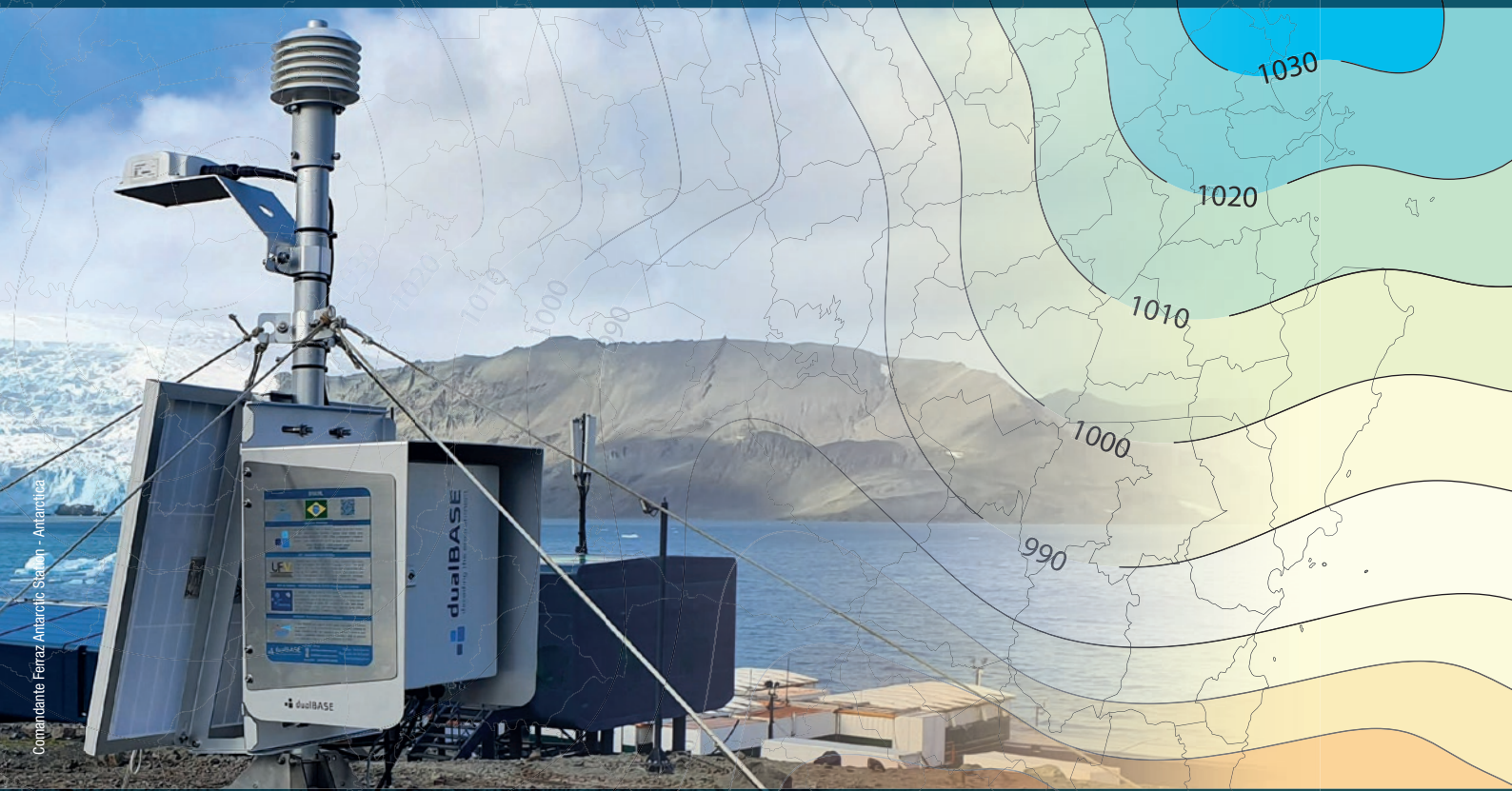
The environment speaks and we do understand



Comandante Ferraz Antarctic Station - Antarctica

dualBASE®
decoding the environment

About us

The environment speaks.
Dualbase decodes.

Since 2009, we have been transforming environmental data into strategic decisions. We develop sensors and telemetry solutions that combine technology, precision, and reliability, serving critical sectors such as hydrology, meteorology, energy, and agriculture.

With patents filed in more than 40 countries, we bring innovation and performance to every product delivered. Our purpose is clear: to decode nature's signals and turn them into accurate information for companies, institutions, and individuals.

Dualbase: technology that connects you to the environment.

Join us!

