

DESIGNED FOR SAFETY

PT890Ex

Intrinsically Safe TETRA Portable Radio



For workers in the Oil and Gas industry or firefighters in the Fire and Rescue, who operate in extreme conditions and are exposed to risks from explosive gas, combustible dusts, or chemical vapors. In dangerous environments, safe, reliable, and high-efficient communication is paramount.

The PT890Ex intrinsically safe TETRA portable two-way radio leverages Hytera's 20 years of experience and expertise in explosion protection to take personal safety and mission-critical communications to a new level for the workers in oil and gas, mining, chemical, pharmaceuticals, and other industries with hazardous environments.

Certified with IECEx/ATEX, the PT890Ex is the safest radio to maintain communication when personal are faced with hazardous working environments, without causing a fire or explosion. PT890Ex has IS circuit, long-lasting explosion-proof battery, superior audio, extended radio coverage, and advanced ergonomics for easy operation.





Fire and Rescue

When firefighters make efforts to protect lives and properties in a place full of smoke, dust, and even toxic or explosive gases, the PT890Ex provides safe and effective communications for them.



Oil and Gas

In dangerous environments with flammable liquid and explosive gas, the PT890Ex provides safe & stable communication for operators to ensure their safety.



Mining

When miners work in complex coal mines with various explosive gases and combustible dust, such as methane, the PT890ex is available to provide personal with safe and effective communications.



Manufacturing

In pharmaceutical processing, steel plant, food processing, and more industries where the chances of massive dust explosions are high, the PT890Ex with a higher IS level can keep the workers safe by reliable communications.



Airport

In the airport with complex facilities that are exposed to fuels, the PT890Ex offers all ground staff and on-site fire crew with safe and efficient communications.



Chemical Plant

In the chemical plant where the conversion and processing of flammable gases, liquids, and solids may lead to explosion, the PT890ex is available to provide personal with safe and effective communications in a chemical environment.



ULTIMATE SAFETY

The PT890Ex intrinsically safe radio is certified to standards listed by IECEx. It has been developed to provide safe and reliable communication in hazardous environments by adopting the new materials, brand-new structural design and innovative IS circuit. With optimized RF solution and pioneering audio solution, it extends communication range and provides better audio. Moreover, the PT890Ex prepares for the unexpected before it really happens, thanks to lone worker, man down, and precise positioning.

IECEX

Ex ib I Mb
Ex ib IIC T4 Gb
Ex ib IIIC T90°C Db
IP66/IP67/IP68, $-25^{\circ}\text{C} \leq T_{a} \leq +60^{\circ}\text{C}$

ATEX

I M2 Ex ib I Mb
II 2G Ex ib IIC T4 Gb
II 2D Ex ib IIIC T90°C Db
IP66/IP67/IP68, $-25^{\circ}\text{C} \leq T_{a} \leq +60^{\circ}\text{C}$

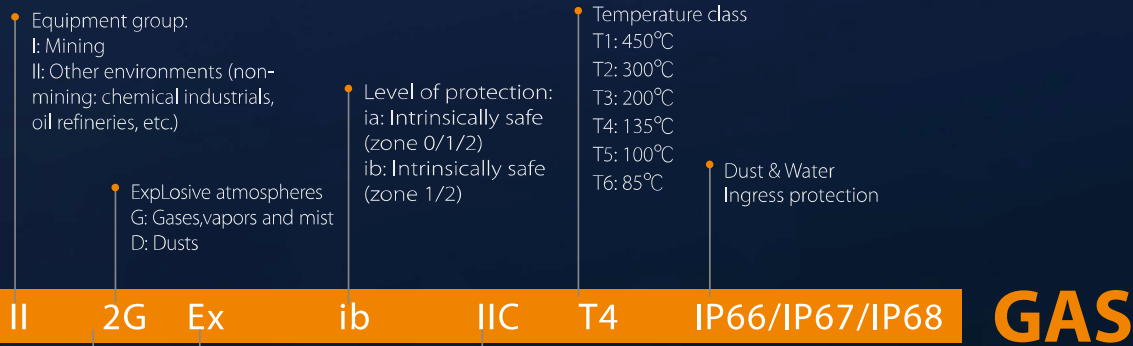
US

Class I, Zone 1, AEx ib IIC T4 Gb
Zone 21, AEx ib IIIC T90°C Db
IP66/IP67/IP68, $-25^{\circ}\text{C} \leq T_{a} \leq +60^{\circ}\text{C}$

