compSUPER SIGMA

More than 1000 systems in operation have positioned Advansor as the world's largest manufacturer of transcritical CO_2 refrigeration systems. The SIGMA range represents the most sophisticated models in Advansor's portfolio, using only CO_2 as refrigerant. It provides single pack solutions with integrated capacity for medium (MT) and low temperature (LT) refrigeration, air conditioning (AC) and heating – suitable for e.g. medium sized supermarkets with needs for a "combined energy management system". The SIGMA range provides customers with new possibilities for optimizing their stores in a completely new way. Only one piece of equipment is needed to satisfy all cooling and heating requirements of the store. This is a new opportunity for saving money, time, and only concentrate on core sales.

- All-in-one unit integrated cooling, freezing, air conditioning and heating
- · Compact, easy-to-install and service friendly design
- Energy efficient performance in hot climate Electrical savings: Southern Europe 6-7% (11% including heat recovery)
- High quality as all other Advansor systems
- Green and environmentally friendly refrigerant CO₂
- Future proof solution



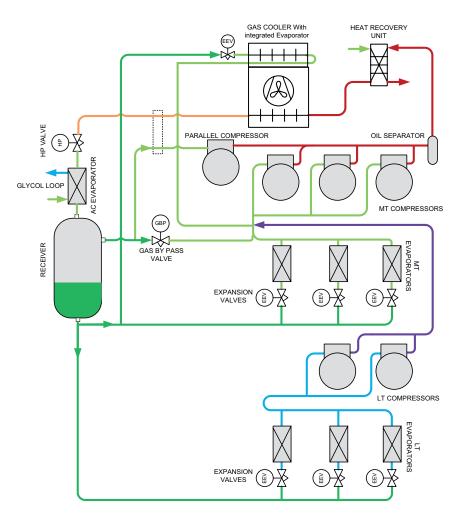
Design

For small and medium sized stores it often makes sense to combine all cooling and heating demands in one integrated solution. Advansor has solved this by developing the compSUPER SIGMA. The system consists of a standard CO_2 booster system serving medium (MT) and low temperature (LT) loads. In a very simple way air condition (AC) capacity and heat capacity is added to the system.

AC capacity is integrated by adding an AC evaporator (refrigerant/glycol) between the high pressure valve (HP-valve) and the receiver. The AC capacity is controlled by modulating receiver pressure, by-pass and glycol-side.

For heating purpose, a normal heat recovery unit is added on the high pressure side. Furthermore, a "heat pump function" can be added by integrating an evaporator in the air cooled gas cooler. This heat exchanger absorbs heat from ambient air when more heat is needed in the store.

With an addition of integrated parallel compression (PC), the system ensures very high efficiency during summer operation with AC as well as winter operation with heat recovery.



SIGMA-Modelle*	compSUPER S (2+1)x1	compSUPER L (3+2)x2	compSUPER L (3+2)x3	compSUPER L (4+2)x3
# of compressors MT+PC/LT	2+1/1	3+2/2	3+2/3	4+2/3
MT capacity [kW]**	50-80	70-130	70-130	120-180
AC capacity [kW]**	20-50	40-100	40-100	80-150
LT capacity [kW]**	5-15	15-30	30-50	30-50
Receiver volume [L]	130	I×I30/ 2×I30	2×130	2×130/3×130
Frequency inverter	One MT and one PC			
Electrical connection	3x400V/50Hz	3×400V/50Hz	3×400V/50Hz	3×400V/50Hz
Length [mm]***	3500 (4000)	5000-6000	5000-6000	6000
Width [mm]***	800 (2300)	800	800	800
Height [mm]***	2000 (2500)	2000	2000	2000
Weight [kg]***	2500 (4000)	3500	3550	4000

^{*} Model examples. Adaptable designs according to customer needs – ask Advansor

Standard configuration:

- High quality, semi-hermetic compressors from leading manufactures
- Frequency controlled compressor at medium temperature and parallel compression
- Design pressure
 - 30 bar on low temperature suction side
 - 52 bar on medium temperature suction side
 - 90 bar on receiver and air conditioning
 - 120 bar on high pressure side
- Gas cooler with speed-controlled fans
- Danfoss or Carel controller
- Oil management system and full compressor protection
- Highest safety level with pressure relief valves, pressure switches and intelligent controls
- Smaller models installed in weather-proof and sound reducing cabinet with integrated gas cooler



compSUPER SIGMA S (2+1)x2

Options:

- Integrated evaporator in gas cooler (air-to-water "heat pump function")
- Enhanced design pressure
 - 60 bar on low temperature suction side
 - 60 bar on medium temperature suction side
 - 90 bar on receiver and air conditioning
 - 120 bar on high pressure side
- System to monitor the unit on an external network
- Energy metering device



^{**}MT and LT capacities stated at respectively -8°C and -30°C evaporation / 32°C ambient air temperature

^{**}AC capacities stated at glycol loop 7/12°C

^{***}Approximate data on all dimensions and weights. Dimensions and weight include rack and electrical panel (closed coupled with cabinet).