

Installation Guide

Status Alert Module SAM/100



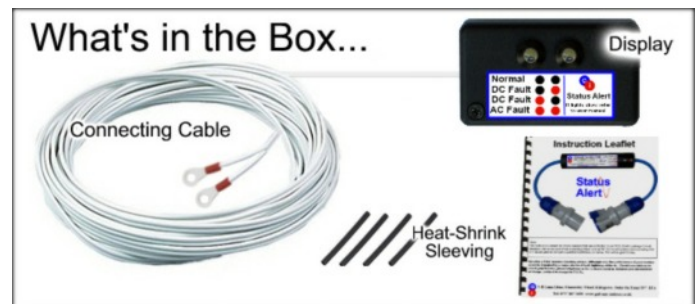
The SAM/100 is intended for connection to our Gi120/S/XP Stud Isolators. These instructions assume that you have already fitted your Gi120/S/XP. If not, please follow the instructions for fitting the isolator before proceeding .

If you are not confident that you can fit this item yourself, please consult a qualified electrician.

The SAM/100 is intended for connection to our Gi120/S/XP Galvanic Isolator. **NOT** suitable for any other make or model. The SAM/100 provides a remote readout of any fault currents connected with your boat's earthing system, mirroring the lights fitted to the isolator.

In the box you should have:

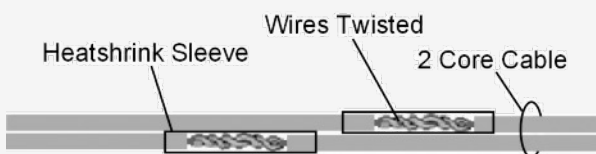
- This guide
- 1 x SAM Module
- 1 x Connecting Cable (attached to module)
- 1 x length of heat shrink tubing



Siting the unit:

The Remote Indicator can be placed up to 100 feet (30m) away from the main unit.

Decide on a location for the Status Alert Module. This can be up to 100 ft (30m) from the Isolator. We suggest that you first position the Remote Indicator, and then route the cable back to the Isolator.

