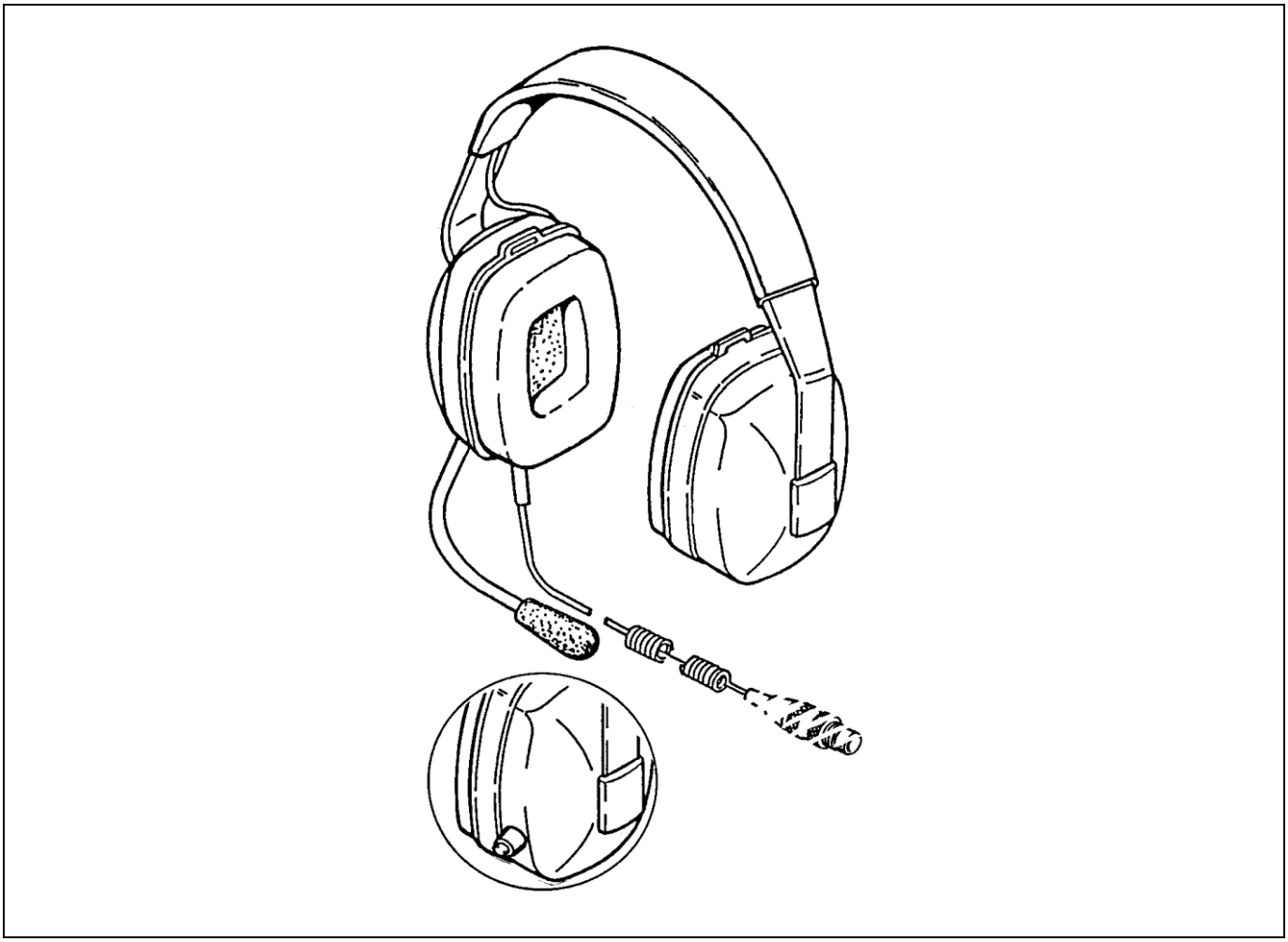
CeoTronics
Audio · Video · Data Communication

