Explosion-proof version
The weather-proof VoIP phone FernTel IP4

CROUSE-HINDS SERIES

FernTel IP4 Z2/Z22

Quick Start Guide

Powering Business Worldwide

FHF BA 9620-110 24/01/25

FernTel IP4 Z2/Z22 – Quick Start Guide

Note:

Read this Quick Start Guide carefully before installing the device.

The FernTel IP4 Z2/Z22 is an explosion-proof version of the weather-proof phone FernTel IP4/IP160.

This Quick Start Guide therefore only explains the differences from the standard version.

If you are familiar with our standard device, reading this Quick Start Guide should suffice.

Otherwise, it is advisable to read the enclosed operating instructions for our standard device.

The operating instructions can be found at:

www.eaton.com\telephones

The contents of the packaging must be checked for completeness.

All supply voltages must be switched off before the device is opened.

Table of contents

1. VoIP phone FernTel IP4 Z2/Z22

Congratulations on your purchase of a FernTel IP4 Z2/Z22 VoIP phone. These instructions are intended to help you to become better acquainted with the differences from our standard set and to familiarise you with the device's use.

1.1. Device description

1.1.1. Application

The FernTel IP4 Z2/Z22 phone is used as a stationary device in areas that can be endangered by a potentially explosive gas or dust atmosphere.

Designed for device group
II and category 3G and 3D,
it can be used within zone 2 and zone 22.

1.1.1.1. Type of ignition protection and other types of protection

The FernTel IP4 Z2/Z22 phone is available with the following types of protection.

- Type of ignition protection:
  II 3G Ex ec ic IIC T5 Gc
  II 3D Ex tc ic IIIC T85°C Dc
- IP degree of protection:IP 65
- IK shock rating: IK08
- Ambient temperature range:
  -20°C ≤ Ta ≤ 55°C

The device features a safety circuit that triggers a non-resettable fuse in the event of an internal fault.

This cannot be replaced by the customer.

1.2 Scope of delivery

Package contents

The scope of delivery of the FernTel IP4 Z2/Z22 includes:

- 1 x phone
- 1 x phone holder
- 1 x handset hook for desktop design with 2 screws
- 4 x washers Ø 18 mm
- 1 x LAN socket for cable installation (Cat5e RJ45 UTP punch free jack)
- 1 x RJ45 - RJ45 connecting cable
- This Quick Start Guide FHF BA 9620-110
- Operating instructions FHF BA9620-100 for the standard FernTel IP4/IP160
- Operating instructions FHF BAKLE-01 for cable entry (i)
- Secure Configuration Guidelines

Purchase accessories (optional):

- Cable entry M12 x 1.5 — for housing entry (iv)
- Cable entry M20 x 1.5 — for housing entry (v)
- Stabiliser bracket
- Fly screen

1.3 CE mark

We hereby declare that this product complies with the essential health and safety requirements

- EMC Directive 2014/30/EU

- Low Voltage Directive 2014/35/EU.

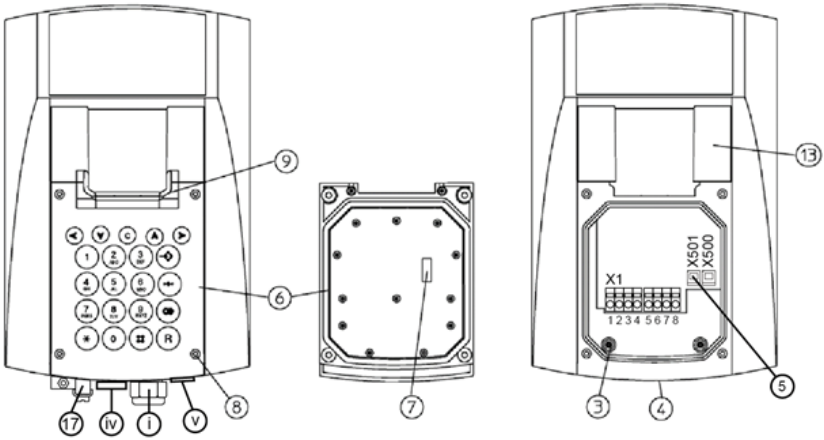
The device complies with Directive 2011/65/EU and the delegated Directives 2017/2102/EU and (EU)2015/863.

Applied harmonised standard: EN 50581:2012

The corresponding standards, technical rules and specifications can be found in the enclosed declaration of conformity and the declarations of conformity on our website.

