MOTOTRBO™ BATTERIES AND CHARGERS

BUYER'S GUIDE

MOTOROLA SOLUTIONS

MOTOTRBO ENERGY

WHEN IT COMES TO MISSION-CRITICAL SITUATIONS, YOUR RADIO IS ONLY AS RELIABLE AS THE BATTERY THAT POWERS IT. BY CHOOSING THE RIGHT BATTERY AND CHARGER TO PAIR WITH YOUR RADIO, YOU CAN PROVIDE A COMPLETE, CUSTOMISED SOLUTION THAT EVERYONE CAN RELY ON.

THIS GUIDE WILL HELP YOU UNDERSTAND THE OPTIONS AND SELECT THE SOLUTION THAT IS RIGHT FOR YOU.

Many factors affect the choice of charging and battery solution, including temperature, duty-cycle, shift length, and even accessories.

RELIABILITY YOU CAN TRUST

Motorola Solutions original batteries are proven tough for reliability and performance. Our design engineers draw on their vast experience from radio user feedback, thousands of hours of simulation and testing, and years of real-life usage that enables them to design energy solutions you can trust to perform when needed.

QUALITY IN EVERY PART

Motorola Solutions radios feature heavy duty casings, sturdy internal circuitry, engineered shock absorbing materials and premium quality cells which all add up to reliable, high-performing energy solutions that can withstand the inevitable knocks and drops they will encounter in every-day use.

DESIGNED TO COMPLY

In addition to Motorola Solution's exceptional design, all our batteries and chargers are tested with our radios as a complete system to ensure they comply with all the relevant regulatory standards set out by ETSI, the European Union and local laws. These tests include RF energy exposure, conducted emissions and Restriction of Hazardous Substances (RoHS).

IMPRES™ TECHNOLOGY

As batteries age, they will hold less and less charge, which can be a big problem if shifts are long and batteries come back depleted. Motorola Solutions' innovative IMPRES battery charging and reconditioning system streamlines and automates battery maintenance using intelligent batteries and chargers. IMPRES radio batteries and chargers communicate with each other to help lengthen battery life by up to 43%*, reducing costs over the lifetime of the system as fewer battery replacements will be required.

IMPRES BATTERIES HAVE A LONGER LIFE

MAXIMUM CAPACITY

100%
80%
60%
40%
20%

IMPRES BATTERIES

NON-IMPRES BATTERIES

CHARGE CYCLES
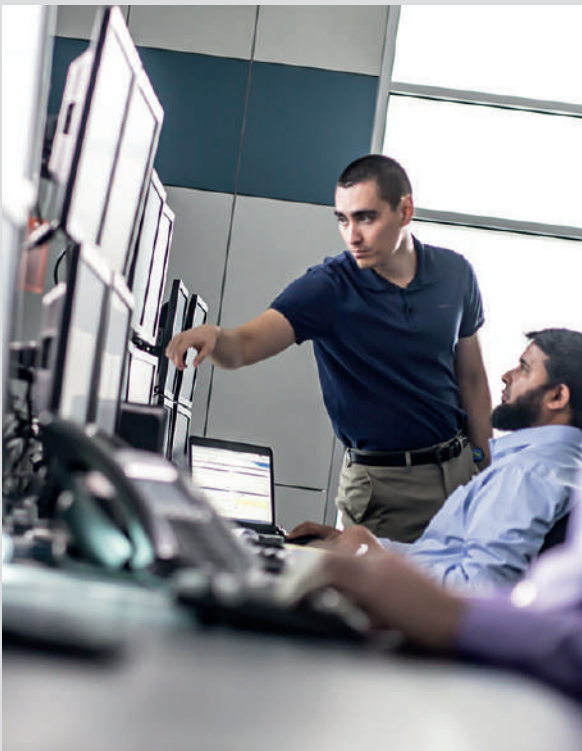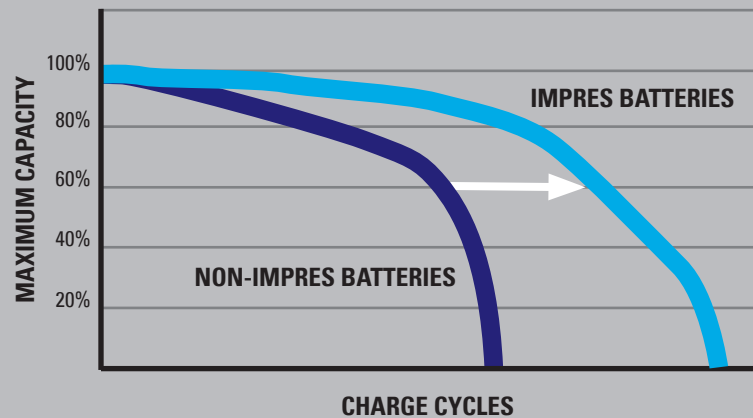
IMPRES FLEET MANAGEMENT

Eliminate the guesswork in managing batteries across your radio fleet with IMPRES Fleet Management. This software application allows you to remotely monitor and analyse the status of batteries to maximise performance and minimise replacement costs.

