

InduTel IP4
Instruction manual



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The greatest care was taken in the compilation of texts and illustrations as well as in the creation of the software. Nevertheless, errors cannot be completely ruled out. This documentation is therefore provided to the exclusion of any guarantee or warranty of suitability for particular purposes. FHF reserves the right to improve or modify this documentation without prior notice.

Should information in this instruction manual deviate from that in the printed instruction manual enclosed with the product, the information contained in the instructions enclosed shall apply in principle.

Note: This instruction manual must be read carefully before installing the device.
The contents of the packaging must be checked for completeness.

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General operating instructions

1. All IP addresses shown in illustrations in this document are mere examples and will vary depending on the network structure and setup.
2. InduTel IP is a VoIP (Voice over Internet Protocol) telephone and is operated on a 10/100/1000 BaseT Ethernet network. Various protocols are available for the connections. Operation corresponds to that of an analogue telephone.
3. Power is supplied via Power over Ethernet (PoE) from the network or via a separate DC voltage source. Only one power supply may be connected at a time.
4. Programming and parameterisation are exclusively via the web server of the telephone. This can be reached via the standard web browser of a PC. To access the web server, the username and password must be entered. The factory settings for the username and password are:

Username: admin
Password: ip161

The device is pre-set to DHCP client mode.

5. The telephone has a cradle with magnetic contact as a hook switch. To terminate an existing connection, the handset must be hung up. Pressing the disconnect button in the keypad is sufficient for interrupting an existing connection.
6. The internal relay contacts only allow switching of voltages up to $30 V_{AC}$ or $53 V_{DC}$. The maximum permissible current depends on the operating mode (see chapter Technical data)
7. A housing connector enables connection to the network (LAN).
8. The handset of the phone is equipped with a stray field coil for coupling with hearing aids. Those wearing a hearing aid with an inductive receiver can receive the signal from the hearing capsule directly through the hearing aid.

Delivery

Contents of packaging

- InduTel IP telephone
- This instruction manual (optional)
- Secure Configuration Guidance – Notes on safe operation and for securing against cyber-attacks.
- LAN device connection plug

Telephone pre-sets

IP address	DHCP client
Mask	DHCP client
Master reset to factory	Press and hold the * button, establish power supply, hold button pressed for 7-15 seconds.
Username	admin
Password	ip161
Redial list	empty
Speed-dial memory	empty
Relay function	"on alert"
Ringtone	"3tone 1"
Ringtone speed	5
Ringtone volume	6
Handset volume	6

Assembly and installation

An IP address is essential for the operation of the device. For initial setup, this must be provided by a DHCP server. For security reasons, the username and password set for delivery should be changed. (For further notes, see: Secure Configuration Guidance)

The telephone should be assembled only by qualified specialist personnel.

Wall assembly

The telephone must be mounted on a solid, flat surface.

Attach the telephone to the wall or a suitable stand with four screws (up to max. Ø 8 mm in size).

Lift the handset. Screw off the key plate. Run the existing LAN cable through the cable gland of the housing, attach the supplied LAN device connector plug and connect it to the RJ-45 socket X501 (see: Contact assignment) inside the phone.

Connection to a separate DC voltage supply

If a PoE supply is not available, the telephone can also be operated with a DC voltage of 24 V to 48 V.

Lift the handset. Screw off the key plate (4 mm hex socket). Run the supply cable through the cable gland and place the two connecting wires on the 7 (+) and 8 (-) contacts (see: Contact assignment). Fasten the supply cable using the cable gland. Make sure that the connection cable to the keyboard is plugged in. Then, attach the key plate back on to the phone with four screws. Finally, replace the handset.

Use only cables with a sheath diameter of 5 to 9 mm, otherwise the IP 66 protection level cannot be guaranteed. If you want to use a separate DC voltage supply and the relay contact at the same time, you will have to use a four-core cable.

If separate DC voltage supply and connection of the internal relay contact are not required, it must be ensured that the sealing element is in the cable gland.

Contact assignment

Contacts 1 – 4 and X502 are model-dependent and are not present in all devices.

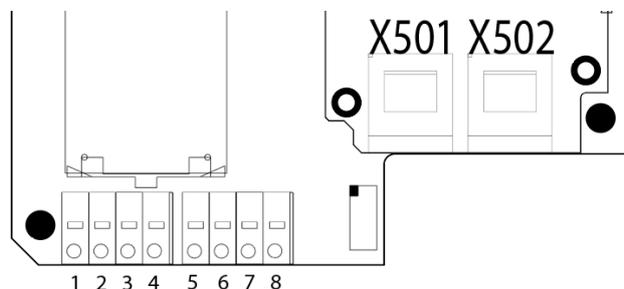
Tightening torque contacts 1 – 8: 0.35 ... 0.4 Nm

Connection of the internal relay contact

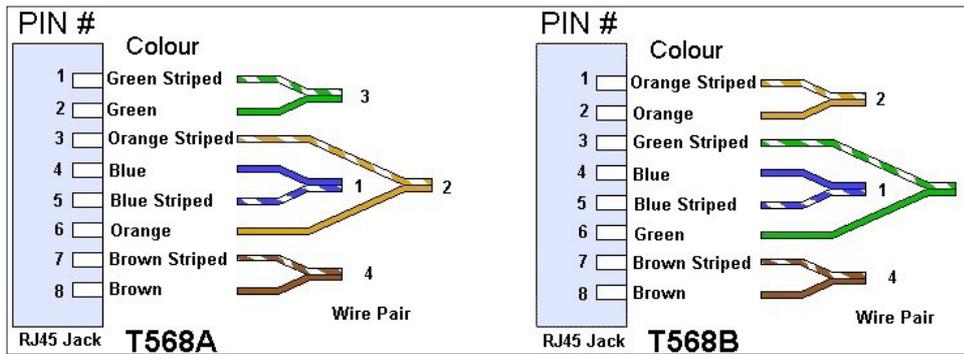
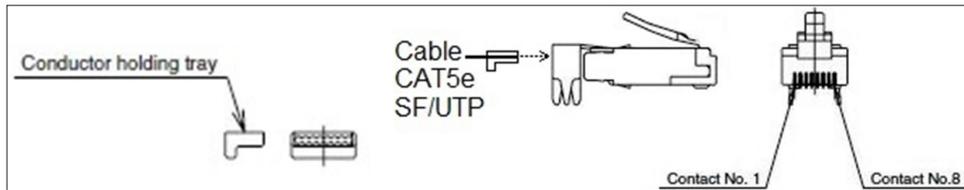
Lift the handset. Screw off the key plate (4 mm hex socket). Run the connecting cable through the cable gland and place the two connecting wires on the 5 and 6 contacts (see: Contact assignment). Fasten the connecting cable using the cable gland. Make sure that the connection cable to the keyboard is plugged in. Then, attach the key plate back on to the phone with four screws. Finally, replace the handset.

