



BASICLINE

PROLINE

WIRELESS WORLD

CONNECTED BY CABLE

Electronic Hearing Protectors

[Improved Communication,
Reduced Isolation, Increased Safety]

MSA SORDIN

Professional & spare time use

Guarding people against the daily hazards of noise is of paramount concern in countless industries and do-it-yourself uses. The challenge is to balance personal attenuation devices with comfort and the ability of communication and listening to music, so that workers will wear their hearing protectors all the time. With over 15 years of experience, MSA SORDIN offers a wide range of hearing protectors with built-in electronics – from basic functions to high-specification communication devices. You have the choice between headband and helmet-mounted version. All products are comfortable hearing protectors, designed to prevent you from feeling isolated, thereby encouraging you to use them and so protecting your hearing for the rest of your life.



■ Reduced feeling of isolation

■ Lightweight

■ Patented adjustable headband pressure system

■ Durable components for toughest environments

■ Supersoft ear cushions

■ Easy to use with three distinct push buttons

■ Built-in memory function remembers the last settings

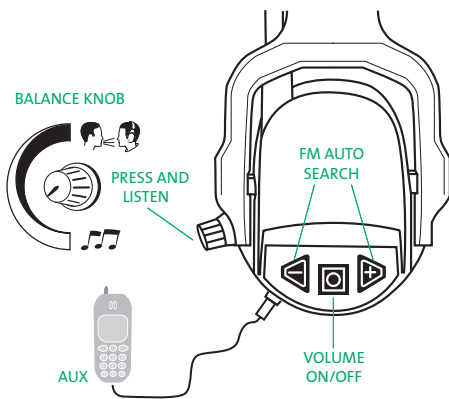
■ Sound reproduction system for ambient noise [CutOff]

■ Simple operation even when wearing gloves

Protection, amplification & communication

[Comfort]

Comfort encourages people to wear hearing protection, which is the safest way to avoid impaired hearing. No matter which MSA SORDIN product you choose, you will be guaranteed a first class hearing protector, equipped with supersoft ear cushions and the patented adjustable headband pressure system for perfect seal and fit. All day comfort is guaranteed.



[FM – built-in radio]

The built-in FM stereo radio receiver offers high quality audio output and reduces the sense of isolation. It features automatic station search and shut-off. Station and volume settings can be saved with the memory function.

[Easy to use]

Basic and high-specification built-in electronic hearing protectors from MSA SORDIN are easy to use.

- All electronic features are controlled using three distinct push buttons
- A built-in memory function remembers the previous setting when the electronics are switched on
- A balance control lets you set the balance easily between radio and CutOff [for Dual Pro]
- There is also a “listen” setting which mutes the radio and switches the CutOff volume to maximum [for Dual Pro]



[AUX – external audio input]

The possibility of connecting most audio sources, such as two-way radios, CD players, MP3 players, or RF scanners [for example at motor races] etc., means giving the wearer the individual freedom to use common communication equipment.

Accessories also include a hands-free lead for connecting a mobile telephone.

The FM radio is muted automatically if there is a signal from the AUX input, and is restored automatically when the signal stops. [for Dual Pro]



[CutOff feature]

The CutOff function acts as an effective protective filter. It limits harmful noise but lets you hold normal conversation with other people – without having to remove your hearing protector. To prevent harmful noise levels, the internal speaker output is limited to 82 dB.





BasicLine

The BasicLine features standard electronics and offers all basic functions at a very good price to performance ratio. Built-in features, such as FM and CutOff are optional.

[Attenuation values]

BasicLine-Headband, SNR 24 dB

H = 30 dB, M = 20 dB, L = 13 dB

BasicLine-Helmet mounted, SNR 25 dB

H = 30 dB, M = 22 dB, L = 14 dB

For details on all frequencies, please see pages 10 and 11.



[ListenOnly Basic]

External connection to CD, MP3-player or scanner

- Connection lead with 3.5 mm stereo jack included [fits most CD and MP3-players, etc.]
- The cable can easily be removed when not needed
- Various cables and accessories



[CutOff Basic]

Built-in level dependent function protects without you feeling isolated

- Lets through speech and other harmless sounds while protecting you from harmful noise

[FM Basic]

Built-in radio receiver

- Scan stations automatically
- Memory for last selected station and volume
- Automatically switches off to save batteries



[Ordering Information & Technical Details]

	ListenOnly	BasicLine CutOff	FM
Order No. Headband	SOR30000	SOR25000	SOR26000
Order No. Helmet mounted*	SOR30502	SOR25502	SOR26502
Order No. Hygiene kit	SOR60085	SOR60085	SOR60085
Sound quality	stereo	stereo	mono
Sound level limitation [max 82 dB]		■	■
AUX input	■		
Active sound level limiter AUX socket [max 82 dB]			
Automatic station scan			■
Volume memory		■	■
Station memory			■
Active amplification [max.]		0 dB	
Battery save function		■	■
Battery life [approx. hours]		300	300
Weight: headband			
without batteries [gram]	220	242	252
Weight: helmet mounted			
without batteries [gram]	218	240	250

*fits V-Gard helmets

ProLine

The ProLine Series is developed for longer duration use in tough environments. Offering very high sound quality using the latest technology, a variety of built-in features, such as auxiliary audio input, CutOff and FM radio, as well as the Dual Pro where a combination of these features is possible.

[Attenuation values]

ProLine-Headband, SNR 24 dB
H = 30 dB, M = 20 dB, L = 13 dB

ProLine-Helmet mounted, SNR 25 dB
H = 30 dB, M = 22 dB, L = 14 dB

For details on all frequencies, please see pages 10 and 11.



[ListenOnly Pro]

Built-in loudspeakers and external connection to, for example, communication radio, CD-player

- Electronic sound limiter protects against harmful sound level irrespective of the output of the external source
- 3.5 mm connection cable is included [fits most CD and MP3-players]
- The cable can be removed when not required
- Various cables and accessories

[Dual Pro]

Built-in FM radio and level dependent listening

- Automatic switch-off feature maximises battery life
- Sound level limited to 82 dB [A]
- Rapid automatic scanning of frequency range [88 –108 MHz], with memory for last radio channel listened to
- Balance control for quick and easy adjustment of balance between radio and ambient sound reproduction
- Lead with 3.5 mm mono plug included
- Choice of accessory leads includes a hands-free lead for mobile telephones

[FM Pro]

Built-in FM stereo receiver of highest sound quality

- Scanning stations automatically
- Memory for last selected station and volume
- Stereo sound in HiFi quality
- Automatically switches off four hours after last “key button” is pressed, ensuring that batteries are not discharged unintentionally

[CutOff Pro]

Built-in level dependent amplification protects without isolation

- Amplifies speech and other harmless sounds while it protects against harmful sound levels
- 1,000 hours of “battery life”, with automatic switch-off function
- Connection to external source, for example communications radio. Cable with 3.5 mm mono plug included [fits most communication radios]



ListenOnly	ProLine		
	CutOff	FM	Dual
SOR40000	SOR35000	SOR36100	SOR37100
SOR40502	SOR35502	SOR36602	SOR37602
SOR60084	SOR60084	SOR60084	SOR60084
stereo	stereo	stereo	stereo
■	■	■	■
■	■		■
■	■		■
		■	■
	■	■	■
		■	■
	12 dB		0 dB
	■	■	■
	1000	140	120–300
234	254	262	276
228	248	256	270

Wireless World

Bluetooth® wireless technology gives us enormous freedom to communicate. Working as a craftsman, installation engineer, gardener, construction worker, in industry, in the forest or even at home in the garage, everyone can now be free of cables and communicate hands-free. Since the range of transmission for Bluetooth® is up to 10 metres, the mobile phone can be kept in a pocket or briefcase.

