VINGTOR STENTOFON

Exigo Ex Access Panels & Turbine Ex Intercoms

Installation, & Maintenance Procedures

Ex schedule document.
All changes must be
approved by a Notified Body.

Document Contents

1 Basic information

1.1 Revision history

Doc.no.	Rev.	Date	Prepared by	Revision text	App. by Ex responsible	
A100K11499	1	05.01.2015	Svend E.Nilsen	New document	05.01.2015	Erik Bjørkander
A100K11499	1.1	05.02.2015	Svend E.Nilsen	Minor correction, labeled headset as ATEX only	05.02.2015	Erik Bjørkander
A100K11499	1.2	03.03.2015	Thomas Hægh	Corrected IS parameters (chapter 3.3.2)	03.03.2015	Erik Bjørkander

1.2 Scope

This document describes the installation and maintenance procedures for
the VINGTOR - STENTOFON Exigo Ex Access Panels and Turbine Ex Intercom Stations,
henceforth commonly referred to as "Ex Products", and their intended audio accessories.
The following models are covered by this manual.

Item number	Search name	Item Name
Exigo Ex PA access panels		
1023221511	EAPFX-1	Exigo Industrial Ex Access Panel, 1 button, Flowire
1023221516	EAPFX-6	Exigo industrial Ex Access Panel, 6 buttons, Flowire
Turbine Ex intercom units		
1008123010	TFIX-1	Turbine Full-Size Ex Intercom Station 1
1008123020	TFIX-2	Turbine Full-Size Ex Intercom Station 2
1008123030	TFIX-3	Turbine Full-Size Ex Intercom Station 3
1008123040	TFIX-4	Turbine Full-Size EX Intercom Station 4
Ex audio accessories		
2330040026	AK5850HS	Ex-Approved Headset with plug **
1008150025	TAX-2B	Ex-Approved Cable for Headset with PTT Button
1008150030	TAX-3	Ex-Approved Handset with PTT, unterminated
1023533511	EMMAX-1H	Exigo Handheld Industrial Ex Microphone, 1 Button, IP66

** Headset AK5850HS is only certified for use in ATEX areas (Not IECEx)

1.3   Related Documentation

For further information, refer to the following documentation

Doc.no.	Documentation
A100K11460	Exigo Installation & Configuration Manual
A100K11422	Flowire Installation & Configuration Manual
A100K11471	Exigo User Manual
A100K11194	Turbine Stations Configuration Manual
A100K11523	Mounting Manual for EAPFX-1, EAPFX-6, TFIX-1, TFIX-2 , TFIX-3, TFIX-4
A100K11525	Connection Manual TAX-2b Ex-Approved plugbox and cable for Ex Headset AK5850HS
A100K11526	Connection Manual TAX-3 EX-approved Handset w/PTT, unterminated
A100K11528	Connection Manual EMMAX-1H Exigo Handheld Industrial Ex Microphone

1.4   Certificates

ATEX Certificate number	**Presafe 14ATEX5209 X**
IECEx Certificate number	**IECEx PRE 14.0029 X**
Certificates can be downloaded from www.vingtor-stentofon.com	

If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special condition for safe use.

Special condition for safe use:

The cable glands shipped with this product has an impact resistance of max 4J.

Due to low impact resistance of the cable glands, the units shall only be installed in areas where there is a low risk of impact.

If cable glands supporting high impact (7J) are used, the X condition does not apply.

2   About the Ex Products

2.1   The Industrial Ex product series

Before using this product, carefully read this manual and other manuals for compatible hardware. Retain instructions for future reference.

The Ex Products are approved according to IECEx and ATEX regulations, and bear the marking:
Ex II 2(2)G Ex e ib mb (ib) IIC T4 Gb (See chapter 3.5.4 marking for detailed information).

The following models and audio accessories are approved for use in hazardous areas

**Access
Panels**

EAPFX-1   EAPFX-6

Intercoms
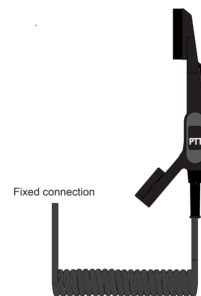
TFIX-1   TFIX-2   TFIX-3   TFIX-4

**Audio
Accessories**

10 mtr. cable
fixed connection

Fixed connection

Fixed connection

AK5058HS**   TAX-2B   TAX-3   EMMAX-1H

**** Headset AK5850HS is only certified for use in ATEX areas (Not IECEx)**

2.2   Ex Product Interface

The interface of the Ex Products consist of the elements in the following chapters.

2.2.1   Status LEDs

Present on all Ex Products.

Green Power LED

The Power LED is lit to indicate that the access panel is powered up.

The Power LED flashes to indicate that the device has no connection to the central equipment.

Yellow Fault LED

The Fault LED is lit to indicate that there are faults in the system.

The Fault LED flashes to indicate that the device is connected to (link OK), but not registered with the central equipment.

Red Call LED

The Call LED is lit when an intercom is in a conversation, or the microphone on an access panel is active.

2.2.2   Function Buttons

Present on all Ex Products.

These are fully programmable buttons which appear in different forms on different units.

Right-aligned Function Buttons have two programmable LEDs (green and red) to indicate status information related to the function.

For right-aligned Function Buttons, button protection covers can be attached to avoid a button being inadvertently pressed.

2.2.3   Numeric Keypad

Present on TFIX-1, TFIX-3 and TFIX-4.

These have a predetermined function.

Dialing buttons 0 - 9, present on TFIX-1 and TFIX-4, are used for calling specific numbers or triggering functions.

M-button, present on TFIX-1, TFIX-3 and TFIX-4, is used for answering calls, Push-To-Talk and changing from external to internal audio devices.
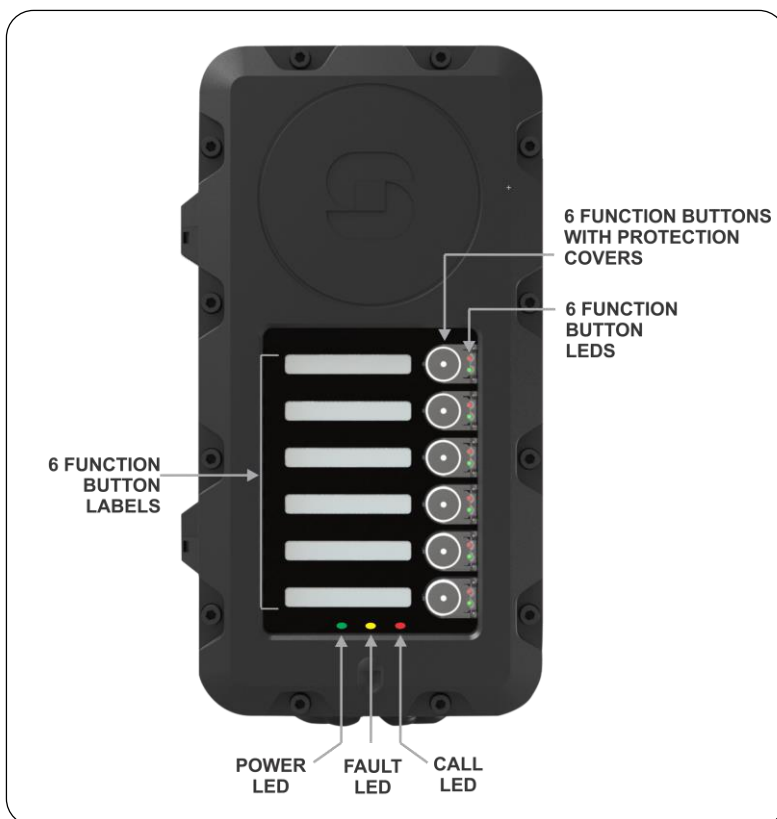
C-button, present on TFIX-1, TFIX-3 and TFIX-4, is used to cancel a current action or state.

2.2.4   Model specific interfaces
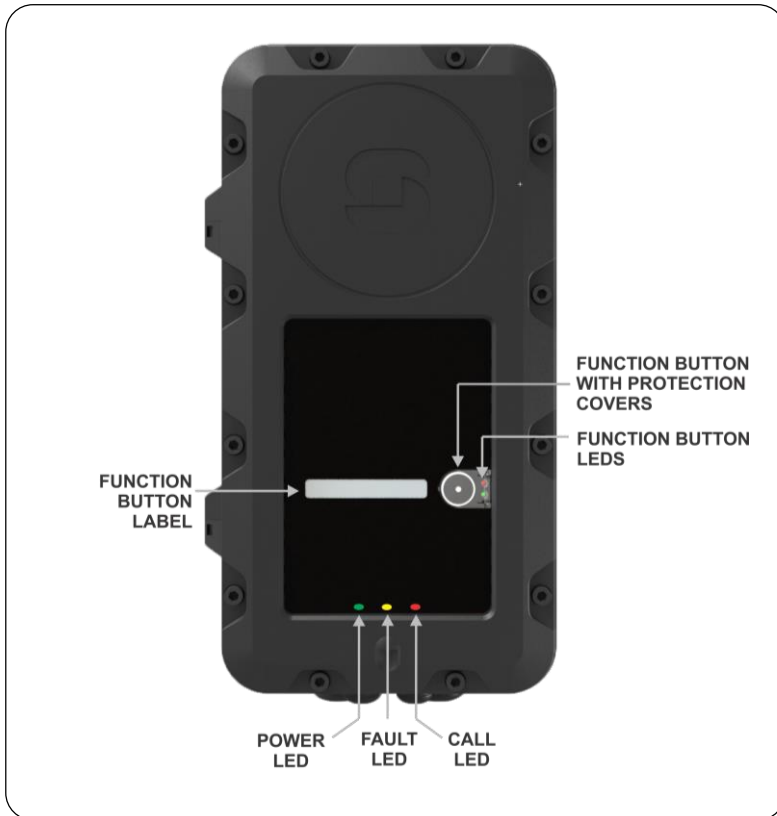
EAPFX-1

- One right-aligned Function Button

- Available area for labelling the button

EAPFX-6

- Six right-aligned Function Buttons

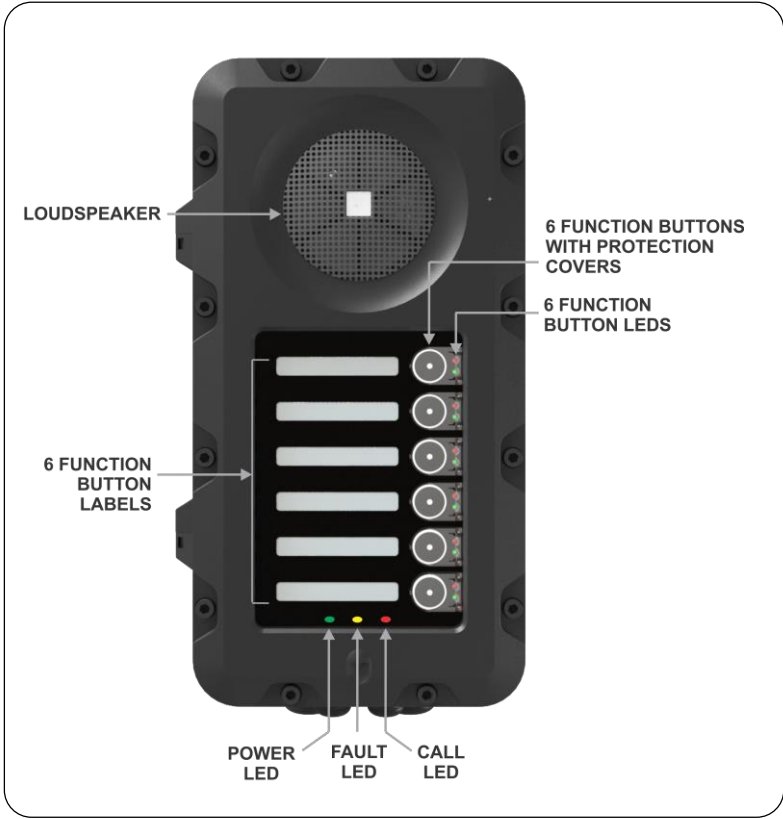- Available areas for labelling the button

