

COOLING CONTROL



My Fruit
The Best Fruit

Unique reason for combining Cooling & CA control in My Fruit

CA:

Inseparable combination of Temperature & Air composition control

Storage conditions:

Every product has its specific requirements regarding the CA-condition determined experimentally in collaboration with knowledge institutions and based on practical experience

Storage protocols:

Bringing together storage conditions and the technique to create them in one protocol to ensure that the product retains its initial quality during the long-term storage period

Our goal:

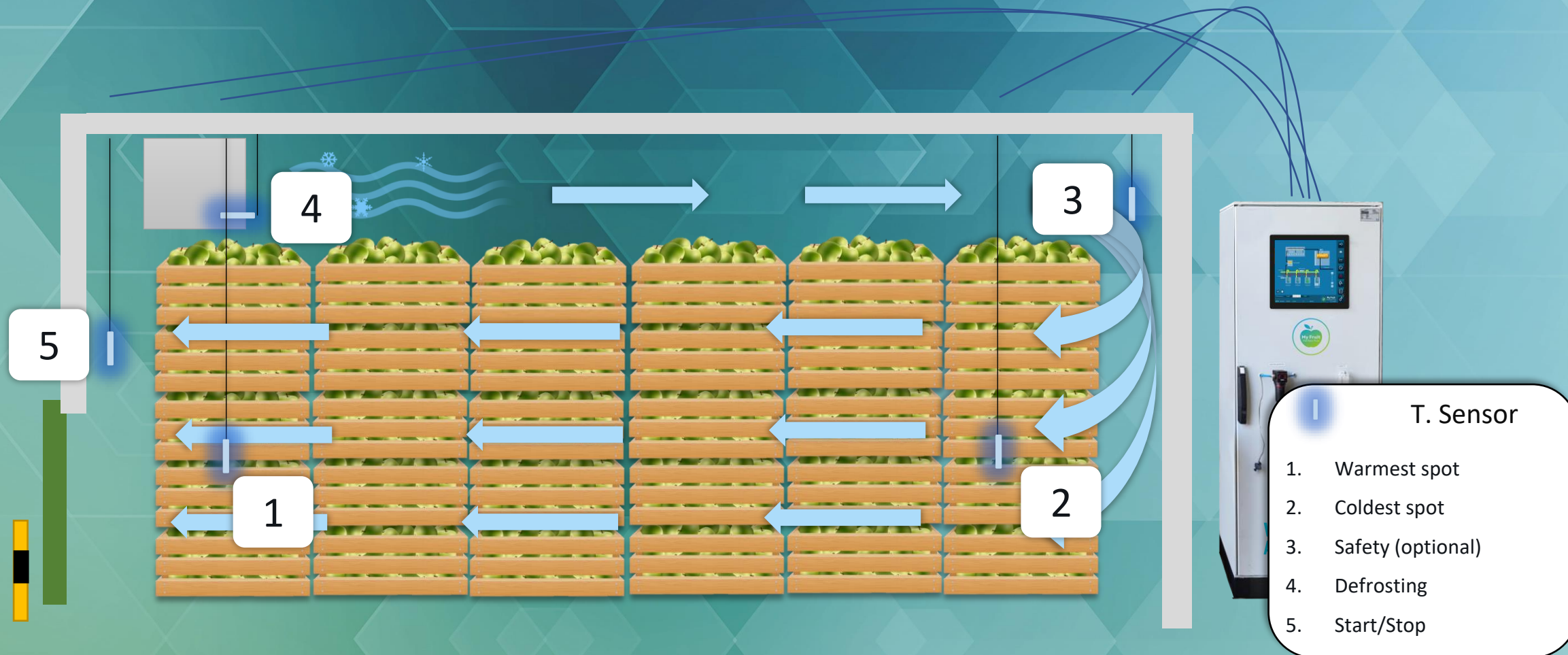
- Prevent loss of quality due to loss of moisture
- Prevent failure
- Minimum usage of energy and maintenance cost

My Fruit control:

The intelligence to understand and control the technology of cooling and air compositions in favor of the stored product and relieve the cold store manager

Full cooling control on room level

- My Fruit can control different types of cooling systems : Freon – Glycol - Ammonia - CO2
- Multiple PT-1000 sensors for optimal cooling control (Customized sensor names)



How does MyFruit control different types of cooling systems on room level

Freon

- Direct expansion
- Defrosting by hot gas

Glycol indirect

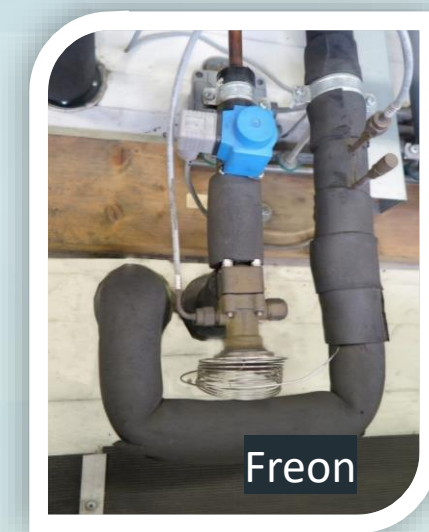
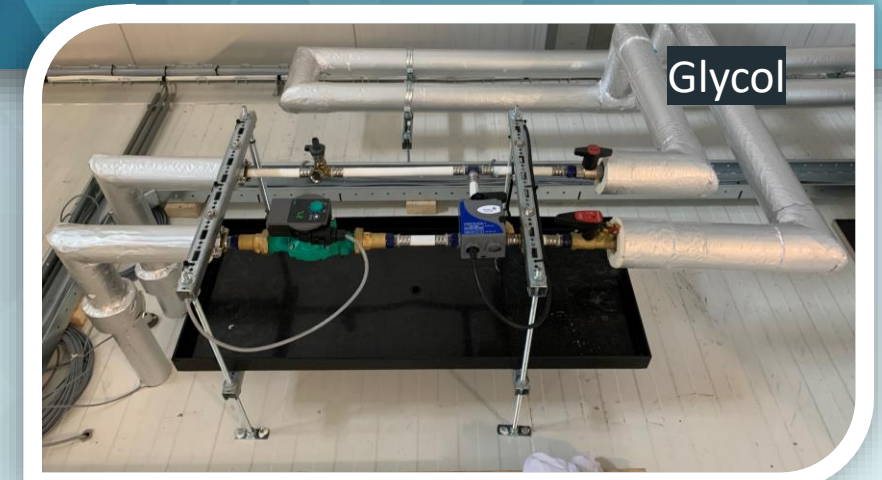
- Temperature control incoming glycol
- Mixing valve control
- Defrosting by warm glycol