With voice activation [depends on mobile phone model], a call can be made without keying the number into the mobile phone. And by pressing the button on the microphone, an incoming call can be answered.

The volume and other features are controlled using the buttons on the right earmuff. The microphone is noise-compensating, so it also works very well in noisy environments. When the mic is not needed, just flip it up by the side of the earmuff.

Again, the ability to communicate without removing hearing protectors is key to maintaining a high level of protection and preventing hearing loss.



- **Communication**
Wireless communication with mobile telephone

[Attenuation values]

Wireless World-Headband, SNR 24 dB
H = 30 dB, M = 20 dB, L = 13 dB

Wireless World-Helmet mounted, 25 dB
H = 30 dB, M = 22 dB, L = 14 dB

For details on all frequencies, please see pages 10 and 11.

- **LED** Flashes to show that Bluetooth® wireless technology is active

- **Push-to-talk button** Integrated in microphone mounting. Press to answer or end a call. Also used to make voice-activated calls and for pairing with your mobile

- **Microphone** Located on the left earmuff. It can be kept in standby position up against the headband, and then flipped down next to your mouth when making a call. Adjustable for length, height and depth. Noise-compensating

Bluetooth[®] technology

Bluetooth[®] transmits in the unrestricted 2.4 GHz band. It has a range of at least 10 metres and can replace cables between computers, printers, mobile telephones, hand-held computers and the like. It does not require line of sight between the transmitter and receiver.



[WW Headset]

- Automatic shut-off saves batteries
- The electronics are switched off automatically four hours after the last button was pressed
- Eliminates the risk of accidentally draining the batteries



[WW FM]

Built-in FM stereo tuner with exceptional sound quality.

- Automatic station search
- Memory that stores the last station and volume setting
- Hi-Fi quality stereo sound
- Automatic shut-off saves batteries.

The electronics are switched off automatically four hours after the last button was pressed

This eliminates the risk of accidentally draining the batteries

[WW CutOff]

Built-in ambient sound reproduction and amplification. Protection without isolation.

- Amplifies speech and other harmless noise while protecting against harmful sound levels at the same time
- Automatic shut-off – saves batteries
- Input for external audio source such as communication radio



[WW Dual]

Built-in FM-radio combined with ambient sound reproduction and amplification. Protection without isolation

- Automatic shut-off saves batteries
- Sound level limited to 82 dB [A]
- Rapid auto-scanning of frequency band [88–108 MHz] and memory for last station and volume setting
- Quick and easy control of balance between radio and ambient sound reproduction



[Ordering Information & Technical Details]

Wireless World	Headset	CutOff	FM	Dual
Order No. Headband	SOR81000	SOR85000	SOR87000	SOR89000
Order No. Helmet mounted*	SOR81502	SOR85502	SOR87502	SOR89502
Order No. Hygiene kit	SOR60084	SOR60084	SOR60084	SOR60084
Sound quality	stereo	stereo	stereo	stereo
Sound level limitation [max. 82 dB]		■	■	■
AUX input		■	■	■
Active sound level limiter AUX socket [max. 82 dB]		■	■	■
Automatic station search			■	■
Volume memory		■	■	■
Station memory			■	■
Active amplification [max.]		12 dB		0 dB
Battery save function		■	■	■
Battery life [approx. hours]	————— Depending on usage mode —————			
Weight: headband without batteries [gram]	280	300	288	314
Weight: helmet mounted without batteries [gram]	274	294	282	308

*fits V-Gard helmets

Connected by cable

This comfortable hearing protection line is equipped with a noise cancelling microphone and a down lead for connection to a two-way radio.

- Can be connected to mobile phones in combination with a separate adapter. Supplied with a 2.5 mm stereo plug
- Also available for direct connection to communication radios such as Motorola, Kenwood, Icom etc. and DECT phones
- Noise cancelling boom microphone permits two-way communication with minimal interference from background noise

[CC CutOff]

Level-dependent ear muffs which reproduce and amplify sounds whilst automatically filtering out harmful noise levels. Allows the wearer to hear warning sounds, alarms and other important information. Ideal for use in high impulse noise areas, road maintenance, railroad work and other environments where you need to hear surrounding sounds at the same time as protecting your hearing.

