Instructions for the Victron Energy TRANSFER SWITCH

Introduction

The TRANSFER SWITCH is designed to take over automatic switching between different power sources: between an generator and the shore, or between an inverter and a generator, or between an inverter and the shore. The TRANSFER SWITCH has two inputs and one output and automatically transfer the availble AC power to output. It can be used with any Victron Energy inverter, dependence of a capacity.

Operation

The TRANSFER SWITCH is situated between a generator or shore and inverter. If the voltage level or the frequency of the generator or the shore varies (input 1), then the TRANSFER SWITCH switches to the inverter (input 2). Once the generator or the shore supply has remained continuously stable, the TRANSFER SWITCH switches back (input 1) with delay of approximately 10 seconds. In this way, the appliances are protected against damage from voltage drops. During transfer between one of the power sources (input 1 or input 2), the appliances are not supplied with power for a short time. Because of this, computers, electronics devices etc. connected to this group might loose data. The TRANSFER SWITCH can be used with any type of inverter but the best results, however, are obtained with an inverter from Victron Enegy.

Installation

- WARNING! Be sure that all AC power sources are switched off or disconnected during installation.
- Install the TRANSFER SWITCH in a dry, well ventilated area. The front of the casing is attached using the four supplied screws. The TRANSFER SWITCH may be mounted on the wall, using the four holes in the rear of the casing.
- The input cables from the mains/generator and the inverter, and output cables to the appliances should be connected according to the the wiring diagram (see figure 1). Use the provide cable-glands to pass the cables through the casing. The correct wire cross section must be applied for a safe installation. Under sized cables can cause overheating of the cables.
- Tighten all connections well in order to limit transition resistance as far as possible. Loose connections can cause dangerous overheating of the teminals.
- Adjustement of the TRANSFER SWITCH ist not recommended. After correct instalation the TRANSFER SWITCH is ready for use. However specific circumstances may require adjustment of the switch on delay time of input 1. Use a small flat blade screw driver to adjust the delay time.
- The wiring to the AC-inputs and outputs must be protected by fuses or miniature circuits breaker which are suitable for the applied wire cross section. External earth leakage switches(RCD, RCCB) must also be integrated in the wiring

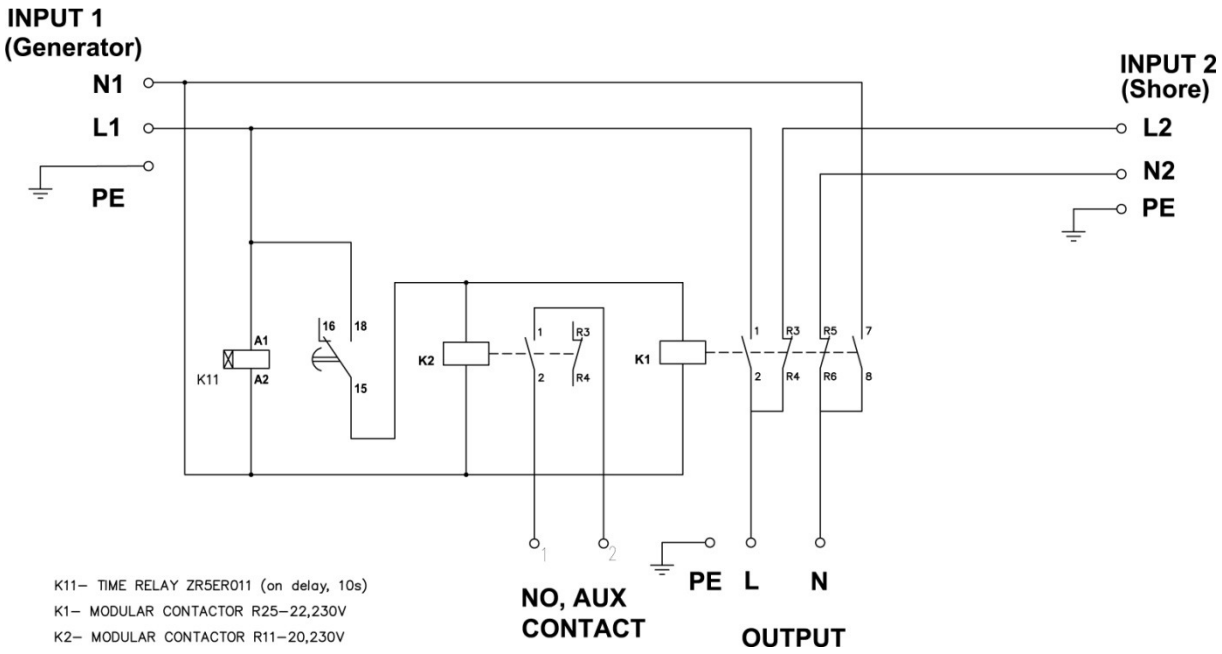
- All ground connections of the power sources and power consumers must be connected to the central ground connection of the ship
- Auxillary contact 1 and 2 of relay K2 (NO) must be connected with screw connector on the back of Digital Multi Control panel (DMC) when an external transfer switch is used with VE Multi Plus and DMC (picture on page 7). When the auxillary contact is open the current limit is controlled by the knob on the front of the DMC. When the auxillary contact is closed the DMC sends the present generator current to connected devices. The Auxillary contact is normally controlled by TRANSFER SWITCH.

