EN

Interface box for connection to control panel

(CT-WireCom Digital Interface Box)

Product instructions

CEOTRONICS
when it counts

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CT-WireCom Digital Interface Box
WireCom
Volume
PTT (Radio)
PTT (MIC on)
MIC
LS

1 Safety notices

⚠ DANGER

Immediate hazardous situation. Results in death or serious injury.

⚠ WARNING

Potentially hazardous situation. May result in death or serious injury.

⚠ CAUTION

Potentially hazardous situation with minor or moderate injury.

NOTICE

Indicates a situation that, if not avoided, may cause damage to the product or other property. Used to indicate useful information for efficient and safe use of the product.

1.1 Additional safety notices

NOTICE

The CE conformity applies to the device in its as-delivered condition, it expires if any adjustments are made to the product.

NOTICE

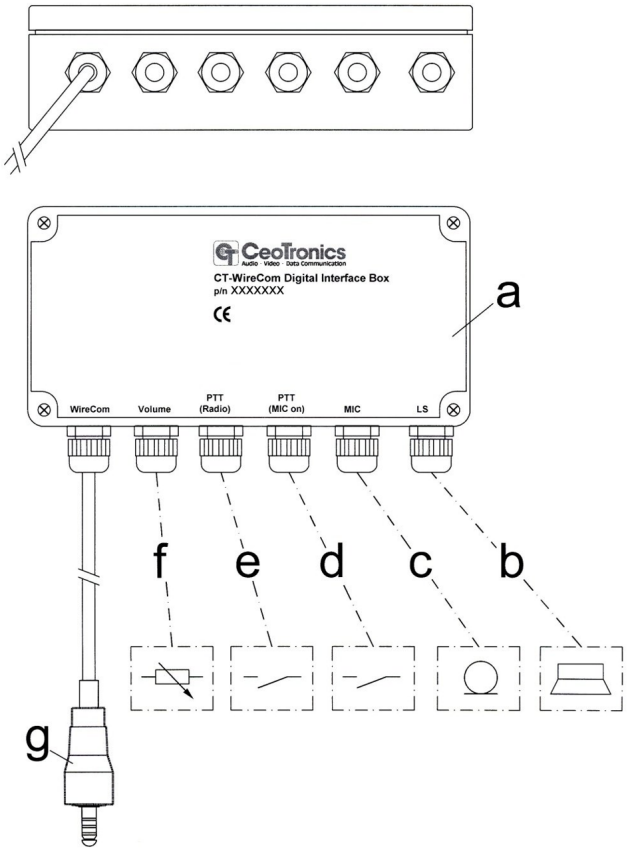
The device is not designed for outdoor use. If the device is nevertheless used outdoors, then appropriate measures must be taken to protect the device from the elements.

2 Introduction

The CT-WireCom Digital Interface Box is used to connect an external control panel and its components to a CEOTRONICS WireCom Intercom System. The interface box has a modular connection design that enables different external components of a control panel, such as a microphone, loudspeaker, PTT and controller to be connected separately. The external components are connected by separate cables via a PG cable gland in the interface box to terminal strips. The power for the interface box is supplied via a connection cable (see Product Overview [▶ 6]) to the CEOTRONICS WireCom communications interface. The CT-WireCom Digital Interface Box is available in several versions. The versions differ in terms of the type of connection cable for connecting to the WireCom communications interface.

3 Product description

3.1 Product Overview



a - housing

b - PG cable gland / connector for external loudspeaker

c - PG cable gland / connector for external microphone

d - PG cable gland / connector for external PTT (MIC on)

e - PG cable gland / connector for external PTT (Radio)

f - PG cable gland / connector for external loudspeaker controller

g - plug / connector for WireCom communication system

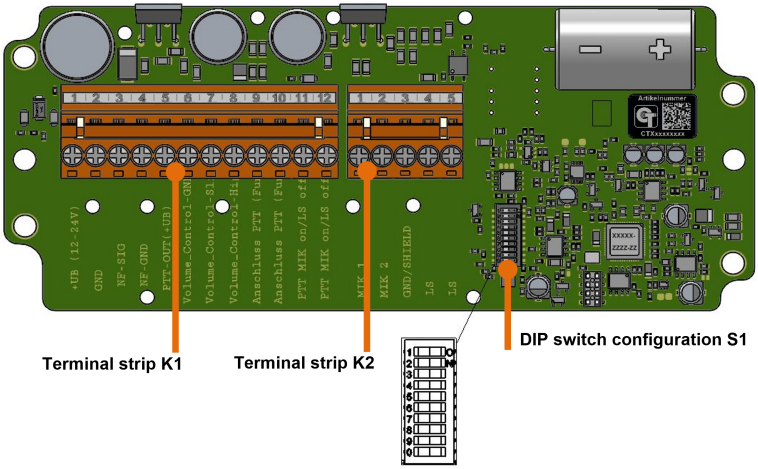
3.2 Technical Features

The interface box has an interfacing electronic circuit that enables a connection from different external components to a CT-WireCom communication system. This makes it possible to change the microphone gain as well as the loudspeaker settings using the corresponding switch positions on the printed circuit board and to adjust the external components used.

