CoolTool Diagnostics. A combined Hard and Software solution to optimize, to analyse, for performance measurement and for troubleshooting to any kind of refrigerating circuits and heatpump-systems.

Modular system for recording, calculating, analysis and diagnosis of A/C systems, refrigerating circuits, heatpump systems with up to 48 channels.

-Short- and longterm recording of all relevant working conditions with temperature and pressure sensors

-Simultaneously capturing and evaluation of up to 3 compressors, evaporators or condensors.

-Immediately calculation and evaluation of the most important KPI for all popular liquids.

-Performance calculation on electric data, component size and volume stream

-Quick and exact COP determination

-Access to the CoolTool datadase with more than 20,000 components

-Adjustable measuring intervals from 1 second till several minutes

-Realtime presentation of all measured and calculated values as a table, Chart or H, Log p-diagramme

-Representation of the stored measuring values as a Stream in fast motion

-Representation of the stored measuring values as a Stream in the H, Log p - diagramme

-Number of the measuring points almost unlimited

-Datatransfer via COM - port and/or storage on internal microSD Card

-Pressure loss measurements and calculations of conduits

-Pressure loss measurements and calculations of heat exchangers

-Operation by touchscreen with/without notebook

-Runs up to 8-hours by accumulator.

CoolTool
DIAGNOSTICS

CoolTool Diagnostics.
A combined hard and software solution to optimize, analyse, performance measurement and troubleshooting for any kind of refrigerating circuits heatpump-systems and energy monitoring
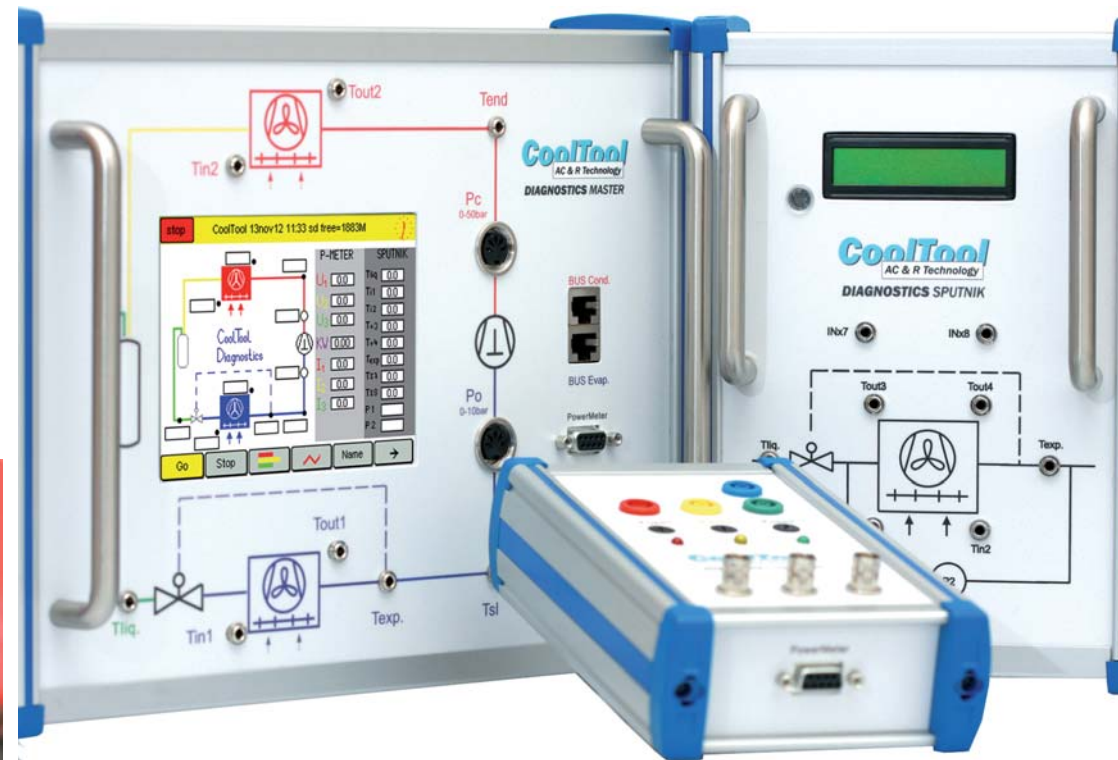
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CoolTool
DIAGNOSTICS

Combined Hard- and Software Solution

- Diagnosis
- Performance Measuring
- Troubleshooting
- Optimisation
- Energy Monitoring