Ammonia

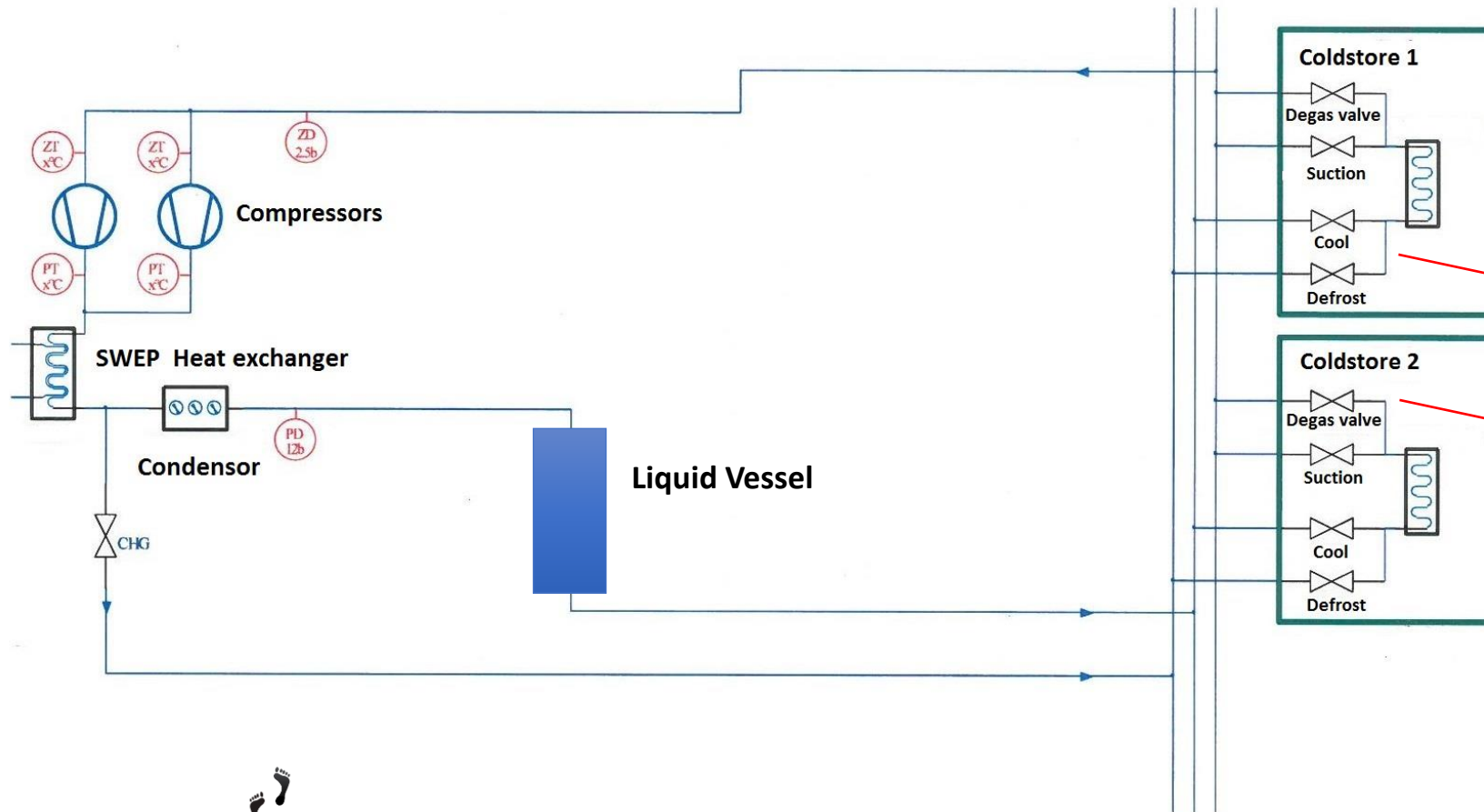
- Direct expansion / pump system
- Defrosting by hot gas
- Suction valve

