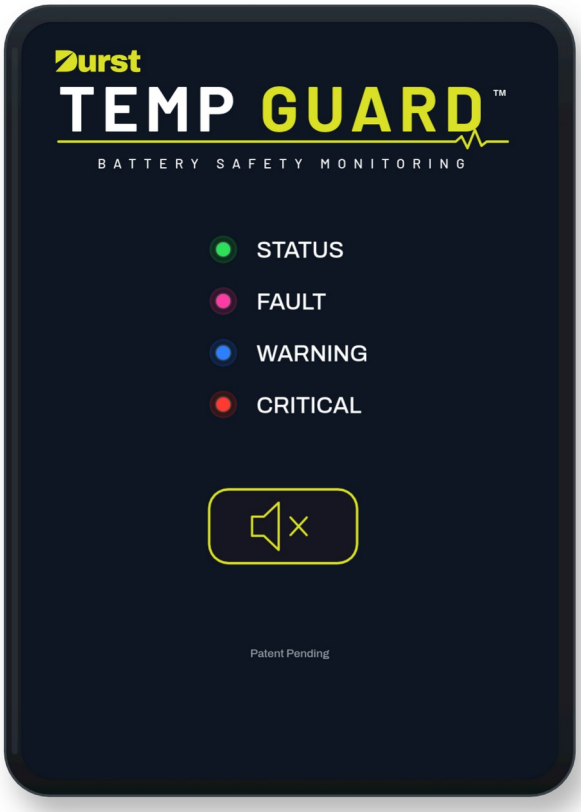
TEMP GUARD™

BATTERY SAFETY MONITORING

User Manual

TG-100 Series



Designed by Durst Industries Australia

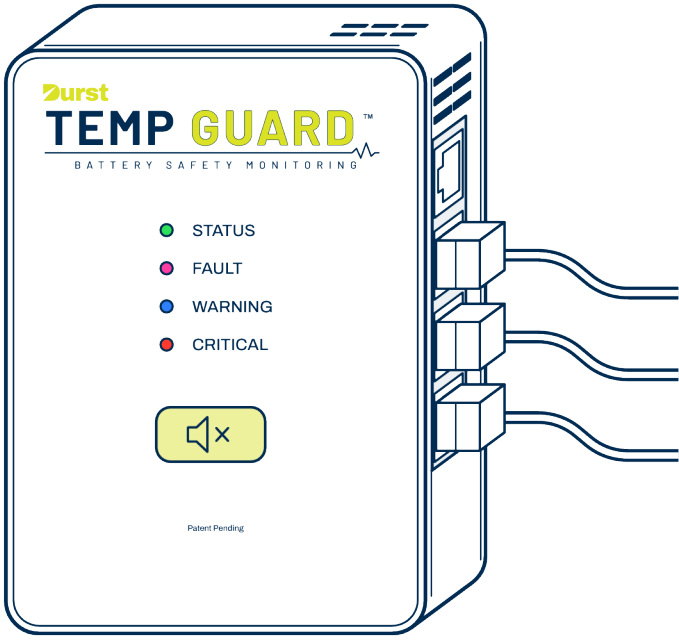
TG-MAN-v27 Nov 2026

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Durst
TEMP GUARD™
BATTERY SAFETY MONITORING

TG-100 SERIES



Why Temp Guard

Lithium batteries have changed how we power caravans, campers, 4WDs, boats and work vehicles. They're lighter, last longer and deliver more usable power. But when a lithium battery fails, it can fail badly. A damaged or aged cell, overcharging or an internal fault can push it into thermal runaway, where the temperature climbs on its own, faster and faster, until the battery vents, smokes or catches fire.

> **You can't always stop the fault.**
> **What you can do is find out early.**

Temp Guard watches your batteries around the clock. Its rapid-rise detection watches for the sudden temperature climb that can come before thermal runaway, and sounds a loud alarm with clear warning lights. Batteries out of earshot? The optional Temp Guard remote alarm (98 dB, 5 m lead) brings that warning to you, by the bed or in the cab. If you're asleep in the caravan or driving with the batteries out of sight, that early warning can give you time to act, get clear and call for help. **It could save your life.**

Caravans | Campers | 4WDs | Boats | Work vehicles

When protection fails

Why your battery's own protection isn't the whole story

Your lithium battery has a battery management system, or BMS, built in. Your charger has its own protection too. Most of the time they do their job quietly, and you never have to think about them.

Yet lithium battery fires happen every day. In 2025, emergency services in NSW and Queensland attended at least 572 lithium-ion battery incidents. That's more than one a day.*

Protection can fail.
So the thing that warns you shouldn't depend on it.

Protection systems fail more often than people think. A cell fails, the charger keeps charging and the BMS doesn't trip. And because your batteries usually live out of sight, under a bed, in a canopy or in a locker, you might not know anything is wrong until it's too late.

That's why we built Temp Guard to work on its own. It doesn't rely on the BMS or the charger. It runs on its own AAA batteries and watches the temperature of your batteries with its own sensors, day and night. If it sees abnormal heat, or a fast temperature rise, it sounds a loud alarm and lights up.

That first alarm is your moment to act. Switch the charger off or isolate the battery straight away. It may stop things going further into thermal runaway, before a bad situation turns into a fire. Then get everyone clear, and call 000 if you see smoke or fire.

Your BMS protects your battery. Temp Guard keeps an independent watch on it.



The protection fails
A cell fails. The charger keeps charging. The BMS doesn't trip.

Temp Guard raises the alarm
Its own sensors pick up the abnormal heat and it sounds a loud alarm.

You switch it off at the first alarm
Charger off or battery isolated, before it can go further.

*Fire and Rescue NSW (NSW Government, 7 April 2026) and Queensland Fire Department, January to November 2025 (Sydney Morning Herald, 25 December 2025).

What makes it different

It checks three things at once: how hot the battery is, how fast it's heating up, and how much hotter it is than the air around it.

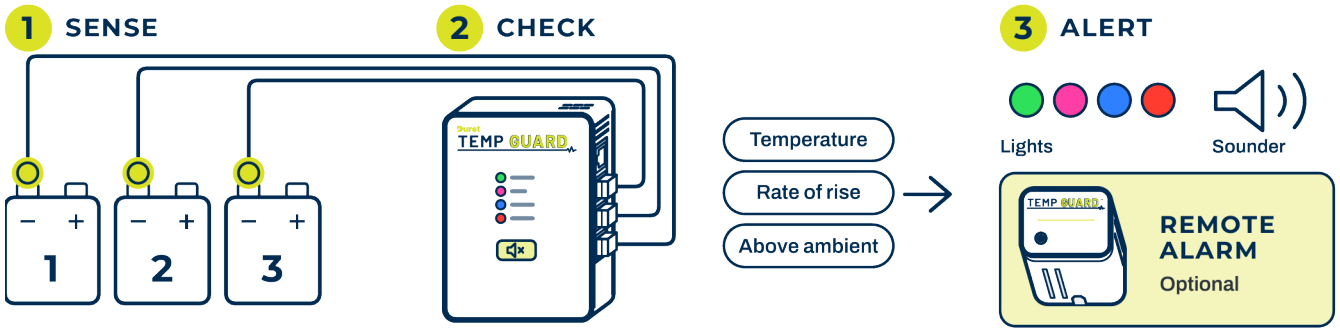
It works on its own power, so it keeps watching even if your battery system fails.

The sensors only measure temperature and are electrically isolated, so you can fit one to any battery in a bank, including a series bank such as 24 V.

It was designed in Australia for lithium, and it works on any battery type.

It runs on three AAA batteries and tells you when they need replacing.

HOW IT WORKS



Sensor on the battery terminal. Monitor up to three batteries, plus an optional ambient sensor.

Temp Guard checks every reading three ways, on its own power.

Lights and a loud sounder. Add the optional remote alarm where you sleep or drive.

Who it's for

Temp Guard is for anyone who sleeps, travels or works near a battery bank, including caravan and camper owners, 4WD tourers, boat owners, fleet and trade vehicles, and off-grid and backup power systems.

