PRODUCT DATA

Acoustic Determinator — Type 7816

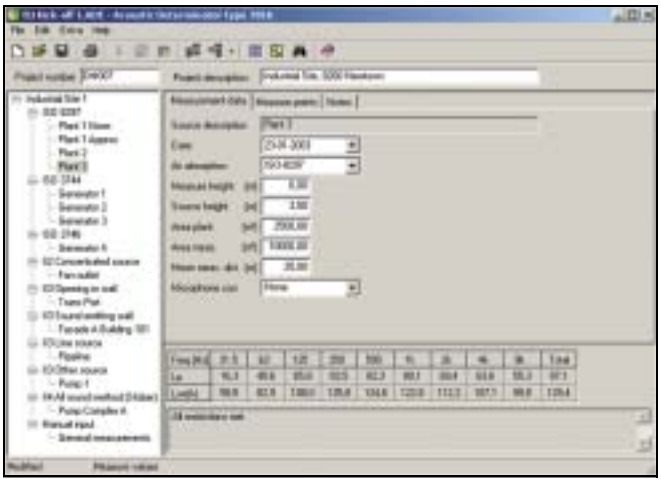
Acoustic Determinator Type 7816 is a very convenient and intuitive tool for acoustic engineers who want to find out the sound power level of industrial sources by measuring sound pressure levels in the field. Using data from field measurements, Acoustic Determinator can then guide you in the determination of sound power levels of various sources in accordance with a wide range of leading national and international standards, such as ISO 8297.

FEATURES

- Determination of L_W from L_p measurements in accordance with the international standards ISO 3744, ISO 3746 and ISO 8297 as recommended by the European Commission for noise mapping.
- Acoustic spreadsheet to perform functions on data such as level addition and subtraction
- Export of results into Predictor Type 7810 for faster and easier creation of a source's acoustic data
- Import of relevant data from Investigator™ Type 2260 and Observer Type 2260
- Import of data from spread-sheets (e.g. Microsoft® Excel)

USES

- Determination of L_W data for use in environmental noise calculation software
- Post-processing of sound level data through averaging, addition (energy-based and arithmetic) and subtraction (energy-based and arithmetic)



Description

When working with prediction software programs to calculate noise contributions in single receiving points or whole areas, it is required to have sound power data for each relevant noise source in question. This is often achieved by measuring sound pressure levels in well-defined positions around the noise source. Depending on the measurement standard used, this can result in quite a few measurements per source.

Acoustic Determinator simplifies the overwhelming task of handling large amounts of (spectral) sound pressure measurements as well as the associated information about measurement positions including the selection of these positions according to various standards.

User Interface

Acoustic Determinator Type 7816 has a Windows® Explorer-based user interface with a tree directory built on user-defined projects, specified standards or methods, and the measurement data (see figure above). This practical file management system makes it easy to create, open and save files containing one or more measurements. Details of the selected measurement file (including measurement guidance) are shown on the right-hand side of the window.

An Acoustic Determinatior project (file) can contain assessments of several sources according to different standards/methods and measurement data from analyzers and sound level meters like Investigator Type 2260 or Observer Type 2260. Once processed and/or stored in Acoustic Determinator, sound power levels can be exported to prediction software such as Predictor Type 7810 for use in environmental noise calculations. Acoustic Determinator's built-in acoustic spreadsheet provides you with quick data transfer from Type 2260 sound level meters as well as import and export possibilities to and from other external devices using the integrated clipboard.

Measuring Methods

Acoustic Determinator supports 12 measurement standards and test methods for processing measurements and determining sound power levels: 8 Dutch methods, 3 international standards and one manual method. Supported standards and methods are listed in the following table:

Table1 *Measurement standard/methods supported*

Dutch HMRI–II	ISO Standards	Other
II2 Concentrated source	ISO 3744	Manual input
II3 Opening in wall	ISO 3746	
II3 Sound emitting wall	ISO 8297	
II3 Line source		
II3 Other source		
II4 All-round method (Stüber)		
II6 Velocity measurements		
II7 Radiation by buildings		

When reading imported measurement data, Acoustic Determinator uses both general and standard-specific parameters to define the measurement properties:

- General parameters include: source description, date, microphone correction, source and measurement point geometry and memo-field for free descriptive text
- Standard-specific parameters may include: multiple measurement surfaces, multiple measurement points, sound pressure level, corrections, background noise, absorption calculation, etc.
- HRMI–II.7 only: a catalogue with approximately 75 pre-defined isolation materials and user-defined isolation material(s), all of which can be modified, is available

Acoustic Determinator's measurement calculations show real-time average sound pressure levels and sound power levels, and are validated for compliance to the specific measurement standard/method used.

