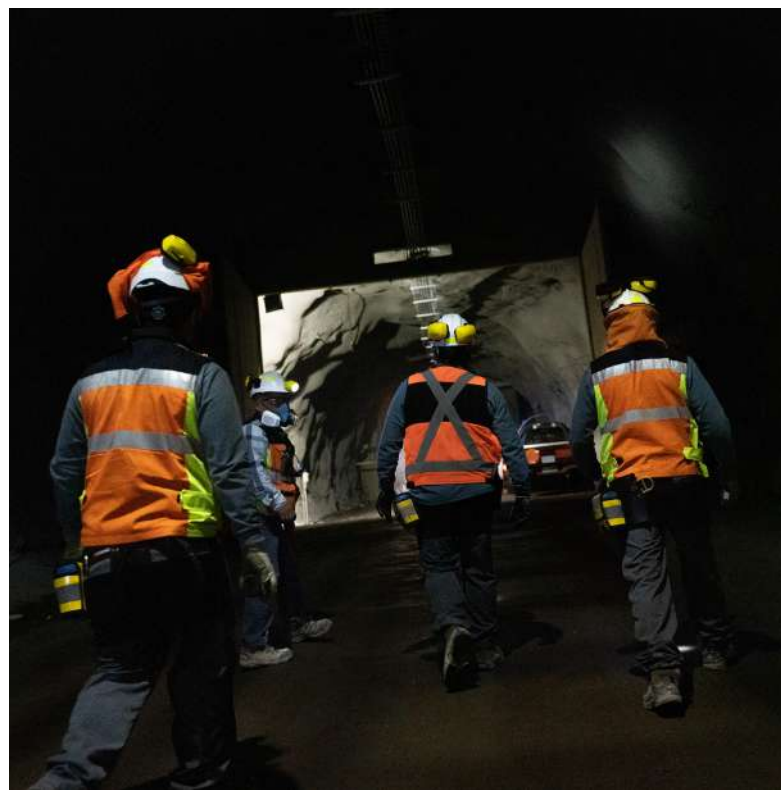


 **MOTOROLA SOLUTIONS**

# MTP8000Ex SERIES TETRA ATEX RADIOS

WORK SAFER. WORK SMARTER. WORK ANYWHERE.





# MTP8000Ex SERIES

## POWER AND PERFORMANCE DESIGNED FOR EXTREME ENVIRONMENTS

The MTP8000Ex Series sets a new standard in TETRA ATEX radios. From their form to their function, these new radios have been carefully engineered to address workers' needs and offer the ultimate in safe, reliable and efficient communications in hazardous environments.

Meeting the latest ATEX and IECEx standards, this next generation of TETRA ATEX radios represents a significant step forward in improving worker safety, communications and efficiency.



MTP8550Ex  
MTP8500Ex



MTP8550Ex

MTP8500Ex

Motorola has more than 20 years of experience in providing intrinsically safe two-way radios. Having shipped more than 100,000 TETRA ATEX radios, we are the leading supplier of TETRA radio communications solutions for use in hazardous environments.

We have used all of this knowledge and experience to develop the MTP8000Ex Series ATEX radios, giving workers the ability to work safer, work smarter and work anywhere with powerful audio, enhanced coverage, extended battery life, greater ruggedness, advanced ergonomics and increased usability.

## DESIGNED FOR THE MISSION

The MTP8000Ex Series TETRA ATEX radios have been specifically designed for end-users who need to work in hazardous environments with potentially explosive gases or chemical vapours, flammable liquids or combustible dust.

## MINING

Escaping flammable gases, such as methane, are a major risk in the mining industry. Communication is key to working effectively in such hostile and dangerous conditions and atex radios are needed to keep miners safe particularly when explosives are used.

## UNCOMPROMISING SAFETY

All design aspects of the MTP8000Ex Series have been optimised to ensure the highest levels of safety, ease of use and ruggedness for users who work in hazardous environments.