Start here: Temp Guard at a glance

Read this section before installing or using Temp Guard.

IMPORTANT: Temp Guard is an early-warning device. It does not disconnect the battery, stop charging equipment, extinguish a fire or make an unsafe battery safe.

What to do next

Temp Guard arrives with its three AAA batteries already fitted and a pull tab keeping them disconnected. Install it and fit the sensors (page 10), then pull the tab and test the alarm (page 17). From then on it keeps watch whether the vehicle, charger or battery system is on or off.

NO ON/OFF SWITCH, BY DESIGN

Temp Guard has no on/off switch, and that's deliberate. A safety monitor only protects you while it's running, so we built it to be always on. It can't be switched off by accident or left off after a trip. That's why it starts with a pull tab instead of a button, and why you press RESET when you add or change a sensor instead of turning it off and on. Its AAA batteries last up to 12 months, and Temp Guard tells you when they're getting low. If you ever take it out of service, or head somewhere colder than -10°C, simply remove its AAA batteries. Otherwise, while it's connected to a battery bank, even with the van in storage or on solar, leave it running.

Set it up, test it, and let it get on with the job. Temp Guard works quietly in the background and only speaks up when something needs your attention.

What it keeps watch on

- Up to three battery-temperature sensors.
- Ambient temperature, from the built-in ambient sensor fitted as standard. If the main unit has to go somewhere warmer or cooler than the batteries, fit the optional remote ambient sensor in the battery area and Temp Guard uses it instead.

Use Temp Guard as a supplementary safeguard

Temp Guard does not replace correct battery selection, installation, charging, protection, ventilation, inspection or maintenance. Always follow the instructions supplied with the battery, charger, vehicle and connected equipment.

Important safety information

If an alarm sounds

- Read the colour indication and take the action shown on page 18.
- Do not repeatedly silence an unresolved temperature alarm.
- Stop using or charging a battery that is unusually hot, swollen, leaking, venting, smoking, hissing or producing an unusual odour.
- If there is smoke, fire or an immediate danger, move away from the area and contact emergency services.

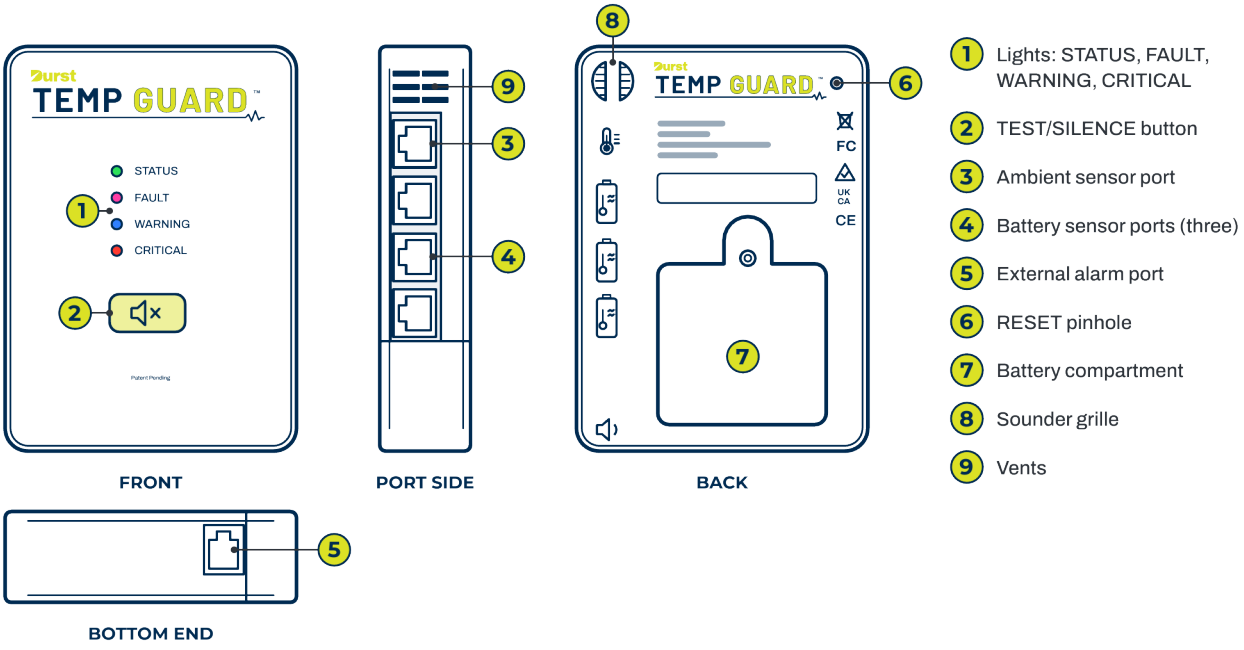
Before installation or service

- Switch off charging, loads and the battery isolator before working at battery terminals.
- Keep tools and conductive objects clear of battery terminals.
- Check behind the mounting surface before drilling or installing screws.
- Do not route cables where they may be cut, crushed, stretched, abraded or exposed to damaging heat.
- Do not cut, shorten, extend or join the sensor leads. Each lead is a calibrated 2 m length, and changing it changes the temperature reading.

Safe use

- Do not open, modify or attempt to repair the Temp Guard unit, sensors or remote alarm.
- Do not rely on Temp Guard if the unit, a sensor, a cable or a connector is damaged.
- Use only genuine Durst Temp Guard sensors. They're matched to the unit, and other sensors won't read correctly.
- Install Temp Guard in a dry location. It is not waterproof.
- Replace the three AAA batteries straight away when the low-battery alert appears.
- Test the audible alarm after installation, after replacing the AAA batteries, every month and before each trip.

Meet your Temp Guard

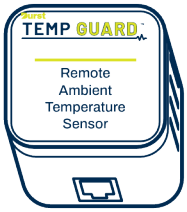


Main unit, model TG-100. Use only genuine Temp Guard sensors and accessories.

Item	What it does
STATUS light (green)	Gives a brief pulse during normal monitoring. Changes to a different flash pattern for the low-battery alert.
FAULT light (pink)	Shows a sensor fault. It also flashes with the WARNING (blue) and CRITICAL (red) lights during a Rapid Event.
WARNING light (blue)	Shows a Warning condition.
CRITICAL light (red)	Shows a Critical condition. It also flashes during a Rapid Event.
TEST/SILENCE button	On a quiet unit, hold for about 2 seconds to test the alarm. During an alarm, hold for about 2 seconds to silence it. See page 20.
RESET pinhole (rear of unit)	Restarts Temp Guard so it detects the connected sensors. Press the recessed button with a straightened paperclip or similar.
Battery sensor ports	Connect up to three battery-temperature sensors.
Ambient sensor port	Connects the optional remote ambient sensor. Use it when the main unit is mounted somewhere warmer or cooler than the batteries.
External alarm port	Connects the optional remote alarm.
Battery compartment	Holds three alkaline AAA batteries (Procell Intense fitted at the factory), with a pull tab that keeps them disconnected until first use.



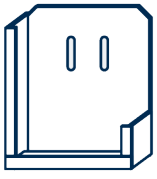
Battery temperature sensor
TG-100-BTS-2M
2 m lead



Remote ambient temperature sensor
TG-100-ATS-2M
2 m lead



Temp Guard remote alarm
TG-100-RA-5M
5 m lead



Mounting cradle kit
TG-100-MCK

Choose your Temp Guard model

Temp Guard comes in three models. They all use the same main unit and the same factory-set alarm points, and every box has what you need to mount it and get started. The difference is the sensors and accessories included, and you can add more later. Every box includes the Quick Start Guide, a double-sided A5 guide to installing, starting up and testing Temp Guard. There is no printed manual. The full manual is online at durst.com.au/products/temp-guard.

