

Galvanic Isolator

Part Numbers: 8-40990 (16A) 8-40991 (32A)

For use with 120/240V 50/60Hz supplies

To be installed on boats taking power from a shore based mains source

Information:

The Galvanic Isolator provides an effective solution to the problem of galvanic corrosion associated with a mains power hook up.

The problem occurs when you have dissimilar metals in contact with the water that share a common earth point. This situation is found in almost all boats that are permanently afloat.

There are several possible sources of galvanic corrosion:

1. Galvanic current can be produced between two boats with a common electrical earth connection. E.g. an aluminium boat moored next to a steel boat both connected to a shore mains supply. Again this can also affect GRP boats with bonded hull fittings.
2. Galvanic currents can be generated between the dissimilar metals of hull fittings. E.g. between a brass propeller and a steel hull. This can happen even in a GRP or wooden boat where a correctly fitted earth bonding system connects all hull fittings.

The first cause can be virtually eliminated by a galvanic isolator! By fitting a galvanic isolator between the earth bonding point and the incoming shore earth connection the D.C. galvanic current that would normally be corroding the anodes, or worse the hull, is reduced almost to zero.

The second cause cannot be removed by fitting a galvanic isolator! The traditional and correct way to prevent corrosion due to dissimilar hull fittings is to fit sacrificial anodes (usually zinc). A galvanic isolator will not prevent corrosion from this source and does not replace traditional sacrificial anodes.

Installation:

Alterations to mains electrical wiring should only be carried out by a competent electrician.

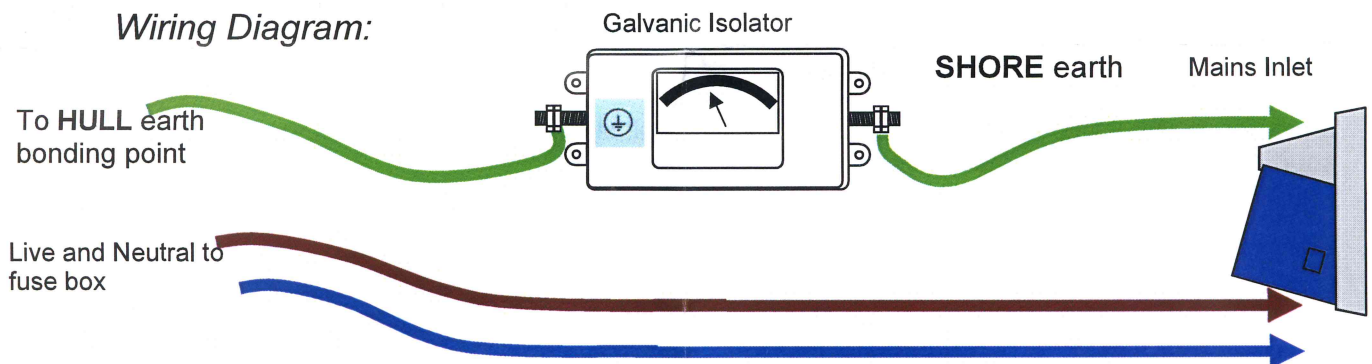
The galvanic isolator must be installed between the incoming earth connection from a shore hook up and the earth bonding point on the boat. This can usually most easily be achieved directly behind the mains power inlet. The earth wire (usually green/yellow) can be cut and the resulting ends connected to the terminal studs on the galvanic isolator using ring terminals.

Placing the galvanic isolator as close to the mains inlet as possible minimises the risk of accidentally bypassing it at a later date.

Fitting the galvanic isolator involves cutting the safety earth connection. For this reason it is very important that the connections to the galvanic isolator are made correctly. Cable lugs, preferably crimped should always be used. The galvanic isolator must be mounted securely to ensure that the connections are not strained. The terminal marked with an earth symbol should go directly to 'hull earth'.

The SHORE earth lead is then attached to the other stud making sure that the lug cannot touch the metal channel, which would result in the isolator being bypassed and ineffective.

Wiring Diagram:



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