The components are connected via two terminal strips. The configuration for both terminal strips 1 and 2 is shown in the following section “Configuration of terminals”. Depending on the external component, different types of connections at the terminals are also necessary. The corresponding wiring for the different components is shown in the section “Connection types”. In addition to the wiring, the configuration is also dependant on the external components. Configuration is carried out via a miniature DIP switch on the printed circuit board. The necessary settings according to the component type are also shown in the section “Connection types”. [▷ 10]

3.2.1 Dimensions

175 x 80 x 57 mm (width x depth x height)



3.3 Configuration of terminal strips K1, K2 and switch S1

Terminal strip K1

Pin	Component / connection	Description	PG cable gland / Cable core
K1.01	WireCom	Supply voltage (12-24V)	g / brown
K1.02	WireCom	Ground power supply	g / green
K1.03	WireCom	Audio signal WireCom communication	g / white
K1.04	WireCom	Ground WireCom communication	g / -
K1.05	WireCom	PTT signal WireCom communication	g / yellow
K1.06	Volume	Potentiometer connection / input (volume control)	f
K1.07	Volume	Potentiometer connection / wiper (volume control)	f
K1.08	Volume	Potentiometer connection / output (volume control)	f
K1.09	PTT (Radio)	PTT button for radio device in WireCom system (Pin 1)	e
K1.10	PTT (Radio)	PTT button for radio device in WireCom system (Pin 2)	e
K1.11	PTT (MIC)	PTT button for speaking to one another in Wire-Com system (Pin 1)	d
K1.12	PTT (MIC)	PTT button for speaking to one another in Wire-Com system (Pin 2)	d

Terminal strip K2

Pin	Component / connection	Description	PG cable gland / Cable core
K2.01	MIC	Power supply microphone	c
K2.02	MIC	Microphone signal	c
K2.03	MIC	Ground microphone signal	c
K2.04	LS	Loudspeaker signal, LS+	b
K2.05	LS	Loudspeaker signal, LS--	b

DIP switch S1

Pin	Component / connection	Description	ON	OFF
S1.01	LS	Output gain for loudspeaker +0dB	on	off
S1.02	LS	Output gain for loudspeaker +6dB	on	off
S1.03	MIC	Input gain for microphone +0dB	on	off
S1.04	MIC	Connection +8V supply voltage at pin K2.01	on	off
S1.05	MIC	Microphone type	dynamic	electret
S1.06	MIC	Microphone type	electret	dynamic
S1.07	MIC	Microphone type	dynamic	electret
S1.08	MIC	Connection +8V supply voltage at pin K2.02 for electret microphone (MIC bias)	on	off
S1.09	MIC	Input gain microphone +14dB	on	off
S1.10	MIC	Input gain microphone +30dB	on	off

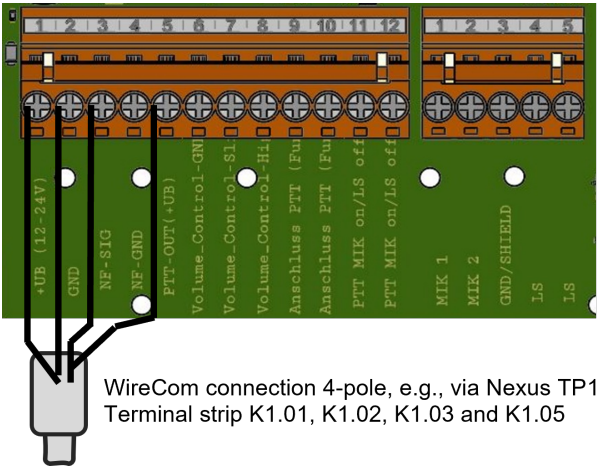
3.4 Connection types

3.4.1 WireCom connection cable

Depending on the product version, a WireCom connection cable is pre-connected to the circuit board at the factory. There are two possible connection options depending on the type of cable and the corresponding connector.