Temp Guard Standard	Temp Guard Multi-Sensor	Temp Guard Remote Alarm
Model code: TG-100 Suits a single battery, with the main unit mounted where you will hear it. **What's in the box** • Temp Guard main unit • **1 × battery-temperature sensor** • 3 × AAA batteries, preinstalled • Mounting cradle • Mounting screw pack • Double-sided mounting tape • Alcohol cleaning swab for surface preparation • 1 × quick-reference sticker • Quick Start Guide • Warranty Card	**Model code: TG-100-MSP** Suits two or more batteries, or a main unit mounted somewhere warmer or cooler than the batteries. **What's in the box** • Temp Guard main unit • **2 × battery-temperature sensors** • **1 × remote ambient sensor** • 3 × AAA batteries, preinstalled • Mounting cradle • Mounting screw pack • Double-sided mounting tape • Alcohol cleaning swab for surface preparation • 1 × quick-reference sticker • Quick Start Guide • Warranty Card	**Model code: TG-100-RAP** Suits batteries in a compartment, under a bed or seat, or in a canopy, where you might not hear the main unit. **What's in the box** • Temp Guard main unit • **2 × battery-temperature sensors** • **1 × Temp Guard remote alarm** • 3 × AAA batteries, preinstalled • Mounting cradle • Mounting screw pack • Double-sided mounting tape • Alcohol cleaning swab for surface preparation • 1 × quick-reference sticker • Quick Start Guide • Warranty Card

Sensors and remote alarm

Item	Details
Battery-temperature sensor	2 m braided lead with an M10 ring-lug sensing point. The ring lug suits an M10 terminal stud or bolt. Plugs into any battery sensor port. If you plug it in after start-up, press RESET.
Remote ambient sensor	2 m braided lead. Sensor in a small protective plastic housing. Sealed against water and dust. Fit it close to the battery, away from hot engine parts like the exhaust or turbo. Supplied with double-sided mounting tape.
Temp Guard remote alarm	98 dB piezo alarm with an integrated LED. About 40 × 30 × 30 mm. 5 m braided lead. Supplied with double-sided mounting tape.

Expand your system: accessories sold separately

Accessory	Part number
Battery temperature sensor, 2 m	TG-100-BTS-2M
Remote ambient sensor, 2 m	TG-100-ATS-2M
Temp Guard remote alarm, 98 dB, 5 m	TG-100-RA-5M
Mounting cradle kit (cradle, screw pack, double-sided tape and alcohol swab)	TG-100-MCK
Procell Intense PX2400 AAA batteries, set of 3	TG-100-PX2400

Buy accessories and spare batteries from durst.com.au/products/temp-guard. Use only genuine Durst Temp Guard sensors. They're matched to the unit, and other sensors won't read correctly. A new sensor is only monitored after you press RESET. See Start up and test.

Install your Temp Guard

Plan the installation before you drill or stick anything down. Then work through the steps below in order. When everything is connected, pull the battery tab last to start Temp Guard, as shown in Start up and test.

Check you have everything. Unpack the box and check the parts against the list for your model on page 9. Contents vary by model.

Doing it yourself? Mounting the unit and plugging everything in is simple DIY. Fitting the sensors means working on battery terminals, so if you're not confident with that, have an auto-electrician fit them.

BEFORE YOU BEGIN: Temp Guard is supplied with its AAA batteries fitted and a battery pull tab in place. Leave the tab in while you install. When all the sensors are fitted and everything is plugged in, pull the tab last.
Temp Guard locks in its sensors within 4 seconds of start-up or RESET. Any sensor plugged in after that isn't monitored until you press RESET. No RESET is needed at first start-up. There is no on/off switch: once the tab is out, Temp Guard stays on and keeps watch.

1. Plan your installation

Lay out the parts and decide where everything will go before you fix anything in place.

Decide	What to consider
Which model	Standard (TG-100) for one battery. Multi-Sensor (TG-100-MSP) for more than one battery, or when the main unit has to go somewhere warmer or cooler than the batteries. Remote Alarm (TG-100-RAP) when you might not hear the main unit from where you will be. See Choose your Temp Guard model.
Main unit position	Ideally in the battery box or close to the batteries, in the same air space, in a dry place where you can reach TEST/SILENCE. Being able to see it is handy but not essential. Its recommended operating range is -20°C to +55°C, so keep it out of direct sun and away from heat sources. Battery under the bonnet? Mount the main unit in the cabin and fit the remote ambient sensor near the battery. Don't mount the main unit in the engine bay. The unit is 107 × 77 × 24 mm and needs room to slide in and out of its cradle.
Where you will hear it	Think about where people will be while the batteries are charging or unattended, for example driving, sleeping or at camp. If you cannot clearly hear the main unit from there, add a remote alarm.
Battery sensor reach	Each battery sensor lead is 2 m. Measure along the actual cable route from each battery negative terminal to the main unit, not in a straight line. The lead length is fixed and cannot be shortened or extended.
Battery terminals	The sensor ring lug suits an M10 terminal stud or bolt. It always goes on top of the vehicle or battery cable lug, never under it, so the cable lug keeps full contact with the terminal. On a stud bigger than M10, or on plug or post-and-clamp terminals, fit it to the nearest bolted joint on the negative side. See Fitting the sensor lug on page 15.
Remote alarm reach	The remote alarm lead is 5 m. Check the route from the main unit to where you will mount the alarm.
Remote ambient sensor	Only needed if the main unit sits somewhere warmer or cooler than the batteries, such as inside the cabin with the battery under the bonnet. The lead is 2 m. See Where to mount the main unit.

Out of sight is fine, as long as you can hear it

It's nice to mount Temp Guard where you can see it, but you don't have to. Temp Guard runs quietly in the background and only speaks up when something needs your attention, so there's no need to keep watching it. As long as you can hear the alarm, it can sit out of sight. When it sounds, take a look at the lights to see what's wrong.

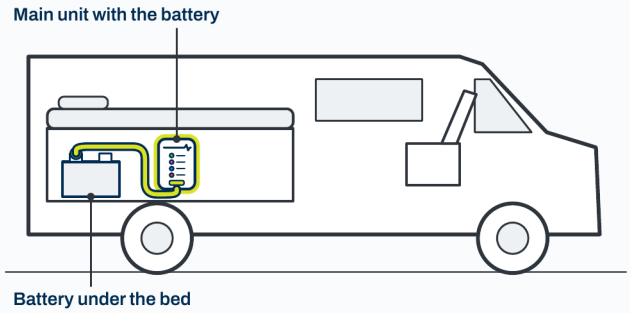
It looks after itself, too. A built-in watchdog restarts Temp Guard if anything glitches, and it carries straight on monitoring. It also tells you when its own AAA batteries are getting low or a sensor has a fault.

Typical installations, from 4WDs to motorhomes

These examples show common layouts, so you can picture where everything goes. Every vehicle and system is different, so check lead reach and the mounting notes on the next pages.

Van, battery under the bed

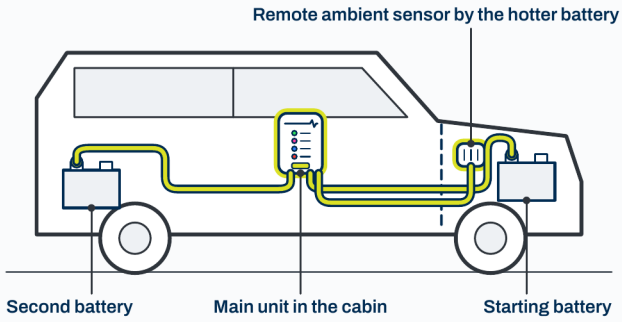
The simplest setup. Nothing extra needed.



Everything is within earshot whether you're sleeping or driving, so no remote parts are needed. The built-in ambient sensor does the job.

4WD, dual battery

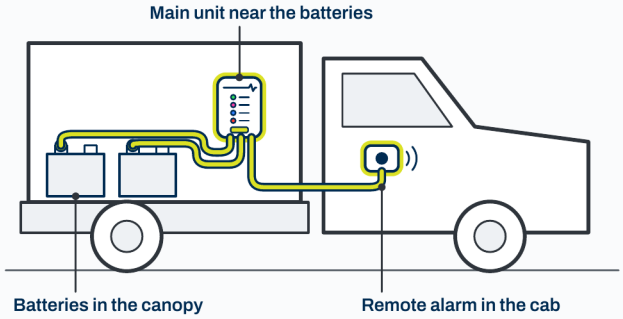
Starting battery under the bonnet, second battery in the back



Leads pass through the firewall. Never mount the main unit in the engine bay.

