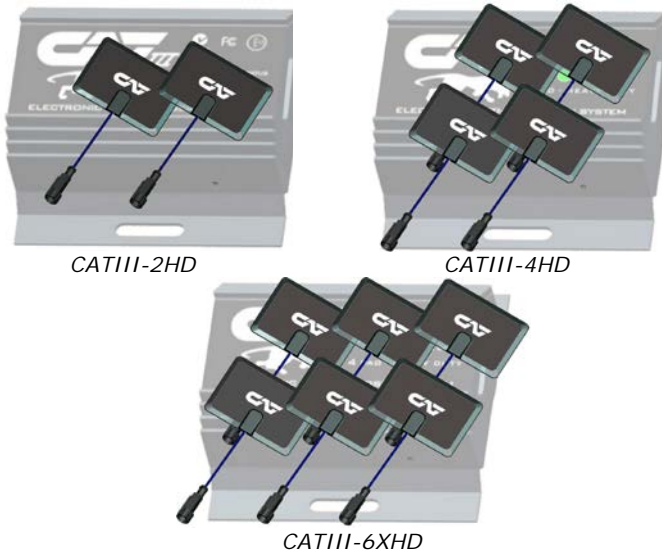


"CAT Electronic Anti-Corrosion Systems"



Introduction

The CATIII is a unique system that replaces traditional coating methods to control rust. The CAT System leverages an optimal combination of voltage and frequency to provide maximum corrosion suppression in "free air" steel structures such as automobiles, mobile plant, machinery and suitable fixed structures. We thank you for your interest in the CAT System Electronic Anti-Corrosion System.

About Us

CAT Systems has been the innovator in high performance Electronic Rust Protection products for 25+ years. The CATIII Electronic Rust Protection System is the very latest in technology, designed to stop rust in the harshest environmental conditions. Not only do our products protect against rust, they also significantly reduce the time, effort and cost associated with maintaining the condition of your vehicle.

Our goal is to ensure that our products and service are the benchmark by which the competition is measured!

In Summary

Controlling rust or corrosion electronically is not a new technology. Cathodic protection systems have been used to control corrosion in ships, jetties, land based fixed structures like bridges, tanks and subterranean metal structures for over 100 years. Traditional Cathodic Protection systems require

sacrificial anodes which were totally separated from the steel being protected. This technology relies on soil or water surrounding the metal structure and the anode. With the aid of an electrical charge the sacrificial anode would corrode because the anode was made of a "softer" metal compared to the metal it was protecting.

Free air structures such as motor vehicles or mobile plant and machinery however are not submerged in water or buried in soil so a different approach was required. The original inventor of the CAT System discovered that by "impressing" or "forcing" an alternating current (AC) with a specific waveform and frequency into the metallic body of a motor vehicle the rusting process could be interrupted (slowed) and in some cases stopped all together. This new technology was thoroughly tested in the UK and proven to be effective before it was released onto the market in 1989. The CAT technology has been continually tested and refined ever since and many improvements have been made along the way. It should be noted that laboratory and real life testing has proven the CAT technology interrupts the rusting process however the exact reason why is still often debated amongst physicists, electrical engineers and metallurgists. It is widely believed that "stray currents" produced by the myriad of electrical connections and electronic devices in modern motor vehicles are what promote corrosion; and the CAT technology simply causes these stray currents to behave in an orderly manner instead of just randomly moving through the metal of the vehicle. This theory is supported by salt fog chamber testing; the most recent conducted independently by SGS Laboratories in April 2015. (report available on request)

Advantages of CAT Rust Protection

There are many great reasons to choose a CAT.

- All the metal on the vehicle or structure are reached, both inside and out. All the places where traditional (spray) coatings may be missing or not typically applied.
- The process is good for a lifetime—unlike coatings which degrade over time and need constant re-application
- The rust suppression is an ongoing process 24/7.
- There is no risk of chemical leakage unlike coatings.
- There is no odour - There is no danger to the environment.
- There is no electronic interference – CAT is certified to comply Australian, US and European *EMC regulations*.
- CAT is easily installed (DIY fitting is recommended) – no drilling or fixing with screws.
- CAT can be transferred easily.
- CAT is designed tough for the harshest conditions.
- CAT can help avoid costly rust repairs.
- CAT is both 12VDC and 24VDC compatible. (or 240VAC with a converter)
- CAT will not send your battery flat – active low voltage cut off is standard.
- CAT slows paint oxidation (from anecdotal evidence).

