TP9000EX Thor 1

ATEX Hand Portable Radio

Basic user guide

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Important information

Safe use of ATEX equipment:

- Do not change the battery & accessories in wet or humid environments.
- Always keep battery connectors dry and clean.
- Use only with ATEX approved accessories.
- Alternatively ATEX approved accessories in compliance with the accessory connector ATEX specification may be used.
- Do not charge the battery in hazardous area.
- The battery BP930Ex may be replaced in hazardous area.
- For charge of battery use ATEX BL910 Single Position Charger or Dual Position Charger
- Use only battery type BP930EX.
- Do not use a mechanically damaged radio.
- Unpacking of the radio and accessories must not take place in the ATEX protected area.

For your safety

It is very important that you read the following instructions and safety advices.
Since this radio is intended to be used in hazardous areas, it is of great importance to observe that no damage has been applied to endanger the safety of the equipment. If for example the radio shows signs of damages on the enclosure or malfunctioning during operation, it must be removed from the hazardous area immediately and returned to the manufacturer for testing and repair.

Authorised usage

The Portable Radio Type TP9000EX Thor 1 must not be used unless you have a valid licence. Usage of the radio may be limited under the terms of your licence to a limited geographical area.

Warranty limitation

IMPORTANT - The radio and batteries are sealed waterproof units.

To maintain the waterproof integrity, they were assembled in a controlled environment.

The radio and batteries are not user maintainable units, and under no circumstances should the units be opened except by authorized personnel.

Unauthorized opening of the units will invalidate the warranty.

Normal warranty is 12 months.

Servicing the radio

Only authorised TP Radio personnel may open the radio for servicing. If non-authorised persons open the radio, the radio may no longer comply with the ATEX directive, the guarantee will be renderedvoid, and the radio may no longer be waterproof.

Disclaimer

Any responsibility or liability for loss or damage in connection with the use of this product and the accompanying documentation is disclaimed by TP Radio.

The information in this manual is provided for information purposes only, is subject to change without notice and may contain errors or inaccuracies.

Manuals issued by TP Radio are periodically revised and updated. Anyone relying on this information should acquire the most current version e.g. From www.tpradio.dk.

TP Radio is not responsible for the content or accuracy of any translations or reproductions, in whole or in part, of this manual from any other source.

Pacemakers and other bio-medical electronic devices

The radio should never be used closer than 20cm to a pacemaker.

Precautions

Avoid water and salt in the I/O connector and keep it clean frequently.

Only use original TP Radio battery packs together with TP Radio charger.
Make sure they are clean and dry before attaching the transceiver.

Be careful not to damage any gaskets. Be careful when handling the Lithium batteries.

With correct use they are safe but any misuse might cause dangerous situations.

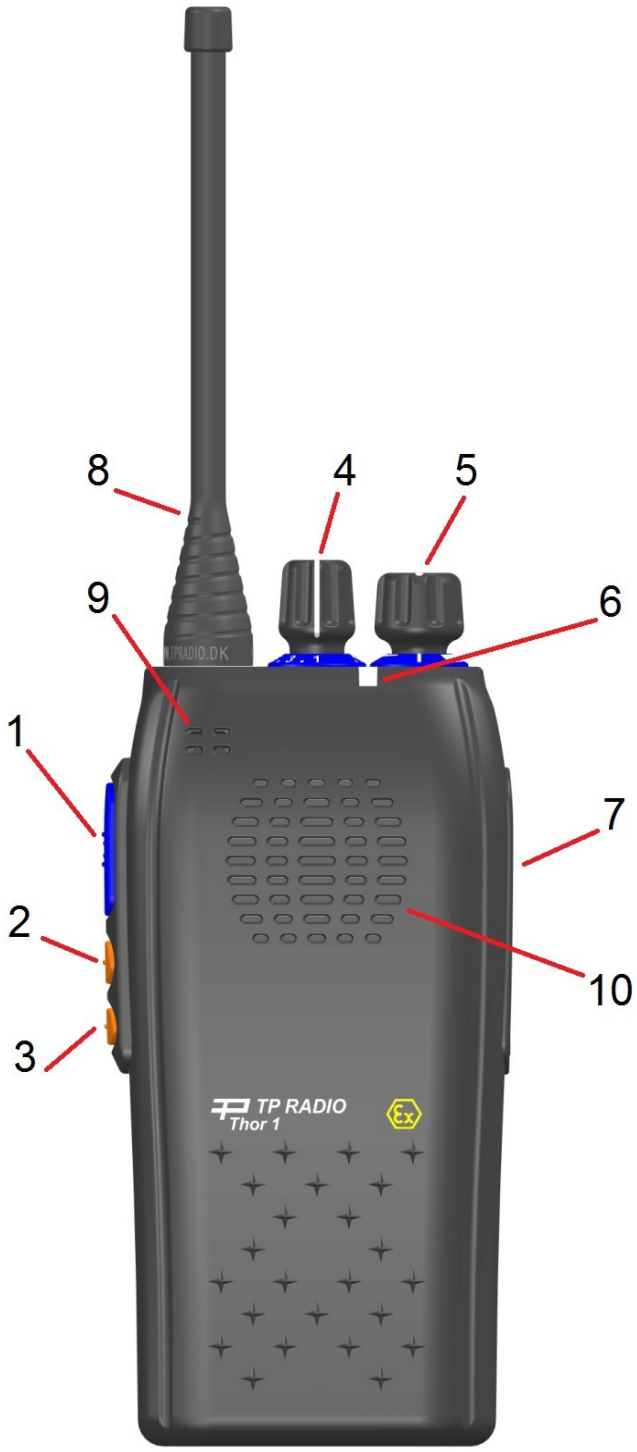
Never short circuit the battery terminals, never expose the transceiver and the batteries to extreme temperature or fire and never use any kind of violence.