2. Assembly and installation

2.1. Preparatory work



(i) Cable entry M20 x 1.5, see also enclosed FHF BAKLE-01 operating instructions

(iv) Dummy plug M12 x 1.5 (Spanner size 24 mm)

(v) Dummy plug M20 x 1.5 (Spanner size 15 mm)

Figure 1 - Top view of housing and position of cable entries (i), (iv) & (v)

First, remove the keyboard (6). To do this, loosen the 4 screws (8), carefully lift up the keyboard (6) and disconnect the connector (7) between the keyboard (6) and the printed circuit board inside the housing.

If you want to use the relay-onboard output contact or if you need to operate the phone with an external DC power supply, replace the cable entry dummy plugs (iv) and/or (v) with suitable cable entries.

2.2. Operating position

The phone is suitable for wall mounting and as a desktop device

-> See standard operating instructions

Items 3, 4, 9, 13 (Figure 1)
-> See standard operating instructions

2.3 Connections

2.3.1. Connection versions

2.3.1.1. RJ45 socket

In contrast to the standard version, the FernTel IP4 Z2/Z22 is not equipped with an external socket for connecting the LAN cable.

On the FernTel IP4 Z2/Z22, the LAN cable must be inserted through the cable entry (i) into the terminal compartment of the device, where the RJ45 socket provided must be mounted on the cable end.

To do this, follow the instructions supplied with the device as a kit together with the RJ45 socket.

This assembly is easy to carry out without special tools.

Make sure that the stripped bare wires are in the RJ45 socket and are securely fastened!

For operation and commissioning via PoE, the application of the IEEE 802.3af standard is mandatory.

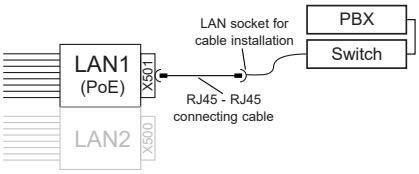
The FernTel IP4 Z2/Z22 device is equipped with a Gigabit Ethernet interface with Auto-MDI-X function and is approved for operation according to IEEE 802.3af.

2.3.1.2 LAN connection X501 (5) LAN1

Connect the network connection cable to the RJ45 socket X501 (5) LAN1, which, in addition to the data traffic, processes a possible PoE (Power over Ethernet) supply and uses the latter to supply the phone. To do this, use the enclosed RJ45 - RJ45 connecting cable to connect the RJ45 connection socket X501 (5) of the electronics module to the mounted RJ45 socket of the network connection cable inserted into the terminal compartment of the FernTel IP4 Z2/Z22.

Ensure that these connections are engaged.

The optional second RJ45 connection socket X500 must not be used with the FernTel IP4 Z2/Z22!



37.0 VDC≤ VPoE ≤ 57.0 VDC

I_{PoE} ≤ 350 mADC

P_{PoE} ≤ 12.95 W (Class 0)

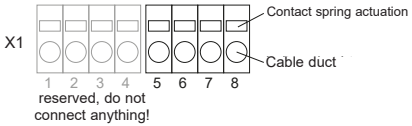
Cannot be used! (LAN2 - X500)

Important!

- Only ES1 and PS1-rated power supplies that comply with EN 62368-1 may be used to supply the phone.
- If the phone is powered via the PoE (Power over Ethernet) supply of your LAN1 connection cable, terminals X1.7 and X1.8 must not be used!

2.3.2 Terminal strip X1 connections

Terminal strip X1 is a terminal block in the terminal compartment of the phone and is designed with push-in connection technology. Rigid connection wires or flexible connection wires with wire end sleeves must only be inserted into the terminal's cable duct. The contact spring opens automatically and provides the necessary contact force against the current bar. To uninstall or install very small connecting wires, use a slotted screwdriver to open the contact spring.



Connection capacity:

See technical data

Stripping length:

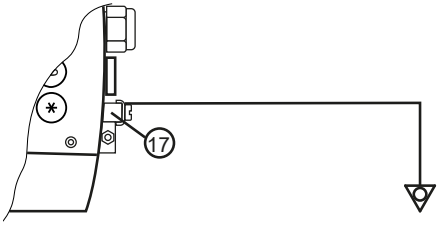
See technical data

Important!

Terminals 1-4 are reserved and must not be connected!

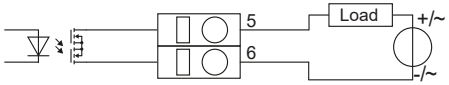
2.3.3 Equipotential bonding terminal (17)

Connect the equalising potential of the installation site to the equipotential bonding terminal (17) of the FernTel IP4 Z2/Z22, which is located at the bottom left of the housing and is accessible from the outside. For the connection capacity of the equipotential bonding terminal, please refer to the technical data in this Quick Start Guide.



