Base Load Power Hub (BLPH)

EQUIPMENT DATA SHEETS – TELECOM EQUIPMENT

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Revision / Change Log

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1	
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3	
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1 IDCS

1.1 IDCS - MICROVAWE MOTION DETECTOR

6931P

Mini outdoor motion sensor, Dual Technology, 24 GHz

Dual Technology outdoor motion sensor

The Mini Dual variants are outdoor motion sensors and alarm triggers that use two independent passive infrared detectors plus a microwave sensor module. All three sensors must trigger to cause the detector to signal an alarm. They use triple detection technology to deliver precise, reliable presence detection.

Easy and quick to install

Programmable options include a variable pulse count and LED able/disable functionality. Moreover, the integral dual-axis tilt sensor allows 90º of pan and 45º of tilt, which increases the speed of the outdoor installation and provides incredibly accurate aiming of the detection pattern.

Aesthetics and hidden sensor module

The design has a neat appearance that gives no visible indication of the orientation of the detector head and totally hides the wiring. It blends smoothly into residential outdoor applications.



Details

- New outdoor family containing wired PIR, 2 Dual Technology variants and wireless PIR
- Attractive aesthetics
- 14 to 70º detection angle
- 90º pan & 45º tilt for flexible installation
- Sensor module is hidden
- High dust and humidity resistance (IP65)
- 5 years warranty

6931P

Mini outdoor motion sensor, Dual Technology, 24 GHz

Technical specifications

General

Technology	Dual
Application type	Wall mount
Anti masking	No
Pet immune	No
Camera	No
Processor	Digital microprocessor with nonvolatile memory

Detection

Max. detection range	15 m
Detection range	14 to 70° detection angle, 15 x 13 m
No. of curtains	21
Microwave frequency (nom.)	24 GHz
Undercrawl protection	No
Fresnel lens	20 zones for each detection element, which can be masked with the curtain sliders
Microwave module	X-band radar 24 GHz
Adjustment	90° pan, 45° tilt
Customized optics	Double silicon shielded quad element eliminates 50,000 lux of white light
Pulse count	1 or 2

Wired / wireless

Wired-wireless	Wired

Inputs / outputs

Alarm relay characteristic	NC, volt free relay, signal contact 24 VAC/DC @ 50 mA with an integral 25 Ohm series resistor

Electrical

Power supply value	10 to 15 VDC
Current consumption	8 mA (12 V nominal)

Physical

Physical dimensions	71 x 120 x 75 mm (W x H x D)
Net weight	225 g
Shipping weight	325 g
Colour	Bronze
Material	High impact ABS plastic with HDPE cover, UV stabilized
Mounting height	3 to 6 m
Mounting height	Variable up to 6 m / Optimum height 3 m for full range

Environmental

Operating temperature	-30 to +65°C
Environment	Outdoor
IP rating	IP65
Temperature compensation	Analogue (thermistor) and digital sensitivity adjustment

Inputs / outputs

Outputs	Silent, solid state, magnetically immune. PIR AND Microwave

LED

	Orange : Microwave activated
	Red : PIR activated
	Orange & Red : Detector alarm

As a company of innovation, Carrier Fire & Security reserves the right to change product specifications without notice. For the latest product specifications, visit firesecurityproducts.com online or contact your sales representative.

Last updated on 27 September 2023 - 15:01

1.2 IDCS – DOOR CONTACT

DC108

Surface, overhead, floor mount contact

Overhead door magnetic contact

The DC108 series overhead door magnetic contact is for use in the rigorous environments of commercial and industrial installations. The floor mount units are constructed with a low profile heavy cast aluminium housing. The reed switch assembly is fully encased in an exclusive polyurethane potting material to prevent damage due to moisture or humidity.

Easy installation

A wide operating gap distance of up to 7.5 cm makes installation easy and helps prevent false alarms caused by door movement or damaged and loose fitting doors.



Details

- Miniature, low-profile design
- Stainless steel armoured cable for added security, reliability
- Wide working gap for overhead doors
- Small size less likely to be damaged by forklifts
- Tamper loop provided

DC108

Surface, overhead, floor mount contact

Technical specifications

Général

Application type	Overhead
Contact type	NC
Connectivity	4 wires, 2 m

Wired / wireless

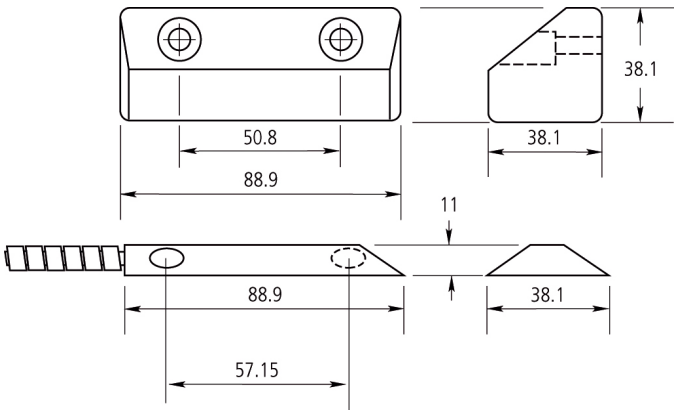
Wired-wireless	Wired
Operating gap	75 mm

Caractéristiques physiques

Dimensions magnet	89 x 38 x 38 mm
Dimensions contact / sensor	89 x 38 x 38 mm
Colour	Metallic silver
Material	Aluminium

Régulateur

EN50131 grade	Grade 2
Certification	IMQ, ULC



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Last updated on 2 February 2024 - 10:54

2 NAVIGATION AIDS

2.1 NAVIGATION AIDS – SART

Tron AIS-SART

AIS transmitter



- Efficient SAR operation based on AIS technology
- Detectable on all AIS receivers
- Easy battery replacement
- Wide range of accessories
- 5 year warranty