Hear/speak system PTT/Ex-*

CT-PTT Headsets for the Operation of Radio Sets in Noisy Environments

Operating Instructions



English

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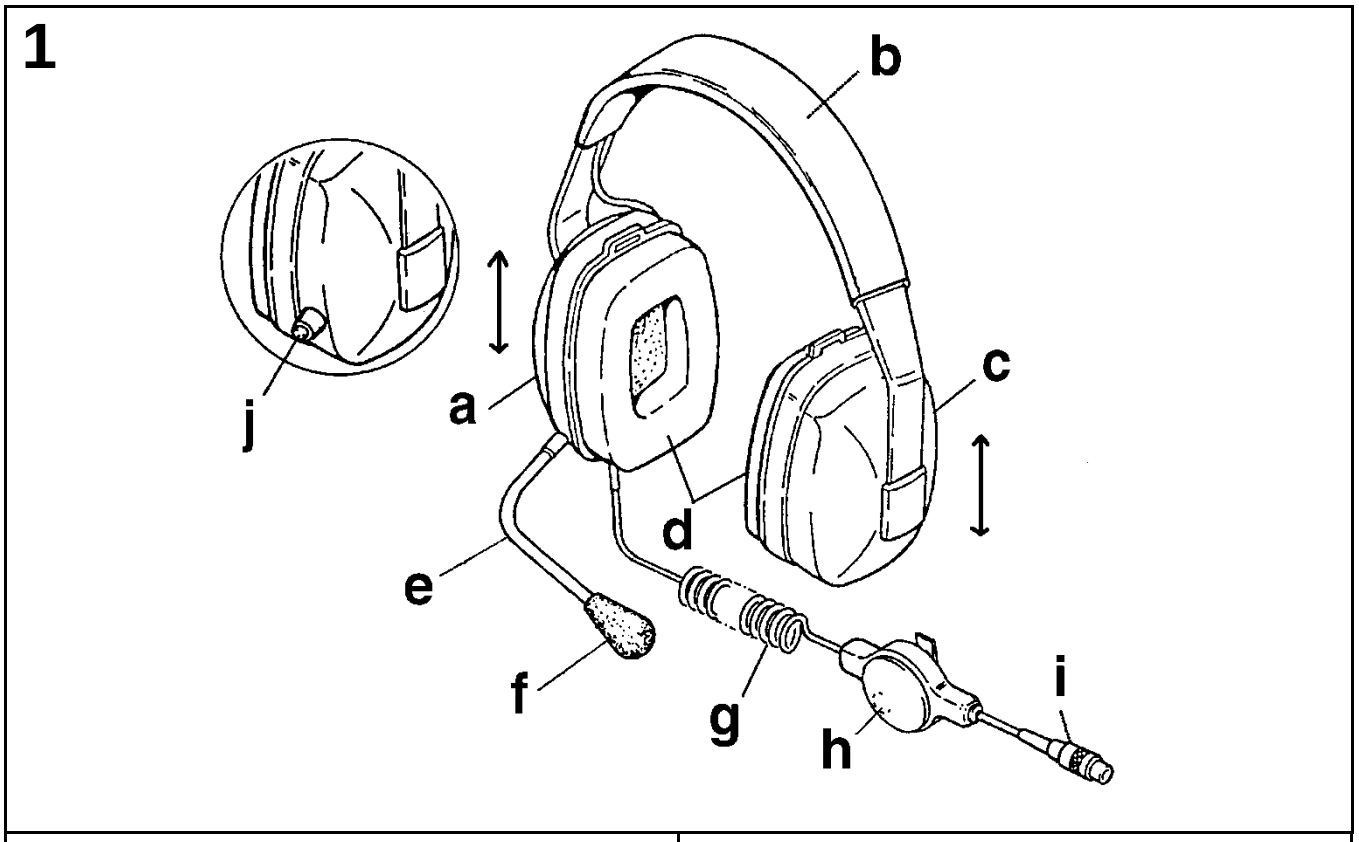
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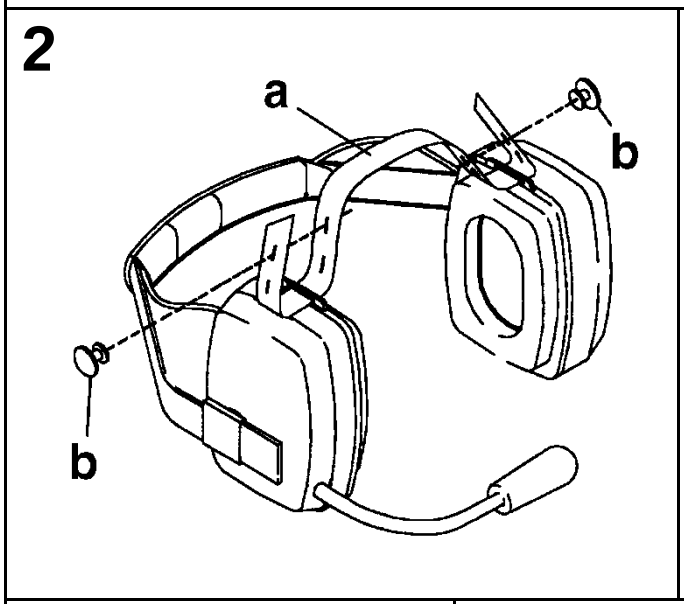
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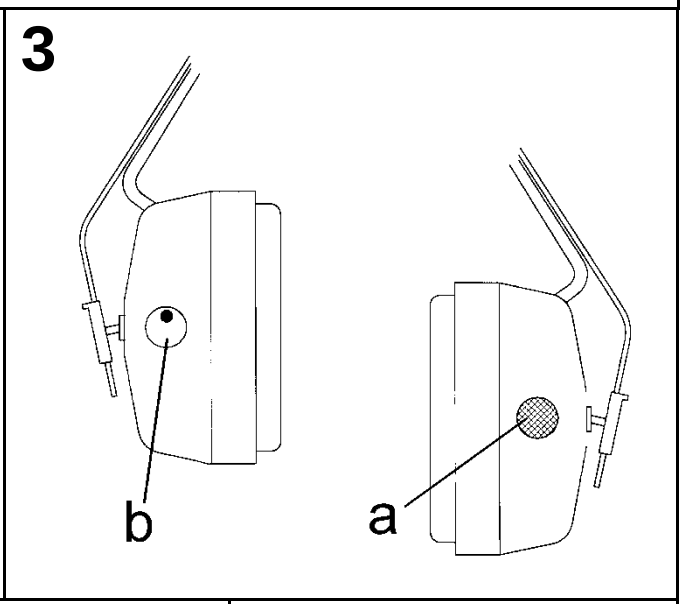
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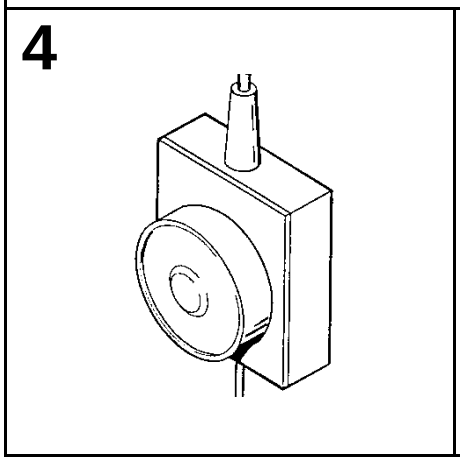
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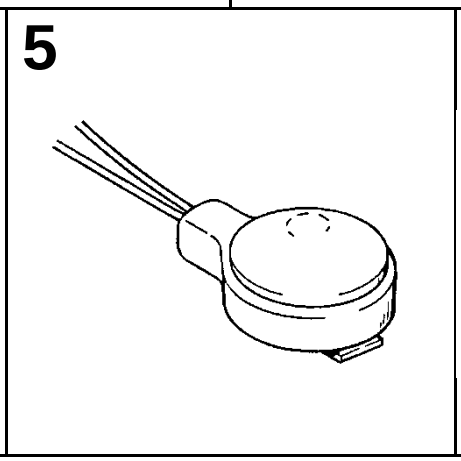
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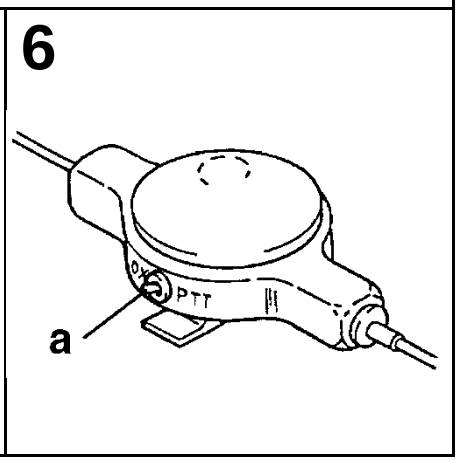
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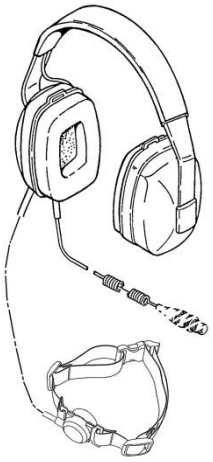

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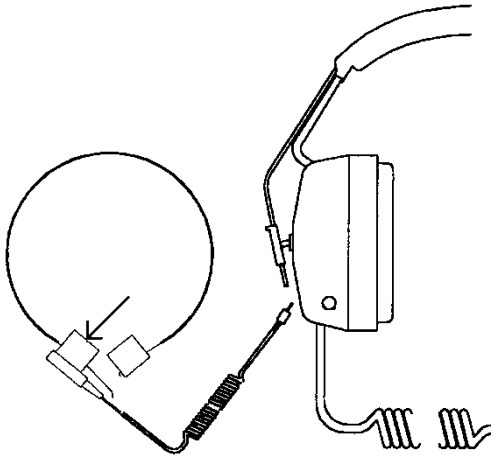

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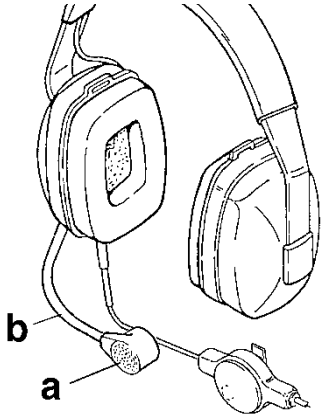

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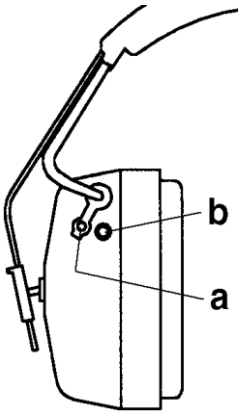