TFIX-1

- Dialing buttons 0-9
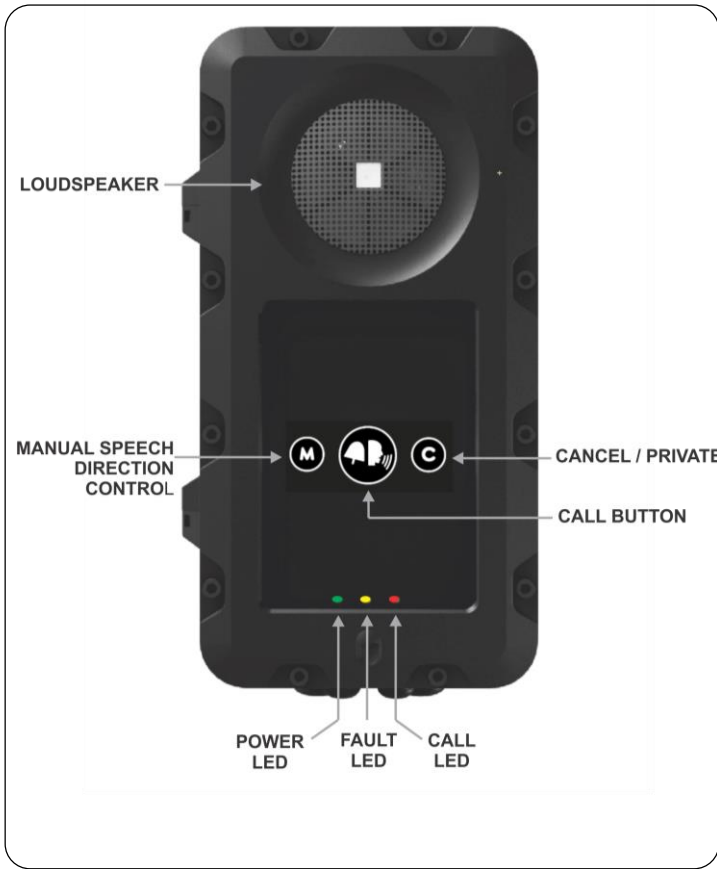
- M-button

- C-button

Four function buttons, three of which are pre-programmed:

- + for volume up

- - for volume down

- Audio button for changing between loud speaking and low speaking mode

TFIX-2

- Six right-aligned Function buttons

- Available areas for labelling the button

TFIX-3

- Call button

- M-button

- C-button

TFIX-4

- Dialing buttons 0-9

- M-button

- C-button

    Four function buttons, three of which are pre-programmed:

- + for volume up

- - for volume do

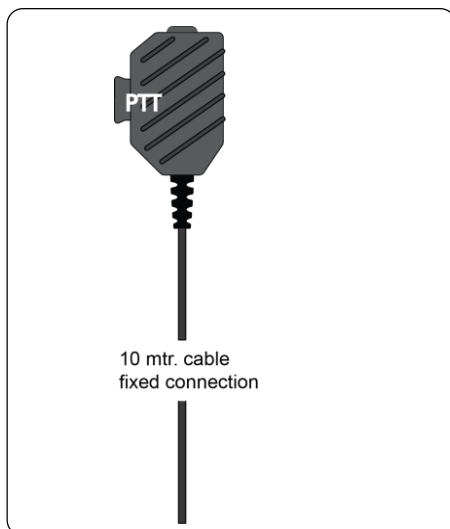- Audio button for changing between loud speaking and low speaking mode

2.3   Accessories

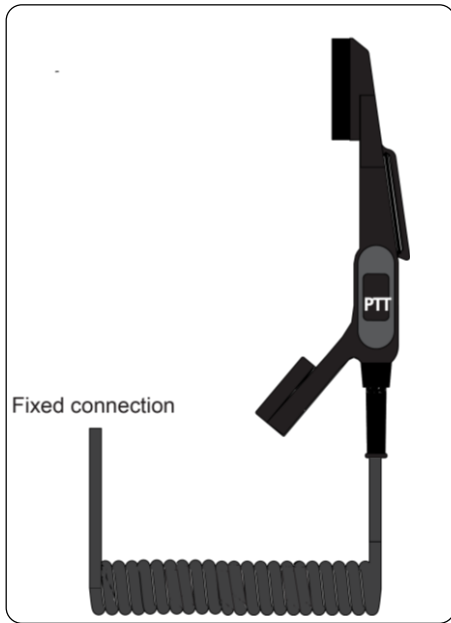The following accessories are designed for use with any of the Ex Products.

AK5850HS

- Headset with boom microphone, curled cord and plug

- Plugs into TAX-2B

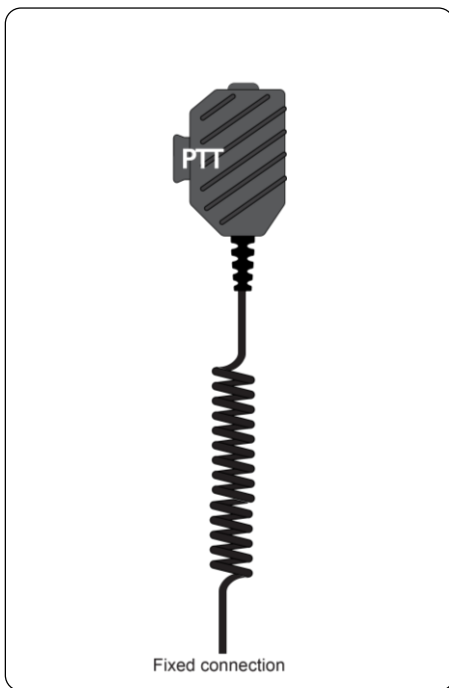- Headset AK5850HS is only certified for use in ATEX areas (Not IECEx)

TAX-2B

- 10 m cable with Push-To-Talk button (PTT) and contact

- For headset AK5850HS

- Terminated on main board inside Ex Product

Fixed connection

TAX-3

- Handset with Push-To-Talk button (PTT)

- Terminated on main board inside Ex Product


Fixed connection

EMMAX-1H

- Microphone with Push-To-Talk button

- Terminated on main board inside Ex Product

3   System design overview

3.1   Connection to central equipment

The Ex Products are connected to the central equipment rack using Ex certified 2-wire cable with shield. A Zenitel proprietary protocol, Flowire, is used to extend the Ethernet connection and support power distribution on the 2-wire cabling infrastructure.

To support the Flowire interface, the central equipment rack must be equipped with a Flowire Converter (FCDC2).
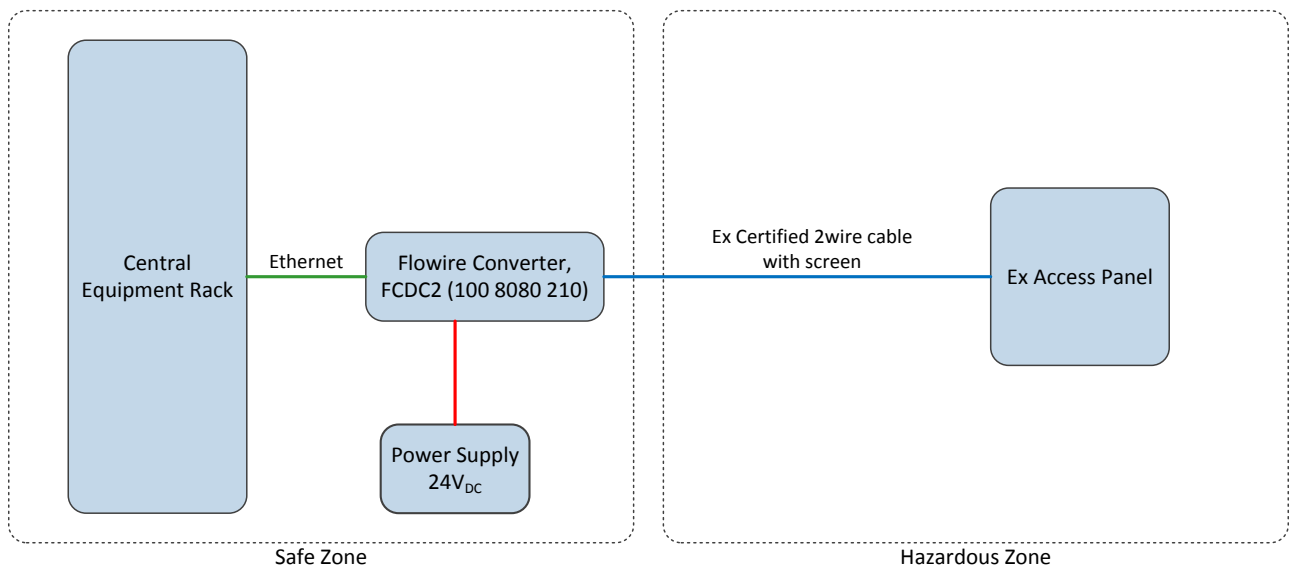
Network configuration 1
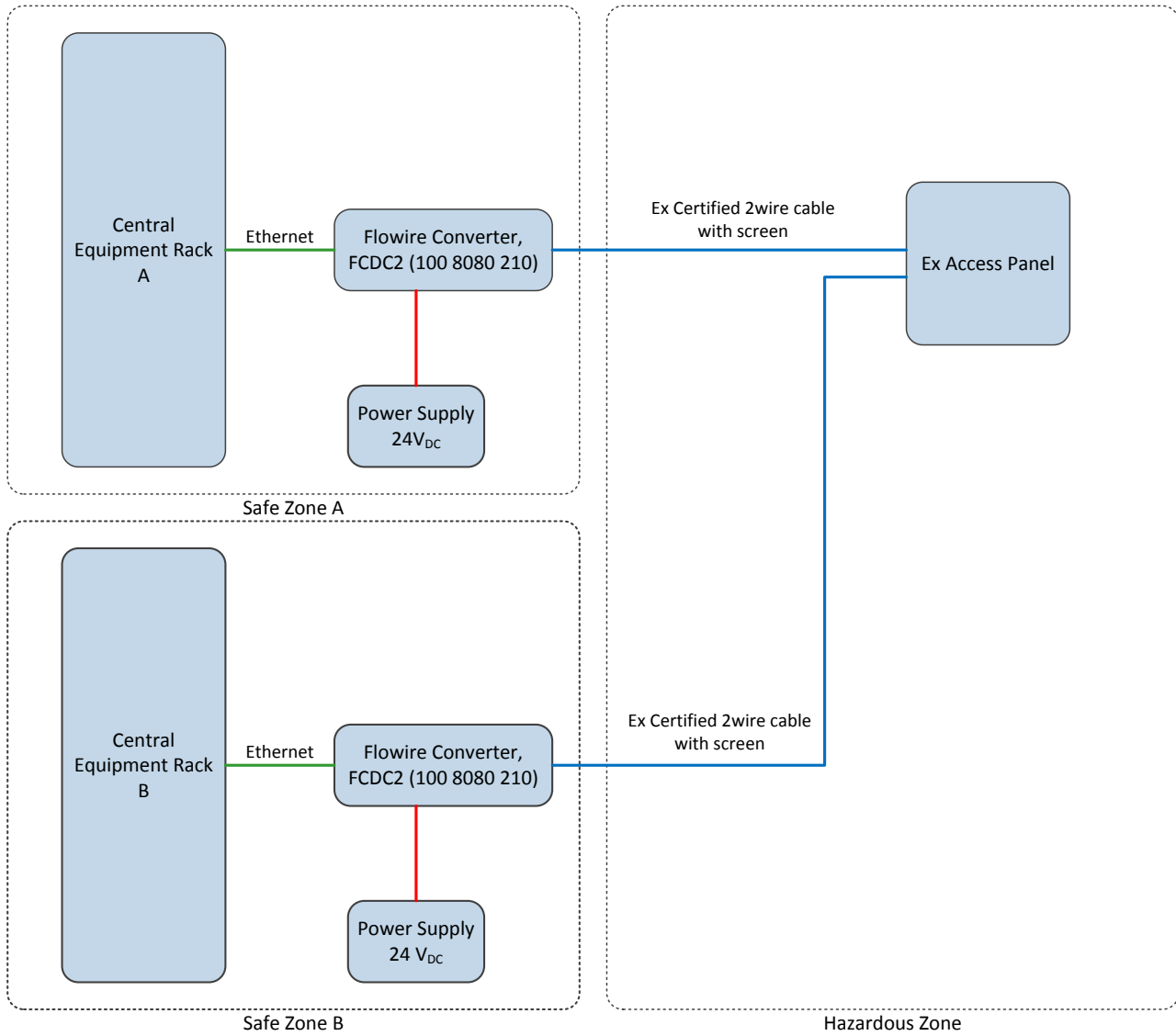
Network configuration 2 - redundant cabling in Ex zone

3.2   Block diagrams for electronics (HW)

The Ex Products all use the same Printed Circuit Board Assemblies. These are:

- A100C08127 – Front Board
- A100C08511 – Main Board

The front board implements the user interface.

