INTARCON

Heat on demand R-290
Water-Water Full INVERTER

- Full INVERTER compressors.
- Natural refrigerant R-290.
- High energy efficiency
- Reduced footprint.

Water-Water chiller plants for commercial and industrial refrigeration applications with reduced R-290 load and Full INVERTER compressors.

Renewable technologies hibridation

The use of water condensing circuits allows a greater optimisation of synergies with other thermal processes present in factories, shops and industry, such as heat recovery, geothermal energy and hybridisation with photovoltaics.

Features

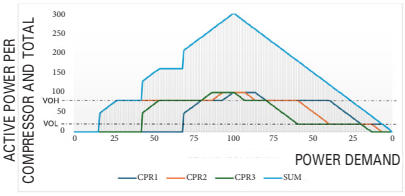
- 380÷460 V 3 ~ 50/60 Hz power supply. Others voltages by request.
- R-290 low refrigerant charge.
- Self-supporting body made of galvanised steel sheet with polyester paint for outdoor use.
- Semi-hermetic compressors with unloaded start with Inverter drive in each compressor, assembled on silentblocks, with rotalock service valves, ATEX class crankcase heater and electronic protection module
- Refrigeration circuit made of annealed copper tube with soldered joints, filter drier, high and low pressure switches, pressure transducers, temperature probes and ducted safety valves.
- Pure copper brazed stainless steel plate evaporators and condensers.
- Liquid solenoid valves and electronic expansion valves.
- Cold water hydraulic circuit made of stainless steel (≥DN100) or annealed copper tube (<DN100), with fill/drain valve, air bleeder, electronic flow switch, inlet and outlet thermometers and pressure gauges.
- Hot water hydraulic circuit made of stainless steel (≥DN100) or annealed copper tube (<DN100), with fill/drain valve, air bleeder, electronic flow switch, inlet and outlet thermomanometers.
- Watertight control and power control panel with independent differential and magnetothermal protection per compressor. Forced ventilation in electrical panel.
- Programmable electronic control board with temperature control over the unit cold water circuit, remote control of the primary pumps for cold and hot water circuits, remote start-stop, remote setpoint control via 0-10V signal and alarm indicator light.
- Hot water inlet temperature between +10 °C and +50 °C.

Full INVERTER

The Full INVERTER system provides precise control over the glycol supply temperature, in the face of a variable refrigeration demand.

This system controls sequentially and simultaneously the capacity of the compressors, varying the motor speed from 30 to 70Hz, and avoiding starts and stops, with significant energy savings.

Compressors will always try to operate between their "minimum optimal speed" (VOL) and their "maximum optimal speed" (VOH) unless they are already at their limits and need to be further increased or decreased. As long as they operate within this range they will operate at their maximum EER and therefore at their best efficiency. Considering as an example 3 compressors with VOL = 20 % and VOH = 80 %, the on-off sequence they follow is The following sequence of activation-deactivation is described below:



Low refrigerant charge.

WK water--water units are designed with multiple cooling circuits in parallel. Each circuit has a reduced refrigerant charge of R-290, less than 5 kg, to comply with the charge limits of the European standard EN378, to allow the plants to be installed even outdoors in commercial premises. R-290 load limits per circuit according to:

Establishment category	Location of equipment	
	Indoor (type 1)	Outdoor (type 3)
A. Public access	1,5 kg	5 kg
B. Supervised access	2,5 kg	10 kg
C. Restricted access	10 kg	No limit

400V 3 50Hz | High temperature | Water - Water | R-290

Refrigerant	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) (1)	Input power (kW)	Ecodesign SEPR (2)	Max. input current (A)	Max. heating capacity (kW)	Max. water flow cold / hot (m³/h)	Pressure drop water circuit cold / hot (kPa)	Hydraulic connection water circuit cold / hot	Refrigerant charge per circuit (kg)	Weight (kg)	SPL dB(A) (3)
R-290	**AWK-FHD-10 502**	2x 25	2x V25-71AXH	142	38,3	7,4	78,2	180,9	24,4 / 30,9	30 / 55	DN100 / DN100	< 5	1 602	54
	AWK-FHD-10 802	2x 40	2x Z40-126AXH	240	62,5	7,7	133,8	303,3	41,1 / 51,8	45 / 60	DN125 / DN125	< 5	1 714	59
	AWK-FHD-11 002	2x 50	2x Z50-168AXH	308	81,5	8,2	171,4	389,5	52,6 / 66,6	35 / 65	DN125 / DN125	< 5	1 722	68
	AWK-FHD-21 203	3x 40	3x Z40-126AXH	361	93,8	8,4	197,2	455,0	61,7 / 77,8	44 / 55	DN150 / DN150	< 5	2 820	61
	AWK-FHD-21 503	3x 50	3x Z50-168AXH	462	122,3	8,0	253,6	584,4	79,0 / 99,9	35 / 60	DN150 / DN150	< 5	2 568	70
	AWK-FHD-22 253	3x 75	3x W75-228AXH	648	174,3	7,6	324,2	822,6	110,8 / 140,6	40 / 70	DN150 / DN150	< 5	2 820	67

