CFC-free Refrigerant Inverter Air-cooled Water Chiller

SIIC-36A-R2

Refer carefully to this manual before operation.

SIIC-A-R2 Series

Coding Principle

SIIC - xxx A - R2

- R2=R410A
- Refrigeration Capacity (kW) Air-cooled
- Shini Inverter Industrial Water Chiller

Features

Standard configuration

- Danfoss frequency converter and compressor are able to reach the water temperature accuracy of ±0.2℃ and with control range of 7~25℃. It can automatically collocate with load from 11 to 36kW.
- Multiple safety devices including power reverse phase protection, pump overload protection, overheat protection and low level protection that can automatically detect abnormal operation and indicate this via visible alarm.
- Water circuit adopts PP-R plastic pipes, which are high pressure resistant, antirust and has long service life.
- R410A refrigerant is environment-friendly and high efficient.
- COP can reach 2.8 under nominal conditions.

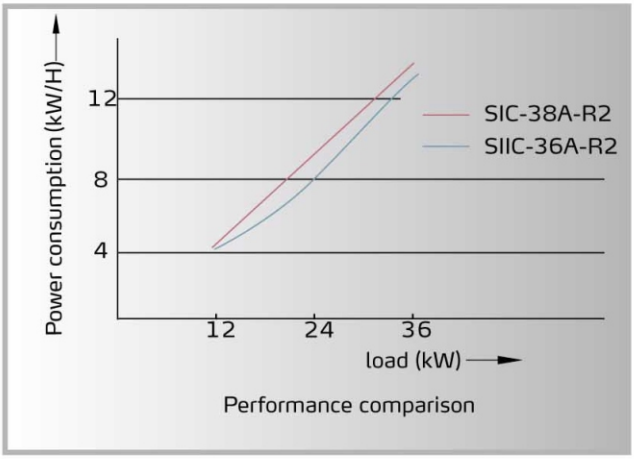
Accessory option

- Danfoss electronic expansion valve is optional.
- Water tank level sensor is optional.
- Flow switch is optional.
- Liquid solenoid valve is optional.
- Refrigerant indicator is optional.
- Medium pressure pump is standard configuration while high pressure one is optional.

Control Panel

Application

Environmental and smart energy control water cooling solution is applicable to plastics industry for precise control of mould temperature. It significantly reduces the cycle time for better production efficiency. SIIC-A-R2 series can be applicable for electronic and machinery manufacturing to ensure normal operation temperature for equipments.