The main board implements the main functions. The board has the following interfaces:

- Interface to internal loudspeaker
- Interface to internal microphone
- Interface to audio accessories (headset, handset, handheld microphone)
- Interface to central equipment (Flowire)

The block diagram below shows the main components used in the Ex Panel design including connectors, barrier sections and cable entries.
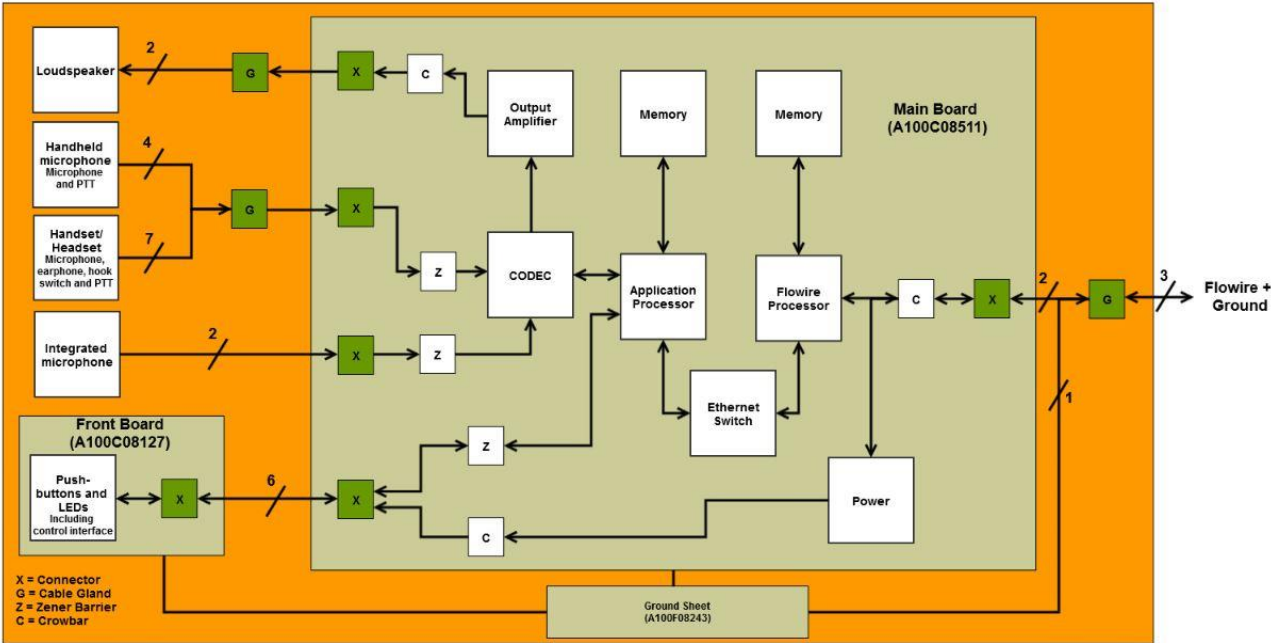
3.3 Electrical parameters

The Ex Products are designed for the following input and output parameters.

3.3.1 Internal Microphone and Loudspeaker

Microphone Input Terminal J13 + -		Loudspeaker Output Terminal J9 8-9	
Uo	4.5V	Uo	6.3V
Io	44mA	Io	660mA
Po	0.5W	Po	01.1W
Co	100 uF	Co	100 uF
Lo	40 mH	Lo	0.3 mH

Details on the loudspeaker and microphone are found in Chapter 6 Technical Data.

3.3.2 Audio Accessories

Microphone Input Terminal J6-3 / J7-4		Loudspeaker Output Terminal J6 1-2		PTT Switch Input / Hook Switch input Terminal J7 5-6	
Uo	5.8V	Uo	5.8V	Uo	5.8V
Io	952mA	Io	952mA	Io	952mA
Po	1008mW	Po	1008mW	Po	1008mW
Co	597nF	Co	597nF	Co	597nF
Lo	40µH	Lo	40µH	Lo	40µH

The parameters above are a combination of all outputs connected together that can occur if separation distances in external accessories are below the limits in EN60079-11:2012.

Technical specification on the accessories are found in Chapter 6 Technical Data.

⚠ **Only Ex-certified audio accessories which comply with the input and output values in chapter 3.3.2 may be used with the Ex Products.**

The following Zenitel accessories comply with the input and output values stipulated above, and are approved for use with the Ex Products:

Ex audio accessories		
2330040026	AK5850HS	Ex-Approved Headset with plug **
1008150025	TAX-2B	Ex Approved Cable for Headset with PTT Button
1008150030	TAX-3	Ex-Approved Handset with PTT, unterminated
1023533511	EMMAX-1H	Exigo Handheld Industrial Ex Microphone, 1 Button, IP66

** Headset AK5850HS is only certified for use in ATEX areas (Not IECEx)

3.4   Terminals and connectors

Terminal J8 and J10 Type Phoenix MK3DSH 3/ 2-5, 08-EX

Hole diameter	1.3 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	4 mm²
Conductor cross section stranded min.	0.2 mm²
Conductor cross section stranded max.	2.5 mm²

Terminal J13, J6, J7 and J9 Type Phoenix 1710049

Hole diameter	1.3 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	4 mm²
Conductor cross section stranded min.	0.2 mm²
Conductor cross section stranded max.	2.5 mm²
Conductor cross section stranded, with ferrule without plastic sleeve min.	0.25 mm²
Conductor cross section stranded, with ferrule without plastic sleeve max.	1.5 mm²
Conductor cross section stranded, with ferrule with plastic sleeve min.	0.25 mm²
Conductor cross section stranded, with ferrule with plastic sleeve max.	2.5 mm²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	12
2 conductors with same cross section, solid min.	0.2 mm²
2 conductors with same cross section, solid max.	1.5 mm²
2 conductors with same cross section, stranded min.	0.2 mm²
2 conductors with same cross section, stranded max.	1.5 mm²
2 conductors with same cross section, stranded, ferrules without plastic sleeve, min.	0.25 mm²
2 conductors with same cross section, stranded, ferrules without plastic sleeve, max.	0.75 mm²
2 conductors with same cross section, stranded, TWIN ferrules with plastic sleeve, min.	0.5 mm²
2 conductors with same cross section, stranded, TWIN ferrules with plastic sleeve, max.	1.5 mm²

3.5   Ex Protection Strategy
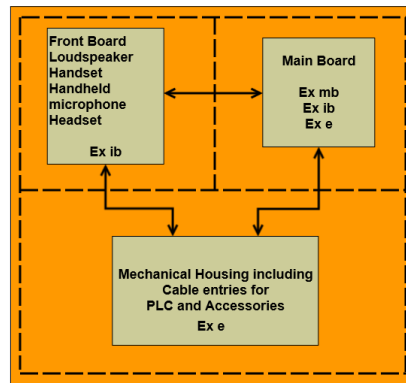
The Ex panel shall comply with the following standards:
- IEC 60079-0: Explosive atmospheres - Equipment - General requirements

- IEC 60079-7: Explosive atmospheres - Equipment protection by increased safety "e"

- IEC 60079-11: Explosive atmospheres - Equipment protection by intrinsic safety "i"

- IEC 60079-18: Explosive atmospheres - Equipment protection by encapsulation "m"

3.5.1   Increased safety "e"

The mechanical enclosure complies with requirements for increased safety (Ex "e").
The Ex "e" part of the main board includes the Flowire screw terminals.

3.5.2   Encapsulation "m"

Encapsulating the entire board ensures compliance with requirements for protection by encapsulation (Ex "m"). Encapsulation removes the risk of sparks and provides thermal protection to ensure that the surface temperature of the potting compound is below T4 limit (135 °C).
The level of protection is "b" to comply with zone 1 equipment.

3.5.3   Intrinsic safety "i"

The following parts comply with requirements for intrinsic safety (Ex "i"):

- A100C08127 - Turbine Front Board Extended

- EMMAX-1H - Exigo Handheld Industrial Ex Microphone, 1 Button

- AK5850HS   Ex-Approved Headset with plug

- TAX-2 - Turbine Ex Approved Headset, Pluggable

- TAX-2B - Turbine Ex Approved Cable for Headset with PTT

- TAX-3 - Turbine Ex Approved Handset with PTT, Unterminated

The barrier design on the main board provides "b" level protection (Ex ib) to the intrinsically safe parts, supporting zone 1 requirements.

Um: 250V

3.5.4   Marking

Based on the requirements of zone 1, T4 and the chosen concept of protection, the Ex Product shall include the following marking:

⟨Ex⟩   II 2(2)G Ex e ib mb (ib)IIC T4 Gb

| VINGTOR ⬥ STENTOFON   TFIX-x | Brandname (use original logo) and *Shortname* |
| Zenitel Norway AS
Bromsveien 17, N3183 Horten | Address |
| **Item: XXXXXXXXX.RRRR**
S/N: YYWWXXXX
Rating: 18-24V DC 0.5A
Permitted supply short-circuit current: 1500A
Presafe 14ATEX5209X / IECEx PRE 14.0029X
All connected accessories must
conform to specifications in manual | *Item no incl. rev.*
Serial no incl. date code
Rating
ATEX IECEx certificate |
| ⟨Ex⟩ II 2(2)G Ex e ib mb [ib] IIC T4 Gb
Ta: -20°C to +60°C
BARCODE | *MAC address* |
| **WARNING**
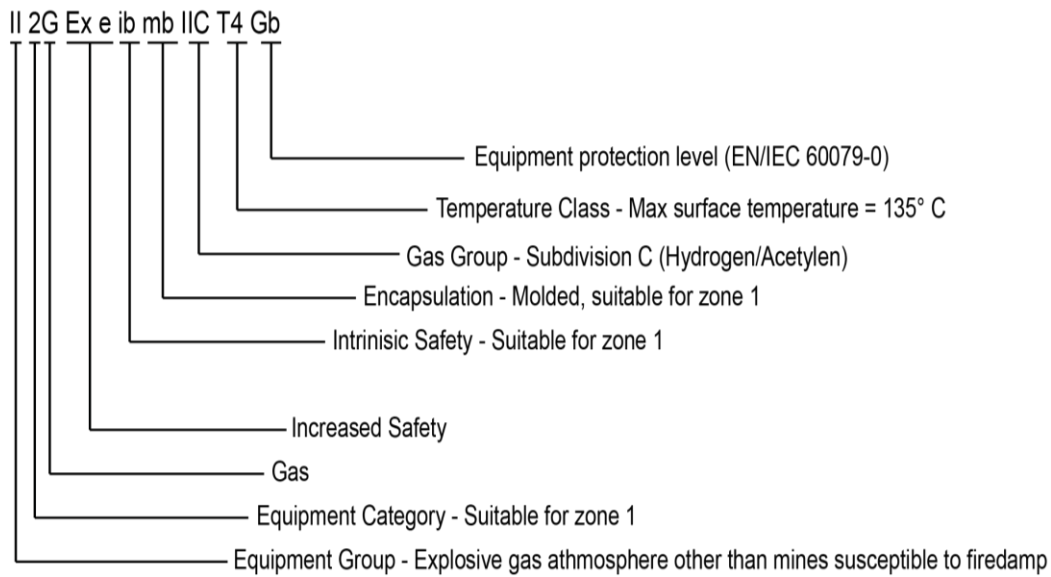DO NOT OPEN WHEN ENERGIZED   C€ 0470 | Ex mark and parameters
CE mark
WARNING text |

If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special condition for safe use.