Use only cables with a sheath diameter of 5 to 9 mm, otherwise the IP 66 protection level cannot be guaranteed. If you want to use a separate DC voltage supply and the relay contact at the same time, you will have to use a four-core cable.

If separate DC voltage supply and connection of the internal relay contact are not required, it must be ensured that the sealing element is in the cable gland.



Assembly of LAN device connection plug RJ45



Apply the PIN assignment depending on the character of the installation on site.



Recommended tool:

LogiLink universal crimping pliers

WZ0003

Operating elements



Number keys

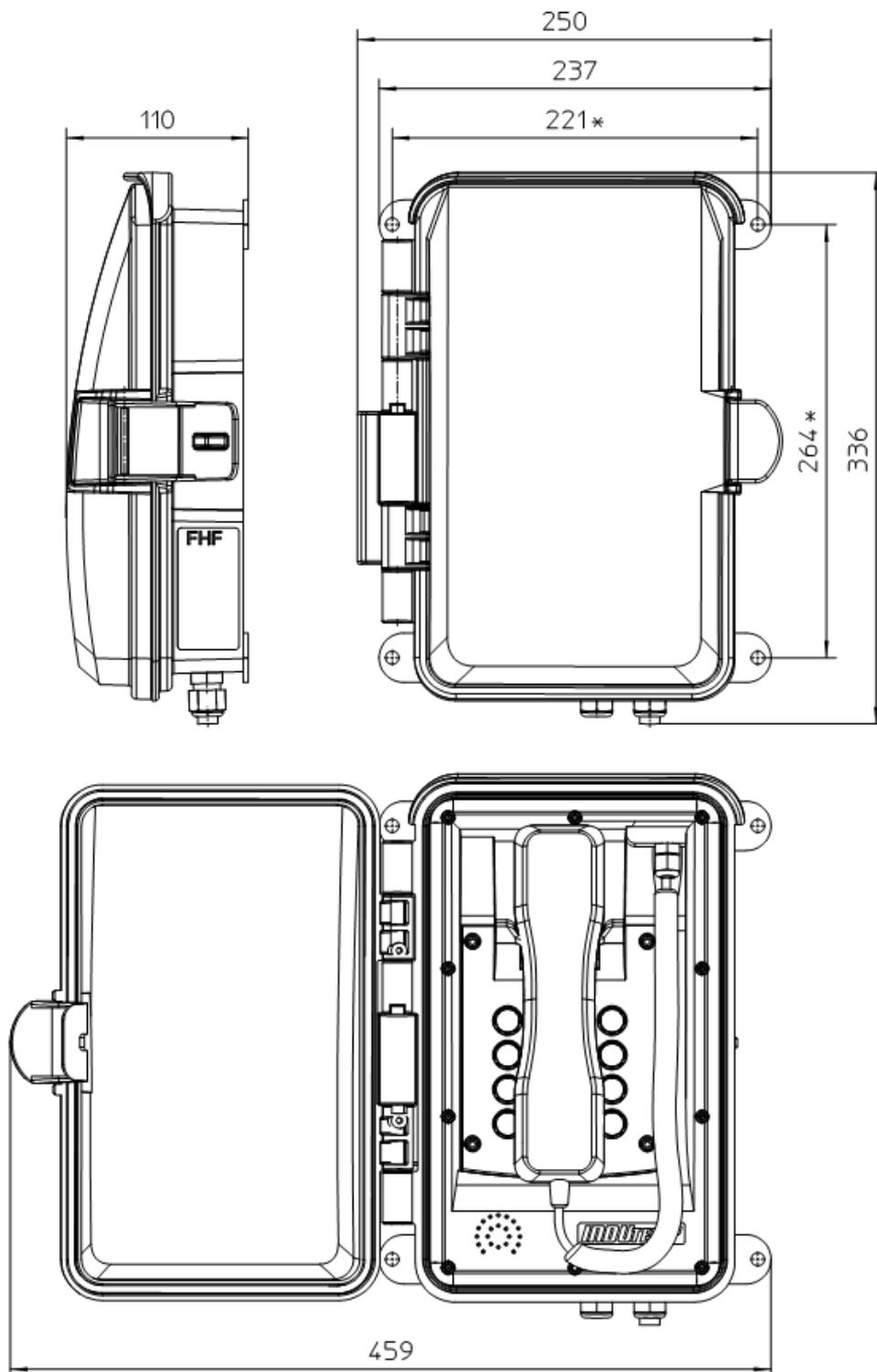
← **Speed-dial (1st button)**

← **Disconnect**

← **Redial**

← **Callback / Toggle**

Dimensions



* Drilling dimensions

Operation

Call / answer

Calls can be made or answered by lifting the handset.

Dialling

Enter the telephone number you wish to dial using the number keys. Once the connection has been established, you can use the number keys and the star and hash keys to transmit a touch-tone signal.

The dialling process is what is known as "block dialling". This means that the numbers must be entered quickly one after the other. A certain length of pause will cause the numbers entered up to that point to be dialled.

Web server

This section describes the administration/configuration of the InduTel IP telephone. All functions and properties of the telephone can be set via the web server. The web server is in English. This cannot be changed.