## MTP8000Ex Series

# WORK SAFER WORK SMARTER WORK ANYWHERE

WORK  
SAFER

PROTECT YOUR WORKERS AND KEEP THEM SAFE IN THE MOST HAZARDOUS ENVIRONMENTS

### ENHANCED COVERAGE

High receiver sensitivity and high transmit power gives the MTP8000Ex Series greater coverage and enhanced in-building performance.

### BUILT TO BE SAFE

Built to the latest ATEX and IECEx safety standards, the MTP8000Ex Series radios ensure that workers and firefighters can operate safely in the most hazardous environments.

### BLUETOOTH AUDIO

A range of wireless accessories can be securely and reliably paired, from headsets and microphones for use in loud environments to large PTT buttons for use with protective clothing, reducing the risk of catching wires.

### LOUD AND CLEAR AUDIO

The MTP8000Ex Series has loud and clear audio for use in noisy environments.

### COVERAGE INDICATOR

For ultimate safety, the radio is fitted with an LED Coverage Indicator at the base of the antenna, clearly showing when coverage is poor.

### LARGE EMERGENCY BUTTON

The MTP8000Ex Series includes an improved and larger emergency button, making it easier to use even with thick gloves.

## INDUSTRIAL ACCESSORIES FOR THE MTP8000Ex

### ACTIVE NOISE CANCELLING RSM



Communicate in the most demanding PetroChem and Industrial environments. Two PTTs (side and front), High/low volume control, emergency button, 1 programmable button. Supports Peltor helmet comms and 3.5mm discreet listening accessories.



### TACTICAL HEADSETS\*

For operations in noisy environments. Active noise cancellation protects hearing while maintaining peripheral listening and face-to-face conversations.

### TWIN CUP HEADSETS\*

For operations in very noisy environments. Provides the highest level of hearing protection with two layers of noise attenuation in each ear cup.



### 3.5MM ACOUSTIC TUBE

For in-ear audio, the 3.5mm listen only acoustic tube is secured to the Automatic Noise Cancelling RSM with push, twist and lock connection.



\*Wired and wireless accessories available

# MTP8000Ex SERIES KEY FEATURES



## LOUD AND CLEAR AUDIO

The MTP8000Ex Series is optimised for excellent audio performance in all types of noisy environments. Audio through both the speaker and accessories is clearer, even at full volume, and the user can be heard clearly against the loudest background noise.



## ENHANCED COVERAGE

High receiver sensitivity and high transmit power gives the MTP8000Ex Series greater coverage and enhanced in-building performance. For ultimate safety, the radio is fitted with an LED coverage indicator at the base of the antenna, alerting the user when coverage is poor.



## RUGGED DESIGN

The MTP8000Ex Series radios are built to work in the toughest and most hazardous environments, in both the cold and wet or the dust and heat, with IP65, IP66 and IP67 ratings.

**WORK  
SMARTER**

**INCREASE EFFICIENCY AND MAINTAIN SAFETY WITH FEATURES DESIGNED WITH THE WORKER IN MIND**

### INTUITIVE USER INTERFACE

For simplicity, the interface makes use of icons and the menus can be configured to only show the options needed for particular groups of users.

### TOP DISPLAY

The display panel on the top of the radio makes it easy to see emergency notifications, battery level, volume level and talkgroup when the radio is worn on the belt.

### BLUETOOTH DATA

Smart Devices and tablet PCs can also be securely connected to the radios using Bluetooth for data collection or other applications, such as work scheduling.

### ADVANCED ERGONOMICS

The T-bar grip makes the radio harder to drop and easier to hold, even for long periods. The exaggerated control knob to select volume and talkgroup, textured PTT button and tactile keypad make it easier to use.

### NAMEPLATE

The use of stick-on labels or external markers to identify the radio can compromise the ATEX certification. Now, the MTP8000Ex Series radios can be easily identified without causing any risk to user safety.



## FIRE ACCESSORIES FOR THE MTP8000Ex

### ACTIVE NOISE CANCELLING RSM



Communicate in the most demanding Fire Ground environments. Two PTTs (side and front), High/low volume control, emergency button, 1 programmable button. Supports Dräger and Savox helmet comms and 3.5mm discreet listening accessories.