CO2

- Direct expansion / Indirect Propane
- Defrosting by hot gas / warm glycol



DX System



Expansion valve

- Thermal
- Electronic



Temperature sensors

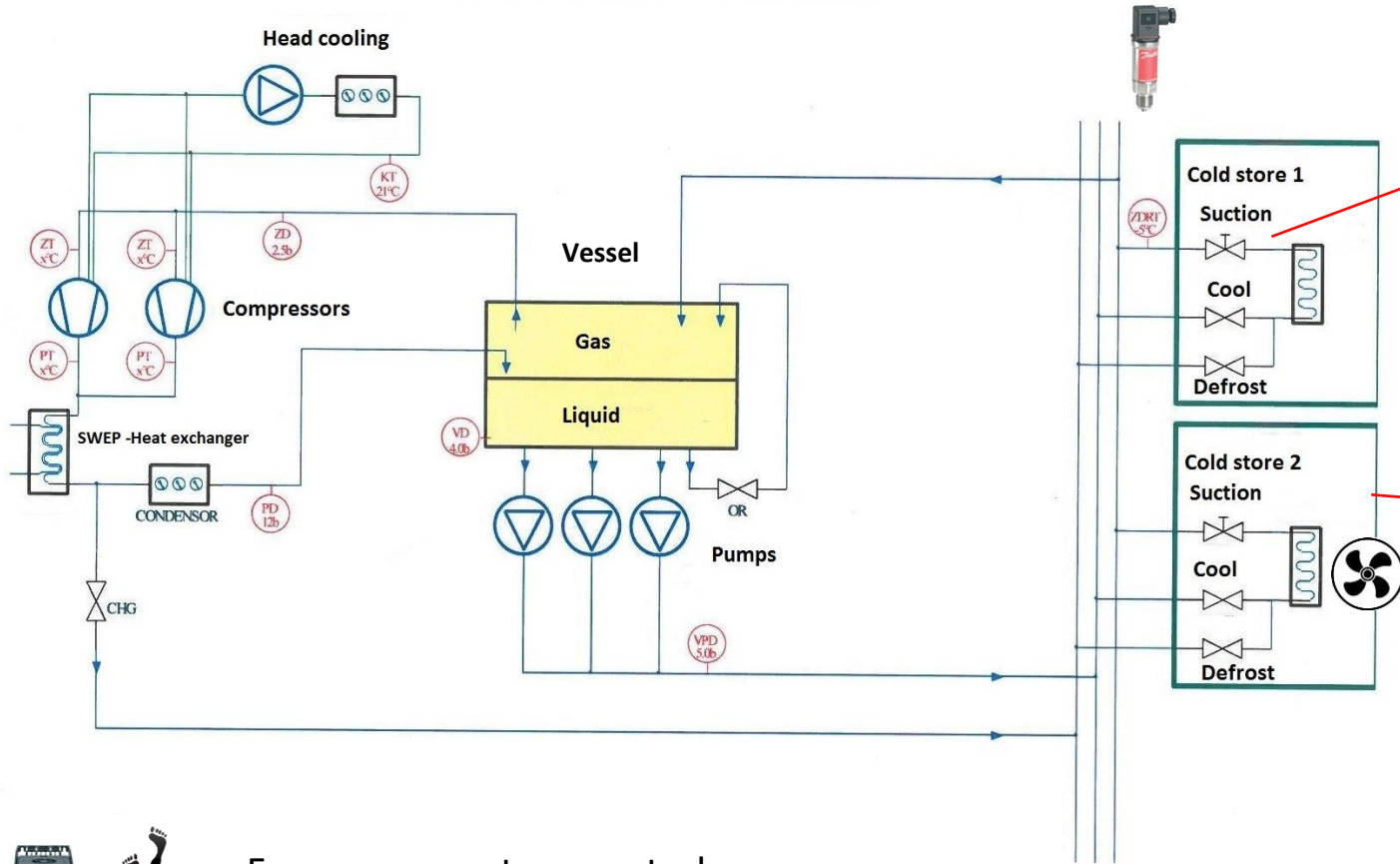
- Fixed sensor
- 1 or 2 Defrost sensors
- 1 pilot sensor
- 1 exhaust sensor
- 1 to 10 product sensors



Frequency or steps control
Compressor, condensor, pump and fans.