IMPORTANT/GENERAL NOTE:

BEFORE PARAMETERS CAN BECOME EFFECTIVE, THEY MUST BE ADOPTED BY PRESSING "OK".

Speed-dial

With the key and a subsequent number key, you can dial phone numbers that you have saved in advance with the help of the web server of the InduTel IP.

Redial

By lifting the handset and pressing the redial button (), the last number entered will automatically be dialled again, provided the InduTel IP has not been restarted.

Disconnect

If you want to end the call and directly start a new one, you can press the Disconnect key () instead of hanging up the handset. The device will then be in sleep mode. Once a new telephone number has been entered using the number keys, press the redial key (). The number entered will be dialled.

Authentication

Access to the web server is via the web browser. You should use an up-to-date version of a common web browser.

Take the IP address of the telephone from your network equipment. (e.g. DHCP server)

IMPORTANT/GENERAL NOTE: The telephone automatically redirects to an https://<ip> connection. The certificate used for this is issued from the device itself. The trust status must be adjusted in the web browser used.

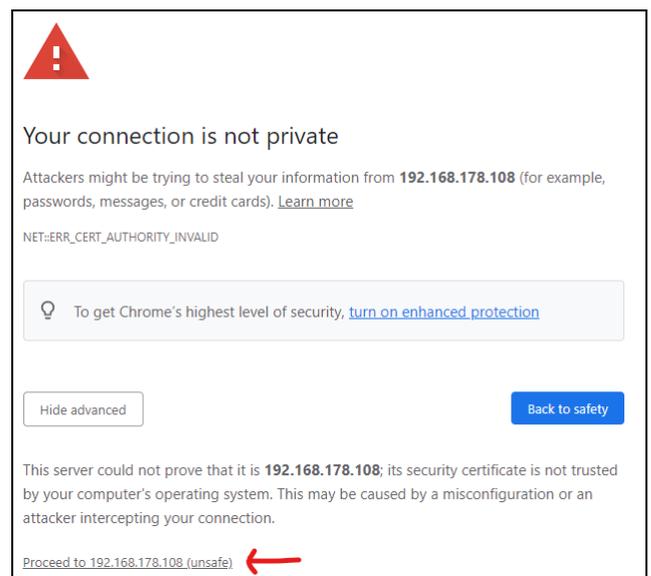


Figure 1. Example of certificate issued from the device in the Chrome browser

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You will be asked to enter a username and a password.

The factory settings for the username and password are:

Username: admin

Password: ip161



InduTel IP4

Login to System Administration ▼

Username

Password

Login

Figure 2. Prompt to enter username and password



InduTel IP4

Welcome admin

Current sessions 1 (all users 1)

OK

Figure 3. Message after successful login

Menus

Since the InduTel IP is a display-less VoIP telephone, all settings are managed via the web server. No settings can be made on the device itself.

General

Info

Once you have been successfully authenticated, you will land on the "General" main menu and the "Info" sub-menu.

Figure 4. General -> Info page for the telephone.

Admin

You can change the user password in the "Admin" sub-category (Fig. 5) The password must have at least 6 characters and contain at least one number, one lower-case letter and one upper-case letter. For security reasons, the password must be entered twice.

Figure 5. Administration page for the telephone

ETH0/IP4/IP6

In these menus, you can configure settings according to your network requirements and use them to analyse connection problems.

Device

The Device menu provides device-specific settings

Relays



Figure 6. Device-specific relay settings

In the “Relays” sub-menu (Fig. 6) you can configure the settings for the onboard relay as well as for relays 1 and 2. (Relays 1 and 2 not in all models). In the default settings upon delivery, the “Alert on” mode (not shown) is active.

Keypad

192.168.178.108: InduTel IP4

General ETH0 IP4 IP6 **Device** Phone Services Maintenance

Relays **Keypad** Audio Extended-Preferences

Input Line 1 ▼

Input Line 2 ▼

Input Line 3 ▼

Important note:
This configuration has effect only, if an illuminated keypad or cradle is installed.

– Keypad Light Options –

Incoming Call Keypad Blinking Period [ticks]

Registration Alert Keypad Blinking Period [ticks]

Keypad Light

– Cradle Light Options –

Incoming Call Cradle Blinking Period [ticks]

Registration Alert Cradle Blinking Period [ticks]

Cradle Light

– Registration Options –

Registration active 1 2 3 4 5 6

Figure 7. Device-specific keypad settings

The effects of the settings in this menu depend on the model.

In the “Keypad” sub-menu, you can define the functions of the three potential-free inputs (not on all models). With the “Function-Key” function, you can assign an action to the function in the menu Phone -> User-(1-6) -> Function-Keys (see: Phone). You can also connect the key illumination as well as the illumination option for the cradle (both depending on model) with actions on the phone (Fig.7).

Audio

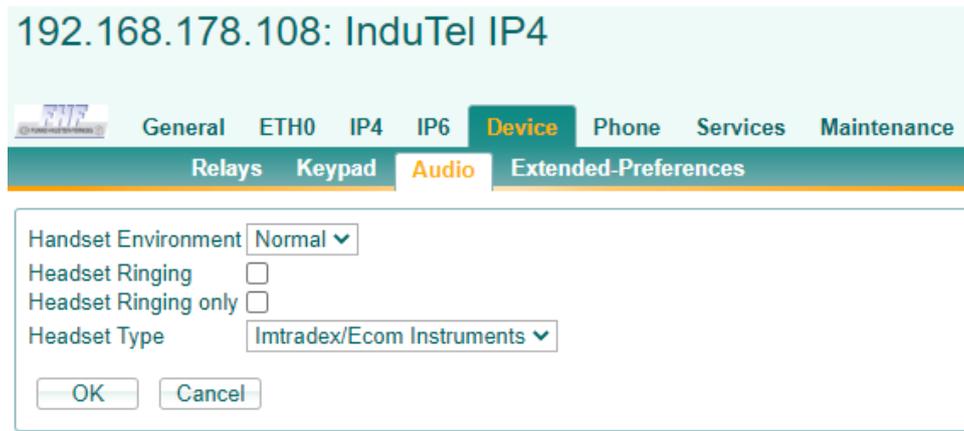


Figure 8. Device-specific audio settings

In the “Audio” menu, additional settings for the headset (model-dependent) and handset can be configured (Fig. 8).

