

Two Circuit Templates

There are a lot of two circuit configurations used in air-conditioning, heat pump and refrigeration application as it gives a good security against total loss of capacity while offering easy to install and possibly good energy efficiency.

Below are a number of common configurations with required sensors to get total performance of the system shown as well as sensors required for a full evaluation of all the components in the system.

The minimum required temperature sensors are show in the flow chart as larger and the optional as smaller.

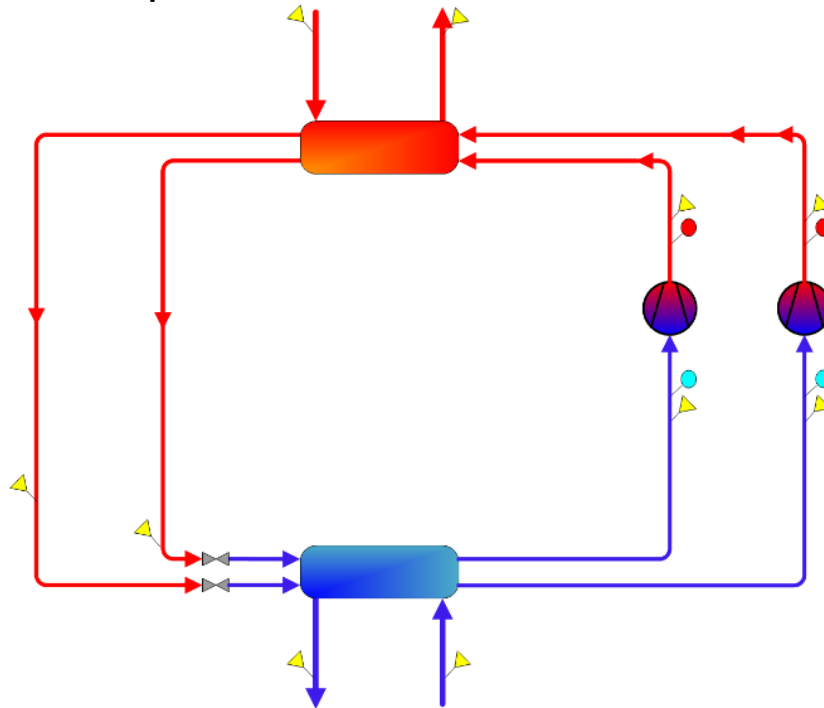
Depending on application **it is often not required or meaningful to have all the optional sensors as marked in the following flow charts and tables** as several temperature will be the same or some sensors might not give important information for the analyses performed. As an example, if there are two desuperheaters or subcoolers these often operate with the same inlet temperatures and on free blowing air heat exchanger such as air-cooled chillers the air off temperature is often not off relevance and challenging to get with accuracy.

It is in the following indicated that a minimum of eight temperatures are required for a two circuit system this will only allow two of the air/water/liquid temperatures in and out of evaporator and condenser to be measured.

It is also shown with a common evaporator and condenser if there are **separate heat exchangers for the circuits and these should be recorded simultaneously additional sensor are required.**

If any questions on best configuration occur please contact ClimaCheck or our distributors for advice.

Standard 2-circuit template



Equipment for this measurement:

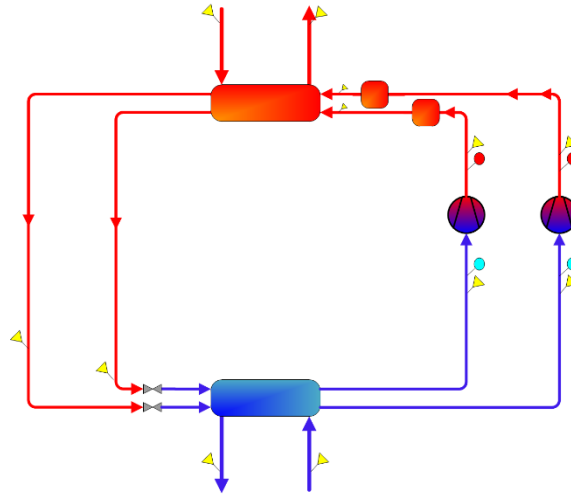
ClimaCheck onsite

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 222	ClimaCheck PA Pro III onsite, 8 temp., 2 pressures
1	100 460	Power meter EP Scout including cables
3	400 600	CT clamps, 150A
1	200 142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 152	Pressure transmitter cable, DIN 5D, 3m
2	300 701	Temperature Sensor - 1-wire, 3m
1	800 311	Template, 2 circuits

ClimaCheck online

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 961	ClimaCheck PA Pro III online, 8 temp., 2 pressures
1	100 512	Power meter EM24
3	400 100	CT fixed, 100A
1	200142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 150	Pressure transmitter cable, free lead, 3m
2	300 700	Temperature Sensor - 1-wire, free lead, 3m
1	700 601	Special configuration of web service