Special condition for safe use:

The cable glands shipped with this product has an impact resistance of max 4J.

Due to low impact resistance of the cable glands, the units shall only be installed in areas where there is a low risk of impact.

If cable glands supporting high impact (7J) are used, the X condition does not apply.

II 2G Ex e ib mb IIC T4 Gb

— Equipment protection level (EN/IEC 60079-0)

— Temperature Class - Max surface temperature = 135° C

— Gas Group - Subdivision C (Hydrogen/Acetylen)

— Encapsulation - Molded, suitable for zone 1

— Intrinisic Safety - Suitable for zone 1

— Increased Safety

— Gas

— Equipment Category - Suitable for zone 1

— Equipment Group - Explosive gas athmosphere other than mines susceptible to firedamp

3.5.5   Compliance

IECEx	IEC 60079-0:2011, IEC 60079-7:2006, IEC 60079-11:2011, IEC 60079-18:2009
ATEX	EN 60079-0:2012, EN 60079-7:2007, EN 60079-11:2012, EN 60079-18:2009
Immunity	EN 60945, EN 61000-6-1, EN 61000-6-2, FCC-47 part 15B
Emissions	EN 60945, EN 61000-6-3, EN 61000-6-4, FCC-47 part 15B

4   Installation

4.1   General

⚠️ **Improper installation and operation of the Ex access panel will result in the invalidation of the guarantee.**

⚠️ **The enclosure/housing must not be opened when the product is powered.**

⚠️ **The installation and connection of Ex units may only be carried out by qualified approved personnel.**

⚠️ **The maximum voltage (Um) that can be applied to the *non-intrinsically safe connection facilities* of associated apparatus without invalidating the type of protection is 250V**

Special condition for safe use

The "X" after the certificate number indicates that the equipment is subject to special condition for safe use.

The cable glands shipped with this product has an impact resistance of max 4J.

Due to low impact resistance of the cable glands, the units shall only be installed in areas where there is a low risk of impact.

If cable glands supporting high impact (7J) are used, the X condition does not apply.

4.2   Mounting

When the Ex Product is mounted directly onto a wall or mounting plate, it shall rest only on the fastening points provided for this purpose. The surface must be even and flat.

⚠️ **The unit must be mounted on the surface to prevent access from the back.**
To mount the panel:
1. Open the enclosure by loosening the 12 screws that secure the front frame to the on-wall box.
2. Open the enclosure by pulling the front frame out 5 mm, keeping it parallel to the on-wall box. This is necessary to get clearing for the hinges. Then pull the right side of the front frame to fully open the enclosure. Make sure to not open the enclosure so far that cables between the front and back parts are pulled tight.
3. Fix the station to the wall, mounting plate or column with four screws that fit the four screw holes in each corner of the on-wall box (6.7 mm diameter). (Ref. drawing on page 22)

   On Mounting plate or column
   M5 x 20 or 25 with Philips head DIN7985 or Torx.
   Head diameter 10mm.

   On Wall
   Panhead – DIN7981 for plug or wooden wall, etc.
   Head diameter 10.8 B5.5 x 38 or 45 mm
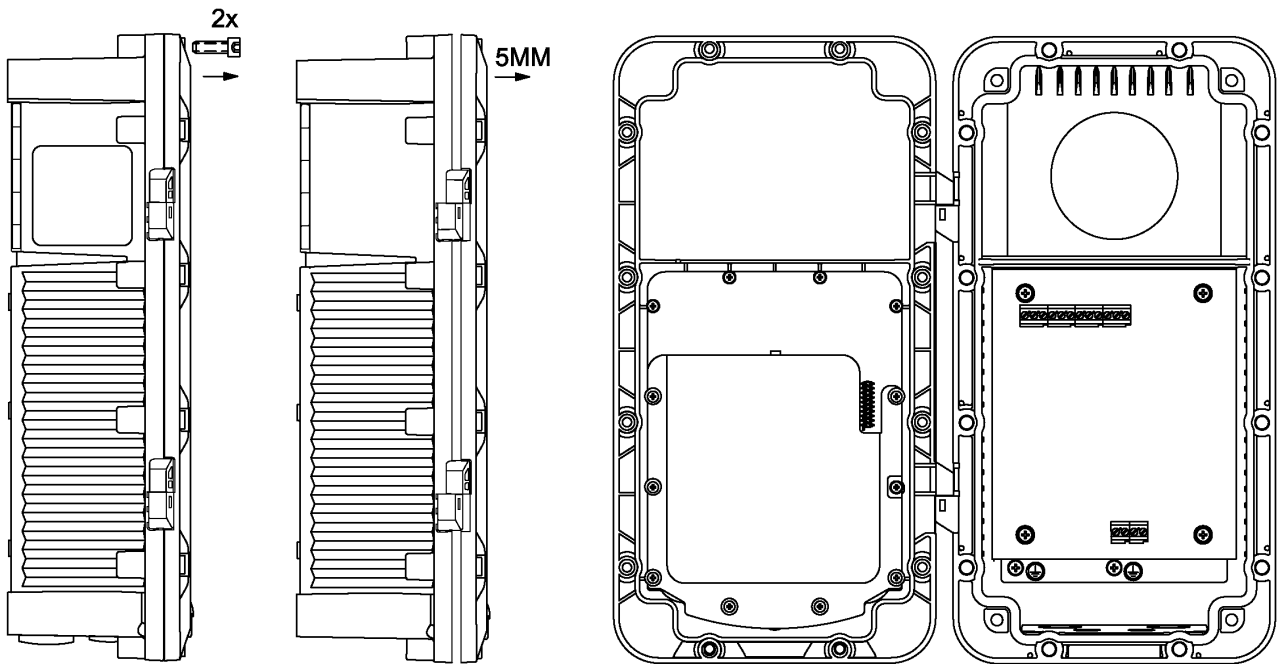
⚠️ **Do not use countersunk screws.**

⚠️ **Due to the cabinet material, use as low a tightening torque as possible**

⚠️ **Washers are recommended**

4. Carry out Electrical connections (chapter 4.3)

5. Move the front part back to its original position and fasten the 12 screws.

⚠️ **Do not use more than 2.5Nm torque when fastening the 12 screws in the front frame.**
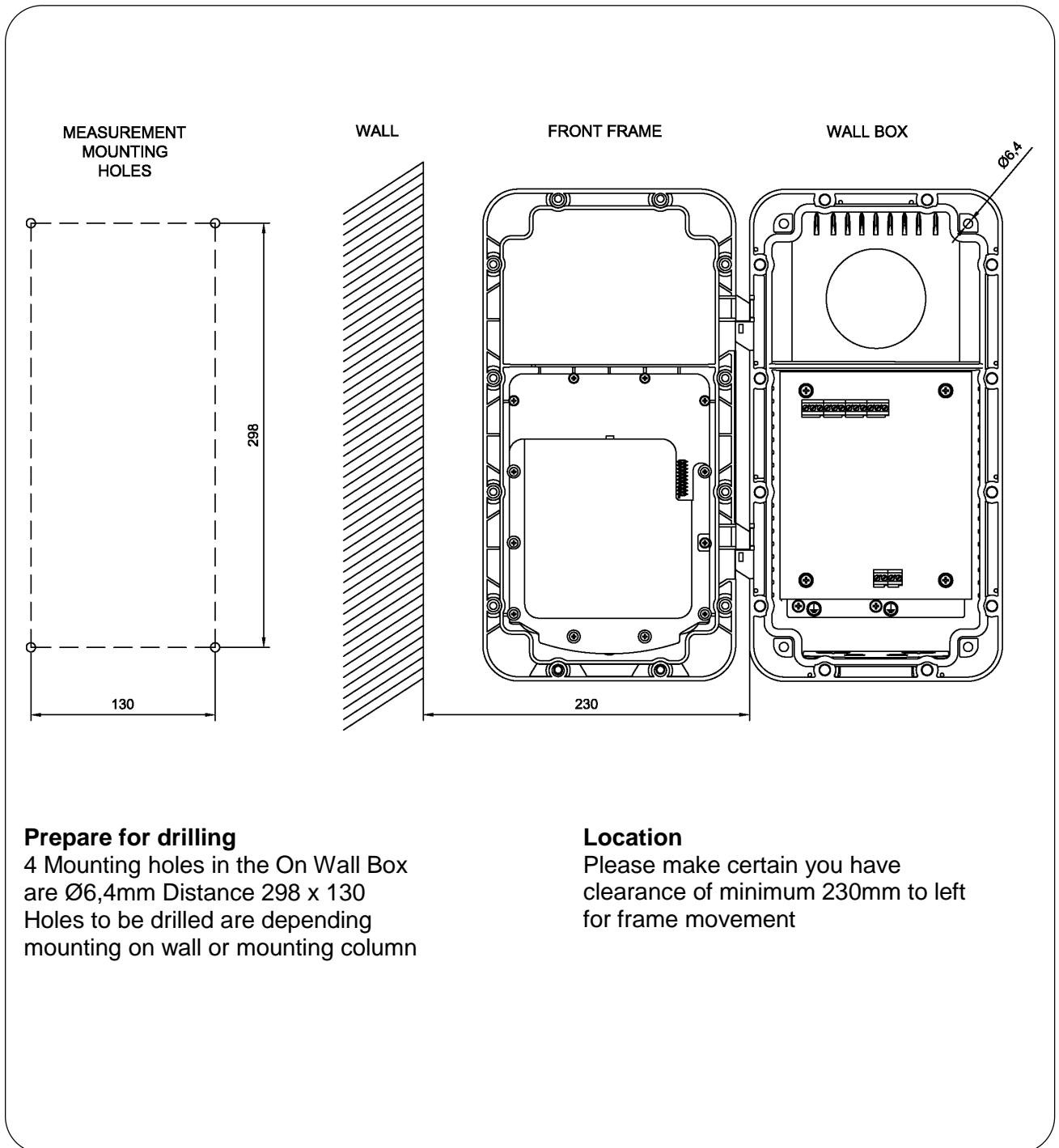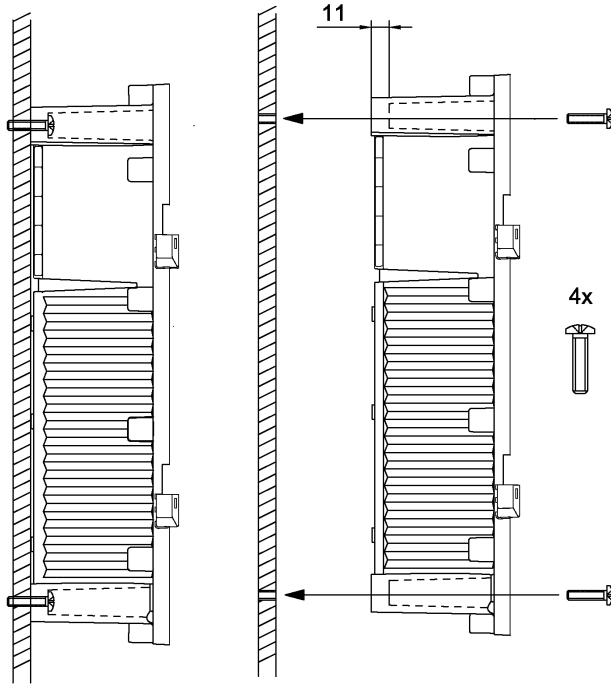
4.2.1 Opening the enclosure

1 Open the enclosure by loosening the 2 screws that secure the front frame to the on-wall box

2 Open the enclosure by pulling the front frame out 5 mm, keeping it parallel to the on-wall box. This is necessary to get clearing for the hinges

3 Then pull the right side of the front frame to fully open the enclosure. Make sure to not open the enclosure so far that cables between the front and back parts are pulled tight.