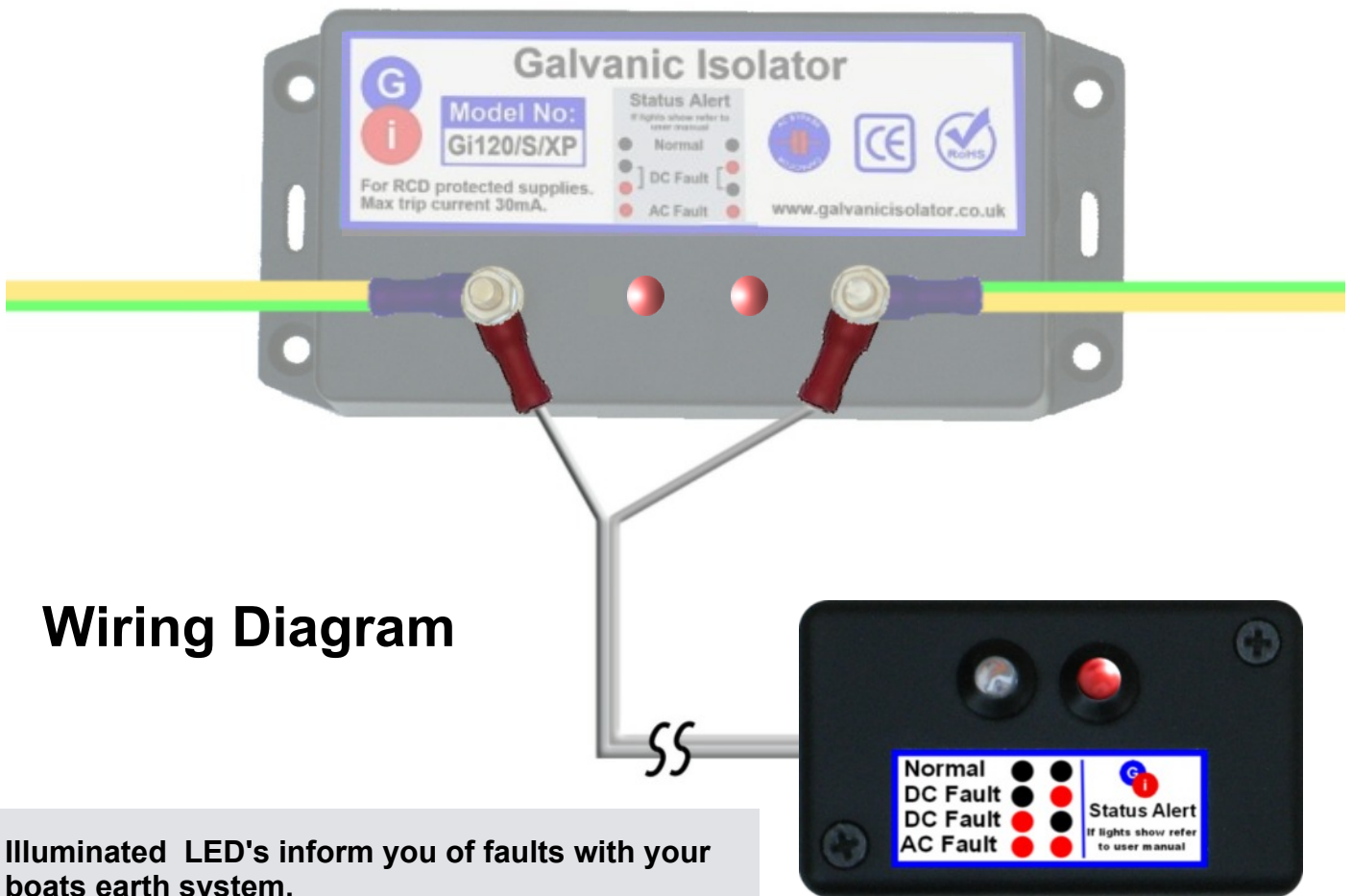


The cable may be lengthened or shortened by cutting and re-joining it. If it is desired to lengthen the connecting cable, we recommend that you use a multi stranded cable of similar type to that fitted.

Strip the ends by about 1cm, twist the wires tightly together, then insulate using the heat shrink tubing supplied. Offset the joints of the two cores by about 3 centimetres, as shown in the image. Ideally the joint should be soldered, but twisting tightly is normally sufficient.

The cable connecting the Isolator to the Remote Indicator must be insulated throughout it's length. It must not be connected to anything else under any circumstances.

- 1) Remove the nuts securing the existing wiring to the isolator and connect the ring terminals on the Status Alert Module connecting cable to the terminals on the Isolator as shown in the picture on the following page. These connections are not polarity sensitive.
- 2) Tighten the connections, taking care not to over tighten.
- 3) The power may now be reconnected.
- 4) If any of the lights illuminate, earth leakage is present. **It is NOT a sign of a faulty isolator!** Please refer to the fault finding guide.



Wiring Diagram

Illuminated LED's inform you of faults with your boats earth system.

Illuminated LED's NEVER indicate a faulty isolator.

If LEDs glow after installation, please refer to Instructions & Fault Finding Guide at link below



Both Lights OFF: Normal operation. No action required – just check back occasionally to ensure that all's well.



One Light ON: If either of the lights are on, it indicates DC leakage. This can cause severe corrosion to your boat. Our instructions give clear basic advice on how to resolve the problem.

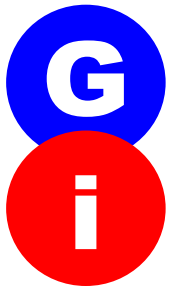


Both Lights ON: If both lights are ON, this indicates AC leakage, usually from the mains wiring or a connected appliance. AC leakage can be a danger to life. Please see instructions for help in rectifying.



For Operating Instructions & Fault Finding guide, please visit:
www.galvanic-isolator.co.uk

Click the *Instructions* link, and select your model SAM/100



Status Alert Monitor

SAM/100

Instruction Leaflet

Status Alert



Tel: 0757 807 3490 www.galvanic-isolator.co.uk



Status Alert Module

SAM/50

The LED's on your SAM/50 inform you about any faults with your boats earthing system.

Illuminated LED's NEVER indicate a faulty isolator.

IDEALLY, the lights will be as below.



Both Lights OFF: Normal operation. No action required – just check back occasionally to ensure that all's well.



One Light ON: If either of the lights are on, it indicates DC leakage. This can cause severe corrosion to your boat. Our instructions give clear basic advice on how to resolve the problem.



Both Lights ON: If both lights are ON, this indicates AC leakage, usually from the mains wiring or a connected appliance. AC leakage can be a danger to life. Please see instructions for help in rectifying the problem.

Occasionally, after fitting a Status Monitor, both of the warning lights may glow straight away.

If both lights are illuminated, you have AC earth leakage.

You do NOT have a faulty isolator. In fact, your isolator is alerting you to a potentially dangerous situation that you may not have been aware of.

There are two main types of earth leakage: Mains Leakage and Imprinted Leakage.

Mains Leakage

Mains Leakage happens when an appliance, cable or connection has poor insulation resistance, and some of the circuit's current "leaks" away to earth. If there is sufficient leakage, the earth leakage circuit breaker, also known as the RCD, will trip, disconnecting the supply.

At lower levels of leakage, the RCD may not trip, but the lights on your galvanic isolator may still glow, alerting you to the likelihood of earth leakage. Usually, an earth leakage fault will only get worse, so you should always take this seriously and investigate.



Ensure that the electrical supply is disconnected before working on a circuit, and remember that in some systems, an auxiliary supply such as an inverter may automatically kick in when the mains supply is disconnected. If you are in any doubt, you should entrust the work to a competent person.

No two electrical systems are the same, so it's only possible to give the broadest suggestions of how to locate any problem. Usually some detective work is required, and this starts by switching off the main RCD on the boat. In most cases, this will result in the lights going out. If not, there is probably something connected to the mains supply BEFORE the RCD.

Assuming the lights go out when the RCD is switched off, switch off ALL the circuit breakers, then switch the RCD back on. In most cases, the isolator's lights will stay off. You can then switch the circuit breakers back on one at a time until the isolator's lights come back on. The last circuit breaker you switched on has the faulty circuit, or appliance connected to it.

Very rarely, even though all the circuit breakers (except the RCD) are switched off, the isolator lights will remain on. In this case you will need to disconnect all appliances, either by pulling out the plugs, or disconnecting any wired in appliances. Do this one at a time, taking care to ensure that you don't forget anything. As you disconnect items, check the isolator lights. The last item you disconnect is the one causing problems.

When you have traced the fault to a single appliance or circuit, it must then be checked for earth leakage by a competent person.

Imprinted Leakage

Imprinted Leakage typically occurs when equipment using a Switched Mode Power Supply Unit, (SMPSU), is connected to your system.



Pay close attention to earthing of equipment. Equipment is often installed without adequate earth bonding. Please consult the equipment's installation manual, or contact the manufacturers for more information.



Earth bonding point
(Equipment varies between boats)

Equipment utilising SMPSU's include, Battery Chargers, Computers, TV's, Domestic Appliances, Phone Chargers etc.

In our experience, battery chargers are often the cause of imprinted leakage. CE regulations require that equipment should not create this kind of interference, but not all equipment is as "clean" as it should be.

Because of the way SMPSU's operate, some of them leak power into the boat's earth wiring. This can cause the galvanic isolators light to come on, as the isolator correctly detects the leakage.

Imprinted Leakage is traced in exactly the same way as for Mains Leakage. However, when you track the problem down to an individual appliance, it may still pass an Earth Leakage test. In that case, it's likely that the problem is Imprinted Leakage. Imprinted Leakage is often due to incorrect installation, but can also result from design or manufacturing issues.

Usually, Imprinted Leakage won't significantly degrade the performance of your isolator, and provided it is confirmed that no Mains Leakage is present, the appliance may continue to be used. You should now read the fault indicator lights as follows:

Note the brightness of the lit LED's. Consider this is "Normal" for your particular installation.