2 Circuits with desuperheater



Equipment for this measurement:

ClimaCheck onsite

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 222	ClimaCheck PA Pro III onsite, 8 temp., 2 pressures
1	100 460	Power meter EP Scout including cables
3	400 600	CT clamps, 150A
1	200 142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 152	Pressure transmitter cable, DIN 5D, 3m
4	300 701	Temperature Sensor - 1-wire, 3m
1	800 312	Template, 2 circuits, desuperheater

Optional equipment to measure all variables in flow chart above including all secondary temperature

4	300 701	Temperature Sensor - 1-wire, 3m
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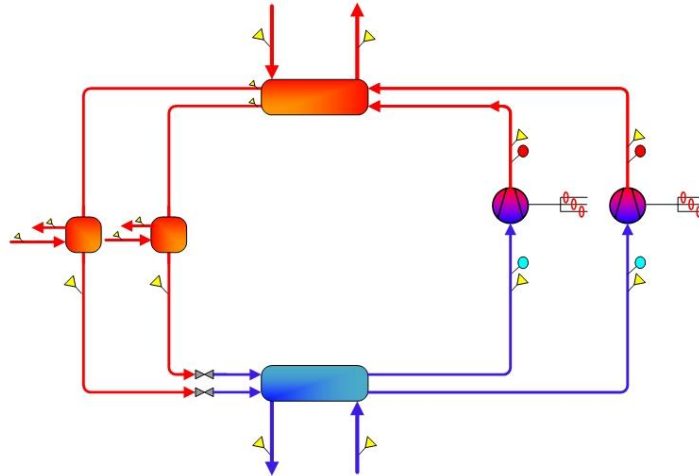
ClimaCheck online

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 961	ClimaCheck PA Pro III online, 8 temp., 2 pressures
1	100 512	Power meter EM24
3	400 100	CT fixed, 100A
1	200142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 150	Pressure transmitter cable, free lead, 3m
4	300 700	Temperature Sensor - 1-wire, free lead, 3m
1	700 601	Special configuration of web service

Optional equipment to measure all variables in flow chart above including all secondary temperature

4	300 700	Temperature Sensor - 1-wire, free lead, 3m
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2 Circuits with subcooler



Equipment for this measurement:

ClimaCheck onsite

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 222	ClimaCheck PA Pro III onsite, 8 temp., 2 pressures
1	100 460	Power meter EP Scout including cables
3	400 600	CT clamps, 150A
1	200 142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 152	Pressure transmitter cable, DIN 5D, 3m
4	300 701	Temperature Sensor - 1-wire, 3m
1	800 313	Template, 2 circuits, subcooler

Optional equipment to measure all variables in flow chart above including all secondary temperature

4	300 701	Temperature Sensor - 1-wire, 3m
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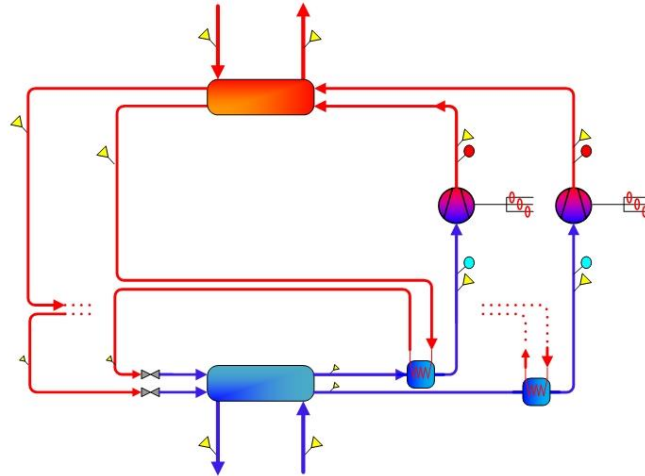
ClimaCheck online

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 961	ClimaCheck PA Pro III online, 8 temp., 2 pressures
1	100 512	Power meter EM24
3	400 100	CT fixed, 100A
1	200142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 150	Pressure transmitter cable, free lead, 3m
4	300 700	Temperature Sensor - 1-wire, free lead, 3m
1	700 601	Special configuration of web service

Optional equipment to measure all variables in flow chart above including all secondary temperature

4	300 700	Temperature Sensor - 1-wire, free lead, 3m
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2 Circuits with suction gas heat exchanger



Equipment for this measurement:

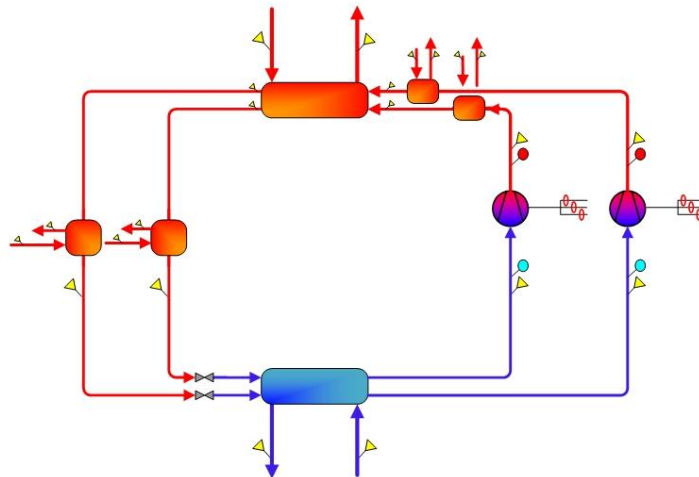
ClimaCheck onsite

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 222	ClimaCheck PA Pro III onsite, 8 temp., 2 pressures
1	100 460	Power meter EP Scout including cables
3	400 600	CT clamps, 150A
1	200 142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 152	Pressure transmitter cable, DIN 5D, 3m
4	300 701	Temperature Sensor - 1-wire, 3m
1	800 314	Template, 2 circuits, suction HX

ClimaCheck online

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 961	ClimaCheck PA Pro III online, 8 temp., 2 pressures
1	100 512	Power meter EM24
3	400 100	CT fixed, 100A
1	200142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 150	Pressure transmitter cable, free lead, 3m
4	300 700	Temperature Sensor - 1-wire, free lead, 3m
1	700 601	Special configuration of web service

2 Circuits with desuperheater and subcooler



Equipment for this measurement:

ClimaCheck onsite

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 222	ClimaCheck PA Pro III onsite, 8 temp., 2 pressures
1	100 460	Power meter EP Scout including cables
3	400 600	CT clamps, 150A
1	200 142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 152	Pressure transmitter cable, DIN 5D, 3m
6	300 701	Temperature Sensor - 1-wire, 3m
1	800 315	Template, 2 circuits, desuperheater, subcooler

Optional equipment to measure all variables in flow chart above including all secondary temperature

8	300 701	Temperature Sensor - 1-wire, 3m
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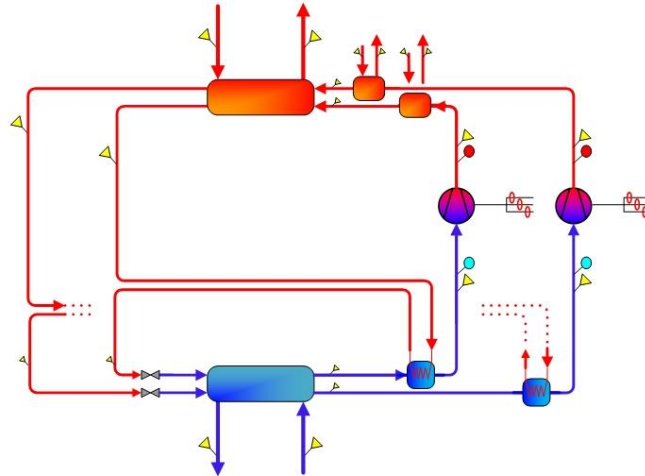
ClimaCheck online

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 961	ClimaCheck PA Pro III online, 8 temp., 2 pressures
1	100 512	Power meter EM24
3	400 100	CT fixed, 100A
1	200142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 150	Pressure transmitter cable, free lead, 3m
6	300 700	Temperature Sensor - 1-wire, free lead, 3m
1	700 601	Special configuration of web service

Optional equipment to measure all variables in flow chart above including all secondary temperature

8	300 700	Temperature Sensor - 1-wire, free lead, 3m
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2 Circuits with desuperheater and suction gas heat exchanger



Equipment for this measurement:

ClimaCheck onsite

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 222	ClimaCheck PA Pro III onsite, 8 temp., 2 pressures
1	100 460	Power meter EP Scout including cables
3	400 600	CT clamps, 150A
1	200 142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 152	Pressure transmitter cable, DIN 5D, 3m
6	300 701	Temperature Sensor - 1-wire, 3m
1	800 316	Template, 2 circuits, desuperheater, suction HX

Optional equipment to measure all variables in flow chart above including all secondary temperature