Proud Member of HMEI
HMEI

SDI-12
Support Group
Serial Digital Interface at 1200 Baud

Mission, Vision and Values

MISSION
To offer reliability in measurement and telemetry for environmental monitoring through safe and reliable technologies, contributing to the development of the sector, with great respect to the individual, society and the environment.

VISION
To be globally recognized, by 2030, as one of the 10 best smart sensor manufacturers for environmental monitoring.

VALUES
Ethics,Innovation, Competence, Responsibility, Commitment and Lasting relationships

MARKETS WE SERVE
- Hydrology and water resources
- Meteorology and climate research
- Precision agriculture
- Renewable energy and solar power plants
- Civil defence and disaster monitoring
- Governmental agencies and universities
- Environmental consultancies and private companies
- Infrastructure and transport
- Mining and others

Laboratories





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LimniDB

OVERVIEW

The LimniDB water level sensor uses a piezoresistive sensor cell with automatic temperature compensation and offers excellent linearity and accuracy. It has low power consumption and three signal outputs: 4 to 20 mA, RS-485 and SDI-12. It is available in absolute or relative (gauge) pressure.

LimniDB-CAP

OVERVIEW

The LimniDB-CAP water level sensor uses a capacitive sensor cell with automatic temperature compensation for the best accuracy possible. It has the lowest power consumption in the market, and it is available with digital RS-485 or SDI-12 output signals, also in the absolute or relative (gauge) versions.

LimniDB-RADAR

OVERVIEW

The LimniDB-RADAR is a non-contact water level sensor. Installed on bridges or secure structures, it measures the height of the water surface without the need for direct contact. This sensor is safe, easy to use and requires low maintenance. It features embedded intelligence such as tilt detection, abnormal vibration, water ingress alert, internal humidity, and automatic temperature compensation to ensure greater measurement accuracy.

LimniDB-BORBULHA

OVERVIEW

The LimniDB-BORBULHA is a bubbler water level sensor that can be used where the environment itself poses some danger to the sensor. The measurement device itself is installed near the Hydrological Station in a safe place, and the measurement is made using a hose that has its end immersed in the river water. It has both SDI-12 and RS-485 digital output signals.

PluviDB

OVERVIEW

The PluviDB is a tipping bucket rain gauge that can measure an extensive range of precipitation intensities, 0 to 500 mm/h, offering great accuracy, robustness, durability, and linearity in the measurements.

SPECIFICATIONS

Capacity
0 to 500 mm/h

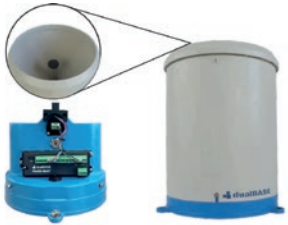
Resolution
0,2 mm

Accuracy
± 2% @ 0 to 250 mm/h
± 3% @ 250 to 500 mm/h

Funnel Collector Diameter
200 ± 0,5 mm

Output
Double *reed-switch*
ON pulse of 100 ms.

PluviDB-SMART



OVERVIEW

The PluviDB-SMART provides the best of two worlds. The excellent accuracy and robustness of the classic tipping bucket sensor, but also the reliability of a Smart Sensor capable of doing some self testing and diagnosis.

PRODUCT DETALS

- **Funnel and siphon clogging detection**
- **Tipping bucket mechanical locking detection**
- **Mechanical vibration and unleveling detection**
- **SDI-12 digital output signal**
- **Ideal for large monitoring networks and alert systems**

PluviDB-DVP

OVERVIEW

The PluviDB-DVP makes the rain gauge verification process more agile, guaranteeing the reliability of the data without removing the equipment from the site and simulating rains on different intensities.

SPECIFICATIONS

Capacity
653 ml

Accuracy
± 0,25 %

Operating Range
0 to 70°C | 0 to 100% RH

Nozzles of Instensities @ 314 cm²
50, 100 and 200 mm/h

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BaroDB

OVERVIEW

The BaroDB is a barometer with three available output signals, Analog Output (Voltage or optional Current), Digital RS-485 and SDI-12. With optimized metrological characteristics, it has good accuracy and stability over time. It has low power consumption, it is compact, stable, and very easy to use.

SPECIFICATIONS

Measurement Range
600 to 1100 hPa

Digital Output
RS-485 and SDI-12

Resolution
0,01 hPa

Analog Output
0 to 2,5 V or 0 to 5 V

Operating Range
-40 to 80°C

Accuracy
± 0,05% F.E. @ +10 to 40°C
± 0,1% F.E. @ -40 to 80°C
± 0,3 hPa @ 20°C

VSensDB-V

OVERVIEW

The VSensDB-V is a windspeed sensor from the VSensDB-Series. It is designed for measuring horizontal wind speed, providing excellent accuracy, robustness, and reliability.

