



ClimaCheck *onsite* PA Pro III Portable Performance Analyser

The future focus in air conditioning, refrigeration and heat pump plants will be efficiency.

ClimaCheck is the world leader in performance analysing in the RAC industry. We supply solutions for portable and permanently installed performance analysing used for inspections, energy audits, preventive maintenance, trouble shooting and cloud based 24/7 monitoring. ClimaCheck early warning capability for decreased efficiency or leaks is unique on the market.

ClimaCheck has selected the most advanced, powerful and flexible IoT platform on the market for our new generation of performance analysers. They have built in Penta Band modem, WiFi and ethernet communication. Data from all sensors are sent to local PC or to the cloud to analyse and visualise performance.

ClimaCheck is used by manufacturers of components, refrigerants and systems as well as consultants and service companies to ensure high performance in air conditioning, refrigeration and heat pump plants.

Tens of thousands of field measurements and thousands of online measurements with ClimaCheck prove that high rating does not ensure efficient operation in a plant. **20-30% of the energy can be saved** in most plants through re-commissioning with ClimaCheck and most failures can be avoided if faults are identified before they cause damage. As 20% of global electricity is used by refrigeration processes – this is a huge saving potential – getting more in focus by authorities, utilities and users every day.

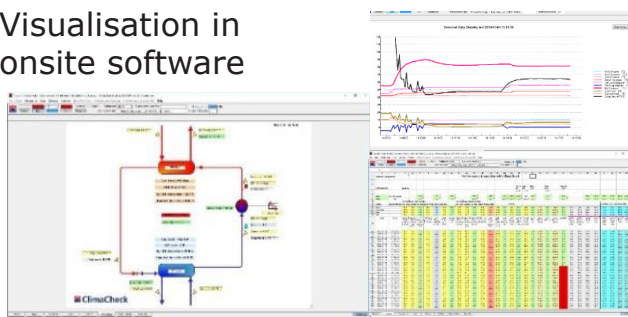
The **new ClimaCheck PA Pro III** is a turn-key portable analyser supplied with all required sensor for a standard refrigeration process. ClimaCheck *onsite* software is included and it can be connected to ClimaCheck *online* cloud servers by inserting a SIM card or through LAN/WiFi.

State of the art technology make the ClimaCheck PA Pro III ready for continued development with features such as Bluetooth and 1-wire "bus technology". Modbus allows cost-effective expansion for complex system and integration with third party sensors/controllers. ClimaCheck customise systems at request and all systems can easily be updated when needed as they are modular and configurable. Updates and configuration can be done over internet to give flexibility and facilitates remote support.

"To measure is to know"






Visualisation in onsite software



Visualisation in online software



| Technical Specification PA Pro III Performance analyser | | |
|---|--|---|
| Graphical display with touchscreen, Graphical 240x160 pixels White-on-Blue display, Digitized audio | | |
| Penta-band cellular modem, UMTS/HSPA | | |
| Inputs on mainboard: | 4 x Analogue (0...10V or 4...20mA) Accuracy +/- 0.5% FS | |
| Inputs digital | 8 x Digital (wired to front) | |
| Output digital | 8 x high-power solid-state digital 2 (wired to front) | |
| Communication | Ethernet, WiFi, RS485x2, RS232x2, USB, Bluetooth classic/LE, CAN2.0B | |
| Analogue input module modbus | 8 x inputs configurable Pt1000, 0-10 V, 4-20 mA, Accuracy: Temperature input ± 0.25°C, Analogue ±0.1% FS | |
| 1-wire bus | Temperature sensors -25 to 150°C (Accuracy -20 to 80°C +/-0.5K) | |
| Memory | SD-card | |
| Supply voltage | 24 VDC, 10 W, plug-in transformer included | |
| Dimensions/ Weight | 501 x 279 x 193 mm/11 kg | |
| 100 222 |  | Complete ClimaCheck PA PRO III <150 A with integrated modem. Including software, cables and mounting kit. Including the following sensors: 8 x Pt1000 temperature sensors 2 x pressure sensors standard 10 and 35 Bar(g) 1 x 3 phase power meter EP Pro Scout with 3 x Current Clamps 0.5 -150A (hole diameter 25 mm/1") |
| 100 232 |  | Complete ClimaCheck PA PRO III <4000 A with integrated modem. Including the equipment and sensors as above but current clamps replaced with "rope type" CT: 3 x Rogowski coils 5-4000 A , (length 40 cm, 16") |
| 900 168 |  | Spare Part Case Attaches to PA Pro carry-on case retractable handle, Protective insulation in lid and bottom |

