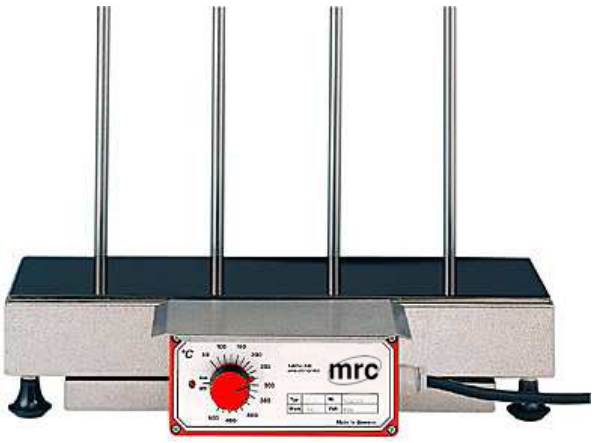
Laboratory Equipment Manufacturer
www.mrclab.com

Operating Instructions

Hot Plates CERA-4314, CERA-2828, CERA-4328, CERA-4343, CERA-5843.



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MRC.VER.01-5.13

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Technical Data	CERA-4314	CERA-2828	CERA-4328	CERA-4343	CERA-5843
Plate size (mm)	430x140	280 x 280	280 x 430	430 x 430	580 x 430
Range of temp.	50...500°C				
Volts	230 Volt, 50-60 Hz		3x400V, N+PE		
Power	1500 W	2000 W	3000 W	4400 W	5700 W
Wieght	4.8 kg	5 kg	6.4 kg	8.8 kg	11 kg

Safety information

- Read operating instruction before use.

- Always make sure the voltage specified on the type plate corresponds to your local mains voltage.

- use the device only with the protective grounding conductor connected.

- Never use the device in explosion-prone environments.

- Do not expose the device to high air humidity.

- Never insert objects through slots and vent holes.

- Have repairs carried out only by qualified personnel.

Accessories:

ST-12 - support rod 12mmÏ , 650mm
AM-25 - interchangeable top mulde for round bottom flask 250ml.

Installation of models A and SR

All four legs of the appliances are height-adjustable by rotation to 8 mm and enable a stable horizontal installation.

Due to the extremely high temperature of 500°C the radiating temperature is accordingly intense. Therefore never install the hot plates near combustible walls made of timber, plexiglass, plastic etc. Even if only low and medium-high temperatures are employed. It must be assumed that the highest temperature can be set, and that the unit can be left burning overnight due to forgetfulness and not switching-off. A possible failure of the automatic control must also be taken into consideration.

The distance from walls sensitive to heat or combustible must amount to a minimum of 15 cm. If this is not possible due to restrictions of space, a corresponding insulation is necessary. For example, a high-grade steel sheet between the heating plate and the wall arranged with a clearance to each other, absorbs approx. 50 to 90% of the laterally radiated heat. Such a vertically positioned sheet would also simultaneously serve as a splashing protection on the occasion of a possible container fracture.

The manufacturer and retailer assume no liability of any kind for possibly arising damage to property.

Do the following test yourself. Set the control to the maximum temperature and heat for at least 1 hour. Then convince yourself of the great ambient temperature. This intense heating also has the further advantage of rapidly freing the unit from the arising smell and fume formation, typical for new appliances.

Electrical connection

The 230 Volt unit is ready for connection. Only earthed connectors with protective contact are permissible. The 400 Volt unit has a 5-pole cable, whereby wire colours are yellow/green basically the protective conductor, and blue basically the wire for the neutral conductor. The neutral conductor is needed for the control voltage of the electronic (230 V). The remaining three cores can be connected arbitrarily to the 400 V network, as in contrast to, e.g. motors, no determined polarity is necessary.

Switching-on

The hot plates have a single button operation. The unit is switched on and temperature is simultaneously set on the temperature scale by rotating the knob clockwise. The red control lamp is illuminated. Switching-off occurs by turning in an anti-clockwise direction until the zero marking is reached. Heating and electronic are then switched-off on all poles.

