

Marine Isolating transformers



Type LS

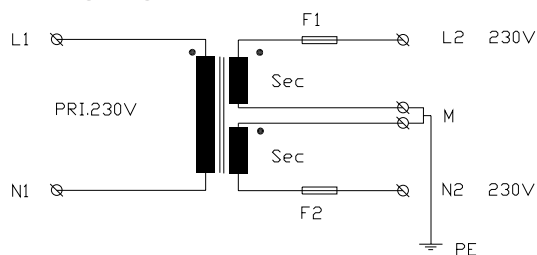
Isolating transformer - for safe and correct connection of AC shore power to your boats AC system. An isolating transformer eliminates any electrical continuity between shore power and the boat. Shore power is fed to the primary side of the transformer and the boat is connected to the secondary, this completely isolates the boat from the shore ground and will prevent any unsafe situation, and at the same time avoid galvanic corrosion.

A soft start feature prevents the shore power fuse from blowing due to the inrush current of the transformer, which would otherwise occur.

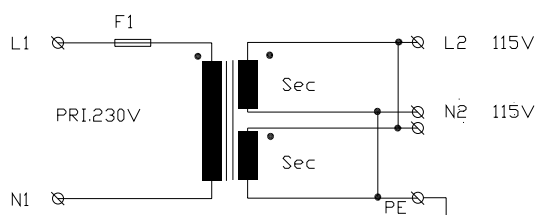
Technical specifications

- Input voltage: 230 V
- Frequency: 47-63 Hz
- Output voltage: 115 V / 230 V
- According to: EN61558-2-4
- Test/insulating voltage: 2,3 kV AC RMS
- Construction class: II
- Insulation class: B (130°C)
- Max ambient temp. (t_a): 40°C
- Degree of protection: IP43

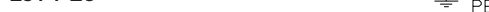
Wiring diagram



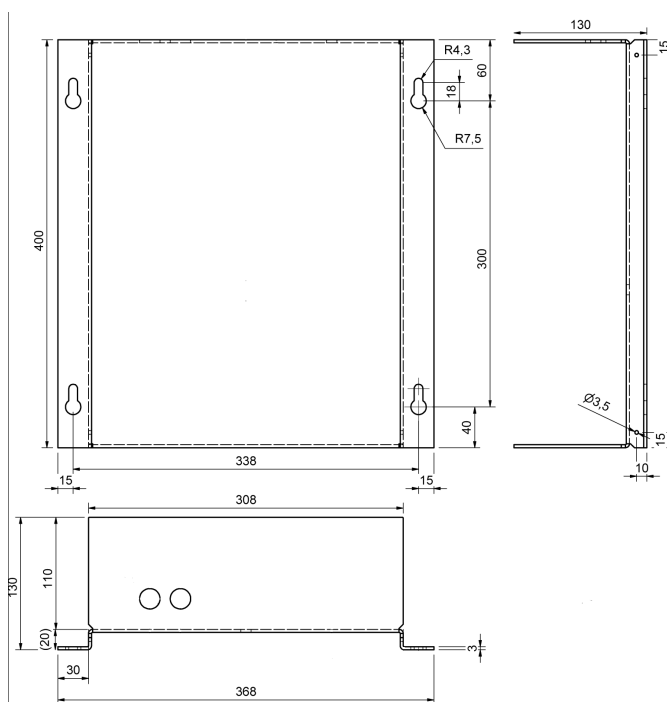
LS10-16



LS14-28



Dimensions



Standard types

Type	Voltage Pri. (V)	Voltage Sec. (V)	Current Sec. (A)	Power (VA)	Dimensions LxWxH (mm)	Weight (Kg)	Art. no.
230 / 115V							
LS14-115	230	115	14,0	1600	400x368x130	18	3-080-000509
LS28-115	230	115	28,0	3200	400x368x130	24	3-080-000508
230 / 230V							
LS10-230	230	230	10,0	2300	400x368x130	18	3-080-000503
LS16-230	230	230	16,0	3600	400x368x130	24	3-080-000481

Noratel marine isolation transformers - Type LS

In order to eliminate galvanic corrosion a isolating transformer separating the shore AC power from the boats 230Volts (or 115 volts) should be installed.

An Isolating transformer eliminates the galvanic currents, and thus protect propellers and propeller shafts from corrosion.

Noratel LS transformers is double insulated and the ground wire from the shore side supply should NOT be connected to the transformer.

LS transformer has "softstart" feature which prevents the shore power fuse from blowing due to the in-rush current of the transformer - connection to most shore power system is possible without fusetripping problems.

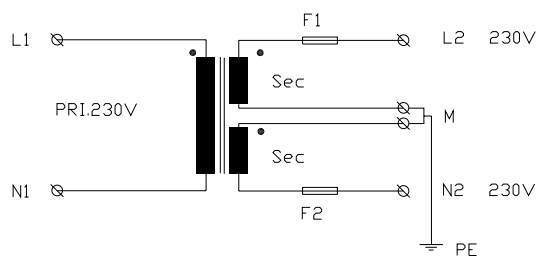
Installation: Type **LS10-230** (art. nr. 3-080-000503) and **LS16-230** (art. nr. 3-080-000481)

The LS10-230 and LS16-230 transformers are equipped with overload and short-circuit protection (circuit breaker) on each phase for maximum security on board.

Noratel recommend that the boat's grounding wire connects to the transformers centertap (M) on the secondary side.

Alternative:

If the boat has a "floating" ground system similar to the IT-net on shore - no ground connection should be made to the transformer. Point M is not connected.



- Shore side AC power connects to N1 and L1
- Do NOT connect shore side ground wire
- The boats AC power system connects to L2 and N2
- The boats ground system connects to the transformers centertap (M)

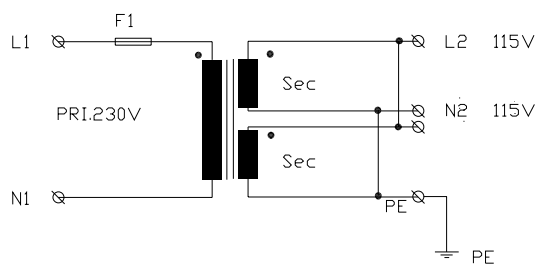
Alternative

If the boat has a "floating" ground system similar to the IT-net on shore side - no ground connection should be made to the transformer. Point M is not connected.

Installation: Type **LS14-115** (art. nr. 3-080-000509) and **LS28-115** (art. nr. 3-080-000508)

In case the boats AC power system is 115Volts, it is recommended by Noratel that the N2 phase is connected to the boats grounding system.

The LS14-115 and LS28-115 transformers are equipped with overload and short-circuit protection (circuit breaker) on the primary side of the transformer.



- Shore side AC power connects to N1 og L1
- Do not connect ground wire
- The boats AC power system connects to L2 and N2.
- Phase N2 can be connected to the boats grounding system. This means that the boats 115V AC system will be a TN-S system (TN-S system as used in Europe except from Norway)

Alternative

If the boat is supposed to have a IT-net do not connect any ground connection to the transformer. The boats power system will then be of the same type used on-shore in Norway.