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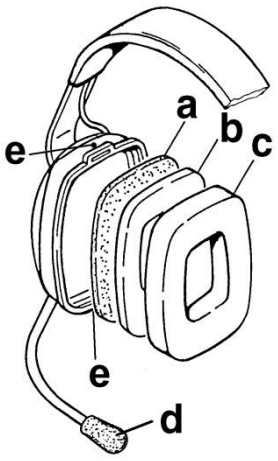

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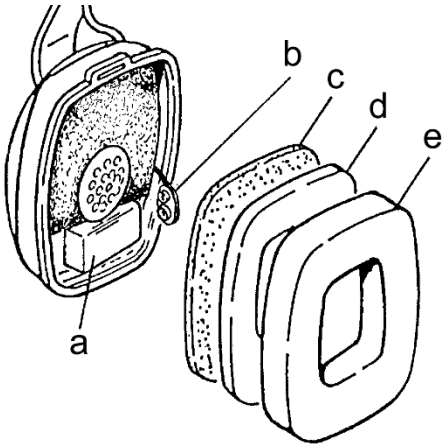

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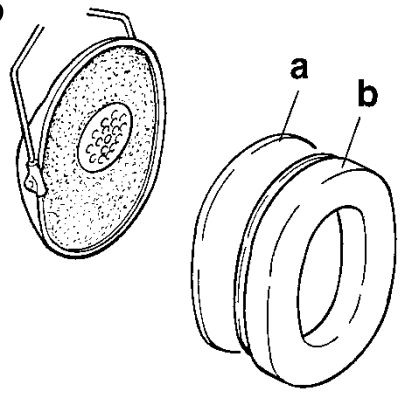

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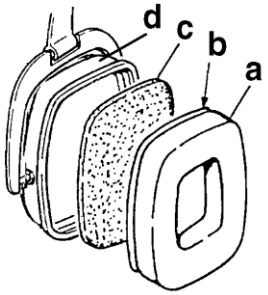

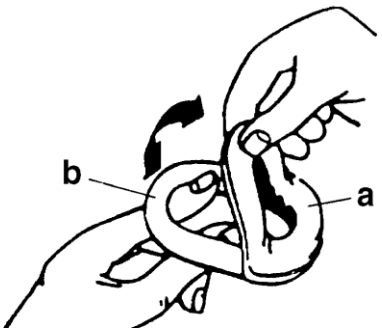

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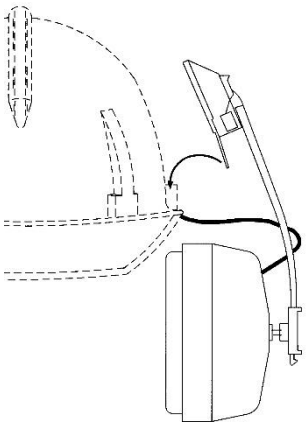


1 PTT Headset – key to Fig. 1

a Right-hand headset muff	f Microphone and windshield
b Adjustable head strap	g Connection cable (example coiled cord)
c Left-hand headset muff	h Inline PTT button (optional)
d Ear cushion	i Radio set plug (optional), depends on radio set
e Flexible microphone boom	j PTT button

2 CeoTronics Operating, Warning, and Safety Instructions

For the use of the device and for prevention of personal injury or property damage, notice the national safety and accident prevention regulations and the following warning and safety instructions in this document.

- *Before using CeoTronics products, read completely the appropriate operating instructions. If in doubt, ask our technical staff.*
- *Keep this document for later use.*
- *Use CeoTronics products only without damage and abrasion.*
- *If repair work of any kind needs to be done to CeoTronics products, arrange for it to be performed only by the company CeoTronics or by a specialized workshop that is authorized by CeoTronics. In all other cases, our warranty and liability for the product shall lapse.*
- *Keep CeoTronics products out of the reach of children and any other persons who are not familiar with the handling and operation thereof.*
- *CeoTronics products may only be used for the specific application envisaged.*
- *Safe operation requires clean devices. Ensure that the devices (microphones, connectors etc.) are clean and in good condition at all times.*
- *Should equipment, supplied by CeoTronics, be definitely put out of service you may return it to CeoTronics. We ensure recycling and / or disposal of outdated equipment in compliance with the applicable environment protection law.*

Product damage!

- *Do not immerse a CeoTronics product into water, unless expressly specified for this purpose.*
- *Connect CeoTronics accessories to a device or disconnect them from a device only after switching the device off, unless otherwise described in the operating instructions.*
- *Let devices that are designed for outdoor use during use outdoors always closed (e.g. CT-DECT Case) and close unused ports with appropriate cover – if available.*
- *Do not store CeoTronics products outside or in damp ambient conditions but keep them always clean and dry at normal atmospheric humidity. CeoTronics products must not be stored in areas with temperatures above +80° C, e.g. in summertime on the rear window shelf of a car. If not otherwise*

indicated on the product, the following temperature ranges are allowed for intrinsically safe CeoTronics products: for operation -20 to +40° C, for storage -40 to +80° C.

- *Pay attention that no humidity could penetrate into the device during cleaning. Do not use solvents (e.g. benzene, alcohol, etc.) for cleaning! Safe operation requires clean devices. Ensure that the devices (microphones, connectors etc.) are clean and in good condition at all times.*

Risk of injury by connection leads!

- *When using CeoTronics products that are equipped with connection leads ensure that the leads do not get caught up in operational machinery or wheels!*

Risk of injury by speaker volume!

- *Please, note that in some audio devices (e.g. radios) very loud signaling beeps could be present as the radio is switched on. There are various types of devices generating a series of tones in different loudness levels. It may be necessary to adjust the volumes of the tones separately. These tones could damage your hearing if they are set too high. Therefore, adjust signaling beeps to a convenient level as desired before starting to use CeoTronics accessories. Follow the instructions of the audio device manufacturer's operating manual to adjust the signaling beeps.*
- *For safety reasons reception volumes in excess of 85 dB (A) are possible with a whole series of CeoTronics products. However, these can be regulated by the user. After switching on the communication system, set the reception volume to approx. 1/2 the available loudness volume and then test the speaker volume, e.g. by opening the squelch on the radio set.*
- *Do not set the volume any higher than is necessary. A very high volume setting can lead to damaged hearing, particularly if it is continuous. For high volumes or noise levels, wear additional earplugs. If in doubt, ask your safety officer or company doctor.*

Road traffic hazard!

- *Do not leave CeoTronics products lying around loose in cars, e.g. on the parcel shelf. Stow these products in a suitable, safe place in the car so that they do not present a danger to you or to other occupants of the car, if emergency braking is effected.*
- *When driving a car, do not use the radio because it may distract you from the other traffic. Never use a CeoTronics product (headset, insert earphone, induction receiver etc.) that will impair your hearing.*

Impairment of flight operation!

- *When on board an airplane always keep a transmitter/receiver switched off. Operation of the transmitter / receiver could affect the safety of the aircraft, and it is therefore prohibited. Never operate electronic devices on board an airplane without the express approval of an authorized member of the cabin crew.*
- *The CT-DECT GateCom Compact must always be removed once the intercom communication is completed. Never remove the warning flag „Remove before flight" from the CT-DECT GateCom Compact.*

Impairment of radio transmission!

- *Transmit only when it is necessary. Unnecessarily occupying a channel can prevent the transmission of vitally important information.*

Risk of explosion!

