



PROUD INDUSTRY LEADER'S IN

MOTIVE POWER SOLUTIONS

WHAT FORKLIFT
BATTERY
CHARGER
DO YOU NEED?

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1300877531

CHARGING EXPLAINED

What is Opportunity / Fast charging?

Using periods of break throughout the day to keep a high state of charge in your forklift battery. This allows battery usage to increase from a traditional “8” hour shift to potentially suit any particular application that has previously required Gas trucks or second shift batteries - all without damaging the battery. Each charge cycle effectively provides a “boost” charge to the Battery, negating the gassing phase of Charge - the rate of this “boost” Charge is indicative of whether it is Rapid Opportunity (20-25% Start rate) or Fast Charge (normally 30-40% start rate)

How is it done?

Every time a truck is not in use (morning tea break for example) the Forklift is parked at a charging station for the battery to be plugged into the charger for short periods of time.

Why Opportunity / Rapid Opportunity / Fast charge?

In certain applications it allows a forklift operator to avoid changing batteries and also heavily increase daily Battery / Electric Forklift usage. This can also potentially eliminate an additional battery requirement for each truck, the need for battery changing equipment, and the risk of injury from making frequent battery changes. It also allows a feasible point of difference to the more expensive Gas Forklift options that would have previously been required prior to this technology being available. Ultimately, it allows the Battery to run for longer than what would be considered standard usage (normally referred to as 8 hours) during any given shift.

CONVENTIONAL vs OPPORTUNITY vs FAST CHARGING

CONVENTIONAL

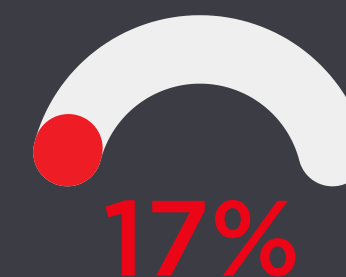
OPERATION TYPES

Single shift operation
Charge once per day
after standard Battery
usage.

DAILY CHARGE TIME (HRS)



CHARGE RATE



OPPORTUNITY

OPERATION TYPES

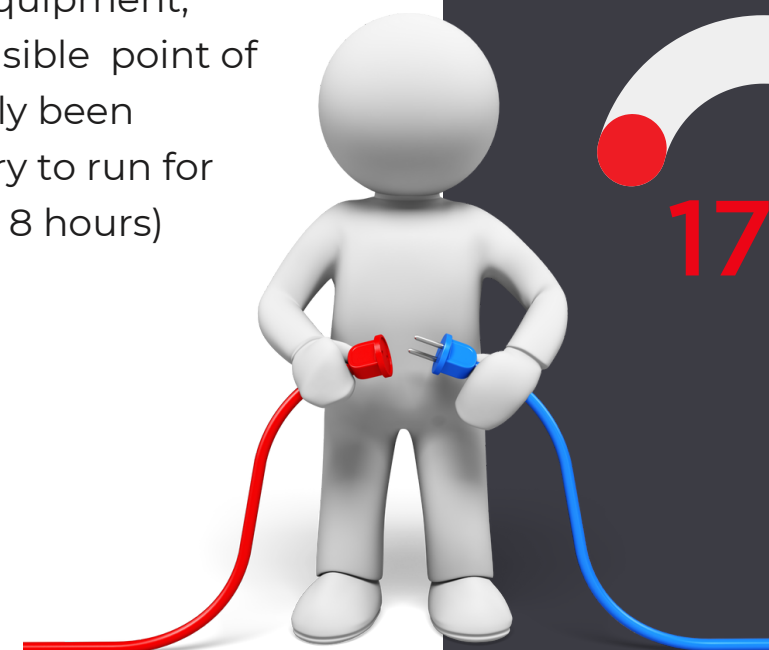
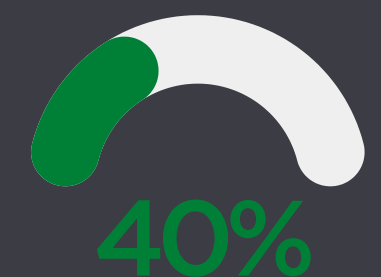
1-2 shift operation
Opportunity/Rapid
Charge on break or
shift changes.



FAST CHARGING

OPERATION TYPES

2- shift operation
Controlled Fast Charge
on break/shift changes



CHARGERS EXPLAINED

What is special about Opportunity / Rapid Opportunity / Fast Charge profiles?

