# Respirator Voice Amplifier

# RVA (C.01)

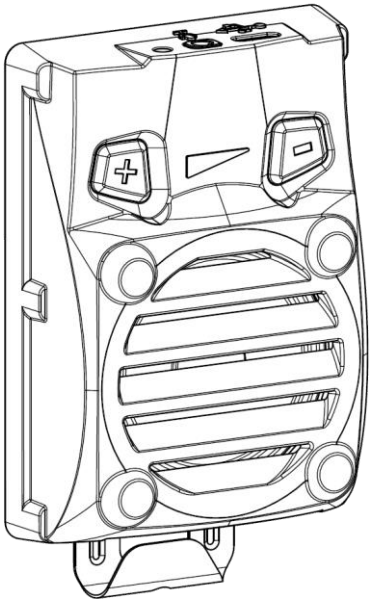

*Figure 1: RVA (C.01)*

*The Respirator Voice Amplifier (RVA, Figure 1) is a wearable rugged voice communication device designed for professionals who need to clearly and loudly talk with the CBRN respiratory mask fitted (there is no need to remove it). The RVA withstands temperature, vibration, water, salt fog and dust.*

*The RVA provides the interface (standard 3.5 mm Jack connector) for the CBRN respiratory full/half face mask microphone (like Tactical Air Respirator Purifying Microphone, TARPM) mounted in the exhalation valve cap of the mask.*

*The RVA is equipped with integrated rechargeable battery (via standard USB Type-C interface) including sophisticated charging/battery management and visual status indicator. There are two control buttons to adjust the voice output as well as to turn the device on and off.*

*It can be attached to tactical gear via the MOLLE compatible clip or pouch.*

***An acoustic feedback may occur if the RVA gets close to the microphone – increase the distance between the RVA and the microphone, reduce the output volume or disconnect and reconnect the microphone.***

## Interfaces (Figure 2)

*Control + and – Buttons*

| | |
|---|---|
| **Short Press (≥ 250 ms) of any Button** | **RVA ON** |
| **Simultaneous Press (≥ 2 s) of both Buttons** | **RVA OFF** |

Smart standby mode automatically turns the RVA off after 30 minutes if no button is pressed during this time.

0 dB to 15 dB (5 steps) with the same volume level on turned on as it showed before turned off.

*Respiratory Mask Microphone Connector*

Panel Connector Type:
Jack Female TRS 3.5 mm (3 pins)

Connector Pinout:

| | |
|---|---|
| Tip | Microphone Signal (MIC +) |
| Ring 1<br>Ring 2<br>Sleeve | Microphone Ground (MIC -) |

*Battery Charging Connector*

Panel Connector Type:
USB Type-C Receptacle

Connector Pinout:

| | |
|---|---|
| A4, A9, B4, B9 | Battery Charging (PWR +) |
| A1, A12, B1, B12 | Battery Charging Ground (PWR -) |

Charging standard USB Type-C Cable (USB Type-C to USB Type-A) is included.

*Battery Status and Charging Visual Indicator*

In Operation (Green Indicator):

| | |
|---|---|
| ON | Battery 100 % ÷ 50 % |
| Blink | Low Battery (< 50 %) |

Charging (Red Indicator):

| | |
|---|---|
| Blink | In Charging |
| ON | End of Charge (Battery 100 %) |

## Battery and Charging Data

Battery Specification:
Lithium Polymer
3.7 V / 1200 mAh, 4.44 Wh

Battery Charging Input:
(4.5 ÷ 6.5) $V_{DC}$
(designed for standard USB Charger, $I_{min}$ 0.5 A)

Operating Time:
5 Hours (for maximum audio output level and continuous voice input)

20 Hours (depending on idle time)

Standard Charging Time ($I_{IN}$ up to 1 A):
2 Hours
(from 0 % to 100 % battery capacity, dependent on charging current $I_{IN}$)

Cycle Life (one charge/discharge period):
500 Times

## Audio and Acoustic Data

Audio Input Impedance (1 kHz):
150 Ω ± 10 %

Frequency Response:
(300 ÷ 3,400) Hz

Maximum Audio Output Power:
2.5 W

Maximum Sound Pressure Level (at usual voice level):
83 $dB_{SPL}$ @ 1 m

## Environmental and Other Data

Colour:
Black (RAL 9005)

Weight:
150 g ± 10 %

Dimensions:
Refer to Figure 2

Attachment:
MOLLE Clip

Operating Temperature:
(-20 to +60) °C

Charging Temperature:
(0 to +45) °C

Storage Temperature:
(-20 to +45) °C

CE Certification:
Approved according to PPE directive 89/686/EEC and EMC directive 89/336/EEC

CBRN:
Designed in accordance with ČSN EN 140

Ingress Protection (IEC standard 60529):
IP67

Flame Retardant Properties (UL 94):
Min. Level V2

Calculated Mean Time Between Failures (MTBF):
> 2,000 Hours

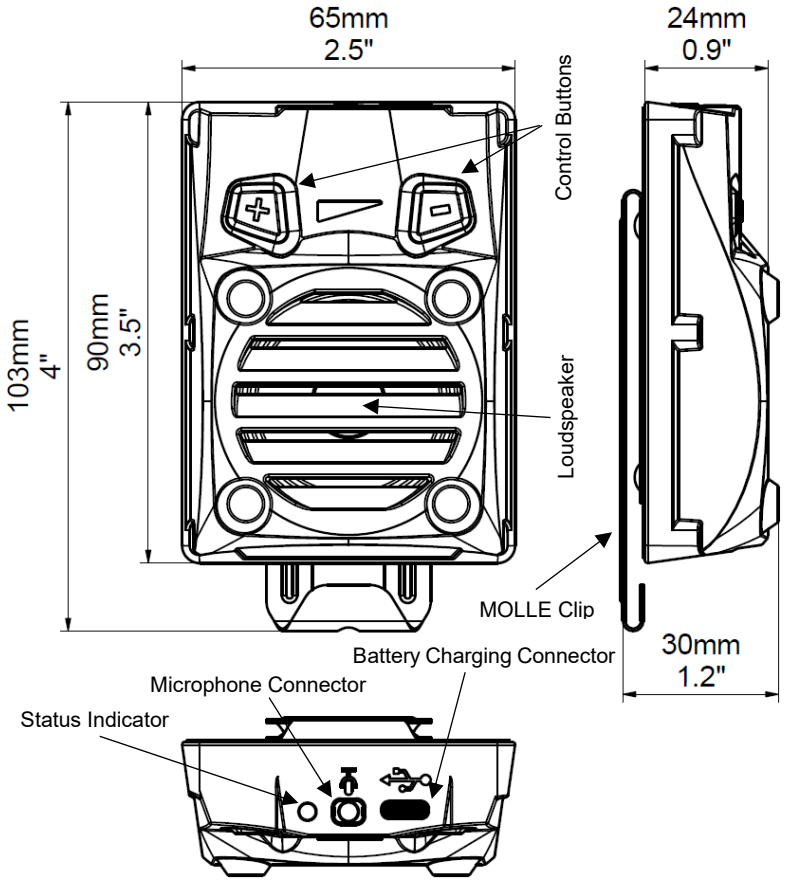


*Figure 2: RVA (C.01) Description and dimensions*