- *Intrinsically safe (explosion-proof) CeoTronics products are used wherever potentially explosive atmospheres – e.g. explosive gases or vapours in conjunction with air – exist or can be present. For intrinsically safe CeoTronics products the special "Ex" advises in this manual have to be respected.*
- *CeoTronics products that are not intrinsically safe (explosion-proof) and there- fore have no special explosion-proof designation must never be operated in potentially explosive environments (e.g. when refueling cars, aircraft etc.). Devices that are not explosion-proof can trigger off explosions in such areas!*

Risk of electric shock!

- *Before opening line voltage operated products (e.g. for service purposes), always disconnect first the mains plug from the mains socket!*

- *Use CeoTronics products only in undamaged condition. In case of any kind of damage, refrain from further using the CeoTronics product and have it repaired.*

Adverse effect on cardiac pacemakers!

- *If you are a cardiac pacemaker carrier, before operating a transmitter / receiver ask the manufacturer of your cardiac pacemaker for information about any impairment that could be caused due to high frequencies.*

Rechargeable batteries and batteries!

- *Observe the environmental regulations when handling storage batteries! Do not throw used (defective) storage batteries into the domestic refuse. Observe the battery ordinance (BattV).*

Risk of injury by Rechargeable batteries and batteries!

- *Insert the rechargeable batteries only after having read and understood all safety instructions. Rechargeable batteries imply potential risks, which could cause physical injury and material damage.*
- *Never intend to open a rechargeable battery and never throw it into open fire. Ensure that contacts and charging sockets of the rechargeable battery do not cause short circuit (risk of fire and injury) by bridging (bent-open paper clip, bunch of keys or similar). In such a case, the guarantee is void.*
- *Transport spare rechargeable batteries in electrically non-conductive packing material in order to avoid shorting the rechargeable batteries.*
- *Keep the rechargeable batteries away from persons who are not familiar with their handling and use (e.g. children).*
- *Charging rechargeable batteries in potentially explosive areas is strictly prohibited (risk of explosion!). Charge and change rechargeable batteries only in areas where no explosive gases, vapours, or dusts could be present in combination with air.*

Damage to charger or rechargeable batteries!

- *Charge rechargeable batteries only using the corresponding appropriate CeoTronics charger. Regard voltage and current data, also on the mains side (e.g. 230 V AC or 115 V AC).*
- *Never use the battery charger for charging non-rechargeable batteries.*
- *Chargers are neither waterproof nor dust-tight and need protection against water, rain, and contamination. Use them only in the appropriate environment, intended for the system. Don´t cover the ventilation openings.*
- *Don‘t charge rechargeable batteries outdoors.*

Radio Software – Risk of malfunction!

Please note that the function of radio accessories is depending on the software settings set up in your radio. Be careful with software updates and / or changes to the software settings. If you update the radio's software, or if you change the software settings, check first on a radio that the radio accessory is still functioning properly after these changes. It is possible that the receiving volume of some radios is not satisfactory. In these cases, we suggest you check if an increase of the receiving volume is possible via the parameters in the audio profile of your radio.
Follow the information of the radio manufacturer!
If you have any further questions in regards to this subject, do not hesitate to contact our sales back office.

Important safety information concerning the use of CT-DECT digital radio systems!

- *Legal note for operation in the European Union*

The transmitter of the CT-DECT device should be used in the European Union only when it is marked as following:

CE

- *Legal note for operation in the USA*

The transmitter of the CT-DECT device should be used in the USA only when it is marked as following:

- *Legal note for operation in Canada*

The transmitter of the CT-DECT device should be used in Canada only when it is marked as following:

Improper use!
The use of CeoTronics products for special applications, such as explosive and hazardous areas, aviation, bomb disposal (EOD / IEED) or other similar applications, is in the sole responsibility of the end user. The end user has to check and decide that the products can be used without risk.

CeoTronics does not take over responsibility for any damage or material losses nor injuries to persons, caused by the use described above or by any other abnormal use of the products.

2.1 Additionally Safety Instructions

- *Muffs with a high degree of passive noise attenuation are used for CeoTronics headsets with headset muffs. If not stated otherwise, it is our experience that the passive noise attenuation of the headset muffs is reduced by approx. 3 dB due to the electronics that are integrated into the headset muffs. As a rule no empirical values are available for non-standard products.*
  At very high noise levels that exceed the passive protective effect of the headset muffs we recommend that ear plugs be worn as an additional measure. If in doubt, ask your safety officer or company doctor. Best noise attenuation exists only if the muff padding is in perfect condition. This should be replaced at the latest after every 6 months of use.
- *In the case of headsets with headset muffs that protect against harmful ambient noise and that are not equipped with additional electronics for level-limited ambient sound reception, take heed that the audibility of warning signals, warning calls etc. is also impaired!*

3 Description

General – The PTT headset with headset muffs (Fig. 1) protects against harmful environmental noise and renders possible the operation of radio sets in noise-filled environments. Transmission keying is manual by means of the PTT button on the rear side of the right-hand headset muff or optionally by means of an external PTT button (extra). Various headset versions are available depending on the usage requirements. The most frequently used PTT headsets are described in these operating instructions. The operation of other PTT headsets is similar.

Speaker and microphone – As a rule PTT headsets are equipped with dynamic speakers. The noise-compensating electret nearfield response microphone with windshield and flexible microphone boom is used most frequently as the microphone. Some headsets have dynamic microphones.

Connection cable and plug – Various straight or coiled connection cables and radio set plugs (optional) are available for the connection of PTT headsets to the radio set.

Power supply – As a rule the radio set supplies the power for the PTT headset. Power can also be supplied by a 9 V alkaline battery or by a 9 V/150 mAh rechargeable battery which resides in the left-hand headset muff.
Intrinsically safe PTT headsets/Ex are only supplied by the intrinsically safe radio.

4 Information concerning explosion proofness

4.1 Equipment

Model designation: PTT/Ex-1 or PTT/Ex-2
User group: Skilled electricians and trained personnel according to national Safety and Accident Prevention Rules

4.2 General

This CeoTronics product is also available as an intrinsically safe version for deployment in explosion hazard areas. It conforms to the European standards for intrinsically safe products (ignition protection type "i") and meets the requirements of protection class Ex ib IIB T4 respectively Ex ib IIC T4. For the explosion-proof class please refer to the explosion-proof marking on the product. Use the product only in explosion hazard areas that do not require a higher protection class than that specified. If in doubt ask your safety officer or superior.

Before using this product please read the explosion hazard instructions carefully and comply with the explosion hazard instructions in order to avoid any risk whatsoever of an explosion.

4.3 Conformity with standards

This intrinsically safe product meets the requirements of the European standards EN 60079-0 and EN 60079-11. It has been developed, manufactured and tested in compliance with the state of the art and in conformity with DIN EN ISO 9001.

4.4 Product liability

We expressly draw attention to the fact that any repair, modification or exchange of components whatsoever – including plugs and cables – may be effected only by CeoTronics or by specialized operations that are authorized by CeoTronics. In all other cases our warranty and liability for the product shall lapse automatically and shall pass to the party who/that occasioned such action.