The IMPRES Battery Fleet Management application software is scalable from a single site to a multi-site system and can be networked to support up to 25,000 batteries in the same location or over geographically dispersed areas. IMPRES Fleet Management software gives you the power to create detailed reports about your entire battery fleet, including performance levels of your batteries, lost battery reports, and even notifications when a battery is nearing the end of its life.

Our latest multi-unit chargers are ready to connect directly to the IMPRES Fleet Management software simply by connecting to your PC through a USB cable.

TEMPERATURE

Temperature can seriously affect the runtime and lifetime of batteries if not properly specified. Will your radios be used inside or outside? Will the environment be heated, ambient, or refrigerated? Lower temperatures will cause a battery's capacity to drop, so in cold outside conditions or refrigerated environments a low-temperature battery should be specified for use with your Motorola Solutions radios.

TYPICAL CHANGES IN BATTERY CAPACITY WITH TEMPERATURE

CAPACITY

-20   -10   0   10   20

TEMPERATURE (ºC)
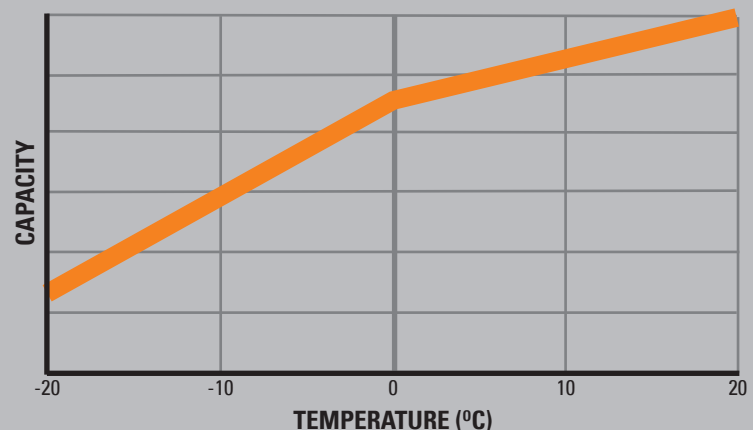
MOISTURE

Wet environments will always pose a risk to most electronics, whether it is rain during outside use, steam in production environments, or high humidity environments such as swimming pools. Within our wide portfolio, Motorola Solutions offers batteries with IP ratings suitable for any environment, including total submersion in water.

IP (INGRESS PROTECTION) RATINGS GUIDE

SOLIDS

1. Protected against a solid object greater than 50 mm such as a hand.

2. Protected against a solid object greater than 12.5 mm such as a finger.

3. Protected against a solid object greater than 2.5 mm such as a screwdriver.

4. Protected against a solid object greater than 1 mm such as a wire.

5. Dust Protected. Limited ingress of dust permitted. Will not interfere with operation of the equipment. Two to eight hours.

6. Dust tight. No ingress of dust. Two to eight hours.

IP 6 7
RATING EXAMPLE

WATER

1. Protected against vertically falling drops of water. Limited ingress protected.

2. Protected against vertically falling drops of water with enclosure tilted up to 15 degrees from the vertical. Limited ingress permitted.

3. Protected against sprays of water up to 60 degrees from the vertical. Limited ingress permitted for three minutes.

4. Protected against water splashed from all directions. Limited ingress permitted.

5. Protected against jets of water. Limited ingress permitted.

6. Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities.