JOTRON
Performance for Life

Tron AIS-SART

A robust and proven GMDSS search and rescue transmitter

- Adopted by IMO RES MSC. 256 (84) as an alternative to 9GHz SART
- Unique AIS technology contribute to a more effective and less time consuming SAR operation, due to superior position accuracy
- The AIS-SART is detected on AIS Class A and B
- Small and compact
- Tron AIS-SART and Tron SART20 use the same accessories:
  - Bulkhead bracket
  - Lifeboat bracket
  - Liferaft mounting pole

Technical specifications

PARAMETER	
Weight	480 g
Dimensions	H: 250 mm, W: 89 mm
Material housing	Glass reinforced polycarbonate
Frequency	161.975 and 162.025 MHz
Radiated power	1 W
Antenna height	Place at least 1 meter above sea/ground level
Indication	Visual and audible alarm
Temperature range	Operating: -20°C to +55°C Storage: -30°C to +65°C
Battery	7.2 V Primary lithium battery. 5 year service life
Operating life	96 hours continuous operation at -20°C
Standards	IEC 61097-14:2010, IEC60945, MSC.246(83), MSC.247 (83)

Proved performance

- Up to 10 nm from a SOLAS ship with AIS class A transponder
- Up to 40 nm from a SAR helicopter (altitude 1000 ft)
- Up to 130 nm from a SAR aircraft (altitude 20000 ft)

Accessories





Bulkhead bracket





Liferaft mounting pole





~~Lifeboat bracket~~

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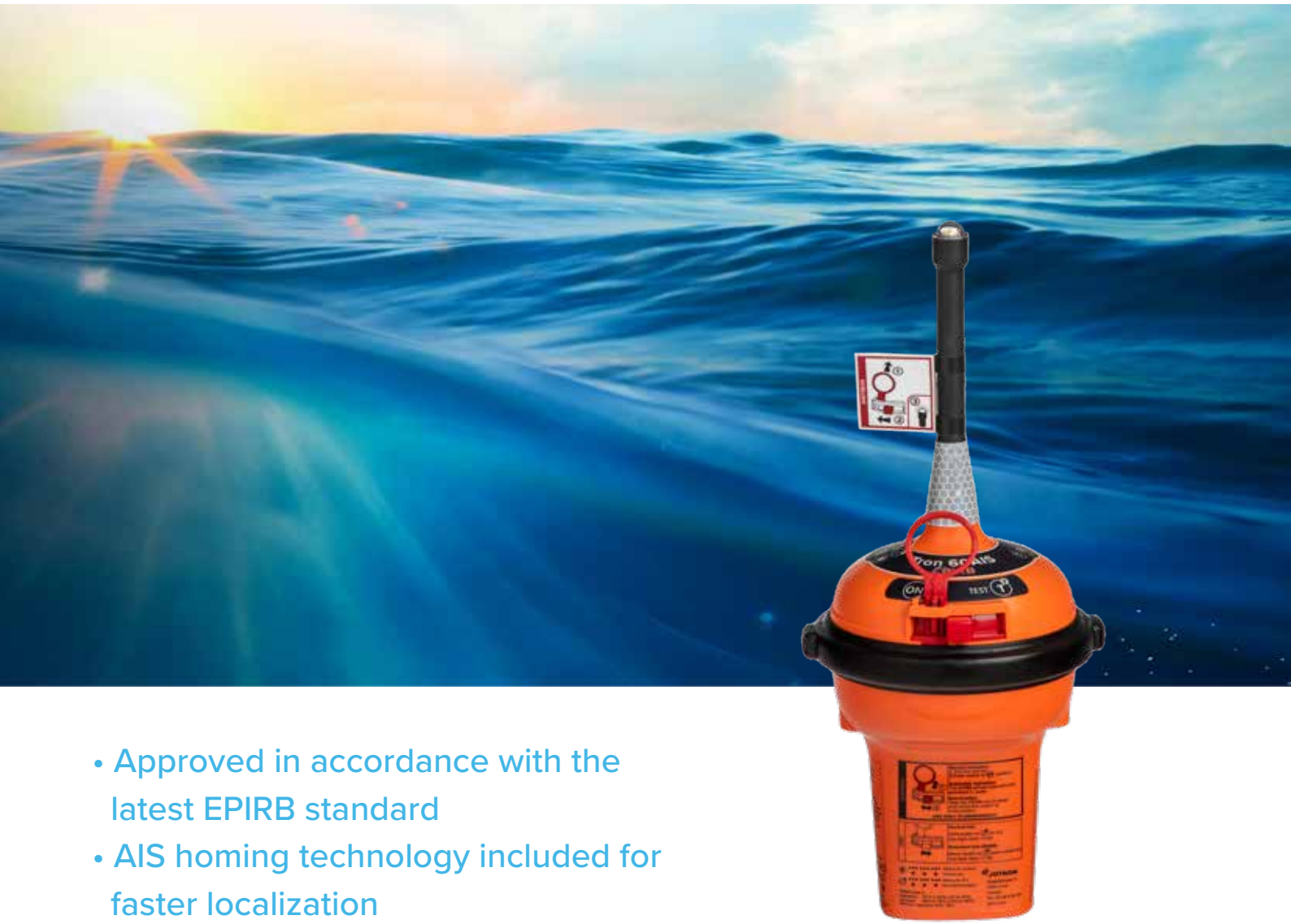
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2.2 NAVIGATION AIDS – EPIRB

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Tron 60AIS

EPIRB with float-free and manual bracket



- Approved in accordance with the latest EPIRB standard
- AIS homing technology included for faster localization
- Prepared for RLS through Galileo GNSS
- IR LED light for night vision devices and assisted SAR
- 11 year and 3 month total battery lifetime

JOTRON

Performance for Life

Tron 60AIS

The most technologically advanced EPIRB to date!

