



Shown with  
optional  
board stand



# MB01-TMS

## 32A 415V 3 Phase Inlet

The MB01-TMS power distribution board is designed as a plug-and-play temporary distribution board for work sites, fully tested to Australian Standard AS61439.4.

This marketing-leading board comes with a range of outlet types and innovative safety features designed to protect personnel and equipment.

Powersafe power boards come fitted with the fully automated Powersafe Thermal Management System (TMS). This system is the only one on the market that offers fully automated internal temperature and humidity management control.

The Powersafe TMS uses a closed loop cooling design, ensuring the board maintains an IP65 rating, suitable for outdoor use.



AS61439 test reports and documentation available upon request.

## KEY FEATURES

- Fitted with Powersafe's proprietary closed loop temperature and humidity control system, including OLED display, fan control, test switch, humidity and anti-freeze control (*see page for more details*)
- Stackable design for easy storage and transport – 12 boards per pallet
- Cascade outlet – for daisy chaining additional boards
- Windows are IP66 and pad lockable
- IP66 breather drain allows one way moisture flow and two way airflow to reduce condensation in the board
- Entire board has been tested to IP65 not just the outlets
- Three phase outlets can be locked off at the rotary switch
- Plug and play design – no hardwiring required
- Boards are made from UV resistant high impact polyethylene

**RDF -1.0**  
Under full load amps

**What is RDF? Click here.**

## OPTIONAL EXTRAS

- Board stand
- Emergency stop
- Phase indication lights
- 4 Pole MCB
- 32A Cascade outlet
- 16A lighting outlet

## SPECIFICATIONS

Supply inlet	32A 415V 5 pin switched CEE Form IP67
Cascade outlet	1 x 32A 415V 5 pin CEE Form rotary switched IP67
Outlets	2 x 32A 415V 5 pin switched IP66 8 x 15A 240V 3 pin auto switched IP66
MCB	1 x 32A 3 pole MCB 10kA
RCD	1 x 40A 4 pole RCD 30mA
RCBO	4 x 20A 2 pole RCBO 10kA 30mA (for 240V outlets)
IP Rating	IP65
Materials	UV resistant high impact V5 polyethylene
Dimensions	28kg - 52cm (L) x 53cm (W) x 56cm (H)



Covered by  
Powersafe's five-year  
pro-rata warranty.



## MADE TOUGH FOR AUSTRALIAN CONDITIONS

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[www.powersafe.net.au](http://www.powersafe.net.au)



**POWER  
SAFE**  
PRODUCTS

Specifications subject to change without notice. August 2021.

Numerous Powersafe products are protected by either registered designs, trademarks, patents, certification or combination of IP protection.

# What's on board the MB01-TMS

Powersafe's commitment to meeting Australian electrical standards can be seen by the below mentioned features and related standards.

The **input isolation device** shall be accessible without the use of a tool or key AS3012:14.5.4-C (MCB behind a locked window does not comply)

**Powersafe Thermal Management System** featuring closed loop cooling, automatic fan monitoring, heating and humidity control (mounted inside the lid)

**Main Switch** must be a different colour to other switches AS3000:2.3.3

The **inlet and cascade outlet** (submains) must be of a different type to what is used on site for tools and machinery AS3012:15.4

**Enclosure Shell** tested for

- Resistance to UV radiation (including outlets)
- Degree of protection IP65
  - Thermal Stability
  - Mechanical impact
  - Lifting

Each **socket outlet** is required to have an isolation switch and overcurrent protection AS3000:4.4.4.1

**IP66 Breather Drain** reducing condensation in the board, mounted under the board

## Side A

1 x 32A Distribution Board Isolating Switch  
1 x 32A 5 pin CEE Form Cascade Outlet  
1 x 32A 3 pole Main MCB 10kA  
1 x 40A 4 pole RCD 30mA



## SIDE B

2 x 32A 5 pin switched outlets  
2 x 15A 3 pin auto switched outlets



## SIDE C

1 x 32A 5 pin CEE Form Cascade Outlet  
4 x 20A 2 pole RCBO 10kA 30mA



## SIDE D

6 x 15A 3 pin auto switched outlets



AS61439 test reports and documentation available upon request.