4.5 Use of intrinsically safe equipment

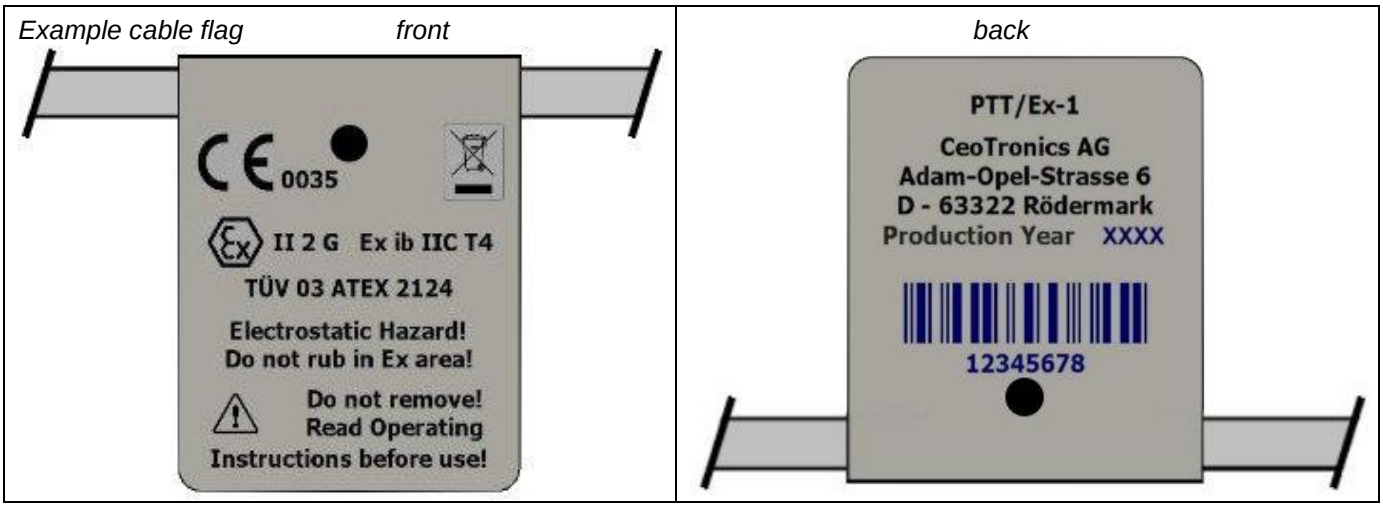
When connecting intrinsically safe CeoTronics products to another intrinsically safe device, do not fail to take heed of the explosion-proof class on the explosion-proof marking on the CeoTronics product and of the electrical limit values. The use of a CeoTronics product that has no explosion-proof marking or that has one which has become illegible, is strictly prohibited in explosion hazard areas!

Electrical limit values: Only if the electrical limit values of the CeoTronics product are complied with by the other intrinsically safe device, is deployment in an explosion hazard area allowed. If you do not know the electrical limit values at the connection socket of the other device, get in contact with the supplier or manufacturer of that device.

Different protection classes: When interconnecting explosion-proof devices and explosion-proof accessories of different classes of protection, the resulting protection class is always the lower one of those specified on the explosion-proof device or explosion-proof accessory of this system.

4.6 Markings

Manufacturer:	CeoTronics AG
Type designation:	PTT/Ex-1 or PTT/Ex-2
Protection class:	Ex ib IIB T4 or EEx ib IIC T4
Certification number:	TÜV 03 ATEX 2124
Marking in conformity with EC Directives 94/9/EC:	CE 0035 Ex II 2 G



4.7 General technical specifications

Ambient temperature:	-20 to +40 °C
Degree of protection	≥ IP 20 (in some cases ≥ IP 40)

4.8 Electrical specifications

PTT/Ex-1

maximum input voltage:	$U_i \leq 10$ V
maximum input current:	$I_i \leq 1.5$ A
maximum input wattage:	$P_i \leq 14$ W
Effective internal capacity:	C_i Negligible
Effective internal inductivity:	L_i Negligible

PTT/Ex-2

maximum input voltage:	$U_i \leq 3.9$ V
maximum input current:	$I_i \leq 400$ mA
maximum input wattage:	$P_i \leq 1.56$ W
Effective internal capacity:	C_i Negligible
Effective internal inductivity:	L_i 10 µH

4.9 Electrostatic charge

The device is partially made of non-conductive plastic material. It is especially designed to ensure that, if appropriately used, no inadmissible electrostatic charge could occur (gas group IIB respectively IIC).

Comply with the following instructions to avoid electrostatic charging. Otherwise an explosion could be caused:

1. ***The headset must never be exposed to friction while being worn in explosion hazard areas.***
2. ***Headsets with an external PTT button – Fasten the PTT button by means of the clip on its rear side to a suitable place on your clothing so that no electrostatic charging can occur, e.g. by the PTT button rubbing on your clothing.***

   Accommodate a PTT button <u>without</u> a clip inside your clothing (e.g. in a pocket in your clothing) so that no electrostatic charging can occur, e.g. by the PTT button rubbing on your clothing.
3. ***The headset must be cleaned only outside of explosion hazard areas.***

4.10 Installation

For installation & operation apply authoritatively the national Safety and Accident Prevention Rules, the state-of-the-art technology, and the present operating instructions.

Take heed of the following instructions:

1. ***Only explosion-proof assemblies with the same type marking (PTT/Ex-1 or PTT/Ex-2) may be interconnected.***
2. ***Other CeoTronics products or products of third-party manufacturers that are coincidentally equipped with the same plug connectors must never be combined with PTT/Ex-1 respectively PTT/Ex-2 products.***

4.11 Explosion hazard instructions

If the following instructions for explosion hazard instructions are not complied with, the consequence could be a explosion!

(1) This intrinsically safe CeoTronics equipment is not suitable for use in category 1 (zone 0).

(2) Operate this intrinsically safe CeoTronics equipment only in compliance with its intended use and in an undamaged and clean condition.

(3) The performance of any modifications to intrinsically safe CeoTronics equipment is prohibited.

(4) If this CeoTronics equipment has faults of any type whatsoever, remove it immediately from the explosion hazard area.

(5) An intrinsically safe CeoTronics equipment may be connected to and disconnected from an intrinsically safe device (e.g. radio set) only outside of the explosion hazard area. This means, e.g. that an explosion-proof radio set, an explosion-proof rechargeable radio battery and an explosion-proof CeoTronics equipment must always be connected to a communication system outside of the explosion hazard area and must be introduced into the hazardous area in an interconnected state only!

5 Putting into operation and operation

⚠ WARNING

For PTT/Ex take heed of sections 4.9, 4.10, 4.11.

a. Ensure that the radio set's rechargeable battery is fully charged.

b. **Connecting the headset** – Connect the headset via the connection cable and the radio set plug to the radio set. For the radio set please heed the operating instructions of the radio set manufacturer.

c. **Donning the headset** – Put on the headset. Adjust the headset muffs by sliding the head band so that the ear cushions enclose the ears well and so that the head band is lying on the middle of your head, thus achieving the best possible noise attenuation.

d. **Wearing the headset with an additional head strap** – In the event of rapid body movements or extreme body postures or in conjunction with a protective helmet the headset can be fixed to the head additionally by means of the head strap supplied (Fig. 2/a). Pull the head strap in accordance with Fig. 2 through the slits in the headset muffs and fasten it by means of the two holding studs (Fig. 2/b).

Putting together the holding stud elements – If this has not already been done ex-works, press the stud of the small holding element into the round opening of the large holding element until it engages.

Put on the headset, swing back the head band and wear the head band as a neck band. Ensure taut seating of the head strap and neck band.

