



Galvanic Corrosion (Electrolysis)

If there are two different metals in the same electrolyte, an electrical voltage is generated between them due to the different electrochemical potentials (voltage series). If both metals are connected to each other, a current flow (reverse electrolysis) is created, which flows until the metal with the lower potential is consumed.

A danger for this is the shore connection on yachts with metal hulls, because the protective conductor in the boat is earthed. If an aluminium yacht lies next to a steel sheet pile wall or a steel yacht,

the galvanic circuit is also closed. This electric circuit can only be interrupted by disconnecting the protective earth connection on the boat. To ensure electrical safety, an isolating transformer must be installed. This separates the hull from the shore power potential. On the secondary side, a new electrical network (TN system) isolated from the shore power supply is established with a downstream residual current circuit breaker.

Toroidal core isolating transformers with a voltage ratio of 230/230 V enable the galvanic isolation of the 230 V vehicle electrical system from the mains power supply.

If a 115 V vehicle electrical system is to be operated with 230 V mains voltage, a voltage ratio of 115/230 V is required.

With a mechanical input voltage switch, a 230 V vehicle electrical system can be operated with

either 115 V or 230 V mains voltage. Housing made of seawater-resistant aluminium/stainless steel with plastic coating suitable for wall or floor mounting. Connection to internal terminals, input protection by circuit breaker MCB. Equipped as standard with professional electronic soft start (inrush current limitation ESB).

Dimensions W 410 x D 290 x H 170 mm



Type	Order-No.:	Input - voltage	Output - voltage	Nominal power	Weight	Input-voltage-switch over	Inrush current - limiting
■ RTR 25 230//230	0 6025 2323	230 V	230 V	2500 W	21 kg	no	yes
■ RTR 25 115//230	0 6025 1123	115 V	230 V	2500 W	21 kg	no	yes
■ RTR 25 230//115	0 6025 2311	230 V	115 V	2500 W	21 kg	no	yes
■ RTR 25 115-230//230	0 6025 1223	115/230 V	230 V	2500 W	21 kg	yes	yes
■ RTR 36 230//230	0 6036 2323	230 V	230 V	3600 W	27 kg	no	yes
■ RTR 36 115//230	0 6036 1123	115 V	230 V	3600 W	27 kg	no	yes
■ RTR 36 230//115	0 6036 2311	230 V	115 V	3600 W	27 kg	no	yes
■ RTR 36 115-230//230	0 6036 1223	115/230 V	230 V	3600 W	27 kg	yes	yes

Further models on request (Delivery time ca. 3 weeks)

► GALVANIC ISOLATOR

To avoid galvanic currents between the hull and the shore power supply, a galvanic isolator can be placed. Two antiparallel and series-connected diodes generate such a high blocking potential that galvanic currents can no longer flow.

The galvanic insulator is recommended especially for yachts with plastic hulls to protect the propulsion unit from galvanic corrosion caused by the shore connection.

GI 16 Order-No.: 7 0009 0016

Waterproof sealed electronics in anodized aluminium housing

Nominal current	16 A
Peak current	5000 A
Connection terminals	2 x M6
Dimensions (L x W x H)	200 x 120 x 60 mm
Weight	1 kg

► REVERSE POLARITY SWITCH



■ **PHB 16** Order-No.: 0 1100 1160

The AC reverse polarity control unit PHB 16 switches automatically the AC shore power to the correct onboard AC polarity. If the shore power wiring is reversed (life L and neutral N are exchanged) the PHB detects this status and switches life and neutral, so that the onboard polarity is always correct. Thereby the triggering of the RCB leakage protector at the pier will be avoided. Leakage current 1.4 mA. Cannot be used for AC systems with 2 phases without protective earth PE, otherwise always a fault indication is displayed.

Dimensions W 160 x H 200 x D 115 mm