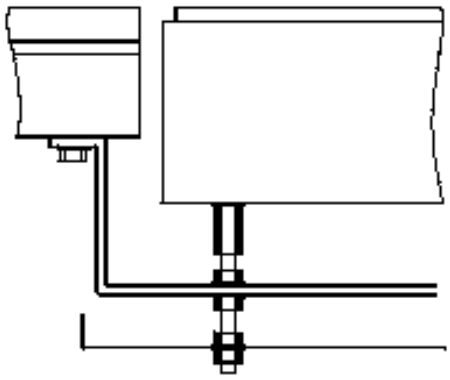
Compared to conventional hot plates from grey cast-iron, those from MRC are lightweight. For example, a heating surface of 1 dm square weights approx. 95, grey cast-iron with equivalent surface are approx. 900-1000 grammes. The heating-up periods are correspondingly short. With MRC less mass needs to be heated-up. In addition, MRC admits ultra-violet waves. A further advantage is the expansion coefficient, laying at approx. zero. Plate distortion through the action of heat rarely occurs. The extremely good acid and temperature resistances should also be noted. Sudden thermal shocks or cooling-off are optimally handled by MRC.

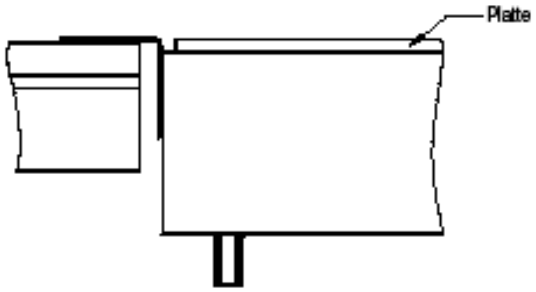
Maintenance

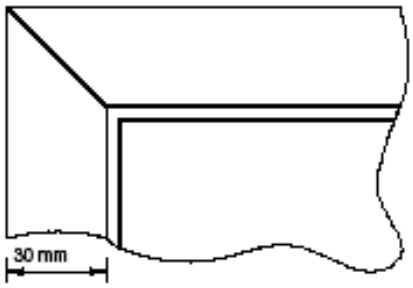
If value is placed on the continuous good appearance of MRC plates, attention is absolutely necessary. Burnt-on crustaction can be ultimately removed by employing a razor scraper. Contaminated MRC surfaces should furthermore be cleaned with a rinsing agent and water. For tenacious stains and discolorations as well as for the high-grade steel housing use special high-grade steel cleaning agents.
When cleaning the surface avoid using agents with sharp scratching effect, as e.g. abrasive powders. It is not possible to remove stains arisen through the etching on by concentrated acids or lyes. However, the appliance remains completely functional.

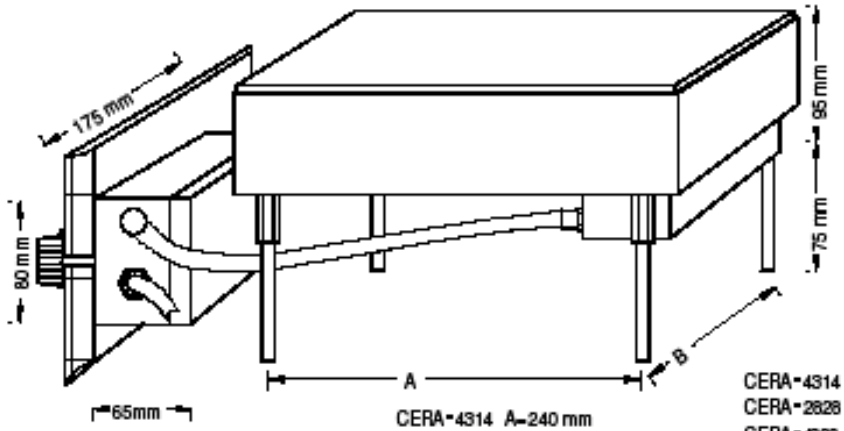
MRC plate fracture

CERA is highly resistant to fracture and withstands all thermic loads.
The plates can only fracture through the mechanical use of force, e.g. by vessels or other hard objects falling on to a plate. In this rare case of a plate fracture , the unit is to be removed from operation and the plate must be replaced, advantageously at the manufactories.