Chargers designed and setup for Opportunity, Rapid Opportunity and Fast charging will not charge the battery past 80% of Charge during the workday. They are programmed to avoid completely finishing the charge cycle during the required usage shift. This is done by eliminating the gassing period of the charge cycle, where the most heat is built up during this particular part of the charge cycle (final 20% of charge) – excessive heat is detrimental to the overall life expectancy of Forklift Batteries.

Why not completely charge the battery?

The life span of a battery is determined by the number of charge cycles that the Battery can deliver. The period of a charge when the battery experiences the majority of its deterioration is during the last 20%, or the gassing stage. If a battery being opportunity charged is plugged into a normal profile charger on every break, but is not discharged past 80%, it will experience a weeks worth of wear in one day. This effectively turns a five year battery into a one-two year battery. This is where the terminology “Opportunity Charging” has derived from. The damage done to a battery if this charging process is used with a conventional charger is immeasurable.

Our CEIL Batteries come with a 1500 cycle/ 5 year full replacement warranty period.

Why do you 'gas' the battery?

The gassing stage, or final 20% of charge is not only delivering Amp hours, but it is also mixing battery acid in the electrolyte. Without gassing, over time, the acid and water separate. This is called stratification, and causes loss in capacity and damage to the Battery plates. This gassing process is an extremely important part of the charging cycle to ensure longevity of battery usage cycles, and battery life.

This process ensures that the Lead plates within the battery are covered by Acid at all times during a charge cycle, allowing for the highest possible usable capacity to be obtained from the Battery during discharge, which ensures the longest possible run time of the Battery cycle.

How do you gas with an Opportunity / Fast charger?

Our Smart Charger range (“Platinum” and “Fast” Chargers) offer a charging algorithm that negates the battery being charged beyond 80% state of charge during any particular shift or application, at the users discretion. These settings are programmed into the charger based on a real time clock and the Applications usage regime. CEIL usually incorporate an 8 hour full charge window (between 10pm and 6am as factory standard), but this can be changed around the required application. This means that at the end of any given shift, the battery should be left plugged in overnight so it can complete a conventional gassing charge cycle to ensure 100% state of charge for the following morning. The actual Charger parameters associated with this are validated by a real time clock, for which the required charging times are programmed specifically into each Charger for that given site / application, and can be universally changed if so required.

WHAT IS FAST CHARGING?



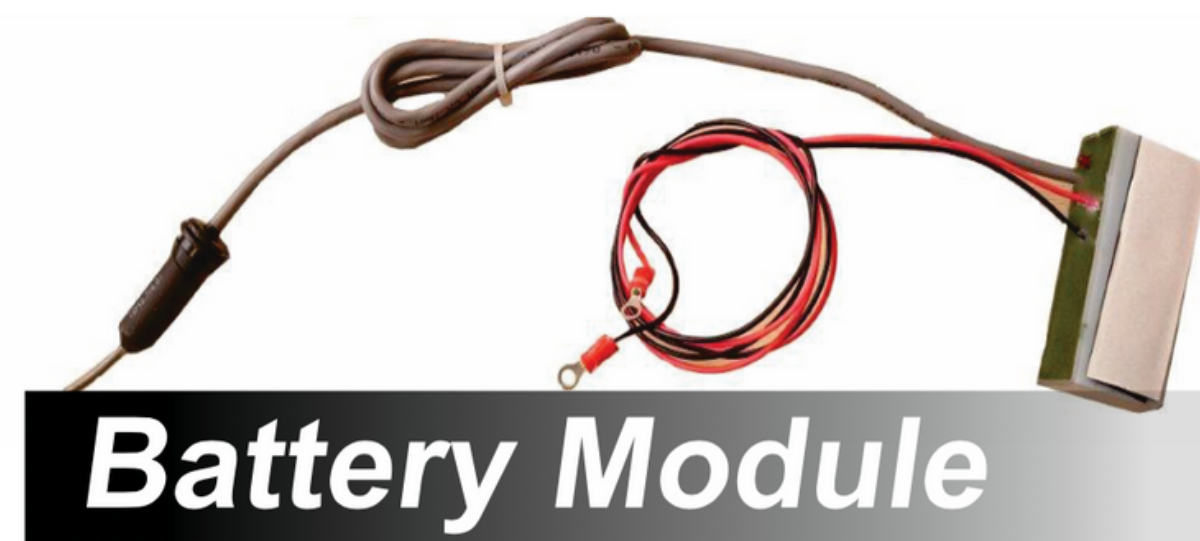
“Fast” charging or “Rapid” charging refers to Opportunity charging at a much higher charge rate. A standard charger has a start rate from 17 Amps per 100AH (17%) of the battery - in comparison Fast chargers deliver 30-40A/100AH (25-40%). The more power that you can put into the battery in the amount of break available determines the total additional truck runtime that can be achieved during any given shift, hence the variable start rate. This higher charge rate also generates increased heat, hence the requirement of a Battery Monitoring Device (BMOD-t), which communicates the Batteries temperature and voltage readings with the Charger during use, and is therefore able to react with the specific charge current indicative of the battery temperature to protect the Battery from overheating and damage.



