

Series 56 | Multi-Tone Sound Module, Self-Adjusting



EAO, the expert for innovative, reliable and intuitive human machine interfaces (HMIs) expands the successful Series 56 range with a new Multi-Tone Sound Module (MTSM) which automatically adjusts its volume to the ambient noise. Furthermore, it can be custom-programmed to emit unique warning sounds and alerts for different situations.

By intelligently sensing the ambient noise and self-adjusting the sounder's level, the appropriate volume is set. This prevents excessive noise and simplifies the set up process.

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: Die cast Zinc (matt chromium plated) or Polybutylenterephthalate (PBT) according to UL 94 V0 in different colours
- Connection cable: Flame-retardant halogen-free polyolefine mixture

Mounting

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

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

Mechanical characteristics

- Connection method: cable, 4 wires with crimped metal sleeves
- Connector on request
- Wire cross section: 0.5 mm² or 0.25 mm²
- Cable length: 200 mm, other lengths on request

- Hexagon socket screw: M4 x 8 mm (x 3) SW 2.5
- The following two degrees of protection are available:
 - IP69K (front) / IP65 (rear)
 - IP40 (front) / IP65 (rear)

Typical applications

- Transportation
- Public-use equipment
- Pedestrian crossings

Electrical characteristics

- Operating voltage:
 - 16–63 VDC and 50–143 VDC
- Current consumption:
 - < 50 mA in reference to voltage and volume

Acoustic characteristics

The «MTSM self-adjusting» offers six individual tone sequences that can be emitted at different frequencies, number of repeats and durations. A set of TSI PRM compliant tones commonly used in public transport applications are typically pre-programmed. Additional customised tone sequences can be easily and quickly created with the tone editor program.

The volume can be pre-set so it is always a specified number of decibels above the ambient noise.

The six tone sequences are controlled in a binary manner, via three wires.

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Tone characteristics

- Frequency range: 480–3000 Hz $\pm 1\%$
- Time range of tone sequence: 0– ∞ endless
- One tone sequence consists of:
 - Four sequenced tones with any frequency, any duration and any number of repeats
- Acoustic pressure level:
 - 5 dB above environment noise (others on request)
 - Max. 100 dB @ 10 cm @ 1 kHz (max. 76 dB @ 1.5 m @ 1 kHz)
 - Multi-Tone by TSI PRM programmable

Environmental characteristics

- Storage temperature $-45\text{ °C} \dots +90\text{ °C}$
- Operating temperature $-40\text{ °C} \dots +85\text{ °C}$

Degree of protection

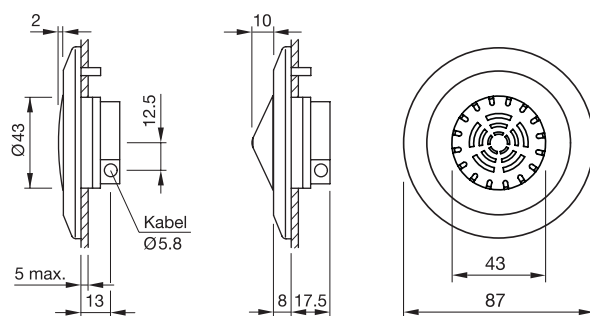
- IP 69K front

Regulatory Approvals

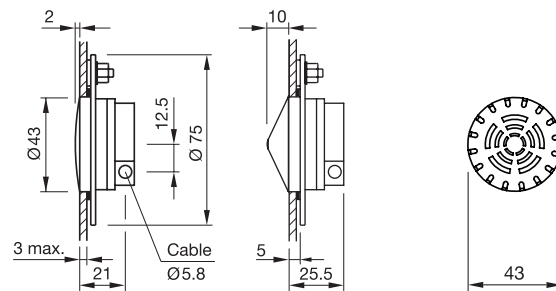
- RoHS
- CE
- EN 50155

Technical drawings and connections

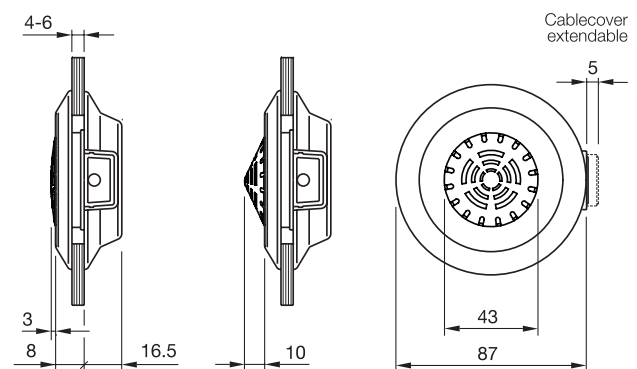
Front mounting



Rear mounting

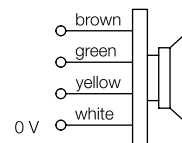


Glass mounting



Wiring diagram

6-Tone sequence



16 ... 63 VDC

Tone	green	yellow	brown
1	16 – 63 VDC	0V	0V
2	0V	16 – 63 VDC	0V
3	16 – 63 VDC	16 – 63 VDC	0V
4	0V	0V	16 – 63 VDC
5	16 – 63 VDC	0V	16 – 63 VDC
6	0V	16 – 63 VDC	16 – 63 VDC

50 ... 143 VDC

Tone	green	yellow	brown
1	50 – 143 VDC	0V	0V
2	0V	50 – 143 VDC	0V
3	50 – 143 VDC	50 – 143 VDC	0V
4	0V	0V	50 – 143 VDC
5	50 – 143 VDC	0V	50 – 143 VDC
6	0V	50 – 143 VDC	50 – 143 VDC

3D product drawings are available in a range of formats to download from the EAO website.