

ISCC - ISCH



Air-cooled modulating water chillers and heat pumps with backward curved blade fans

Range:

Cooling capacity: 60 ÷ 120 kW
Heating capacity: 66 ÷ 130 kW

Available versions:

- low noise

R410A refrigerant

Inverter driven Scroll compressors

STANDARD FEATURES

- Self-supporting galvanized sheet steel framework with panels painted with epoxy powder paints (colour RAL 7037) equipped with fast screws for easy and quick access
- Inverter-driven hermetic Scroll compressor, equipped with
 - Inverter speed control
 - Oil by-pass valve and line
 - Soft start
 - Integrated power factor correction condenser
 - Integrated thermal protection
 - Anti-vibration supports
- Inverter driver with IP54 protection grade coupled with a specific compressor and positioned in a dedicated housing compartment
- Compressor sound-proofing with noise insulating jackets and, only for model 1221A, soundproofing of the compressor compartment
- Vibration absorbers on the compressor discharge and suction line (only for model 1221A)
- Single refrigerant circuit in accordance with EC standards (directive PED 97/23/CE) in copper piping including dehydration filter, liquid sight glass, electronic expansion valve connected to and driven by the unit control, high and low pressure switches and transducers. **The refrigerant circuit features an exclusive patented system for optimum lubrication management of the tandem compressors**
- Continuous operation up to -20°C (only ISCC)
- Environmentally friendly refrigerant R410A
- Crankcase heaters and inverter with oil heating function
- Brazed plate water side heat exchangers in stainless steel, insulated with closed-cell expanded polyurethane and anti-freeze heaters
- Refrigerant side cycle inversion with 4-way inversion valve (only ISCH)
- Water flow differential pressure switch
- Air side exchange coil and free-cooling coil with aluminium fins and mechanically expanded copper piping
- Backward curved blade single aspiration centrifugal fans with directly coupled motor. The impeller is statically and dynamically balanced and the bearings are sealed and lubricated for life.
- Modulating condensation control by means of continuous fan speed control
- Electrical panel in accordance with EC standards (directive 73/23/EC and directive EMC 89/336/EC) IP54 protection grade with auxiliary transformer, minimum and maximum temperature control, general door interlock cut off switch, protection and remote control switches
- Phase sequence control
- UPC1m microprocessor control including:
 - Chilled / hot water temperature regulation by means of self adaption of the set point regulation band
 - Management of the electronic thermostatic valve
 - Compressor management driven by inverter
 - Quick start start-up procedure
 - Integrated LAN card
 - Integrated clock card
 - Compatibility with Modbus protocol via RS485
 - Compatibility with the most common external BMS: LONworks, BacNET, TCP/IP, Trend

TECHNICAL DATA

ISCC/ISCH MODELS		0621A	0921A	1221A
Power supply	V/ph/Hz		400 / 3 + N / 50	
Fans	nr.	2	3	4
Refrigerant circuits	nr.	1	1	1
Compressors	nr.		1 ON/OFF +1 driven by inverter	
Evaporator	nr.	1	1	1
Evaporator	mod		Plate	
ISCC – Low noise version				
Cooling capacity (1)	kW	59.7	88.1	117.0
Absorbed power (1) (2)	kW	21.4	30.8	41.4
E.S.E.E.R. (4)		3.98	4.42	4.35
I.P.L.V. (5)		5.63	5.70	5.66
ISCH – Low noise version				
Heating capacity (3)	kW	67.4	98.7	131.0
Absorbed power (3) (2)	kW	21.5	31.2	42.5
Noise pressure level (6)	dB(A)	67.6	69.1	72.5
ISCC – Low noise version (EC)				
Cooling capacity (1)	kW	59.8	88.2	117.1
Absorbed power (1) (2)	kW	21.4	30.8	41.4
E.S.E.E.R. (4)		3.98	4.42	4.35
I.P.L.V. (5)		5.63	5.70	5.66
ISCH – Low noise version (EC)				
Cooling capacity (1)	kW	67.4	98.7	131.2
Absorbed power (1) (2)	kW	21.6	31.2	42.5
Noise pressure level (6)	dB(A)	65.3	66.8	71.2
Dimensions and weights				
Height	mm	1560	1560	1874
Length	mm	1190	1190	1192
Width	mm	2008	2798	3075
Weight ISCC (basic version) (7)	Kg	818	1179	1277
Weight ISCH (basic version) (7)	Kg	848	1209	1322

(1) Data refer to nominal conditions: water temperature: 15/10°C; external temperature 35°C; glycol 20%; inverter compressor at 90rps R410A refrigerant; 50Pa

(2) Data refer to total absorbed power (compressors and fans)

(3) Data refer to nominal conditions: water temperature 40/45°C, external temperature 7°C dry bulb 6°C wet bulb; inverter compressor 90rps; R410A refrigerant; 50Pa

(4) European Seasonal Energy Efficiency Ratio

(5) Integrated Partial Load Value

(6) Data measured in free field conditions at 1m from the ducted unit operating at nominal conditions, coil side, directional factor Q=2

(7) Data refer to an empty unit without pump

CONSTRUCTION OPTIONS

- Integrated hydraulic module with one or two pumps (1+1 in stand-by) with heat protected circulation, expansion vessel and safety valve
- Integrated hydraulic module with one or two inverter driven pumps (1+1 in stand-by) with heat protected circulation, expansion vessel and safety valve
- Cataphoresis treatment for condensing coils
- Shut-off taps on the compressor discharge
- Power factor correction on compressors
- Modification of the set-point by external signal 0-10V

