

## Series 56 Multi-Tone Sound Module



EAO, the expert for Human Machine Interfaces, expands the successful Series 56 switch range with a Multi-Tone Sound Module (MTSM). This is a versatile device which can be programmed to emit a clear warning sound adapted to a particular operating environment. Depending on the version of sound module, either three or five different tone sequences can be played in any sequence at different volumes, durations and intervals to create a unique sound. The three-tone Sound Module is, among other uses, suited for any applications that must comply with Directive TSI PRM 2008/164/EC. It also comes pre-programmed with a set of standard tones commonly used in public transport applications.

### Material

The sound module is designed to meet EAO's very high standards of quality, reliability, durability and design.

- Speaker housing: conical and flush-mounting housing moulded from rugged polycarbonate (PC) according to UL 94 V0
- Front bezel:
  - Zinc matt chromium plated or thermoplastic, or Polybutylen-terephthalat (PBT) according to UL 94 V0 in different colours
- Connection cable: Flame-retardant halogen-free polydefine mixture

### Mounting

The sound module shares the same design and dimensions of other Series 56 products.

- Fast front mounting into panel with 3 fixing screws (supplied)
- Glass mounting, or panel mounting

### Mechanical characteristics

- Connection method: by cable, either 4 or 6 wires with crimped metal sleeves
- Wire cross section: 0.5 mm<sup>2</sup> or 0.25 mm<sup>2</sup>
- Cable length: 200 mm
- Hexagon socket screw: M4 x 8 mm (x3) SW 2.5
- The following two degrees of protection are available:
  - IP69K (front)/IP65 (rear)
  - IP40 (front)/IP65 (rear)

### Typical Applications

- Pedestrian crossings
- Transportation
- Public-use equipment, e.g. lifts, emergency-call terminals, etc

### Electrical characteristics

- Operating voltage:
  - 4 strands: 12, 24, 36, 48, 72, 96, 110 VDC ±30%
  - 6 strands: 24 VDC, ±30%
- Current consumption: <50 mA in reference to voltage and volume

### Acoustic characteristics

The tones can be played in any sequence at different volumes, durations and intervals (note: customised tones are programmed by EAO from the customer's specification created using the EAO Tone Editor program). A set of standard tones are pre-programmed (please refer to the main catalogue).

The version with six wires allows the volume of each tone sequence to be adjusted in five steps of 6 dB each using the tone editing program. It is also possible to directly adjust the volume at the rear of the MTSM 56. Each wire controls one of the five tone sequences.

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The version with four wires allows the volume of each tone sequence to be adjusted in 17 steps of 1.5 dB each using the tone editing program. Alternatively, the MTSM's volume can be adjusted directly through one wire. The three tone sequences are controlled in a binary manner via two wires.

In order to meet TSI regulations the customer can purchase the optional EAO Volume Control Box to determine the correct volume for the sounder as measured on, or outside the vehicle.

### Tone characteristics

- Frequency range: 500–3000 Hz +/- 1%
- Time range of tone sequence: 0–∞ endless
- Accoustic pressure level 5/17: 90 dB @ 10 cm @ 1 kHz
- One tone sequence consists of:
  - Two frequencies at any duration and any number of repeats
- Programmable according to TSI/PRM requirements

### Environmental characteristics

The MTSM is vandal-resistant and is suitable for either internal or external use:

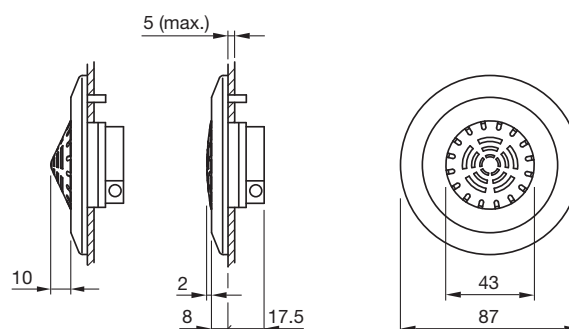
- Storage temperature: –45 °C ... +90 °C
- Operating temperature: –40 °C ... +85 °C

### Approbations, Guidelines, Norms

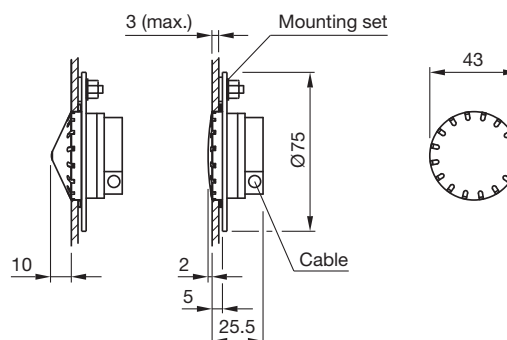
- RoHS
- CE
- e1 / E1
- EN 50155

### Technical drawings and schematics

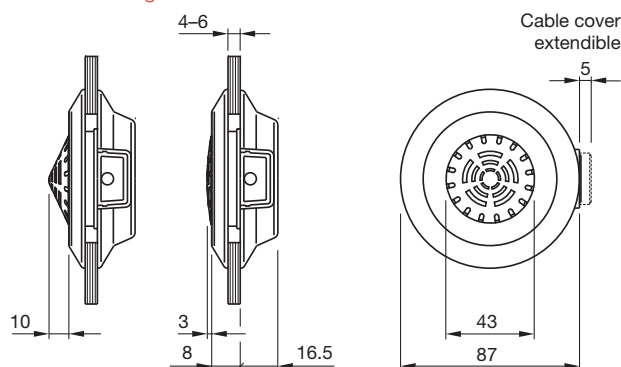
#### Panel front mounting



#### Panel rear mounting



#### Glass mounting



3D product drawings are available in a range of formats to download from our website [www.eao.com](http://www.eao.com)