The Tron 60AIS is compliant with the mandatory International Maritime Organization (IMO) regulation (as of July 2022) and Safety of Life at Sea (SOLAS) regulation.

Tron 60AIS feature comparison

FEATURE	DESCRIPTION	Tron 60GPS	Tron 60AIS
IEC 61097-2 Ed.4	Approved in accordance with the latest EPIRB standard		✓
MSC.471(101)	Compliant with the latest IMO regulation for EPIRB (July 2022)		✓
AIS technology	Homing technology included for faster localization		✓
Return Link System	RLS through Galileo GNSS		✓
IR technology	IR LED light for use with night vison devices and assisted SAR		✓
Battery	11 year and 3 month total lifetime		✓
Cospas-Sarsat 406 MHz	Approved in accordance with Cospas-Sarsat	✓	✓
121.5 MHz homing	VHF/AM frequency for homing/ location purposes	✓	✓
GNSS (GPS, GLONASS, Galileo)	72 channels GNSS (Global Navigation Satellite System)	✓	✓
MEOSAR	Enhanced detection capability for accelerated rescue	✓	✓
Activation	Manual and/or water activation	✓	✓
Battery replacement	Maintenance according to IMO regulations and/or national flag state administration	✓	✓
Warranty	5 year full warranty	✓	✓
Wrist strap	Hands-free wrist strap	✓	✓
LED technology	Top mounted LED light securing 360 visibility coverage	✓	✓
Brackets	Float-free or manual	✓	✓

Features:

The Tron 60AIS has both regular LED light and infrared light emitting diode (IR LED) incorporated. This IR LED allows the use of night vision, which better assists SAR operations that occur at night or in the dark.

The Tron 60AIS offers Galileo Return Link System, Europe's Global Navigation Satellite System (operational since January 2020).

This EPIRB has been tested for operational and performance requirements in accordance with the international standard, IEC 61097-2 Ed.4 (April 2021).

Float-free and manual bracket



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2.3 NAVIGATION AIDS – GMDSS MARINE RADIO

2.3.1 Navigation Aids – GMDSS VHF Marine Portable Radio

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THE SAILOR® SP3500 ATEX PORTABLES

Tough Job. Tough Conditions. Tough Equipment.

Product Sheet

Communication is vital for the safety and efficiency on board all vessels operating in hazardous environments, such as tankers, supply vessels and other offshore operations. Choosing a portable radio specially designed for this harsh environment is a must. Fully waterproof, the ATEX versions of the SAILOR SP3500 portable series is built specifically for use at sea, so it can be trusted to provide reliable communication whatever the conditions.

All SAILOR SP3500 ATEX versions are designed with the user in mind, and are ideal for work in hazardous marine environments. The unique SAILOR SP3540 VHF is both ATEX and GMDSS approved, so it can be used for on board communication and to fulfill safety requirements if an incident should occur.

With large tactile buttons and control knobs combined with a user-friendly interface, operation of the SAILOR SP3500 ATEX portables could not be simpler, and when in the middle of a vital operation, be it a bunkering operation, hazardous cargo transfer or an oil spill clean-up, complicated operation of your radio is the last thing you need. Every SAILOR SP3500 portable radio also comes with a large, easy to read display with a red backlight to protect your night vision.

Years of experience with maritime design have resulted in the innovative, user-friendly design of the SAILOR SP3500 ATEX portables, which is backed up by incredible value and a high quality worldwide service network – On Board Service Center.

The ATEX Family

The SAILOR ATEX portable series is part of the SAILOR SP3500 family, which features seven models covering all maritime applications. There are three high-quality, durable ATEX models specifically designed for use in the dangerous offshore and tanker environment, whilst at the same time offering superb value.

- SAILOR SP3530 Portable VHF ATEX
- SAILOR SP3540 Portable VHF ATEX GMDSS
- SAILOR SP3560 Portable UHF ATEX

All feature powerful transceivers and high quality audio ensuring that all parties can be heard loud and clear even when working in windy and noisy conditions. The SAILOR name gives you confidence that your portable VHF was built for the job at sea, with such features as:

- Robust design
- Waterproof (IP67)
- Large display
- Clear sound
- Large tactile buttons
- Ribbed grip
- Interface to external accessories – e.g. SAILOR 3595 Hand Microphone ATEX

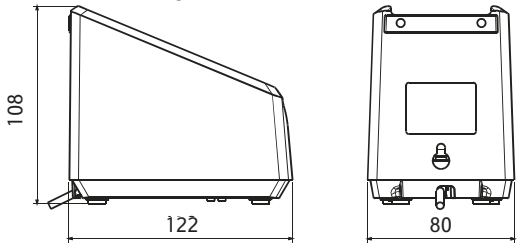
The SAILOR SP3500 ATEX versions conform to the 94/9/EC ATEX Directive. The approved rating is II 2 G Ex ib IIC T4. Accessories has been approved together with the SAILOR SP3500 ATEX radios.



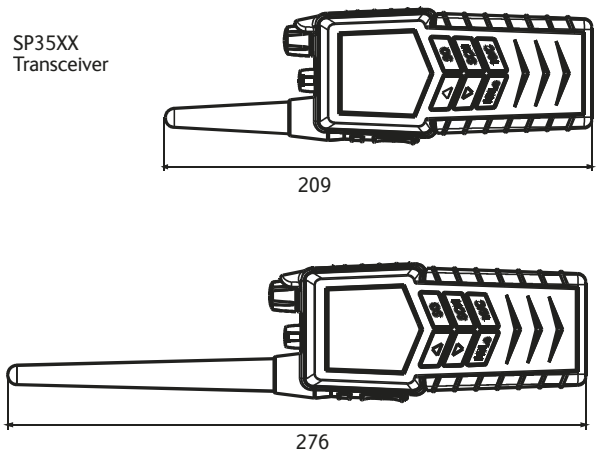
THE SAILOR® SP3500 ATEX PORTABLES

Tough Job. Tough Conditions. Tough Equipment

SP35XX
Charger



SP35XX
Transceiver



The complete package

The SAILOR SP3530/SP3540/SP3560 packages consist of:

- Transceiver and antenna
- Belt clip and lanyard
- Li-Ion rechargeable battery and charger*
- AC/DC converter/adaptor
- DC connection
- Operators manual
- The SAILOR SP3540 also includes a Lithium battery for GMDSS application.