400V 3 50Hz | Positive temperature | Water | R-290

Refrigerant	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) (1)	Input power (kW)	Ecodesign SEPR (2)	Max. input current (A)	Max. heating capacity (kW)	Max. water flow cold / hot (m³/h)	Pressure drop water circuit cold / hot (kPa)	Hydraulic connection water circuit cold / hot	Refrigerant charge per circuit (kg)	Weight (kg)	SPL dB(A) (3)
R-290	**MWK-FHD-10 502**	2x 25	2x V25-71AXH	88	36,0	4,4	78,2	124,0	13,5 / 21,2	30 / 55	DN80 / DN80	< 5	1 602	55
	MWK-FHD-10 802	2x 40	2x Z40-126AXH	150	60,0	4,9	133,8	210,0	23,0 / 35,9	30 / 60	DN100 / DN100	< 5	1 714	60
	MWK-FHD-11 002	2x 50	2x Z50-168AXH	196	77,0	5,0	171,4	273,0	30,0 / 46,6	30 / 70	DN100 / DN100	< 5	1 722	69
	MWK-FHD-21 203	3x 40	3x Z40-126AXH	225	90,0	4,9	197,2	315,0	34,5 / 53,8	25 / 55	DN125 / DN125	< 5	2 820	62
	MWK-FHD-21 503	3x 50	3x Z50-168AXH	294	115,5	5,0	253,6	409,5	45,1 / 70,0	30 / 65	DN125 / DN125	< 5	2 568	71
	MWK-FHD-22 253	3x 75	3x W75-228AXH	360	174,0	4,4	324,2	534,0	55,2 / 91,3	35 / 60	DN125 / DN125	< 5	2 820	68

400V 3 50Hz | Negative temperature | Ethylene glycol - Water | R-290

Refrigerant	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) (1)	Input power (kW)	Ecodesign SEPR (2)	Max. input current (A)	Max. heating capacity (kW)	Max. water flow cold / hot (m³/h)	Pressure drop water circuit cold / hot (kPa)	Hydraulic connection water circuit cold / hot	Refrigerant charge per circuit (kg)	Weight (kg)	SPL dB(A) (3)
R-290	**BWK-FHD-10 502**	2x 25	2x V25-71AXH	38	17,5	2,6	78,2	64,0	6,58 / 10,9	15 / 45	DN80 / 2 1/2"	< 5	1 602	55
	BWK-FHD-10 802	2x 40	2x Z40-126AXH	56	27,8	3,1	133,8	113,6	12,2 / 19,4	20 / 60	DN100 / DN80	< 5	1 714	60
	BWK-FHD-11 002	2x 50	2x Z50-168AXH	71	37,0	2,9	171,4	147,7	15,8 / 25,2	25 / 60	DN100 / DN80	< 5	1 722	69
	BWK-FHD-21 203	3x 40	3x Z40-126AXH	84	41,7	3,1	197,2	170,4	18,4 / 29,1	25 / 60	DN100 / DN100	< 5	2 820	62
	BWK-FHD-21 503	3x 50	3x Z50-168AXH	107	55,5	2,9	253,6	221,6	23,8 / 37,9	25 / 55	DN100 / DN100	< 5	2 568	71
	BWK-FHD-22 253	3x 75	3x W75-228AXH	137	76,4	2,5	324,2	276,9	27,0 / 47,3	20 / 45	DN125 / DN125	< 5	2 820	68

Options

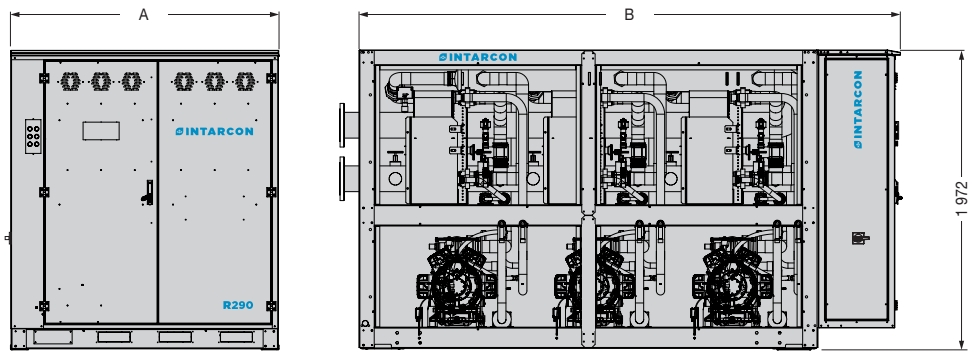
- Change to Bitzer Full INVERTER compressor, except 75HP models (on request)
- Leak detector.
- Paneling prepared for outdoors with acoustic panelling, ATEX extraction fan and differential air pressure switch.
- Rodent-proof paneling prepared for outdoors.
- Electronic control and spare driver.
- Compressor network analyser.
- Network analyser in general supply.
- Network analyser in general supply with current consumption prevention. Multi-tube heat exchanger in evaporator and condenser.
- Silentblock.
- Heat mode setting, which allows it to work according to the setpoint temperature of the hot water circuit.

(1) General conditions: condensing water 30/35° C, with water I/O 12/7 °C in HT, propylene glycol (35%) I/O -2/-8 °C in PT, and with ethylene glycol (50%) I/O -19/-25 °C in NT.

(2) COP/SEPR: Coefficient of performance according to (UE) 2015/1095 and (UE) 2016/2281.

(3) Free-field sound pressure level with compressors running at full capacity (65 Hz for HT, 70 Hz for PT and NT), directivity 1, measured at 10 m from the source (non-binding value calculated from the sound power).

Dimensions



Dimensions in mm.

Dimensions (mm)	A	B
1 series	1 758	2 648
2 series	1 758	3 547