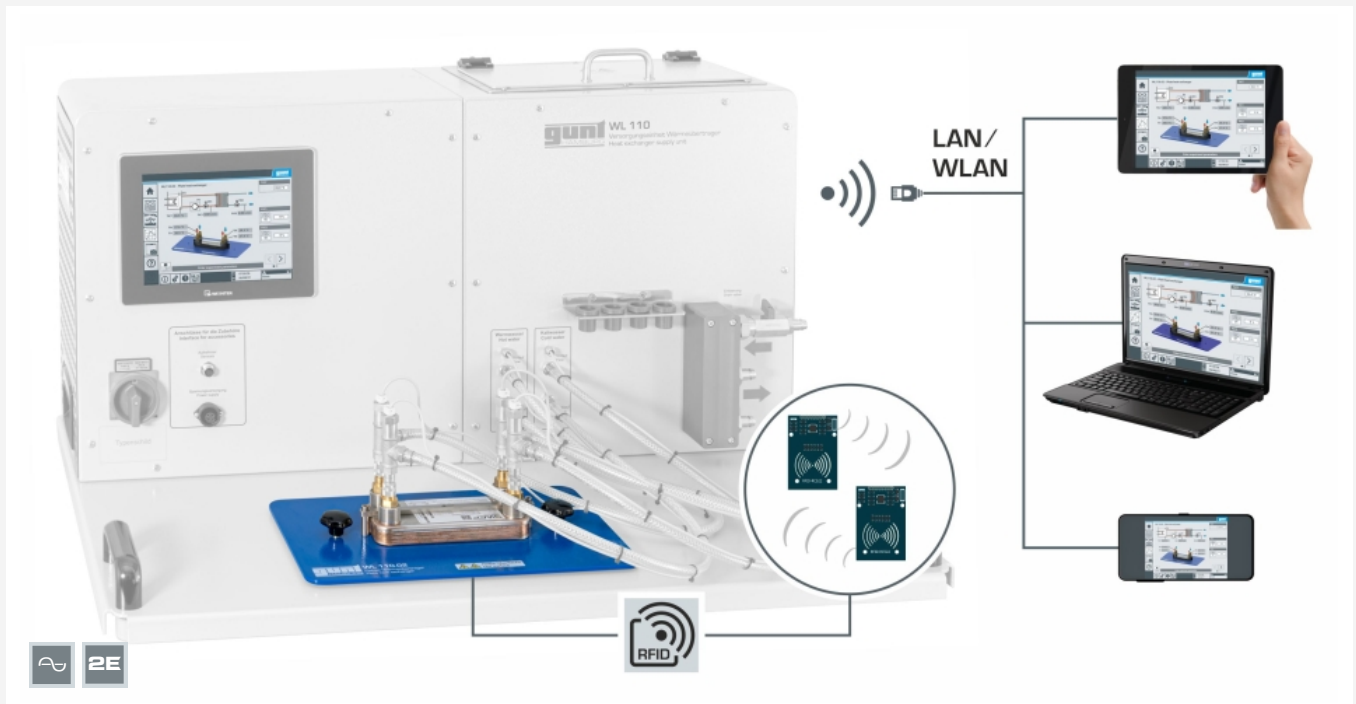


# WL 110.02

## Plate heat exchanger



Complete experimental set-up with supply unit WL 110, screen mirroring is possible on up to 10 end devices

### Description

- parallel flow and counterflow operation possible
- intuitive experiment execution via touch screen
- integrated router for operation and control via an end device and for screen mirroring on up to 10 end devices: PC, tablet, smartphone
- automatic identification of accessories via RFID technology

The key feature of plate heat exchangers is their compact design, in which optimum use is made of all of the material for heat transfer. The pressed in profile on the plates creates narrow flow channels, in which significant turbulence occurs. The turbulent flow allows effective heat transfer even with low flow rates and also has a self-cleaning effect. Plate heat exchangers are used in the food industry, offshore technology, refrigeration and domestic engineering.

The plate heat exchanger WL 110.02 is made up of profiled plates with water flowing through the spaces between them. These are one "cold" and one "hot" flow channel, in an alternating arrangement. Part of the thermal energy of the hot water is transferred to the cold water. The supply hose can be re-connected using quick-release couplings,

allowing the flow direction to be reversed. This allows parallel flow or counterflow operation.

During experiments, temperature curves are plotted and displayed graphically. The mean heat transfer coefficient is then calculated as a characteristic variable.

The accessory WL 110.02 is easily and safely positioned on the worktop of the WL 110 supply unit. Via RFID technology the accessories are automatically identified, the appropriate PLC software is loaded and an automatic system configuration is performed. The intuitive user interface guides through the experiments. For tracking and evaluation of the experiments, up to 10 external workstations can be used simultaneously using the local network via LAN connection.