4.2.2   Prepare and mount the station

MEASUREMENT MOUNTING HOLES

WALL

FRONT FRAME

WALL BOX

Ø6,4

298

130

230

Prepare for drilling
4 Mounting holes in the On Wall Box
are Ø6,4mm Distance 298 x 130
Holes to be drilled are depending
mounting on wall or mounting column

Location
Please make certain you have
clearance of minimum 230mm to left
for frame movement

11

4x

Mounting plate or column
Fix the station to mounting plate or column with four screws that fit the four screw holes in each corner of the on-wall box (6.4 mm diameter). Use M5 x 20 or 25 with Philips head DIN7985 or Torx. Head diameter 10mm.
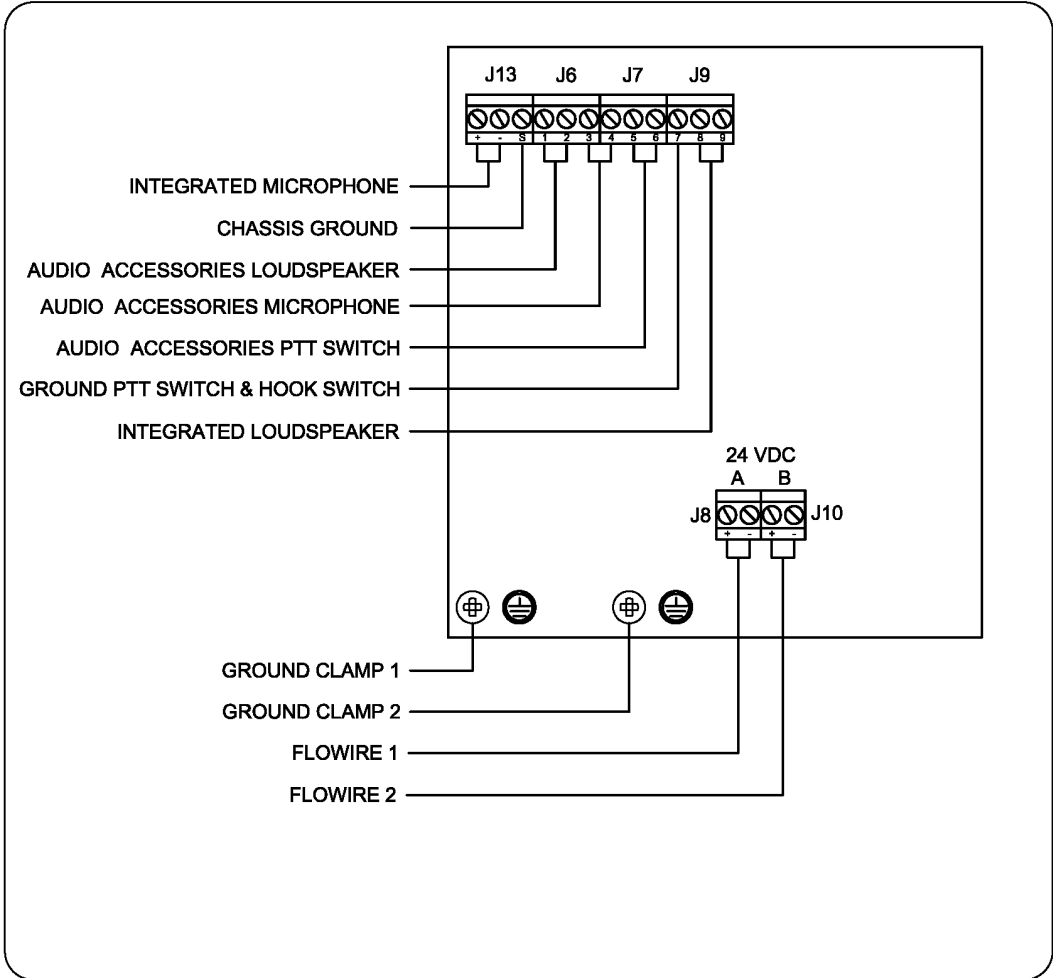
11

4x

4x
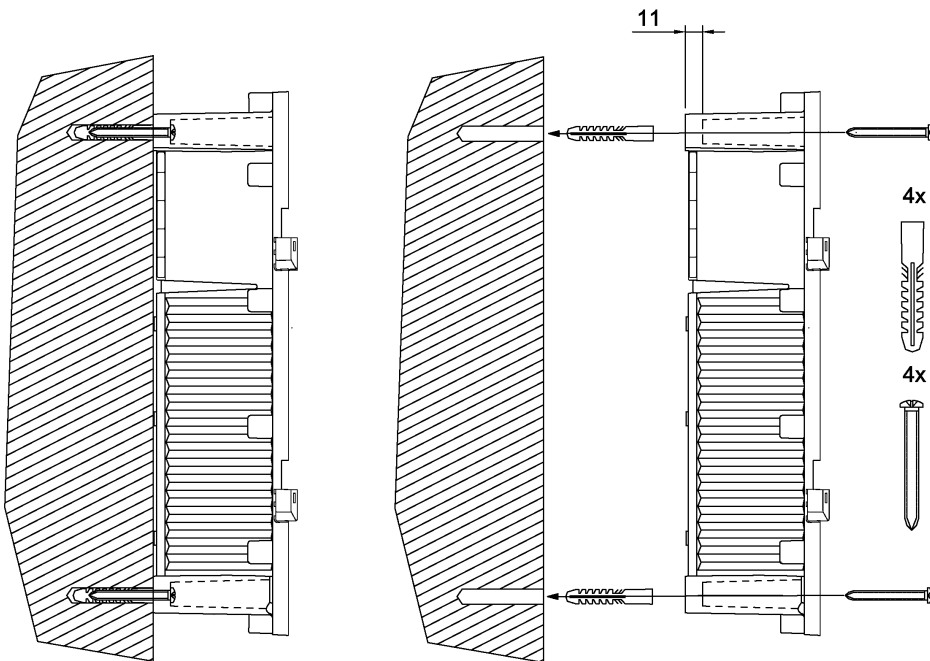
Wall
Fix the station to the wall with four screws that fit the four screw holes in each corner of the on-wall box (6.4 mm diameter).
Use Panhead – DIN7981 for plug or wooden wall, etc. Head diameter 10.8 B5.5 x 38 or 45 mm

4.3　Electrical connection

All electrical connections are made on the main board inside the housing. See chapter 4.2 for instructions on opening and closing the housing


INTEGRATED MICROPHONE

CHASSIS GROUND

AUDIO ACCESSORIES LOUDSPEAKER

AUDIO ACCESSORIES MICROPHONE

AUDIO ACCESSORIES PTT SWITCH

GROUND PTT SWITCH & HOOK SWITCH

INTEGRATED LOUDSPEAKER

GROUND CLAMP 1

GROUND CLAMP 2

FLOWIRE 1

FLOWIRE 2
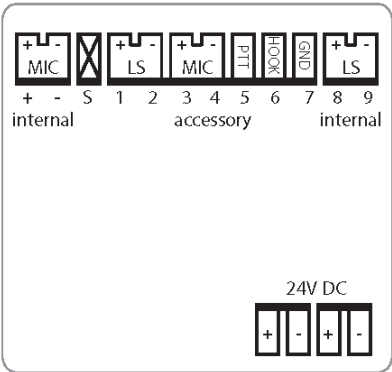
4.3.1 Connection of audio accessories

The blue connector is marked +, -, S, and numbers 1 to 9 (ref. Figure 2). These should be utilized as follows:

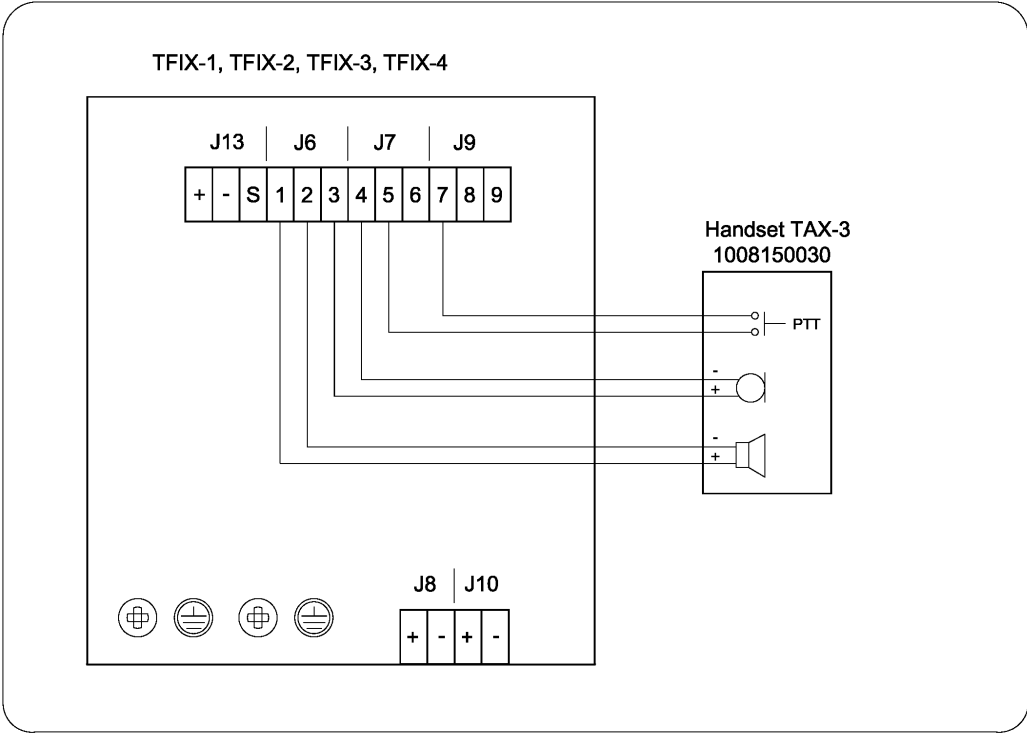|		
J13	+	Integrated Mic +
	-	Integrated Mic –
	S	Chassis ground
J6	1	Audio accessory speaker -
	2	Audio accessory speaker -
	3	Audio accessory microphone mic +
J7	4	Audio accessory microphone mic –
	5	Audio accessory Push To Talk (PTT)
	6	Audio accessory Hook
J9	7	Audio accessory Ground PTT/Hook
	8	Loudspeaker +
	9	Loudspeaker -
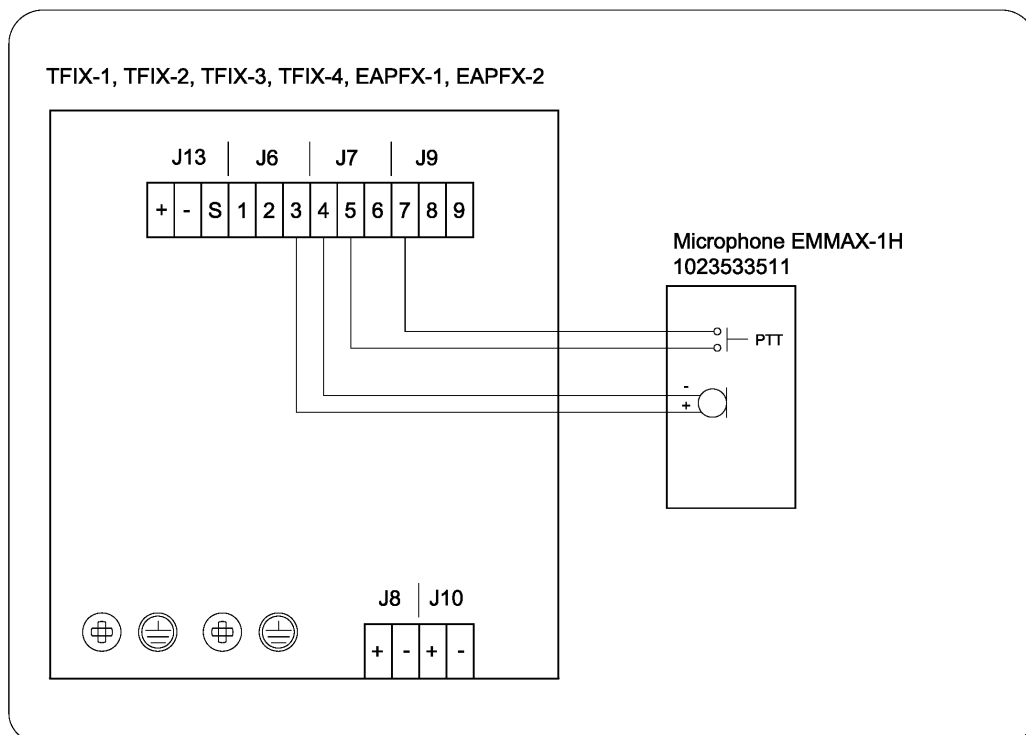
Connection of handheld microphone EMMAX-1H
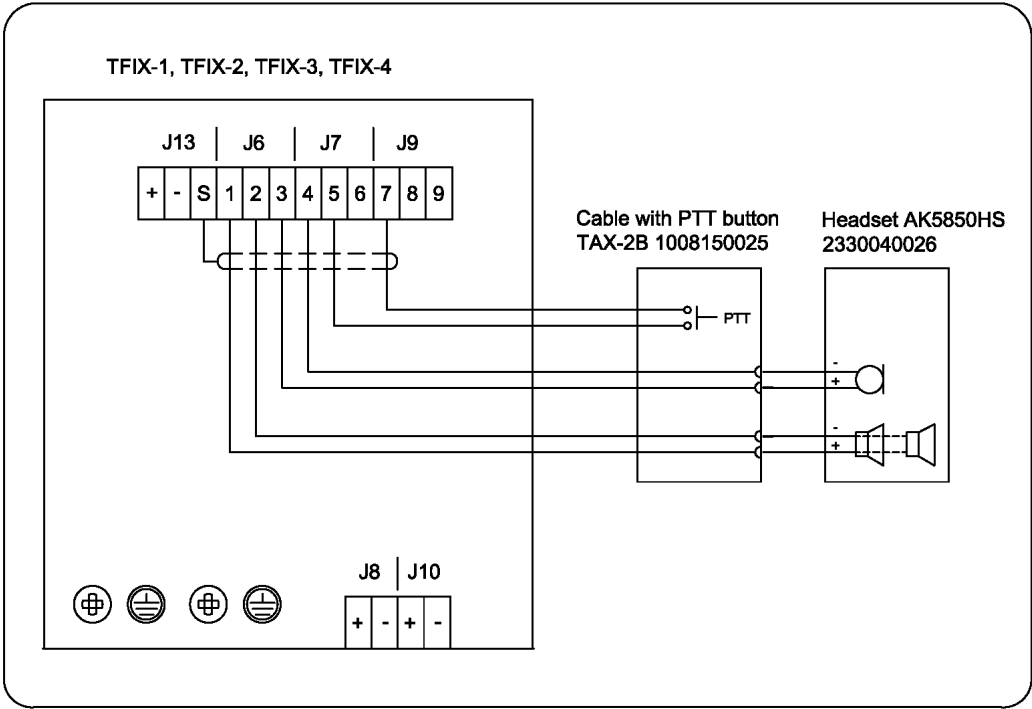
Connection of headset AK5850HS and cable with PTT TAX-2B

Connection of handset TAX-3

TFIX-4

		J13		J6			J7			J9		

| + | - | S | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

External EX certified
loudspeaker 8 ohm

-
+

	J8		J10	
+	-	+	-
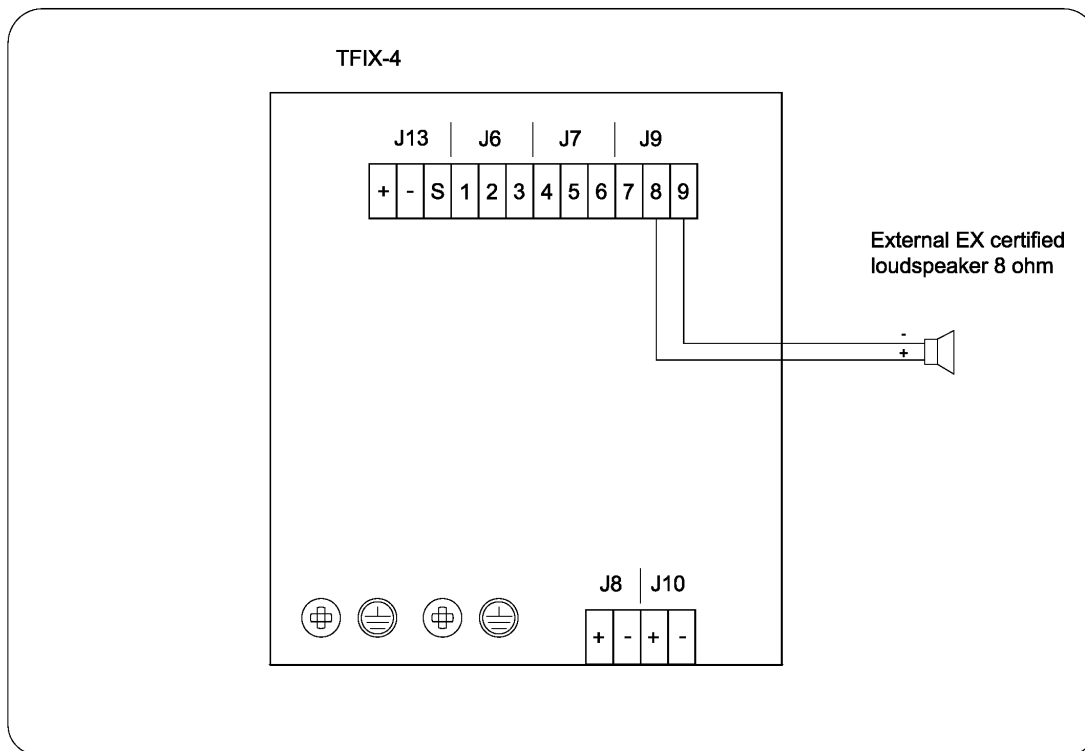
Connection of External loudspeaker on TFIX-4

4.3.2 Flowire connection

Each Ex Product features two Flowire connectors. Power and signal redundancy can be achieved by utilizing both Flowire connectors in an A-B system configuration.

See general guidelines for cabling in Flowire Installation and Configuration Manual, Doc. no. A100K11422.
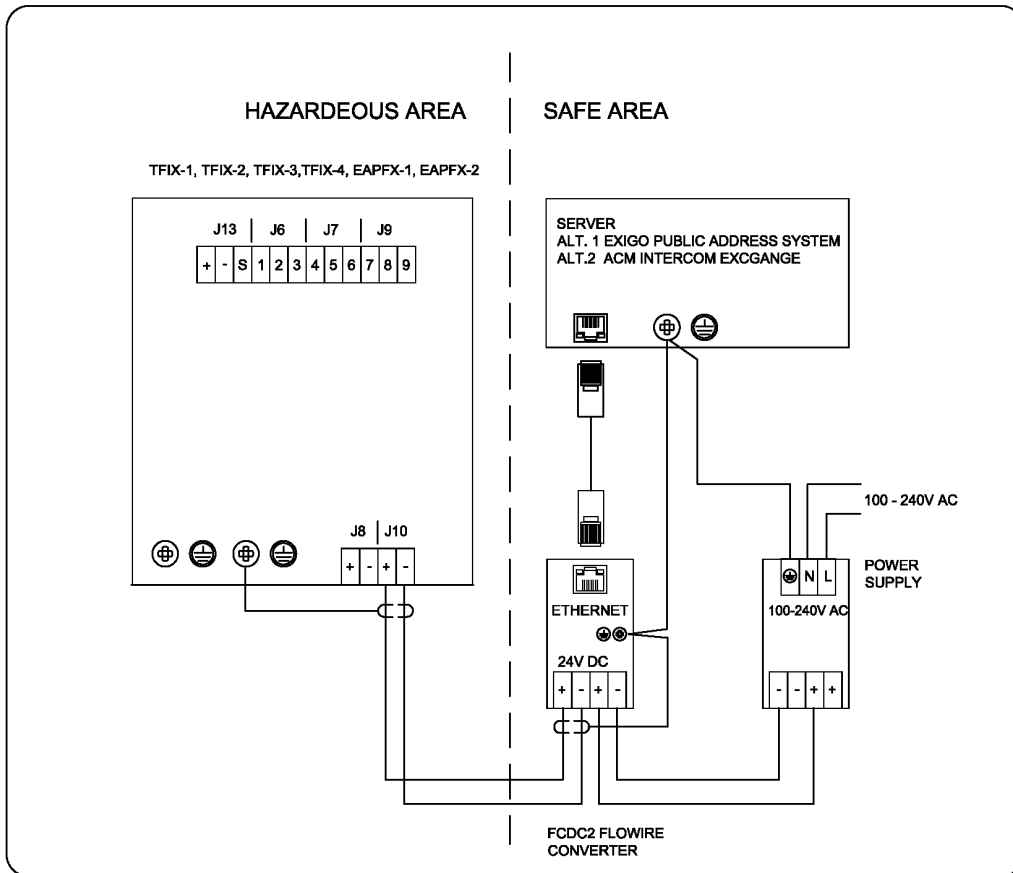
⚠ **Do not connect more than 9 Ex Products to each central Flowire Converter.**

