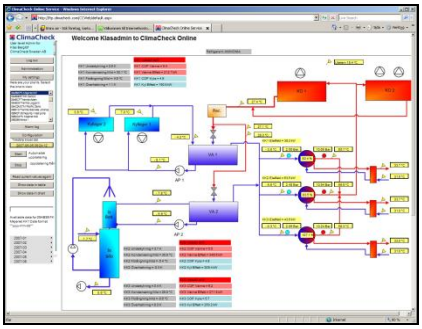
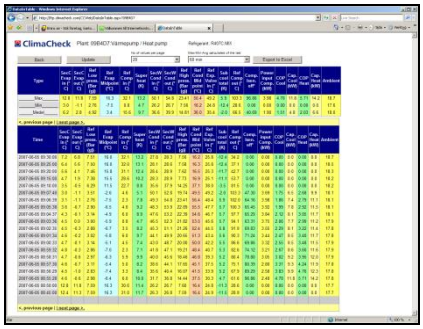
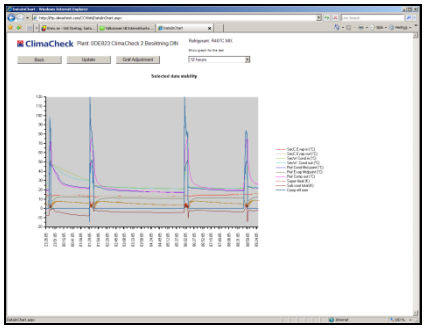
ClimaCheck

Reduce energy cost of Air-Conditioning & Refrigeration whilst extending equipment life

ClimaCheck On-Line COP Monitoring provides Owners, Technicians and Experts with instant in-built refrigeration expertise for plant optimisation

Monitor refrigeration, air-conditioning or heat pump equipment from any computer connected to the Internet. The *On-Line Service* sends SMS or E-mail Alarm Messages if any value (or combination of values) falls outside preset limits. Provides immediate access to all current values. Useful for Owners and Service Companies. If you wish, you can allow access to manufacturers, Performance inspectors and Experts for plant optimisation and preventative measures. Download *Historical Data* for comparison and analysis in detail.

A Demo of the ***On-Line Service*** is available at www.online.climacheck.com

User name: climacheck **Password:** demo001

	
Complete System for LAN - Part. No. 100 950 For mobile Internet with GPRS-modem 100 955	For DIN-Mounting - Art. Nr 100 905

ClimaCheck Performance Analyser Pro for DIN-Mounting: A permanent installation for standard systems includes two pressure transducers, eight temperature sensors and a power meter. This is everything necessary for continuous monitoring, E-mail and SMS alarm.

Using any computer connected to the Internet you can see:

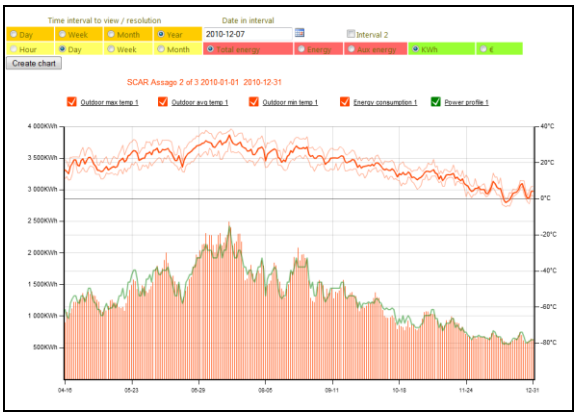
- **COP/Energy Efficiency** (Coefficient of Performance).
- **Total energy consumption** over time for the compressor(s)
- **Monitoring of:**
  - **Expansion Valve function** (superheat values)
  - **Refrigerant Leakage** (via change in sub-cooling)
  - **Compressor** (efficiency, inlet/outlet temperatures, power input)
  - **Condenser** (inlet/outlet temperatures via temperature differences)
  - **Evaporator** (inlet/outlet temperatures via temperature differences)
- **Logging and Alarm** (for temperatures in cooling/freezing areas or other monitored systems/rooms)
- **Alarms for Pressure, Temperature, Power, etc.**
- **Control Functions** (easily checked at different loads without any expensive travel or collection of data)