**Unit Specifications**

Input Voltage	12V/24VDC
Operating Voltage	9V-32VDC
Operating Temperature	-30°C~85°C
Ground	- Negative
Current Draw	25ma +/-
Low Voltage Cut Off	11.9V/23.9V
High Voltage Cut Off	15.1V/28.1V
Dimensions (mm)	Main Module – 75 x 75 x 35 Induction Pads – 70 x 70 x 5

LED Status Indicators

Flashing or Solid GREEN	Normal Operation
Flashing AMBER	Battery voltage or temperature too high or too low
Flashing RED	Pad/s not mounted correctly
Solid RED	Extremely low or high voltage or internal fault condition
No Light	Power not connected - Blown Fuse – internal fault

The Importance of Paint..

The overall effectiveness of the CAT system is dependent on a dielectric coating. In most cases this will be paint. Where metal surfaces are left bare, a thin layer of ferric oxide may form. A good quality coating is essential to maximise the protection offered by the CAT System. Where the paint becomes thin and porous due to age or oxidation there is a risk that salt, acid and moisture may penetrate to the metal beneath. To avoid this it is recommended the paint be sealed for maximum performance. Rust repairs can be eliminated and maintenance costs reduced, but it is not simply a matter of installing a CAT unit and expecting miracles. A system must be applied, not just a device.

CAT can and cannot do...**What the CAT System CAN do**

The CAT system has been proven to decrease the rate of corrosion that occurs by disrupting the natural electrochemical rusting processes. As explained earlier, the dielectric properties of paint are important for effective operation.

What the CAT System CANNOT do

It cannot return rusted components back to metal; the amount of energy that is released in a rust reaction is very large. While the system can help slow and in some cases stop the rust reaction, reversing the reaction is well beyond the capability of the system.

History and Testing...**Initial Testing (1989-1991)**

Soon after its development, CAT's founding engineers commissioned independent and detailed testing in England by **Donald Harrison C.B.E., D.F.H., M.I.E.E., C.E.** - an eminent Physicist, a member of the Institution of Electrical Engineers and a Chartered Engineer. Mr Harrison carried out physics and nuclear research at the Atomic Energy Establishments at Harwell in England and Wintrith in England on behalf of the British Government. Mr Harrison was subsequently Deputy Chief Scientist at the Department of Industry concerned with scientific research programs in

Industrial and Government Research Laboratories and is very highly regarded by his peers in his field of physics....

Quotations from his 1991 report are as follows:

"The vehicle fitted with the CAT protection showed a significant reduction in the rate of rust on exposed metal surfaces."

"The CAT system may be even more effective in reducing long term in-depth corrosion than the present tests would reveal."

"In both tests, the protected rig showed a significant and clearly observable reduction in the rate of development of rust. Because both rigs were exposed to virtually identical environmental conditions, it was concluded that these results demonstrate the effectiveness of the CAT System in the control of rust"

"The main conclusion from the results of these tests is that the CAT System clearly provides an observable reduction in the rate of corrosion. We believe with these test reports on the CAT System made on motor vehicles, rigs, and laboratory examinations using ammonium sulphate, salt, potassium sulphate, tap water and copper sulphate as an electrolyte, that the CAT System showed an improvement in the life expectancy of metal some 4-fold."

- Donald Harrison (UK) C.B.E., D.F.H., M.I.E.E., O.E.

Ongoing Improvements and Testing (1989 - 2015)

Since the CAT technology was first developed in 1989, our engineers have worked hard to improve both its effectiveness and reliability. Technical advancements such as the miniaturisation of electronic components have seen a reduction in the size of the CAT (Which is just as well since most modern vehicles have limited space for installing accessories under the hood). The size of the CAT may have decreased but the power output has increased almost 3 fold and all this without increasing power consumption (still only 35mA).

We have now sold over 80,000 CAT's worldwide and the most important consideration for us has always been to continually verify the CAT technology does what it is designed to do - "suppress rust". It's simply not good enough for us to rely on our engineer's theoretical calculations or anecdotal evidence from customers.



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The only scientifically controlled way to test the CATs effectiveness is in a **salt fog and humidity chamber** so we have invested over \$250,000 in our own testing equipment in order to do continuous testing and improvements of the CAT product. We also regularly submit the CAT for independent testing to verify our own results and to ensure impartiality. The most recent testing was conducted in April of 2015 by SGS - the world's leading inspection, verification, testing and Certification Company. *(full test report available on request).*



We have successfully tested the CAT technology for the past 25+ years and specialise in this technology, so we are confident that our systems are the most effective on the market.