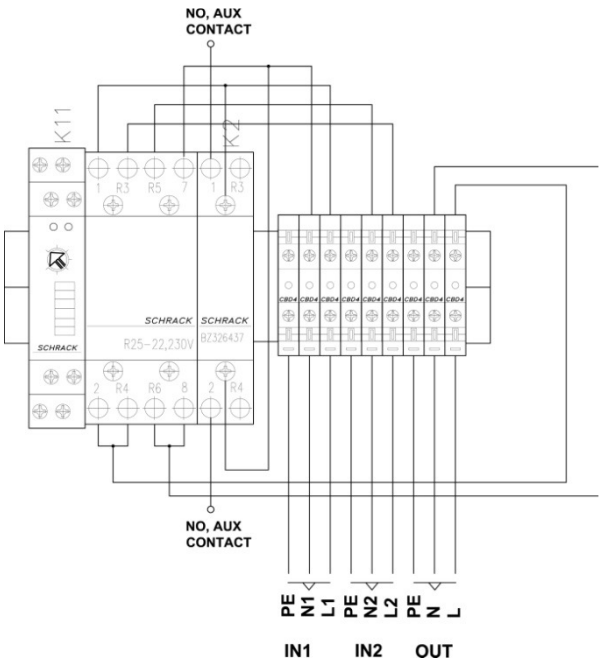
Specifications

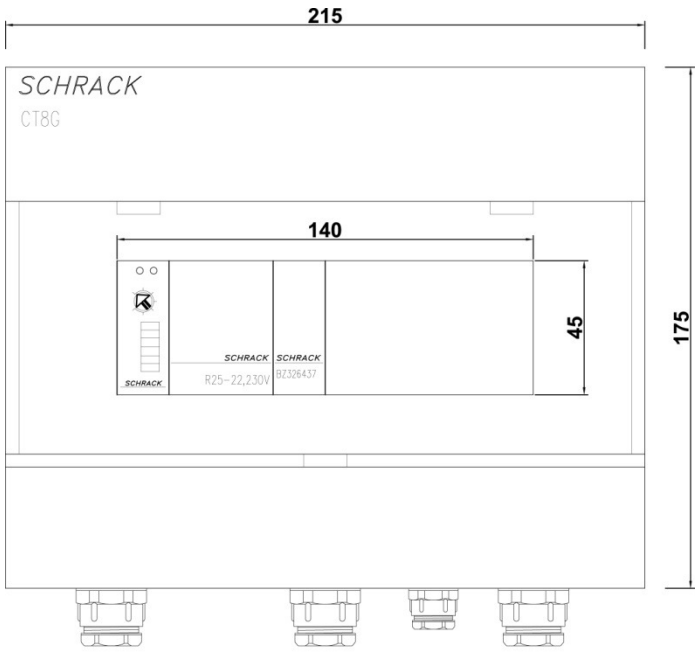
VE TRANSFER SWITCH	COS 0 - 5 kVA	COS 0 - 10 kVA	COS 0 – 25 kVA
Nominal voltage	**200 - 250 V AC, Single phase**		
Nominal frequency	**50 – 60 Hz**		
Input 1, Nom. current	**20 A**	**40 A**	**125 A**
Input 2, Nom. current	**20 A**	**40 A**	**125 A**
Output, Nom. current	**20 A**	**40 A**	**125 A**
Power consumption Input 1	**6 VA**	**6 VA**	**25 VA**
Power consumption Input 2	**0 VA**	**0 VA**	**0 VA**
Transfer time by closing contacts	**10 – 20 msec.**	**10 – 20 msec.**	**20 – 30 msec.**
Transfer time by opening contacts	**5 – 20 msec.**	**5 – 20 msec.**	**6 – 15 msec.**
Transfer time by closing contacts	**10 – 20 msec.**	**10 – 20 msec.**	**10 – 20 msec.**
Contacts delay Input 1	**Approximately 10 sec. (adjustable)**		
Auxiliary contact	**200 - 240 V AC; 20 A, cos φ =1**		
GENERAL			
Operating temperature	**-5°C to + 60°C**		
Humidity (non condensing)	**Max. 95 %**		
Miniatur circuit breaker (MCB)	**Not included – installation dependent**		
Earth leakage breakers (RCD)	**Not included – installation dependent**		
ENCLOSURE			
Protection category	**IP 54**		
Color	**RAL 7035**		
Dimension h x w x d (mm)	**175 x 215 x 120**	**175 x 215 x120**	**220 x 300 x 180**
Weight (kg)			