7. Protection against the effects of immersion in water between 15 cm and 1 m for 30 minutes.

8. Protection against the effects of immersion in water under pressure for long periods.

HAZARDOUS ENVIRONMENTS

If your radio operatives will be visiting potentially explosive and hazardous environments then they will need intrinsically safe certified radios to keep themselves safe and in contact at all times. DP4000 Ex series radios from Motorola Solutions work with our ATEX-certified batteries and are approved for explosive environments.
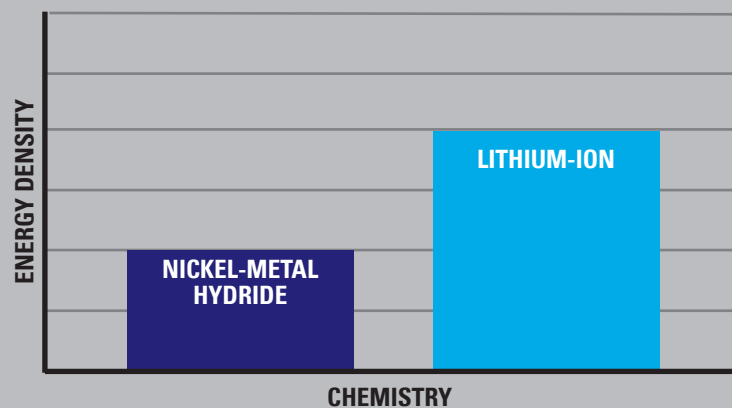
BATTERY CAPACITY

When choosing a battery, special attention should be paid to the way the radio will be used. Are your operatives only using the radios for a few minutes at a time or could they be away from a charging point for many hours? The longer the period between chargers the higher the battery capacity should be.

Is your system always busy? The higher the volume of calls, the faster the battery will be depleted because receiving and transmitting uses more power than when in standby. Do some of your users have accessories such as Bluetooth® headsets and GPS location updates enabled? These features will require more power and therefore may need a higher capacity battery to get through a whole shift.

BATTERY CHEMISTRY

Advances in battery chemistry have allowed devices to get smaller and more powerful as more energy is available. With Motorola Solutions batteries, you can choose between Nickel-Metal Hydride (NiMH) or Lithium-Ion (Li-Ion) technology. NiMH is ideal for users who won't be using their radio extensively, or who don't work long shifts. Li-Ion chemistry offers an energy density that is nearly double that of NiMH, allowing users to choose lighter batteries or batteries of the same weight that offer a longer runtime between charges.

BATTERY CHEMISTRY Vs ENERGY DENSITY

ENERGY DENSITY

NICKEL-METAL HYDRIDE

LITHIUM-ION

CHEMISTRY

BATTERIES DP1400 / DP2000e SERIES / DP3000e SERIES

RADIO FAMILY		DESCRIPTION	TYPICAL CAPACITY (mAh)	IMPRES	IP RATING	CHEMISTRY	CE APPROVED	INTRINSIC SAFETY	MIN TEMPERATURE (°C)
DP1400									
PMNN4251		1400mAh NiMH Battery	1400	No	IP54	NiMH	Yes	No	-20
PMNN4253		1600mAh Li-Ion Battery	1600	No	IP54	Li-Ion	Yes	No	-10
PMNN4259		2075mAh Li-Ion Battery	2075	No	IP54	Li-Ion	Yes	No	-10
NNTN4497		2250mAh Li-Ion Battery	2250	No	IP54	Li-Ion	No	No	-10
PMNN4254		2300mAh Li-Ion Battery	2300	No	IP54	Li-Ion	Yes	No	-10
PMNN4258		2900mAh Li-Ion Battery	2900	No	IP54	Li-Ion	Yes	No	-10
DP2000e SERIES									
PMNN4412		IP68 1400mAh Li-Ion Battery	1400	No	IP68	NiMH	Yes	No	-20
PMNN4525		IMPRES IP68 1950mAh Li-Ion Battery	1950	Yes	IP68	Li-Ion	Yes	No	-30
PMNN4491		IMPRES IP68 2100mAh Li-Ion Battery	2100	Yes	IP68	Li-Ion	Yes	No	-10
PMNN4544		IMPRES IP68 2450mAh Li-Ion Battery	2450	Yes	IP68	Li-Ion	Yes	No	-10
PMNN4490		IMPRES IP68 2900mAh Li-Ion Battery	2900	Yes	IP68	Li-Ion	Yes	TIA4950	-10
PMNN4488		IMPRES IP67 3000mAh Li-Ion Battery	3000	Yes	IP67	Li-Ion	Yes	No	-10
DP3000e SERIES									
PMNN4440		IP68 1700mAh Li-Ion Battery	1700	No	IP68	Li-Ion	Yes	No	-10
PMNN4511		IMPRES IP68 2900mAh Li-Ion Battery	2900	Yes	IP68	Li-Ion	Yes	TIA4950	-20
PMNN4502		IMPRES IP67 3000mAh Li-Ion Battery	3000	Yes	IP67	Li-Ion	Yes	No	-10

