



M4103 Battery Pack

Module Description:

General	Rechargeable battery pack with inbuilt charger
Battery	12V 2.5Ah NiMH
Input Power Supply	Input: 100 to 240VAC 50/60Hz 0.8A Output: 24VDC 1.25A
Minimum Power Supply	22VDC to 28VDC [18W min]
Typical Charge Time	<4 hours
Battery Life	Up to 70 hours
Cycle Life	>300 discharge-charge cycles typical
Auxiliary Output Power	12VDC/24VDC, 400mA max. (Battery voltage or Input power supply voltage)

The NiMH battery with inbuilt charger is designed to allow safe and fast charging while supplying power to the connected indicator. Operation is fully automatic. Charging should normally take less than 4 hours to complete.

While the input power supply is disconnected and sufficient battery charge remains, the charger will automatically supply the indicator from battery power.

The battery charger supports a dual colour (Red/Green) LED annunciator to show status.

Status Annunciator	Input Power	Output Power	Charging	Meaning
OFF	Not present	Battery ¹	No	Battery operation
GREEN	Present	Input Power Supply	No	Ready
RED	Present	Input Power Supply	Yes	Charging
FLASHING GREEN or FLASHING ALTERNATE GREEN AND RED	Present	Input Power Supply	No ²	Fault ³

Notes:

1. If battery is sufficiently charged.
2. It is necessary to remove then reconnect the input power supply before further charging will occur.
3. Refer to troubleshooting section for further information.

While charging is occurring it is normal for the battery to get hot. The battery temperature is monitored and charging may be suspended if the temperature becomes excessive. This is most likely to occur when the ambient temperature is high. This will result in an extended charging period. The LED status annunciator will remain RED during suspended charging.

Module Troubleshooting:

Problem	Possible solutions
Flashing green or flashing alternate green and red LED Status Annunciator ¹ (within a few seconds of input power supply connection)	• Wait for up to 30min: The battery may be excessively discharged (battery voltage less than 3.5V) and will take some time to recover. • Check input power supply voltage: The charger requires a minimum 22V. • Replace battery: The battery may have failed.
Flashing green LED Status Annunciator ¹ (following a charge cycle)	• Start a repeat charge cycle: The battery may have failed to completely charge, however battery should be sufficiently charged to operate normally. To try again, simply disconnect the input power supply for a few seconds and reconnect.
Battery gets hot	• It is normal for the battery to get quite hot (80°C (176°F)) during charging.
Insufficient battery life	• Reduce system power requirements: Turn off or reduce backlight brightness; enable auto power-off (if supported); etc. • Replace battery: A battery will typically last at least 300 discharge-charge cycles.
With Input Power Supply connected, LED Status Annunciator never lights	• Check wiring polarity: The input power supply polarity may be reversed. Ensure polarity is correct. • Check input voltage: The charger requires a minimum 22V.
No Voltage on Auxiliary Output Connections	• Reduce load on output. The self-resetting fuse may have tripped. It may take several minutes to self-reset following load reduction.

Module Connections:

This product is designed to be quickly and easily recharged. There are 3 options for the position of the recharging socket and LED status annunciator:

- The recharging socket and LED status annunciator can each be inserted into a cable gland in the instrument boot. This is suitable where the boot is used and there is easy access to the rear of the boot.
- The recharging socket and LED status annunciator can each be fitted to the battery module (using the predrilled holes). This is suitable for panel mount applications with easy access to the rear of the instrument.
- The recharging socket and LED status annunciator can each be fitted to a nearby panel. This is suitable for most panel mount applications.

Connections:

