CeoTronics
Audio · Video · Data Communication

CT-Plug/Adapter for Two-Way Radios MT 2100

Operating Instruction

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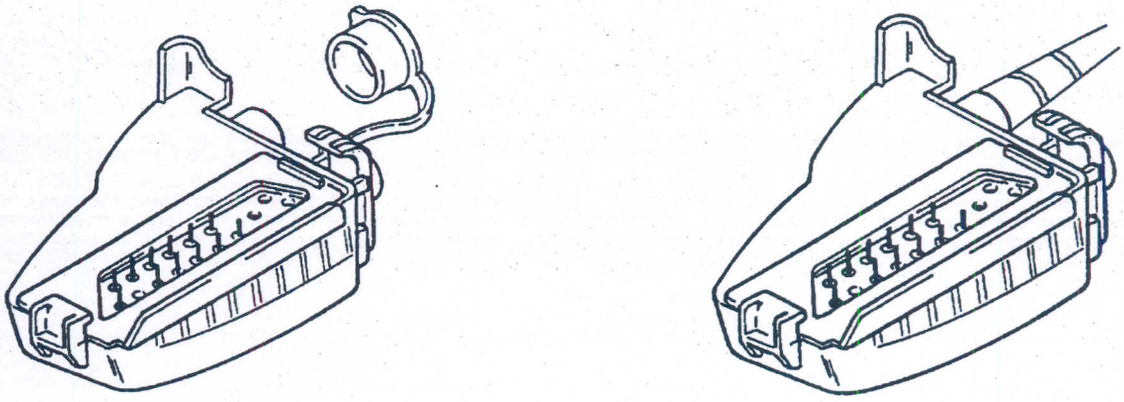

English

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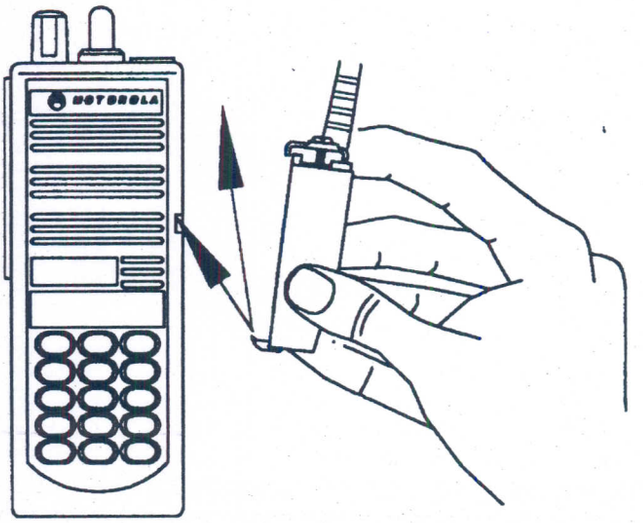

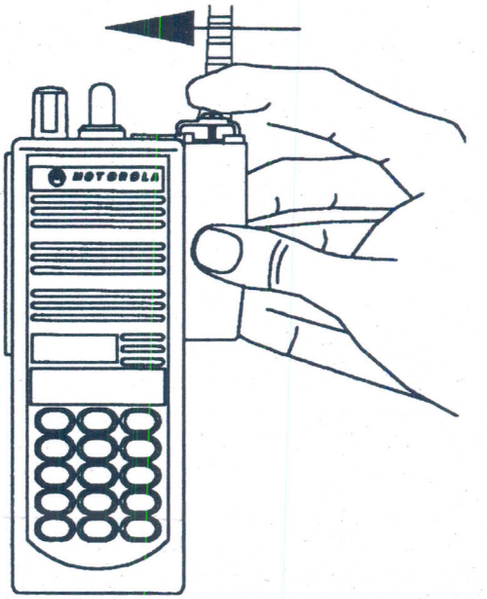

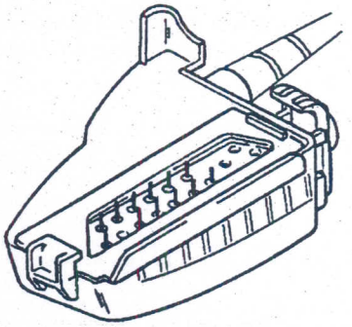

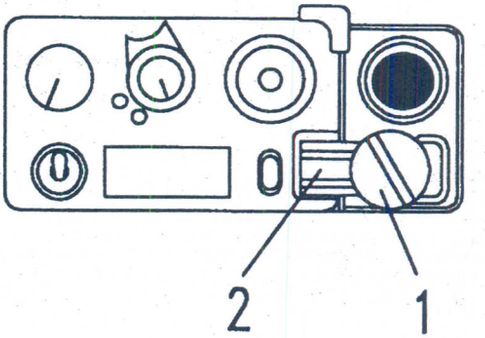

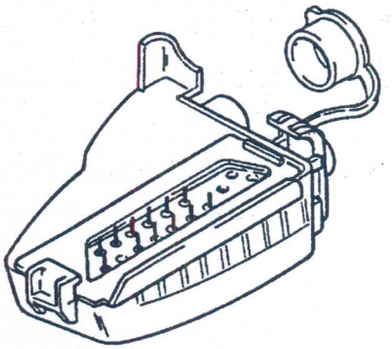

1. Safety instructions

For the use of the device notice the national safety and accident prevention regulations and the following safety instructions shown in italics in this instruction manual.

- *Before using CeoTronics products read completely the appropriate operating instructions. If in doubt, ask our technical staff.*
- *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.*
- *Do not store CeoTronics products outside or in damp ambient conditions. At all times keep them clean, dry and at normal air humidity. CeoTronics products must not be stored in areas with a temperature of over +80° C (+176° F), e.g. in the summertime on the parcel shelf of a car. If not stated otherwise, the following temperature ranges are allowed for CeoTronics products: -10 to +55° C (+14 to +131° F) for operation, -40 to +80° C (-40 to +176° F) for storage. Operation of intrinsically safe CeoTronics products: -20 to +40° C (+4 to +104° F).*
- *Do not immerse a CeoTronics product into water, if it is not expressly specified for this purpose.*
- *When using CeoTronics products that are equipped with connection leads ensure that the latter do not get caught up in operational machinery or wheels !*
- *Intrinsically safe (explosion-proof) CeoTronics products are used wherever potentially explosive atmospheres – e.g. explosive gases, vapours or dusts in conjunction with oxygen – 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 therefore have no special explosion-proof designation must never be operated in potentially explosive environments (e.g. when refuelling cars, aircraft etc.). Devices that are not explosion-proof can unintentionally trigger off explosions in such areas !*
- *Connect CeoTronics accessories to a device or disconnect them from a device only when the device is switched off. In the case of intrinsically safe products (explosion-proof) this must always take place outside of the potentially explosive area. Otherwise the consequence could be an unintentional explosion !*
- *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.*
- *Keep CeoTronics products out of the reach of children and any other persons who are not familiar with the handling and operation thereof.*
- *Packaging materials, e.g. filling materials and plastic bags are not toys and have to be kept out of the reach of children. There is a risk of children ingesting them and choking !*
- *Safe operation requires clean devices. Ensure that the devices (microphones, connectors etc.) are clean and in good condition at all times.*
- *CeoTronics products may only be used for the specific application envisaged..*
- *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.*

- *Keep these operating instructions for later use.*

2. Purpose

The plug/adapter type MT 2100 is used to connect radio accessories, e.g. CeoTronics communication headsets, to two-way radios Motorola MT 2100, GP 900, MTS 2010/13, GP 1200, ... Various versions are available, e.g. adapters with 12-pole accessory jack, 6-pole accessory jack or plugs with a permanently connected cable. Fig. 1 on the front page shows two examples.