Ammonia Pump System

Machineroom Pumpsystem



Kornwestheim valve
Analog signal 4-20mA

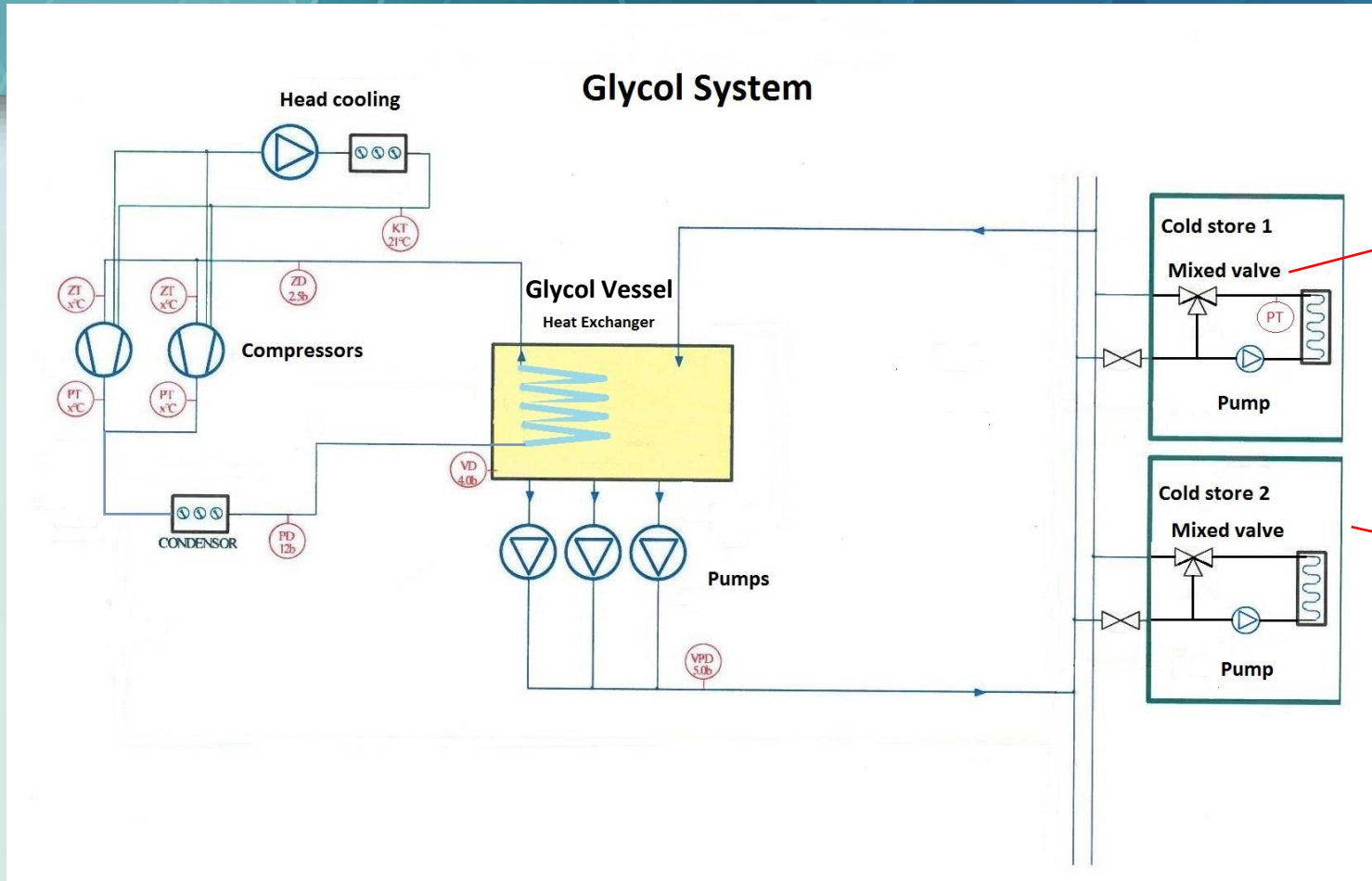
Temperature sensors

- Fixed sensor
- 1 or 2 Defrost sensors
- 1 pilot sensor
- 1 exhaust sensor
- 1 to 10 product sensors



Frequency or steps control
Compressor, condensor, pump and fans.

Glycol System



Temperature sensors

- Fixed sensor
- 1 or 2 Defrost sensors
- 1 water sensor
- 1 pilot sensor
- 1 to 10 product sensors



Frequency or steps control
Compressor, condensor, pump and fans.

Cooling Control & Energy Management

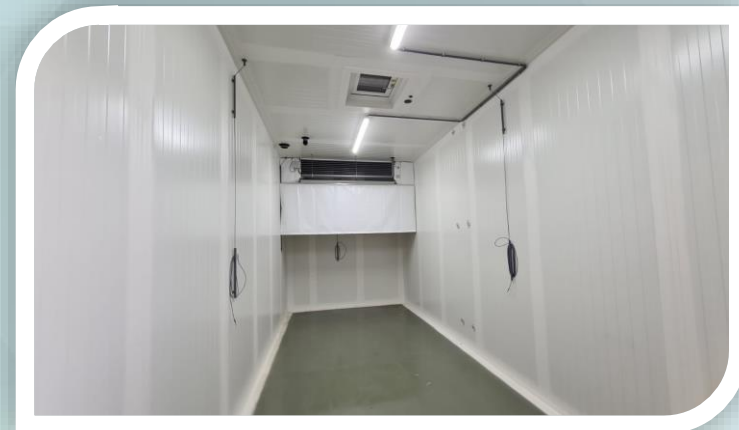
2 ways to start cooling during the storage period

- Δ Delta Temperature
Target temperature – Measured temperature
- Relay cooling
A group of rooms start cooling based on interval time one by one and each room uses the compressor (frequency controlled) in the most efficient way (ENERGY SAVING)

Innovative Energy Management (IEM)

- Advanced control of circulation
- Smart Cooling: based on power-consumption, solar-cooling during daytime, low-price energy, etc.
- Auto Defrosting: interval measurement of coil temperature
- Machine room: compressor & condenser control the needed capacity for cooling & protection of technical parts of the compressor
- Respiration/heat-production control: Active Control of Respiration (ACR)