CA

Ex ib IIC T4 Gb
Ex ib IIIC T90°C Db
IP66/IP67/IP68, $-25^{\circ}\text{C} \leq T_{a} \leq +60^{\circ}\text{C}$

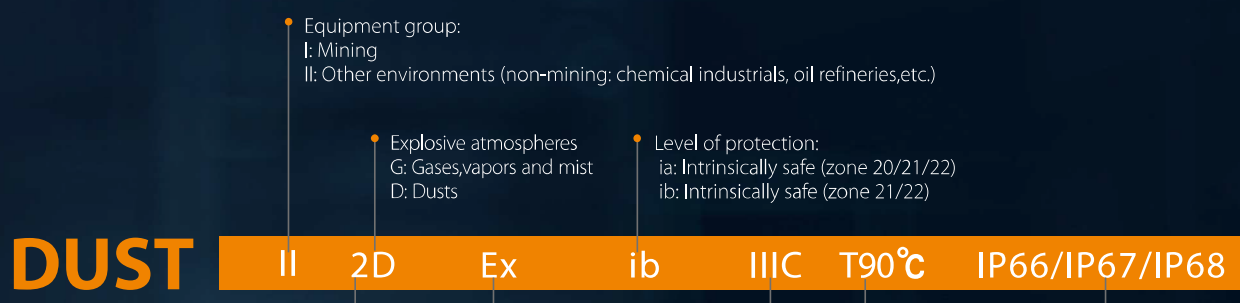




Explosion-proof standard:
EU ATEX directive and IECEx standards

Gas group:
I: Methane (mining)
IIA: Propane
IIB: Ethylene
IIC: Acetylene, hydrogen
(hazard level: IIC>IIB>IIA)

Classification for hazardous places
1: Very high level (zone 0 or zone 20)
2: High level (zone 1 or zone 21)
3: Normal level (zone 2 or zone 22)
Zone 0: Present continuously
Zone 1: Present intermittently
Zone 2: Present abnormally



Explosion-proof standard:
EU ATEX directive and IECEx standards

Dust group:
IIIA: combustible flyings
IIIB: non-conductive dust
IIIC: conductive dust

Classification for hazardous places
1: Very high level (zone 0 or zone 20)
2: High level (zone 1 or zone 21)
3: Normal level (zone 2 or zone 22)
Zone 0: Present continuously
Zone 1: Present intermittently
Zone 2: Present abnormally



M1: Equipment must continue to operate in a potentially explosive environment.
M2: Equipment does not operate in a potentially explosive environment. (hazard level: M1>M2)

Level of protection:
ia: Intrinsically safe (Category M1/M2)
ib: Intrinsically safe (Category M2)



Built for Safety



Wider range of operation temperature (in Ex area)

Thanks to new explosion-proof materials and advanced mechanical design, the PT890Ex is built to work under temperatures from -25°C to 60°C in explosion-prone areas. With stable and even heat dissipation, the PT890Ex is engineered to work in the extreme conditions, bringing extra safety and efficiency to everyday work.



More powerful intrinsically safe circuit

The PT890Ex adopts the innovative silicone encapsulation technology to prevent liquid, inflammable dust, or explosive gas from intruding internal circuits. With multiple circuit protection mechanisms, the PT890Ex strictly limits the amount of energy in the electrical circuit to a non-ignitable level during operation.



Rugged intrinsically safe battery

The IS battery is secured to the radio by a battery protection plate and an anti-falling battery latch. Even if the PT890Ex is dropped by accident, the battery will never become detached to avoid potential sparks in hazardous circumstances. In addition, the PT890Ex prohibits the user to use a non original battery which alerts the user when it identifies a non-original battery has been detected with prompts on screen and flashing red LED indicator, as the safety of life and property cannot be endangered by any risks.

Latest anti-static technology

Electrostatic discharges are a source of ignition in explosive risk areas. Taking this in mind, the PT890Ex first adopts high-strength, explosion-proof materials to prevent static electricity on the surface. Then the PT890Ex uses a dual-material technology to resist the build-up of static electricity. So the workers can freely use the PT890Ex removing the threat to lives and properties from the potential risk of spontaneous combustion or explosion.





Reliable to Use



Rugged and certified

The PT890Ex is certificated with IP6X and MIL-STD-810H after a whole list of reliability tests such as accelerated life testing, impact test for the radio with 2.4-inch screen, and drop test. It is rugged enough to withstand dust, shock, or sudden drop. The workers can use the radio whatever harsh environments they encounter.



