Motorola TETRA

ATEX Terminal - MTP850Ex

High performance communication & protection

THIS PRESENTATION IS DESIGNED FOR INITIAL CUSTOMER OVERVIEW OF MTP850Ex TO BE PRESENTATED BY SALES PEOPLE, PRE SALES TECHNICAL SUPPORT ETC.

IF YOU ARE REQUIRED TO PROVIDE A COPY TO YOUR CUSTOMER PLEASE CONVERT TO PDF FORMAT

Motorola ATEX TETRA Terminal

Session Content

Communicate with safety

- **What are the ATEX and IEC Ex standards ?**
- **User environments for the Motorola ATEX Device**

Motorola MTP850Ex ATEX TETRA Terminal

- **Key Features and Benefits**
- **User Accessories**
- **User Applications and Case Studies**

What are the ATEX / IEC Ex standards ?

ATEX Standard

ATmosphères EXplosibles
European Standard

IECEx Standard
corresponding
International Standard

Devices approved to these standards are designed to operate in working environments where there could be risk of explosive gas or dust

Approved devices provide additional user safety protection when using communication and other equipment in these type of working conditions

Motorola TETRA ATEX Terminal meets both the ATEX and IECEx Standards

User environments that require ATEX

Public Safety Teams / Military / Coastguard

- **Incidents with high heat, smoke and dust**
- **Incidents dealing with fuel, gas & other explosive substances**
- **Bomb disposal**
- **Container searching at country entry ports**

Oil / Gas Industry

- **Environments with high risk of explosive gas & flammable liquids**
- **Oil fields, oil rigs, gas fields**
- **Gas & oil pipelines**
- **Oil refineries**
- **Oil tankers, road tankers**

Public Utilities (Gas)

- **Environments with high risk of explosive gas**
- **Gas Pipelines**
- **Gas storage**
- **Gas industrial appliances**
- **Gas domestic appliances**

Industrial Manufacture

- **Environments with risk of explosive dust, gas or flammable liquids**
- **Fuel manufacturers**
- **Chemical plants**
- **Pharmaceutical industry**
- **Food processors**

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Motorola ATEX TETRA Terminal

High Performing Communication

- **TETRA voice and data capability**
- **Leadership in speaker audio quality for high noise environments**
- **Full range of ATEX standard accessories**

High User Safety

- **ATEX explosive <u>gas and dust</u> approvals**
- **Large key pad format for use with protective gloves**
- **GPS user location for C&C monitoring**
- **Integrated man down alarm**

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Key Features and Benefits

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High Performing Communication

Intrinsically Safe Communication

An intrinsically safe TETRA portable radio designed to be operated in potentially explosive environments (gas and/or dust) providing safe and reliable communication

Data Applications Capability*

Support of WAP* plus simultaneous Short Data Service (SDS) and Multi-Slot packet data (MSPD)* services via TNP1* protocol.

Best in Class Audio

Maintains audio performance in the typical noisy environments where specialist users from industry or public safety operate
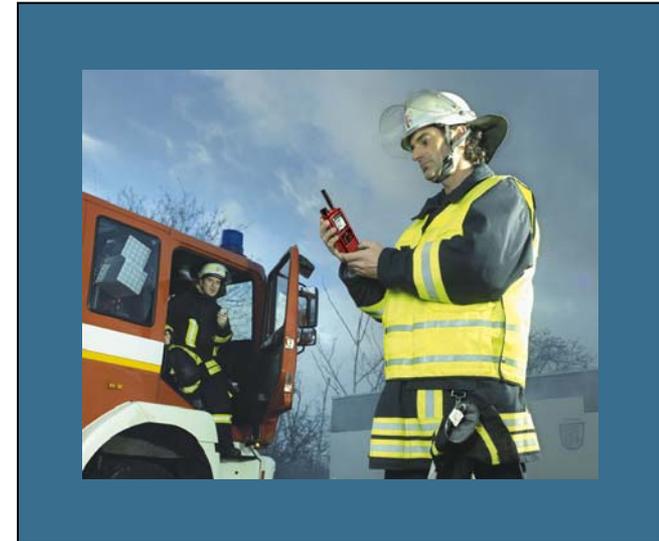
* Some features and services are optional and may require additional software licenses and / or subject to network operator support

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High User Safety

Experience

Motorola has strong experience of producing ATEX analog two-way radios combined with its proven TETRA terminal portfolio

Simplified Keypad with Large Buttons

Easy to use with gloves, facilitates operation in difficult environments with limited visibility

Simplified User Interface - Large Icons/Fonts

Ensures easy access to critical features

Wide range of Languages/Keypads

- Languages including : Arabic, Chinese Simplified, Chinese Traditional, Dutch, English, French, German, Greek, Hungarian, Italian, Korean, Lithuanian, Norwegian, Portuguese Russian, Spanish and Swedish.