Extended-Preferences

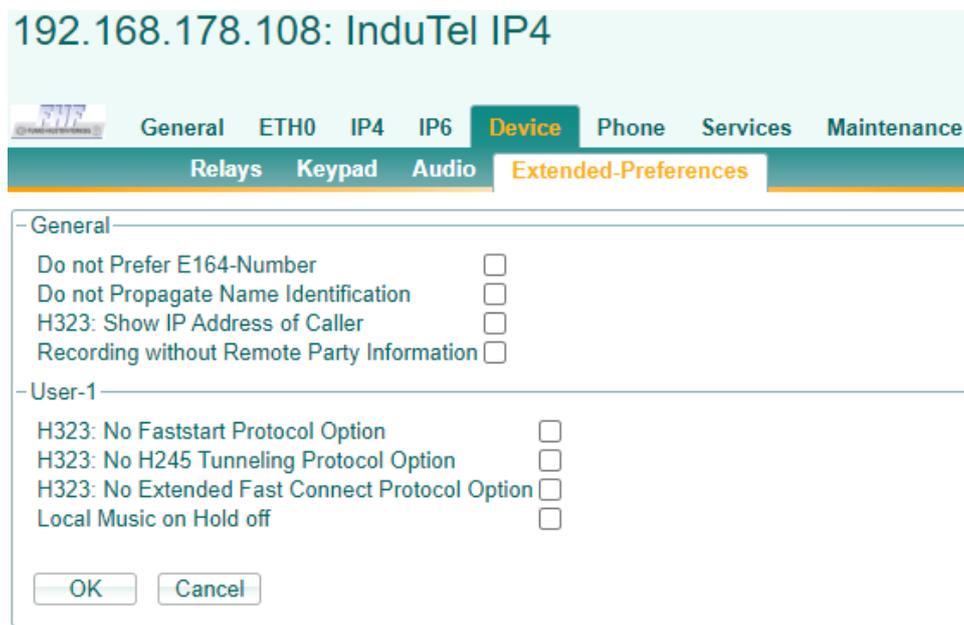


Figure 9. Extended basic settings

In the Extended-Preferences (Fig. 9) menu, extended settings can be configured. The effects of these settings depend on the model and system.

Phone

Under the “Phone” menu item, general settings such as ringtone, direct-dial or configuration lock as well as up to 6 registrations can be configured.

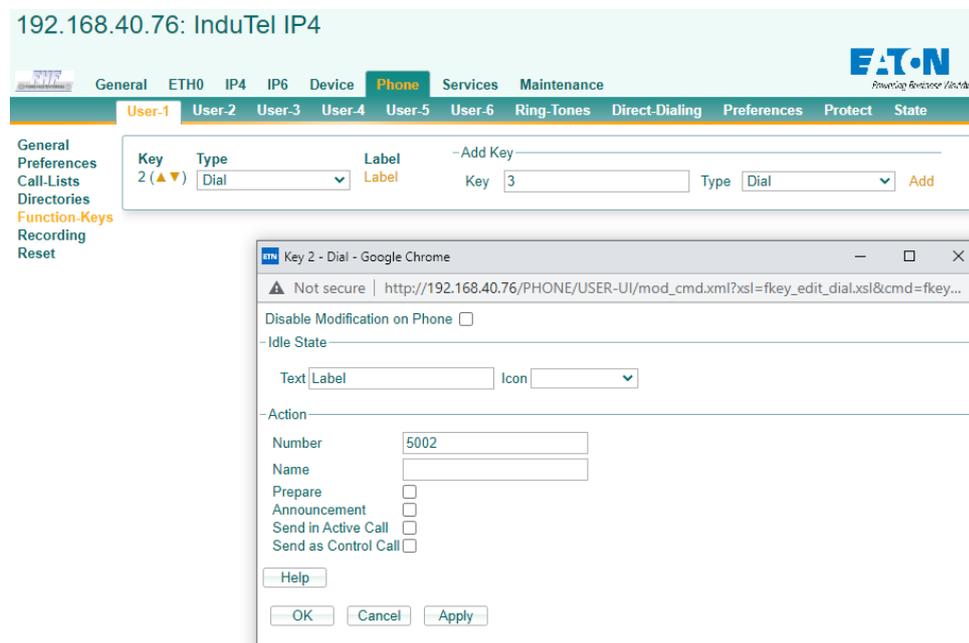


Figure 10. Setting up a speed-dial using button 2 as an example.

Under the “Function-Keys” menu item, the buttons 0-9 can be assigned a speed-dial number, as mentioned in the Speed-dial section. Fig. 10 shows how the “2” button, for example, can be assigned the speed-dial number “5002” and the text “Label”. It should be noted that the button  corresponds to the key value “10”.

Volumes

Under the sub-menu “Volumes”, the volume of the handset and of the ringtone speaker can be changed (depending on the model). Fig. 11 shows the factory setting.



Figure 11. Setting the handset and ringtone volumes.

The setting of Ring tone volume can be adjusted per registration (sub-menu “User#”).

Services

In the “Services” menu, the services provided by the device can be adapted to the desired circumstances. In addition, there are also settings for automatic update and log functions in this menu.

Maintenance

Under the “Maintenance” menu item, you will find tools for diagnosing connection problems (“Diagnostics”), manual upload and download options as well as a debug functionality.

A particular note on the command line (Maintenance->Diagnostics->Command)!

As delivered, an automatic redirection to the https protocol as well as a session-based login is activated. In the session-based login, commands can only be executed in “debug” mode. Fig.12 shows an example of an error message when “debug” mode is not activated.



Figure 12. Commands cannot be executed in the session-based login.

To activate this, please proceed as follows (Fig. 13 to Fig. 19):

Delete the “/session” part in the address bar of the browser and confirm the new address.