WHAT IS A BMOD & WHY IS IT USED?

The BMOD-t is a Battery Management Device that is supplied with Industrial Batteries Australia Smart Chargers. They are fitted to the Battery and send the Battery information from the state of charge, voltage and Temperature readings, to ensure complete Battery protection during Rapid Opportunity (BMOD-t optional) and Fast Charging (BMOD-t absolutely required) Charging.

The BMOD-t that is fitted to the Battery is then synced to the Charger, allowing for a perfect and adaptable Charge profile to be supplied from the Charger to the Battery. The main reason for this Battery Management Device is to monitor the internal temperature of the Battery, and determine the most appropriate Fast charge rate without damaging the Battery, as the rate of Charge that is supplied is dependent on the condition of the Battery when the Charger is connected to the Battery.



Battery Module

- *Battery Monitoring Device for communicating with Bassi Chargers for both **Rapid** and **FAST** Charge Applications*
- *Suitable for Lead Acid, GEL and AGM Batteries*



Industrial Batteries⁺
Australia
BMOD-t

➤ *Battery Monitoring Device for communicating with Bassi Chargers for both **Rapid** and **FAST** Charge Applications*

➤ *Suitable for Lead Acid, GEL and AGM Batteries*

Description	Specifications
<p>The BMOD-T is a battery identification and monitoring device for Lead-Acid batteries.</p> <p>It has only two wires, to be connected to the battery positive and negative terminals, and a submersible sensor.</p> <p>It can be installed on any battery with nominal voltage within 24V and 80V, and it communicates wirelessly with Bassi chargers.</p> <p>The BMOD-T provides battery recognition (ID, type, capacity, voltage) and complete monitoring (temperature, electrolyte level, equalization). In this way, the charging process is improved and the COMPLETE PROTECTION of the BATTERY is achieved.</p> <p>The BMOD-T is essential in Rapid / Fast charging applications, and it's recommended when the workload of the battery is heavy.</p> <p>When the batteries in the fleet are equipped with BMOD-T modules, all historical data saved by the chargers include battery IDs. This feature is particularly powerful when coupled with the Bassi fleet management system, as it allows to analyse the operating performance and history logs of each charger and each battery in the fleet.</p>	<ul style="list-style-type: none"> ➤ Nominal Voltages: 24-80 V ➤ Dimensions: 7 x 2 x 3,5 cm ➤ Electrical consumption: < 10 mA <p>The installation of the BMOD-T is simple: it's sufficient to connect the two wires to the battery terminals, and to insert the submersible sensor in a central battery cell. The unit is protected against reverse polarity.</p> <p>At the first connection of the battery to a BASSI charger, it's possible to program the battery information in the BMOD-T, directly through the charger user interface:</p> <ul style="list-style-type: none"> ➤ Nominal battery voltage: 12-80 V ➤ Nominal capacity: 0-2000 Ah ➤ Battery Type: Lead-Acid, GEL, AGM, Li ➤ Battery ID: 8 character alphanumeric <p>This data will be saved in the internal memory of the module, until it will remain connected to the battery.</p>

Typical applications

- Fleets of forklifts and AGVs
- Fleets of passenger EVs
- Stand-by power systems

Related products

- Bassi chargers equipped with BA03 board
- BMOD-ADVANCED (with current sensor)