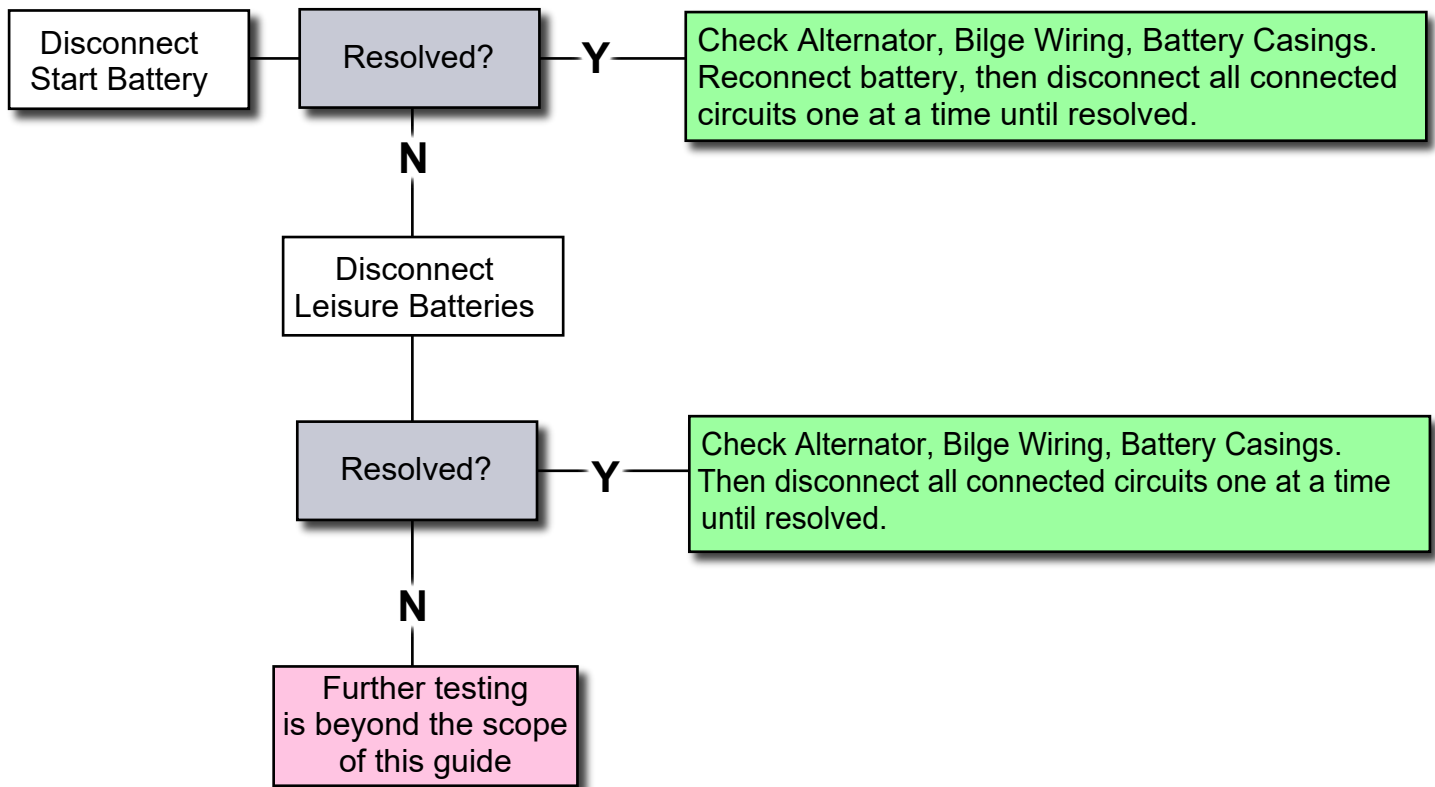
Increased brightness of either LED indicates DC leakage.



Increased brightness of BOTH LED's indicates increased AC leakage.



ONE (either) LED glowing



BOTH LEDs glowing



This indicates a possibility of AC (mains voltage) leakage. Proceed with great care. Danger of electrical shock. If in doubt, please consult a qualified electrician.