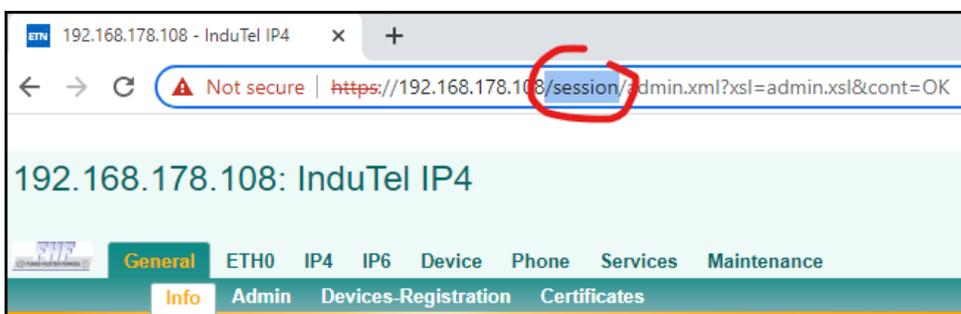


Figure 13. Remove “/session” from the URL.

When you now go to the Maintenance->Diagnostics->Config-Show page, you will be prompted to re-enter the username and password.

Log in again.

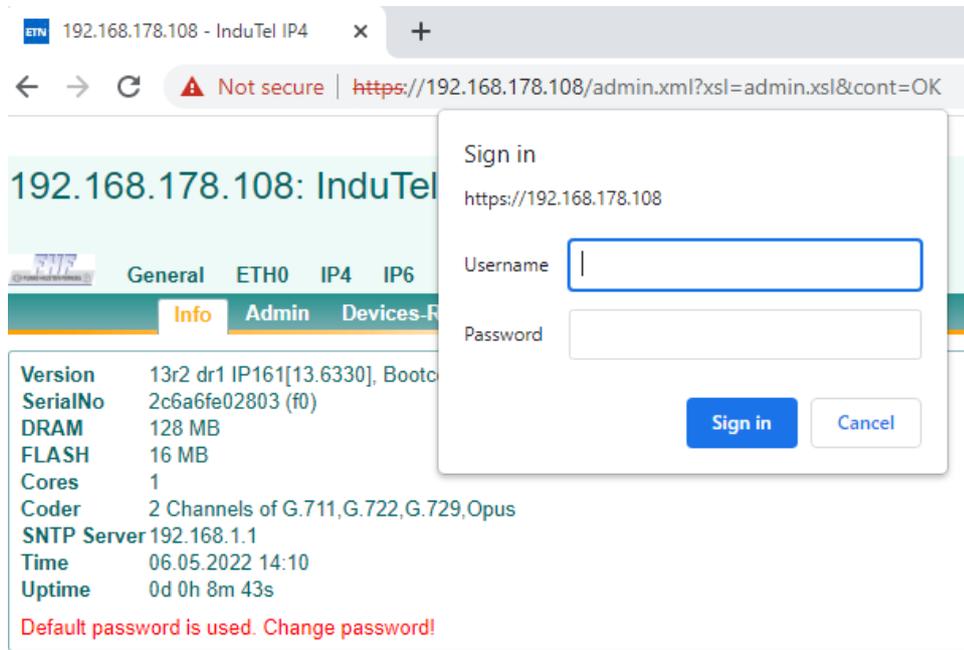


Figure 14. New login outside the "session".

Check the configuration of the CPU module.

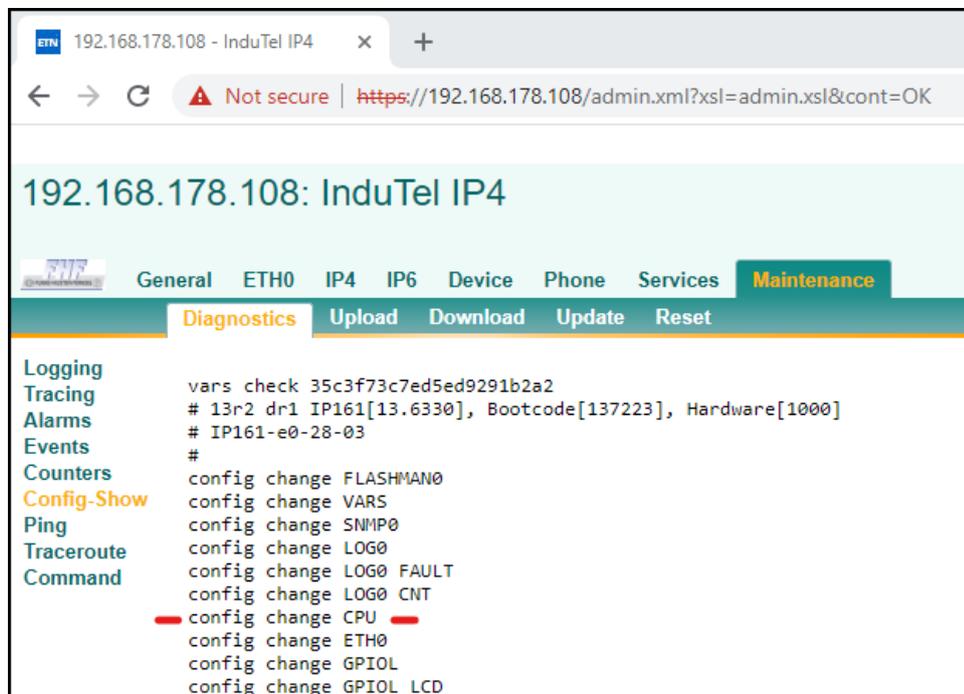


Figure 15. Example CPU configuration

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Copy the entire line (here: config change CPU)

Select the menu item "Command"; enter an exclamation mark "!" in the input field and paste the copied line after it. Have the line end with " /debug" and click on the "Command" button.