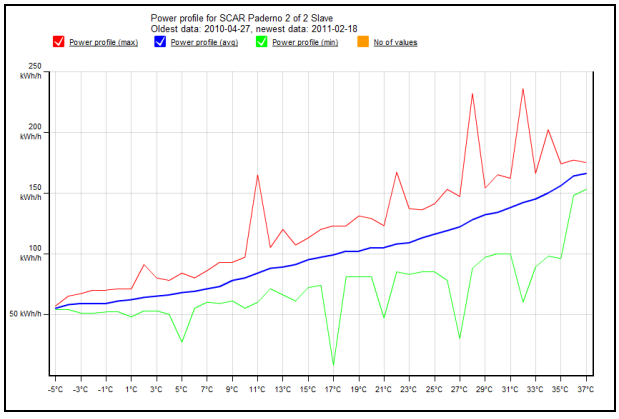
All the above and much more is presented in different formats since the entire process is monitored and recorded. There are also 8 digital inputs available for external alarms. If desired, the system can be connected via a wireless GPRS Modem instead of using an Ethernet connection.

Now with Energy Statistics and Energy Profiles!

The latest addition to ***ClimaCheck On-Line Services*** are *automatic energy statistics* and *profiling* that will allow Owners to follow the energy consumption of their plants and Refrigeration Technicians to trouble-shoot any deviation from correct performance. Effectively cost and compare energy consumption for different time periods (before and after optimisation Projects). ClimaCheck allows energy consumption for different installations / sites to enable direct comparisons between sites or equipment configurations to be made.

This opens totally new possibilities to ensure the highest possible efficiency and to immediately detect if the energy profile of the building is deteriorating, or if expected energy savings from measures taken are being achieved or not.





Global leader in Performance Analysis

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Web: www.climacheck.com

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Components included in standard housing for fixed installation and common options

	**ClimaCheck Energy and Power Meter EP Pro, Art. No. 100 315** *1 included in 100 950 and 100 955* Measures Power and Energy as well as voltage and current on each phase. Communication by RS485 Modbus.
	**Fixed Current Transformer, Class 1, Art. No. 400 XXX** 3 included in *100 950 and 100 955* Used with EP Pro to measure current. Available in different models dependant on current and physical size of the leader. Please specify required max ampere and hole dimension (diameter for cable or rail WxH) see special datasheet for info on models available
	**Split Core Current Transformer, Class 1, Art. No. 400 XXX** *Option to above* Split core current transformers can be attached to the system without removing any of the cables. Available in different models dependant on current and physical size of the leader. Please specify required max ampere and hole dimension (diameter for cable or rail WxH)
	**ClimaCheck Pressure Transmitter** **Art. No. 200 100, 0-35 Bar(g) and 200 200, 0-10 Bar(g)** *2 pressure sensors included in 100 950 and 100 955* **Pressure transmitter** with high accuracy, specially designed teflon seal and schrader opener which provides fast and secure connection. Also available in 50 and 150 Bar(g) models.
	**ClimaCheck Temperature Sensor PT1000, Class A, Art. No. 300 200** *8 included in 100 950 and 100 955* -50 to 150°C, with 5 m cable.
	**Temperature Module RTD-04, Art No. 300 600** *Option to expand number of temperature inputs* Allows for connection of up to four extra temperature sensors to ClimaCheck PA Pro. Required when using more than eight sensors.
	**GPRS Modem, Art no. 600 105** Included in *100 955* GPRS Modem which sends the information to your own server or to ClimaCheck Online. Add antenna 600 106 and DIN-bracket 600 107.

ClimaCheck offer a wide range of additional sensors including wireless sensors. Pls contact our nearest distributor for your requirements.