⚠ CAUTION

Do not twist the flexible microphone boom. Do not carry the headset by the microphone boom. Use the microphone only with the windshield.

e. **Adjust the flexible microphone boom** so that the microphone is positioned at a distance of approx. 5 mm (0.2 inch) in front of your lips. Optimal voice transmission and the best possible noise compensation are then provided.

f. **Switching on and adjusting the volume** – Switch on the radio set. The headset is operational and on standby/reception (listen) when the radio set is in operation. Adjust via the radio set the reception volume to approx. 1/2 of the available sound volume. Check the volume of the speakers of the headset, e.g. by opening the squelch facility on the radio set. Then adjust on the radio set the desired speaker volume for the headset.

g. **Transmission and reception** – To transmit, if the channel is free, press the PTT button on the rear side of the right-hand headset muff or the external PTT button (optional) for the headset. You can speak into the headset microphone as long as you keep the PTT button pressed. Upon release of the PTT button the radio set is back on standby/receive.

h. **Headsets with ambient sound reception (example Fig. 3)** – Heed also Operating Instructions Dok0722.

i. **End of operation** – Take off the headset and disconnect it from the radio set. Switch off the radio set in order to conserve the radio set's rechargeable battery. In the case of headsets with ambient sound reception switch off the ambient sound reception, if the headset has an On/Off switch for the ambient sound reception. Clean the headset thoroughly.

6 Safekeeping – storage

After use, keep the cleaned headset in a clean and dry place at normal room temperature and at normal relative air humidity.

7 PTT headset with an external PTT button

The PTT headset can be supplied with an external PTT button. Most frequently used are the inline PTT buttons (Fig. 1/h and Fig. 4) in the connection cable between the headset and radio set. Fig. 5 shows an external PTT button which can be connected via a connection cable on the right-hand or left-hand headset muff. Both these PTT buttons can be fastened by means of the fastening clip on the rear to a suitable place on your clothing. Other PTT buttons are available.

Transmission keying by hand is effected by means of the external PTT button or optionally by means of the PTT button on the rear of the right-hand headset muff, if the headset is equipped with this PTT button. Both the PTT buttons have functionally equal rights.

8 PTT headset with a throat microphone

General – PTT headsets with a throat microphone (examples Fig. 7 and Fig. 8) are used wherever conventional lip microphones cannot be used, i.e. hinder or endanger the wearer.

Throat microphone with stretch necklet (Fig. 7): The stretch necklet is adjustable to the neck size of the wearer and closed and opened by a snap fit. Place the stretch necklet around the neck, fix it, and position the microphone to the throat. Connect the throat microphone via the connecting cable and plug to the headset, if it isn't permanently connected to the headset.

Throat microphone with flexible and padded metal harness (Fig. 8): Place the harness around the neck and position the microphone to the throat. Connect the throat microphone via the connecting cable and plug to the headset, if it isn't permanently connected to the headset.

9 PTT headset with a dynamic microphone

PTT headsets can also be supplied with a dynamic, noise-compensating microphone (example Fig. 9/a) and a flexible microphone boom (b).

10 PTT headset with a VOX/PTT selector switch

For radio sets that are equipped with a VOX function there are several models for which a separate VOX/PTT selector switch can be supplied. As a rule the selector switch is integrated into an external inline PTT button (example Fig. 6). For VOX mode switch the VOX/PTT selector switch (a) to VOX and for PTT mode to PTT. Please heed the operating instructions of the radio set manufacturer.

11 PTT headset with a side tone

On PTT headsets with additional electronics for a »side tone« (monitoring tone) for control purposes, when transmitting your own voice is audible in the speakers of your own PTT headset.

12 PTT headset muffs for helmet fastening

The two headset muffs can be supplied without a head band for lateral fastening to a helmet (example Fig. 15). Various fastening components are available to suit the specific type of helmet. Separate fitting instructions are available for fastening to the helmet. These are supplied complete with fastening components. Lay the connection cable between the two headset muffs so that it does not cause any interference. In addition you can also use the head strap which is packed with each headset (see section 5, step »d«). If no noise protection is required for the activity, you can fold the two fastening arms with the headset muffs outwards and away from the helmet.

13 PTT headset with "channel busy" signalling (option)

In conjunction with compatible two-way radios with the feature for "channel busy" signalling the CeoTronics headset can be equipped with a tone generator. The tone generator resides in the inline PTT button of the CeoTronics headset. If the channel is busy and you press the PTT button an acoustic signal is audible via the speaker of the CeoTronics headset.

14 Maintenance – repair

⚠ ATENTION!

In general the intrinsically safe PTT/Ex* is maintenance-free. However, the body of the PTT/Ex* should be inspected before every use whether it is faultless and intact (protection class ≥ IP 20).

14.1 Visual tests

Regularly examine the device and in particular the headset muffs, ear cuhions, cable and plugs for signs of breakage, cracks and wear. Send any defective devices back to CeoTronics for repair. Replace any damaged or worn ear cushions in accordance with sections 14.4.1, 14.4.2, 14.4.3 at the latest after 6 months of usage. If necessary, also change any dirty foam covers in the headset muffs.

14.2 Cleaning

⚠ WARNING

To avoid static charging, intrinsically safe devices must never be cleaned in the explosion hazard area – a explosion could be the consequence (see section 4.9 "Electrostatic charging").

⚠ CAUTION

When cleaning ensure that no moisture is allowed to penetrate to the inside of the unit. Do no use any solvents (e.g. benzine, alcohol etc.).

Remove any loose dust with a soft brush. If necessary, clean the outside with a suitable clean tissue only **slightly** moistened with clear water and subsequently rub the unit dry again. If heavily soiled, a little dishwashing liquid can be used in addition. If necessary clean the plug terminals with a commonly available contact cleaning agent.

14.3 Replacing the microphone's windshield

Pull the windshield (Fig. 11/d) off the microphone and replace it.

14.4 Replacing the ear cushions and foam covers

14.4.1 Headset with VK shells (Fig. 11)

Ear cushion *(Fig. 11/c):* Pull the ear cushion off the headset muff and replace it. Ensure that the new ear cushion fully engages into the headset muff.

Foam cover *(Fig. 11/a):*

⚠ CAUTION

We like to expressly point out that replacement of the foam cover of intrinsically safe communication sets PTT / Ex* must be made only by CeoTronics itself or specialist workshops duly authorized by CeoTronics. Otherwise our guaranty and product liability lapses automatically and passes on to the person responsible.

⚠ WARNING

In some headset models the retaining ring is screwed together with the headset shell. These screws can only be removed with a Torx TX 7 screwdriver.

Remove the bolts between shell and retaining ring, if applicable (figure 11/e). Pull the ear cushion (Fig. 11/c) off the headset muff.

⚠ WARNING

When removing the cover ring proceed with care so that you do not injure your fingers or break your finger nails.

Hold the headset muff with one hand. Push four fingers of the other hand inside between the foam cover (a) and the cover ring (b). With your fingers pull the cover ring hard, but carefully, away from the headset muff and at the same time use your thumb to press the headset muff hard in the opposite direction. Change the foam cover. When reassembling, ensure that the cover ring and the ear cushion engage fully into the headset muff.

⚠ CAUTION

If the retaining ring was fastened with screws before replacing the foam cover, then secure it again with the two screws (e) after replacement. Use for it only the Torx TX 7 screwdriver.