Canopy or ute tray

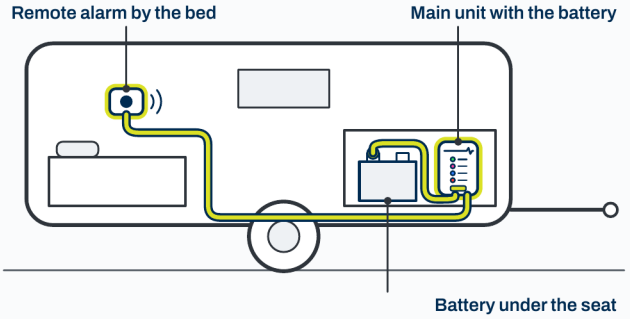
Batteries and main unit in the canopy



The remote alarm lead is 5 m. Mount it where you will hear it.

Caravan

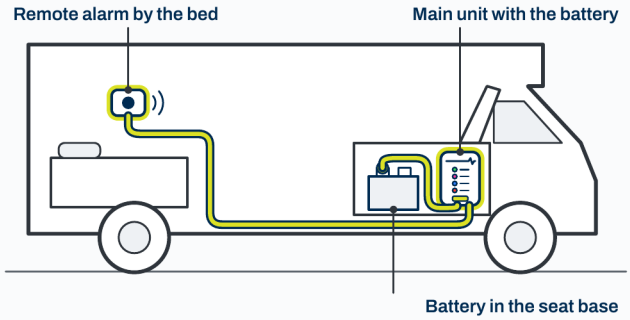
Battery and main unit together under a seat



The built-in ambient sensor does the job, so no remote ambient sensor.

Motorhome or campervan

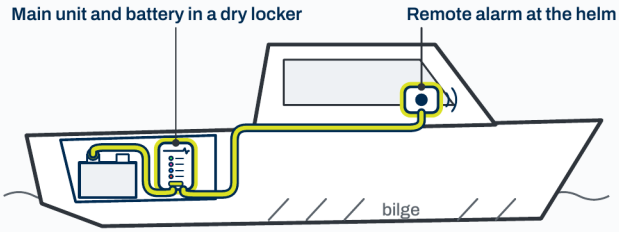
Lithium battery and main unit in the seat base



Keep the seat base dry. Remote alarm lead 5 m, so it reaches the bed.

Boat

Main unit with the battery in a dry locker, never the bilge



Main unit in the cabin instead? Add the remote ambient sensor by the battery.

Key

- **Temp Guard main unit** — Dry place, usually with the batteries.
- **Battery sensor on the negative terminal** — Cable lug first, sensor lug on top.
- **Sensor or accessory lead** — Sensor leads 2 m, remote alarm lead 5 m.
- **Remote ambient sensor** — By the batteries, when the main unit is elsewhere.
- **Remote alarm** — Where people sit or sleep.

Typical installations. Lime shows the Temp Guard parts. Each battery sensor goes on the negative terminal, on top of the cable lug.

Where to mount the main unit, and when you need the remote ambient sensor

Temp Guard compares the temperature of each battery with the air around it. The main unit has a built-in ambient sensor as standard to measure that air.

Most installs: keep it with the batteries. Mount the main unit in the battery box or close to the batteries, in the same air space. Its built-in sensor then reads the same conditions your batteries see, and you won't need the remote ambient sensor.

When the main unit has to go somewhere else. Sometimes the main unit has to sit somewhere with a different temperature from the batteries. The most common case is a battery under the bonnet. An engine bay gets hot and wet, so mount the main unit inside the cabin instead. That's what the remote ambient sensor is for. It's sealed against water and dust, so it can go under the bonnet. Fit it close to the battery, away from hot engine parts like the exhaust or turbo, and keep it off the battery itself. Temp Guard then compares the battery with the air it actually sits in.

Why it matters. Without the remote ambient sensor, Temp Guard would compare an under-bonnet battery with the air in the cabin. With the air conditioning on, the cabin can be much cooler than the engine bay, so the battery would look far hotter than its surroundings and could set off a false alarm.

Batteries in two places? With a starting battery under the bonnet and a second battery in the back, mount the main unit in the cabin and fit the remote ambient sensor by the hotter battery, usually the one under the bonnet.

Hot battery areas. The main unit has a recommended operating range up to +55°C, and it keeps working above that. Most installations never get near it. If your battery area can get that hot, for example heat soak on the hottest outback days, mount the main unit somewhere cooler and fit the remote ambient sensor by the battery.

Where the main unit goes	Do you need the remote ambient sensor?
In the battery box, or close to the batteries in the same air space	**No.** The built-in ambient sensor does the job.
Somewhere warmer or cooler than the batteries, for example in the cabin with the battery under the bonnet	**Yes.** Fit it in the battery area and plug it into the ambient sensor port. It comes with the Multi-Sensor model and is also sold separately (TG-100-ATS-2M) from durst.com.au/products/temp-guard.

If the remote ambient sensor is connected when Temp Guard starts up, or when you press RESET, Temp Guard uses it as the ambient reference instead of the built-in sensor. So plug it in before you pull the battery tab. If you add it later, press RESET.

Quick guide by installation

Installation	Main unit	Battery sensors	Accessories
Van with the battery under the bed	Beside the battery, under the bed.	One on each battery negative terminal.	None needed. It's within earshot whether you're sleeping or driving.
4WD dual battery: starting battery under the bonnet, second battery in the back	In the cabin, in a dry spot where you'll hear it. Don't mount the main unit in the engine bay.	One on each battery negative terminal.	Remote ambient sensor by the hotter battery, usually the starting battery under the bonnet. It comes with the Multi-Sensor model (TG-100-MSP).
Canopy or ute tray battery system	Inside the canopy, in a dry spot with the batteries.	One on each battery negative terminal.	Remote alarm in the cab, or wherever you will hear it, within 5 m.
Caravan with batteries under a seat or bed	With the batteries, in a dry spot under the seat or bed.	One on each battery negative terminal.	Remote alarm by the bed, within 5 m. No remote ambient sensor needed.
Under-seat lithium battery in a motorhome or campervan	In the seat base with the battery, in a dry spot.	On the battery negative terminal, on top of the cable lug.	Remote alarm near the bed or driver's seat. No remote ambient sensor needed.
Boat with the battery in a dry locker	In the dry locker with the battery. Never in the bilge or anywhere it can get wet.	On the battery negative terminal, on top of the cable lug.	Remote alarm at the helm. Main unit in the cabin instead? Fit the remote ambient sensor by the battery.

Boats: Temp Guard is not waterproof. On a boat, mount it in a dry location, not in the bilge or anywhere it can get wet.

2. Tools and materials

Supplied: mounting cradle, screw pack, double-sided mounting tape and alcohol cleaning swab.

You may also need:

- A spanner or socket to suit your battery terminal nut or bolt. The sensor ring lug suits an M10 stud or bolt.
- A torque wrench, if the battery manufacturer specifies a terminal torque.
- A drill, suitable bits and a screwdriver, if you will screw the cradle in place.
- Cable ties, plus grommets or edge protection where leads pass through panels or past edges.
- A straightened paperclip or similar, to press RESET if you add or change a sensor later.
- A clean, dry cloth.

3. Before you start

- Read Important safety information on page 7.
- Switch off all charging equipment, such as mains chargers, DC-DC chargers, solar controllers and inverters. Switch off loads and the battery isolator too.
- Remove metal jewellery such as rings and watches. Keep tools clear of the battery terminals.
- Fitting a sensor means removing the nut or bolt from a battery negative terminal, which disconnects that battery. Check the vehicle or battery manufacturer's instructions first. Some vehicles need settings restored after a battery is disconnected.
- Check behind any panel before you drill. Look for wiring, fuel lines, gas lines and water lines.
- Dry-fit first. Hold the unit in place and run each lead loosely along its route to check that it reaches.