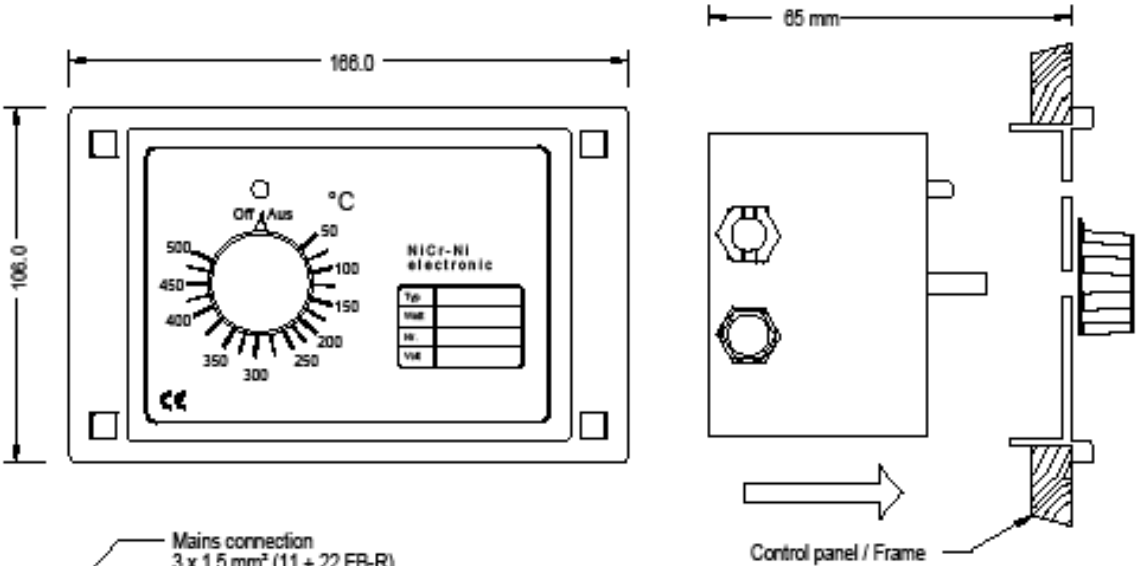


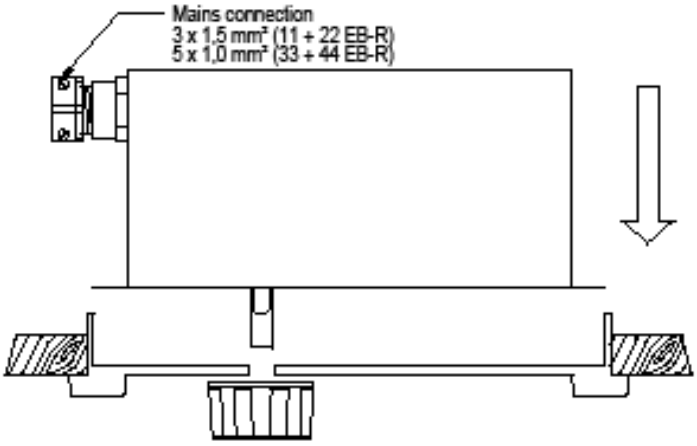


CERA-4314	280x280	290x290
CERA-2828	430x280	440x290
CERA-4328	430x430	440x440
CERA-5843	580x430	590x440

CERA-4314 A=240 mm
CERA-2828 A=390 mm
CERA-4328 A=390 mm
CERA-5843 A=390 mm

CERA-4314 B=240 mm
CERA-2828 B=240 mm
CERA-4328 B=390 mm
CERA-5843 B=540 mm

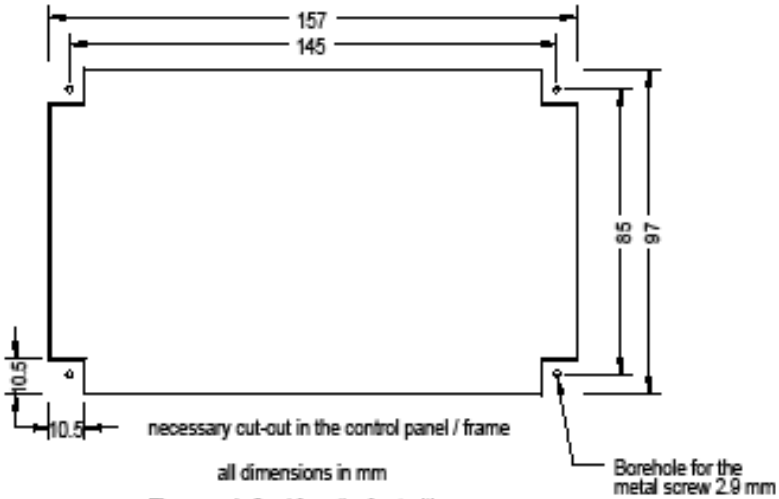




Mains cable and metal hose connection to hotplate not shown in this diagram.