### Dräger FPS COM PLUS

Includes integrated microphone and ear piece. Plugs directly into the Active Noise Cancelling RSM Nexus socket for optimised transmit and receive audio.



### SAVOX HC-1

Helmet communications with HC-1 bone conductive microphone and ear piece.



### 3.5MM ACOUSTIC TUBE

For in-ear audio, the 3.5mm listen only acoustic tube is secured to the Automatic Noise Cancelling RSM with push, twist and lock connection.



**INTEGRATED BLUETOOTH**  
Secure Bluetooth Wireless technology is integrated in to the MTP8000Ex Series, ensuring that a range of wireless accessories and collaborative devices can be securely and reliably paired with the radios.



**ADVANCED ERGONOMICS**  
The MTP8000Ex Series has been engineered to redefine usability, from the T-Bar profile to the exaggerated control knob, tactile keypad, enlarged emergency button and textured PTT button.



**EXTENDED BATTERY LIFE**  
With an extended battery life in excess of 16 hours, workers can be confident that the MTP8000Ex Series radios will be ready for a longer shift in the event of emergencies or unplanned situations.



**EASIER TO USE**  
With intuitive user interface, innovative nameplate, large main display and the secondary top display making it easier to see emergency notifications, talk group status or battery condition, the MTP8000Ex Series is designed to be easier to use.



**ENSURE SUPPORT FOR YOUR WORKERS WHEREVER THEY ARE AND WHATEVER THE CHALLENGE**

**ENHANCED COVERAGE**

With high receiver sensitivity and high transmission power, urgent messages will be heard by the worker in locations where other radios would be out of coverage.

**LOUD AND CLEAR AUDIO**

Automatic Gain Control allows workers to hear and be heard in any situation without the worry of loud background noise or interference.

**EXTENDED BATTERY LIFE**

With an extended battery life in excess of 16 hours, workers can be confident that their radios will be ready for a longer shift in the event of emergencies or unplanned situations.

**ADVANCED ERGONOMICS**

The radios are designed with advanced ergonomics to be used easily by workers in protective clothing and heavy gloves.

**RUGGED DESIGN**

Built to the latest ATEX and IECEx safety standards for use in the toughest and most hazardous environments with IP65, IP66 and IP67 ratings.

**BLUETOOTH SENSORS**

Bluetooth can also be used to pair the radios with bio-monitors or gas sensors to automatically alert control and the workers to dangerous conditions.



II 2D Ex ib IIC T4 Gb  
II 2D Ex ib IIC T90°C Db  
I M2 Ex ib I Mb  
BVS 15 ATEX E xxx X  
IECEx BVS 15 xxxXX  
-20°C ≤ Tamb ≤ +55°C  
Ingress Protection IP6x

**WARNING:**  
DO NOT REPLACE BATTERY IN EXPLOSIVE ATMOSPHERE.  
DO NOT CHARGE BATTERY IN EXPLOSIVE ATMOSPHERE. READ SAFETY LEAFLET BEFORE USE.

**STANDARD ACCESSORIES FOR THE MTP8000Ex**



**SINGLE UNIT CHARGERS**  
Designed for quick and easy charging and to maximise battery life performance.



**BELT CLIP**  
Securely attaches the radio to a belt of up to 2.5 inches wide.



**CARRY CASES**  
Protects the radio from being knocked, dropped or mislaid. Can be worn on a belt or shoulder strap for extra convenience and safety.

**VEHICLE CHARGER**  
Designed for permanent installation in a vehicle. Charges and optimises battery life performance on the go.