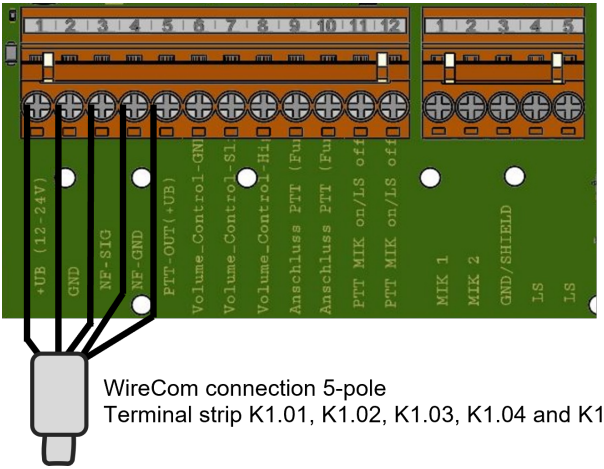
Preference should be given to the 5-wire option. Here, the reference ground for the audio signal is separate from the power supply ground. In the case of a 4-pole connector, the 4-wire option can be used. The audio signal connection at pin K1.03 then uses the power supply ground at pin K1.02.

4-Wire option



WireCom connection 4-pole, e.g., via Nexus TP120
Terminal strip K1.01, K1.02, K1.03 and K1.05

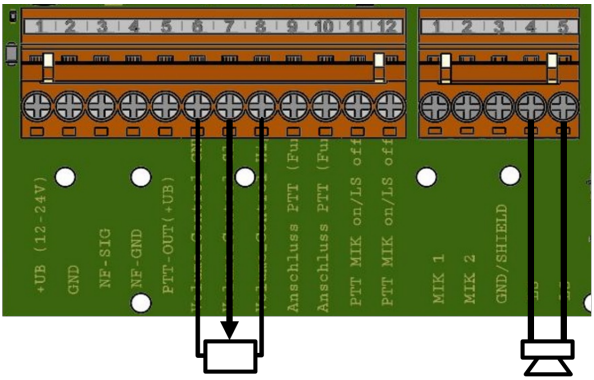
5-Wire option



WireCom connection 5-pole
Terminal strip K1.01, K1.02, K1.03, K1.04 and K1.05

3.4.2 Loudspeaker and loudspeaker controller

The loudspeaker controller and loudspeaker are connected as shown in following Figure. Note the position of the wiper terminal when installing the controller. If necessary, you might have to swap the configuration of K1.06 and K1.08 if turning clockwise reduces the volume instead of increasing it.



Volume control connection
Terminal strip K1.06, K1.07 and K1.08

Loudspeaker connection
Terminal strip K2.04 and K2.05

NOTICE

The connecting cable to the external volume control must be at least 3-wire and shielded to avoid interference

The gain for the loudspeaker can be configured using the first two DIP switches S1.01 and S1.02. There are two permitted gain levels.

Gain 0dB

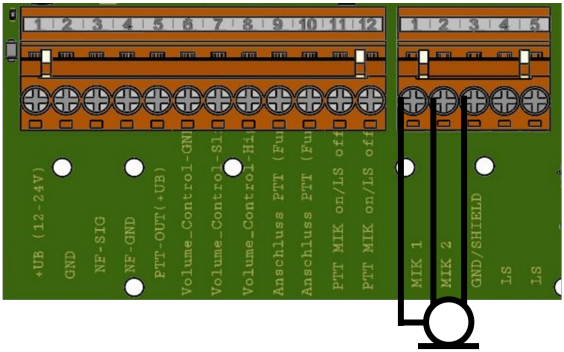
DIP switch	OFF	ON
S1.01		O
S1.02	O	

Gain +6dB (recommended)

DIP switch	OFF	ON
S1.01	O	
S1.02		O

Other switch settings are not permitted and must not be selected.

Electret microphone 3-wire



Connection electret microphone 3-wire
Terminal strip K2 – K2.01 (MIK1=+8V), K2.02 (MIK=NF) and K2.03 (GND)

Configuration microphone type

DIP switch	OFF	ON
S1.04		O
S1.05	O	
S1.06		O
S1.07	O	
S1.08	O	

Configuration 0dB gain (recommended)