Long Term Field Trials and Real Life Observations

For 25+ years, vehicles fitted with CAT technology have been reported as working with amazing success by many long term clients including salt mining and fertiliser companies, the Australian Army, the Royal Australian Navy (shore based units), major mining companies and major fleet operators. Many international clients from New Zealand, USA, Canada, Europe and the UK have also reported outstanding results over many years using our CAT technology.

Certifications



C-Tick (Australia)

Australian EMC regulations are mandatory and apply to almost all electronic products. Application of the C-Tick mark signifies compliance with appropriate Australian EMC standard.



FCC (United States)

Manufacturers who wish to sell electronic devices in the United States must have their products tested by FCC listed or accredited labs and certified by the FCC for EMC compliance.



CE Mark (Europe)

CE marking is a mandatory conformity marking for certain products sold within the European Economic Area (EEA) since 1985. The CE marking confirms EMC compliance.

FAQ's

Q: What is electronic rust prevention?

A: Electronic rust protection is the use of electricity to prevent or control rust on steel. There are various forms of electronic rust protection, some technologies have been in daily use protecting ocean going vessels, underground pipelines, offshore oil rigs, bridges and other large capital investments for over forty years.

Q: How does CAT work?

A: The CAT basically interferes with the naturally occurring electro-chemical rusting process.

Q: Is CAT protection expensive?

A: No. With the high price of an average vehicle, the purchase and installation of a CAT system will only represent less than 1% of the vehicles value. However future rust repairs on unprotected vehicles may cost thousands. CAT Electronic rust protection is a cheap and worthwhile investment for any vehicle.

Q: Does the CAT system come with a warranty or guarantee ?

A: Yes. All CAT Systems are covered worldwide by a 5 Year product replacement guarantee. (T's & C's apply)

Q: Will CAT cause electrical shocks if a person touches the vehicle.

A: No. CAT is as safe as any other electrical device on your vehicle and will not cause any electrical shocks by merely touching the vehicle.

Q: Will CAT interfere with any electronic devices that are already on my vehicle, such as the computer or car alarm?

A: No. CAT works like any other electronic device on your vehicle and will not affect any other electronics or on-board computers.

Q: Will CAT be effective on a vehicle that has existing rust?

A: Yes. The CAT system can help but it cannot produce the large amount of energy needed to restore the metal. This makes reversing the reaction well beyond the capability of the system

Q: Is it really necessary to install CAT onto a brand new vehicle that has an existing factory warranty?

A: Definitely. It is best to have protection from day one and even though new vehicles come with a factory warranty, rust usually forms from the inside out and so there could be rust present during your warranty period that only becomes visible after your warranty expires.

Q: What if my vehicle already has spray-on rustproofing or undercoating?

A: CAT electronic rust protection is fully compatible with any undercoating or spray-on type rustproofing application.

Q: Is it practical to install CAT if I'm only keeping my vehicle for a couple of years?

A: Yes. What if your plans change? Wouldn't it be nice if your vehicle held up longer when times are tough? Let's say you do only keep your vehicle for more than a couple of years, are you



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one of the few people that aren't concerned about the resale value? When you show a potential buyer or dealer that you have taken extra measures to protect the vehicle from rust, don't you think that in itself would increase the value? Even if you decide none of the points made above are of concern to you, the CAT system can be transferred to your next vehicle.

Q: Will CAT drain my battery?

A: No. CAT draws less than 35 milliamps current which is less than most vehicle alarm systems. If your battery voltage drops by other means, e.g. leaving your lights on, then the electronic unit has a smart sensor that automatically shuts the unit off, so as not to damage your battery, and switches back on when the voltage returns to normal.

Q: Will CAT be effective on larger vehicles such as large 4WD's or trucks ?

A: Yes. The 4 Pad Extra Heavy Duty CAT System will help protect larger vehicles or those which operate in extremely corrosive environments. On even larger vehicles and machinery multiple CAT systems can be installed.

Q: Can CAT be fitted to a vehicle with a 24 volt battery?

A: Yes. CAT comes as a standard 12 /24 volt system. No additional hardware is needed.