14.4.2 Headset with Optime shells (Fig. 13)

Pull off the ear cushion (Fig. 13/b) from the ear muff and replace it. Replace the cover foam (a). Make sure that the new ear cushion locks in place completely.

14.4.3 Headset with AS/AM shells (Fig. 14)

a. Pull with force – but carefully – the shell ring (Fig. 14/b) together with the ear cushion (a) off the headset muff (d). Replace the cover foam (c).
b. Pull the old self-adhesive ear cushion (a) off the shell ring (b). Clean the shell ring. Pull the protective foil off the new ear cushion and adhere the new ear cushion to the shell ring. Attach shell ring and new ear cushion to the headset muff. Ensure that the shell ring audibly engages.

15 Accessories and consumable parts

Designation and description	Article no.
Single charger for headsets with an 9 V/150 mAh NiMH rechargeable battery For mains voltage 230 V AC For mains voltage 115 V AC	 40 05 020 40 06 020
Automatic charging station for up to 10 headsets with 9 V/150 mAh NiMH rechargeable batteries For mains voltage 230 V AC	09 10 000
Hygiene set for headsets with VK shells consisting of: 2 pieces ear cushion, 2 pieces foam cover, 2 pieces windshield for microphone	50 00 500

Ear cushion for headsets with VK shells, 2 pieces	50 00 501
Hygiene set for Headsets with Optime shells consisting of: 2 pieces ear cushion, 2 pieces cover foam	50 00 496
Ear cushion for headsets with AS/AM shells, 2 pieces	50 00 502
Cover foam 5 mm for headsets with AS/AM shells, 1 piece	50 00 305
Windshield for microphone, 10 pieces	50 02 201
Comfort set consisting of 25 pairs of cotton perspiration absorbers	40 10 025

16 EC-Type Examination Certificate TÜV 03 ATEX 2124

Translation

(1) **EC-TYPE EXAMINATION CERTIFICATE**

(2) Equipment or protective system intended for use in potentially explosive atmospheres **- Directive 94/9/EC**

(3) EC-Type Examination Certificate Number

TÜV 03 ATEX 2124

(4) Equipment: Hear/speak system type PTT/Ex-*

(5) Manufacturer: CeoTronics AG

(6) Address: D-63322 Rödermark, Adam-Opel-Str.6

(7) This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH & Co. KG, TÜV CERT-Certification Body, notified body number N° 0032 in accordance with Article 9 of the Council Directive of the EC of March 23, 1994 (94/9/EC), certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential report N° 03 YEX 550549.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50 014: 1997 **EN 50 020: 2002**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type examination certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment or protective system must include the following:

II 2 G EEx ib IIB T4 or EEx ib IIC T4

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TÜV CERT-Certification Body
Am TÜV 1
D-30519 Hannover
Tel.: 0511 986-1470
Fax: 0511 986-2555

Hanover, 2003-05-16

Head of the Certification Body

TÜV NORD CERT

TÜV CERT A4 10.02 10.000 Lö

page 1/2

(13) **SCHEDULE**

(14) **EC-TYPE EXAMINATION CERTIFICATE N° TÜV 03 ATEX 2124**

(15) Description of equipment

The hear/speak system type PTT/Ex-* is used for the remote-control of radio devices or similar communication systems which may also be cable-bound.
Differently marked and external modules must not be combined. The hear/speak system type PTT/Ex-* is realized in several versions e.g. also integrated in different ear muffs.

The gas group in dependence on the ear muff type of has to be taken from the table:

Type	Gas group
Viking	IIC
Mark 12	IIC
AS/AM	IIB
LAS/LAM	IIB
Optime I	IIB
Optime II	IIB
Optime III	IIB

Electrical data

Supply circuit (plug)	in type of protection Intrinsic Safety EEx ib IIC only for the connection to a certified intrinsically safe circuit

The maximum values in dependence on the type have to be taken from the table:

Type	U_i	I_i	P_i	L_i	C_i
PTT/Ex-1	10 V	800 mA	8 W	≈ 0	≈ 0
PTT/Ex-2	3,9 V	400 mA	1.56 W	10 µH	≈ 0

(16) Test documents are listed in the test report No.: 03 YEX 550549.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

BA 02 03.02

Translation

1. SUPPLEMENT to

EC TYPE-EXAMINATION CERTIFICATE No. TÜV 03 ATEX 2124

of the company: CeoTronics AG
Adam-Opel-Str.6
D-63322 Rödermark

In the future, the hear/speak system type PTT/Ex-* may also be manufactured according to the test documents listed in the test report.

The amendments concern the alternative design of the ear muff “AS/AM” and “LAS/LAM” with the helmet attachment type “Kombi S”.

The electrical data and all other data apply unchanged for this supplement.

The marking for this model is:

II 2 G EEx ib IIC T4

Test documents are listed in the test report N° 03 YEX 550724.

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Hannover, 2003-08-07

Head of the
Certification Body

BA 02 03.02

Translation

2. SUPPLEMENT to

EC TYPE-EXAMINATION CERTIFICATE No. TÜV 03 ATEX 2124

of the company: Ceotronics AG
Adam-Opel-Str.6
D-63322 Rödermark

In the future, the Hear/speak system type PTT/Ex-* may also be manufactured according to the test documents listed in the test report.

The amendments concern the electrical data of the type PTT/Ex-1.

Electrical data

Supply circuit (plug)	in type of protection Intrinsic Safety EEx ib IIC only for the connection to a certified intrinsically safe circuit

The maximum values have to be taken from the table:

Type	U_i	I_i	P_i	L_i	C_i
PTT/Ex-1	10 V	1.4 A	14 W	≈ 0	≈ 0

All further data apply unchanged for this supplement.

(16) Test documents are listed in the test report N° 03 YEX 550956.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

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Hannover, 2003-10-30

Head of the Certification Body

BA 02 03.02

Translation

3. SUPPLEMENT to

EC TYPE-EXAMINATION CERTIFICATE No. TÜV 03 ATEX 2124

of the company: CeoTronics AG
Adam-Opel-Str.6
D-63322 Rödermark

In the future the hear/speak system type PTT/Ex-* may also be manufactured according to the test documents listed in the test report.

The amendments concern the internal design.

The electrical data and all other data apply unchanged for this Supplement.

Test documents are listed in the test report N° 04 YEX 551353.

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Hanover, 2004-03-24

i.V. Schwedt

Head of the
Certification Body

BA 02.11.03

Translation

4. SUPPLEMENT

to Certificate No.	**TÜV 03 ATEX 2124**
Equipment:	Hear/speak system type PTT/Ex-*
Manufacturer:	**CeoTronics AG**
Address:	Adam-Opel-Str. 6 D-63322 Rödermark
Order number:	8000553432
Date of issue:	22.11.2006

Amendments:

In the future, the hear/speak system type PTT/Ex-* may also be manufactured and operated according to the test documents listed in the test report.

The amendments concern an additional device alternative “CT-Neckband” and a changed printed circuit board for the transmission key unit (PTT).

The electrical data and all other data apply unchanged for this supplement.

The equipment incl. of this supplement meets the requirements of these standards:

EN 50 014:1997+A1+A2 **EN 50 020:2002**

(16) The test documents are listed in the test report No. 06 YEX 553432.

