

LSM

Loudspeaker module for front panel mounting



High
volume

Modular
solution

A perfect fit

LSM is Commend's unique loudspeaker module that fits perfectly for the im3. It can be space-savingsly stacked with the Intercom module im3 and mounted together on the front panel. A detached installation is also possible.

Features and highlights

- Amazingly loud in combination with im3's Smart Audio Amplifier
- Sound pressure level up to 98 dB (0.5 m) for perfect speech intelligibility
- Special membrane type for optimal sound quality
- The multifunctional LED LED3 can be mounted together with the loudspeaker module to indicate call status and any other system status

LSM

Technical specifications

Technical data

| | |
|---|---|
| IP rating: | IP45 (acc. to EN 60529) ¹⁾ |
| Housing: | aluminium |
| Sound pressure level (with im3): | max. 98 dB at 0.5 m (1.64 ft)/92 dB at 1 m (3.28 ft) |
| Frequency range: | 300 Hz to 20 kHz (–10 dB) |
| Power rating: | 1 W/max. 1.5 W |
| Impedance: | 8 Ω |
| Connection: | two-wire loudspeaker cable wire cross section: 0.2–0.25 mm (AWG 28–30) |
| Operating temperature range: | –40 °C to +80 °C (–40 °F to +176 °F) |
| Storage temperature range: | –40 °C to +80 °C (–40 °F to +176 °F) |
| Relative humidity: | up to 95%, not condensing |
| Dimensions (H x W x D): | 84.5 x 54 x 15.5 mm (3.33 x 2.13 x 0.61 in) |
| Weight: | approx. 130 g (0.29 lbs) |
| Approvals and compliances: | EN 61000-6-2, EN 61000-6-3, EN 55032 Class B, EN 55035, FCC Part 15 Class B, ICES-003 Class B, EN 60529 IP49, EN 62262 IK04, EN 62368-1 IEC 62368-1 (CB Scheme), UL 62368-1 (Listed E351589) |

¹⁾ Poke protection applies to foreign objects with a diameter > 1 mm (0.04 in).



Extent of supply

- Loudspeaker module
- Short reference

Attention

If the LSM is connected to an im6, the volume level “9” must not be exceeded.

LSM

Installation instructions

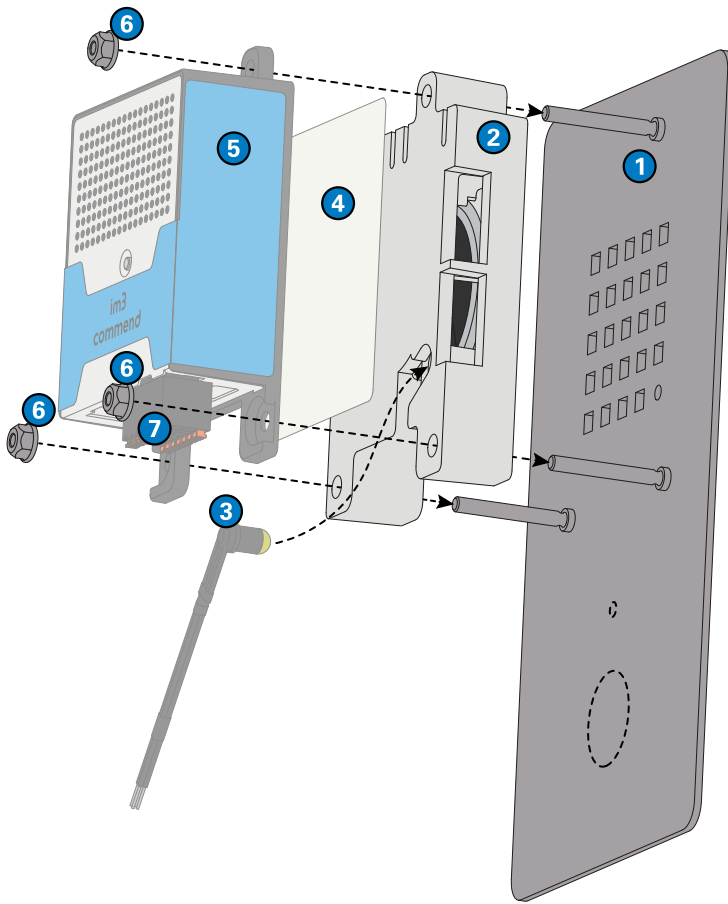
Installation instructions

- Do not install the device on unstable walls or on surfaces which cannot support the device's weight.
- This device shall be installed or replaced by trained and qualified personnel only, and only when the power supply is disconnected.
- Observe the country-specific standards for installation, mounting and configuration.
- Install or store this device out of the reach of children and do not allow persons unfamiliar with the device and these instructions to handle and operate the device.
- The microphone must be installed at a distance of > 150 mm from the loudspeaker to avoid feedback (see also integration guide "im3" or integration guide "im6").
- When mounting the device, its electrical connections should face downwards.
- If the threaded bolts or screws are too long, the I/O connector of the intercom module cannot be connected.
- For optimal heat dissipation, a flat front panel is recommended.
- The openings in the front panel for the loudspeaker and the LED must be prepared so that penetrating water can drain off completely.

Safety instructions

- Only use recommended tools when installing the device.
- Do not install the device in locations where it may be wet or damp. Also avoid locations with increased dust formation, high humidity or high ambient temperature.
- Only accessories that comply with the device's technical specifications shall be used.
- All connected circuits shall fulfil the following requirements:
 - Safety Extra Low Voltage (SELV) and Limited Power Source (LPS) according to IEC/EN 60950-1 or
 - ES1, PS2 circuits and Annex Q (Limited Power Source) according to IEC/EN/UL 62368-1.
- Before using the device, ensure all cables are connected correctly and not damaged.
- All changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.

Mounting



- 1 Prepare the front panel with 3 M3 threaded bolts, loudspeaker openings, microphone opening and button opening (see also "Dimensions"). If an LED3 is required for the status display, prepare the LED opening on the front panel.
Length of the M3 threaded bolts with im3: 25 mm (0.98 in).
Length of the M3 threaded bolts without im3: 20 mm (0.79 in).
Recommendation: Use welding studs.
- 2 Attach the LSM with the loudspeaker facing the front panel on the M3 threaded bolts.
- 3 (Only with LED3) Insert the LED3 into the LED mounting hole.
- 4 (Only with im3) Position the thermal pad included in extent of supply of the im3 between the LSM and the im3.
- 5 (Only with im3) Attach the im3 onto the M3 threaded bolts.
- 6 Fix the LSM with 3 M3 nuts.
- 7 Connect all required cables to the Intercom module.

Quality tested. Reliable. Smart.

COMMEND products are developed and manufactured by Commend International in Salzburg, Austria.

The development and manufacturing processes are certified in accordance with **EN ISO 9001:2015**.



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