DIP switch	OFF	ON
S1.03		O
S1.09	O	
S1.10	O	

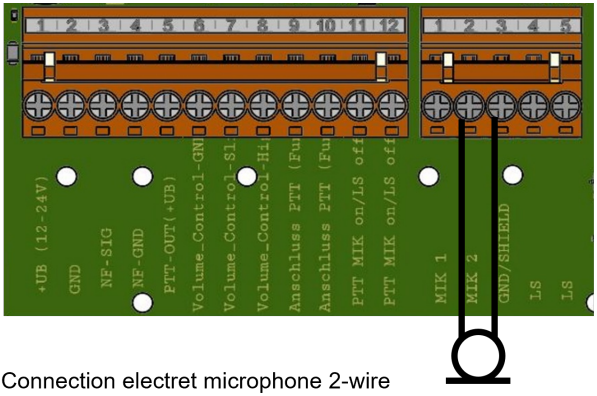
Configuration +14dB gain

DIP switch	OFF	ON
S1.03	O	
S1.09		O
S1.10	O	

Configuration +30dB gain

DIP switch	OFF	ON
S1.03	O	
S1.09		O
S1.10		O

Electret microphone 2-wire



Connection electret microphone 2-wire
Terminal strip K2 – K2.02 (MIK2=AF/+AF) and K2.03 (GND)

Configuration microphone type

DIP switch	OFF	ON
S1.04	O	
S1.05	O	
S1.06		O
S1.07	O	
S1.08		O

Configuration 0dB gain

DIP switch	OFF	ON
S1.03		O
S1.09	O	
S1.10	O	

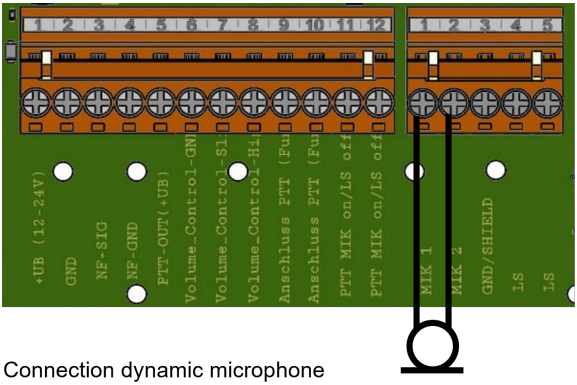
Configuration +14dB gain (recommended)

DIP switch	OFF	ON
S1.03		O
S1.09	O	
S1.10	O	

Configuration +30dB gain

DIP switch	OFF	ON
S1.03	O	
S1.09		O
S1.10		O

Dynamic microphone (optional, depending on product version)



Connection dynamic microphone
Terminal strip K2 – K2.01 (MIK1) and terminal K2.02 (MIK2)

Configuration microphone type

DIP switch	OFF	ON
S1.04	O	
S1.05		O
S1.06	O	
S1.07		O
S1.08	O	

Configuration 0dB gain (recommended)

DIP switch	OFF	ON
S1.03		O
S1.09	O	
S1.10	O	

Configuration +14dB gain

DIP switch	OFF	ON
S1.03	O	
S1.09		O
S1.10	O	

Configuration +30dB gain

DIP switch	OFF	ON
S1.03	O	
S1.09		O
S1.10		O

Microphone gain

The appropriate microphone gain depends on the installation situation and speaking distance. The recommended settings relate to the installation of reference microphones.

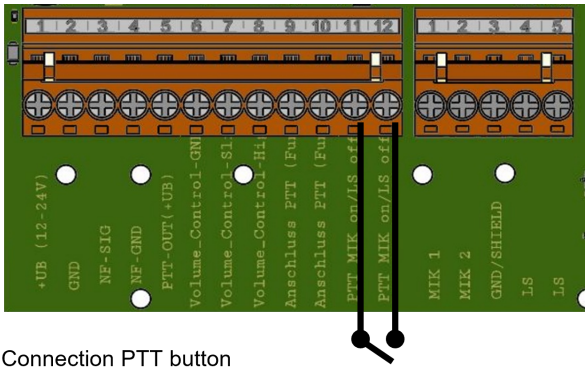
3.5 DIP switch default configuration

On delivery, the DIP switch is configured to the settings for connecting a 3-wire microphone and has the volume gain of +6dB. In this configuration, the printed circuit board electrically corresponds to previous products, which did not allow adjustments to be made to the switch positions. The products are mutually compatible.

DIP switch	OFF	ON
S1.01	O	
S1.02		O
S1.03		O
S1.04		O
S1.05	O	
S1.06		O
S1.07	O	
S1.08		O
S1.09	O	
S1.10	O	

3.6 PTT button (MIC on)

An external button can be connected via the two PTT cables. Pressing the button activates the microphone and makes it possible to speak into the WireCom communication system. In order to suppress feedback, the loudspeaker is switched off during speaking.