- High amplification of weak signals possible
- Sound level from the electronic circuits limited to max 82 dB [A]

[Attenuation values]

CC Cut Off Headset-Headband, SNR 28 dB
H = 32 dB, M = 26 dB, L = 18 dB
CC CutOff-Helmet mounted, SNR 27 dB
H = 30 dB, M = 24 dB, L = 17 dB

For details on all frequencies, please see pages 10 and 11.

[CC Headset]

A comfortable hearing protector equipped with a down lead and boom microphone.

[Attenuation values]

CC Headset-Headband, SNR 28 dB
H = 32 dB, M = 26 dB, L = 18 dB
CC Headset-Helmet mounted, SNR 27 dB
H = 30 dB, M = 24 dB, L = 17 dB

For details on all frequencies, see pages 10 and 11.

[Ordering Information & Technical Details]

Connected by cable	Headset	CutOff
Order No. Headband	SOR41000	SOR45000
Order No. Helmet mounted*	SOR41502	SOR45502
Order No. Hygiene Kit	SOR60084	SOR60084
Sound quality	stereo	stereo
Sound level limitation [max. 82 dB]		■
Active sound level limiter AUX socket [max 82 dB]	■	■
Active amplification [max.]		0 dB
Battery save function		■
Battery life [approx. hours]		600
Weight: headband without batteries [gram]	298	330
Weight: helmet mounted without batteries [gram]	292	325

*fits V-Gard helmets

Accessories

[Visors]

MSA SORDIN visor range is designed for those working environments where face protection is necessary. All visors are compatible with the electronic hearing protectors: BasicLine, ProLine, Wireless World, Connected by Cable and the passive hearing protectors: XLS, EXC and HPE.

[Visor carriers]

Carriers to connect visors to ear muffs or helmets.

Order No.	Visor carrier Description
SOR60020	Visor carrier for helmets
SOR60030	Visor carrier for headband BasicLine, ProLine, WW, CC, EXC & HPE
SOR60034	Visor carrier with brim for headband BasicLine, ProLine, WW, CC, EXC & HPE
SOR60035	Visor carrier for headband XLS
SOR60022	Visor attachment for helmets without ear muffs

[Adapters for helmet mounted ear muffs]

To fit an ear muff on a helmet, a simple-to-attach adapter has to be used. With only one click, the adapter can be placed on the helmet. No tools are required to replace these adapters.

Note: all helmet-mounted ear muffs are supplied with the MSA V-Gard adapter fitted as a standard.

Order No.	Down lead Description
SOR60120	Down lead with 3.5 mm stereo plug [supplied with ListenOnly Basic & ListenOnly Pro]
SOR60121	Down lead with 3.5 mm mono plug [supplied with CutOff Pro & Dual Pro]
SOR60122	Down lead with 2.5 mm mono plug
SOR60123	Hands-free set for mobile phones with 2.5 mm stereo plug

[Hygiene kits]

To maintain the sound attenuation performance of the ear muffs, it is important to regularly replace cushions and inserts. Under normal use, replace the hygiene kit at least twice per year.

If using in tough and dirty environments, the hygiene kit should be replaced more frequently.

To avoid sound leakage, the hygiene kit must be replaced if cracks or any other damage of the cushions are detected.

Each hygiene kit consists of cushions and inserts. Choose the hygiene kit applicable to the ear muff used.