Relay cooling



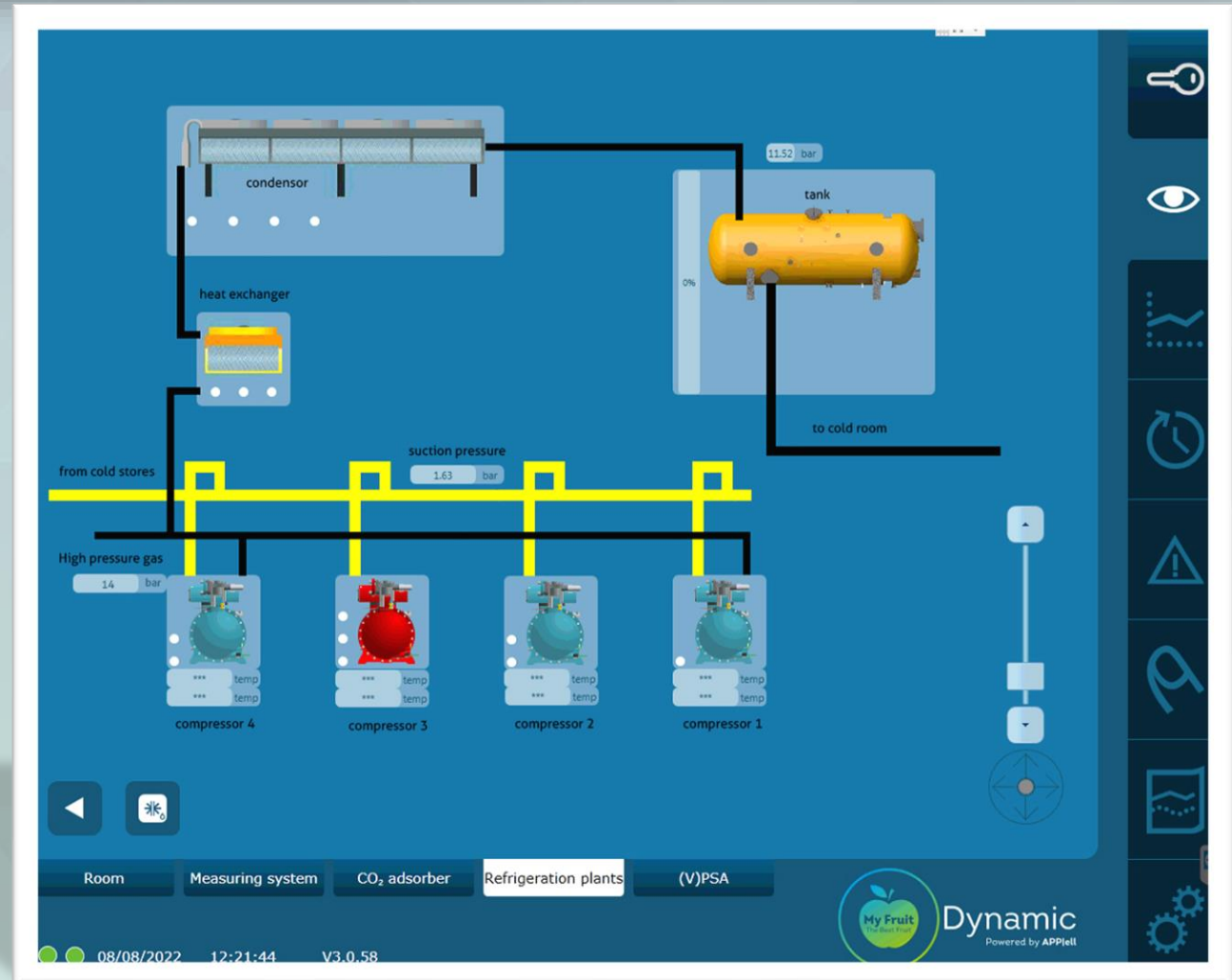
My Fruit Machine Room Control

Up to 6 refrigeration plants

- Compressors (frequency control)
- Condensers (frequency control)
- Tanks for liquid refrigerant
- Pumps
- Compressor head cooling
- Heat exchanger for indirect cooling

Safety management

- Refrigerant level sensors
- Refrigerant Leakage detection sensors
- Input alarms (compressors, condensers, pumps)

