

# MIL/MC3901 Military Battery Management System



- **Supports Lithium Ion, Nickel Cadmium, Nickel Metal Hydride and Lead Acid batteries**
- **User programmable**
- **Profile discharge for testing rechargeable and non-rechargeable batteries**
- **Rugged and reliable construction**
- **Universal battery management and charger system for military batteries**
- **110V/230V ac or 24V dc supply inputs**

The MC3901 is designed for field deployment or a workshop environment. The unit's main purpose is to provide fast reactivation of many types of rechargeable military batteries. Each of the battery types capable of being charged is connected to the charger using the appropriate coded battery lead.

With fast, normal, and balance charging and programmable discharge the MC3901 can fully charge, condition, discharge and measure the capacity of a battery. Each of the 10 outputs can perform a different operation. For example one channel may be conditioning a 24V nickel cadmium battery while another is fast charging a 16.8V lithium ion battery. With 20 programmes and the ability to charge all common rechargeable chemistries MC3901 covers most military requirements for charging thus reducing the logistic burden battery management.

Some of the latest batteries require special interfaces between the battery and the charger. For example some Lithium Ion batteries require two way communication with the charger. The charger leads for these batteries have an integral module to house the interface electronics. The interface for battery temperature sensors is also built into the charger lead. The extra flexibility this offers allows the MC3901 to charge the widest possible range of current and future military batteries.

The operator can enter new or updated battery programs using the push button switches and the alphanumeric display. By entering key battery data such as chemistry, voltage and capacity the MC3901 can be kept up to date with the users changing requirements.

Functions include:

- Pre charge test – to check battery fit to charge
- Constant current charge – for first stage charging of lithium ion batteries or fast/slow charging of nickel cadmium batteries
- Constant voltage charge - for second stage charging of lithium ion batteries or charging of lead acid batteries.
- Constant current discharge– to test packs after storage
- Programmable discharge profile – to simulate receive, transmit, standby operation.

These functions are combined to create the appropriate battery programs. For example a lithium ion charge program consists of pre charge test, constant current charge, constant voltage charge. The discharge functions are designed for testing both rechargeable and non-rechargeable batteries. With the programmable discharge profile the user can set up a repeating cycle of discharge currents. For example a program might consist of 600mA for 2 minutes, followed by 100mA for 18 minutes repeated until the battery is discharged.

All functions are selected from the 30 line alphanumeric LCD display using push button switches. The display gives all the operational information for each battery, such as charge/discharge current, battery voltage and capacity. The display also shows status reports and fault reports such as low capacity, short circuit, and high resistance.

Function	Value
Nominal battery voltage	6V to 24V
Fast charge current	100mA to 3000mA
Normal charge current	100mA to 3000mA
Charge termination	Voltage profile or timed
Discharge current	100mA to 2000mA
Number of channels	10
Output connectors	6 pin MIL-C-26482 series
Output power	500 Watts
AC supply voltage	110V/230V ac internally switched 50/60Hz
Max power consumption	700 Watts
DC supply voltage	20 to 30 Volts dc
Max DC current drain	30 Amps at 20Volts dc
Size L * W * H	340mm * 210mm * 180mm
Weight	30kg
Charging temperature	-10°C to +55°C
Storage temperature	-20°C to +70°C

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