OPTIONS

- Remote user terminal mP20 II (up to 200 metres) for:
 - entering of commands
 - display unit status and alarms
- RS485 serial adaptor used to communicate with the Uniflair supervisory system or to interface with external BMS
- LON FTT10 serial adaptor used to communicate with external BMS managed with LON protocol
- TCP/IP serial adaptor used to communicate with external BMS managed with SNMP protocol
- Air side coil protection filters and grills
- Rubber or spring anti-vibration supports

ISCF



Air-cooled modulating water chillers and heat pumps with backward curved blade fans and free-cooling system

Range:

Cooling capacity: 60 ÷ 120 kW

Available versions:

- low noise

R410A refrigerant

Inverter driven Scroll compressors

STANDARD FEATURES

- Exclusive free-cooling system completely managed by the control system
- Self-supporting galvanized sheet steel framework with panels painted with epoxy powder paints (colour RAL 7037) equipped with fast screws for easy and quick access
- Inverter-driven hermetic Scroll compressor, equipped with
 - Inverter speed control
 - Oil by-pass valve and line
 - Soft start
 - Integrated power factor correction condenser
 - Integrated thermal protection
 - Anti-vibration supports
- Inverter driver with IP54 protection grade coupled with a specific compressor and positioned in a dedicated housing compartment
- Compressor sound-proofing with noise insulating jackets and, only for model 1221A, soundproofing of the compressor compartment
- Vibration absorbers on the compressor discharge and suction line (only for model 1221A)
- Single refrigerant circuit in accordance with EC standards (directive PED 97/23/CE) in copper piping including dehydration filter, liquid sight glass, electronic expansion valve connected to and driven by the unit control, high and low pressure switches and transducers. **The refrigerant circuit features an exclusive patented system for optimum lubrication management of the tandem compressors**
- Continuous operation up to -25°C
- Environmentally friendly refrigerant R410A
- Crankcase heaters and inverter with oil heating function
- Brazed plate water side heat exchangers in stainless steel, insulated with closed-cell expanded polyurethane and anti-freeze heaters
- Pump for free-cooling circuit
- Water flow differential pressure switch
- Air side exchange coil and free-cooling coil with aluminium fins and mechanically expanded copper piping
- Backward curved blade single aspiration centrifugal fans with directly coupled motor. The impeller is statically and dynamically balanced and the bearings are sealed and lubricated for life.
- Modulating condensation control by means of continuous fan speed control
- Electrical panel in accordance with EC standards (directive 73/23/EC and directive EMC 89/336/EC) IP54 protection grade with auxiliary transformer, minimum and maximum temperature control, general door interlock cut off switch, protection and remote control switches
- Phase sequence control
- UPC1m microprocessor control including:
 - Chilled / hot water temperature regulation by means of self adaptation of the set point regulation band
 - Management of the electronic thermostatic valve
 - Compressor management driven by inverter
 - Quick start start-up procedure
 - Integrated LAN card
 - Integrated clock card
 - Compatibility with Modbus protocol via RS485
 - Compatibility with the most common external BMS: LONworks, BacNET, TCP/IP, Trend

TECHNICAL DATA

ISCF MODEL		0621A	0921A	1221A
Power supply	V/ph/Hz		400 / 3 + N / 50	
Fans	nr.	2	3	4
Refrigerant circuits	nr.	1	1	1
Compressors	nr.		1 ON/OFF +1 driven by inverter	
Evaporator	nr.	1	1	1
Evaporator	mod		plate	
ISCF – Low noise version				
Cooling capacity (1)	kW	64.7	95.3	126.8
Absorbed power (1) (2)	kW	22.0	31.5	42.4
Capacity in free-cooling (3)	kW	43.6	62.7	84.0
Absorbed power in free-cooling (3) (4)	kW	4.6	7.3	9.2
E.E.R. in free-cooling (4)		9.5	8.6	9.1
Noise pressure level (5)	dB(A)	67.6	69.1	72.5
Dimensions and weights				
Height	mm	1560	1560	1874
Length	mm	1190	1190	1192
Width	mm	2008	2798	3075
Weight (basic version) (6)	Kg	751	935	1212

(1) Data refer to nominal conditions: water temperature: 15/10°C; external temperature 35°C; glycol 20%; inverter compressor at 90rps R410A refrigerant; ESP=50Pa

(2) Data refer to total absorbed power (compressors and fans)

(3) Data refer to nominal conditions: inlet water temperature 15°C, external temperature 5°C; glycol 20%; inverter compressor at 90rps R410A refrigerant; ESP=50Pa

(4) Data refer to total absorbed power (fans and free-cooling pump)

(5) Data measured in free field conditions at 1m from the ducted unit operating at nominal conditions, coil side, directional factor Q=2

(6) Data refer to an empty unit without pump

CONSTRUCTION OPTIONS

- Remote user terminal mP20 II (up to 200 metres) for:
 - entering of commands
 - display unit status and alarms
- RS485 serial adaptor used to communicate with the Uniflair supervisory system or to interface with external BMS
- LON FTT10 serial adaptor used to communicate with external BMS managed with LON protocol
- TCP/IP serial adaptor used to communicate with external BMS managed with SNMP protocol
- Cataphoresis treatment for condensing and free-cooling coils
- Shut-off taps on the compressor discharge
- Power factor correction on compressors
- Modification of the set-point by external signal 0-10V

OPTIONS

- Remote user terminal mP20 II (up to 200 metres) for:
 - entering of commands
 - display unit status and alarms
- RS485 serial adaptor used to communicate with the Uniflair supervisory system or to interface with external BMS
- LON FTT10 serial adaptor used to communicate with external BMS managed with LON protocol
- TCP/IP serial adaptor used to communicate with external BMS managed with SNMP protocol
- Air side coil protection filters and grills
- Rubber or spring anti-vibration supports