ClimaCheck
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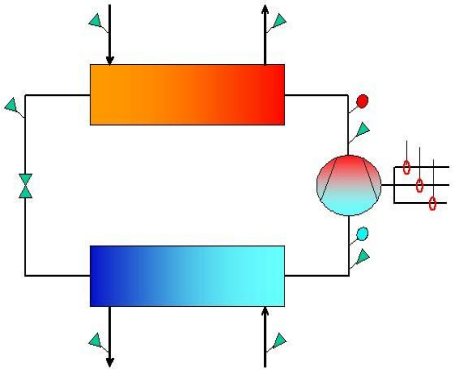
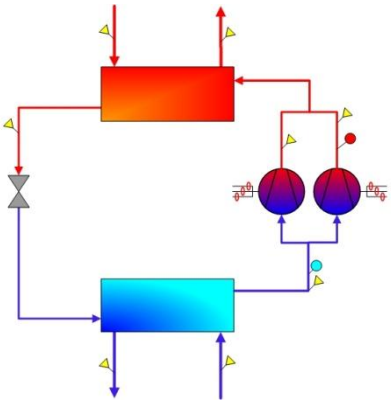
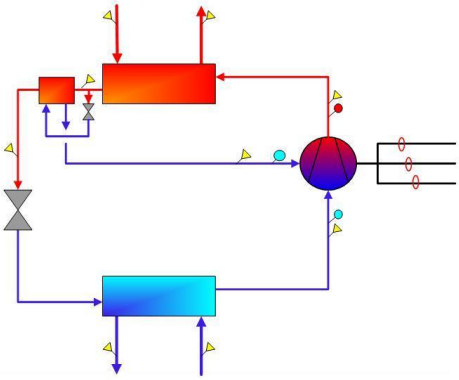
Examples of typical Installations and accessories required

Standard Installation One Compressor	Part no.	Description	Pcs.
	100 950	Performance Analyser PA Pro Package	1
	Included in above Part no.		
	200 100	Pressure sensor 35 Bar(g)	1
	200 200	Pressure sensor 10 Bar(g)	1
	300 100	Temperature sensor PT1000	8
	100 550	Power/energy Meter	1
	400 xxx	Current transformer	3
Optional Parts			
600 105		GPRS Wireless Modem	1
600 106		Antenna for Modem	1
600 107		Mounting for Modem	1

Two Compressors, One Circuit	Part no.	Description	Pcs.
	100 950	Performance Analyser PA Pro Package	1
	Included in above Part no.		
	200 100	Pressure sensor 35 Bar(g)	1
	200 200	Pressure sensor 10 Bar(g)	1
	300 100	Temperature sensors PT1000	8
	100 550	Power/energy Meter	1
	400 xxx	Current transformers	3
400 xxx		Current transformers	3
Optional Parts			
100 512		Separate Power Meter for second compressor	1
600 105		GPRS Wireless Modem	1
600 106		Antenna for Modem	1
600 107		Mounting for Modem	1

One Compressor, Economiser	Part no.	Description	Pcs.
	100 950	Performance Analyser PA Pro Package	1
	Included in above Part no.		
	200 100	Pressure sensor 35 Bar(g)	1
	200 200	Pressure sensor 10 Bar(g)	1
	300 100	Temperature sensors PT1000	8
	100 550	Power/energy Meter	1
	400 xxx	Current transformers	3
200 100		Pressure sensor 35 Bar(g)	1
300 600		Module, 4 extra temperatures	1
300 100		Temperature sensor PT1000	1
Optional Parts			
600 105		GPRS Wireless Modem	1
600 106		Antenna for Modem	1
600 107		Mounting for Modem	1