Wide range of accessories

In addition to the standard package a range of accessories are available, making the SAILOR SP3500 portable series even more vital for all marine applications:

- SAILOR 3590 Hand Microphone with Interface for OTTO Engineering accessories
- SAILOR 3595 Hand Microphone ATEX* with interface for SAVOX and PELTOR accessories
- Interface cables for PELTOR and SAVOX accessories
- Service/programming cable
- Dual charger
- Leather carry and soft carry bags with shoulder strap

** SAILOR 3595 Hand Microphone ATEX is ATEX approved for SAILOR SP3530/SP3540/SP3560 ATEX Portables*

	SAILOR SP3530 VHF ATEX	SAILOR SP3540 VHF GMDSS ATEX	SAILOR SP3560 UHF ATEX
Approvals	R&TTE FCC IC	MED (Wheelmark) FCC IC	R&TTE FCC IC
CHANNELS AND FREQUENCIES			
Frequency range	149.3 - 174 MHz	149.3 - 174 MHz	440 - 470 MHz
Channel separation	25 and 12.5 kHz	25 kHz	25 and 12.5 kHz
Pre-programmed channels	Int., US, Canadian and BI	GMDSS	16 maritime
Additonal programmable channels	100	100	100
ATIS call sign programmable	X	X	X
FEATURES			
Squelch control	X	X	X
Transmitter power (Hi/Lo) (radiated)	2/1W	2/1W	2/1W
Dual watch, Tri-watch, scanning	X	X	X
Call Channel Program and Selection	X	X	X
Red back light with dimming	X	X	X
Keypad lock	X	X	X
Keypad beep On/Off	X	X	X
Backlit keypad	X	X	X
Light on key press or manual only	X	X	X
Display contrast	X	X	X
CTCSS	X		X
Scrambler	X		X
Battery save function	X	X	X
Battery level indicator	X	X	X
BATTERY			
1650mAh Rechargeable Li-Ion battery	X	X	X
GMDSS battery			X

For further information please contact:

satcom.maritime@cobham.com

Subject to change without further notice.

2.3.2 Navigation Aids – Marine Portable Radio Single Charger Kit

ATEX Single Charger Kit for SP3500

403536A

The SAILOR charger kit consist of:

- Li-Ion rechargeable battery
- Charger
- AC/DC converter
- DC connection

The charger is not waterproof.

The charger can be supplied from DC or from AC using an AC/DC converter.

- DC: Connect the 12-24VDC Connection Cable between the DC supply and the connector on the underside of the charger.
- AC: Connect the AC/DC converter to the connector on the underside of the charger. Then connect the AC/DC converter to the AC outlet.

For further information please contact:

satcom.maritime@cobham.com

Subject to change without further notice.

2.3.3 Navigation Aids – PTT Control Unit

SAVOX

SAVOX C-C440/Sailor Ex Com control unit



The SAVOX C-C440 com-control unit is a push-to-talk unit designed for use with your two-way radio in demanding environments. It offers easy and reliable communication for professionals requiring durable equipment when operating in harsh conditions, and is ideal for those who need to communicate hands-free and/or with their radio secured underneath protective clothing. With a headset it provides a hands-free way to stay connected with your team and ensure the efficiency and safety of your operations. Rugged to IP67 and available as an ATEX version. Ex variants can be recognized by their different PTT button color (dark blue).

Key benefits

- Dust proof and water submersible (IP67)
- Extra large push-to-talk button
- Excellent tactile feel and operation; suitable for wearing under clothing and with gloves
- Large 360° rotating clip

Market Segment	Public Safety	Product code	L443922
Size L	89.8 mm	Size W	30.9 mm
Size H	87.9 mm	Housing Colour	Black
Weight (text)	140 g	Operational Temperature Min	-40 °C (-40 °F)
Operational Temperature Max	85 °C (185 °F)	Ingress Protection	IP66, IP67
Storage Temperature Min	-25 °C (-13 °F)	Storage Temperature Max	70 °C (158 °F)
Protection Against Drop(fall)	1 meter, IEC 60068-2-31-2008	Headset Connector	QR4+1 female
Battery Life Time	No battery	Connectivity	Wired
Cable Type	Coiled	Use Voltage	3.0...10VDC (0VDC for dynamic microphone)
Electro Magnetic Compatibility (EMC)	EN	Ex/IS	ATEX / IECEx
Emergency Button	No	Attachment/Fastening	Clothing Clip
Price List Notes	EX II 2 G, Ex ib IIC T4 Gb, EX II 2 D, Ex IIIC T110 Db, ATEX and IECEx approved Sold only through Thrane & Thrane		

Savox Communications Oy Ab (Ltd)
Keilaranta 15 B
02150 Espoo, Finland

2.3.4 Navigation Aids – Headset

3M™ Peltor™
Technical Datasheet



PELTOR™

3M™ Peltor™ Twin Cup Headset, ATEX

MT72H540P3E-50

Product description

The **Peltor™ Twin Cup Headset , ATEX** has high-attenuating shells with optimised acoustic design and excellent space for the ears. Noise compensated microphones for clear and reliable communication. The P3E-version is for helmet attachment and fits all 3M™ Peltor™ helmets and most other helmet brands on the market. ATEX approved.