Order No.	Visor Description	Approvals	Symbols for field of use
SOR60040	PC, 20 cm	EN 166	1, F, 3, 9
SOR60041	PC, 16 cm	EN 166	1, F
SOR60042	PC, 10 cm	EN 166	1, F
SOR60043	PC, 20 cm, for electric arcs	EN 166	1, B, 3, 8, 9
SOR60044	PC, 23 cm	EN 166	1, B, 3, 9
SOR60045	PC, 20 cm, anti-fog/anti-scratch	EN 166	1, F, 3, 9
SOR60060	Metal mesh	EN 1731	S
SOR60065	Nylon mesh	EN 1731	S

PC = Polycarbonate
 1 = Optical class 1
 S = Mechanical strength, 12 m/sec
 F = Mechanical strength, 45 m/sec
 B = Mechanical strength, 120 m/sec
 3 = Protection against liquid splash
 8 = Protection against short circuit electric arc
 9 = Protection against molten metals and hot solids



Order No.	Adapter Description
SOR60012	Adapter for MSA V-Gard/Super V-Gard II
SOR60010	Adapter for Protector HC 300/HC 710/HC 41, Balance AC/ABS/Robust

Adapters for other helmets on request.

[Down leads]

Most of the electronic ear muffs BasicLine, ProLine, Wireless World and Supreme can be connected to different external devices like CD- and MP3-players, walkmen, communication radios, mobile phones etc. An assortment of down leads can be offered therefore.



Order No.	Hygiene kit Description
SOR60084	Hygiene kit for ProLine, CC, WW
SOR60085	Hygiene kit for BasicLine



Noise attenuation

It is important that the hearing protection used provides enough attenuation for the application and environment of use. But it is also important that it doesn't give too high attenuation for you to become overprotected. Overprotection can prevent you from hearing your workmates, alarms and other important signals. The recommended sound level under the hearing protector is between 70–80 dB.

Examples of noise:			
Noise source	Level dB [A]	Noise source	Level dB [A]
Electric machines	90–110 H	Chain saws	90–110 M, H
Farm tractors	85–100 L	Wood working	90–110 H
Industrial ventilation	90–110 L	General industrial noise	90–110 L, M, H
Diesel engines	90–120 L	Airports	100–140 H

Headband Models

[BasicLine & ProLine]

According to EN 352-1 [CutOff & Dual EN 352-4]								
Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
Mean value [dB]	12.1	10.7	12.4	21.4	29.5	31.7	40.1	41.7
Stand. dev. [dB]	2.3	1.9	2.9	3.2	3.7	2.8	5.3	4.5
APV-value [dB]	9.8	8.8	9.5	18.2	25.8	28.9	34.8	37.2
SNR 24 dB, H = 30 dB, M = 20 dB, L = 13 dB								

[Wireless World]

According to EN 352-1 [CutOff & Dual EN 352-4]								
Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
Mean value [dB]	12.1	10.7	12.4	21.4	29.5	31.7	40.1	41.7
Stand. dev. [dB]	2.3	1.9	2.9	3.2	3.7	2.8	5.3	4.5
APV-value [dB]	9.8	8.8	9.5	18.2	25.8	28.9	34.8	37.2
SNR 24 dB, H = 30 dB, M = 20 dB, L = 13 dB								

[Connected by Cable]

According to EN 352-4								
Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
Mean value [dB]	12.6	14.3	19.8	25.5	30.9	34.1	36.0	36.9
Stand. dev. [dB]	5.1	2.8	2.5	2.5	2.0	2.8	2.8	4.2
APV-value [dB]	7.5	11.5	17.3	23.0	28.9	31.3	33.3	32.7
SNR = 28 dB, H = 32 dB, M = 26 dB, L = 18 dB								

According to EN 352-1								
Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
Mean value [dB]	12.6	14.3	19.8	25.5	30.9	34.1	36.0	36.9
Stand. dev. [dB]	5.1	2.8	2.5	2.5	2.0	2.8	2.8	4.2
APV-value [dB]	7.5	11.5	17.3	23.0	28.9	31.3	33.3	32.7
SNR = 28 dB, H = 32 dB, M = 26 dB, L = 18 dB								



To be able to calculate attenuation, you must know which noise level [quoted in dB (A)] you are exposed to as well as the characteristics of the noise [H = high frequency (treble), M = medium frequency or L = low frequency (base)]. You must also know the attenuation values [H, M and L] of the product, which are also found in the user information provided with the product.

