorological data is obtained from Meteomatics AG, based in St.Gallen, Switzerland. Meteomatics supplies weather data to ABB, Airbus, Bosch, Swiss International Airlines and many others.

For data retrieval, a suitable API must be obtained from Meteomatics AG. For the selection of the size of the API, queries per day are specified. Each of the modules described above makes two queries when the values are updated. Calculate the size of the API as follows:

$$queries\ per\ day = number\ of\ components \times 2 \times \frac{24}{refresh\ rate\ in\ h}$$

If you want to realise all three modules with the smallest API package (500 queries per day), you have to set the update interval to 20min in order not to exceed the capacity.

When you place an order, Meteomatics AG will send you your user data. Then enter this user data in the Meteo Service.

Compatibility
The ITEC Meteo service can be used from Niagara version N4.7.109.20..

Version
This data sheet applies to module version 4.1.1.X..

Contact
If you have any questions, comments, suggestions or error messages, please contact our technical support team:

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