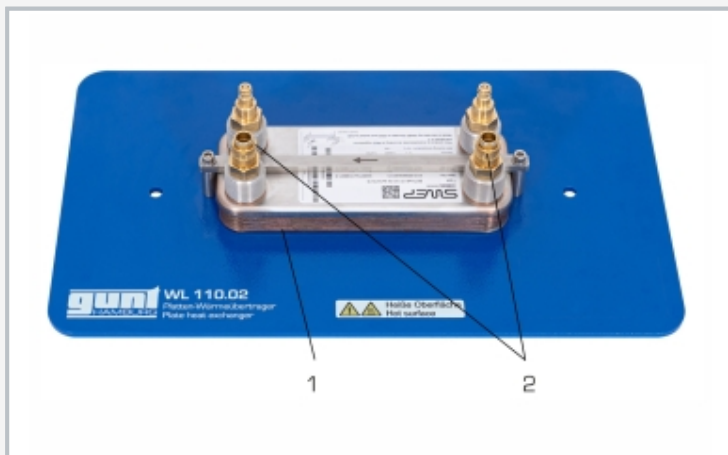
Temperature sensors for measuring the inlet and outlet temperatures are located at the supply connections of the WL 110. The supply of hot and cold water, the flow setting and the measurement of inlet and outlet temperatures are carried out via the supply unit.

### Learning objectives/experiments

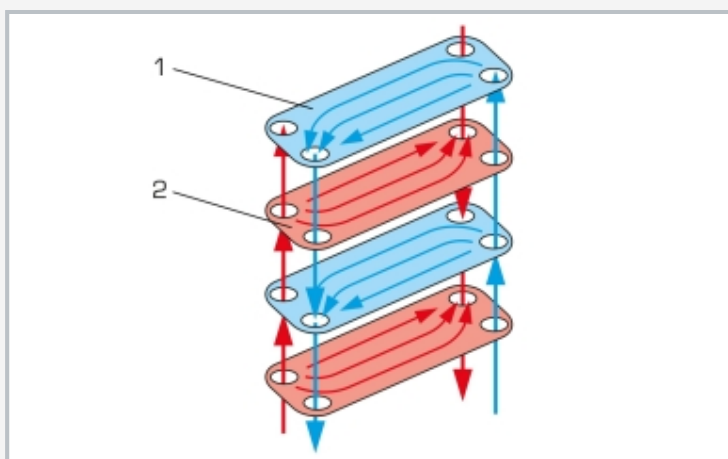
- in conjunction with WL 110 supply unit
  - ▶ function and behaviour during operation of a plate heat exchanger
  - ▶ plotting temperature curves:
    - in parallel flow operation
    - in counterflow operation
  - ▶ calculation of mean heat transfer coefficient
  - ▶ comparison with other heat exchanger types
- PLC software specifically adapted to the accessories used
  - ▶ learning module with theoretical fundamentals
  - ▶ device description
  - ▶ guided experiment preparation
  - ▶ execution of the experiment
  - ▶ graphical representation of the experimental section with measured values for temperature
  - ▶ data transfer via WLAN/LAN for versatile external use of measured values and screenshots e.g. evaluation in Excel

# WL 110.02

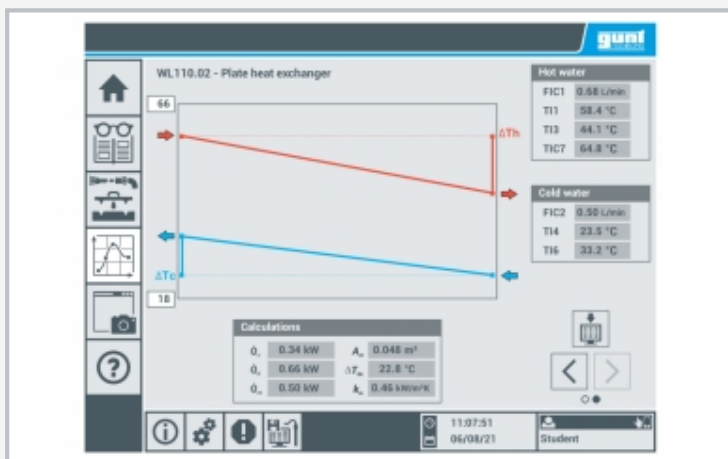
## Plate heat exchanger



1 plates, 2 water connections



1 plate with cold water, 2 plate with hot water; red: hot water, blue: cold water



User interface on the touch screen: temperature curve in counterflow operation

### Specification

- [1] plate heat exchanger for connection to WL 110
- [2] parallel flow and counterflow operation possible
- [3] six soldered plates
- [4] recording of temperature using WL 110
- [5] automatic identification of accessories via RFID technology and use of the corresponding PLC software
- [6] experiment execution and display of the measured values via touch screen (HMI)
- [7] screen-mirroring: access to ongoing experiments and their results from up to 10 end devices simultaneously via the local network
- [8] hot and cold water supply from WL 110

### Technical data

6 plates, stainless steel  
Heat transfer surface: 480cm<sup>2</sup>

LxWxH: 400x230x85mm  
Weight: approx. 3kg

### Scope of delivery

- 1 plate heat exchanger

# WL 110.02

## Plate heat exchanger

Required accessories

060.11000      WL 110      Heat exchanger supply unit