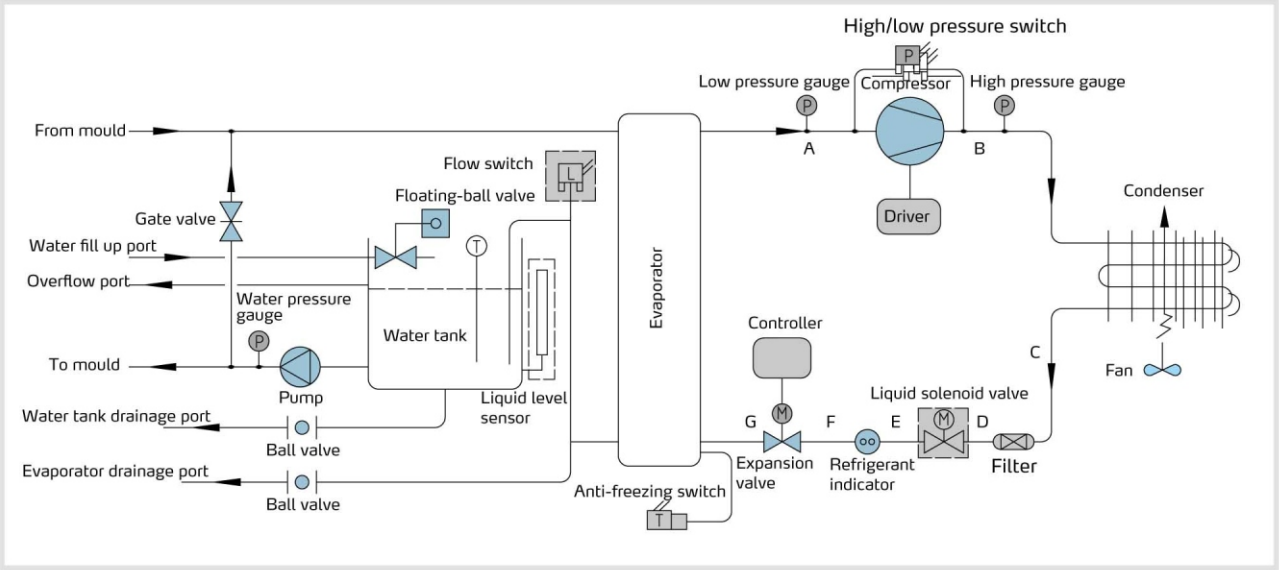
Performance comparison

SIIC-A-R2 Series

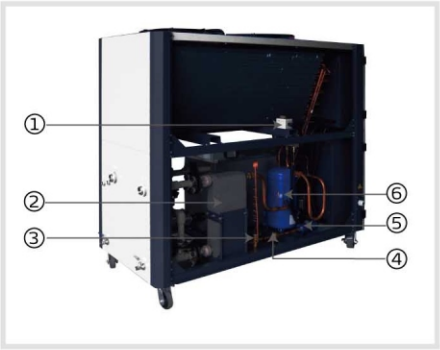
Working Principle

SIIC air-cooled water chillers include four main components, such as compressor, condenser, thermostatic expansion valve and evaporator. The system adopts single closed-loop design for refrigeration system. Refrigerant is alternatively changed from gaseous to liquid state to absorb or release heat thus cooling effect is achieved.

When the SIIC machine is started, compressor begins working. Refrigerant is compressed into high temperature and high pressure gas in the process from A to B. Then this gas reaches C stage where it is cooled down when passing through condenser and changes into liquid. Next the gas comes to E stage following acid filtering by drier filter and then reaches F stage through refrigerant indicator. In the process from F to G, refrigerant is throttled and depressurized by solenoid valve and goes to evaporator, where heat exchange takes place between refrigerant and cooling water. Thus over-heated and gaseous state refrigerant comes back to compressor. This is one circle of refrigeration. If external load is too large and water tank temperature is higher than set point, driving unit will speed up compressor operation to increase refrigeration. On the contrary, if the load is small and water temperature is lower than set value, compressor will be driven to decrease refrigeration in order to fulfill precise temperature control.



Structure



① Anti-freezing switch
② Plate evaporator
③ Thermostatic expansion valve
④ Refrigerant indicator
⑤ Drier filter
⑥ Variable frequency compressor
⑦ High/low system pressure gauge.
⑧ Main power disconnect switch
⑨ Pump pressure gauge
⑩ Powder coated frame

⑪ Heavy duty 3-phase pump ensures no blockages and high torque
⑫ Stainless steel water tank for storage of circulation water
⑬ Plastic pipelines are antirust
⑭ Fin condenser features quick heat transfer and heat radiation

Specifications

Item / Parameter / Model		SIIC-36A-R2
Refrigeration Capacity[1]	kW	24 (11~36)
	kcal/hr	20,640 (9,460~30,960)
Compressor	Output Power (kW)	8.2 (4.4~13)
Refrigerant	Filler Content (kg)	12
	Control Mode	Thermostatic expansion valve/Electronic expansion valve (optional)
	Type	R410A
Evaporator	Type	Plate evaporator
Condenser	Type	Fin style
	Blower (kW)	0.75×2
Water Tank (L)		96
Pump[2]	Power (kW)	1.5
	Working Flow (L/min)	150/195
	Working Pressure (kgf/cm^2)	3.0/4.0
Total Power[3] (kW)		16
Pipe Coupling (inch)	Chilled Water Outlet (inch)	$1^{1}/_{4}$
	Chilled Water Inlet (inch)	$1^{1}/_{4}$
	Drainage Port of Water Tank (inch)	1/2
	Overflow Port of Water Tank (inch)	1/2
Protective Device	Compressor	Overload relay
	Pump	Overload relay
	Refrigerant Circuit	High and low pressure switches/Anti-freezing switch
	Cooling Water Ciucuit	Flow switch (Option)/By-pass valve
Power [4]		3Φ,400VAC,50Hz
Dimensions (mm) (H × D × W)		1693×1882×905
Measures Exchange		1 kW = 860 kcal/hr 1 RT = 3,024 kcal/hr 10,000 Btu/hr = 2,520 kcal/hr

Notes: 1) Refrigeration capacity is measured based on the flow 0.172 m^3 / (h·k W) and the outlet temperature (7 ℃) of chilled water under the environment temperature of 35℃.

2) This pump is used as standard either for domestic or Southeast Asia; high pressure pump (Model denotes "HP", such as SIIC-36A-R2-HP) is optional for installation on customer's demands.

3) Pump power is included in total power.

4) Demands on special voltage of power supply could be satisfied.

We reserve the right to change specifications without prior notice.

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