Electrical and installation diagrams, outline drawings

TRANSFER SWITCH, COS 0 - 5 kVA



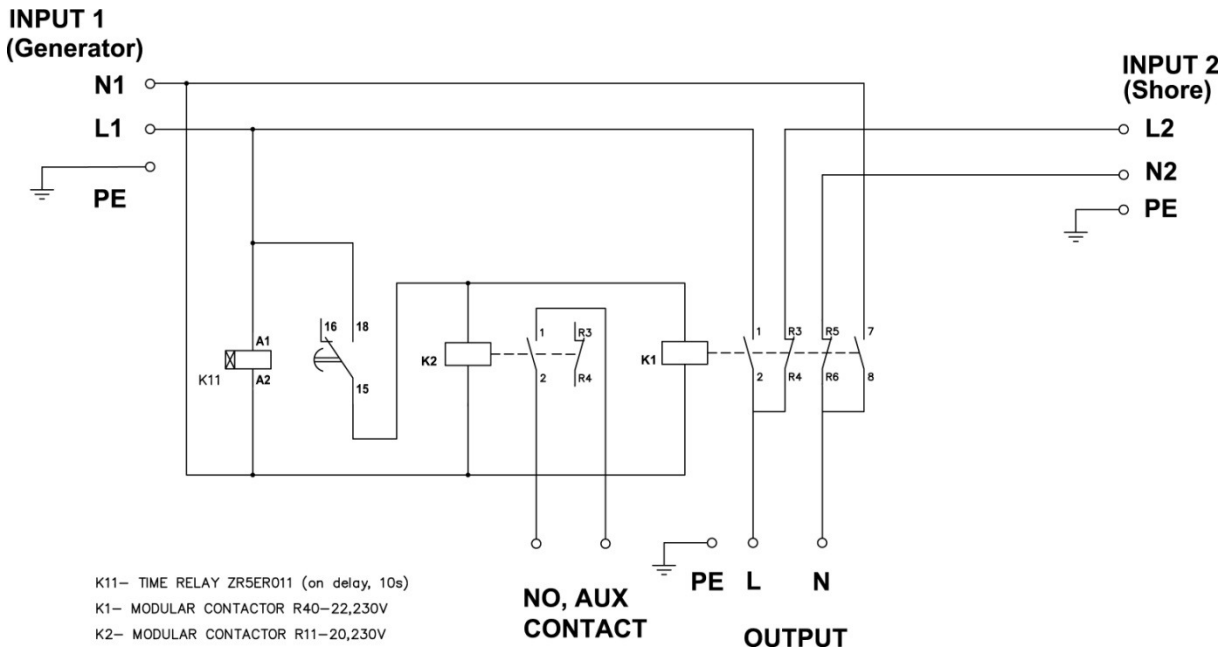


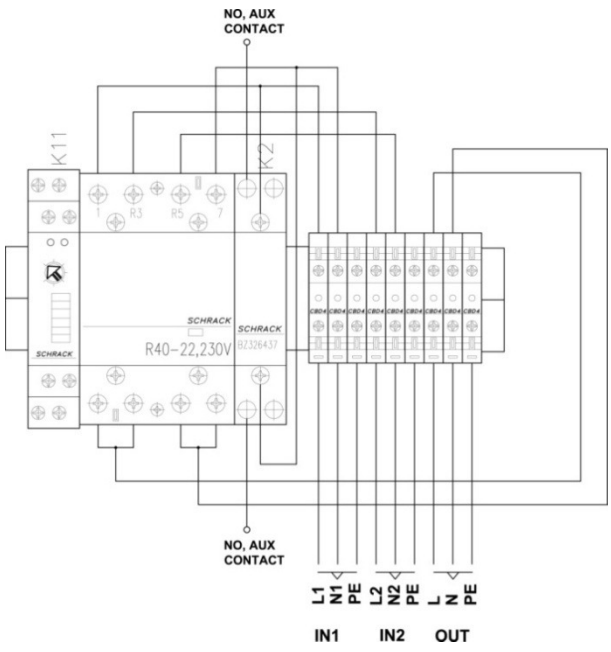


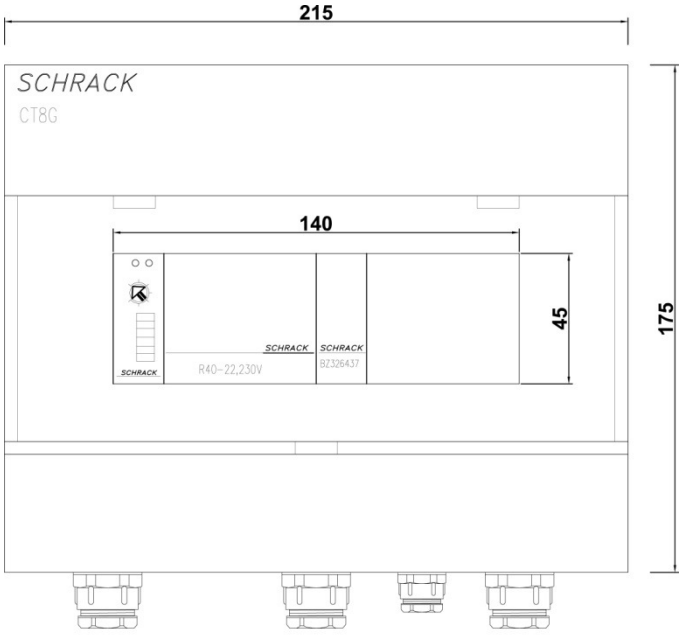
All dimensions are in mm!