Calculation examples:

Cutting of chip board with a circular saw
Noise level 105 dB [A]

Characteristics:

H = high frequency noise

Optimum protection:

ProLine with attenuation H = 30 dB

Level under ear muff:

$105 - 30 = 75$ dB [A]

For a more information just contact us.



Helmet mounted Models

[BasicLine & ProLine]

	According to EN 352-3 [CutOff & Dual EN 352-4]							
Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
Mean value [dB]	12.4	10.1	14.5	23.6	29.8	31.2	37.5	39.4
Stand. dev. [dB]	2.4	2.7	1.9	3.1	2.9	3.6	4.9	2.7
APV-value [dB]	10.0	7.4	12.6	20.5	26.9	27.6	32.6	36.7
SNR 25 dB, H = 30 dB, M = 22 dB, L = 14 dB								

[Wireless World]

	According to EN 352-3 [CutOff & Dual EN 352-4]							
Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
Mean value [dB]	12.4	10.1	14.5	23.6	29.8	31.2	37.5	39.4
Stand. dev. [dB]	2.4	2.7	1.9	3.1	2.9	3.6	4.9	2.7
APV-value [dB]	10.0	7.4	12.6	20.5	26.9	27.6	32.6	36.7
SNR 25 dB, H = 30 dB, M = 22 dB, L = 14 dB								



[Connected by Cable]

CC CutOff	According to EN 352-4							
Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
Mean value [dB]	11.9	12.8	19.1	25.0	30.8	32.3	30.8	35.5
Stand. dev. [dB]	3.8	3.5	2.9	2.9	2.5	2.3	3.3	3.3
APV-value [dB]	8.1	9.3	16.2	22.1	28.3	30.1	27.5	32.2
SNR = 27 dB, H = 30 dB, M = 24 dB, L = 17 dB								



CC Headset	According to EN 352-3							
Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
Mean value [dB]	11.9	12.8	19.1	25.0	30.8	32.3	30.8	35.5
Stand. dev. [dB]	3.8	3.5	2.9	2.9	2.5	2.3	3.3	3.3
APV-value [dB]	8.1	9.3	16.2	22.1	28.3	30.1	27.5	32.2
SNR = 27 dB, H = 30 dB, M = 24 dB, L = 17 dB								



Other MSA SORDIN range



[Passive Hearing Protection] XLS

The XLS provides a good combination of quality, comfort and great value. It has many features only found in more expensive ear muffs. XLS is mainly designed for use in lighter industrial environments and do-it-yourself application.



[Passive Hearing Protection] HPE

The HPE ear muffs have been designed to offer protection in areas with very high noise levels, especially in low frequencies. Thick, soft, foam-filled cushions provide high comfort and perfect seal. HPE can be equipped with a variety of visors.

[Passive Hearing Protection] EXC

The ear muff that is so comfortable you always want to wear it! Unique injection – moulded inserts provide excellent attenuation and maximum space for the ears inside the cup. EXC can be equipped with different visors and is suitable for most noise situations.



[Defence & Police Hearing Protection] Supreme

A range for military, law enforcement, hunting and shooting applications. Developed to meet MIL specification and extreme conditions.



[Rain and noise have one thing in common...]

If you walk out in heavy rain without a raincoat, you will get wet in a couple of minutes. If you then choose to use your umbrella, it is too late, you will be wet for the rest of the day! **It is the same with noise.**

After just a few minutes without hearing protectors in a noisy environment, the damage is already done. Even if you then wear a hearing protector for the rest of the day, your hearing has already been exposed to more than the ear can take. A few minutes of carelessness will harm your hearing almost as much as being in a noisy environment for a whole day without a hearing protector.

Damaged hearing can never be repaired. To guarantee the best protection, you should choose the best quality.

MSA SORDIN is always the right choice.

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