Acoustic Spreadsheet

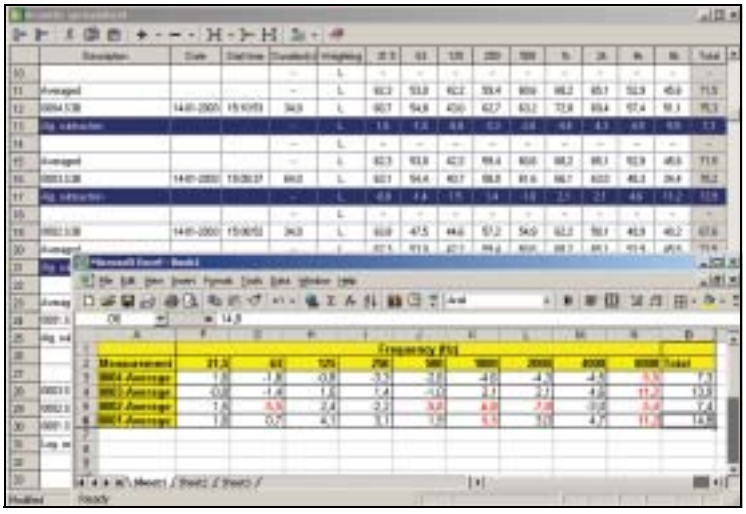
The number of measurement data spectra the acoustic spreadsheet can process and store is virtually unlimited. The acoustic spreadsheet allows for:

- Importing and exporting spectra to and from Acoustic Determinator, Microsoft® Word and Excel, etc.[1]
- Adding and subtracting two or more spectra and storing result
- Weighing and averaging one or more spectra and storing weighted spectra
- Adding constant value(s) to one or more spectra and storing corrected spectra
- Importing measurement data from Investigator Type 2260 and Observer Type 2260 and storing measurement data for further editing

Edited measurement data from the acoustic spreadsheet can then be exported to Acoustic Determinator's main program and used as input for measurements.

[1] Spectra copied from the acoustic spreadsheet to Acoustic Determinator's main program, will, when needed, be automatically converted to A-weighted spectra.

Fig. 1
Back: *The acoustic spreadsheet allowing post-processing of spectra*
Front: *Results from the acoustic spreadsheet can be exported to Microsoft® Excel for graphical presentations*



Reporting and Other Features

Acoustic Determinator features a print option for printing measurements and calculation results. The print option includes:

- Detailed measurement selection capabilities with print review
- Report setup: headers, footers, multiple copies, margins
- Printer setup

Other features are:

- Search within measurements
- Setting options for microphone correction, air absorption and isolation values
- Easily accessible embedded Help function and status information that guides the user through fulfilment of the particular standards.

Specifications – Acoustic Determinator Type 7816

Methods And Test Standards Supported

ISO 3744: 1995: Acoustics – Determination of sound power levels of noise sources using sound pressure – Engineering method in an essentially free field over a reflecting plane
ISO 3746: 1995: Acoustics – Determination of sound power levels of noise sources using sound pressure – Survey method using an enveloping measurement survace over a reflecting plane
ISO 8297: 1994: Acoustics – Determination of sound power levels of multisource industrial plants for evaluation of sound pressure levels in the environment – Engineering method
Dutch HMRI–II II2: Concentrated source
Dutch HMRI–II II3: Opening in wall
Dutch HMRI–II II3: Sound emitting wall
Dutch HMRI–II II3: Line source
Dutch HMRI–II II3: Other source
Dutch HMRI–II II4: All-round method (Stüber)
Dutch HMRI–II II6: Velocity measurements
Dutch HMRI–II II7: Radiation by buildings

Functional Specifications

DATA IMPORT
Type 2260 Investigator with Sound Analysis Software: BZ 7210, BZ 7201, BZ 7202 and BZ 7206
Type 2260 Observer with Sound Analysis Software: BZ 7220
Windows® clipboard

DATA EXPORT
Windows® clipboard

ACOUSTIC SPREADSHEET POST-PROCESSING
The following functions on a spectrum or single-value figure:
- Addition of two or more dB values: energetic or arithmetic
- Subtraction of one dB value: energetic or arithmetic
- Averaging of two or more dB values
- Conversion of frequency weighting between: A, C and Linear
- Addition of a constant value to one or more dB values

Recommended PC Requirements

- Pentium® II 350 MHz with Windows NT®, Windows® 2000 or Windows® XP
- 64 MB RAM
- At least 10 MB free disk space

Ordering Information

Type 7816 Acoustic Determinator version 1.0
Includes the following accessories:
Program on CD-ROM
Program protection key

Accessories Available

Type 2260 Investigator
Type 2260 Observer
Type 7810 Predictor

BP 2003 – 11 03/03 Rosendahls Bogtrykkeri

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