NEWS LETTER

Welcome to our first newsletter, the subject covered in this issue is “sound level” Many industries and people are affected by it

A **sound level meter** is used to measure sound levels, usually in terms of subjective loudness. This involves the use of a weighting filter, usually to the A-weighting standard.

The use of A-weighting is historical, and not really justifiable on the basis of current understanding of equal-loudness contours and the fact that these have been shown not to apply for random noise. The use of an rms rectifier, also standard, is also hard to justify.

Pacific Sensor Technologies PST-C322 Sound level meters are commonly used in noise pollution studies for the assessment of roadway noise, industrial noise, and aircraft noise. Strictly speaking the A-weighting was only recommended for quiet sounds in the region of 40dB SPL but today it is used at all levels, and the other weightings are little used, except for D-weighting which is used specifically for Aircraft noise at very high levels.

Sound exposure meters use the same priciples, and A-weighting, to measure total exposure to noise over a period of time. The result is indicated in terms of $L_{Aeq}T$, which means the equivalent level (A weighted) over a time period T (often 8 hours). The equivalent level is derived by storing a large number of sound pressure values in pascals and then calculating the mean square before converting to dB SPL. High levels thus count more in the final figure. Exposure meters are usually used to assess high level industrial noise, in terms of potential for hearing damage, though they use the A-weighting curve which was derived from equal-loudness contours at very low level(40 dB SPL).

The ITU-R 468 noise weighting curve was designed specifically for noise measurement, along with a quasi-peak detector, and though used mostly for professional audio equipment measurements, would actually produce more meaningful results if incorporated into sound level meters for low level noise measurement.

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The following standards define sound level meters and exposure meters:

- BS 3539:1986 "Sound level meters for the noise emitted by motor vehicles"
- BS 5969:1981 "Sound level meters"
- BSEN 60651:1994 "Sound level meters" - superseded BS 5969
- BS 6402:1983 "Personal sound exposure meter" - for measuring L_{Aeq}

Data loggers for sound level measurements: PST-C322

Pacific Sensor Technologies' Hand held PST-C322 data logger sound level meter is the perfect tool for the automotive and OH&S sectors.

The PST-C322 sound level meter data logger stores a massive 32 000 readings, resulting in cost of ownership being attained sooner.

The PST-C322 sound level meter data logger operates as a stand-alone device, meaning only one person is required to set up and log.

In the automotive application of taking exhaust/muffler noise readings, the PST-C322 sound level meter data logger can be set up at the exhaust end of vehicle while the operator is making the revs. At the completion of the task the operator can make a report after downloading the readings via the RS-232 interface.

The PST-C322 sound level meter data logger is also used as a tool for local councils to monitor industrial noise as well as residential noise.

The PST-C322 sound level meter data logger is the perfect tool for the OH&S inspectors in the industrial work environment.

With the easy to use window based software, doing reports is simple.

The PST-C322 sound level meter data logger has the following features

- RS-232 interface
- Free windows post analysis reporting writing software
- Memory for 32 000 records
- Bargraph indication
- Max Min function
- Auto ranging (30-130dB)
- Clock display
- Resolution 0.1dB
- Level range display
- AC/DC signal output
- Auto power off
- LCD back light

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