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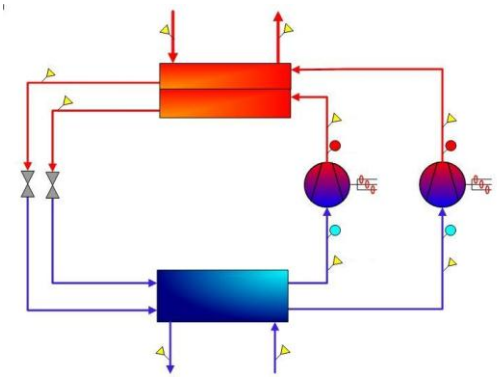
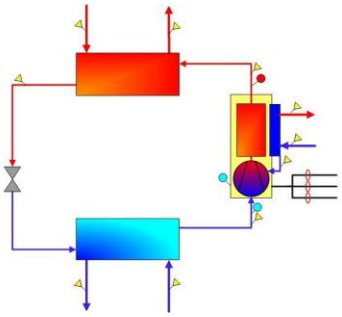
Two Compressors, Two Circuits



It is possible to analyse a system using only eight temperature sensors by omitting one of air/liquid in/out evaporator or air/liquid in/out condenser. In this case 300 600 and 300 100 is not needed.

Part no.	Description	Pcs.
100 950	Performance Analyser PA Pro Package	1
	Included in above Part no.	
200 100	Pressure sensor 35 Bar(g)	1
200 200	Pressure sensor 10 Bar(g)	1
300 100	Temperature sensors PT1000	8
100 550	Power/energy Meter	1
400 xxx	Current transformers	3
200 100	Pressure sensor 35 Bar(g)	1
200 200	Pressure sensor 10 Bar(g)	1
300 600	Module, 4 extra temperatures	1
300 100	Temperature sensors PT1000	2
100 550	Power/energy Meter	1
400 xxx	Current transformers	3
Optional Parts		
600 105	GPRS Wireless Modem	1
600 106	Antenna for Modem	1
600 107	Mounting for Modem	1

One Compressor, Oil Cooling

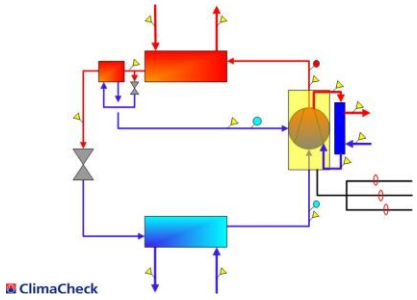


The oil cooling capacity can be calculated with of one of:

1. Known cooling water flow
2. Known oil flow (fixed or as a function of pressure)
3. Known oil cooling capacity from manufacturer

Part no.	Description	Pcs.
100 950	Performance Analyser PA Pro Package	1
	Included in above Part no.	
200 100	Pressure sensor 35 Bar(g)	1
200 200	Pressure sensor 10 Bar(g)	1
300 100	Temperature sensors PT1000	8
100 550	Power/energy Meter	1
400 xxx	Current transformers	3
300 600	Module, four extra temperatures	1
300 100	Temperature sensor PT1000	1
Optional Parts		
200 100	Pressure sensor 35 Bar(g) for Oil Pressure	1
600 105	GPRS Wireless Modem	1
600 106	Antenna for Modem	1
600 107	Mounting for Modem	1

One Compressor, Oil Cooling, Economiser



The oil cooling capacity can be calculated with one of:

1. Known cooling water flow
2. Known oil flow (fixed or as a function of pressure)
3. Known oil cooling capacity from manufacturer

Part no.	Description	Pcs.
100 950	Performance Analyser PA Pro Package	1
	Included in above Part no.	
200 100	Pressure sensor 35 Bar(g)	1
200 200	Pressure sensor 10 Bar(g)	1
300 100	Temperature sensors PT1000	8
100 550	Power/energy Meter	1
400 xxx	Current transformers	3
200 100	Pressure sensor 35 Bar(g)	2-3
300 600	Module, four extra temperatures	1
300 100	Temperature sensor PT1000	1
Optional Parts		
600 105	GPRS Wireless Modem	1
600 106	Antenna for Modem	1
600 107	Mounting for Modem	1