

Bekafun document

Formula Sound: The Sentry



With the strict noise regulations in force today no-one can afford to contravene the noise levels laid down by the local governing body.

The Sentry, designed and manufactured by FormulaSound, is a product which will help solve some of the environmental noise problems encountered in entertainment venues and industry today.

The Sentry works in conjunction with a relay or contactor and usually controls mains power. But the Sentry is not limited to this function; any function that can be controlled by a relay or switch can be controlled by the Sentry.

The Sentry has been designed to help solve some of the environmental noise problems encountered in entertainment venues and working areas.

The Sentry has connectors provided to interface with a range of equipment, plus internally selectable options to make the system as versatile as possible. Although its main application is to control mains power outlets in entertainment venues it is not restricted to this application. Basically any function that can be controlled by a relay or switch can be controlled by the Sentry. These may include disconnecting loudspeakers, switching passive attenuators to reduce system volume or acting as the trigger into an active attenuator system. It is microphone driven and has its own microphone built in to minimise tampering.

The Sentry also incorporates the facility to operate at two different sound level thresholds which may be selected manually, by a remote key switch or similar, or automatically by a time switch (switches not supplied). This allows a venue to operate at different levels at different periods of the day. e.g. when near offices or shops. An integral timer is available as a cost option - See [price list](#)

New features on the MK2 version

- New case design provides easier connections via cable entry knock-outs and screw terminals.

- A choice of internal microphone (supplied factory fitted as standard) or external microphone.
- Removable cover provides access to all connections and settings. Anti-tamper seals are provided.
- Anti-tamper microphone circuitry is incorporated with a front panel indicator.
- Dual mains voltage operation is standard (internally switchable).
- Provision to connect a security loop is provided. This may be required to detect open doors or windows that would impair the sound proofing of a building, etc.

Entertainment Venues

Under the Environmental Health act entertainment licences can be at risk if a Local Authority decides excessive noise from entertainment venues is a nuisance.

But what happens in an entertainment venue when a live band or mobile disco is using their own equipment?

It is still the responsibility of the venue manager to ensure that the regulations are adhered to and this is now possible with the Sentry.

The permitted level of noise in any venue is determined by the local environmental health officer (EHO). The sensitivity of the Sentry can be set-up in accordance with any of these regulations.

If the permitted levels are exceeded in any venue where a Sentry is installed and the warnings ignored, the offending equipment will be disconnected from mains power. Re-connection is only possible by operating the reset button.

The Sentry has the advantage over other units in that it features a large bar-graph VU meter with 23dB range to give visual indication of the noise level in a venue. Anyone can see what the volume level is and how their actions are contributing to this level.

Industrial Application

The Sentry can be helpful with regard to legislation concerning Noise in the Workplace. One or more units can be used as display units indicating sound pressure levels or to switch on warning lamps or illuminated signs to advise the need to wear ear defenders, when the safe noise level is exceeded.

Operation

The Sentry works in conjunction with a relay or contactor. The unit operates by supplying a continuous voltage to the contactor which is connected to designated power outlets. If the unit is tripped or should anyone disconnect the Sentry the power outlets will be disconnected.

The bar graph meter is colour coded from green to red, and indicates the volume level in the venue. The red section increases in size to aid viewing. While the meter is

operating in the green section, with even an occasional peak into the red, there is no cause for concern.

If the two red "WARNING" segments are lit this indicates that the volume level in the venue is nearing the permitted limit. A connector is provided so that a mains powered warning lamp or beacon can be connected which operates at the same point as these two red sections of the meter. This lamp or beacon may be situated in a remote position.

If the noise level is high enough to light the "over limit" section (3 red segments) of the meter, the noise has exceeded the permitted limit. If this is allowed to continue the unit will trip and remove the power to the contactor. Visual indication is provided by the lamp adjacent to the re-set button labelled "Power off". The unit must then be re-set manually in order to restore power.

The unit has its own internal microphone and can be easily adjusted to operate at different levels. A remote reset switch can be connected to the unit, via the auxiliary connector.

A 32 amp, fully fused, boxed contactor with low voltage interface is available from Formula Sound. Added benefits are the extra safety and possibly lower installation costs stemming from the fact that only low voltage cable is required as a connection to the Sentry.

Alternatively 220/240V AC is available from the Sentry to interface with 220/240V contactors or relays.

Factory Options for Sentry Mk2

Slave display: Two Sentries may be connected together, one acting purely as a slave display of the other. Specify slave display unit when ordering.

Hearing Protection Indicator: The Sentry may also be used in industrial situations to control warning signs, usually indicating the need for hearing protection. When used for this purpose the contactor output is reversed and only switches on after the time period. Units for this application need to be specified when ordering.