(17) Special conditions for safe use

no additional ones

(18) Essential Health and Safety Requirements

none

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The head of the certification body

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BA 02 07.06 1.000.000

P17-F-016 06-06

page 1/1

Translation

5. SUPPLEMENT

to Certificate No.	**TÜV 03 ATEX 2124**
Equipment:	Hear/speak system type PTT/Ex-*
Manufacturer:	**CeoTronics AG**
Address:	Adam-Opel-Str. 6 63322 Rödermark Germany
Order number:	8000553695
Date of issue:	2007-05-09

Amendments:

In the future, the hear/speak system type PTT/Ex-* may also be manufactured and operated according to the test documents listed in the test report.

The amendments concern the use of an other enclosure material and a changed printed circuit board.

The electrical data and all other data apply unchanged for this supplement.

The equipment incl. of this supplement meets the requirements of these standards:

EN 50014:1997 +A1 +A2 **EN 50020:2002**

(16) The test documents are listed in the test report No. 07203553695.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

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P17-F-016 06-06

page 1/1

Translation

6. S U P P L E M E N T

to Certificate No.	**TÜV 03 ATEX 2124**
Equipment:	Hear/speak system type PTT/Ex-*
Manufacturer:	**CeoTronics AG**
Address:	Adam-Opel-Str. 6 63322 Rödermark Germany
Order number:	8000555258
Date of issue:	2009-06-08

Amendments:

In the future, the hear/speak system type PTT/Ex-* may only be manufactured according to the documents listed in the test report.

The amendments concern the connection data of the variant PTT/Ex-1, the internal construction, the marking and the instruction manual.

The marking is in future:

⟨Ex⟩ **II 2 G Ex ib IIB T4 resp. Ex ib IIC T4**

Technical Data:

PTT/Ex-1

Supply circuit ..... (plug)	in type of protection „Intrinsic Safety“ Ex ib IIB resp. Ex ib IIC only for the connection to a certified intrinsically safe circuit. Maximum values: U_i = 10 V I_i = 1.5 A P_i = 15 W The effective internal capacitance and inductance are negligibly small.

All other data apply unchanged for this supplement.

The equipment incl. of this supplement meets the requirements of these standards:

EN 60079-0:2006 **EN 60079-11:2007**

(16) The test documents are listed in the test report No. 09 203 555258.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

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Translation

7. SUPPLEMENT

to Certificate No.	**TÜV 03 ATEX 2124**
Equipment:	Hear/speak system type PTT/Ex-*
Manufacturer:	**CeoTronics AG**
Address:	Adam-Opel-Str. 6 63322 Rödermark Germany
Order number:	8000556210
Date of issue:	2011-01-24

Amendments:

In the future, the hear/speak system type PTT/Ex-* may also be manufactured according to the documents listed in the test report.

The amendments concern an additional marking possibility of all product variants with a "cable flag", the supplement with two new headsets "CT HL-09" and "CT HL-19", in the version without transmission key optionally with enlarged ambient temperature range, as well as the enlargement of the ambient temperature range for the already certified headset "KKM/BOH" in the version as a pure earbud.

Technical data of the headsets „CT HL-09" and „CT HL-19"

PTT/Ex-1

Supply circuit ..... in type of protection „Intrinsic Safety" Ex ib IIC
only for the connection to a certified intrinsically safe circuit.

Maximum values: U_i = 10 V
I_i = 1.5 A
P_i = 15 W

The effective internal capacitance and inductance are negligibly small.

PTT/Ex-2

Supply circuit ..... in type of protection „Intrinsic Safety" Ex ib IIC
only for the connection to a certified intrinsically safe circuit.

Maximum values: U_i = 3.9 V
I_i = 0.4 A
P_i =1.56 W

Effective internal capacitance: negligibly small
Effective internal inductance: L_i = 10µH

The permissible ambient temperature range amounts to -20 °C ≤ T_{amb} ≤ +40 °C or for the headsets "CT HL-09" and "CT HL-19", in the version without transmission key as well as for the headset "KKM/BOH" in the version as a pure earbud -20 °C ≤ T_{amb} ≤ +60 °C, respectively.

All other data apply unchanged for this supplement.

The equipment incl. of this supplement meets the requirements of these standards:

EN 60079-0:2006 **EN 60079-11:2007**

(16) The test documents are listed in the test report No. 11 203 556210.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

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Translation

8. S U P P L E M E N T

to Certificate No.	**TÜV 03 ATEX 2124**
Equipment:	Hear/speak system type PTT/Ex-*
Manufacturer:	**CeoTronics AG**
Address:	Adam-Opel-Str. 6 63322 Rödermark Germany
Order number:	8000422324
Date of issue:	2013-07-03

Amendments:

In the future, the hear/speak sets „CT HL-09“ and „CT HL-19“ may also be manufactured according to the documents listed in the test report. For those types the Printed Circuit Board HL_Ex-1 is superseded by HL_Ex-6.

Furthermore the hear/speak sets „UKL“ and „GD“ for CT-MultiCom may be manufactured with other components so that a higher sound level can be achieved.

The permissible ambient temperature range amounts to -20 °C ≤ T_{amb} ≤ +40 °C or for the headsets “CT HL-09” and “CT HL-19”, in the version without transmission key as well as for the headset “KKM/BOH” in the version as a pure earbud -20 °C ≤ T_{amb} ≤ +60 °C, respectively.

Marking of the equipment:

⟨Ex⟩ II 2 G Ex ib IIC T4 Gb resp. Ex ib IIB T4 Gb or
II 2 G Ex ib IIC T4 resp. Ex ib IIB T4

All other data apply unchanged for this supplement.

The equipment incl. of this supplement meets the requirements of these standards:

EN 60079-0:2012 **EN 60079-11:2012**

(16) The test documents are listed in the test report No. 13 203 123806.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the certification body

Herbert Peters

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Translation

9. S U P P L E M E N T

to Certificate No.	**TÜV 03 ATEX 2124**
Equipment:	Hear/speak system type PTT/Ex-*
Manufacturer:	**CeoTronics AG**
Address:	Adam-Opel-Str. 6 63322 Rödermark Germany
Order number:	8000441511
Date of issue:	2015-09-30

Amendments:
In the future, the hear/speak system may also be manufactured and operated according to the documents listed in the ATEX testing report.
The amendments concern an additional device model "CT-FlexCom" with the accompanying technical changes. The device model "CT-FlexCom" is intended to be mounted with different helmet attachment adapters to suitable fire helmets.
The device model "CT FlexCom" may be used in areas where explosive atmospheres caused by gases, vapors or mists may occur and where the use of equipment of category 2 is required.

Technical data of the device model „CT-FlexCom":
Supply circuit ..... in type of protection „Intrinsic Safety" Ex ib IIC
only for the connection to a certified intrinsically safe circuit.

Maximum values: U_i = 10.0 V
I_i = 1.5 A
P_i = 15.0 W

The effective internal capacitance and inductance are negligibly small.

Permissible range of ambient temperature:
-20 °C ≤ T_a ≤ +40 °C / +60 °C (with / without push to talk button unit)

All other data apply unchanged for this supplement.

The equipment incl. of this supplement meets the requirements of these standards:
EN 60079-0:2012+A11:2013 **EN 60079-11:2012**

(16) The test documents are listed in the ATEX testing report No. 15 203 151682.

(17) Special conditions for safe use

none

9. Supplement to Certificate No. TÜV 03 ATEX 2124

(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the notified body

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Certificate No. 01100004023 (ISO 9001)

Certificate No. 01220004023 (ATEX)

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