For connection of intrinsically safe CeoTronics communication headsets/Ex to intrinsically safe two-way radios MT 2100/Ex plugs/adapters type MT 2100/Ex are available.

Proper function of the adapter or plug is only extant in conjunction with accessories released by CeoTronics.

3. Intrinsically safe versions (Ex)

3.1 Product

Type designation: Plug/adapter type MT 2100/Ex

User group: Skilled qualified personnel according to Elex V, IEC 79-17 and instructed persons.

3.2 General

This intrinsically safe CeoTronics product is designed 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 EEx ia 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 grade than that specified. If in doubt ask your safety officer or superior.

Before using these products read the explosion hazard instructions carefully and comply with the explosion hazard instructions in order to avoid any risk whatsoever of an unintended explosion.

3.3 Conformity to standards

This product meets the requirements of EN 50014: 1997 and EN 50020: 1994. It was developed, manufactured and tested to meet the state of the technical art and to be in conformity with EN 29001.

3.4 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.

3.5 Use of intrinsically safe products

When connecting intrinsically safe CeoTronics products to an intrinsically safe two-way radio, do not fail to comply with the electrical limit values (e.g. voltage and current limits) and with the explosion-proof grade as specified on the explosion-proof marking on the CeoTronics product. The use of a CeoTronics product that has no explosion-proof marking or that has one which has become illegible, is strictly prohibited in potentially explosive 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 grades of explosion-proofing: When interconnecting explosion-proof devices and explosion-proof accessories that have different grades of proofing, e.g. to a communication system, the resulting grade of proofing is always the lowest grade of proofing that is specified for an explosion-proof device or an explosion-proof accessory for this system.

3.6 Designation

Manufacturer:	CeoTronics AG
Explosion-proof class:	EEx ia IIC T4
Certification number:	TÜV 02 ATEX 1942

3.7 Conformity

CE 0035 Ex II 2 G, EEx ia IIC T4

3.8 Electrical specifications

Supply circuit:

Voltage	$U_o \leq 6.4$ V
Current	$I_o \leq 315$ mA
Power	$P_o \leq 1.3$ W
Effective inner capactity of the plug/adapter:	120 nF
Effective inner inductivity of the plug/adapter:	negligible small

Output circuit:

Voltage	$U_o \leq 6.4$ V
Current	$I_o \leq 175$ mA
Power	$P_o \leq 280$ mW
Capacity	C_i negligible small
Inductivity	L_i negligible small
Max. permissible outer capacity:	28 µF
Max. permissible outer inductivity:	0.6 mH

Notice also the electrical limit values of the communication system that will be connected.

3.9 Installation

For installation and operation the regulations according to Elex V and according to the »safety regulations for appliances« are valid, as well as the general state of the technical art and this instruction manual.

3.10 Explosion hazard instructions

If the following instructions for explosion-proof devices are not complied with, the consequence could be an unintentional explosion !

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

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

(3) It is prohibited to carry out any modifications at intrinsically safe CeoTronics products.

(4) If this CeoTronics product exhibits any faults whatsoever, remove it immediately from the explosion hazard area.

(5) An intrinsically safe CeoTronics product may only be connected to and disconnected from an intrinsically safe device (e.g. two-way radio) outside of the potentially explosive area. This means, e.g. an explosion-proof two-way radio, an explosion-proof rechargeable radio battery and an explosion-proof CeoTronics product always have to be connected to a communication system outside of the potentially explosive area and may only be introduced into the hazardous area in ready connected state. Risk of explosion !

4. Mounting instruction

⚠ WARNING

- ***The intrinsically plug/adapter MT 2100/Ex may only be connected to or isolated from the radio set outside of explosion hazard areas. Risk of explosion !***
- ***If intrinsically safe radios are used in explosion-hazard areas, the intrinsically safe plug/adapter type MT 2100/Ex must be secured by means of the retaining strap (Fig. 2/2) and the screw (Fig. 2/1) provided for this purpose. If radios and plugs/adapters type MT 2100 for non-explosion hazard areas are used, secure the adapter as well by means of the retaining strap and the screw.***

Mount the plug/adapter to the radio as shown in Fig. 2. Tighten the screw (Fig. 2/1) to secure the plug/adapter.