Covered by Powersafe's five-year pro-rata warranty.





# Why temperature management is important

Major problems can arise when electrical components overheat.

MCBs and RCDs can trip, electrical components can fail, and people can get hurt.

When deciding on purchasing a power board, thought is rarely given to the internal temperatures and how this can affect its functionality and safety.

Many RCDs and RCBOs commonly used have an operating temperature range of  $-5^{\circ}$  to  $40^{\circ}$  which is problematic as many power boards will exceed this temperature if placed in the sun even without any current flowing through it.

Exceeding the manufactures temperature specifications not only voids any warranty, but can potentially lead

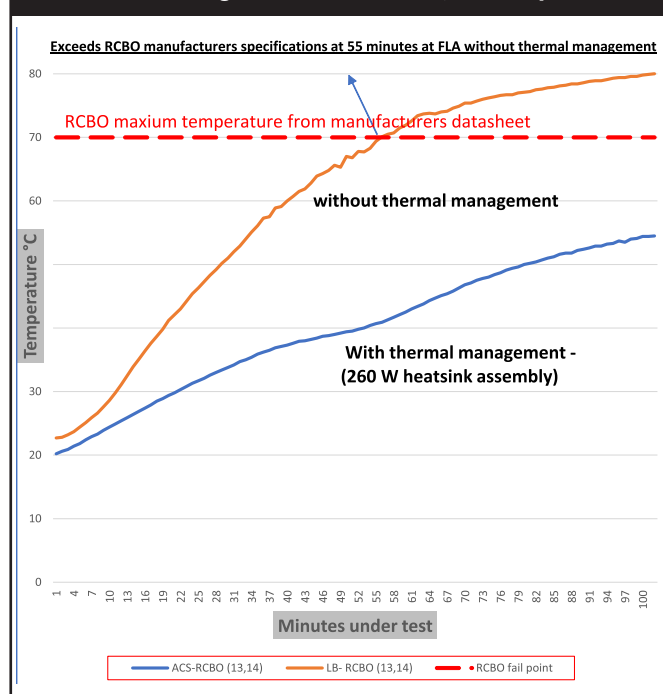
to malfunctions due to overheating, such as nuisance tripping, electrical fires and arc flashing, to name a few.

Operating at high temperatures also shortens the life of electrical components.

Powersafe has taken two steps to alleviate this issue:

1. Using the highest temperature rated components available -  $60^{\circ}$  RCD,  $70^{\circ}$  RCBO,  $75^{\circ}$  MCB
2. The design and installation of our Powersafe Thermal Management System (TMS) to maintain temperatures below  $60^{\circ}$  even under full load at  $40^{\circ}$  ambient as per AS61439 testing requirements.

## LB01 with thermal management VS LB01 without thermal management - RCBO 13,14 comparison



**Thermal Management** is a large subject to cover, especially with the recently introduced AS61439-10:10 mandating that manufactures in Australia produce ACSs with an internal temperature management system.

Visit our website for further information:

Temperature Management Resources

What is Rated Diversity Factor (RDF)?