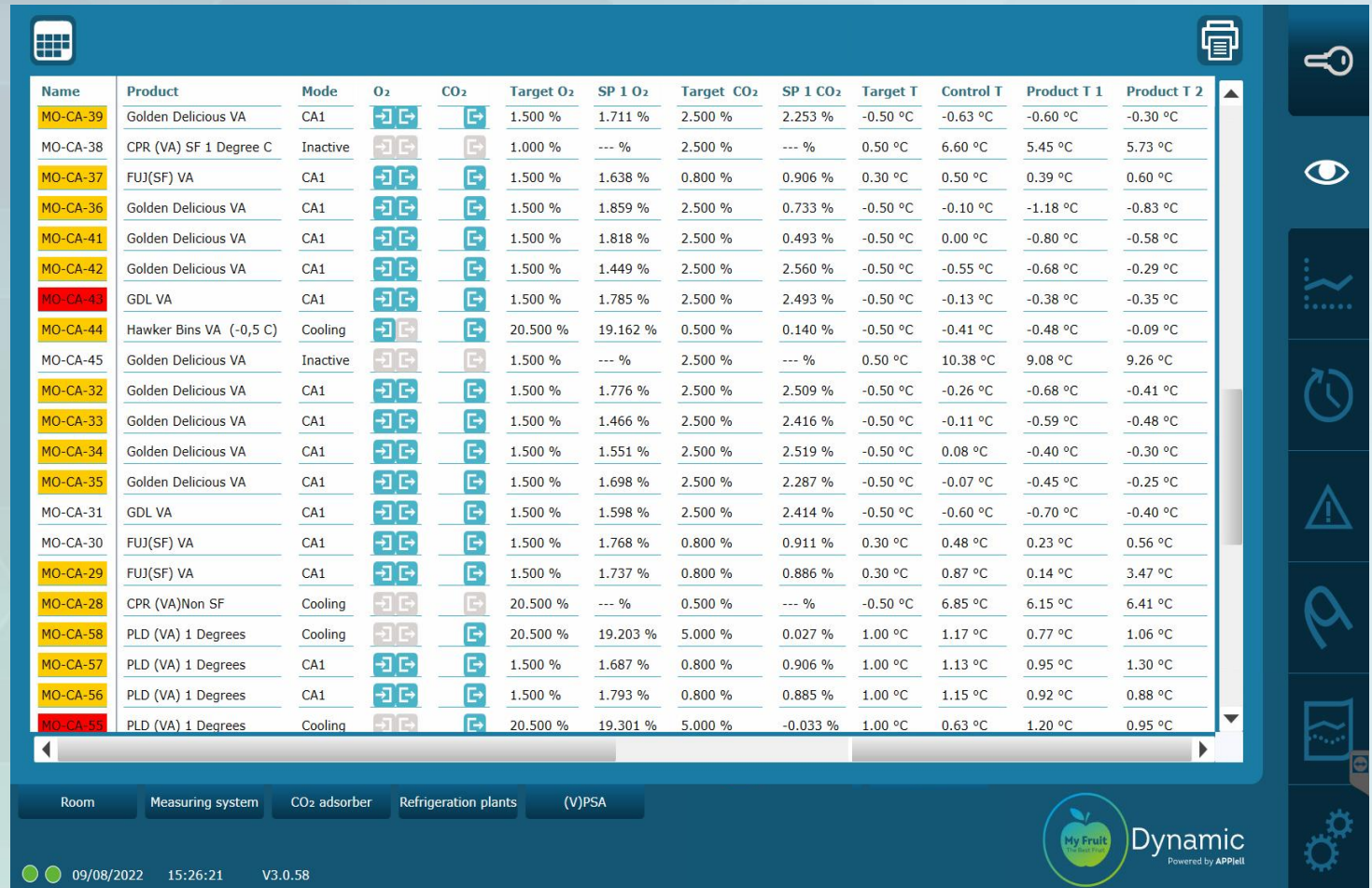


My Fruit Cooling & CA control

Benefits for Operation & Management

- ❖ All setting and monitoring in one system
- ❖ Multiple functionalities:
 - Clear overview of cooling & CA data in ONE table or graph
 - Registration overviews
 - Alarm system for cooling & CA overviews
 - Number of actions & running hours for service & energy info

My Fruit makes
it simple



Name	Product	Mode	O ₂	CO ₂	Target O ₂	SP 1 O ₂	Target CO ₂	SP 1 CO ₂	Target T	Control T	Product T 1	Product T 2
MO-CA-39	Golden Delicious VA	CA1	→←	→	1.500 %	1.711 %	2.500 %	2.253 %	-0.50 °C	-0.63 °C	-0.60 °C	-0.30 °C
MO-CA-38	CPR (VA) SF 1 Degree C	Inactive	→←	→	1.000 %	---	2.500 %	---	0.50 °C	6.60 °C	5.45 °C	5.73 °C
MO-CA-37	FUJ(SF) VA	CA1	→←	→	1.500 %	1.638 %	0.800 %	0.906 %	0.30 °C	0.50 °C	0.39 °C	0.60 °C
MO-CA-36	Golden Delicious VA	CA1	→←	→	1.500 %	1.859 %	2.500 %	0.733 %	-0.50 °C	-0.10 °C	-1.18 °C	-0.83 °C
MO-CA-41	Golden Delicious VA	CA1	→←	→	1.500 %	1.818 %	2.500 %	0.493 %	-0.50 °C	0.00 °C	-0.80 °C	-0.58 °C
MO-CA-42	Golden Delicious VA	CA1	→←	→	1.500 %	1.449 %	2.500 %	2.560 %	-0.50 °C	-0.55 °C	-0.68 °C	-0.29 °C
MO-CA-43	GDL VA	CA1	→←	→	1.500 %	1.785 %	2.500 %	2.493 %	-0.50 °C	-0.13 °C	-0.38 °C	-0.35 °C
MO-CA-44	Hawker Bins VA (-0,5 C)	Cooling	→←	→	20.500 %	19.162 %	0.500 %	0.140 %	-0.50 °C	-0.41 °C	-0.48 °C	-0.09 °C
MO-CA-45	Golden Delicious VA	Inactive	→←	→	1.500 %	---	2.500 %	---	0.50 °C	10.38 °C	9.08 °C	9.26 °C
MO-CA-32	Golden Delicious VA	CA1	→←	→	1.500 %	1.776 %	2.500 %	2.509 %	-0.50 °C	-0.26 °C	-0.68 °C	-0.41 °C
MO-CA-33	Golden Delicious VA	CA1	→←	→	1.500 %	1.466 %	2.500 %	2.416 %	-0.50 °C	-0.11 °C	-0.59 °C	-0.48 °C
MO-CA-34	Golden Delicious VA	CA1	→←	→	1.500 %	1.551 %	2.500 %	2.519 %	-0.50 °C	0.08 °C	-0.40 °C	-0.30 °C
MO-CA-35	Golden Delicious VA	CA1	→←	→	1.500 %	1.698 %	2.500 %	2.287 %	-0.50 °C	-0.07 °C	-0.45 °C	-0.25 °C
MO-CA-31	GDL VA	CA1	→←	→	1.500 %	1.598 %	2.500 %	2.414 %	-0.50 °C	-0.60 °C	-0.70 °C	-0.40 °C
MO-CA-30	FUJ(SF) VA	CA1	→←	→	1.500 %	1.768 %	0.800 %	0.911 %	0.30 °C	0.48 °C	0.23 °C	0.56 °C
MO-CA-29	FUJ(SF) VA	CA1	→←	→	1.500 %	1.737 %	0.800 %	0.886 %	0.30 °C	0.87 °C	0.14 °C	3.47 °C
MO-CA-28	CPR (VA)Non SF	Cooling	→←	→	20.500 %	---	0.500 %	---	-0.50 °C	6.85 °C	6.15 °C	6.41 °C
MO-CA-58	PLD (VA) 1 Degrees	Cooling	→←	→	20.500 %	19.203 %	5.000 %	0.027 %	1.00 °C	1.17 °C	0.77 °C	1.06 °C
MO-CA-57	PLD (VA) 1 Degrees	CA1	→←	→	1.500 %	1.687 %	0.800 %	0.906 %	1.00 °C	1.13 °C	0.95 °C	1.30 °C
MO-CA-56	PLD (VA) 1 Degrees	CA1	→←	→	1.500 %	1.793 %	0.800 %	0.885 %	1.00 °C	1.15 °C	0.92 °C	0.88 °C
MO-CA-55	PLD (VA) 1 Degrees	Cooling	→←	→	20.500 %	19.301 %	5.000 %	-0.033 %	1.00 °C	0.63 °C	1.20 °C	0.95 °C