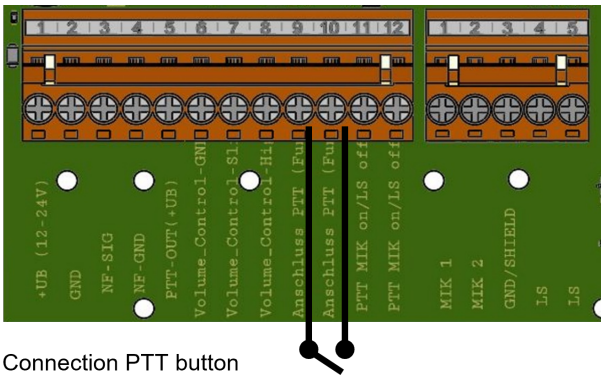


Connection PTT button
Terminal strip K1 – K1.11 (PTT MIK on / LS off)
and terminal K1.12 (PTT MIK / LS off)

3.7 PTT button (Radio)

An external button can be connected via the two PTT wires. Pressing the button activates the PTT signalling for a connected radio device in the WireCom system. PTT signalling is via pin K1.05 on terminal strip 1. When the button is pressed, the input voltage is supplied there from pin K1.01.

To speak into the connected radio device, the PTT button (MIC on) connection must be connected in parallel to the PTT button (Radio). The connection must occur via a separate normally open contact. Parallel connection of the terminals K1.09/K1.11 and K1.12 to a physical button is not permitted. Depending on the desired function, a button with two separate normally open circuits may be required.



Connection PTT button
Terminal strip K1 – K1.09 (Connection PTT) and
Terminal K1.10 (Connection PTT)

4 Installation

4.1 Connecting the cables

Before the connection cable is connected to the communication device via the connector plug (Figure 1/g), ensure that all cable connections are present in accordance with Section 3. In the event that not all the connections are present, carry out the necessary installation steps.

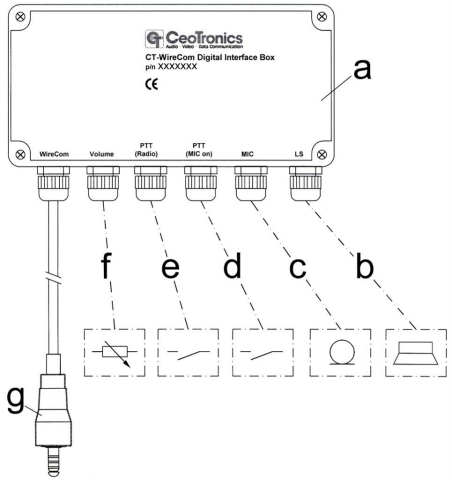
NOTICE

Please note that the installation of the interface box may only be carried out by trained technical personnel.

5 Switching on and operation

1. Connect the connector plug (g) to the communications interface. The interface box is then ready for full-duplex communication. The desired volume for the external loudspeaker is adjusted on the external loudspeaker controller (f).
2. First set the receiver volume to approx. 1/2 of the available loudspeaker volume. Then check the speaker volume. Do not set the final volume any higher than necessary. Very high volume settings may damage hearing, especially over extended periods of use.
3. To speak over the microphone in the control panel, you must press and hold the external PTT button (MIC on; d) for as long as you are speaking.

Depending on the application requirements, an external PTT button (Radio; e) can be used to manually key the transmitter of a radio device that is connected to the WireCom system via a radio interface. Push the external PTT button (Radio; e) to key the radio device transmitter and the external PTT button (MIC on; d) to activate the microphone. You can speak into the microphone for as long as you hold down both external PTT buttons. After releasing the external PTT buttons, the interface box returns to standby/receive mode. If the radio device receives calls, these are also fed into the WireCom system. For “normal” wired communication, the external PTT button has no function.



a- housing

b- PG cable gland / connector for external loudspeaker

c- PG cable gland / connector for external microphone

d- PG cable gland / connector for external PPT (MIC on)

e- PG cable gland / connector for external PTT (Radio)

f- PG cable gland / connector for external loudspeaker controller

g- plug / connector for WireCom communication system

6 Product liability

Please note that any repair, modification or replacement of components – including connectors and cables – must be carried out only by CEOTRONICS or specialist companies authorised by CEOTRONICS. In all other cases, our warranty and liability for the product will automatically lapse and transfer to the party requesting the repair, modification or replacement concerned.

7 Maintenance and care

7.1 Inspecting devices

Inspect your CEOTRONICS devices, especially cables and connectors, regularly for any damage or wear and have them repaired if necessary.

7.2 Cleaning

Do not use alcohol or other solvents for cleaning. Clean the device with a suitable cloth dampened with clean water. If necessary, you can also use a mild soapy solution, e.g. washing-up liquid. Use only alcohol-free disinfectants. Clean the contacts of connectors with a standard contact cleaner.

7.3 Storage

After use, store the cleaned product in a clean, dry place at normal room temperature and humidity.

Notes

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