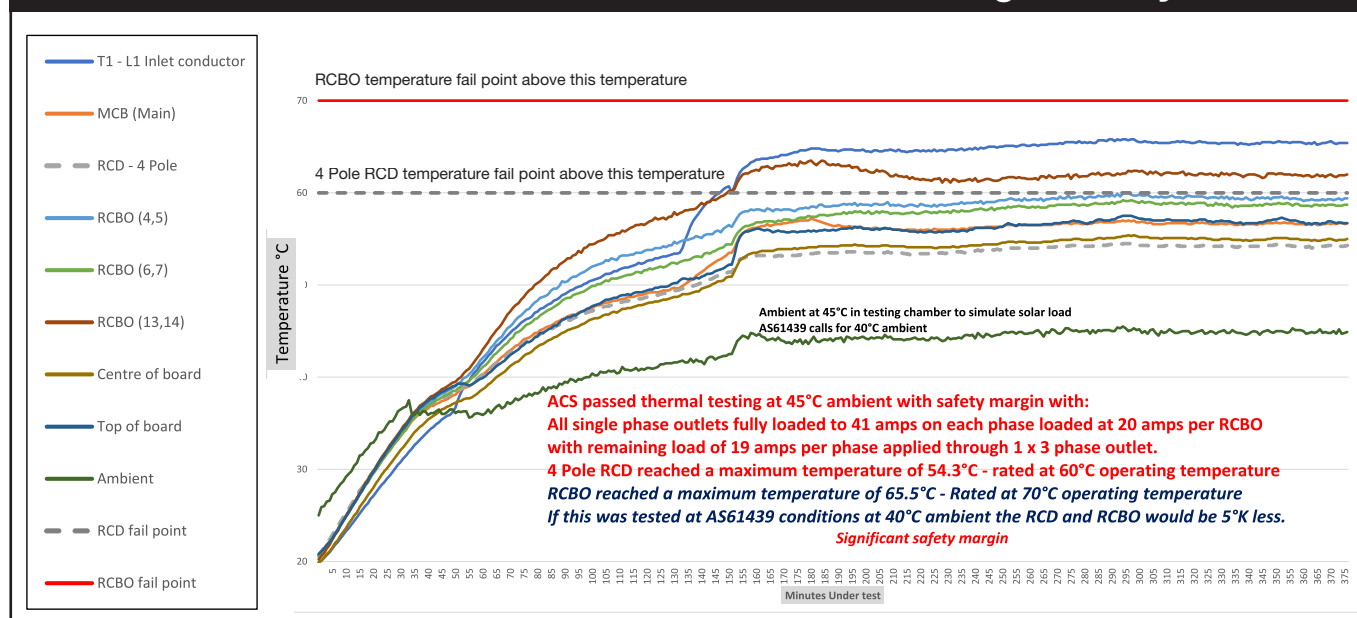
What to look for when purchasing a power board