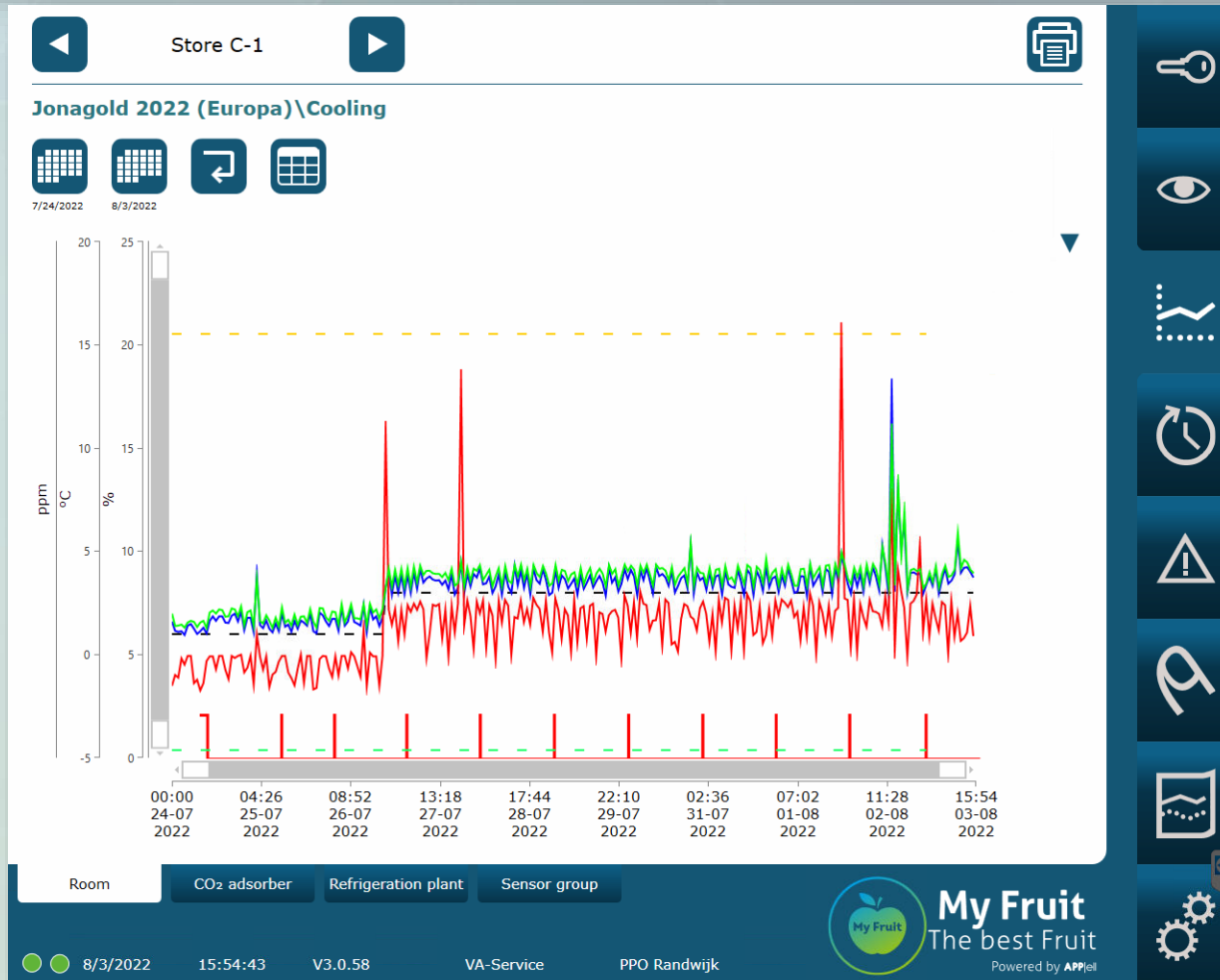
Room Measuring system CO₂ adsorber Refrigeration plants (V)PSA

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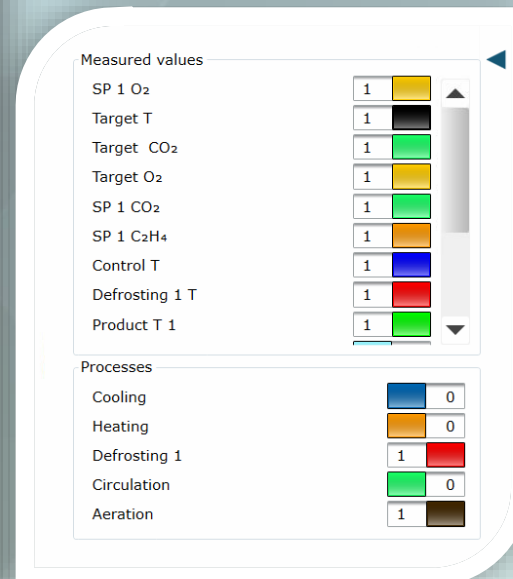
My Fruit The Best Fruit Dynamic Powered by APPIelt

My Fruit Cooling & CA control

Benefits for your products



- ❖ All related parameters in one (customized) graph
 - CA conditions
 - Temperature & RH
 - Product status indicator
 - CA & cooling: processes & data
- ❖ Easy to track & trace the deviations
- ❖ Historical data gives information for future storage