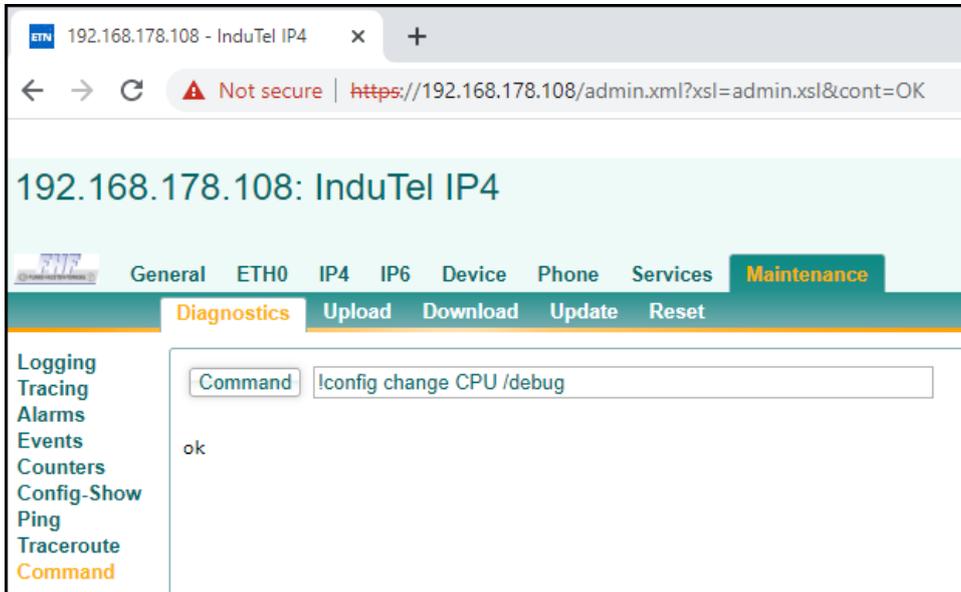
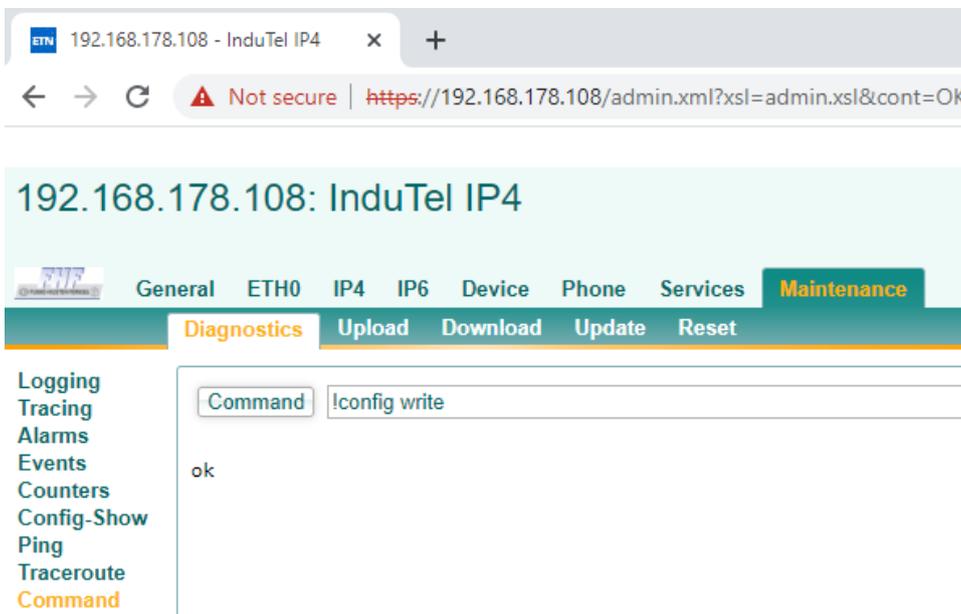


Figure 16. Confirmation after issuing the "config change" command

The confirmation "ok" will appear.

Then execute the commands



and



Restart the telephone.

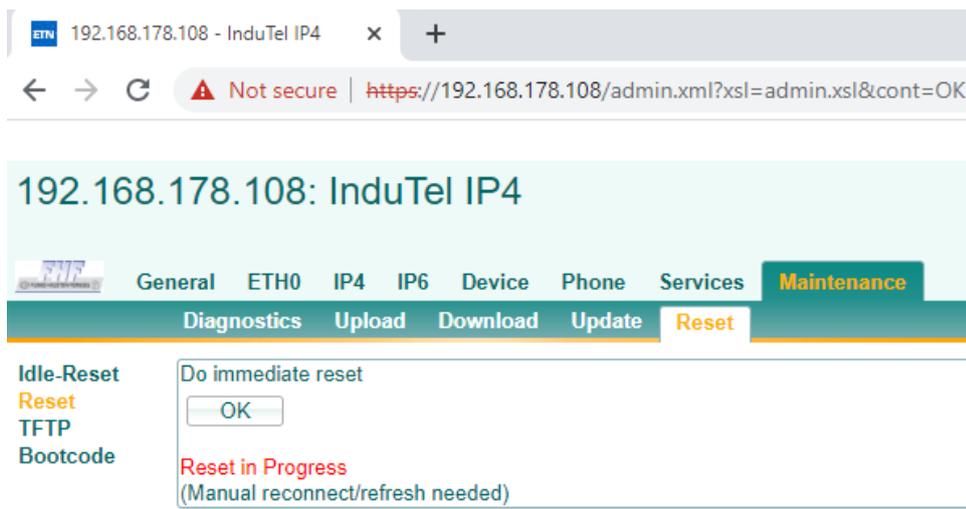


Figure 17. Reset started

Restart your browser and sign in again to the device.

You can see on the Maintenance->Diagnostics->Config-Show page if the debug mode is active.