⚠ **Only use one of the Flowire connectors on each Ex product for each central Flowire Converter.**
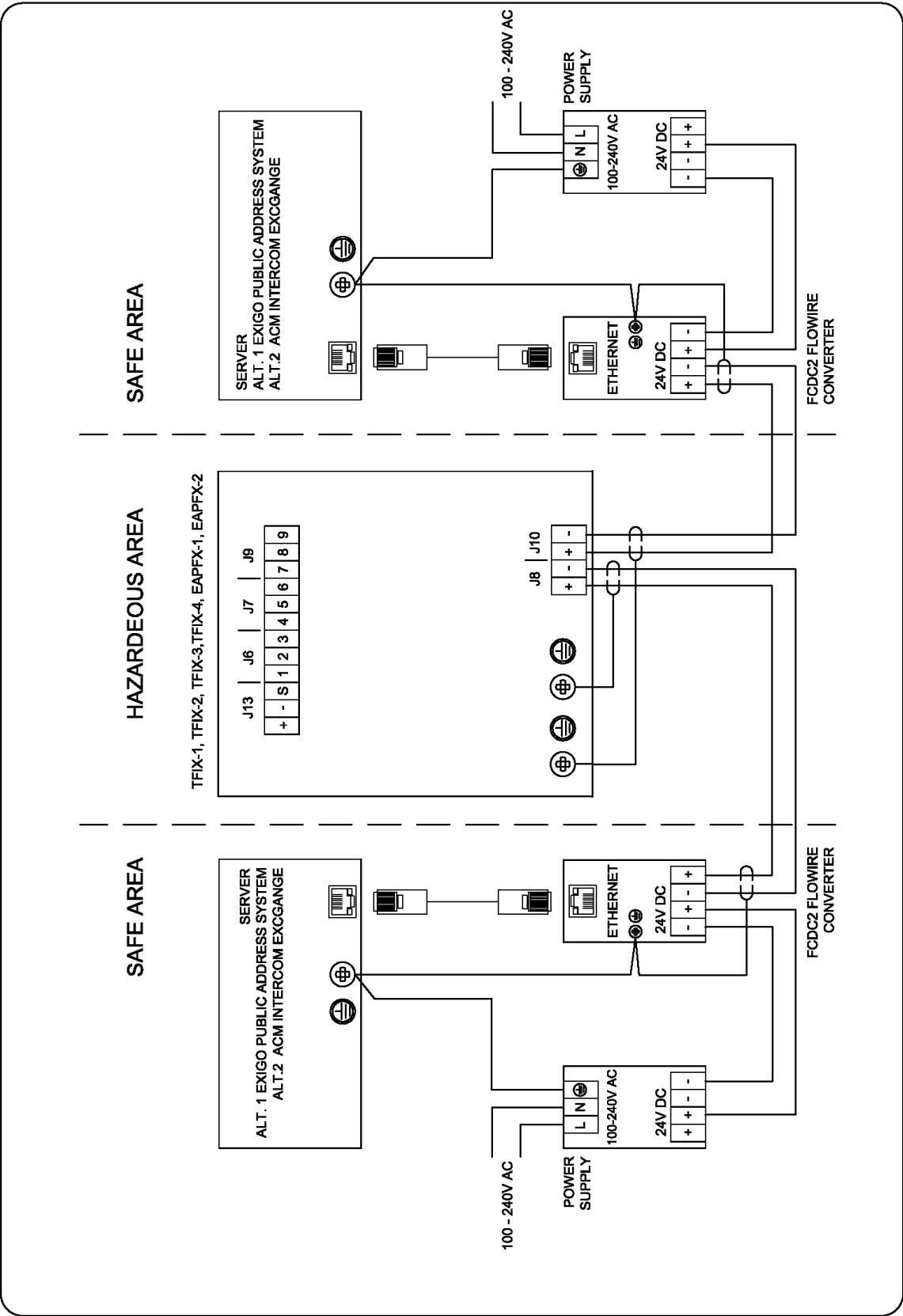
⚠ **Load sharing power supply must be used for redundant cabling solutions. Consult with Zenitel before implementing this type of solution.**
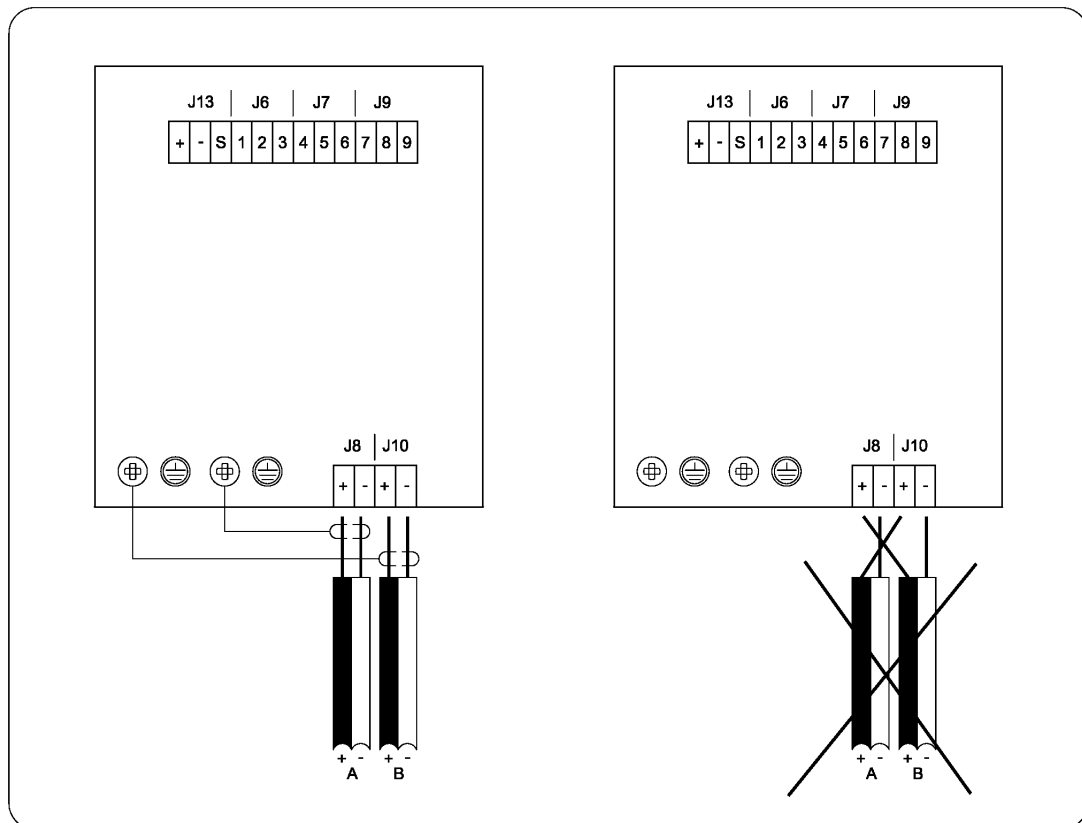
The main board receives both power and Ethernet signals through two wires. You can connect either A or B for connection to the rest of the system, or both A and B, each to a separate server, in order to achieve redundancy.

HAZARDEOUS AREA | SAFE AREA

TFIX-1, TFIX-2, TFIX-3,TFIX-4, EAPFX-1, EAPFX-2

| J13 | J6 | J7 | J9 |
| + | - | S | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

J8 | J10
+ | - | + | -

SERVER
ALT. 1 EXIGO PUBLIC ADDRESS SYSTEM
ALT.2 ACM INTERCOM EXCGANGE

100 - 240V AC

ETHERNET

POWER
SUPPLY
100-240V AC

24V DC
+ | - | + | -

⊕ N L

- | - | + | +

FCDC2 FLOWIRE
CONVERTER

Connection of Flowire in a single system

Connection Flowire in a redundant A–B system
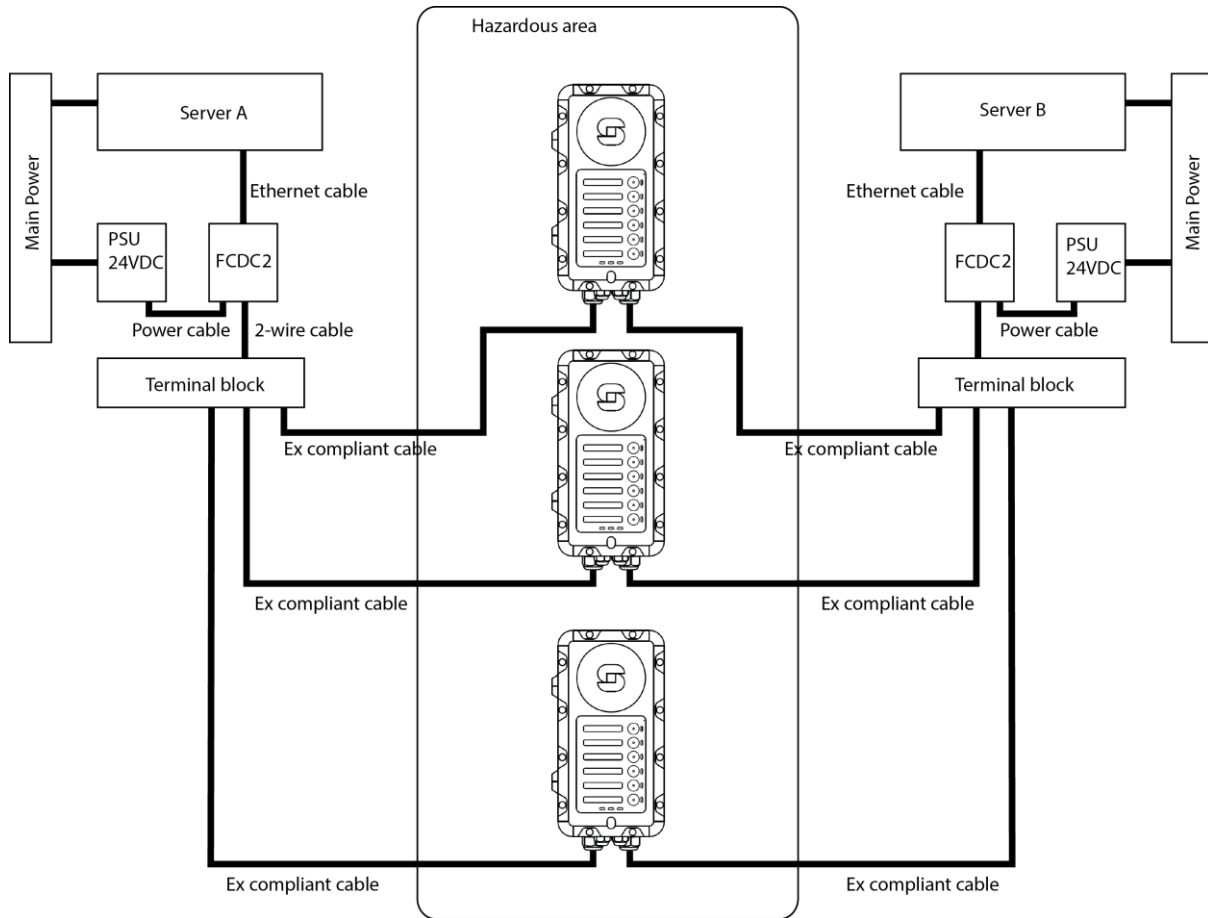
4.3.3 Central connection

The central rack must contain
- A server
- A Flowire Converter (FCDC2)
- A 24V Power Supply Unit (PSU)