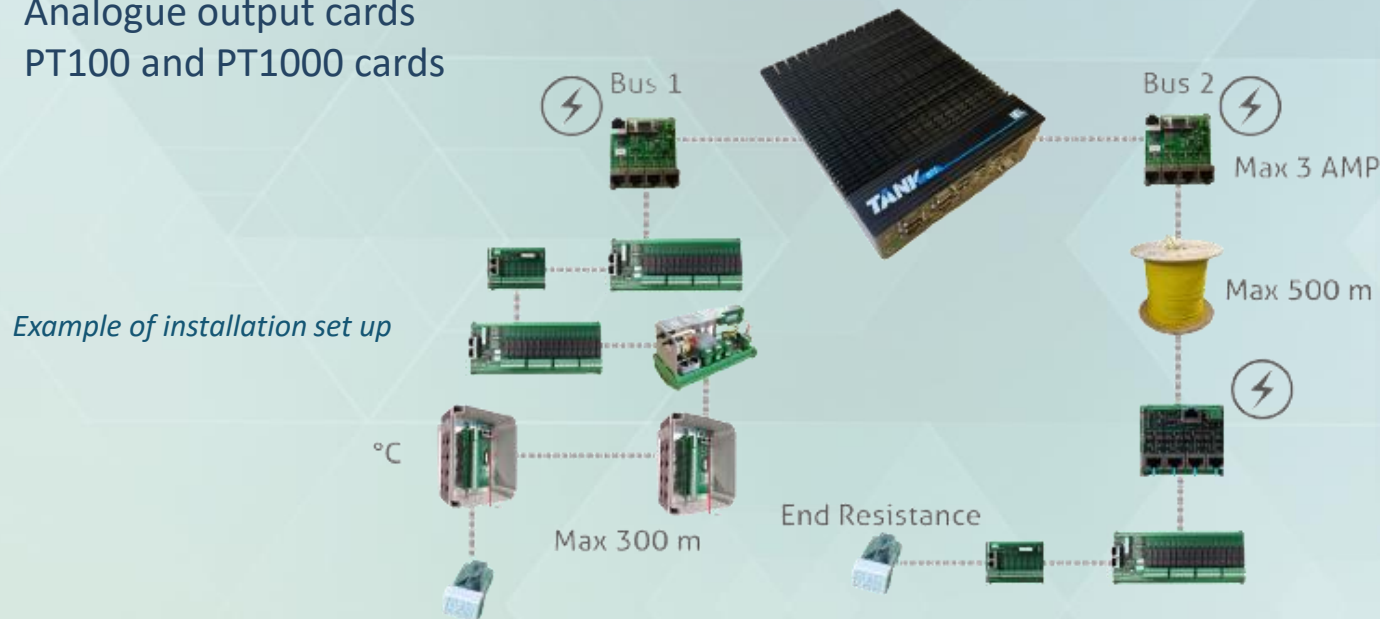
**My Fruit makes
it simple**

My Fruit Cooling & CA control

Benefits for Installation & Communication

- ❖ Cat6 cables
- ❖ Manual forcing of relay outputs via a print switch
- ❖ Plug & play
- ❖ Easy to extend
 - Relay cards
 - Digital input cards
 - Analogue entry cards
 - Analogue output cards
 - PT100 and PT1000 cards

My Fruit can customize your CA & cooling installation via flexible configuration of In/Outputs



Cooling panel



Main panel



These Options Make Big Differences!

Pressure sensor per room:

- Pressure control during cooling
- Pressure control for leakage testing
- Pressure control during ACR respiration measurement



Water meter per room:

- Water loss indicates the functioning of cooling system
- Water loss gives info on fruit quality



Independent temperature pilot sensor per room:

- To prevent too low temperature

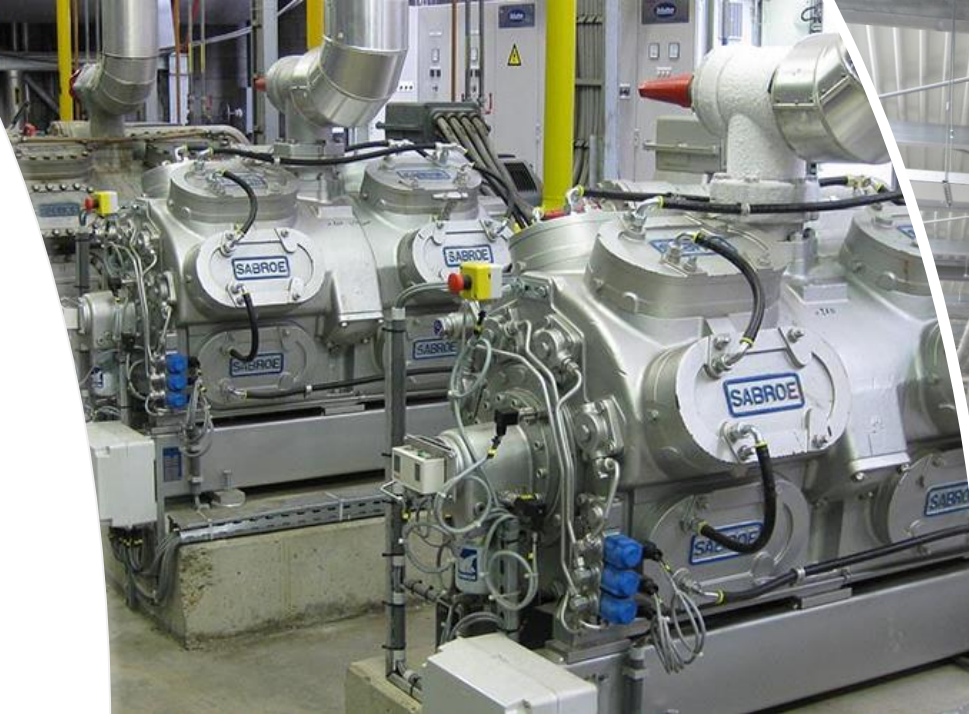


Worldwide monitoring and control

Data is safe in the Cloud



References in
over 60
countries



THE DYNAMIC FRUIT MANAGER



Check our
webinar



SCAN ME

FRUIT STORAGE



The next level of CA storage

CA EQUIPMENT



RESEARCH
CONTROL



CA CONDITIONS



FLEXIBLE
CA STORAGE



VAN CA technology
AMERONGEN

DYNAMIC CA



COOLING CONTROL



WATERLOSS CONTROL



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