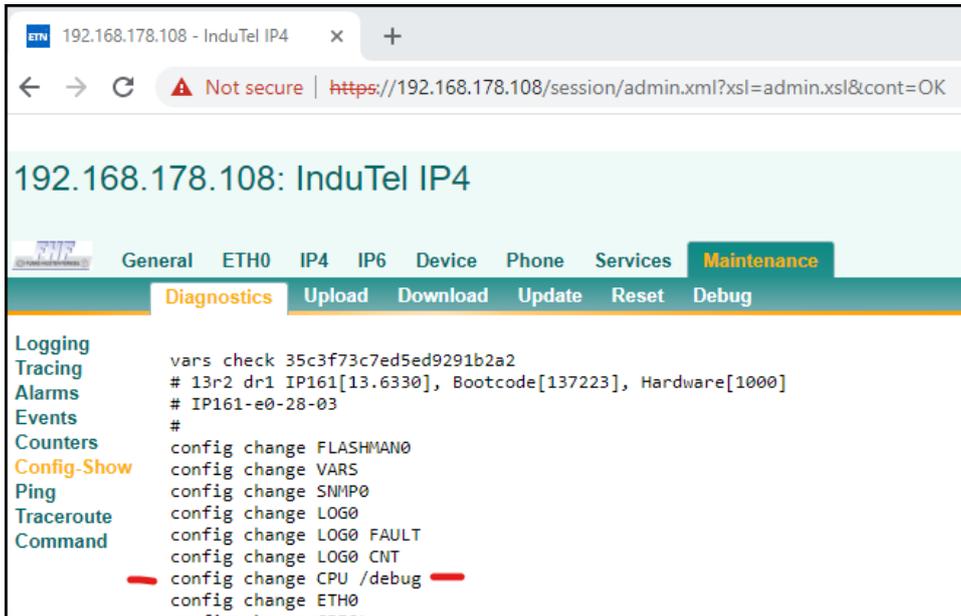


Figure 18. Example configuration, “ /debug” switched on

Now, commands can also be executed within a session.

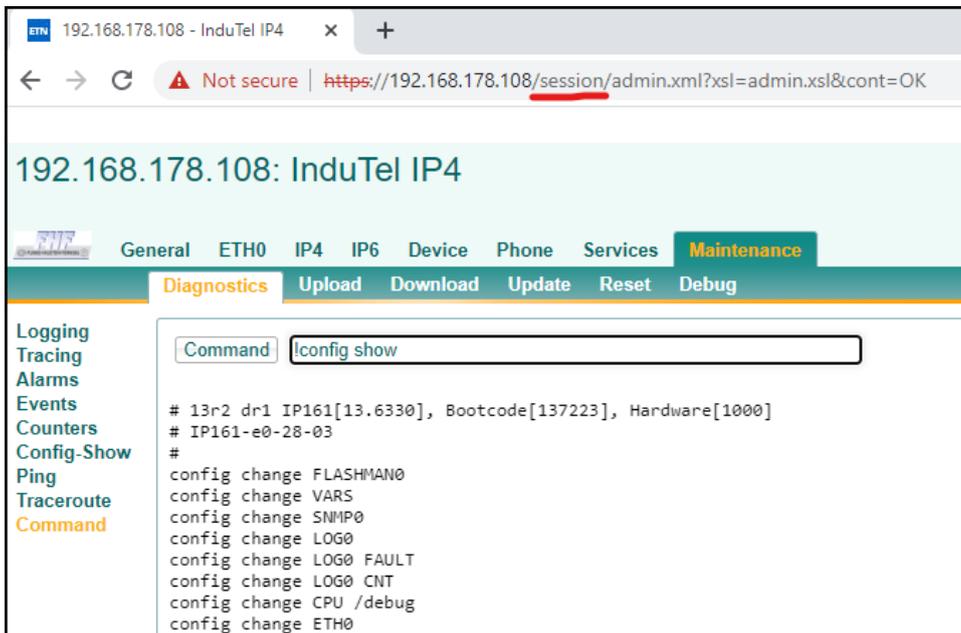


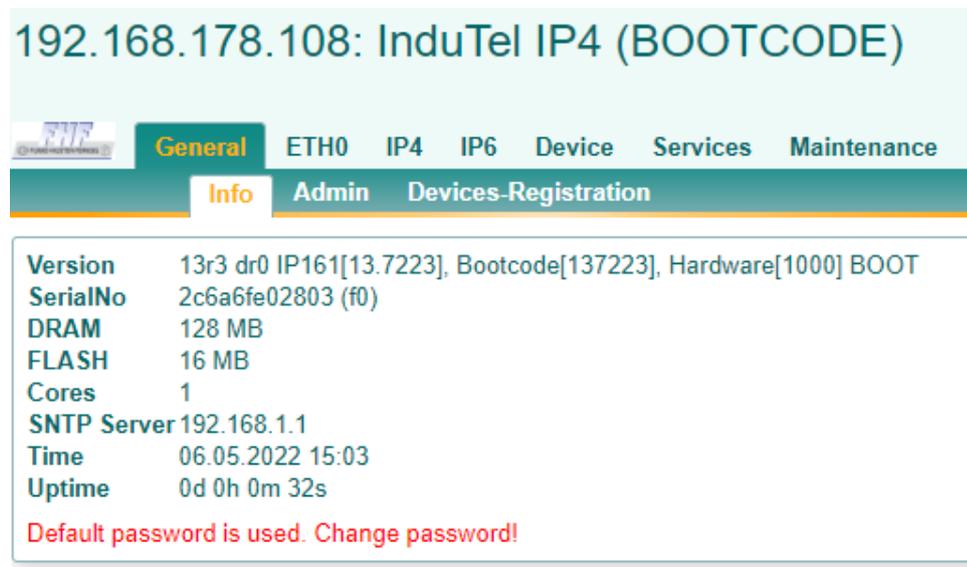
Figure 19. Command lines within a “session”

To exit the debug mode, you can restore the factory settings or remove the “ /debug” addition from the configuration of the CPU module. To do this, copy the line “config change CPU ...” but without the “ /debug” addition. Run the commands “!config change CPU ...”, “!config write” and “!config activate” one after the other and then restart the device.

Factory settings

To reset the device to factory settings, disconnect the power supply, press and hold the  button, restore the power supply and hold the button pressed for 7 – 10 seconds (some PoE supplies take some time to turn on the power supply. This lead time must be added to the holding time.)

If you do not press and hold the button long enough, the phone may start the BOOTCODE with minimal firmware. Fig. 20 shows a BOOTCODE that has started.