Article number	Description	3M ID number
MT7H72H540P3E-50	Twin Cup headset, helmet attachment	XH001674254

Key Features:

- ATEX approved for use in areas where intrinsic safety is required
- Dynamic noise cancelling microphone
- Twin-Cup technique for increased attenuation



Application:

The Peltor™ Twin Cup headset, ATEX-approved, is designed to be used in industrial areas where intrinsic safety is required.

Accessories:

Article number	Description	3M Id number
HY13	Hygiene kit	XH001659297

Standard and Approval:

MT72H540P3E-50 is in conformity with the provisions set out in the PPE directive 89/686/EEC, the EMC directive 2004/108EC and the ATEX directive 94/9/EC. Thereby it fulfils the requirements for CE marking.
The product has been tested and approved in accordance with EN352-3:2002, EN352-6:2002, EN 60079-0:2006, EN60079-11:2007. The product has been verified according to: EN 61000:6-2:2005.

The product has been examined by:
FIOH, Finnish Institute of Occupational Health, Topeliuksenkatu 41 a A, FI-00250, Helsinki, Finland Notified body #0403
NEMKO, Gaustadalléen 30 N-0373 OSLO, NORWAY Notified Body #0470

The product has been approved for use in potentially explosive environment according to ATEX directive and IEC Ex.
Product marking: II 2G Ex ib IIC T4 -20°C ≤ Ta ≤ +50°C
IEC Ex certificate number: IECEx NEM 09.0005X

3M™ Peltor™ Technical Datasheet

Technical Data Specifications:
Materials:
Helmet attachment: stainless steel
Cups: ABS
Ear cushions: PVC covered PU foam

Microphone:
Type: noise cancelling dynamic microphone
Sensitivity: -60dB+-3dB (0dB=1V/Pa @ 1 kHz)
Impedance: 230 Ω +20% -10%

Cable and connector:
0.5–1.4-m cable curled PU with connector type TP-120

Storage:
Recommended storage conditions: -55º C - +55º C, <90% humidity
Recommended maximum shelf life: 5 years except the batteries: <1 year

Use limitation:
Never modify or alter this product

Warranty:
The warranty does not cover any damage caused by neglected maintenance or careless handling. For more information on maintenance, please see the user instruction. For full warranty condition, contact your dealer or local 3M office.

Attenuation
MT7H72H540P3E-50

Frequency(Hz)	125	250	500	1000	2000	4000	8000
Mean Attenuation (dB)	17,9	27,3	34,0	35,8	31,5	40,5	36,5
Standard Deviation (dB)	3,3	3,6	4,2	2,9	3,0	4,7	4,0
Assumed Protection (dB)	14,6	19,7	29,0	32,9	28,5	35,8	32,5

SNR=31dB H=31dB M=29 dB L=24 dB

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3 RADIO SYSTEM

3.1 RADIO SYSTEM – DMR RADIO

3.1.1 Radio System – DMR UHF Portable Radio



MOTOTRBO DP4000 Ex SERIES ATEX AND MED PORTABLE RADIOS

KEEPING YOU SAFER IN THE TOUGHEST ENVIRONMENTS

MOTOROLA SOLUTIONS

MOTOTRBO™ ATEX AND MED SOLUTIONS: THE PROFESSIONAL CHOICE FOR HAZARDOUS AREAS

In environments like production facilities and oil rigs your workers are confronted with explosive gases, combustable dust, and chemical vapours. Safe, reliable communication is absolutely critical in such dangerous environments. That's where the power and performance of MOTOTRBO digital radios stand out.

The MOTOTRBO DP4000 Ex Series combines the best of two-way radio functionality with the latest digital technology. It integrates voice and data seamlessly, offers enhanced features that are easy to use, and delivers increased capacity to efficiently connect all your crews. With exceptional voice quality, long battery life and ATEX-rated for safety, the radios keep your workers connected and productive, wherever the job takes them.

COMMUNICATE CLEARLY IN DIFFICULT CONDITIONS

DP4000 Ex SERIES

These high-performing portables have the highest ATEX gas explosion group rating. Ideal for hazardous work with loud noise, long shifts, rough weather and dangerous conditions including combustible dust, explosive chemicals, gas leaks, flammable hydrocarbons and more.

DP4401 Ex - Rugged, easy to use, non-display model for hazardous open environments

DP4801 Ex - Adds a full keypad and large colour display for access to advanced features like texting and caller ID



DP4401 Ex (Non-Display) **DP4801 Ex (Display)**

ATEX DUST PROTECTION:

- **II** Group II, other environments, (chemical industries, refineries, etc.)
- **2D** High protection, Category 2 equipment for Zone 21 and 22. D = Dust
- **Ex** Explosion-proof equipment, certified to European ATEX Directive and IECEx
- **IIIC** Enclosure certified for dust Zone 21 by IP rating
- **T130°C** Maximum enclosure surface temperature

ATEX GAS PROTECTION:

- **II** Group II 'other' environments
- **2** High Protection, Category 2 for Zone 1 and 2
- **G** Gas
- **Ex** Explosion-proof equipment, certified to European ATEX Directive and IECEx
- **ib** Type of ignition protection (Zones 1 and 2)
- **IIC** Protection in the most explosive gas environment (hydrogen)
- **T4** Device surface temperature will not exceed 135°C

ATEX MINING PROTECTION:

- **I** Group I
- **M2** Category Equipment is intended for use in underground mines as well as surface installation of such mines likely to be endangered by firedamp and/or combustible dust
- **Ex** Explosion-proof equipment
- **ib** Type of ignition protection (Zones 1 and 2)
- **I** Explosion Group, I = Methane



SO RUGGED, IT WITHSTANDS THE WORST

The DP4000 Ex Series is so rugged and durable, it meets the most stringent standards and has the highest ATEX rating. Whether working in an oil refinery, or chemicals factory, dust and water can damage radios, but the DP4000 Ex Series is designed to withstand the worst. It meets or exceeds MIL-STD-810 for exceptional durability and is IP67 rated[1] to keep out damaging water and dust. The design has also been subjected to Motorola Solutions unique Accelerated Life Test to simulate five years of hard use.