2.3.4 Output contact relay

Equipment to be switched on/off must be connected to terminals 5 and 6 of terminal strip X1 located in the terminal compartment. The NO contact of the photo relay can switch DC and AC loads in the specified load range.



AC: $V_{switch} \leq 30$ V / $I_{switch} \leq 1.0$ A
$S_{switch} \leq 15$ VA

DC: $V_{switch} \leq 53$ V / $I_{switch} \leq 1.0$ A
$P_{switch} \leq 15$ W

Important!

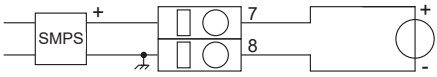
The maximum load currents of the output contacts are voltage-dependent. Calculate their maximum values as shown below. The result must also not exceed the specified maximum value of the switching current I_{switch}:

AC: $I_{LoadMax} = S_{switch} / V_{switch}$ =	15 VA / 24 V = 0.626 A $I_{LoadMax} \leq I_{switchMax}$!
DC: $I_{LoadMax} = P_{switch} / V_{switch}$	= 15 W / 48 V = 0.312 A $I_{LoadMax} \leq I_{switchMax}$!

2.3.5 External DC power supply

The external DC power supply must be connected to terminals 7 and 8 of terminal strip X1 located in the terminal compartment.

Make sure that sufficient conductor cross-sections are used so that the minimum DC voltage required is always available at the terminals. For more information, refer to the technical data in this Quick Start Guide.



22.8 VDC ≤ $V_{DCPower}$ ≤ 53.0 VDC

Important!

- Only ES1 and PS1-rated power supplies that comply with EN 62368-1 may be used to supply the phone
- If you supply the phone via connections X1.7 and X1.8, your LAN1 connection cable must not have a PoE (Power over Ethernet) supply!

2.4 Final work

Please perform a final check of the fastenings and connections to ensure proper commissioning and safety.

Connect the keyboard (6) to the printed circuit board inside the housing via the plug connector (7). Then secure the inserted keyboard with the 4 screws (8).

3. Commissioning

-> see standard operating instructions

4. Operation

-> see standard operating instructions

5. Menu

-> see standard operating instructions

6. Technical data

			Min	Typ	Max	Unit
Ethernet connection X501 (5)						
LAN1 VoIP		(5)		RJ45 port 1000 BASE-T with PoE		
1) Connection X501 (5) LAN1, PoE (Power over Ethernet) to IEEE 802.3af						
V_{PoE}	Supply voltage		37.0		57.0	V_{DC}
I_{PoE}	Supply current				350	mA_{DC}
P_{PoE}	Power supply	Class 0			12.95	W
Terminals X1						
A_{LtgS} A_{LtgF}	Terminal capacity rigid conductor cross-section Terminal capacity flexible conductor cross-section		0.2 0.2		4.0 2.5	mm^2 mm^2
I_{Isol}	Stripping length			10		mm
Equipotential bonding terminal (17)						
A_{LtgS} A_{LtgF}	Terminal capacity rigid conductor cross-section Terminal capacity flexible conductor cross-section		1.5 1.5		4.0 4.0	mm^2 mm^2
X1.5 – X1.6 Relay-onboard						
V_{switch}	Switching voltage	AC DC			30 53	V V
I_{switch}	Switching current	AC DC			1.0 1.0	A A
S_{switch} P_{switch}	Apparent switching capacity Switching capacity	AC DC			15 15	VA W
1) 2) X1.7 – X1.8 External DC power supply						
$V_{DCPower}$	Supply voltage		22.8		53.0	V_{DC}
$I_{DCPower}$	Supply current				650	mA_{DC}
$P_{DCPower}$	Power supply				15.00	W
Acoustic properties						
L_{Ringer}	Ring tone volume (measured at a distance of 1 m)				95	dB (A)
Handset						
	Earphone			Dynamic earphone with magnetic field generator for inductive coupling of hearing aids		
	Microphone			Electret microphone		
Housing						
	Material			Polycarbonate		
L_{HxWxD}	Dimensions	Height Depth Width		293 191 128		mm mm mm

e	Housing entries	Cable entry(i) Dummy plug (iv) Dummy plug (v)	M20 x 1.5 M20 x 1.5 FHF BAKLE-01 M12 x 1.5		
m	Weight		2.3		kg
h	Operating altitude			2000	m
	Operating position		Desktop or vertical wall mounting		
Ambient conditions					
T_A	Operating temperature		-20	55	°C
T_{STG}	Storage and transport temperature		-25	70	°C
	Protection class, impact resistance		IP 65 to IEC 60529 IK 08 to EN/IEC 50102		
Conformity					
atex	EC type examination certificate		BVS 08 ATEX E 022 II 3G Ex ec ic IIC T5 Gc II 3D Ex tc ic IIIC T85°C Dc		
iecex	IECEx certificate of conformity		IECEX BVS 08.0009 Ex ec ic IIC T5 Gc Ex tc ic IIIC T85°C Dc		
Menu					
T_L	Minimum actuation time for second key function		0.5		s
T_{SHIFT_TO}	Time limit for second Shift key function			5.0	s
T_{D2A}	Minimum actuation time for changing mode Digit2Alpha		2.0		s

1) Only ES1 and PS1-rated power supplies that comply with EN 62368-1 may be used to supply the phone.