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High User Safety

GPS Location Services*

A state of the art integrated GPS receiver provides ability to locate personnel thereby improving user safety and resource management

Man-Down*

A fully integrated internal Man-Down solution triggers an emergency procedure when the carrier of the radio device does not move any more and/or has fallen down

* Some features and services are optional and may require additional software licenses and / or subject to network operator support

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European and International Standards Compliance

European

MTP850Ex Enhanced	ATEX Marking GAS	ATEX Marking DUST
	II 2G Ex ib IIC T4	II 2D Ex tD A21 IP6x ib D21 T90ºC

International

MTP850Ex Enhanced	IECEx Marking GAS	IECEx Marking DUST
	Ex ib IIC T4 (Approved for Zone 1&2, Equipment Group II, Gas Group C, Temperature Class T4, -20oC to +50oC)	Ex tD A21 IP6x ib D21 T90ºC (Approved for Zone 21&22, Equipment Group II)

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Accessories - Enhanced User Communication

MTP850Ex – ATEX Accessory Portfolio
Headsets

**Over the Head
Light Weight Headset**

**Over the Head
Heavy Duty Headset**

**Behind the Head
Light Weight Headset**

**Behind the Head
Heavy Duty Headset**

Audio Accessories	
ATEX Marking GAS	**II 2G Ex ib IIC T4**
ATEX Marking DUST	**II 2D Ex tD A21 IP6x T90ºC**

MTP850Ex – ATEX Accessory Portfolio
Microphones

Skull Microphone System

Throat Microphone System

Remote Speaker Microphone

Audio Accessories	
ATEX Marking GAS	**II 2G Ex ib IIC T4**
ATEX Marking DUST	**II 2D Ex tD A21 IP6x T90ºC**

MTP850Ex – ATEX Accessory Portfolio

Power Charging

Single Unit Charger

Multi-Unit Charger

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User Interface

MTP850Ex - User Interface
Motorola ATEX TETRA Terminal

Programmable Rotary Connector

Earpiece

Upper Microphone

Programmable Side Button 1

Display

PTT

Menu Select Button

Programmable Side Button 2

Right Soft Button

Left Soft Button

Power On/Off
End Call / Home Mode

Send Button

Loudspeaker

Menu Navigation

MTP850Ex - User Interface
Motorola ATEX TETRA Terminal

Antenna RF/GPS

Emergency Button

Accessory Connector

LED Indicator

Speaker Control Key

Lower Microphone

Motorola MTP850Ex – Summary
Motorola ATEX TETRA Terminal

High Performing Communication

- **TETRA voice and data capability**
- **Leading speaker audio quality**
- **Full range of ATEX accessories**

High User Safety

- **ATEX explosive <u>gas and dust</u> approvals**
- **Large key pad format**
- **Large icon screen menu**
- **GPS user location for C&C monitoring**
- **In-built man down alarm**

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ATEX Marking Overview

Help on ATEX Marking (1/2)

Types of Protection
o = oil immersion
p = high-pressure encapsulation
q = sand encapsulation
d = pressure-resistant encapsulation
e = increased safety
ia = intrinsic safety (Zone 0)
ib = intrinsic safety (Zone 1, 2)
ma = cast encapsulation (Zone 0)
mb = cast encapsulation (Zone 1, 2)
s = special protection
n = normal operation In Normal Conditions (Zone 2)
nA = non-sparking
nC = enclosed break
nR = vapour-proof housing
nL = energy limited
nZ = high pressure encapsulation
op = optical radiation (is, pr,sh)
tD = protected by housing (dust)
pD = high-pressure encapsulation (dust)
iD = intrinsic safety (dust)
mD = cast encapsulation (dust)

II	II
2	2
D	G
Ex	Ex
tD	ib
A21	IIC
T90ºC	T4
IP64	
ib	
D21	

Device Group
I = Mining
II = all other explosive areas

Category
1 = can be used in Zones 0 or 20
2 = can be used in Zones 1 or 21
3 = can be used in Zones 2 or 22
M1 = Mining (in firedamp: operable)
M2 = Mining (in firedamp: switch off)

Atmosphere
G = Gas
D = Dust
(Mining: no details)

Explosion Group
I = Methane (mining)
IIA = such as Propane
IIB = such as Ethylene
IIC = most dangerous group (e.g. hydrogen)

Temperature Classes
T1 = 450 ºC
T2 = 300 ºC
T3 = 200 ºC
T4 = 135 ºC
T5 = 100 ºC
T6 = 85 ºC

Zone 20, 21, 22
Procedure for determining the housing's leak tightness
(A or B)

Max Surface Temperature during a device error
(normal operation in the case of category 3 device).

Help on ATEX Marking (2/2)

II	II
2	2
D	G
Ex	Ex
tD	ib
A21	IIC
T90ºC	T4
IP64	
ib	
D21	

Ingress Protection IPdw
d: contact and foreign body protection
  5 = dust deposits
  6 = dust penetration
w: water protection
  0 = no protection
  1 = vertical water drip
  2 = 15ºC water drip
  3 = water spray
  4 = water splash
  5 = water jet
  6 = strong water jet
  7 = temporary immersion
  8 = continous immersion

ib D21: protection for antenna circuit
  ib   = intrinsic safety
  D21 = Dust Zone 21