4	300 701	Temperature Sensor - 1-wire, 3m
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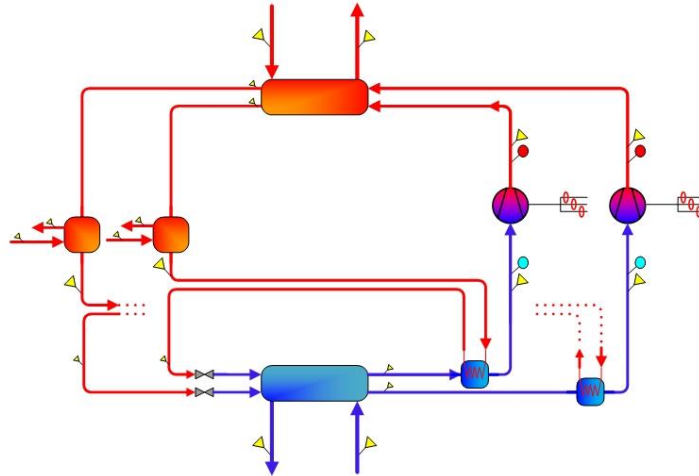
ClimaCheck online

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 961	ClimaCheck PA Pro III online, 8 temp., 2 pressures
1	100 512	Power meter EM24
3	400 100	CT fixed, 100A
1	200142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 150	Pressure transmitter cable, free lead, 3m
6	300 700	Temperature Sensor - 1-wire, free lead, 3m
1	700 601	Special configuration of web service

Optional equipment to measure all variables in flow chart above including all secondary temperature

4	300 700	Temperature Sensor - 1-wire, free lead, 3m
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2 Circuits with subcooler and suction gas heat exchanger



Equipment for this measurement:

ClimaCheck onsite

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 222	ClimaCheck PA Pro III onsite, 8 temp., 2 pressures
1	100 460	Power meter EP Scout including cables
3	400 600	CT clamps, 150A
1	200 142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 152	Pressure transmitter cable, DIN 5D, 3m
6	300 701	Temperature Sensor - 1-wire, 3m
1	800 317	Template, 2 circuits, subcooler, suction HX

Optional equipment to measure all variables in flow chart above including all secondary temperature

4	300 701	Temperature Sensor - 1-wire, 3m
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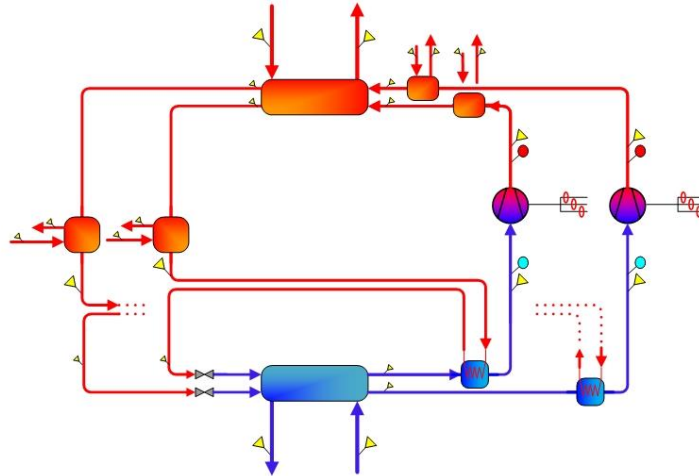
ClimaCheck online

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 961	ClimaCheck PA Pro III online, 8 temp., 2 pressures
1	100 512	Power meter EM24
3	400 100	CT fixed, 100A
1	200142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 150	Pressure transmitter cable, free lead, 3m
6	300 700	Temperature Sensor - 1-wire, free lead, 3m
1	700 601	Special configuration of web service

Optional equipment to measure all variables in flow chart above including all secondary temperature

4	300 700	Temperature Sensor - 1-wire, free lead, 3m
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2 Circuits with desuperheater, subcooler and suction gas heat exchanger



Equipment for this measurement:

ClimaCheck onsite

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 222	ClimaCheck PA Pro III onsite, 8 temp., 2 pressures
1	100 460	Power meter EP Scout including cables
3	400 600	CT clamps, 150A
1	200 142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 152	Pressure transmitter cable, DIN 5D, 3m
8	300 701	Temperature Sensor - 1-wire, 3m
1	800 318	Template, 2 circuits, desuperheater, subcooler, suction HX

Optional equipment to measure all variables in flow chart above including all secondary temperature

8	300 701	Temperature Sensor - 1-wire, 3m
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ClimaCheck online

Quantity	Part No.	Designation
<i>Necessary equipment</i>		
1	100 961	ClimaCheck PA Pro III online, 8 temp., 2 pressures
1	100 512	Power meter EM24
3	400 100	CT fixed, 100A
1	200142	Pressure transmitter, 35 Bar, 1-5V
1	200 141	Pressure transmitter, 10 Bar, 1-5V
2	200 150	Pressure transmitter cable, free lead, 3m
8	300 700	Temperature Sensor - 1-wire, free lead, 3m
1	700 601	Special configuration of web service

Optional equipment to measure all variables in flow chart above including all secondary temperature

8	300 700	Temperature Sensor - 1-wire, free lead, 3m
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