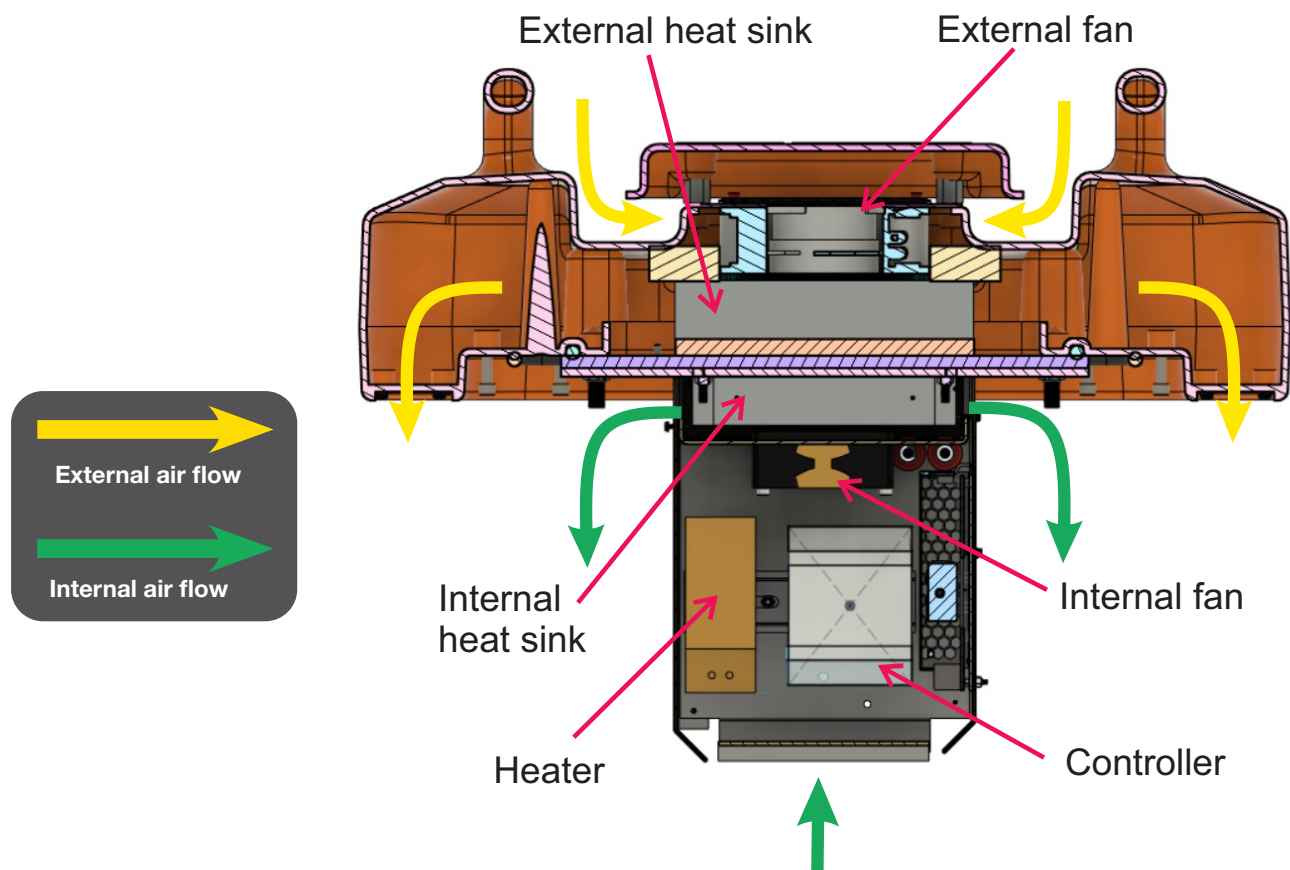
**Left:** This graph compares the **MB01-TMS** assembly both with, and without thermal management and with an RDF factor of 0.3 loaded at full load amps (63 amps per phase – 3 phase).

It exceeds the temperature rating of the fitted RCBOs within a short period of 55 minutes running at a controlled ambient of  $40^{\circ}\text{C}$  and a starting temperature of  $25^{\circ}\text{C}$ . This is without factoring in solar effect from being in an outdoor environment in sunlight.

**Below:** This is the **MB01-TMS** with the Powersafe Thermal Management System installed and running at  $45^{\circ}$  ambient.

## MB01-TMS @ FLA with TMC-360W thermal management system





## Advanced features: Temperature and humidity control

*With the introduction of AS61439.4, all portable power distribution boards classified as an ACS must be fitted with a fully tested temperature management system.*

*Under AS3000:2018 Amd 2:2021 switchboards under 125A do not need to comply. However, they must be able to withstand the thermal stresses they are likely to occur in service, while also factoring in the environment in which are used. As seen in previous graphs, without a thermal management system many boards overheat well before reaching maximum current draw.*

### → OLED Display

The OLED display displays the internal temperature and humidity of the assembly, as well as fan speed. If the fan is not operating correctly, it will emit an audible alarm and display which fan is faulty. Other faults such as low fan speeds, excessive temperature (high or low) or humidity will also be displayed.

Alerts for these faults are displayed after a predetermined time, and only after the controller has attempted to automatically correct the issue. The assembly continues to operate in an alarm event, and will not turn off automatically in case it is connected to vital equipment.

### → Fan control

Using PWM control, internal sensors will smoothly regulate the speed of the fan to ensure the correct airflow over the heat sync assembly, so the interior remains within the required temperature range. This also ensures a longer lifespan for the fan.

### → Test switch

This feature allows the user to test the internal fan,

checking whether it's speed and responsiveness, without the time-consuming and cumbersome task of removing the lid.

### → Humidity Control

In the event of the humidity internal of the assembly becoming too high, the controller will turn on the internal fan and heaters.

