

SALTO

Long term remote monitoring of noise climates

Overview

The SALTO environmental monitoring system has been designed for long term remote monitoring of noise climates (from several months to several years), with advanced processing functions for further investigation.

SALTO is mainly composed of a type 41AM all-weather outdoor microphone unit, the **Symphonie** acquisition system and a rugged industrial computer. These elements are self-contained in a weatherproof heated and ventilated enclosure for use under extreme weather conditions for long periods of time.

The advanced functions of **Symphonie**, resulting from the unequalled flexibility of this system, allow SALTO to address any type of noise monitoring application around airports, industrial facilities or within the community (road traffic, railway, etc.).

Remote access for system control and data transfer from one or several measuring units can be achieved with the specific software package **dBMODEM**.

The acquisition parameters (single or dual channel, measured quantities, integration duration, threshold trigger level, etc.) can be modified by the user at any time depending on the results.

With its reliability, remote access and automatic calibration check, SALTO is the perfect system for unattended noise monitoring.



Main functions

Measurement station

- Outdoors microphone unit 41AM / CM with remote automatic calibration by electrostatic actuator
- Leq, Fast, Slow, Impulse, Peak, statistical indices for user-defined integration times and storage
- Single measurement range from 20 to 135 dB (option) or 6 ranges adjusted automatically
- Advanced event triggering functions (audio, spectrum, multispectrum, source codes, alarms) under user-defined threshold conditions (absolute or relative)
- Real-time frequency analysis in 1/1 and 1/3 octaves
- Climatically regulated weathertight conditioning
- Options: weather data, data transfer by modem, vibration measurements, psychoacoustics and aeronautics criteria

Data transfer and processing

- Measured quantities and status log transferred by modem at regular intervals
- Real-time or off-line display of noise level time histories
- Advanced data analysis and automatic processing functions (averaged Leq, statistical analysis, noise climates, etc.)



Inside view of a SALTO station

Acoustic characteristics

Accuracy	Type 1 according to IEC60651 and IEC60804
Functions	Approved by PTB Short Leqs, Peak, Slow, Fast, Impulse 1/1 and 1/3 octave bands from 20 Hz to 20 kHz (1 Hz option) Audio recording on computer hard disk
Weightings	A, B, C, G and Lin
Dynamic range	20-135 dB in a single range (option) or over 6 automatically adjustable ranges
Resolution	0.1 dB
Time base	From 20 ms to 1 s
Storage	Several months of continuous storage (Only limited by hard disk size)

General characteristics

Conditioning	Stainless steel, weathertight, IP44.7, heated, ventilated with protection against lightening
Battery life	Maximum 8 hours in case of power shortage
Temperature	From -10°C to +50°C
Dimensions	650 x 400 x 250 mm
Weight	35 kg
Other	Automatic calibration, auto-reboot facility

Option: Weather station (CWS7)*

Temperature	From -40°C to +50°C
Wind	Speed: from 0 to 150 km/h Direction: curve evolution
Atm. pressure	From 950 to 1050 mB
Humidity	Relative from 0 to 100%
Rain fall	From 0 to 50 mm/m ²
Solar radiation	From 0 to 1500 W/m ²

* Other weather stations are available

Components

Front end	Outdoor microphone unit 41AM/CM for all kinds of weather conditions
Hardware	SYMPHONIE system housed in a heated and ventilated weathertight enclosure, with internal battery pack
Software	Acquisition module dBTRIG32 and data processing module dBTRAIT32

Options

Weather	Weather stations dBMETEO software module for acquisition of weather data simultaneously with Leq
Modem	Land line or GSM modems dBMODEM software module for automatic data transfer
Vibration	Accelerometers dBTRIG32 vibration module
2 channel	Two noise acquisition channels 115 dB maximum dynamic range
Psychoacoustics	Loudness, PNL, PNLT in real-time

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Key points

- All-in-one integrating data-logging sound level meter, virtual tape recorder and real-time frequency analyser
- Weather resistant
- Automatic remote calibration
- Type 1 certified by PTB (IEC60804, IEC60651)
- Weather and noise monitoring
- Data transfer and remote access via modems without interrupting acquisition

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Software options

In addition to the powerful environmental noise software suite dBENV32 (see appropriate datasheet), the SALTO system can be upgraded with the dBMODEM software module for data transfer and system control of several measuring units and/or the dBMETEO software module for acquisition of weather parameters simultaneously to noise levels.

For airport noise monitoring, specific modules allow to perform any noise and trajectometry analysis using a flight path database.

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Some references

Airports

Lyon-Saint-Exupéry: 6 stations + 1 mobile station
Paris Airports: 10 stations
Montpellier, Toulouse
Liège (Belgium)
San Francisco (USA)

Road traffic

Athens (Greece): 6 stations to monitor the traffic on the newly built circular boulevard during Olympic Games.



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