



SPLIT AIR- CONDITIONING TRAINER

Interactive Training System with Fault Simulation

RCC32 SPLIT AIR-CONDITIONING TRAINER WITH FAULT SIMULATOR



This practice-oriented LN training system enables students to easily understand the ins and outs of split air-conditioning systems like the ones used in many different areas. Thanks to interactive analysis features, it is possible to read out and analyse measured values for temperature and pressure. The trainee can also learn to identify the properties of a variety of different operating modes and to calculate their efficiency. The trainer also simulates malfunctions and faults.

Learning fields

Mechatronics technician for refrigeration tech. : 3, 5, 17

Systems mechanic for SHK : 3, 13, 14, 15

Equipment set RCC32

Art. no. CO3207-3B

Training contents

- Analysing operating modes
- How to use measuring equipment for fault analysis
- Calculating COP/EER values
- Sensor characteristic
- Measuring voltage, current and resistance
- Systematic trouble-shooting
- Detecting what causes malfunctions

Your benefits

- Original, commercially available components
- Industrial components for split air-conditioning technology
- Condensate pump with trap vessel
- Mobile trolley

INTERACTIVE FAULT SIMULATOR



In conjunction with the interactive training software, the fault simulator allows malfunctions that frequently occur on the job to be reproduced.

A flowchart depicts the refrigeration cycle. There are also measurement sockets situated at relevant locations on the front panel which are used in fault-finding procedures.

Your benefits

- Simulation of malfunctions from real life, including:
 - high-pressure faults
 - lack of refrigerants
 - defective sensors
 - and much more
- Safe trouble-shooting
 - using measurement sockets without any danger to the trainee
 - contact-safe voltages and currents
 - temperature and pressure display

MULTIMEDIA TRAINING SOFTWARE

Störung 1

Durch Öffnen dieser Seite ist ein Fehler aufgeschaltet worden. Messen Sie gegebenenfalls, wie im vorangegangenen Abschnitt, die Werte der Klimaanlage und tragen Sie sie in die folgende Tabelle ein.

	Druck Absaugleitung [gje bar $\times 10^{-1} \text{ Pa}$]	Druck Gasleitung [gje bar $\times 10^{-1} \text{ Pa}$]	Temperatur Gasleitung [g] $^{\circ}\text{C}$	Temperatur Hochtemperatur [g] $^{\circ}\text{C}$	Temperatur Innentemperatur [g] $^{\circ}\text{C}$	Temperatur Rückleitung [g] $^{\circ}\text{C}$
1	27,5	4,5	18,0			
2	27,5	4,5	18,8			
3	22,5	4,5	18,0			
4	22,5	3,5	18,2			
5	22,5	3,5	18,6			

Vergleichen Sie die soeben ermittelten Messwerte mit den Messwerten während des Normalbetriebes der Klimaanlage und überprüfen Sie sie auf Plausibilität.

Vergleichen Sie Ihren gemessenen Füllwiderstand mit der P1100 Füllwertkurve.

Schließen Sie, nachdem Sie die Werte verglichen haben, auf die Ursache der Störung. Wenn Sie glauben den Fehler gefunden zu haben, beantworten Sie die folgenden Fragen. Nachdem Sie alle Fragen erfolgreich beantwortet haben, wird der Fehler zurückgesetzt!

Vergleichen Sie Ihren gemessenen Füllwiderstand mit der P1100 Füllwertkurve und bewerten Sie das Ergebnis.

Der gemessene Füllwiderstand ist

Wie ist die in der Gasleitung gemessene Druck zu bewerten?

Der gemessene Druck in der Gasleitung ist

Wie ist die am Ausgang des Innengerätes gemessene Temperatur zu bewerten?

Der gemessene Druck in der Gasleitung ist

Wie ist die an der Kältemittelleitung gemessene Temperatur zu bewerten?