If, after a period, the humidity remains high, an audible alarm will sound, and a "high humidity" fault is displayed on the OLED. This feature reduces maintenance and prolongs the life of the assembly. It also prevents the possibility of internal shorts or arc flashing by moisture accumulation in the assembly.

### → Anti-freeze Control

If the assembly is exposed to low ambient conditions, the internal fan and heater will turn on and control the internal component temperature to prevent devices being operated at below their manufacturers operating temperatures. This will prevent frost or ice accumulation on components in the assembly.



# Suitability and testing of switchboard componentry

To comply to AS61439 all componentry requires individual testing and also as an assembly. Under the latest AS3000:2018 Amd 2:2021 switchboards under 125A do not need to comply with AS61439.

However they must be able to withstand the electrical,

mechanical and thermal stresses that are likely to occur in service and the environment they are used.

The only way to properly check if componentry meets these requirements is to test them.

**The below test reports are for the componentry used in the MB01-TMS**

Test	Test Report No.	Australian standard
Properties of insulating material	LCS210111032AK	AS61439-10.2.3.1
Thermal stability	LCS210111032AK	AS61439-10.2.3.1
Resistance to abnormal Heat	TUV - 19301176001	TUV Report no 19301176001
<b>Resistance to UV radation</b>	LCS2101110004CK	ISO to AS/NZS 61439 Requirements
	LCS210111003CK	ISO to AS/NZS 61439 Requirements
	LCS210111001CK	ISO to AS/NZS 61439 Requirements
Lifting	PS18973-ACS63	AS/NZS 61439
Mechanical Impact	PS18973-ACS63	AS/NZS 61439
Marking	TUV- 50226281	AS/NZS 61439 & AS/NZS 3100
Degree of protection of enclosures	Austest 0604POWLBO529	IP65 -AS60529:2004
<b>Incorporation of switching devices and components</b>		
Socket outlets -56 series	20600200551	AS/NZS 3123 & AS/NZS3100:2100
Switches -56 series	206002000550	AS/NZS 3123 & AS/NZS3100:2100
Autoswitched outlets	SAA - 200053-EA	AS/NZS 3123 & AS/NZS3100:2100
Rotary Cam switch	50480442- TUV	EN60947-3:2009
Inlet (CEE FORM)	AT2950	IEC 60309-1 &2
Outlet (CEE Form)	AT3066/A1	IEC 60309-1 &2
RCBO	NSW21900	AS61009.1
RCD	NSW21900	AS61008.1
MCB	AS60898	NSW 16860
Dielectric properties	PS18975-ACS63/01	AS61439
Power frequency withstand voltage	PS18975-ACS63/01	AS61439
Impulse withstand voltage	PS18975-ACS63/01	AS61439
Temperature Rise Limits	PS/ACS 32-01 TRV	AS61439

## Powersafe add-ons



### Adaptor leads

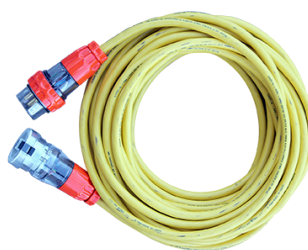
The Powersafe MB01-STD requires an adaptor lead if the supply lead is not fitted with a 32A 5 pin CEE Form socket.

These are common for generators and temporary distribution systems but may not be present on your site.



### Single phase extension leads

Powersafe's single phase 240V braided extension leads offer superior safety, featuring plugs and sockets specifically designed for braided cable, rated to IP66 and designed for Australian work sites. Available in 10amp or 15amp in various lengths.



### Three phase extension leads

Powersafe three phase leads are heavy duty and industrial strength, resistant to mechanical stresses, oils, chemical corrosion and weathering.

Cables are manufactured in Australia with a yellow outer jacket increasing visibility and site safety.



### Cable covers

Cable covers provide protection for cables and hoses in compliance with AS/NZ3012.

These cable covers are suitable for roadways or pedestrian areas and available in two, three and five channel and pedestrian.