192.168.178.108: InduTel IP4 (BOOTCODE)

General ETH0 IP4 IP6 Device Services Maintenance

Info Admin Devices-Registration

Version	13r3 dr0 IP161[13.7223], Bootcode[137223], Hardware[1000] BOOT
SerialNo	2c6a6fe02803 (f0)
DRAM	128 MB
FLASH	16 MB
Cores	1
SNTP Server	192.168.1.1
Time	06.05.2022 15:03
Uptime	0d 0h 0m 32s

Default password is used. Change password!

Figure 20. Started minimal system

In this mode, the telephony function and the corresponding settings are not available.

To get back to normal mode, restart the telephone.

General information

Service

You have purchased a modern FHF product that is subject to careful quality control. If you have any questions about the telephone or if there is a malfunction – even after expiry of the warranty period – please contact FHF. Have the type specification and article number at hand (please refer to the type plate for this information).

This instruction manual has been created with the utmost care, but errors may have crept in. The manufacturer reserves the right to make changes that serve the purpose of correction or technical progress, even without prior notice. Please check the website at regular intervals.

Care and maintenance

The telephone is maintenance-free. Nevertheless, when it is used with exposure to heavy contamination by dust, grease, oil, etc., cleaning should be carried out from time to time. Wipe the handset and the device with a damp cleaning cloth.

Attention! Never use pointed objects for cleaning. Please avoid the use of other cleaning and abrasive agents.

Mobile housing components must NOT (!) be moistened with greasing agents/lubricants such as oils, grease, etc.!

Warning and safety notes

This device is a weatherproof phone designed specifically for operation in harsh industrial environments. The following warnings and safety instructions must be observed:

1. Care must be taken to ensure proper connection. The connection cord must be laid in such a way that there is no risk of tripping.
2. Protection class IP 66 is only guaranteed when the housing is closed.
3. The telephone may only be operated under the specified environmental conditions (see "Technical data"). Adverse environmental conditions, such as ambient temperatures that are too high or too low, are not permissible since they can encourage the failure of electronic components.
4. It is important to make sure that the telephone, connection cord, etc. are not damaged. The phone may not be operated if it is damaged.
5. When operating the telephone, the legal and commercial regulations, accident prevention regulations, as well as electrical regulations must be observed.
6. In the case of repairs, only original spare parts are permissible, and these must be exchanged professionally. The use of other replacement parts may lead to damage, invalidating the warranty.
7. Before repairing or replacing the phone, it must be disconnected from the power supply. If maintenance or repair while connected is unavoidable, this may only be undertaken by qualified personnel.
8. The seals that are essential for the impermeability of the housing must not be damaged during assembly and disassembly.
9. The prescribed conditions of usage must be observed.
10. Changes to the product that serve technical advancement are also possible without prior notice.
11. According to EN60950-1:2006, the relay must not be subject to voltages greater than 42.4 V peak value or 53 V DC voltage.

Technical data

Power supply	Power over Ethernet according to IEEE 802.3af	
Separate DC voltage supply	22.8 V _{DC} ... 53 V _{DC} (threshold values)	
Power consumption	max. 4 W (Class 1)	
Connection	Plug-in connector RJ45 port internal (10/100/1000 Mbit/s) Screw terminals	
Relay and sep. DC voltage (mechanical)	Cable gland for cable diameter Screw terminals, internal Tightening torque:	M16 x 1.5 5 ÷ 9 mm 0.35 ... 0.4 Nm
Relay (electrical)	V _{AC max} V _{DC max} P _{max}	30 V 53 V 15 VA
Ringtone volume open housing lid closed housing lid	approx. 90 dB(A) at 1 m distance approx. 65 dB(A) at 1 m distance	
Housing (height x width x depth)	331 x 250 x 110 mm	
Weight	2.6 kg	
Operating position	vertical	
Handset		
Mouthpiece	Electret microphone	
Earpiece	dynamic capsule with magnetic field generator	
Environmental conditions		
Ambient operating temperature	-40°C...+55°C	
Transportation and storage temp.	-55°C...+70°C	
IEC60529 protection level	IP 66 (closed)	
VoIP standard	SIP (RFC3261)/H323 (TLS)	
Codecs	G.711 A/μ, 729A, G722, OPUS-NB/WB	
Optical call signalling and illuminated key panel	Can be switched on/off	
Protocols	VoIP protocols: SIP, H.323 (UDP, TCP, TLS), RTP, SRTP (SDES, DTLS), RTCP, ICE	
DTMF	In-band, out-of-band, event	
Additional VoIP characteristics	H.245 fast connect Enblock dialling overlapped sending	
Security	encrypted password identification in accordance with H.235	
Quality of Service (QoS)	Prioritisation of IP-packets via TOS and DiffServ, VLAN priority in accordance with IEEE 802.1p/802.1q	
Language codecs	G.711 A-law/μ-law, G.729A, G.722, OPUS (NB/WB)	
Admin	Access via https, password-protected with secure identification	
Diagnosis	Log and trace files (pcap), status displays of interfaces and connections, ping connection test, sending SNMP traps, syslog client	
VPN	PPP over PPPoE/PPTP	
NAT	Yes	

Declaration of Conformity

FHF Funke + Huster Fernsig GmbH declares that the InduTel telephone complies with the essential requirements and other relevant provisions of Directive 1999/5/EC (R&TTE).

However, if you still encounter problems during operation, please contact FHF Technical Support.

Legal directives

The device complies with the following legal directives:

R&TTE Directive 1999/5/EC

Low Voltage Directive 2006/95/EC

EMC Directive 2004/108/EC

RoHS Directive 2011/65/EC

Conformity with the directives listed above is confirmed through the CE label.



Disposal



Electrical and electronic waste equipment (WEEE) marked with this symbol may contain substances that are hazardous for humans and the environment. For this reason, they must not be disposed of together with unsorted municipal waste (household waste). In order to protect our environment, public collection points are available for the disposal of electrical and electronic waste equipment marked with this symbol.

Further information on WEEE directives can be found at

<https://www.eaton.com/recycling>

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