MASTERBOX

The Masterbox is the heart of the DiaGnostics system. It is collecting all the data from the other components like Sputnik and the Powermeter together and path it through via USB - port to the connected Notebook. All measured data can also be stored on the internal micro-SD card in the case if no Notebook is connected. All necessary operation steps to start a measurement can be carried out by the touchscreen-display. The connecting scheme on the Masterbox points out exactly, which sensor has to be placed in which point of the arrangement. Up to eight PT1000, two pressure sensors and one Powermeter to measure three phases and currencies in the compressor can be connected directly to the Masterbox

SPUTNIK

The Sputnik delivers measuring data from appliances, i. e. heat-exchangers, condensors or evaporators which are located in the distance There can be connected six PT1000 temp.-sensors, two pressure sensors and one Powermeter to the Sputnik. The two pressure sensors of the Sputnik allows the measurement of the pressure loss from conduits between Masterbox and Sputnik, or the pressure loss of an evaporator or condensor. two other chanals can be used optionally, e.g. as an input for a dynamic volumestream measurement. In total two Sputniks can be connected to the Masterbox, i. e. four condensors and one evaporator can be measured at once.

POWERMETER

The Powermeter gathers the electrical data from compressor, fans and other components with electromagnetic drive. The electrical data are the base to assign the expected performance of the compressor. In use with the Sputnik it is possible to determin the performance and to check the proper function of the fans and shuttle valves To measure the three phases currency clamps up 1000 Ampere can connected, and the security voltage clamps allows an easy access to the measuring point.
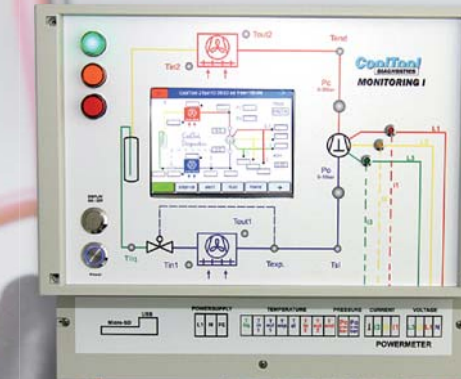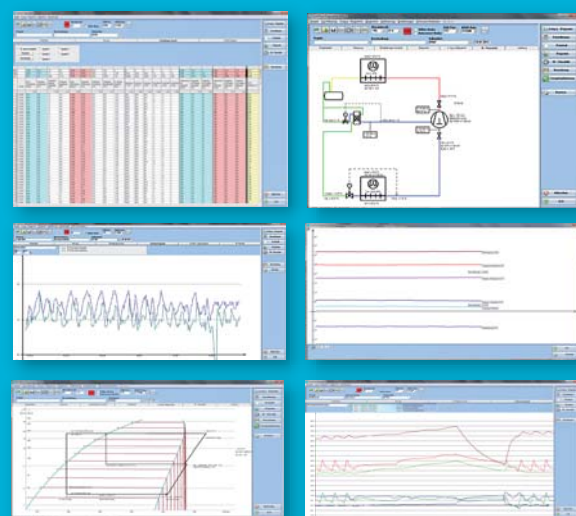
STANDARD-Package

BASIC-Package

POWERMETER   MASTERBOX   SPUTNIK

DIAGNOSTICS SOFTWAREMODULE

MONITORING

BASIC- Package

The Masterbox and the Powermeter are predestinated to gather data from simple basic systems like fridge or cooling cell up to any other large and complex refrigeration circuit. Eight temperature sensors measures all relevant values of the cooling process in user defined intervals. In addition with the collected data of the pressure sensors and the electric ones of the Powermeter, a realtime basic polytrope efficiency, COP, cooling- or heating performance can be calculated directly. The accurate output of the calculated values like overheating and undercooling of the expansion valve delivers significant data about the function of the arrangement.

STANDARD- Package

Beside the Masterbox and the Powermeter, a Sputnik fullfills the package. It is another measuring device for appliances placed in a distance up to 100 meters. This could be a heat-exchanger, a condensor as well as an evaporator. With the further more pressure sensors, the pressure loss of the conduits between the compressor and the heat-exchanger can be determined. Furthermore, the internal pressure loss of the heat-exchanger can be measured. Even here, each relevant data of the cooling process like polytrope efficiency, COP and the cooling- or heating performance will be evaluated directly.

MONITORING

This system is designed to monitor, capture, measure the performance and track the energy consumption of cooling appliances via Internet, GSM and GPRS. It evaluates critical conditions and send alerts via SMS and /or E-Mail. A failure of the appliance can be detected by a remote diagnosis based on the collected data. The evaluation and calculation will be carried out using the captured data by the remote access with the CoolTool DiaGnostics Software.