CALL OUR TEAM TODAY

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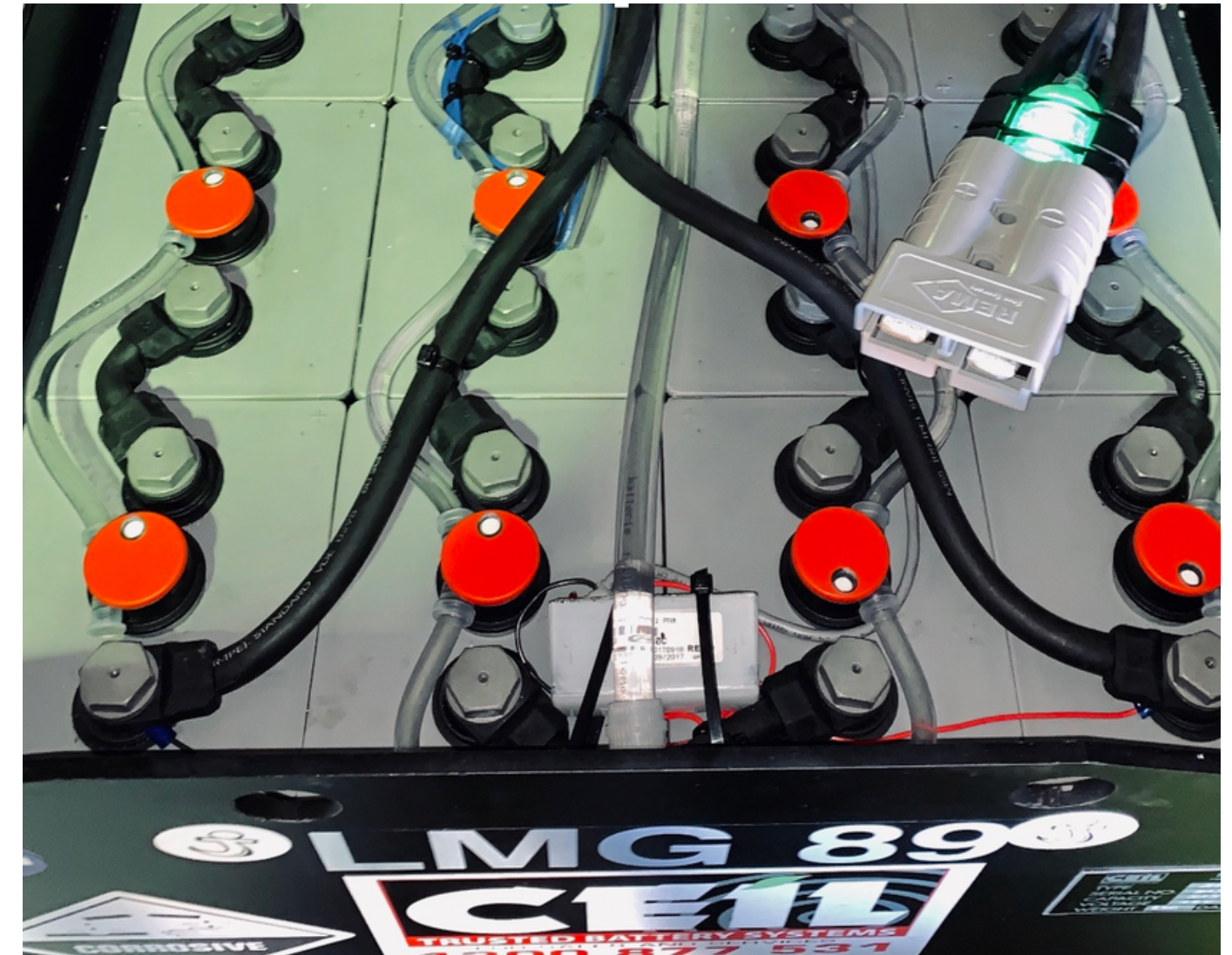
RAPID AND FAST CHARGE BATTERY MONITORING

The CEIL Battery Monitoring Device (BMOD-t) is a vital part of any Rapid Opportunity and Fast Charge application and is designed by our Smart Charger Manufacturer in Italy, who are Worldwide Industry Leaders with this Charger Technology

The Battery Management Device is fitted to the Forklift Battery and subsequently synced with our Smart Charger range to ensure a perfect charge profile is supplied to the Battery, while maximizing the Charge rate depending on the Batteries requirements at the time of charge.

The main function of the BMOD-t for Rapid and Fast Charging applications is to monitor the internal temperature of the battery asset, of which excessive temperature is the main cause of battery damage with more than once a day charging, referred to in the past as “opportunity charging”.

The excessive build up of Temperature due to the required increase in charge rate needs to be monitored at all times, and the Charger reacts to the Batteries supplied information by either increasing or decreasing the supplied charge rate depending on the Batteries voltage and temperature reads