Do not submerge the transceiver more than 1 m for 30 minutes.

Keep the transceiver at least 1,5 m away from the magnetic compass.

Radio Controls

1. **Push to Talk Button (PTT).**
2. **Function Button 1.**
   By default assigned for
   Speaker Mute/Squelch Open.
3. **Function Button 2.**
   default assigned for Call 1/Call 2
4. **Channel Selector/Function Button 3.**
   default assigned for Emergency Call
5. **Power switch/Volume control**
6. **Multi coloured LED indicator**
7. **Accessory Connector**
8. **Antenna**
9. **Microphone**
10. **Speaker**



Programmable Functions

Each Function Button can activate two different functions. Function 1 is activated by a short press, and function 2 with a long press (3 seconds or more).

With our external speaker-microphone connected to the TP9000EX, an additional (fourth) Function Button is accessible, and can be assigned to two more functions.

By default the Function Buttons on the TP9000EX are assigned as follows:

Function Button 1

- Short press: Speaker Mute – toggle between Mute on/off. (LED indicator is flashing green/white.)
- Long press: Squelch Open – momentarily opening the squelch until the button is released.

Function Button 2

- Short press: Call Telegram – Transmits a tone sequence to call another radio.
- Long press: Call Telegram – Transmits a tone sequence to call yet another radio.

Function Button 3 (Push the channel Selector)

- Short press: No Function.
- Long press: Energency Telegram – Transmits a tone sequence to make an emergency call.

If the default configuration does not comply with your requirements, our dealers will do the programming of the Function Buttons according to your needs.

The following options can be assigned to fulfill any needs:

- Call Telegram — Transmits a tone sequence to call another radio.
- Emergency Telegram — Transmits a tone sequence to make an emergency call.
- Speaker Mute — Toggle between Mute on/off. (LED indicator is flashing green/white.)
- Squech Open — Momentarily opening the squelch until the button is released.
- Adjust Squelsh mode — When activated, the squelch level can be adjusted with the volume button. (LED indicator is flashing blue/white.) Deactivated by an additional press.
- Internal / External Speaker — Toggle between internal and external speaker.

Additional programmable functions:

- PTT Call Telegram — Transmits a tone sequence initially when the PTT button is pressed.
- TILT Alert — Transmits an alert call when the TP9000EX is positioned horizontally or inversely for a certain period of time.

LED Indicator

• Power ON	The LED flashes green once (Battery level full, >50%). The LED flashes orange once (Battery level medium, 25-50%). The LED flashes red once (Battery level low, <25%).
• Stand-by	The LED is white.
• Transmitting	The LED is red. (LED is Cyan when transmitting with low power, due to low battery.)
• Receiving	The LED is green.
• Call received	The LED is flashing red/white
• Low battery Alert	The LED flashes red with beep sound every 30 seconds

Getting started

Switch the Radio On/Off

Turn the On-Off/Volume Control knob clockwise. To switch off, turn the On-Off/Volume Control knob counterclockwise until you hear a click.

Adjusting the Radio's Volume

Turn the Volume Control knob to adjust the volume level.

Selecting a Radio Channel

Turn the Channel Selector until you reach the desired channel indicated with numbers.

Transmit

1. Make sure the Channel Selector is set to the required channel.
2. Press the PTT button and speak clearly into the microphone. The distance between your mouth and the microphone should be about 5 to 20 cm.
3. Release the PTT button when you finish speaking.

Receive

1. Turn your radio on and adjust the volume level.
2. Switch to the desired channel.

Technical specifications

Item	Specification
GENERAL DATA	
VHF frequency range UHF frequency range	145 – 174 MHz 406 – 470 MHz
Max. Number of channels	16
Channel Spacing	12,5 / 20 / 25 KHz
VHF Bandwidth UHF Bandwidth	29 Mhz 64 MHz
Operation mode	Simplex / Semi-Duplex
Antenna Impedance	50 ohm
Operating Temperature	-20 °C to +55 °C
Storage temperature Less than 1 month Less than 3 month Less than 1 year	 -20 °C to +50 °C -20 °C to +40 °C -20 °C to +20 °C
Battery	Lithium-Ion, 3000 mAh rechargeable
Frequency error	± 2 ppm
Water ingress protection	IP67
Dimensions incl. 3000mAh battery	H = 137, B = 64, D = 31mm
Weight incl. battery	250 g.