4. Mount the cradle

Choose tape or screws to suit the surface.

Method	Best for
Double-sided tape	Smooth, flat, clean surfaces that do not flex or get hot, where you do not want to drill holes. Press the cradle firmly over the whole taped area and allow time for the tape to bond before you fit the unit.
Screws	Textured, uneven, flexible or warm surfaces, and places with a lot of vibration, such as off-road vehicles. Check behind the surface before drilling.

1 **Choose the position.** Pick a dry spot, usually with the batteries, where you will hear the alarm and can reach TEST/SILENCE. Seeing the lights is a bonus. See Where to mount the main unit.

2 **Check access.** Make sure the unit can slide into and out of the cradle without obstruction.

3 **Prepare the surface.** If you are using tape, clean the mounting area with the supplied alcohol swab and let it dry fully. The surface must be free of dust, grease and wax.

4 **Secure the cradle.** Fix it with the tape or the supplied screws. Do not overtighten the screws or distort the cradle.

5 **Fit the unit.** Slide Temp Guard into the cradle and check that it sits securely.

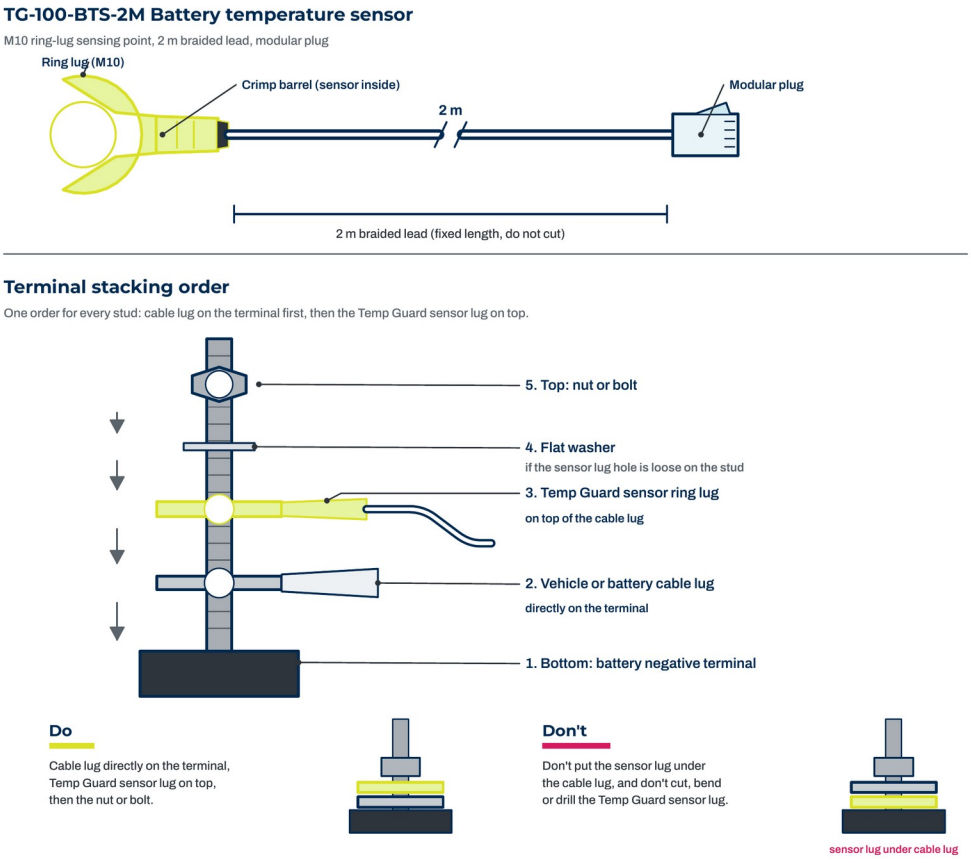


Secure the cradle, then fit the unit.

5. Fit each battery sensor

1. **Switch off charging, loads and the battery isolator.** Do this before you work at the battery terminals.
2. **Remove the terminal nut or bolt.** Remove it from the negative terminal of the battery being monitored. Keep the existing cable lug and hardware.
3. **Stack the lugs in order.** Leave the vehicle or battery cable lug directly on the battery terminal. Fit the Temp Guard sensor ring lug on top of it, with a flat washer if its hole is loose on the stud. Then refit the nut or bolt.
4. **Tighten the connection.** Check the nut or bolt still has full thread engagement (page 15). Tighten to the battery maker's torque, without overtightening, and check the lugs sit flat.
5. **Plug in the sensor.** Insert the sensor plug fully into one of the three battery sensor ports.

Position	Part
1. Bottom	Battery negative terminal
2.	Vehicle or battery cable lug, directly on the terminal
3.	Temp Guard sensor ring lug, on top of the cable lug
4.	Flat washer, if the sensor lug hole is loose on the stud
5. Top	Nut or bolt



Battery sensor and stacking order. Cable lug on the battery terminal first, then the Temp Guard sensor ring lug, a flat washer if needed, then the nut or bolt.

Fitting the sensor lug

Why this order works. The cable lug sits directly on the terminal, so the main current joint is untouched and keeps full, solid contact. The sensor lug sits on the same metal, right at the terminal, so it reads the terminal temperature accurately.

Smaller studs, such as M8 or M6. Use the same order. Add a flat washer on top of the sensor lug if its hole is loose on the stud.

More than one cable lug on the terminal? Leave all the cable lugs directly on the terminal and fit the sensor lug on top of all of them.

Studs bigger than M10, plug terminals, post-and-clamp terminals or no stud. Fit the sensor lug to the nearest bolted joint on the negative side, such as the negative cable lug's bolted joint, a busbar or a shunt connection, as close to the battery as possible.

Fit the lug as it is. Don't cut, bend or drill the Temp Guard sensor lug to make it fit.

Check bolt length and thread. The extra lug, and the washer if you use one, take up thread. Make sure the nut or bolt still has full thread engagement. If not, use a longer bolt of the same size and grade, as the battery maker specifies.

Not sure? Call Durst Industries on 02 9660 1755 or email sales@durst.com.au.

Which terminal to use

The battery sensor is electrically isolated. It only measures temperature and sends the reading to Temp Guard. This means you can fit it to the negative terminal of any battery, including a battery in a series bank, for example a 24 V bank made from two 12 V batteries. The negative terminal is the recommended location.

6. Route and secure the leads

- Keep leads away from heat sources such as exhaust parts and hot engine components.
- Keep leads clear of sharp edges. Use a grommet or edge protection where a lead passes through a panel.
- Keep leads clear of moving parts such as fans, belts, steering, suspension, hinges, drawers and slides.
- Secure each lead with cable ties at regular intervals so it cannot sag, rub or snag. Do not pull the ties tight enough to crush the braid.
- Leave a little slack at each end so the plugs and ring lugs are not under tension.
- Label each lead with the battery it monitors. This makes it easier to check a sensor if a fault appears.

IMPORTANT: Do not cut, shorten, extend or join the sensor leads. Each lead is a calibrated 2 m length, and changing it changes the temperature reading. Coil any spare lead neatly and secure it with cable ties.

7. Fit the optional accessories

Remote ambient sensor. You only need this if the main unit is mounted somewhere warmer or cooler than the batteries, because the unit has a built-in ambient sensor. See Where to mount the main unit. Sealed against water and dust. Fit it close to the battery, away from hot engine parts like the exhaust or turbo. Keep it off the battery itself and out of direct sun. Make sure the surface is clean and dry, then fix it with the supplied double-sided tape. Plug it into the ambient sensor port.

Remote alarm. Mount it where you will hear and see it, within reach of its 5 m lead. Good places are near where people sit or sleep, rather than inside the battery compartment. Do not cover it with bedding, cushions or stored gear. Make sure the surface is clean and dry, fix it with the supplied double-sided tape and plug the lead into the external alarm port.

Connect all accessories before you pull the battery tab.