SPECIFICATIONS

Measurement Range
0 to 60 m/s

Accuracy
5% @ 0 to 60 m/s
3% @ 0 to 20 m/s

Maximum Windspeed Survival
80 m/s

Starting Threshold
0,8 m/s

Operating Range
Temperature: -40 to 80°C
Humidity: 0 to 100 % (non condensating)

VSensDB-D

OVERVIEW

The VSensDB-D is a wind direction sensor from the VSensDB-Series. It is designed to measure the horizontal direction of the wind accurately. Its unique design, without potentiometers, makes it more reliable and robust than most of its counterparts in the market.

SPECIFICATIONS

Measurement Range
0 to 360°

Accuracy
3° @ 0 to 360°

Maximum Windspeed Survival
80 m/s

Open
Typical: 3°
Maximum: 5°

Operating Range
Temperature: -40 to 80°C
Humidity: 0 to 100% (non condensating)

TUSensDB

OVERVIEW

The TUSensDB measures the air temperature and relative humidity with great accuracy. It has a digital SDI-12 output as an optional analog output. It guarantees the collected data's accuracy, stability, and reliability with low power consumption.

SPECIFICATIONS

Operating Range
Temperature: -40 to 80°C
Humidity: 0 to 100% RH

Resolution
Temperature: 0,01°C
Humidity: 0,01% RH

Accuracy Temperature
± 0,1°C @ 25°C
± 0,2°C @ 5 to 40°C
± 0,3°C @ -40 to 80°C

Accuracy Humidity @ 25°C
± 1,8% @ 10 to 90% RH
± 3% @ 0 to 100% RH

Output Signal
SDI-12; Analog (0-1V)

MultiSensDB-PTU

OVERVIEW

The MultiSensDB-PTU put together what is needed in a Weather Station in terms of temperature, humidity, and barometric pressure. It joins the accuracy of the BaroDB and TUSensDB with the ease of installation from the TUSensDB. It has a digital SDI-12 output signal.

SPECIFICATIONS

Measurement Range
Temperature: -40 to 80°C
Humidity: 0 to 100% RH
Pressure: 600 to 1100 hPa

Accuracy Pressure
± 0,05% F.E. @ +10 to 40°C
± 0,1% F.E. @ -40 to 80°C
± 0,5 hPa @ 20°C

Accuracy Temperature
± 0,1°C @ 25°C
± 0,2°C @ 5 to 45°C
± 0,3°C @ -40 to 80°C

Accuracy Humidity @ 25°C
± 1,8% @ 10 to 90% RH
± 3% @ 0 to 100% RH

Resolution
Temperature: 0,01°C
Humidity: 0,01% RH
Pressure: 0,01 hPa

Output Signal
SDI-12

STH-01

OVERVIEW

The STH-01 is designed to ensure the quality of the measurements from the temperature and humidity sensors, as well as protect and prolong its lifetime. It has UV Protection and low water adhesion. Windtunnel tested, it is the best choice for the TUSensDB.

SPECIFICATIONS

Type
ABS plates with UV filter

Operating Range
-40 to 80°C | 0 to 100% RH

Versions
6 or 12 plates

Diameter to fix sensors
10 to 30 mm

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RSensDB

OVERVIEW

The RSensDB-Series pyranometers were developed for solar radiation measuring(W/m²). They can be installed in a horizontal or inclined position, or they can even be assembled as the AL version for albedometers. The sensors are available in Classes A, B or C.

SPECIFICATIONS

Measurement Range
0 to 4000 W/m² (Class A)
0 to 2000 W/m² (Classes B and C)

Spectral Range (50%)
283 to 3000 nm (Classes A and B)
300 to 3000 nm (Class C)

RemoteSensDB-Series

OVERVIEW

The RemoteSensDB-Series is a line of radio and telemetry communication products. Available in 2.4 GHz, 900 MHz, SDI-12, Bluetooth, or Wi-Fi options, it is compatible with most dataloggers available on the market.

PRODUCT DETAILS

- **Available in 2.4 GHz, 900 MHz**
- **Bluetooth or Wi-Fi**
- **SDI-12**
- **RS-232 or RS-485**
- **MESH network capability**

ConvDB-Series

OVERVIEW

A series of communication interfaces enabling interoperability between standards such as SDI-12, Modbus, USB, RS-485, RS-232, among others. Designed to ensure reliable data transmission, electromechanical compatibility, and integration simplicity.