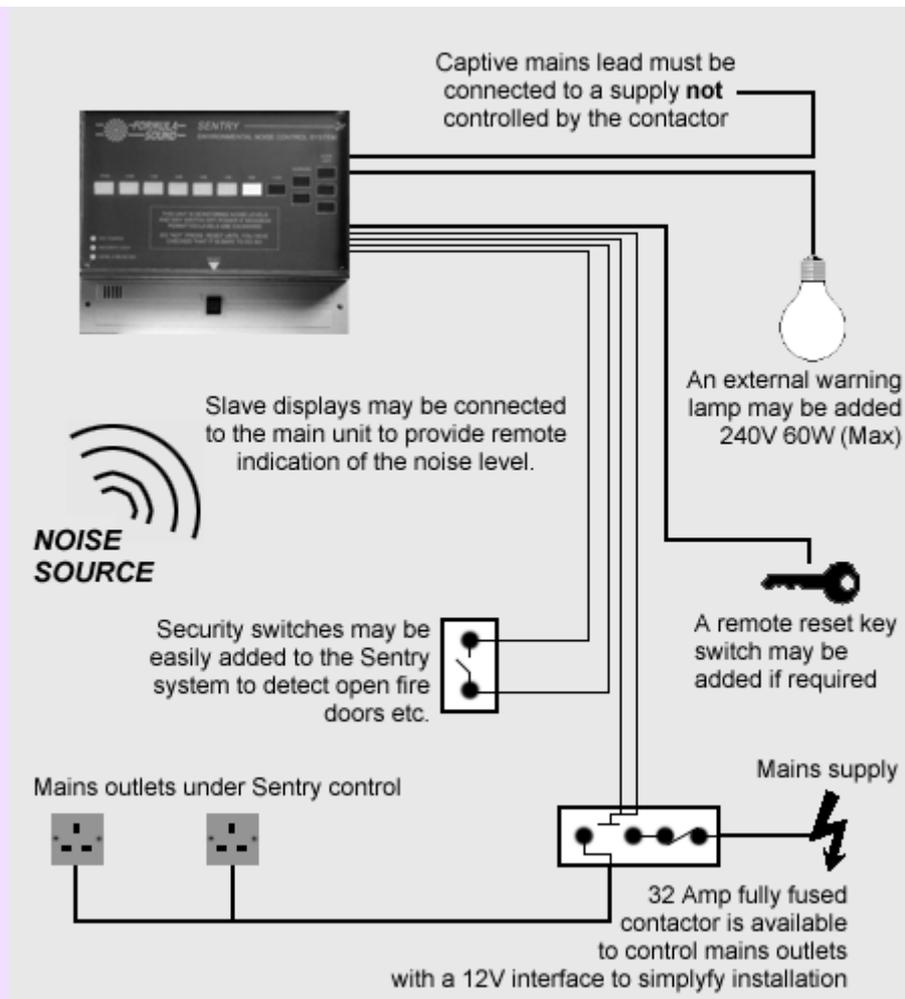
Auto Power On: This option allows the Sentry to provide power to the contactor when first powered up. As normally supplied the Sentry requires the reset button to be pressed when the power is first applied.

Auto Power Reset: This option allows the Sentry to turn back on after a defined period. Contact Formula Sound for more information.

Typical Sentry Installation

For an entertainment venue

The Sentry features a large bargraph meter to indicate the actual noise level. The red section on the right is larger to clearly show when the permitted level is exceeded.



The built in microphone minimises tampering. Connections are provided for a remote microphone.

With an Internal mic

The unit must be mounted in the noise area and adjusted to operate in the range 85dB to 120dB (SPL), Linear or 'C' for entertainment venues.

With an External mic

The mic must be mounted in the noise area.

The Sentry is not restricted to this type of application.

Any function which can be controlled by a relay or switch can be controlled by the Sentry.

WARNING

CORRECT WIRING PRACTICE MUST BE OBSERVED ON ALL 240V MAINS CONNECTIONS. IF IN ANY DOUBT CONTACT A QUALIFIED ELECTRICIAN.

Accessories

Sentry Remote reset switch



- Push button type.
- Stock Code 074P
- Surface mount box (Size 65mm x 65mm x 45mm depth)
- Push button switch plus 2 leds (WARNING and RESET REQUIRED).
- Connections via screw terminals.

Sentry Remote reset switch



- Key switch type.
- Stock Code 074K
- Surface mount box (Size 65mm x 65mm x 45mm depth)
- Key Switch plus 2 leds (WARNING and RESET REQUIRED)
- Supplied with 2 keys. (Replacement keys are not available)
- Connections via screw terminals.

Sentry Contactor



(shown with lid removed)

- Stock code 071
- Steel enclosure with cable entry knockouts. (protective grommets supplied)
- Length 260mm, Width 155mm, Height 85mm.
- 32 Amp fully fused contactor with 12 volt interface card for use with Sentry.
- Dual versions for switching 2 x 32 amp circuits are also available.

Sentry Timer/Counter Options.

Timer Option

- Stock code 073/T.
- Integral 7 day timer for the automatic selection of alternate noise level.

Counter Option

- Stock code 073/C.
- Records the number of times that the unit has been reset.



Specifications

Display

Large bar graph VU meter with 13 segments each 20mm x 12mm.
Mic tamper, Security loop, Level 2 selected and Reset indicators.

Microphone

The unit is fitted with a built-in Electret microphone.
Sensitivity range -85dB - 120dB SPL continuously variable.
Provision is also made for an external microphone. (not supplied)
Microphone frequency response is selectable to "A", "C" or Linear.

Delay

The delay between "over limit" and "power off" is adjustable from 10 to 70 seconds.

Connections

All connections are located beneath the lower removable front cover and are screwdriver operated terminals

Power Inputs

220/240V AC or internal selection 110/120V AC

Case

High impact polycarbonate, Flame resistance - UL 94-V2. Standard colour Grey (RAL7035). Clear polycarbonate cover.

Installation

Installation instruction manual is provided.
The unit should only be adjusted by a competent operator using a precision sound level meter.

Other products in the noise control range

AVC2

The Guardian

Dimensions

Width (including hinges) 320mm	Depth 120mm	Height 261mm
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Formula Sound reserve the right to alter specifications at any time without notice.