Dual antimagnetic mechanism

In the area containing metallic compounds, the PT890Ex resists magnetic metal dust and shavings from the environments that could damage the speaker — maintaining outstanding audio clarity and a longer service life. All lies in the dual antimagnetic mechanism.





Built for Individuals Safety



Lone worker

Provides lone worker protection and reassurance for those who work alone especially in dangerous environments, such as oil pipeline worker. If the PT890Ex senses that the worker does not make any operation within a preset time, due to a worker becoming incapacitated and unable to move, this radio will automatically alarm and reports the location to the companion or control center for a welfare check.



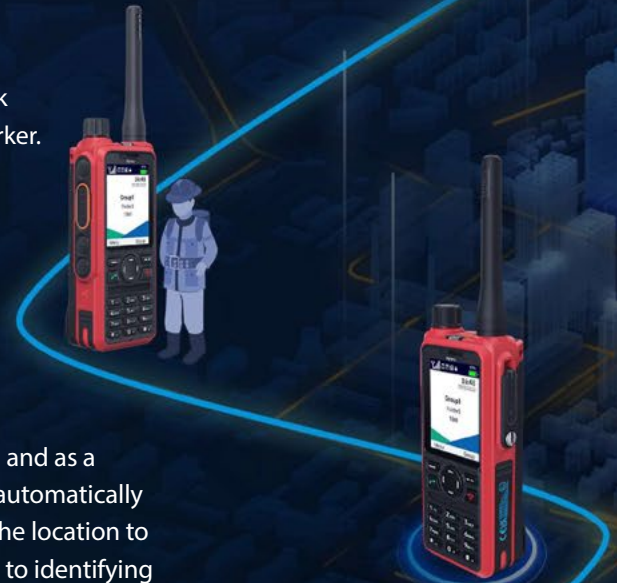
Man down

Man Down is ideal for emergency situation. If the worker has fallen and as a result has become unconscious, or not able to move, the PT890Ex automatically detects a sudden tilt towards the ground, and alarms and reports the location to the companion or control center for for a welfare check, this is vital to identifying dangers and preventing the loss of life.



Precise positioning

With the built-in positioning module, the PT890Ex supports the flexible combination of GNSS, BDS, GLONASS and Galileo satellite systems. Also, the PT890Ex enhances positioning accuracy down to one meter, thanks to the dual-frequency positioning technology. Such reliable and accurate location information helps locate the individual that may need assistance during an emergency event.





HIGH EFFICIENCY COMMUNICATIONS

The PT890Ex takes critical communications to a new level, with the efforts of Hytera Audio Lab, RF & Antenna Lab, Energy-efficient Lab, and UX Design Lab*. The PT890Ex keeps the workers always connected, from superior audio quality to extended radio range. The PT890Ex performs longer thanks to the longlasting battery. Moreover, the PT890Ex facilitates the usage and management in terms of versatile connectivity and easy-to-use design.

* Hytera Professional Lab.



Superior Audio Quality

Improved Speaker performance

Most explosion-prone environments are noisy, this radio provides clear and loud audio which is key to ensure effective communication among team members. The PT890Ex, with a lighter and slimmer body, has a 2W speaker to deliver louder audio to improve team collaboration and work efficiency.

Ultra Clarity

With cutting-edge audio processing technology adopted, the PT890Ex delivers crisp, clear audio even in complex environments, ensuring clearer audio for Mission-critical and business-critical communications.

AI-based noise cancellation

The PT890Ex adopts the most advanced AI-based noise cancellation algorithm and gets machine learning behaviour. After learning and training thousands of noise samples, the PT890Ex can quickly separate the human voice from the noise, allowing the workers to receive clear commands.

Water-porting design

The speaker has a unique water-porting design that can automatically expel water from the speaker's acoustic cavity quickly. Even in heavy downpours, the PT890Ex will still deliver clear audio.

Automatic gain control

Automatic gain control (AGC) automatically increases or decreases microphone gain to ensure consistently loud and clear audio output, regardless of how softly or loudly the workers are talking into the microphone.

Feedback suppression

Using the innovative feedback suppression algorithm, the PT890Ex eliminates a feedback sound when two radios are too close, even 30 cm away from each other.





Longer-lasting Battery

The standard 2150 mAh battery, together with the cutting-edge low power consumption technology, can outlast the shift. The workers can check the remaining battery and battery health on the radio and extend the battery life using the smart charger.