PRODUCT DETAILS

- **USB**
- **SDI-12**
- **RS-232**
- **RS-485**
- **Modbus**

TSatDB

OVERVIEW

The TSatDB GOES transmitter has an excellent data transmission performance via GOES and METEOSAT satellites. Ideal for use in Hydro-Meteorological Stations. It has low power consumption on standby mode, and is easy to integrate with many dataloggers from the market.

PRODUCT DETAILS

- **High transmission data rate - version 2.0 (CS2);**
- **Global positioning system (GPS) and automatic clock fix. Is capable of operating for up to 28 days without GPS signal;**
- **Compatible with many dataloggers;**
- **Front panel LEDs indicate operating status;**
- **NESDIS Homologation: 1014-000114;**
- **ANATEL Homologation: 03654-18-11455**

YagiDB

OVERVIEW

The YagiDB antenna is designed to be used with the TSatDB transmitter, although it is also compatible with other transmitters on the market. It meets NOAA Certification Standard features at 300bps to 1200bps. Each antenna passes through a quality test, ensuring the performance of each unit.

SPECIFICATIONS

Right Hand Circular Polarization (RHCP)

Central Frequency
401,8 MHz

Bandwidth
2 MHz

Maximum input power
15 Watts

Gain
11dBi

VSWR
<1,5:1

Input Impendance
50 Ohms

GpsDB

OVERVIEW

The GpsDB is designed for GPS data reception, featuring an integrated receiver with TTL output and optional RS-232 and PPS. It is ideal for automatic data collection platforms.

PRODUCT DETAILS

- **Outdoor-type GPS receiver**
- **Global Positioning System enabling date and time synchronisation**
- **Lower-base circular female connector**
- **Compatible with various systems**
- **Flexible cable available in multiple lengths and connector types**
- **Protection rating: IP67**

TCelDB-4G

OVERVIEW

The TCelDB-4G is a robust and reliable GSM/GPRS/3G/4G data transmitter. It features low power consumption and allows remote access to the Data Collection Platform.

PRODUCT DETAILS

- **Data transmission via cellular signal**
- **Robust and customisable**
- **Status indicator LEDs**
- **Dual SIM card slots with alternating operation**
- **2 × RS-232 ports and 1 × USB port**

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Weather Stations

DBMet

Used for monitoring the environmental variables related to weather and climate. The number of sensors can be increased according to the client´s needs. The DBMet Weather Station meets the W.M.O specifications; Robust but lightweight structure, easy to carry, and simple to install.

DBAgro

Evapotranspiration and weather monitoring is essential for the modern precision agriculture. The DBAgro weather station provides the essential data for farm management.

DBSol

Measuring solar radiation is very important in the recent world movement toward renewable energy. The DBSol Weather station provides all the support for measuring solar radiation and any other variable that is needed. The DBSol can be customized in order to meet the recommendations of the IEC 61724-1 for different plant sizes.

DBHidro

Water is one of the most valuable resources of any country. So, it is essential to know how much water is available. The DBHidro Hydrological Station provides water level and rain data for the best management of this resource. The DBHidro can be customized with many options of telemetry or additional sensors.

DBCompact

The DBCompact weather station is a complete and compact solution for monitoring rain and water level. It can also be expanded with SDI-12 sensors such as temperature, humidity, solar radiation, pressure and wind sensors. It is low profile, easy to install and maintain.

PluviDB-IoT

The PluviDB-IoT rain gauge station is a complete solution for rainfall monitoring. It integrates a PluviDB rain gauge with an ultra-low power IoT transmitter that sends data via 4G/NB-IoT and LTE-M networks using the MQTT protocol as standard. It features a long-life integrated battery, eliminating the need for a solar panel.

PCDWeb

PCDWeb is a cloud real-time data platform. Accessible by any internet browser, including mobiles, it hosts the data of several types of weather stations. That data can be transmitted by various types of telemetry, including: Celular modem, GOES Satellite, INMARSAT Satellite, FTP, HTTP and others.

The system is capable of receiving, validating and handling the data, generating alerts, and send messages through email and/or SMS. The PCDWeb works not only with the Dualbase Products, but it can be integrated with other system, SCADA, and weather stations from other manufacturers.

Main Panel

Summarizes the general state of the DCP, notifying if there was any failure of reception and if there was any maintenance in a certain period of time.

Individual and Comparative Graph

Create graphs from the same station or from different stations, comparing one or more meteorological variables simultaneously.

Notifications / Alerts

The system generates notifications from established maximum and minimum limits. For example, if the temperature decreases below 10°C or the level of the river exceeds 250cm, the system can send a notification or an alert message, as configured, by the user.

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