TOP DISPLAY

BEST-IN-CLASS  
COVERAGE

LARGE EMERGENCY  
BUTTON

LED COVERAGE  
INDICATOR

EXAGGERATED  
CONTROL KNOB

T-BAR GRIP

LARGE FRONT  
DISPLAY

TEXTURED  
PTT

SLIMPORT  
AUDIO

RUGGED  
DESIGN

TACTILE  
KEYPAD

FULL AND  
LIMITED  
KEYPAD

# MTP8000Ex Series REDEFINING THE ATEX RADIO



NAMEPLATE

EXTENDED  
BATTERY  
LIFE





# WORK SMARTER WITH INTEGRATED BLUETOOTH

The MTP8000Ex Series radios have integrated Bluetooth wireless technology, providing a secure link to devices, which can be matched to the specific needs of the worker. These collaborative solutions combine devices and applications to improve the safety, effectiveness and efficiency of your workers.



## WIRELESS ACCESSORIES

Fast wireless Push-To-Talk buttons can be used when protective clothing and gloves make it difficult to reach the radio. Wireless headsets and mics can be worn under protective clothing so workers can communicate clearly in hazardous environments.



## DATA COLLABORATION

A mobile computing device or tablet PC can be connected to the radio and used to collect information, such as meter readings, sending the data back to control through the radio.



## HEART RATE MONITOR

A heart rate monitor can be connected to the radio and used to detect if the worker or firefighter is at risk of heart problems or failure during strenuous activity or has collapsed in a hazardous environment.



## GAS SENSORS

Body-worn gas sensors can be linked to the radio to automatically alert control and the worker to build-up of dangerous gases. If one sensor picks up a gas leak the other workers and control can be warned immediately.



## LOCATION SENSORS

Bluetooth beacons across the facility or in high-value buildings can be used to detect the presence of the radio and track the location of a worker during a shift or a firefighter during an incident.

**SERVICE FROM THE START FOR TETRA TERMINALS ENSURING MAXIMUM PERFORMANCE TO MEET YOUR MISSION CRITICAL REQUIREMENTS**

**PROVEN PROTECTION**

With our proven capability, you can be sure your equipment is expertly repaired and back in the hands of your users quickly. Using the latest tools and with strict adherence to Motorola engineering procedures, our expert technicians diagnose and repair units to original manufacturing specifications.

**TECHNICAL EXPERTISE**

Experienced technical support engineers work with you to diagnose and resolve hardware and software problems resulting in swift resolution of issues for your end users.

**CUSTOMER SERVICE**

A single source of support delivered through our state-of-the-art diagnostics equipment, repair tools, and an extensive inventory of replacement parts help us to provide expert repair on your TETRA terminals.

**PEACE OF MIND**

Our support programme protects your hardware investments from every angle, all designed to optimise device performance, minimise downtime and keep operations running smoothly and within budget.

# MTP8000EX SERIES SPECIFICATIONS

**GENERAL**

Battery performance	Duty cycle 5/5/90 > 16 hours Duty cycle 5/35/60 > 12 hours
Loud and clear audio	> 1.2W Integrated audio howling suppression

**RF SPECIFICATIONS**

Frequency bands	350-470 MHz, 800 MHz
Transmitter RF	Power class 3L & class 4
Receiver class	A and B
Rx static sensitivity	-116dBm (min); -118dBm (typical)
Rx dynamic sensitivity	-107 dBm (min); -109 dBm (typical)

**ENVIRONMENTAL SPECIFICATIONS**

Operating temperature °C	-30 to +55
Storage temperature °C	-40 to +85
Humidity	ETS 300-019-1-7 Class 7.3E, MIL-STD 810 D, E, F, G
Dust and water ingress protection	IP64, IP65, IP66 & IP67 per IEC-60079-0:2011 & IEC-60529 Dust, water, rain, waterjet proof & submersible
Shock, drop and vibration	ETS 300-019 1-7 class 5M3; MIL-STD 810 D/E/F/G

**MAIN VOICE SERVICES**

Full duplex TMO private, PABX, PSTN, emergency
Half duplex TMO private, group, emergency
Half duplex DMO private, group, emergency
Inter-MNI, gateway, repeater
PTT double push
Adaptive audio control

**EMERGENCY CALL MANAGEMENT**

Tactical emergency group call to ATTACHED talkgroup
Non-tactical emergency group call to DEDICATED talkgroup
Individual emergency call to PREDEFINED party (half/full duplex)
HOT MIC emergency - hands free in moments that matter
Emergency status message sent to dispatch console
Smart TMO / DMO selection for emergency call set up - ensure call gets through
Preemptive priority calls