8. Final installation check

Check	Done
The cradle is secure and the unit slides in and out.	☐
Each sensor ring lug sits on top of the cable lug, never under it, or at the nearest bolted joint on the negative side.	☐
Each terminal nut or bolt is tightened to the battery manufacturer's torque.	☐
Each sensor and accessory plug is fully inserted.	☐
Leads are tied, clear of heat, sharp edges and moving parts, not under tension, and not cut, extended or joined.	☐
Temp Guard has been started by pulling the battery tab last, and tested. See Start up and test.	☐
Charging equipment is switched back on and the battery system works normally.	☐

Start up and test

Start Temp Guard

1. **Install Temp Guard.** Mount the cradle, fit the sensors and connect any accessories, as described in Install your Temp Guard. Leave the battery pull tab in place for now.
2. **Check the connections.** Make sure every sensor and accessory you want to use is plugged in fully.
3. **Pull the battery tab.** When everything is connected, pull out the factory battery pull tab. Temp Guard starts running straight away. No RESET is needed at first start-up.
4. **Confirm normal monitoring.** Check that the STATUS light (green) gives a brief pulse about every 4 seconds.
5. **Test the alarm.** Follow Test the alarm below before you put Temp Guard into service.
6. **Check each sensor.** Unplug one sensor from the main unit and wait. FAULT (pink) comes on and the alarm sounds. Plug the sensor back in. FAULT clears on its own.
7. **Switch charging back on.** Switch your charging equipment back on and check the battery system works normally.

ADDING OR CHANGING A SENSOR LATER: Temp Guard locks in its sensors within 4 seconds of start-up or RESET. Any sensor plugged in after that isn't monitored until you press RESET. Press RESET whenever you add, remove or change a sensor.

Test the alarm

1. **Check the status.** Make sure Temp Guard is in the Normal state.
2. **Start the test.** Press and hold the TEST/SILENCE button. At about 2 seconds the buzzer sounds for about 2 seconds, and so does the remote alarm if one is fitted.
3. **Listen from where you will be.** Check that you can clearly hear the alarm from where you will normally be once Temp Guard is installed. If a remote alarm is connected, check that it sounds as well.

Test Temp Guard after installation, after replacing the AAA batteries, every month and before each trip. The test checks that the buzzer, and the remote alarm if fitted, are working and can be heard.

Everyday monitoring

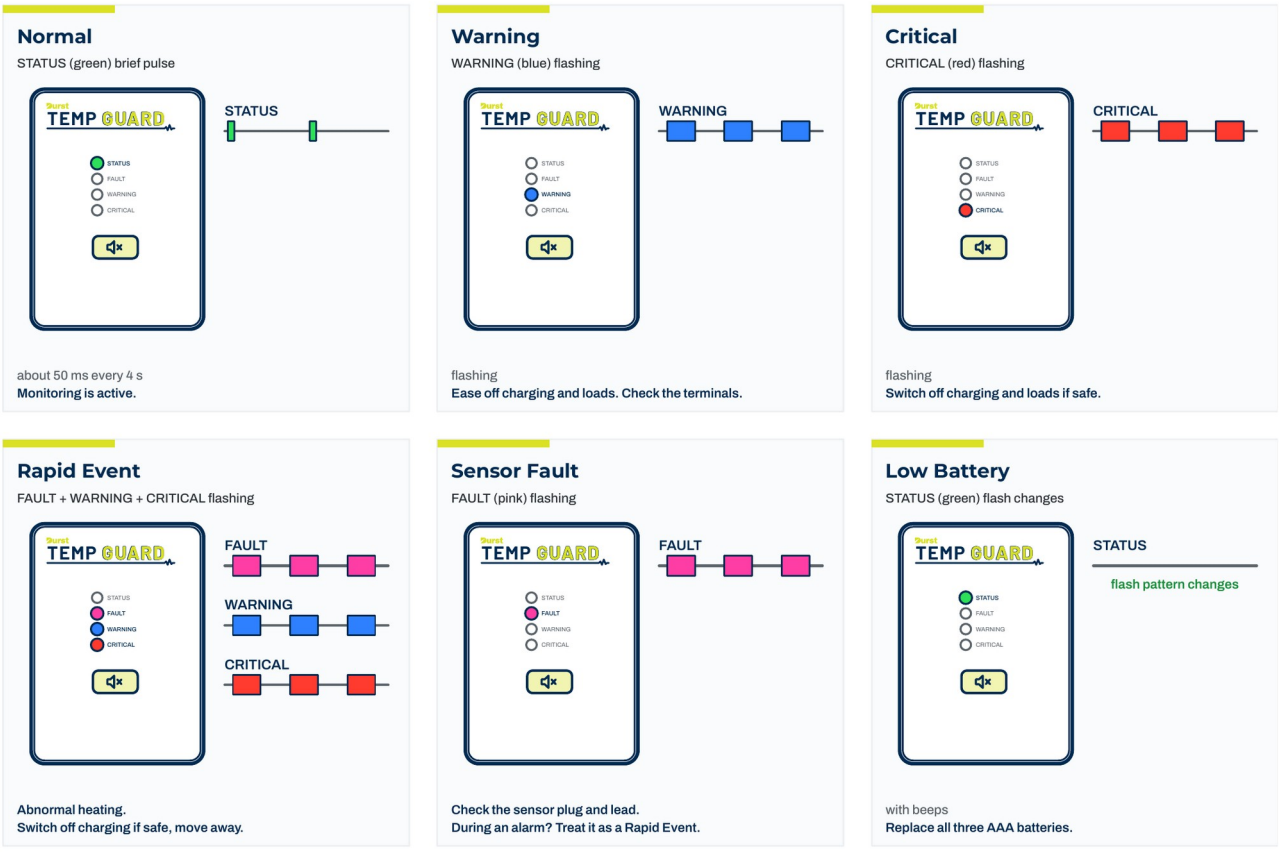
During Normal operation, Temp Guard checks the active temperature sensors every 4 seconds. The STATUS light (green) gives a brief pulse of about 50 milliseconds each time to show that monitoring is active. During an alarm or fault, Temp Guard checks the sensors every second.

What the lights mean

Always respond to the light indication, even if the audible alarm has been silenced.

What you see	Meaning	What to do
STATUS (green) brief pulse	Normal	Monitoring is active. No action is required.
WARNING (blue) flashing	Warning	Your battery is running hot. Ease off charging and heavy loads, check for a loose terminal connection and give the battery more airflow. If it keeps climbing, treat it as Critical.
CRITICAL (red) flashing	Critical	Switch off charging and heavy loads if it's safe to do so. Keep clear of the battery and its terminals while it cools. Find the cause before you use the battery again.
FAULT (pink) + WARNING (blue) + CRITICAL (red) flashing	Rapid Event	Abnormal heating. Switch off charging if safe, move away. Keep everyone clear of the battery, and call 000 if you see smoke or fire. Have the battery checked before you use it again.
FAULT (pink) flashing	Sensor Fault	If there's no temperature alarm and the battery isn't hot, check the sensor plug and lead. Until it's fixed, that battery may not be monitored. During or straight after a temperature alarm, see the note below.
STATUS (green) flash changes, with beeps	Low Battery	Replace all three AAA batteries straight away. This alert overrides all other lights and sounds, and it **cannot be silenced**.

FAULT DURING AN ALARM: If FAULT comes on during or straight after a temperature alarm, or the battery is hot, swelling or smoking, treat it as a Rapid Event. Switch off charging if safe and move away. Don't go to the battery to check the sensor. A very hot battery can push its sensor past its measuring range, and Temp Guard then shows FAULT instead.



What the lights mean. Always respond to the light, even if the alarm has been silenced.

When Temp Guard speaks up

You don't need to work out what's safe for your battery. We've done the hard work for you and chosen the temperature points that matter, so Temp Guard warns you early and gives you time to act.

They're set at the factory, so there's nothing to adjust and nothing to get wrong. Around the clock, Temp Guard watches all three of these. Any one of these on its own sets off that alarm.