EASY TO OPERATE

The DP4000 Ex Series features large PTT, volume, channel knobs and programmable buttons that are easy to use, even when wearing gloves. The large, colour display (DP4801 Ex only) and bright LED show radio status information at a glance. Plus the prominent orange emergency button enables workers to quickly call for assistance when it is required.

KEEP CREWS COMMUNICATING, EVERYWHERE

MOTOTRBO has the ability to scale to meet your team's needs. Our IP Site Connect system uses the Internet to extend coverage to workers on up to 15 sites anywhere in the world, meaning remote teams can communicate like never before. Capacity Plus expands the capacity of your sites to over 1,500 users. Capacity Max can be implemented on networks up to 250 sites and can handle up 3,000 users per site, while offering DMR Tier III compatibility.

Use Motorola Solutions Application Developer Program to adapt the DP4000 Ex Series to your unique needs in the future – from location tracking using the built-in GPS receiver to text messaging or call logging and recording.

WORK SAFELY, FROM PIPELINE TO POWER PLANT

Everything about the DP4000 Ex Series is designed for worker safety. Loud, clear performance and innovative features like Intelligent Audio and Transmit Interrupt help ensure messages get through in the noisiest environments. And like the radio, Motorola Solutions audio and energy accessories meet the most stringent ATEX standards.

An integrated man-down and lone worker feature sends an instant alert if a mishap occurs. And the bright blue colour helps ensure workers can easily identify and carry only ATEX-approved radios into hazardous environments.

PUT YOUR RADIOS TO WORK

DIGITAL PERFORMANCE

The DP4000 Ex Series meets the ETSI DMR Standard to deliver integrated voice and data, clearer voice communications, with a longer battery life than analogue.

EXCEPTIONAL AUDIO

Hear and speak clearly in loud environments, negate background noise from heavy equipment, engines and trucks.

EASY TO USE

Ergonomically designed for ease of use, with customisable buttons and an intuitive user interface.

COMPLETE ATEX-CERTIFIED SOLUTION

IMPRES™ smart audio and energy accessories meet the same tough specs, for a complete system you can rely on.


PMLN6333


PMMN4094


~~PMMN4067~~


~~PMLN6803~~

EXTEND SAFETY TO LONG SHIFTS AND NOISY AREAS WITH ATEX-CERTIFIED ACCESSORIES

From the drilling platform to the oil refinery, you deal with extremes - that's why it is critical to use the only ATEX accessories designed to withstand the perils and work with these MOTOTRBO ATEX portables.

BE IN THE CLEAR WITH AN IMPRES RSM

The IMPRES Remote Speaker Microphone (RSM) ensures hassle free communication. Along with IMPRES audio, this microphone features Windporting which makes it easy to use in all weather conditions.

PELTOR™ HEADSETS HANDLE TOUGH SHIFTS, HEAD ON

This twin cup heavy-duty headset with helmet attachment offers two layers of hearing protection with extra high-attenuating twin shells, preventing you from having to wear both earplugs and hearing protection, while still receiving critical radio communication. ATEX certified for extreme conditions and comfortable for long shifts.

IMPRES™ BATTERIES AND CHARGERS

Our high-capacity IMPRES battery maximizes talk time and optimizes battery cycle life automatically.

Only IMPRES batteries can be charged 150 additional times as compared to a standard battery – a 43% increase in charge cycles. This means if you charge your radios two to three times a week, you'll get more than an extra year out of every IMPRES battery.

DURABLE CARRY CASES

High quality leather carry cases are designed to withstand harsh conditions in hazardous environments. Swivel belt loop cases keep the case secure while allowing the radio to swing freely as you move.

GENERAL SPECIFICATIONS

	DP4801 Ex DISPLAY	DP4401 Ex NON-DISPLAY
Frequency Band	UHF B1 (403-470MHz) and VHF (136-174MHz)	
Zone Capacity	250	4
Max. No. of Conv. Channels or Personality Capacity	1000	64
Dimensions (H x W x L) with Li-Ion battery	138.5 x 56.7 x 39.8mm	138.5 x 56.7 x 37.8mm
Weight with Li-Ion battery	482.5g	455.5g
Power Supply	7.4 V Nominal	
Programmable Buttons	5	3
Integrated GPS Receiver	Yes	
Gas Rating	ATEX: Class II 2G Ex ib IIC T4 Gb IECEx: Ex ib IIC T4 Gb	
Dust Rating	ATEX: Class II 2D Ex ib IIIC T130 °C Db IECEx: Ex ib IIIC T130°C Db	
Mining Rating	ATEX: I M2 Ex ib I Mb IECEx: Ex ib I Mb	
SOLAS / MED (UHF Models Only)	Marine Equipment Directive 2014/90/EU MED/5.20 Merchant Shipping (Marine Equipment) Regulations 2016 UK/5.20	
Battery Part Number	NNTN8359	
Typical[2] battery life Analogue	16 hrs	
Typical[2] battery life Digital	19 hrs	