5. Maintenance – repair

Comply with the regulations of Elex V §9, Elex V §13 and VDE 0165 respectively DIN EN 60 079-14 (in Germany) that are valid for maintenance/repair/testing of intrinsically safe products. In the case of intrinsically safe products, particularly those parts have to be tested on which the ignition protection type depends.

5.1 Visual tests

Regularly examine the device and in particular the connecting cables and connectors for signs of breakage, cracks and wear. Send any defective devices back to CeoTronics for repair.

5.2 Cleaning

⚠ CAUTION

Do not immerse the device in water. No moisture may be allowed to penetrate the device.
Do not use any solvents (benzine, alcohol, etc.) for cleaning purposes !

Remove any loose dust with a soft brush. Clean the outside with a suitable clean cloth that has been slightly moistened with clear water, and rub the parts dry afterwards. If heavily soiled, some dishwashing liquid can be used in addition.

Clean the contacts of connectors with a commonly available contact cleaning agent.

EC-Type Examination Certificate TÜV 02 ATEX 1942

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 02 ATEX 1942

(4) Equipment: Plug/adapter type MT 2100/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 is 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° 02 YEX 197467.

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

EN 50 014: 1997 **EN 50 020: 1994**

(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:

Ex II 2 G EEx ia IIC T4

TÜV NORD CERT GmbH & Co. KG
TÜV CERT-Certification Body
Am TÜV 1
D-30519 Hannover
Tel.: 0511 986-1470
Fax: 0511 986-2555

Hanover, 2002-10-25

Head of the Certification Body

TÜV NORD CERT

(13) **SCHEDULE**

(14) **EC-TYPE EXAMINATION CERTIFICATE N° TÜV 02 ATEX 1942**

(15) Description of equipment

The plug/adapter type MT 2100/Ex is intended for the connection of various certified hear-/speak devices to one certified intrinsically safe radio set.

Electrical data

Supply circuit (direct mounting at the radio set)	in type of protection „Intrinsic Safety" EEx ia/ib IIC only for the connection to certified intriniscally safe circuits Maximum values: U_i = 6.4 V I_i = 315 mA P_i = 1.3 W effective internal capacitance ≤ 120 nF The effective internal inductance is negligibly small.
Output circuit (plug/socket connection or prefabricated cable)	in type of protection „Intrinsic Safety" EEx ia/ib IIC Maximum values: U_o = 6.4 V I_o = 175 mA P_o = 280 mW maximum permissible external capacitance 28 µF maximum permissible external inductance 0.6 mH

(16) Test documents are listed in the test report No.: 02 YEX 197467.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

Translation

1. SUPPLEMENT to

EC TYPE-EXAMINATION CERTIFICATE No. TÜV 02 ATEX 1942

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

In the future, the plug/adapter type MT 2100/Ex may also be operated according to the test documents listed in the test report.

The amendments concern the electrical data.

Supply circuit (direct mounting at the radio set)	in type of protection Intrinsic Safety EEx ia/ib IIC only for the connection to certified intrinsically safe circuits Maximum values: U_i = 6.4 V I_i = 350 mA P_i = 1.3 W effective internal capacitance ≤ 120 nF The effective internal inductance is negligibly small.

All further data apply unchanged for this supplement.

Test documents are listed in the test report N° 03 YEX 550839.

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

Hannover, 2003-08-28

Head of the
Certification Body

Germany and International Sales

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DIN EN ISO 9001:2000
Certificate No. 01 100 004023
Certificate No. 01 102 004023

Directive 94/9/EC (ATEX)
Certificate No. 01 220 004023

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