What Temp Guard watches	Warning	Critical	Rapid Event
How hot the battery is	55°C	60°C	70°C
How fast it's heating (rise within 10 seconds)	1.5°C	2.5°C	3.5°C
How much hotter it is than the air around it	15°C	25°C	35°C

Warning, Critical and Rapid Event indications clear automatically once the battery has cooled.

If a condition gets worse, the more serious indication replaces the current one. Critical replaces Warning, and Rapid Event replaces Critical. If FAULT comes on during or straight after an alarm, keep treating it as a Rapid Event. The low-battery alert replaces all other indications, because Temp Guard can no longer monitor reliably when its AAA batteries are low.

Why these temperatures?

Every alarm point has a reason. Temp Guard is an early warning system, so each level is set to catch an abnormal battery early, while there's still time to find the cause and fix it.

55°C: WARNING (blue) Your battery is running hotter than it should. Many lithium batteries are rated to charge only up to about 45 to 55°C, and heat shortens the life of every battery. In a ventilated battery area, a hot day rarely gets a battery to 55°C on its own, so a Warning usually means the battery or a connection is making extra heat. Under the bonnet, or in a closed compartment in full sun on the hottest days, heat soak alone can bring a battery close, so treat a Warning there as a reason to check. Common causes are a heavy load, fast charging, a hot enclosed compartment, poor airflow, or a loose or corroded terminal. Check the connections, reduce the load or charging, and improve ventilation.

60°C: CRITICAL (red)
Your battery is at or beyond the upper limit of most lithium battery specifications, and many battery management systems shut down around here. Damage builds quickly at this temperature. If it's safe, stop charging and turn off heavy loads, then find the cause before using the battery again.

70°C: RAPID EVENT (pink, blue and red)
There's no normal reason for a battery to reach 70°C. It's well outside any normal operating range, and heat at this level speeds up the damage that can lead to thermal runaway. Act straight away. After a Rapid Event, don't use or charge the battery again until the battery supplier or a qualified technician has checked it.

Rapid rise: 1.5, 2.5 or 3.5°C within 10 seconds
Big batteries heat up and cool down slowly. A fast jump means something is heating quickly, such as a failing connection under heavy current or an internal cell fault. A rapid rise in temperature is a recognised warning sign of thermal runaway, and the faster the rise, the higher the alarm.

Above ambient: 15, 25 or 35°C hotter than the surrounding air
A healthy battery sits close to the air temperature around it. The further above ambient it climbs, the more heat the battery or its connections are producing. This catches a problem on a cool day, well before the battery reaches 55°C.

If you see smoke, swelling or leaking, hear hissing or notice a strong smell, switch off chargers and loads if it's safe, get everyone clear and call 000.

Silencing alarms, faults and low battery

Silence an active alarm

1. **Read the indication.** Check the lights to see which alarm it is, and follow What to do on page 18.
2. **Silence the sound.** Press and hold TEST/SILENCE for about 2 seconds until the alarm stops. The internal buzzer and connected remote alarm go quiet. How long depends on the alarm (see below).
3. **Keep responding.** The lights remain active and temperature monitoring continues while the sound is silenced.

A silenced Critical or Rapid Event alarm sounds again after about 60 seconds if the condition is still active. A silenced Warning stays quiet until the temperature drops to 50°C. Then it re-arms, and the next alarm sounds as normal. So in a hot spot it won't keep beeping at you, but it is still watching. Silencing the sound does not clear the condition or fix its cause. The low-battery alert cannot be silenced, on purpose.

Sensor Fault: FAULT light (pink) flashing

A Sensor Fault is triggered if a monitored sensor is disconnected, open circuit, short circuit or outside its valid measurement range. The sensors measure from -10°C to +80°C. If there's no temperature alarm and the battery isn't hot, check the sensor plug, braided lead and ring-lug installation. Until the fault is fixed, that battery may not be monitored.

During or straight after a temperature alarm? Treat FAULT as a Rapid Event. Switch off charging if safe and move away, and don't go to the battery to check the sensor. A very hot battery can push its sensor past its measuring range, which shows as FAULT.

Cold weather. Temp Guard reads battery temperatures from -10°C to +80°C. In mainland Australia batteries rarely get colder than that, but if you're heading somewhere that cold, such as the alpine regions in winter, take the AAA batteries out of Temp Guard for the trip. When conditions warm up, refit them and Temp Guard starts up and finds your sensors again. A FAULT on a freezing morning with a cold battery is expected. A FAULT with a hot battery, or during an alarm, is not, so treat that as a Rapid Event.

Low Battery: STATUS (green) flash changes, with beeps

When the AAA batteries are low, the STATUS light (green) changes from its brief pulse to a different flash pattern. The alarm gives one beep.

The low-battery alert overrides all other lights and sounds, and it **cannot be silenced**. This is by design. When its AAA batteries are low, Temp Guard can no longer monitor reliably, so restoring correct operation comes first. Sensing is no longer reliable. While the alert is on, Temp Guard will not sound heat alarms, even Critical, and may not show a sensor fault. Replace all three AAA batteries straight away. If the batteries keep running down, the buzzer stays on or cycles long beeps. At this stage Temp Guard no longer works as intended, so replace the batteries now.

What you will hear

When any alarm is active, Temp Guard sounds its alarm from the unit and from the remote alarm if fitted. Always check the lights to see which alarm it is.

Beeps. Warning (55°C): one beep. Critical (60°C): two beeps. Rapid Event (70°C): three beeps. Low battery: one beep.

One beep? One beep can mean heat or low battery. Hold TEST/SILENCE for about 2 seconds. If it stops, it is a heat Warning. If it keeps beeping, the batteries are low. Replace all three now.

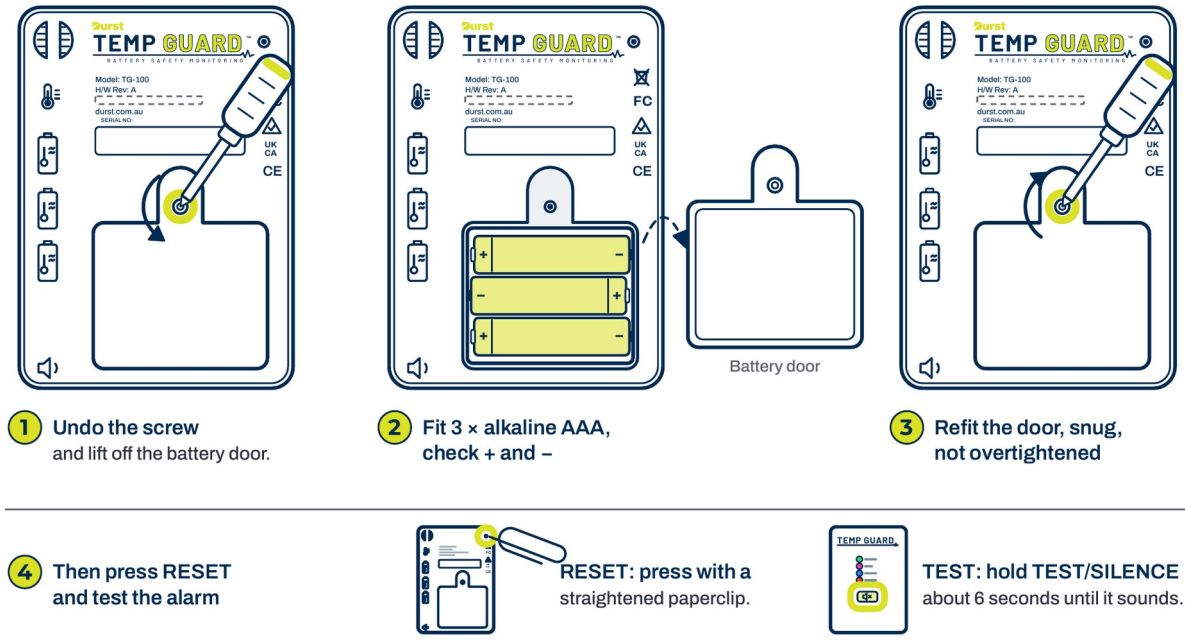
Why low battery can't be silenced. Low battery can't be silenced because without good battery power Temp Guard can't sense reliably or sound heat alarms. It keeps telling you until the batteries are replaced.