**DMO REPEATER SERVICES**

DMO repeater type 1A for efficient single channel operation
DMO presence support for effective channel management voice, status & SDS repeated
Emergency calls

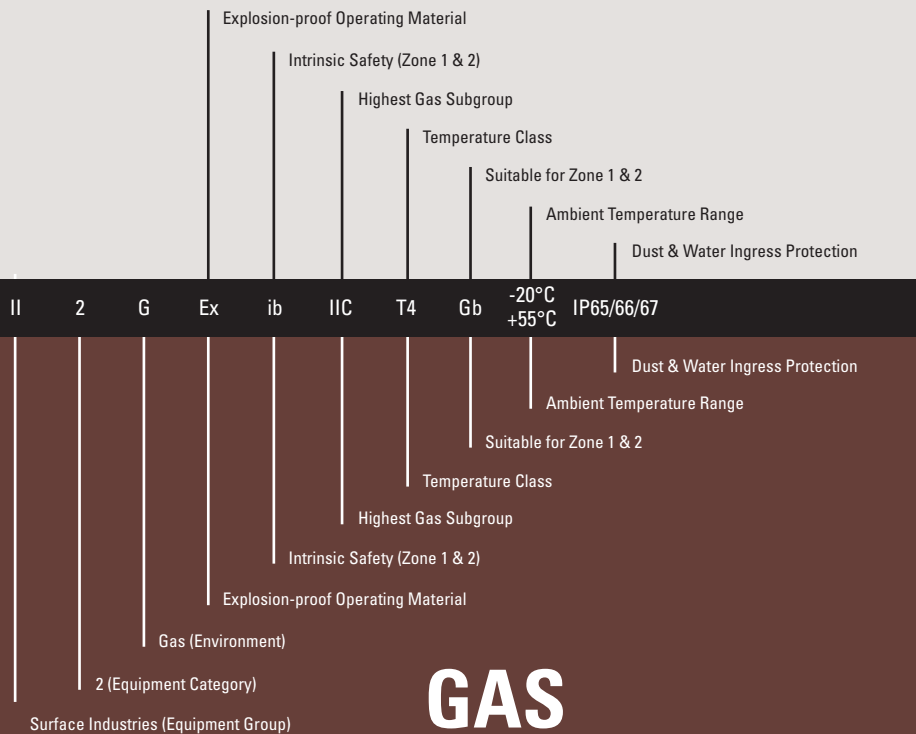
**BLUETOOTH AUDIO & DATA SERVICES**

Bluetooth versions supported :	Bluetooth 2.1 +EDR, Bluetooth 4.0, Bluetooth Smart (BTLE)
Bluetooth security	Bluetooth 2.1 introduces mandatory encryption with secure simple pairing (SSP), easier pairing and preventing sniffing / hacking Bluetooth 4.0 supports Security Manager (SM) services with AES encryption
Bluetooth audio	Headset profile Serial Port Profile, Dial Up Networking Profile, Discovery mode, Generic Access Profile, Object Push Profile, Generic Attributes Profile (GATT), Heart Rate Profile, Battery Service Profile, Devices Info Profile.
Bluetooth data services	

**IECEx SPECIFICATIONS  
IEC 60079-0:2011  
IEC60079-11:2011**



**ATEX SPECIFICATIONS  
EN60079-0:2012  
EN60079-11:2012**



## LOCATION SERVICES

Constellations supported	GPS, Beidou, Glonass
Simultaneous satellites	12 integrated external antenna
Tracking sensitivity	-163 dBm
Accuracy	< 5 metre (50% probable) @ -130 dBm
Protocols	ETSI LIP & Motorola LRRP

## USABILITY

Language and keypad options Full and Simplified Keypad, Multiple keypad languages supported  
 Enhanced T-bar grip for confident handling  
 Unique nameplate for simple identification of radio  
 Large 360° signal / status indicator for high visibility

