

Description

The IM2160 range of galvanic isolators are designed to be an essential aid in preventing galvanic current flow between vessels and shore power outlets interconnected in marinas and boat yards. They play a key role in the prevention of expensive and potentially dangerous corrosive damage to metalwork on boats in contact with water such as hulls, rudders, propellers, shafts and tubes.

The IM2200 is a passive electrical status/fault indicator that utilises the galvanic isolator as a current flow sensor, detecting current flow and voltage drop across the device's terminals. It can be mounted in a prominent position so that boat crew and users are immediately alerted to electrical fault conditions that would exacerbate the galvanic corrosion problem, but more importantly could be hazardous to those on board the vessel. 'Passive' refers to the fact that the indicator unit consumes no electric power under normal conditions, only receiving power when there is current flow through the galvanic isolator, and thereby accurately indicating a fault in the vessel or shore power electrical systems.

Application

The use of different types of metals used in boat manufacture for parts in contact with the water leads to galvanic currents when an electrical circuit is made between boats and shore power, as in any typical marina or maritime facility. Stray electrical currents (galvanic currents) flow between the metallic components of boats and the water they are immersed, via the electrical connection between the shore power supply and the vessel. Under certain circumstances, in particular, electrical fault conditions, the corrosion can be very rapid.

The IM2160 range of galvanic isolators work by placing a rectifier network between the earth connection the boat and shore-based mains power supply. This stops the small continuous electrical currents that are generated by galvanic reactions between the various metals in contact with one another and the water which can cause rapid and heavy corrosion of underwater metalwork. Variants are available to cater for 16Amp, 32 Amp and 70 Amp shore and vessel electrical systems. The appropriate variant should be installed in-line in the earth cable between where shore power enters the boat and the vessels electrical distribution panel. All vessels will benefit from the installation of a correctly installed galvanic isolator, and many marinas make their use mandatory.

The IM2200 electrical fault/status indicator unit has a 2-wire connection which connects directly to the terminals on the galvanic isolator. It is ideally located in direct view of those responsible for safety on board the vessel, and any lit LED indicates an electrical fault. One LED lit reveals a DC fault, and two an AC fault. The fault may be with the vessel's own electrical systems, the shore power electrical system, or another boat co-connected to the shore power system. Any fault should be referred immediately to a qualified electrician for rectification.



Refer to the IM2160 and IM2200 installation guide when fitting these products.

IM2160 Galvanic Isolator Range

Part No	Description	Supply
IM2160A16	Galvanic isolator - IP68 rated enclosure	Max 16A
IM2160A32	Galvanic isolator - IP68 rated enclosure	Max 32A
IM2160A70	Galvanic isolator - IP68 rated enclosure	Max 70A

Disclaimer: not tested to UL certificate or ABYC standard



These galvanic isolators are not safety devices and do not serve as a replacement for adequate RCD (residual current device) and MCB (miniature circuit breaker) protection. They are designed to work in conjunction with a fully protected circuit.

Part No	Description	Dimensions L x W x H mm
IM2200	Electrical status /fault indicator - IP68 rated enclosure For use with the IM2160 galvanic isolator range	60 x 35 x 20



IM2160A16



IM2160A32



IM2160A70

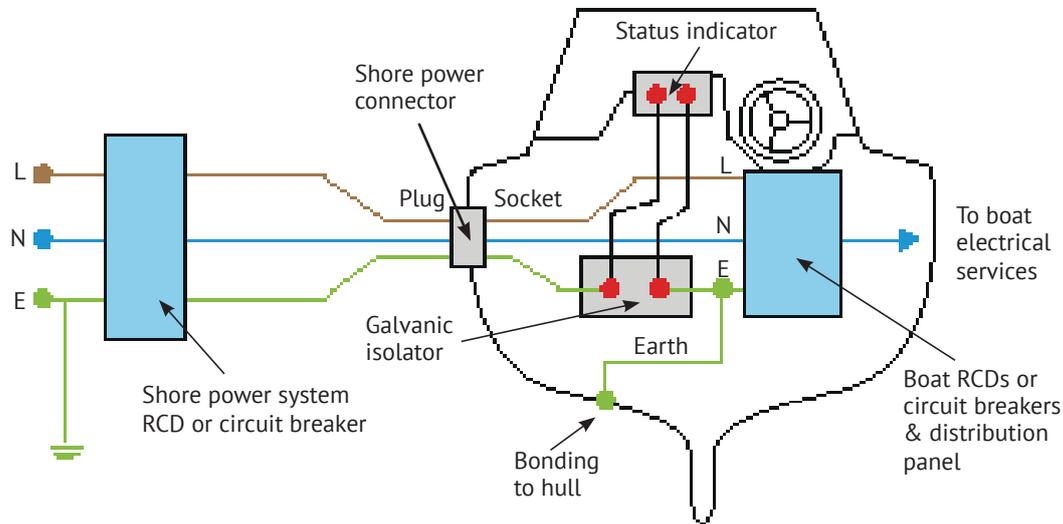


IM2200

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System installation schematic diagram:



Attributes

Unit Classification	16A	32A	70A
Shore inlet compatability	Single: 15, 16A	Dual: 15,16A. Single: 30, 32A	Dual: 15, 16, 30, 32A. Single: 50, 70A
120/240Vac	120/240Vac	120/240Vac	120/240Vac
AC fequency	50/60Hz	50/60Hz	50/60Hz
Max continuous current*	35A	35A	100A
Max surge current	400A	400A	500A
Operating temperature range	-55 - 150°C	-55 - 150°C	-55 - 150°C
Weight	592g	642g	945g
Enclosure length	120 mm	144 mm	194 mm
Enclosure width	77 mm	77 mm	77mm
Enclosure height	85 mm	85 mm	85 mm

Disclaimer: Maximum continuous power can flow indefinitely for the IM2160/16 model, 45 minutes for the IM2160/32 model and 25 minutes for the IM2160/70 model. Under normal circumstances RCDs (residual-current devices) or circuit breakers in the vessel and/or shore mains power system should have tripped immediately current flow through the earth connection is detected.

Compliance

Enviromental	IP68 rated when not passing electric current. (note: any condition where mains electricity comes into contact with a body of water can be fatal)
RoHS	Compliant
EN ISO 13297	Compliant
CE	Compliant

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Materials

	IM2160	IM2200
Enclosure	Anodised Aluminium	ABS plastic
Connectors	Brass	

Operation Statement

In a major fault condition the IM2160 range of galvanic isolators will take a full rated current and is designed to be used with suitable RCD (residual-current device) protection methods.

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