BATTERIES
DP4000e SERIES / DP4000 Ex SERIES / SL1000 SERIES / SL2000 SERIES / SL4000 SERIES

RADIO FAMILY		DESCRIPTION	TYPICAL CAPACITY (mAh)	IMPRES	IP RATING	CHEMISTRY	CE APPROVED	INTRINSIC SAFETY	MIN TEMPERATURE (°C)
DP4000e SERIES									
PMNN4412		IP68 1400mAh Li-Ion Battery	1400	No	IP68	NiMH	Yes	No	-20
PMNN4525		IMPRES IP68 1950mAh Li-Ion Battery	1950	Yes	IP68	Li-Ion	Yes	No	-30
PMNN4491		IMPRES IP68 2100mAh Li-Ion Battery	2100	Yes	IP68	Li-Ion	Yes	No	-10
PMNN4544		IMPRES IP68 2450mAh Li-Ion Battery	2450	Yes	IP68	Li-Ion	Yes	No	-10
PMNN4489		IMPRES IP68 2900mAh Li-Ion Battery	2900	Yes	IP68	Li-Ion	Yes	TIA4950	-10
PMNN4488		IMPRES IP67 3000mAh Li-Ion Battery	3000	Yes	IP67	Li-Ion	Yes	No	-10
DP4000 Ex SERIES									
NNTN8840		IMPRES ATEX IP67 2000mAh Li-Ion Battery	2000	Yes	IP67	Li-Ion	Yes	ATEX MA	-10
NNTN8359		IMPRES ATEX IP67 2075mAh Li-Ion Battery	2075	Yes	IP67	Li-Ion	Yes	ATEX	-10
SL1000 SERIES									
PMNN4468		2300mAh Li-Ion Battery	2300	No	IP54	Li-Ion	Yes	No	-20
SL2000 SERIES									
PMNN4468		2300mAh Li-Ion Battery	2300	No	IP54	Li-Ion	Yes	No	-20
SL4000 SERIES									
PMNN4468		2300mAh Li-Ion Battery	2300	No	IP54	Li-Ion	Yes	No	-20

CHARGERS DP1400 / DP2000e SERIES / DP3000e SERIES

RADIO FAMILY		DESCRIPTION	IMPRES	CHARGING SLOTS	POWER CORD	DISPLAY	INTEGRATED FLEET MANAGEMENT	REQUIRES ADAPTER
DP1400								
PMLN5192		Rapid Single Unit Charger (Euro)	No	1	Euro	None	No	None
PMLN5191		Rapid Single Unit Charger (UK)	No	1	UK	None	No	None
PMLN5193		Rapid Single Unit Charger (USA)	No	1	USA	None	No	None
PMLN7089		Travel Single Unit Charger (Car)	No	1	Car	None	No	None
PMLN6598		Multi-Unit Charger (Euro)	No	6	Euro	None	No	None
PMLN6600		Multi-Unit Charger (UK)	No	6	UK	None	No	None
DP2000e SERIES								
NNTN8273		Core Single Unit Charger (Euro)	No	1	Euro	None	No	None
NNTN8274		Core Single Unit Charger (UK)	No	1	UK	None	No	None
WPLN4255		IMPRES Single Unit Charger (Euro)	Yes	1	Euro	None	No	None
WPLN4254		IMPRES Single Unit Charger (UK)	Yes	1	UK	None	No	None
WPLN4253		IMPRES Single Unit Charger (USA)	Yes	1	USA	None	No	None
PMPN4289		IMPRES Multi Unit Charger with Single Display (Euro)	Yes	6	Euro	1	Yes	None
PMPN4290		IMPRES Multi Unit Charger with Single Display (UK)	Yes	6	UK	1	Yes	None
PMPN4284		IMPRES Multi Unit Charger with Single Display (USA)	Yes	6	USA	1	Yes	None
DP3000e SERIES								
PMLN5188		IMPRES Single Unit Charger (Euro)	Yes	1	Euro	None	No	None
PMLN5194		IMPRES Single Unit Charger (UK)	Yes	1	UK	None	No	None
PMLN5198		IMPRES Single Unit Charger (USA)	Yes	1	USA	None	No	None
PMPN4297		IMPRES Multi Unit Charger with Single Display (Euro)	Yes	6	Euro	1	No	None
PMPN4298		IMPRES Multi Unit Charger with Single Display (UK)	Yes	6	UK	1	No	None
PMPN4285		IMPRES Multi Unit Charger with Single Display (USA)	Yes	6	USA	1	No	None