   In addition, only one power supply may supply the phone.

   Use either LAN1 or connections X1.7-X1.8.

2) The DC power supply must be unearthed.

6.1 Marking (name plate)

Company	FHF Funke+Huster Fernsig GmbH
Type	FernTel IP4 Z2
DEKRA	BVS 08 ATEX E 022
CE 0158 Ex	II 3G Ex ec ic IIC T5 Gc
	II 3D Ex tc ic IIIC T85°C Dc
	-20°C ≤ Ta ≤ +55°C
	Um = 57 VDC; Un = 48 VDC
IECEx	Ex ec ic IIC T5 Gc
	Ex tc ic IIIC T85°C Dc
	IECEx BVS 08.0009

7. Notes

7.1 Maintenance

The phone does not contain any wearing parts that require maintenance work.

7.2 Care and maintenance

The phone is maintenance-free. Nevertheless, cleaning should be carried out from time to time in areas of use with heavy contamination by dust, grease, oil, etc.

⚠ Important!

- Clean only with a damp cloth to avoid electrostatic charges.

Never use sharp objects for cleaning.

7.3 Disposal

Waste electrical and electronic equipment marked with this symbol may contain substances that are hazardous to 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 therefore available for the disposal of waste electrical and electronic equipment marked with this symbol

Complete disposal is carried out via electronic waste. After being dismantled, the plastic, metal and electronics components must be disposed of separately. In all cases , the disposal requirements of the respective country of use must be observed.

https://www.eaton.com/us/en-us/products/productstewardship/recycling.html

7.4 Warnings and safety instructions

This device is an explosion-proof, weather-proof phone specially designed for operation in harsh industrial environments

The following warnings and safety instructions must be observed:

- The device must be connected and installed by trained personnel in accordance with the specified types of protection and in accordance with the prescribed installation regulations as set out in IEC/EN 60079-14.

- The phone is designed in protection class I and may only be connected and operated at the specified voltages.

- Make sure that it is connected properly. The connecting cables must be routed in such a way that there is no risk of tripping.
- Take care not to damage the phone, the connection lines and the handset cord. The phone must not be operated when damaged.
- When operating the device in commercial facilities, the accident prevention regulations of the industrial employers' liability insurance association for electrical systems and equipment must be observed.
- The device must only be operated under the specified ambient conditions.
- Adverse ambient conditions can damage the device and thus lead to the loss of licence.

Such adverse ambient conditions are:

» Excessive humidity (>75% RH, condensing)

» Moisture and dust (observe degree of protection)

» Flammable gases, vapours and solvents not covered by the device's type of ignition protection.

» Ambient temperatures that are too high (> +55°C)

» Ambient temperatures that are too low (< -20°C)

- Do not operate the device with an additional cover.
- When connecting or disconnecting cables in the terminal compartment, the cables must be disconnected from the power supply.
- If connection work needs to be carried out in the hazardous area, opening and closing must be carried out as follows:

» Disconnect the device from the power supply

» Loosen the fastening screws of the keyboard insert

» Remove the keyboard insert and disconnect the cable from the keyboard

» Connect to the open device

» After completing the work, reconnect the keyboard and place the keyboard insert back on the lower part

» Ensure that the seal is in the correct position and undamaged. Then tighten the fastening screws alternately

- Only the sealing plugs and cable entries specified for approval may be used.
- Operation of this device may cause radio interference in a domestic environment.
- Changes to the product that serve technical progress are also possible without prior notice.

⚠ Important!

- Failure to observe the above points will result in the device no longer being explosion-proof.

- The device then poses a danger to the environment and can cause the ignition of a potentially explosive atmosphere.

Eaton
FHF Funke + Huster Fernsig GmbH Gewerbeallee 15 – 19
45478 Mülheim an der Ruhr, Germany
Tel +49 (208) 8268-0
Fax +49 (208) 8268-377
www.eaton.com/telephones

Printed in Germany
Publication No. TMF0100.1
March 2025