TRANSMITTER	
RF output power,	Programmable 0.5 - 2 Watt
Max deviation	± 5 KHz / 25 KHz channel
Spurious emission	< 0,25 µW or - 36 dBm
Modulation distortion	< 5 % @ ± 3,0 KHz
RECEIVER	
Sensitivity (EMF) (25 KHz channel spacing) @ 20 dB SINAD @ 12 dB SINAD	 0,45 µV 0,30 µV
Intermodulation EN 300 720 EN 300 086	Better than 68 dB 65 dB
Spurious response	> 70 dB
Channel selectivity	> 70 dB
LF output power	2 x 0,5 Watt

Intrinsically safe specifications:	
BL910:	
U_m:	$16V_{DC}$ ($250V_{AC}$ without damaging BP930Ex, BL910 will not work afterwards)
BP930Ex charging input:	
U_{max}:	4,2V
I_{max}:	1,8A
TP9000Ex (RE930/7Ex & RE930/2Ex) connection for handheld accessories or programming unit PK930:	
U_o:	4,2V
I_o:	595mA
P_o:	2,5W
L_o:	300µH
C_o:	5µF
PK930	
U_m:	$5V_{DC}$ ($250V_{AC}$ without damaging TP9000Ex, BK930 will not work afterwards)
Special condition for safe use:	
Battery cassette BP930Ex shall only be charged in an area known to be non-hazardous. The battery cassette BP930Ex shall only be charged with charger BL910. The battery cassette BP930Ex shall only be charged in an ambient temperature range of: +10°C to +40°C The battery cassette BP930Ex may be replaced in hazardous area. The programming unit PK930 shall only be used in an area known to be non-hazardous. Intrinsically safe equipment connected to the accessory connection shall comply with the entity parameters shown above.	

Simplified EU Declaration of Conformity

Hereby,

TP Radio, Agenavej 35-37,2670 Greve, Denmark

declares that the radio equipment

Type: TP9000Ex Thor 1

Model: RE930/2Ex & RE930/7Ex

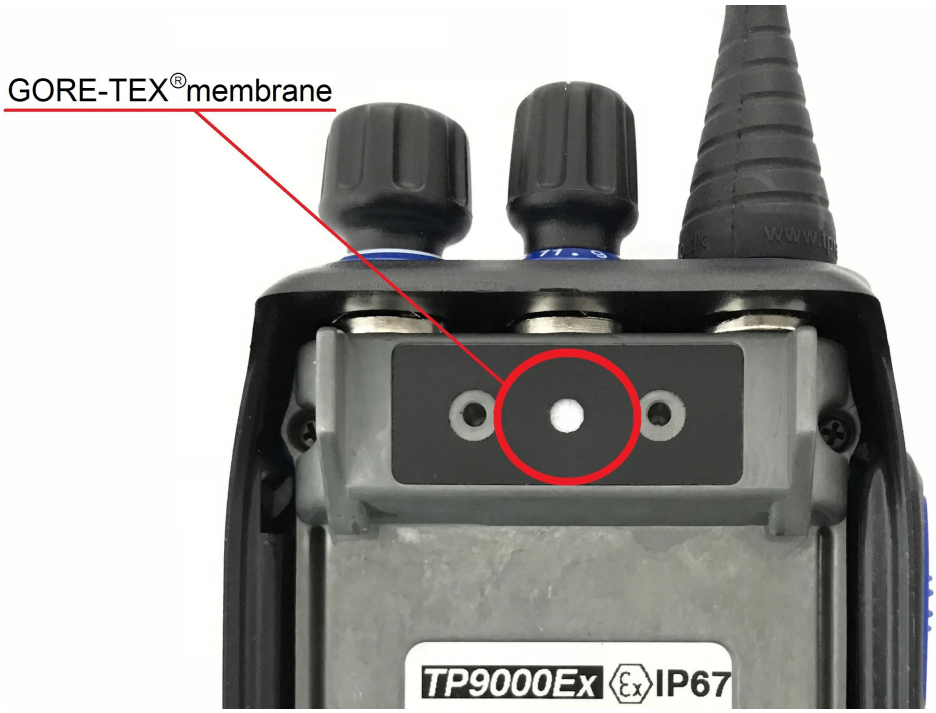
Is in compliance with Directive 2014/53/EU

The full text of the EU declaration of conformity is available at the following internet address:

https://drive.google.com/file/d/0B6HYkZ6m9gcdVEE3Y2t6b0U1dzA/view

Attention

GORE-TEX® Membrane

To keep the Radio watertight, it is very important that the Gore-Tex® membrane under no circumstances must be damaged/covered or removed.

Do not remove the Gore-Tex® membrane or place any labels in the area.