Testimonials

"We fitted a CAT anti-corrosion system to our Toyota LandCruiser wagon in 2003. This vehicle has been used as a work vehicle, and to launch and retrieve a boat in and out of the ocean on the South Coast on regular occasions. Thirteen years later there are still no sign of rust; best little "Pussy CAT" ever! Would strongly recommend"

Ted Francis – 19/8/2016

"I have had one of these systems installed in my last seven cars. When I came to trade to them in they were absolutely pristine, inside and under body. My new motor home which is presently under construction deserves one too. Great Product, anyone not using one have no idea what they are missing. Keep on keeping on....."

Jack Scheele - 17/5/2015

"I have had a cat system fitted to my 1990 model Toyota LandCruiser for around 10 years. I live in a small coastal town in Tasmania Australia and regularly drive on coastal sand dunes and launch a boat off the beach. I rarely wash the vehicle and I never polish it. The paint work even has some scratches through to bare metal. After 10 years of neglect in a harsh environment the bodywork has virtually no rust, even the bare metal scratches have only very light surface rust. I believe the Cat system is very efficient and I would recommend it to anyone wanting to minimize rust damage to their vehicle."

Stuart Fleming - 12/12/2013

"Our company is located on Mermaid Beach in the Gold Coast Queensland. During the last 6 years or so we have installed well over 100 CAT SYSTEM electronic rust control units on high rise outside air conditioners which operate from main power by way of a reducer from 240 to 13 volts. These air conditioners are exposed to salt air 24 hours a day. In all that time there

has been only one failure, the air conditioner rusted because CAT SYSTEM connection was not switched on! At all times we have found the CAT Systems Australia most professional to deal with excellent service marketing an high quality unit with a most satisfactory performance result. I have no hesitation in recommending CAT SYSTEM for vehicles and in particular units installed on our air conditioners for complete rust protection."

Brian Doyle - 4/11/2013

"My Toyota LandCruiser has been fitted with a CAT 1 protection system since being purchased new in 1992. The paint work is still original and in very good condition due to the fact that The CAT 1 has done it's job over a 20 year period. The vehicle is also maintained and polished regularly to protect the vehicle."

Allen Kent - 2012

"I just wanted to thank you for the CAT anti rust system. I live in a coastal city and my car is constantly exposed to sea air and I do not drive my car huge distances. As I am such a sceptical person, after installing the system, I set up a test for the system of two screws - one connected to the bull bar and one insulated from the chassis by a rubber mount. The screws are galv coated self tappers, so I filed off the galv coat. They have been on the car for exactly the same time and have been exposed to the same conditions and the insulated screw is showing, without a doubt, significant rusting while the other screw is only showing a very slight visible rust. So I can recommend this product to anyone - it doesn't totally stop rust but it significantly reduces it and is well worth the relatively small cost. And no - I don't know the owner and I am in no way gaining from this testimony."

David. T - 18/6/2008

"Wallis Drilling Pty Ltd currently has in excess of 38 units fitted to various vehicles. While it is nearly impossible to evaluate the action of the CAT system (because how can you evaluate nothing happening?), we consider that the overall marked reduction in CAT repairs warrants their continued use and fitment to vehicles as they enter the fleet. Where a unit has 'gone down', usually because of inadvertent disconnection, there seems to be a marked increase in corrosion.

"Another observation is that the CAT vehicles seem to keep their 'bloom' considerably longer than vehicles that were not fitted."

Jamie Wallis - 1/5/1997 – WALLIS DRILLING

"I am writing this letter in reference to the CAT systems that I have installed in 2 of my personal vehicles. The first one was fitted to a 1987 Daimler which I purchased in September 1993. I subsequently had extensive repairs to in excess of \$4,000. LH front door skin, RH rear door skin, boot lid and all other areas were ground and treated with a rust converter. A silver coating of rust inhibited weld-thru primer has been applied to all welded patches and both door skins repairs.

After the extensive work I immediately fitted a CAT system and until now have not had the slightest sign of any rust what so ever. I intend to keep this vehicle for a long time and I am absolutely thrilled at the results. At approximately the same time I restored a 1973 Buick Centurion pillar less sedan. It had areas of rust in the boot etc. After repairs and treatments I fitted a CAT system and until this time I cannot locate any trace of rust. I certainly recommend this system and if any one wishes to contact me to verify my statement I will only be too happy to tell them of my total satisfaction."

Hans Merks - 24/4/1996