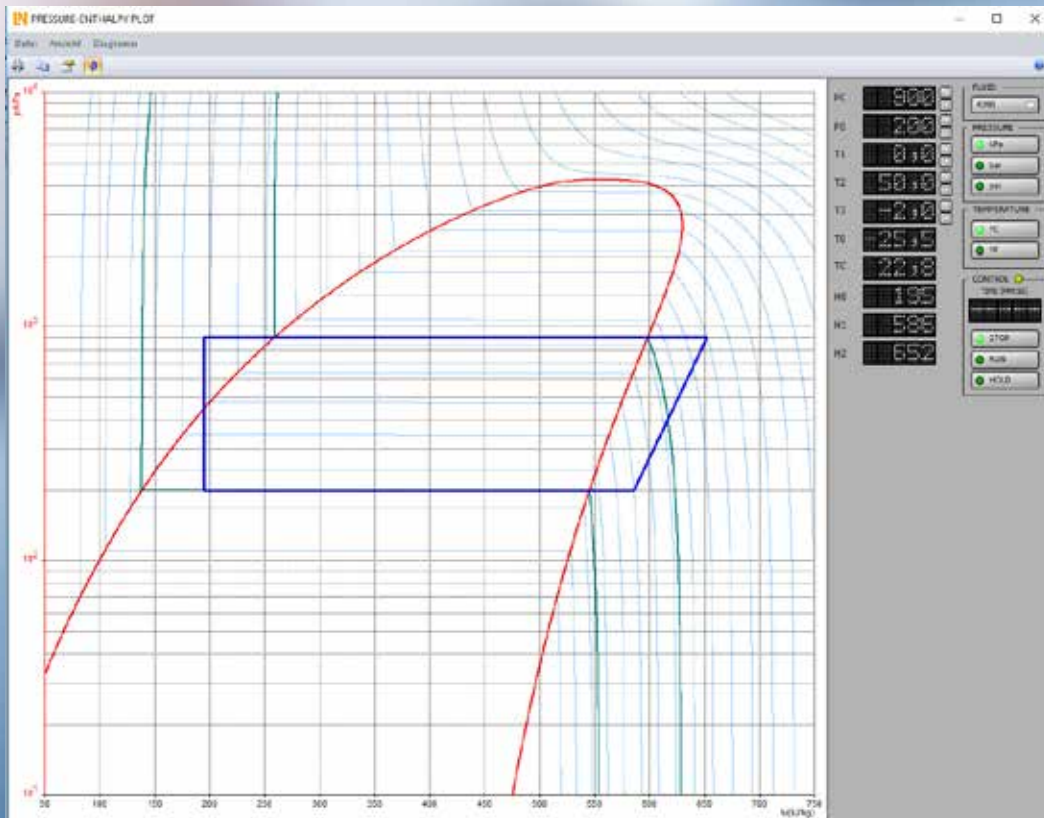
Die gemessene Temperatur in der Kältemittelleitung ist

The interactive training software uses experiment instructions to guide the student through the exercises, accompanied by practical tips theoretical knowledge. The refrigeration technology diagnostics tool assists in the analysis of the refrigeration technology system.

Your benefits

- Activate faults
- Explore detailed experiment instructions
- Gain basic theoretical knowledge
- Compare different operating modes
- Tables and curves show how temperature and pressure change over time

REFRIGERATION AND AIR-CONDITIONING TECHNOLOGY DIAGNOSTICS TOOL



The tool supplies all pressure and temperature values directly from the system as well as from the environment. A pressure-enthalpy diagram (log p/h diagram) permits them to be represented "live".

In REC mode, the instrument supplies real measured data to the system. The pressure and temperature can be entered manually in simulation mode. It is also possible to copy intermediate measurement values directly into the course.

Your benefits

- Live representation of the refrigeration cycle in the log p/h diagram
- Output of all pressure, temperature and enthalpy values relevant for consulting
- Switch between different refrigerants
- Switch between different pressure and temperature units
- Timer and holding function
- Copy function to insert data into course

SMART HOME INTEGRATION



A KNX or Modbus interface connects the split air-conditioning trainer to the Lucas-Nülle Smart Home training system.

The Smart Home controller devices can be controlled either via the KNX bus or via the Modbus and their data read out. Using the corresponding user interface, the system can be set up and monitored using a tablet, smartphone or PC.

Your benefits

- Configuration and parameter setting of a smart home network with a Z-Wave central controller (which can be extended with ZigBee, KNX and other products)
- Operation of smart home systems as needed
- Scenario control
- Security monitoring when you are not at home
- Analysis and visual display via PC, tablet computer or smartphone



Academy

YOUR PERFECT TRAINING CENTRE

WITH THE EXPERT PROGRAM FROM THE LN ACADEMY YOU GET A COMPLETE TRAINING CONCEPT FOR YOUR TRAINING CENTRE, WITH TRAINING SYSTEMS, TRAIN THE TRAINER PROGRAM AND TRAINING MODULES BASED ON THE GERMAN CURRICULUM.

JUST ASK FOR THE BROCHURE!



*“Learning is doing.
Everything else is just information.”*
Albert Einstein





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