Front cover:
Material - PS
Colour - RAL 7035
Surface - Eroded structure
Front label - Polyester (silver)

Housing:
Galvanised sheet metal 0,8 mm

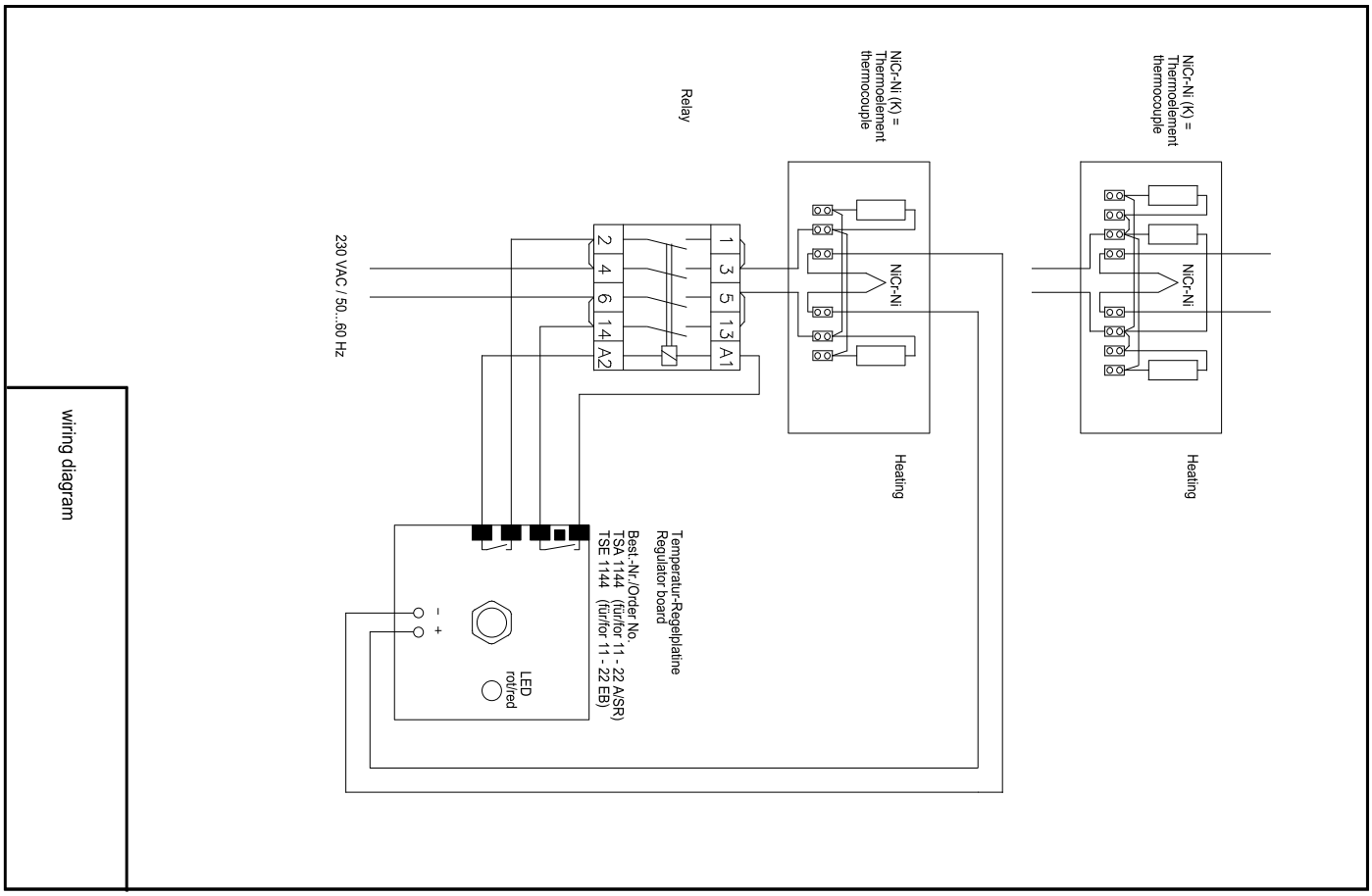


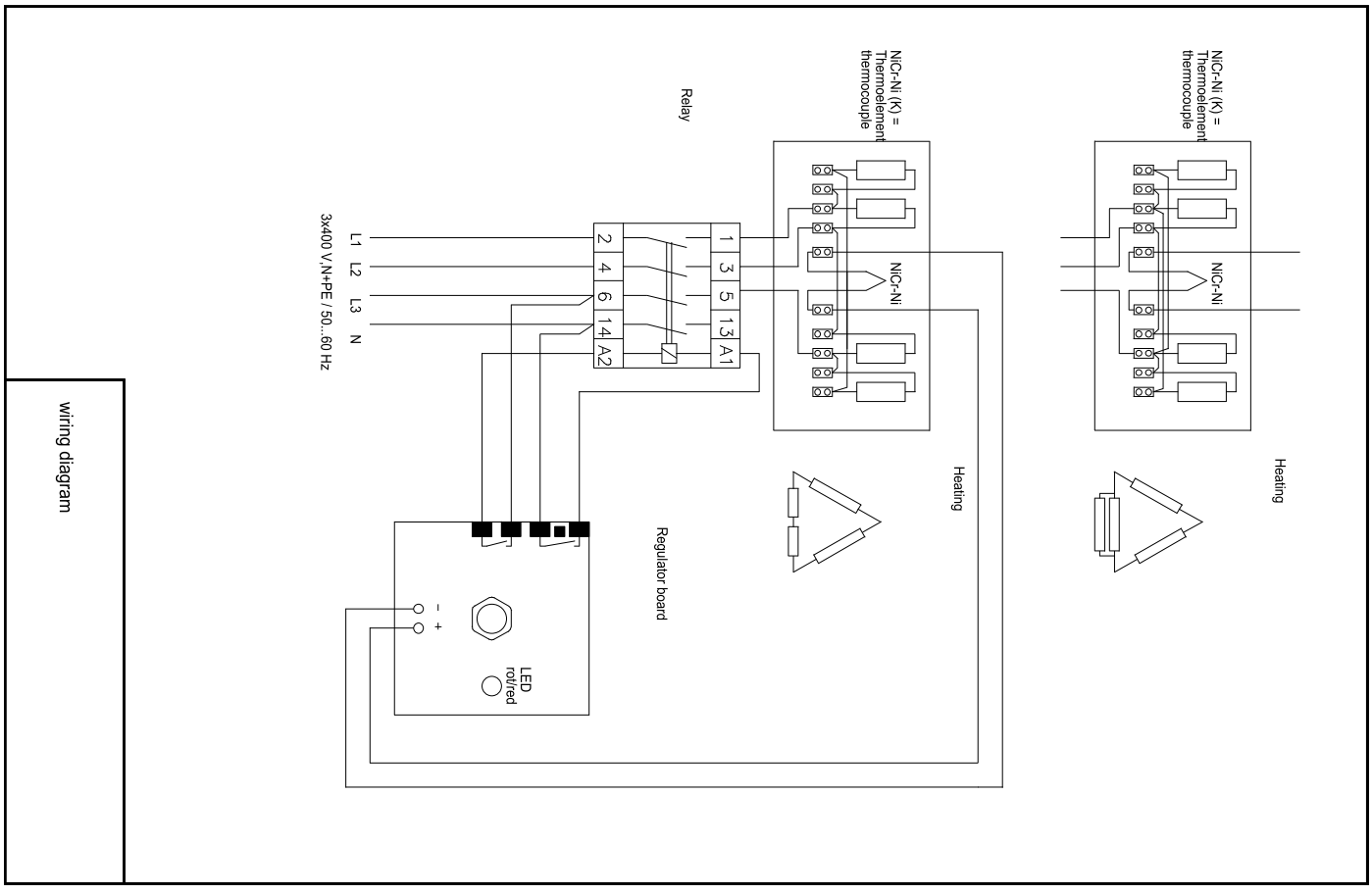
all dimensions in mm

The cover is fixed from the front with metal screws 2.9 x 9.5 mm; the screw heads are then masked with screw covers.

Build-in switch housing for Glass ceramic hotplates

CERA-4314 CERA-4328
CERA-2828 CERA-5843


wiring diagram
NiCr-Ni (K) =
Thermoelement
thermocouple
NiCr-Ni
Heating
NiCr-Ni (K) =
Thermoelement
thermocouple
NiCr-Ni
Heating
Relay
1 3 5 13 A1
2 4 6 14 A2
230 VAC / 50...60 Hz
Temperatur-Regelplatine
Regulator board
Best.-Nr./Order No.
TSA 1144 (für/for 11 - 22 A/SR)
TSE 1144 (für/for 11 - 22 EB)
LED
rot/red
- +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1 3 5 13 A1
2 4 6 14 A2
L1 L2 L3 N
3x400 V,N+PE / 50...60 Hz
Regulator board
LED
rot/red
- +