Electrical and installation diagrams, outline drawings

TRANSFER SWITCH, COS 0 - 10 kVA



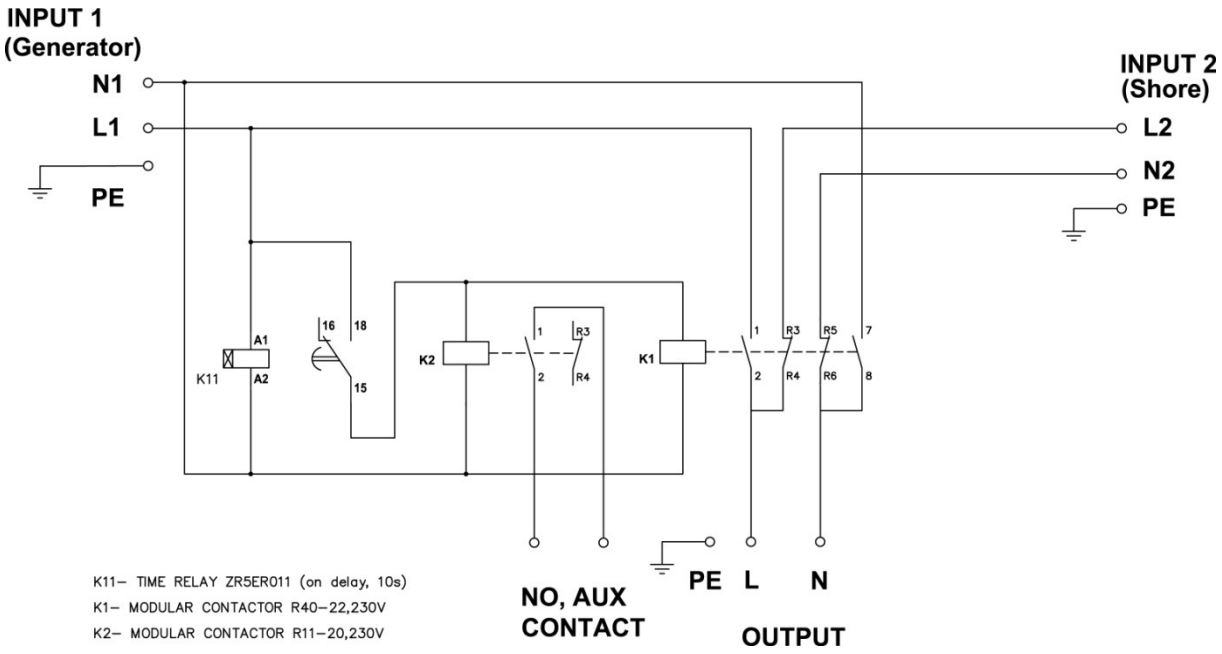


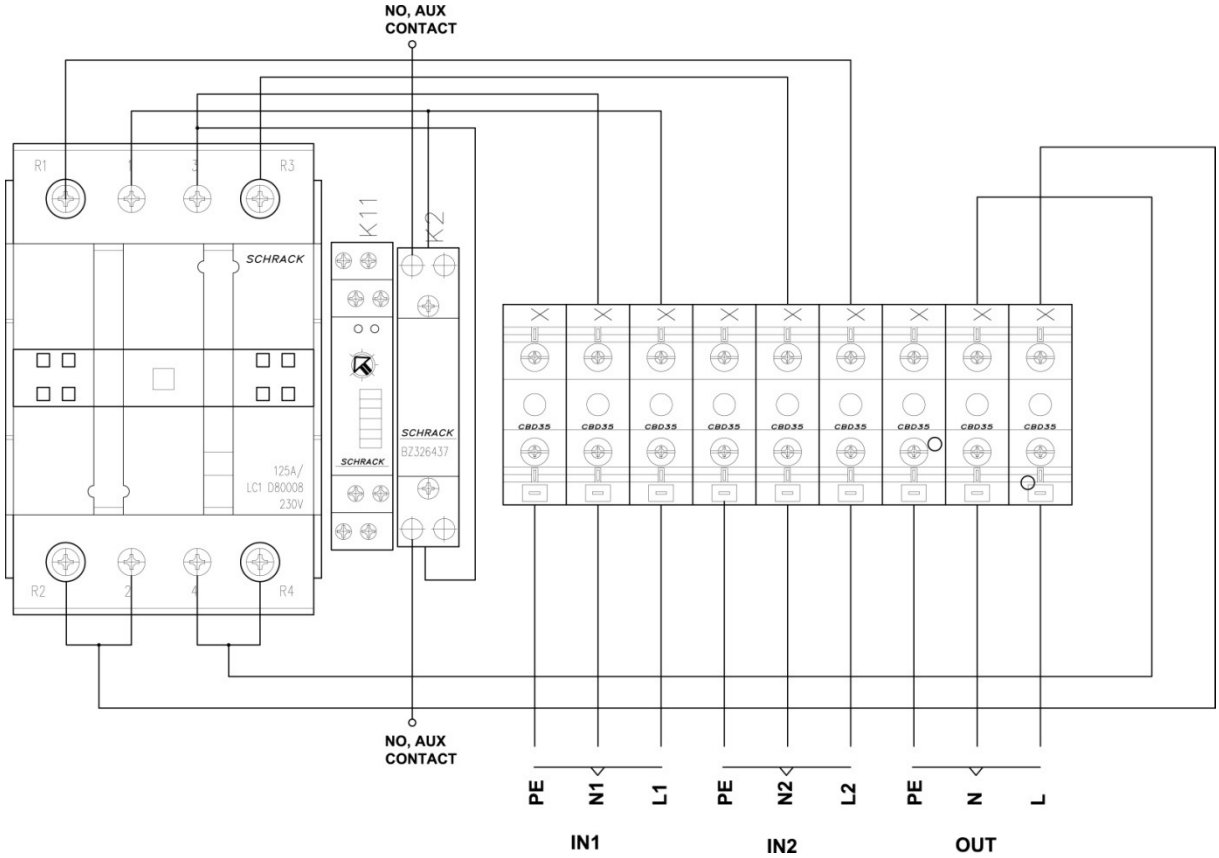


All dimensions are in mm!