### USER CONTROLS

Large multi-function knob for volume and talkgroup control  
 User configurable one touch buttons and keys, extensive list of functions  
 Keypad lock

### CUSTOMISABLE, USER FRIENDLY MENUS

Menu shortcuts - user customisable  
 Menu editor, simplify and tailor to user needs

### DISPLAY

Dual displays: large front mounted display with scalable fonts for readability, top mounted display for easy interaction when worn on belt  
 Colour Transflective Front Display, 240x320 pixel screen with 262,144 vivid colours - viewable in bright sunlight  
 Colour Transflective Top Display, 200x112 pixel screen with 262,144 vivid colours - viewable in bright sunlight  
 Flip screen, large/x-large text and icon options (front display only)  
 Screen Saver gif image and text (any user's selection)  
 Configurable smart backlight to optimise power use  
 Universal time display  
 Multiple display languages, user selectable

### TALKGROUP & CALL MANAGEMENT - USER FRIENDLY, FLEXIBLE, EFFICIENT, FAST

Talkgroup capacity:  
 TMO Talkgroups up to 10,000  
 DMO Talkgroups up to 2,000  
 Folder capacity:  
 TMO Folders - up to 1,500, each capable of holding up to 2,048 TMO Talkgroups  
 DMO Folders - up to 128, each capable of holding up to 1,024 DMO Talkgroups  
 Favourite folders - Up to 3  
 Country/network code list - up to 100  
 Scan lists: 40 lists of up to 20 groups  
 Dialling direct, scroll, speed, one touch button/key  
 AlphaNumeric search, call history redial

### CONTACT MANAGEMENT - FAMILIAR CELLULAR STYLE INTERFACE FOR EASE OF USE

Up to 1000 contacts with 6 numbers per contact (max 2000 unique numbers)  
 Multiple dialling methods to support multiple use cases  
 Fast/flexible call set up/answer  
 Set up a private call response to a group call via one touch button  
 Multiple ring tones

### TEXT & STATUS MESSAGING - FAMILIAR CELLULAR STYLE INTERFACE FOR EASE OF USE

Text message list: 20 message In/Out box  
 Intelligent keypad text input (model specific)  
 Status list: up to 400 pre-defined messages

## USER SAFETY & WORKGROUP MANAGEMENT

RUA/RUI - Log on / ID management  
 Call out

### SAFETY

Man down sensor

## SECURITY OPTIONS

Enhanced security - OTAR/DMO SCK  
 Authentication (mutual)  
 Air interface encryption (ETSI / SFGP TEA algorithms)  
 Security class 1, 2, 3 and 3G support  
 End to end encryption: Motorola CRYPTR micro hardware module  
 BOS smart card support  
 Permanent disable (ETSI, V2-customer restore)  
 Temporary disable (stun)