In order to connect several Ex Products to one central FCDC2, you also need a terminal block.
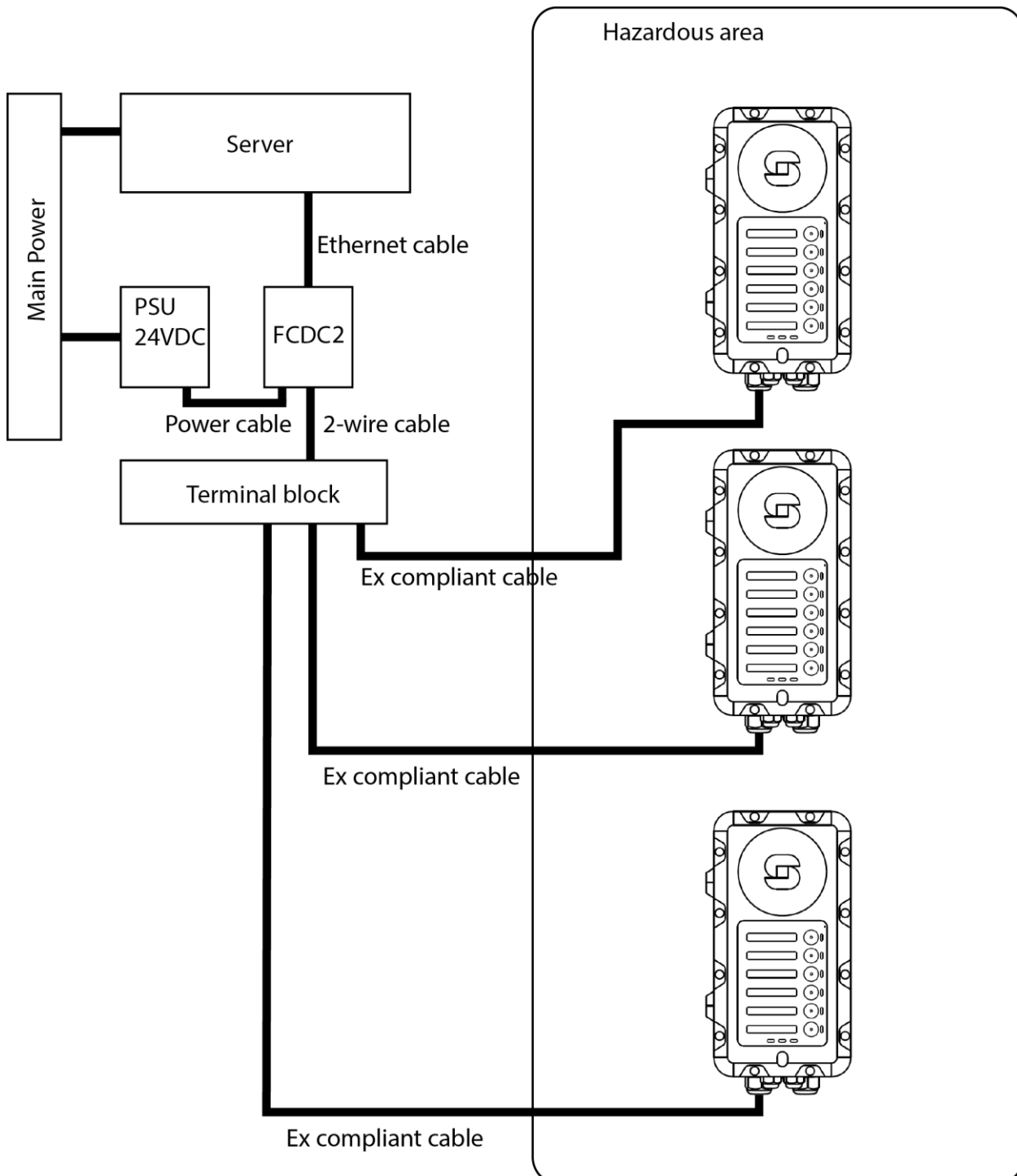
Industrial Ex products connected to a central server

Industrial Ex products connected to two central servers in a redundant A-B system

⚠ **Only use 24VDC power supplies sold or recommended by Zenitel for Ex products.**

4.3.4 Grounding

⚠ **To establish explosion-proof protection, it is vital that the grounding of the panel is done according to the following instructions.**

All ground and shield cables from the central rack must be terminated on the ground sheet inside the main housing.
Grounding must be done according to IEC 60079-17.

The apparatus does not withstand the electrical strength test with 2 x Um 250V r.m.s. to earth according to clause 6.3.13 of IEC/EN 60079-11: 2011/2012, because the equipment has a connection to earth.

4.3.5 Cable insertion

⚠ **Only cables certified for use in explosive atmospheres shall be used.**

⚠ **Only Ex certified cable entries made from plastic shall be used.**

⚠ **The prescribed cable diameters and other guidelines for cable entries used shall be observed.**

⚠ **The relevant mounting directives for the cable entries used shall be observed.**

⚠ **When using cable entries with a degree of protection that differs from the IP protection of the Ex Product (see Technical Specifications), the limiting IP protection level shall be adhered to.**

⚠ **When using cable entries with an ambient temperature range that differs from the ambient temperature range of the panel or intercom (see Technical Specifications), the limiting temperature range shall be adhered to.**

⚠ **When using cable entries with impact resistance that differs from the impact resistance of the panel or intercom, the limiting impact resistance shall be adhered to.**

⚠ **Cable entries must have ingress protection IP54 or higher**

⚠ **Cable entries must be approved according to IEC 60079-0:2007 or EN 60079-0:2009 or later versions of one of these standards**

⚠ **In order to ensure the required minimum degree of protection, the cable entries must be tightened down securely.**

⚠ **Over-tightening can impair the degree of protection and damage the Ex Product.**

⚠ **When tightening the cap nut of a cable entry, a suitable tool shall be used to prevent the gland from twisting.**

⚠ **When using the Hummel M16 cable gland HSK-K-MZ-Ex included in the box, the following limiting factors apply**

- Lowest temperature -20°C

- Impact resistance: 4J (low risk of mechanical danger)

4.4   Commissioning

Before operating the Ex panels ensure that;

- The national regulations concerning such apparatus are followed.

- An inspection according to the IEC 60079-17 standard has been performed.

5   Maintenance Service

5.1   General

The valid national regulations for the servicing/maintenance of electrical apparatus for use in potentially explosive atmospheres shall be observed.

Prior to opening the enclosure, it is necessary to ensure that the voltage supply has been isolated or to take suitable protective measures.

The necessary intervals between servicing depend upon the specific application and shall be stipulated by the operator according to the respective operating conditions.

During servicing, explosion protection dependent parts shall be tested to ensure their correct state, such as the following.

5.1.1   Water tight enclosure

- Visual inspection to look for cracks or damages on the enclosure.

- Visual inspection of the screw inserts for the 12 screws connecting the front frame to the on-wall box. If any of these have moved out of their original positions, the integrity of the enclosure is jeopardized.

- Inspect all seals, gaskets and cable entries for efficiency and intactness.

- If water has entered the Ex panel, contact your supplier immediately and do not apply voltage to the panel until it has been inspected and/or replaced by a specialist.

5.1.2   Wires

- Inspect termination points for loose wires.
- Inspect wire isolation and jackets for cracks and signs of ageing.

⚠️ **Do not replace any parts not mentioned in chapter 5.3 without approval from Zenitel.**

5.2   Repair / Overhaul / Modifications

⚠️ **Only original Zenitel parts shall be used for carrying out repairs that concern explosion protection.**

In the event of damage to the enclosures, replacement of these components is mandatory. Contact Zenitel for guidance.

Reconstruction or modifications to the apparatus are only possible within the scope of the approvals and shall be certified afterwards.

5.3   Serviceable / replaceable parts

Item number	Item Name	Item Description
1000150040	TAX-4	Cable gland kit (10x), for TFIX and EAPFX
1023594100	EGA-1	Button Protection Covers (10x), for TFIE/TFIX/EAPII/EAPFX
1008140250	TA-25	M6 screw kit for TFIE/TFIX and EAPII/EAPFX stations
2330040026	AK5850HS	Ex-Approved Headset with plug **
1008150025	TAX-2B	Ex Approved Cable for Headset with PTT Button
1008150030	TAX-3	Ex-Approved Handset with PTT, unterminated
1023533511	EMMAX-1H	Exigo Handheld Industrial Ex Microphone, 1 Button, IP66

** Headset AK5850HS is only certified for use in ATEX areas (Not IECEx)

5.4   End of life, the WEEE directive

⚠ **The WEEE Directive does not legislate that Zenitel, as a 'producer', shall collect 'end of life' WEEE.**

This 'end of life' WEEE should be recycled appropriately by the owner who should use proper treatment and recycling measures. It should not be disposed to landfill.

Many electrical items that we throw away can be repaired or recycled. Recycling items helps to save our natural finite resources and also reduces the environmental and health risks associated with sending electrical goods to landfill.

Under the WEEE Regulations, all new electrical goods should now be marked with the crossed-out wheeled bin symbol shown.

Goods are marked with this symbol to show that they were produced after 13th August 2005, and should be disposed of separately from normal household waste so that they can be recycled.

6   Appendix

6.1   Main Technical specification

Physical	
Size (HxWxD):	345 x 188 x 101 mm
Weight:	4'000 gram
Acoustical	
Audio output :	> 90 dB *
Frequency response	150 – 20 000 Hz *
Environmental	
Storage temperature	-40°C to 70°C
Operating temperature (T4)	-20°C to 60°C
Ingress protection	IP 66 / IP 64 **
Impact resistance	Fit for areas with high risk of mechanical danger ***
Safety	
IECEx (IEC EN 60079)	II 2(2)G Ex e ib mb [ib] IIC T4 Gb+

For detailed information about electrical and operational specifications please see chapter 3 and datasheets.

* TFIX versions only

** IP 66 tested in accordance with EN60945, IP 64 tested in accordance with IEC 60079-0

*** When using cable entry "Hummel M16 cable gland HSK-K-MZ-Ex", included with the Ex industrial panels and intercoms, impact resistance is limited to areas with low risk of mechanical danger

6.2 Dimension Drawings

6.2.1 TFIX-1, TFIX-2, TFIX-3, TFIX-3, TFIX-4, EAPFX-1, EAPFX-6

6.2.2 AK5058HS & TAX-2B

6.2.3 TAX-3
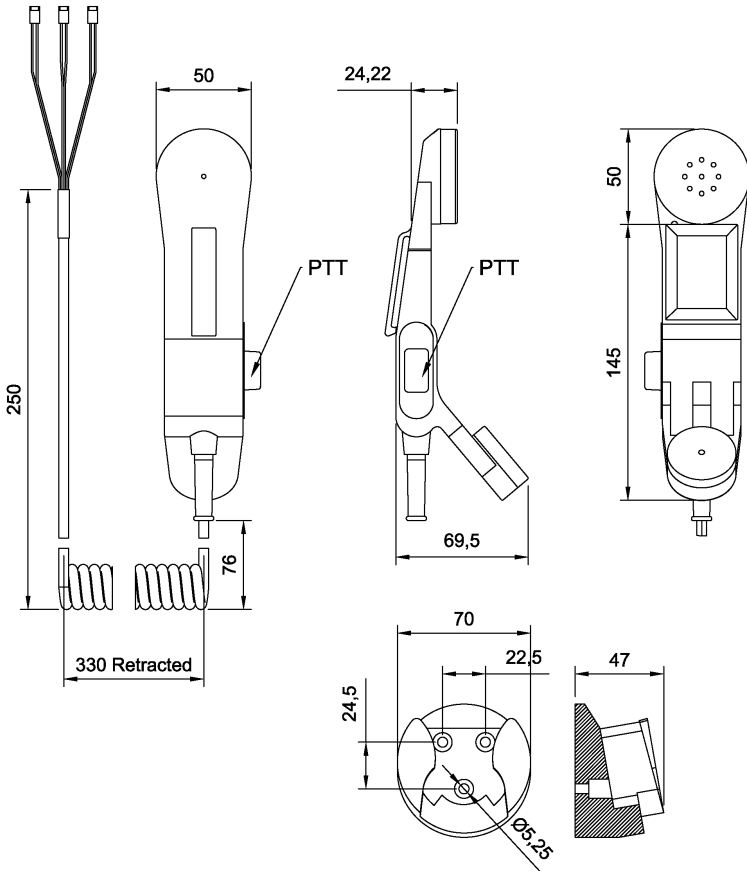
6.2.4 EMMAX-1H
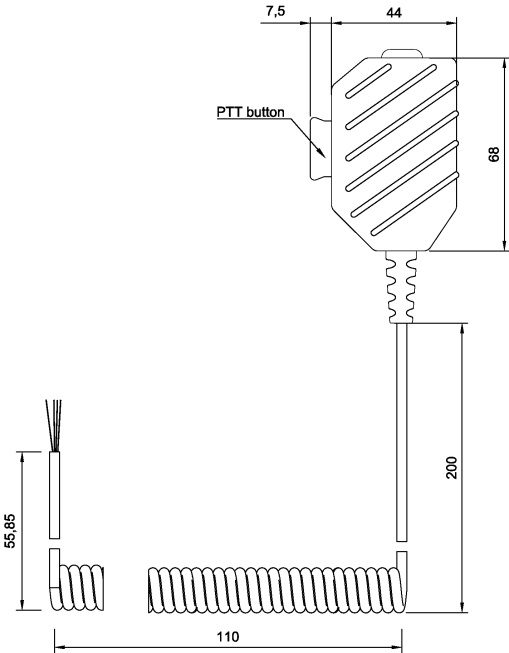
www.zenitel.com

Zenitel Norway AS

P.O. Box 4498 Nydalen

NO-0403 OSLO

Norway