Electrical and installation diagrams

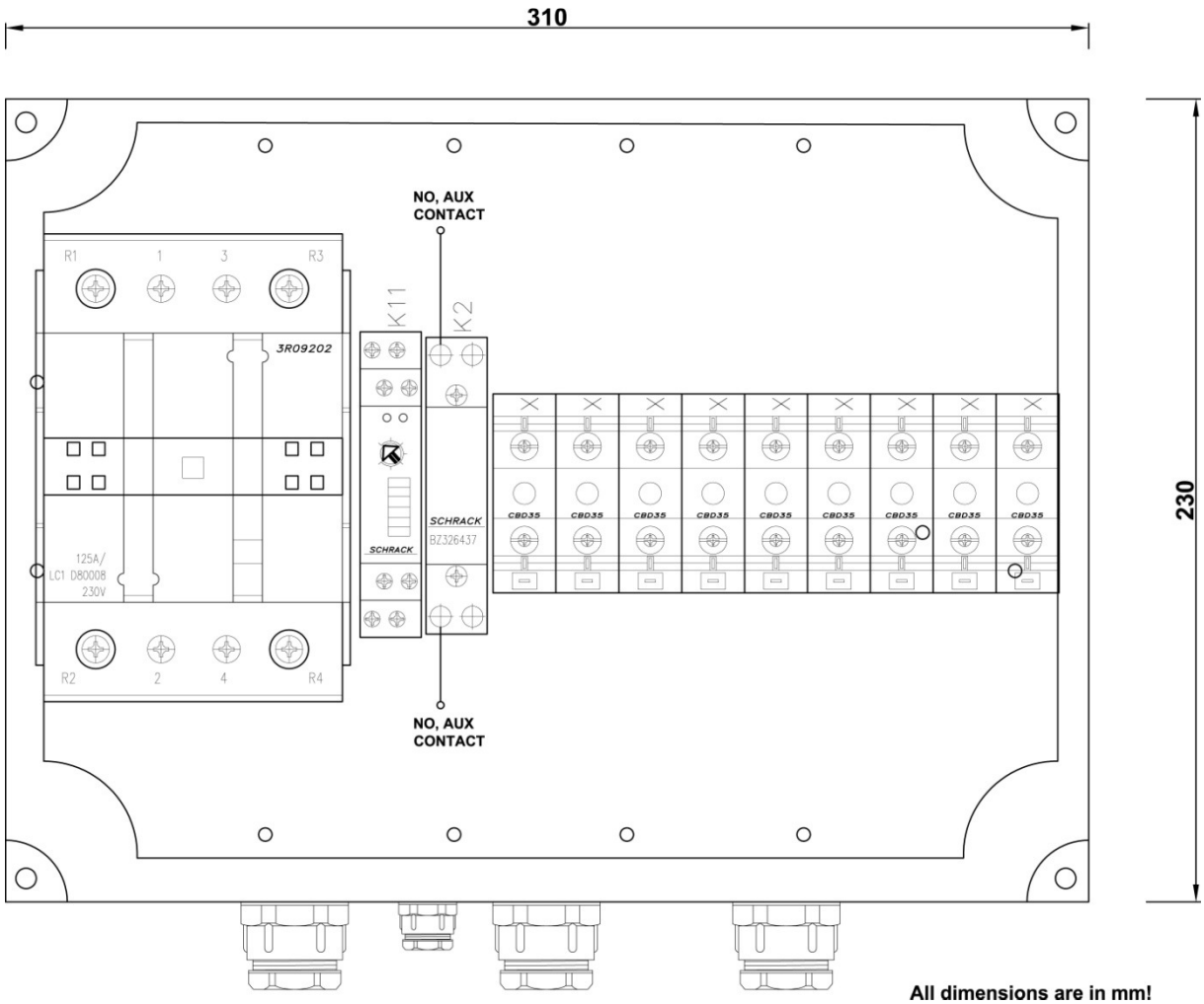
TRANSFER SWITCH, COS 0 - 25 kVA





Outline drawings

TRANSFER SWITCH, COS 0 - 25 kVA



TRANSFER SWITCH wiring with Digital Multi Control panel (DMC)