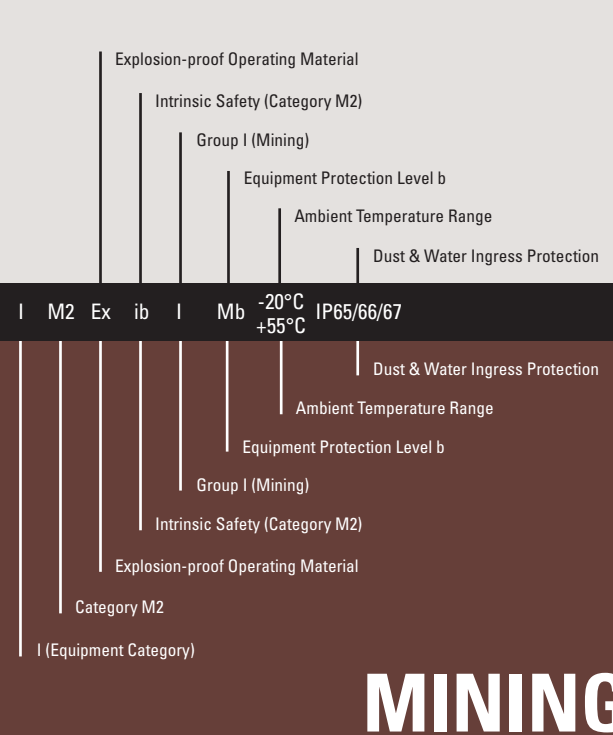
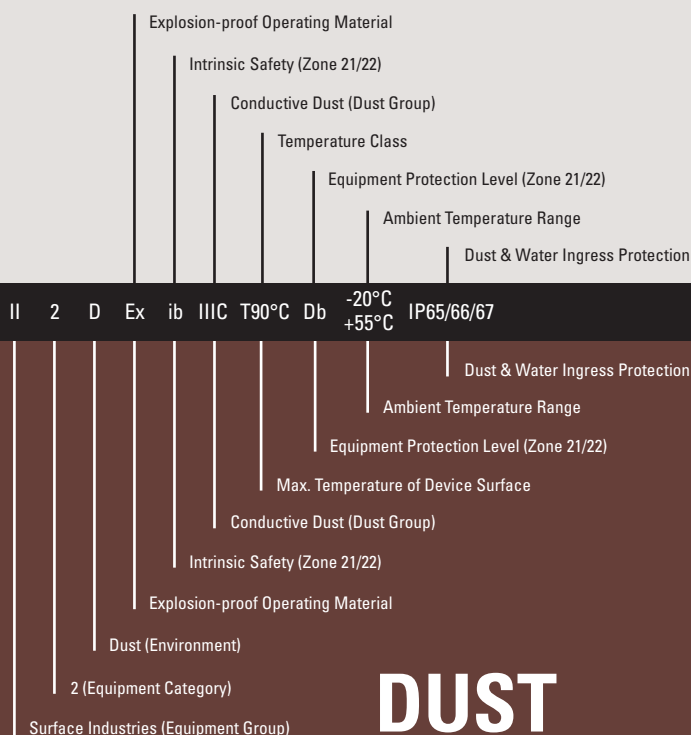
## DATA & MESSAGING SERVICES

Single and multi slot packet data service  
 Secondary control channel  
 Radio messaging system (RMS)  
 WAP browser / WAP push  
 SDS messaging in TMO and DMO, incl concatenated messaging  
 ETSI and enhanced AT commands (including voice control)  
 Short data applications  
 TNP1 - Support simultaneous packet data and short data services over PEI  
 iTM fleet management (remote programming)

## ACCESSORIES

Robust side connector with high-performance matching accessories  
 Team ID antenna rings: efficient operations

Antenna	Whip 120mm (350-470MHz) Stubby 80mm (806-870MHz) Stubby 80mm (380-430MHz)
	Active Remote Speaker Microphone (RSM) with volume control and emergency button
Audio - Wired	Active Noise Cancelling RSM with Large Push-To-Talk with Nexus jack. Compatible with Savox HC1 headset RMN5123A. Peltor headsets distributed by Motorola and Motorola 3.5mm Receive only voice tube PMLN7188A. Dräger smoke mask.
Audio - Wireless	Any 3rd party ATEX Bluetooth wireless technology headset supporting Fast PTT and Headset Profile ATEX Belt clip 2.5 inch Shoulder wearing device
Carry Solutions - for shoulder and belt worn radio	All compatible Peter Jones Klick Fast docks and belt loops 2.5" or 3" Swivel belt loop Hard Leather Case with 2.5" or 3" Belt Loop for simple and full keypad models
	ATEX Small PTT nexus Adapter with selection of Heavy Duty Headsets, Twin Cup Heavy Duty Headset and Tactical Heavy Duty Headset.
Specialty and Third party	Savox ATEX IECEx C-C440 Large PTT. For use with the following Savox headsets: Savox HC1 Headset ATEX, Savox HC2 dual headset ATEX





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WORK  
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SMARTER  
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For more information on the MTP8000Ex Series TETRA ATEX radios,  
please visit [www.motorolasolutions.com/MTP8000Ex](http://www.motorolasolutions.com/MTP8000Ex)

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MTP8000Ex Series DataSheet 05/17



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