RECEIVER

	ALL MODELS
Channel Spacing	12.5/20/25KHz
Frequency Stability	±0.5ppm
Digital Sensitivity (5% BER)	0.25uV
Analogue Sensitivity (12 dB SINAD) Typical	0.25uV
Intermodulation (TIA603C)	70dB
Adjacent Channel Selectivity (TIA603) - 1T	60dB @ 12.5kHz / 70dB @ 20/25kHz
Adjacent Channel Selectivity (TIA603C) - 2T	45dB @ 12.5kHz / 70dB @ 20/25kHz
Spurious Rejection (TIA603C)	70dB
Rated Audio	0.5W
Audio Distortion @ Rated Audio	5%, 3% (typical)
Hum and Noise	-40dB @ 12.5kHz -45dB @ 20/25kHz
Audio Response	TIA603C
Conducted Spurious Emission (ETSI)	-57dBm

TRANSMITTER

	ALL MODELS
Channel Spacing	12.5/20/25KHz
Frequency Stability	±0.5ppm
Power Output	1W
Modulation Limiting	±2.5kHz @ 12.5kHz ±4.0kHz @ 20kHz ±5.0kHz @ 25kHz
FM Hum and Noise	-40dB @ 12.5kHz / -45dB @ 20/25kHz
Conducted / Rated Emission (ETSI)	36 dBm < 1GHz, -30 dBm > 1GHz
Adjacent Channel Power	60dB @ 12.5kHz, 70dB @ 20/25kHz
Audio Response	TIA603C
Audio Distortion (per EIA)	3%
FM Modulation	12.5 kHz: 11K0F3E 25 kHz: 16K0F3E
4FSK Digital Modulation	12.5kHz Data: 7K60F1D & 7K60FXD 12.5kHz Voice: 7K60F1E & 7K60FXE Combination of 12.5kHz Voice & Data: 7K60F1W
Digital Protocol	ETSI TS 102 361-1, -2, -3 DMR Tier II and DMR Tier III

GPS

Accuracy specs are for long-term tracking (95th percentil values>5 satellites visible at nominal -130dBm signal strength)	
TTFF (Time To First Fix) - Cold Start	<60 seconds
TTFF (Time To First Fix) - Hot Start	<10 seconds
Horizontal Accuracy	<5 meters

ENVIRONMENTAL SPECIFICATIONS

	ALL MODELS
Operating Temperature	-20°C to +55°C
Storage Temperature	-40°C to +85°C
Thermal Shock	MIL STD 810D, E, F, G
Humidity	MIL STD 810D, E, F, G
ESD	IEC-801-2KV
Water Intrusion	IEC-60529 IP67
Packaging Test	MIL STD 810D, E, F, G
Ingress Protection (IP) Rating	IP67[1]

[1] DP4000 Ex Series radios are rated IP67 and are also certified to the highest ingress protection available under ATEX/IECEx test conditions - IP64
[2] Assuming 5/5/90 duty cycle, no option board, no GPS, conventional operation

For more information on how to communicate safely in hazardous locations, visit motorolasolutions.com/mototrbo or find your closest Motorola Solutions representative or authorised Partner at motorolasolutions.com/contactus.

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MOTOROLA SOLUTIONS

3.1.2 Radio System – UHF Portable Radio Single Unit Battery Charger

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MOTOROLA SOLUTIONS

IMPRES™SINGLE UNIT CHARGER

WPLN4255



Innovative charging and reconditioning system that streamlines and automates battery maintenance. Talk time and cycle life are optimized as the need for manual maintenance programs is eliminated. Advanced conditioning features allow batteries to be left on the charger for extended periods of time with incurring heat damage. In addition, batteries left in the charger are kept fully charged so they are always ready when you need them.
Mix and match any MOTOTRBO IMPRES™ or non-IMPRES™ radio battery (except SL4000 battery) in these chargers.

3.1.3 Radio System – UHF Portable Radio Battery

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2075mAh Li-ion IMPRES™ BATTERY

NNTN8359



MOTOROLA ATEX IMPRES BATTERY KEY FEATURES:

- Li-Ion battery
- Colour - black
- Operational time - 16 hours (max)
- Typical rated capacity - 2075mAh
- Minimum rated capacity - 1800mAh
- ATEX - Intrinsic safety standard

MOTOROLA ATEX IMPRES BATTERY COMPATIBLE DEVICES:

- Motorola DGP8050EX
- Motorola DGP8550EX
- Motorola DP4401
- Motorola DP4401EXS
- **Motorola DP4801EX**
- Motorola XIRP8600EX
- Motorola XIRP8608EX
- Motorola XIRP8668EX

3.1.4 Radio System – Remote Speaker

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ANC REMOTE SPEAKER MICROPHONE

COMMUNICATE CLEARLY IN HARSH ENVIRONMENTS



PMMN4094



ANC REMOTE SPEAKER MICROPHONE

COMMUNICATE CLEARLY IN HARSH ENVIRONMENTS



PMMN4094

In harsh environments, you want to talk and hear clearly above the noise. Whether you are in a noisy oil refinery or in the midst of fighting a fire, you can't afford to lose seconds struggling to get your message through. The Active Noise Cancelling (ANC) Remote Speaker Microphone (RSM) has been designed to withstand the toughest environments, while providing clear communications.

ATEX ACTIVE NOISE CANCELLING RSM





ENHANCED AUDIO

The active noise cancellation technology ensures your voice, not the surrounding noise, goes through clearly. Likewise, the speaker has been designed to let users hear above the noise, which can be difficult in harsh environments. The digital signal processing also reduces audio feedback, allowing users to work in close proximity with each other.

COMMUNICATE CLEARLY IN WINDY AND WET CONDITIONS

The ANC RSM incorporates the Windporting feature present in many of Motorola's remote speaker microphones. Windporting reduces the adverse effect of wind noise and provides intelligible audio for users working under windy conditions. This is especially beneficial for users working in inclement weather or in oil refineries that are located near windy sea shore conditions.

Firefighters don't need to worry any longer about water-clogged microphones or speaker grills that prevent communication from getting through. Water drains quickly from the ANC RSM, ensuring clear audio so that users can focus on critical tasks.