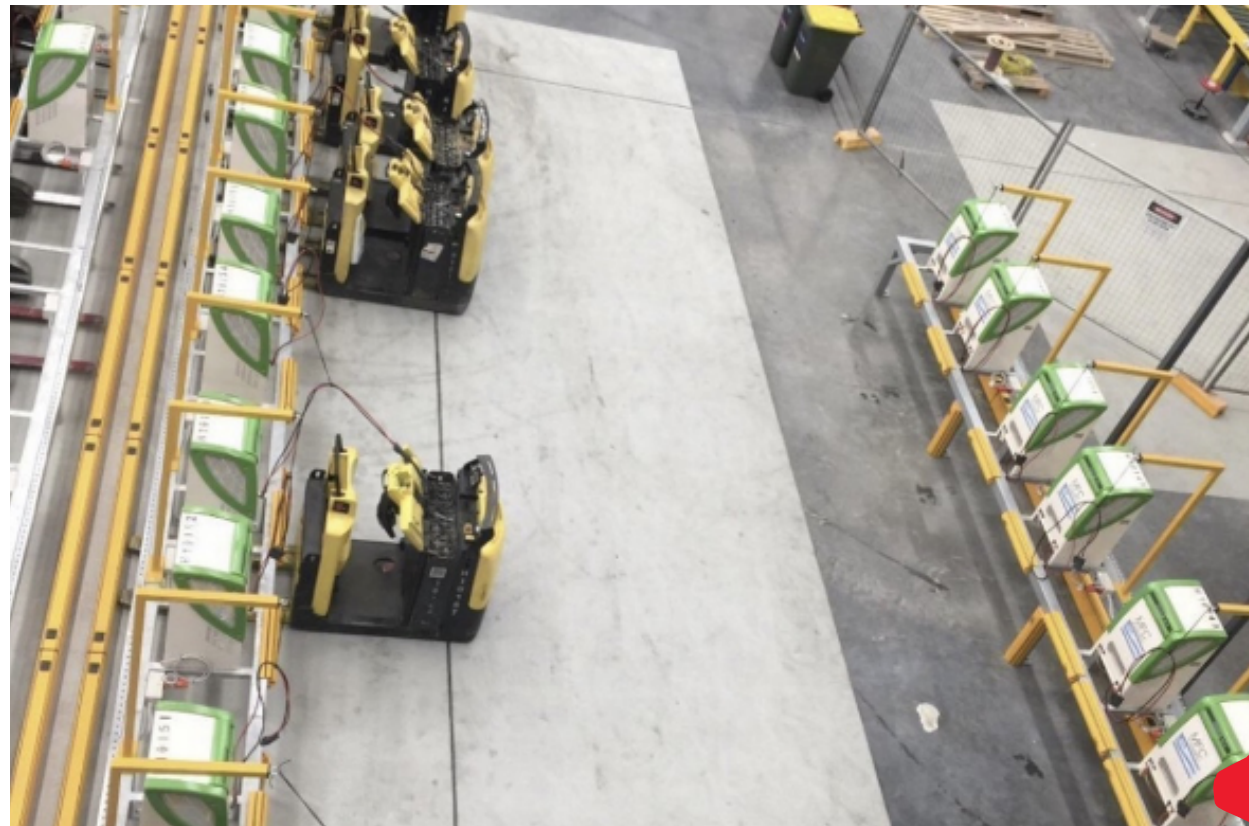


BATTERY MANAGEMENT DEVICE (BMOD-T) FITTED TO A RECENTLY SUPPLIED CEIL FAST CHARGE BATTERY

WHO IS FAST CHARGING?

- CCA Amatil (Coca Cola Nationally)
- Qantas - Nationally
- Menzies (Through DNATA - Nationally)
- SPAR Supermarket (Specifically 26 chargers in one DC Site in Brisbane)
- SILK Logistics, Estore Logistics, Dindas and Ecolab + more (multistate customers)
- Numerous OEM Forklift suppliers Nationally

CCA BRISBANE DC



Due to the proven ability of the IBA Fast Chargers pictured here in green, all second shift Battery requirements were removed from this site

WHY WORK WITH US?



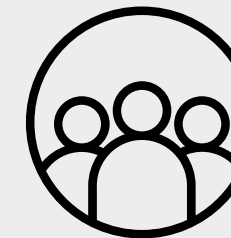
Best Quality
+ Pricing



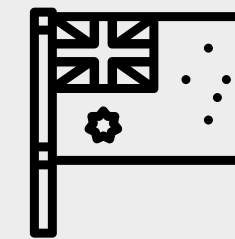
Australia's Leading
Product Warranty



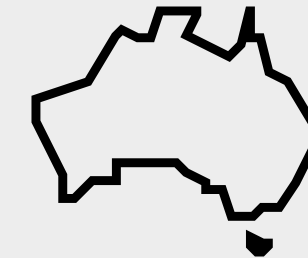
Trusted
Performance



70+ Years
Experience



Australian Owned
+ Operated



National Service
+ Support

Trusted performance you can rely on

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