Extended Radio Range

Thanks to the new-designed powerful IS circuits and RF optimization solution, PT890Ex features Class 3L transmitting power and industry-leading receiving sensitivity (-120 dBm), providing more smooth communications even at a distance or in the edge area, further enhancing personal safety and work efficiency.



Versatile Connectivity



Bluetooth 5.3

The PT890Ex can connect to wireless IS accessories*. Fast and stable, without the hassle of wires and cables. Moreover, the PT890Ex can run the BT-based applications developed by the third party that covers more scenarios.



Wireless Lan

The PT890Ex facilitates remote management through the WiFi, such as programming, upgrading*, and log management*. It is a smarter way to manage radios in batch without getting them back and forth between the field and the office, greatly reducing operational expenses.



NFC

The PT890Ex can be easily recognized and managed via NFC tag as per actual requirements.

* Not provided by Hytera.
The radio adapts the third-party wireless IS accessories.

* Coming soon.

Easy to Use

About 390 g (with standard battery and antenna)

- Comfortable for prolonged usage

2.4-inch LCD screen

- Intuitive to operate and a clear to read display

Textured housing on the back

- Never slip down from your fingers



Large LED indicator

- Easy to get the radio status

Vibration pattern

- Never miss any call and message



U-shaped Slot

- Quick to attach and release the belt clip



User-friendly UI

- 9-grid menu
- Conversational SMS interface
- Pop-up notification on home screen

Purpose-built knob and keys

- Volume/channel selector knob
- Enlarged emergency key
- Three programmable keys
- Tactile and textured keys
- Four navigation keys



At a Glance



Parameter		Description
General	Frequency Range	380-475 MHz; 806-870 MHz
	Dimensions (H x W x D)	130 mm x 55 mm x 37 mm
	Weight	About 390 g (with standard battery and antenna)
	Battery	Standard: 2,150 mAh IIC intrinsically safe Li battery
	Operating Voltage	7.4 V DC
	Operating Time	TMO(5-5-90): 26H; DMO(5-5-90): 20H
Audio	Output Power	1.5 W (rated), 2 W (max.)
User Interface	Display	2.4 inches, 320x240 pixels
	Talkgroup	TMO: 12000 DMO: 6000
	Talkgroup Folder	TMO: 200 DMO: 50
	Phone Book	2,000
	Inbox	≤550 entries
	Outbox	
	Draft	
	Status Message	200
RF	Channel Bandwidth	25 kHz
	Power Class	Class 3L (max)
	Power Level Accuracy	± 2 dB
	Power Control	5 dB per step
	Receiver Class	ETSI EN 392-2/396-2 Class A and Class B
	RX Static Sensitivity	≤-118 dBm (typical: -120 dBm) (for 380-475 MHz) ≤-117 dBm (typical: -119 dBm) (for 806-870 MHz)
	RX Dynamic Sensitivity	≤-108 dBm (typical: -110 dBm) (for 380-475 MHz) ≤-107 dBm (typical: -109 dBm) (for 806-870 MHz)
Location	Satellite System	GPS, BDS, GLONASS, Galileo
	Sensitivity	Acquisition ≤ -149 dBm
		Tracking ≤ -165 dBm
	Accuracy	1 m (dual-frequency GNSS, 95% probable, -130 dBm, ≥ 22 operational satellites)
	Cold Start (Time to First Fix)	<35 seconds
	Hot Start (Time to First Fix)	<1 second
Environment	Operating Temperature	-30°C to +60°C (in non-hazardous area) -25°C to +60°C (in hazardous area)
	Storage Temperature	-40°C to +85°C
	Humidity	95%
	Waterproof and Dustproof	IP64/IP65/IP66/IP67/IP68 per IEC-60079-0:2017 & IEC-60529
	Vibration, Drop and Shock	MIL-STD-810H GJB150A
Connectivity	WLAN	2.4 GHz
	BT	BT 5.3
	NFC	ISO/IEC 15693

Standard Accessories



Battery
(Standard Capacity)



Charger



Power Adapter



Antenna



Belt Clip



Strap

Optional Accessories



Remote Speaker
Microphone



Earpiece



Carry Case



Intrinsically Safe
Hamlet Heavy Duty
Noise-cancelling Headset kit



Intrinsically
Safe and Adjustable Earset



Intrinsically
Safe Large PTT



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