CHARGERS DP4000e SERIES

RADIO FAMILY		DESCRIPTION	IMPRES	CHARGING SLOTS	POWER CORD	DISPLAY	INTEGRATED FLEET MANAGEMENT	REQUIRES ADAPTER
DP4000e SERIES								
NNTN8273		Core Single Unit Charger (Euro)	No	1	Euro	None	No	None
NNTN8274		Core Single Unit Charger (UK)	No	1	UK	None	No	None
WPLN4255		IMPRES Single Unit Charger (Euro)	Yes	1	Euro	None	No	None
WPLN4254		IMPRES Single Unit Charger (UK)	Yes	1	UK	None	No	None
WPLN4253		IMPRES Single Unit Charger (USA)	Yes	1	USA	None	No	None
PMPN4289		IMPRES Multi Unit Charger with Single Display (Euro)	Yes	6	Euro	1	Yes	None
PMPN4290		IMPRES Multi Unit Charger with Single Display (UK)	Yes	6	UK	1	Yes	None
PMPN4284		IMPRES Multi Unit Charger with Single Display (USA)	Yes	6	USA	1	Yes	None

CHARGERS DP4000 Ex SERIES / SL1000 SERIES

RADIO FAMILY		DESCRIPTION	IMPRES	CHARGING SLOTS	POWER CORD	DISPLAY	INTEGRATED FLEET MANAGEMENT	REQUIRES ADAPTER
DP4000 Ex SERIES								
NNTN7616		IMPRES Single Unit Charger (Car)	Yes	1	Car	None	No	None
WPLN4255		IMPRES Single Unit Charger (Euro)	Yes	1	Euro	None	No	None
WPLN4254		IMPRES Single Unit Charger (UK)	Yes	1	UK	None	No	None
WPLN4253		IMPRES Single Unit Charger (USA)	Yes	1	USA	None	No	None
NNTN8525		Travel Single Unit Charger (Car)	No	1	Car	None	No	None
PMPN4289		IMPRES Multi Unit Charger with Single Display (Euro)	Yes	6	Euro	1	Yes	None
PMPN4290		IMPRES Multi Unit Charger with Single Display (UK)	Yes	6	UK	1	Yes	None
PMPN4284		IMPRES Multi Unit Charger with Single Display (USA)	Yes	6	USA	1	Yes	None
PMPN4308		IMPRES ATEX Multi Unit Maintainer with Single Display (Not Charger) (Euro)	Yes	6	Euro	1	No	None
PMPN4319		IMPRES ATEX Multi Unit Maintainer with Single Display (Not Charger) (UK)	Yes	6	UK	1	No	None
SL1000 SERIES								
PS000042A12		USB Charger Adapter (Euro)	No	1	Euro	None	No	None
PS000042A13		USB Charger Adapter (UK)	No	1	UK	None	No	None
PMLN7110		Single Unit Charger (Euro)	No	1	Euro	None	No	None
PMLN7163		Single Unit Charger (UK)	No	1	UK	None	No	None
PMLN7162		Multi Unit Charger (UK)	No	6	UK	None	No	None
PMLN7102		Multi Unit Charger (Euro)	No	6	Euro	None	No	None

CHARGERS SL2000 SERIES / SL4000 SERIES

RADIO FAMILY		DESCRIPTION	IMPRES	CHARGING SLOTS	POWER CORD	DISPLAY	INTEGRATED FLEET MANAGEMENT	REQUIRES ADAPTER
SL2000 SERIES								
PS000042A12		USB Charger Adapter (Euro)	No	1	Euro	None	No	None
PS000042A13		USB Charger Adapter (UK)	No	1	UK	None	No	None
PMLN7110		Single Unit Charger (Euro)	No	1	Euro	None	No	None
PMLN7163		Single Unit Charger (UK)	No	1	UK	None	No	None
PMLN7162		Multi Unit Charger (UK)	No	6	UK	None	No	None
PMLN7102		Multi Unit Charger (Euro)	No	6	Euro	None	No	None
SL4000 SERIES								
PS000042A12		USB Charger Adapter (Euro)	No	1	Euro	None	No	None
PS000042A13		USB Charger Adapter (UK)	No	1	UK	None	No	None
PMLN6705A		Tri Unit Charger (EU) also includes micro-USB socket	No	2	Euro	None	No	None
PMLN6704A		Tri Unit Charger (UK) also includes micro-USB socket	No	2	UK	None	No	None
PMLN6688A		Multi Unit Charger (Euro)	No	6	Euro	None	No	None
PMLN6686A		Multi Unit Charger (UK)	No	6	UK	None	No	None

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