| Example of common accessories (request complete list): | Part No. |
|---|----------|
| Power Scout - extra power meter for 2 circuit or cascade/booster systems | 100 460 |
| Clamp on, current transformer 0.5 – 150 A | 400 610 |
| Rogowski coils, current transformer 5-4000A | 400 710 |
| Magnet touch Voltage Probes, colour coded according to local market (specify colours) | 400 26X |
| Pressure Sensor -0.7 – 5 Bar(g) Typical use is for R123 chillers | 200 140 |
| Pressure Sensor 0 - 10 Bar(g) | 200 141 |
| Pressure Sensor 0 - 35 Bar(g) | 200 142 |
| Pressure Sensor 0 - 50 bar (g) typical use R410A and MP for CO2 | 200 143 |
| Pressure Sensor 0 - 150 bar (g) typical use HP for CO2 | 200 144 |
| Expansion Module, eight temperature or analogue inputs configurable | 500 603 |
| Temperature sensor 5 m, 3.5 mm male plug | 300 100 |
| Temperature sensor 10 m, 3.5 mm male plug | 300 225 |
| 1-wire sensor, 3 m cable, 3.5 mm male plug | 300 101 |
| Extension 1-wire 10 m with one male 3.5 mm "plug" to 3 female | 300 116 |

ClimaCheck

ClimaCheck *onsite*

Performance analysing software

**Reduce energy cost and extend equipment life
of Air Conditioning & Refrigeration equipment.**



Provides the expert with state of the art information to trouble shoot, optimise performance with complete unbiased documentation.

ClimaCheck *onsite* software performance analysers for field measurements is a complete analysing software to analyse refrigeration, air conditioning and heat pump systems. ClimaCheck recommissioning often save 20-30% of energy and reduce failures. ClimaCheck PA Pro III Performance Analysers are available with 0.5-150 A or 5-4000 A current transformers as standard with integrated modem (see separate product information). The platform can be expanded with sensors and templates to measure on virtually any vapour compression process and can also be used together with ClimaCheck *online* internet based monitoring. A complete range of accessories and communication options are available.

ClimaCheck onsite software present the following data and much more in real time after 20-40 minutes "hook up":

- **System Efficiency Index SEI**
- **Capacity/Energy Efficiency/COP (Coefficient of Performance)**
- **Compressor efficiency**
- **Condenser/Evaporator efficiency (inlet/outlet temperatures temperature differences)**
- **Control Functions (at different loads without expensive travel/data collection)**
- **Expansion Valve function (superheat values)**
- **Refrigerant charge/Leakage**

ClimaCheck

ClimaCheck *onsite*

Performance analysing software

ClimaCheck *onsite* software is supplied with the most common templates: Standard process, Sub cooler, Desuperheater and suction gas heat exchanger systems. For other systems hundreds of special templates are available for all kinds of designs from plug-in systems till large industrial multi stage systems. ClimaCheck performance analysers can be connected via a Modem, LAN or WiFi to the **ClimaCheck *online*** cloud based servers for commissioning and troubleshooting or to establish baseline for optimisation or retrofits. It is often more cost effective to leave the site and monitor it remotely for the time required to get different load and climate conditions.


ClimaCheck *onsite* is used from cradle to grave in the refrigeration, air-conditioning and heat pump industry:

- Test rigs at manufacturers development and production sites (more than 50 test rigs analysing systems supplied)
- As a commissioning and inspection tool validated by several testing institutes
- Preventive maintenance and trouble shooting
- Energy audits and recommissioning projects
- Pre- and post-retrofits to ensure that money is not wasted on systems that never will be efficient and with those that systems worth retrofit are optimised for the new refrigerants.

ClimaCheck *onsite* software

ClimaCheck information is visualised in flowcharts, graphs, tables, and comprehensive performance reports. Results can be exported to Excel and software can be used to calculate performance from data in Excel or earlier recorded ClimaCheck files. ClimaCheck *online* can also use Modbus to import and export data and results.

The ClimaCheck software offer the perfect flexible analysing tool to document all relevant parameters in a refrigeration system. The information is as detailed as the most advanced test rigs making it possible to in moments check performance and efficiency of all components in the system.

| P/N | Standard ClimaCheck <i>onsite</i> PC software - add on | | |
|---------|--|--|--|
| 800 100 |  | Standard Program incl. standard Templates and Data Sources. Special Price together with ClimaCheck Loggers | |
| 800 200 | | ClimaCheck Software incl. Standard Templates/Data Sources | |
| 800 800 | | ClimaCheck Software School License | |
| 800 250 | | ClimaCheck Software Extra License | |
| 800 300 | PC special templates Example only (please supply flowchart to get correct template for your plant) | ClimaCheck Template Special Economizer with doc. | |
| 800 310 | | ClimaCheck Template Special Oil cooler with doc. | |
| 800 320 | | ClimaCheck Template Special 2-stage with doc. | |
| 800 330 | | ClimaCheck Template Special ECO+oilcool with doc. | |
| 800 340 | | ClimaCheck Template Special 2-stage+oil cool with doc. | |
| 800 350 | | ClimaCheck Template Special 2 circuit system | |
| 800 360 | | ClimaCheck Template Special CO2 super critical | |
| 800 365 | | ClimaCheck Template Special CO2 sub critical | |
| 700 600 | | ClimaCheck <i>online</i> cloud services for portable systems | Web service configuration/flow chart |
| 700 710 | | | 12 months ClimaCheck <i>online</i> services for portable |