Keep it ready: care and troubleshooting

Replace the AAA batteries

Use alkaline AAA batteries only. We use and recommend Procell Intense because it holds its voltage well right through its life, so Temp Guard has full power for the alarm when it matters. That's why we keep them in stock as genuine replacements. Here's how to change them.

1. **Remove the unit.** Slide Temp Guard out of its cradle. Monitoring stops while the AAA batteries are out, so keep an eye on your battery bank until it's running again.
2. **Remove the battery door.** On the back of the unit, undo the central screw and lift off the battery door.
3. **Take out the old batteries.** Remove all three AAA batteries.
4. **Fit three new batteries.** Check that every sensor is connected first. Fit three new alkaline AAA batteries, such as Procell Intense PX2400, matching the + and − marks in the battery compartment. Replace all three at once, and don't mix old and new batteries.
5. **Refit the door.** Put the battery door back and do up the screw until it's snug. Don't overtighten it.
6. **Press RESET.** Use a straightened paperclip to press the RESET button on the back of the unit. Temp Guard locks in its sensors within 4 seconds. Check for the STATUS (green) pulse.
7. **Test the alarm.** Hold TEST/SILENCE for about 2 seconds and check that the buzzer sounds, and the remote alarm too if one is fitted. Then slide Temp Guard back into its cradle.



Replacing the batteries. Undo the door screw, fit three alkaline AAA batteries the right way round, refit the door, then press RESET and test the alarm.

TIP: Carry a spare set or two. Procell Intense is a great spare to have on hand, for Temp Guard and for any other gear that runs on AAA batteries. Spare sets (TG-100-PX2400) are available from durst.com.au/products/temp-guard.

Do not use lithium or rechargeable AAA batteries. Use alkaline only. Temp Guard's low-battery warning is designed around alkaline batteries. Lithium and rechargeable cells behave differently, so it may not warn you in time.

How long the AAA batteries last. Battery life is estimated at up to 12 months with one sensor in normal use. More sensors, frequent alarms or alarm tests, and very hot or cold conditions will all shorten it. Temp Guard tells you when it's time to replace them.

Routine care

- Each month, when you test the alarm, inspect sensor leads, plugs, ring lugs, the cradle and remote alarm for damage or looseness.
- Each month, check each sensor: unplug one sensor from the main unit and wait. FAULT (pink) comes on and the alarm sounds. Plug the sensor back in. FAULT clears on its own.
- Keep the unit clean and dry. It is not waterproof. Wipe it with a soft, slightly damp cloth only.
- Do not use solvents, abrasive cleaners or high-pressure water.
- Only remove the AAA batteries to take Temp Guard out of service, or for a trip colder than -10°C (page 20). Otherwise, while it's connected to a battery bank, even in storage or on solar, leave it running.
- Out of service with its AAA batteries removed? Store Temp Guard in a cool, dry place, ideally between +5°C and +30°C.

Troubleshooting

Problem	Check
No STATUS (green) pulse	On a new unit, check that the battery pull tab has been removed. Check that all three AAA batteries are present, correctly fitted and serviceable. Then press RESET on the back of the unit.
FAULT (pink) indication	During or straight after a temperature alarm, treat it as a Rapid Event (page 18). Otherwise, check the sensor plug, lead and ring-lug installation. If you have added or removed a sensor, press RESET.
FAULT on a freezing morning	Expected below -10°C with a cold battery. For very cold trips, take out the AAA batteries and refit them when it's warmer (page 20).
New sensor is not monitored	Connect it, then press RESET. Temp Guard locks in its sensors within 4 seconds of start-up or RESET.
Alarm returns after silence	The condition is still active. Critical and Rapid Event sound again after about 60 seconds, a silenced Warning once it has dropped to 50°C and heats up again. Respond to the indication and correct the cause.
Frequent Warnings, but the battery and connections look fine	Look for direct sun on the battery box, poor airflow or long spells of heavy charging, and check each terminal is tight. If the main unit sits somewhere warmer or cooler than the batteries, fit the remote ambient sensor in the battery area.
You heard an alarm, but the lights are now normal	The lights go back to the STATUS (green) pulse once conditions are back to normal. Always check the battery and its connections after any alarm.
Remote alarm does not operate	Check its plug and cable, then repeat the TEST function.
One beep that won't stop when you hold TEST/SILENCE	This is the low-battery alert. Replace all three AAA batteries.
Alarm cannot be silenced and the STATUS light (green) flashes	This is the low-battery alert. Replace all three AAA batteries.

The details: specs

Technical specifications

Specification	Value
Power supply	3 × AAA, alkaline only (Procell Intense PX2400 recommended, TG-100-PX2400). Fitted at the factory with a pull tab.
Power switch	None (always on by design; starts when the battery pull tab is removed)
Battery sensor inputs	3
Ambient sensing	Built-in ambient sensor fitted as standard, plus 1 input for the optional remote ambient sensor (used as the ambient reference if connected at startup or RESET).
Remote alarm connection	1
Sampling	Every 4 seconds; every 1 second during an alarm or fault
Normal STATUS (green) pulse	Approximately 50 ms
Processor watchdog	Built in. Restarts Temp Guard automatically if it ever glitches.
Battery sensor lead	Calibrated 2 m braided lead (fixed length) with M10 ring-lug sensing point
Battery sensor isolation	Electrically isolated. Measures temperature only.
Sensors	Use only genuine Durst Temp Guard sensors. They're matched to the unit, and other sensors won't read correctly.
Remote ambient sensor lead	2 m braided lead. Sealed against water and dust. Fit it close to the battery, away from hot engine parts like the exhaust or turbo.
Remote alarm lead	5 m braided lead
Remote alarm	Approximately 98 dB piezo, with integrated LED. About 40 × 30 × 30 mm.
User settings	None. The alarm points are set at the factory. See When Temp Guard speaks up.
Main unit dimensions	107 × 77 × 24 mm
Weight	Approx. 250 g with its AAA batteries installed
Water resistance	Not waterproof. Install in a dry location.
Compliance marks	RCM, FCC, UKCA and CE
Disposal	Don't put Temp Guard or its AAA batteries in household rubbish. Recycle the unit as e-waste and the batteries at a battery recycling drop-off point.
Operating temperature	-20°C to +55°C recommended (main unit). It keeps working above this, but long periods at high heat shorten its life. Hotter battery area? See Where to mount the main unit.
Storage temperature	-20°C to +55°C. For best battery life, store at +5°C to +30°C in a cool, dry place.
AAA battery life	Up to 12 months with one sensor in normal use. More sensors, frequent alarms or alarm tests, and very hot or cold conditions shorten it.
Sensor measurement range	-10°C to +80°C
Battery sensor ring-lug size	M10. Fits on top of the cable lug. Bigger studs, plug or post-and-clamp terminals: see Fitting the sensor lug (page 15)

Warranty and support

Keep your proof of purchase, and note the model and the serial or batch number before you contact us.

Contact	Details
Warranty provided by	Durst Industries (Aust) Pty Ltd
ABN	81 630 699 857
Address	1/11 Packard Ave, Castle Hill NSW 2154
Website	durst.com.au
Telephone	02 9660 1755
Email	sales@durst.com.au
Warranty	3 years against defects. Consumables such as AAA batteries, mounting tape and cleaning swabs are not covered.

Temp Guard and its accessories are covered by Durst Industries' 3-year warranty against defects. Consumables such as AAA batteries, mounting tape and cleaning swabs are not covered. The Warranty Card in the box and the warranty page at durst.com.au set out the full terms and how to make a claim. The benefits of this warranty are in addition to other rights and remedies you have under a law in relation to the goods.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Scan for the online manual, spare batteries and accessories. durst.com.au/products/temp-guard

Your Temp Guard record

Fill this in and keep it with your proof of purchase.

Item	Details
Model	
Serial or batch number	
Date of purchase	
Where purchased	
Date installed	
Batteries last replaced	