



**minuendo**<sup>®</sup>  
Lossless hearing

# Minuendo Smart Alert earplug

Technical  
Data  
Sheet

Minuendo Smart Alert earplugs define a new class of Smart PPE, providing natural sound awareness, smart alerts and protection from noise. Noise levels are continuously monitored and the user is alerted that their hearing is at risk and can take immediate “corrective” action.

With patented acoustic membrane technology there is no sound degradation like the muffled sound from traditional earplugs or earmuffs. Users hear speech and sounds naturally and are not over-protected.



## Overview

**Reference Number:** MSA101

**Product Type:** In-ear hearing protection

**Range & Line:** Passive Protection Earplug

**Data:** In-ear noise exposure LAEq, 15 mins  
/ Environment noise exposure LAEq, 15 mins

**Accuracy:** Smart Alert earplug performance  
= +/- 1.4 dB at 1KHz.

### In-Device Warning (LED • Audio • Haptic)

- \* Noise Alert - Predictive noise exposure indication based on real-time noise level
- \* Exposure Alarm (EAV) Max safe permitted exposure based on EU noise criterion (85, 8, 3)

**Analytic Platform:** Minuendo Smart Alert Cloud

## Smart Alert Features



Active noise monitoring



Continuous fit-test validation



Instant in-device safety alerts



Patented acoustic membrane



Natural flat frequency response



Unmatched comfort



One button simplicity

## Performance

**Hearing Protection:** 16-18dB Passive Attenuation

**Environmental Awareness:** Yes - natural sound

**Environmental Protection:** in-house testing -IP54

**Battery Life:** Aprx 40hrs from fully charged

## User Interface

**Feedback:** Audio/Haptic/Visual

**Control:** Single Button (ON • OFF • Battery Status)

**Comfort:** Changeable Ear Tips and Ear Hooks

## Physical

**Mass:** 52g (without Ear Tips or Ear Hooks)

**Power:** Built-in rechargeable battery

**Charging & Data:** 8 Station Multi dock (Option)

**Ear Tips:** Silicone - ZY4452 · Silicone - T200

**Ear Hooks:** TPE

**Other Materials:** Plastics(ABS, TPE, PC) · Steel

**Wearing Instruction:** In ear / Around neck

## Technical Information

**Batteries:** Non replaceable single cell, rechargeable, lithium ion battery

**Operating Conditions:** -5°C to +35°C

**Environmental directives:** WEEE, RoHS

**Dimensions:** Collar Unit: 160mm x 160mm x 23mm  
Earpiece: 19mm x 17mm x 17.5mm

## Compliance and Certification

**UKCA Approval:** SATRA Technology Centre Ltd (0321). Wyndham Way, Telford Way, Kettering. Northamptonshire. NN16 8SD. UK.

**CE Approval:** SATRA Technology Europe Ltd (2777). Bracetown Business Park. Clonee. D15 YN29. Ireland

The Earplug has been further tested to and complies with these specifications:

- EN 61000-6-2:2005, EN 61000-6-2:2005/AC:2005", "EN 61000-6-3:2007, EN 61000-6-3:2007/A1:2011/AC:2012, EN 61000-6-3:2007/A1:2011 included within Electromagnetic Compatibility
- Directive 2014/30/EU. RoHS Directive 2011/65/EU. 2011/65/EU (RoHS2), 2015/863 (RoHS3)

Further information and the full text of the EU and UKCA Declaration of Conformity: [www.minuendo.com/support](http://www.minuendo.com/support) or search for Minuendo Smart alert earplugs

## Ear Tip Attenuation Data

SINGLE FLANGE	Attenuation (dB) (re 20 µPA)							
	Tested in accordance with EN352-2:2020							
A: Frequency (Hz)	63	125	250	500	1K	2K	4K	8K
B: Mean Attenuation (dB)	14.5	13.8	15.3	13.8	16.3	19.4	23.3	26.5
C: Standard Deviation (dB)	6.8	5.3	5.7	3.7	3.3	4.8	4.4	6.8
D: Assumed Protection (dB)	7.7	8.5	9.6	10.0	12.9	14.6	18.9	19.7

SNR = 16 dB, H = 16 dB, M = 13 dB, L = 11 dB. In accordance with EN ISO 4869-2:2018 with the parameter  $\infty+1$

DOUBLE FLANGE	Attenuation (dB) (re 20 µPA)							
	Tested in accordance with EN352-2:2020							
A: Frequency (Hz)	63	125	250	500	1K	2K	4K	8K
B: Mean Attenuation (dB)	14.0	15.9	14.9	15.9	15.5	18.8	19.3	28.3
C: Standard Deviation (dB)	5.2	5.4	5.7	4.9	2.8	4.3	3.5	7.6
D: Assumed Protection (dB)	8.8	10.5	9.1	11.0	12.7	14.4	15.8	20.7

SNR = 16 dB, H = 16 dB, M = 13 dB, L = 12 dB. In accordance with EN ISO 4869-2:2018 with the parameter  $\infty+1$

TRIPLE FLANGE	Attenuation (dB) (re 20 µPA)							
	Tested in accordance with EN352-2:2020							
A: Frequency (Hz)	63	125	250	500	1K	2K	4K	8K
B: Mean Attenuation (dB)	12.6	14.1	16.9	16.4	15.9	19.0	19.8	28.8
C: Standard Deviation (dB)	6.1	4.9	5.4	3.9	3.5	3.2	4.3	7.2
D: Assumed Protection (dB)	6.6	9.3	11.5	12.4	12.4	15.8	15.5	21.6

SNR = 16 dB, H = 16 dB, M = 14 dB, L = 12 dB. In accordance with EN ISO 4869-2:2018 with the parameter  $\infty+1$

FOAM	Attenuation (dB) (re 20 µPA)							
	Tested in accordance with EN352-2:2020							
A: Frequency (Hz)	63	125	250	500	1K	2K	4K	8K
B: Mean Attenuation (dB)	15.1	15.0	15.6	14.6	16.5	20.1	23.9	31.0
C: Standard Deviation (dB)	4.6	5.1	3.3	2.6	2.6	3.2	3.1	5.2
D: Assumed Protection (dB)	10.6	9.9	12.3	12.0	13.9	16.9	20.8	25.8

SNR = 18 dB, H = 19 dB, M = 15 dB, L = 13 dB. In accordance with EN ISO 4869-2:2018 with the parameter  $\infty+1$

## Ordering Information

Product Number	Version	Quantity	Size
MINA0013 (S) · MINA0014 (M) · MINA0015 (L)	Memory foam	10 pairs ea.	S · M · L
MINA0016 (S) · MINA0017 (M) · MINA0018 (L)	Silicone 1-flange	10 pairs ea.	S · M · L
MINA0019 (S) · MINA0020 (M) · MINA0021 (L)	Silicone 2-flange	10 pairs ea.	S · M · L
MINA0022 (S) · MINA0023 (L)	Silicone 3-flange	10 pairs ea.	S · L
MINA0027 (XS) · MINA0026 (S) · MINA0025 (M) · MINA0024 (L)	Ear Hook (L&R)	10 pairs ea.	XS · S · M · L
MINA0028	Charging Cable	1	N/A