DESIGNED WITH THE RIGHT FIT AND FEEL

The ANC RSM is designed for ease of use in the toughest conditions. Exaggerated controls, including large glove friendly front and side Push-To-Talk buttons, allow you to transmit with ease even when wearing protective gear and other equipment that can make reaching for a side Push-To-Talk challenging.

The rugged housing includes emergency and volume controls that are large for quick access but protected to avoid accidental activation. Now you can focus on the job at hand without worrying about fumbling with your equipment.

VERSATILITY MEETS PERFORMANCE

The ANC RSM is equipped with two audio jacks, allowing you to use your RSM with compatible headsets. For users preferring a simple earpiece, a 3.5mm-plug earpiece is available with the ANC RSM. The RSM has a unique sliding cover that ensures the 3.5mm audio jack is protected when not in use, preventing any debris or liquids from entering the device.

Further, the Nexus-jack has an open ATEX/IECEx interface, enabling third party headsets with compatible interfaces, such as the Draeger FPS-Com-Plus, to be used safely. Select from a variety of Peltor™ Headsets that have been certified with the ANC RSM to ensure optimum performance and audio quality. Any ATEX/IECEx certified accessory with a matching set of input parameters published in the certificates can be safely connected.

COMPATIBLE AUDIO ACCESSORIES

~~PMLN6087~~	~~Peltor high attenuation headset with boom mic., headband~~
~~PMLN6089~~	~~Peltor Tactical XP headset with boom mic, helmet attachment~~
~~PMLN6090~~	~~Peltor Tactical XP headset with boom mic, headband~~

~~PMLN6002~~	~~Peltor high attenuation headset with boom mic., helmet attachment~~
PMLN6333	Peltor Twin Cup headset with boom mic, helmet attachment
~~PMLN7188~~	~~3.5 mm earpiece with clear acoustic tube~~



~~PMLN6092~~



~~PMLN6089~~



~~PMLN6090~~



~~PMLN6087~~



~~PMLN7188~~

ANC REMOTE SPEAKER MICROPHONE SPECIFICATIONS

COMPATIBLE RADIOS	
DP4401 Ex, DP4801 Ex. Requires Radio Firmware: R02.40.01 or later	
GENERAL	
Part Number	PMMN4094
Dimensions (RSM head only)	68mm (W) x 94mm (H) x 29mm (D) (without clip)
Weight (complete kit)	~290 grams
Clip	Swivel Clip with D-ring
Power Source	Radio Battery
Secondary Accessory Interfaces[1]	The Tx/Rx 4-pole Nexus-jack has the following certified ATEX/IECEx interface parameters: Uo = 7 V, Io = 0.160 A, Po = 0.275 W, Co = 1 µF, Lo = 1 mH The Rx-only 3.5mm jack with locking mechanism has the following certified ATEX/IECEx interface parameters: Uo = 8.4 V, Io = 0.142 A, Po = 0.243 W, Co = 1 µF, Lo = 1 mH
MICROPHONE	
Type	Electret Condenser Microphone
Sensitivity	-44 ± 3 dBV/Pa at 1 kHz
Distortion (THD)	<3% at 1 kHz
Intelligent Audio	Supported by RSM
IMPRES™	Yes
Noise Cancellation	Active Noise Cancelling
Windporting	Yes
SPEAKER	
Diameter	36mm
Impedance	20 ohm
Rated Output Level	90 dB SPL Typical at 0.5W, 30 cm
Maximum Output Level (at max radio volume)	94 dB SPL Typical, at 30 cm 97 dB phon Typical, at 30 cm
Distortion (THD)	<10% typical at 1 kHz, 0.5W, at 30cm
CONTROLS	
Top	Orange Programmable Button
Side	Side Push-To-Talk (PTT) (525 000 Cycles) and One Black Programmable Button
Front	Front Push-To-Talk (PTT) (525 000 Cycles)
Volume	Hi-Lo
CABLE	
Length	390mm (Resting Position), 1200 mm (Fully Stretch)
Flex Life	100,000 Cycles (Minimum), Bend 90° Left-Right and Front-Back with 2lbs Load
Pull Strength	40 lbs (Minimum)
Cable Jacket	UL94 V-0 Compliant
ENVIRONMENTAL	
Operating Temperature	-30°C to +60°C
Storage Temperature	-55°C to +85°C
Thermal Shock	-57°C to +80°C
Humidity	90% - 95% Relative Humidity at +50°C for 8 hours
Rain	MIL STD 810G Method 506.4
Salt Fog	MIL STD 810G Method 509.4 Procedure 1
Dust	MIL STD 810G Method 510.4 Procedure 1
Vibration	MIL STD 810G Method 514.5 Procedure 1 Category 24
Mechanical Shock	MIL STD 810G Method 516.5 Procedure 1
ESD	IEC / EN 61000-4-2
IP Rating	IP67
Impact Grill	1.25" diameter steel ball drop, 30cm to 100cm at 10cm intervals, 8 times at each height
ATEX / IECEX[1,2]	
Gas Rating	ATEX: Class II 2G Ex ib IIC T4 Gb; IECEx: Ex ib IIC T4 Gb
Dust Rating	ATEX: Class II 2D Ex ib IIIC T90°C Db; IECEx: Ex ib IIIC T90°C Db
Mining Rating	ATEX: Class I M1 Ex ia I Ma; IECEx: Ex ia I Ma
Ambient Temperature	Ta: -20°C to +55°C
ATEX/IECEx IP Rating	IP64, IP67

[1] When combining accessories and radios, the resulting ATEX/IECEx classification for the system is always the lowest classification of the system elements.

[2] ATEX Specifications: EN60079-0:2012, EN60079-11:2012. IECEx Specifications: IEC 60079-0:2011, IEC60079-11:2011.

Note: Specifications subject to change without notice.

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