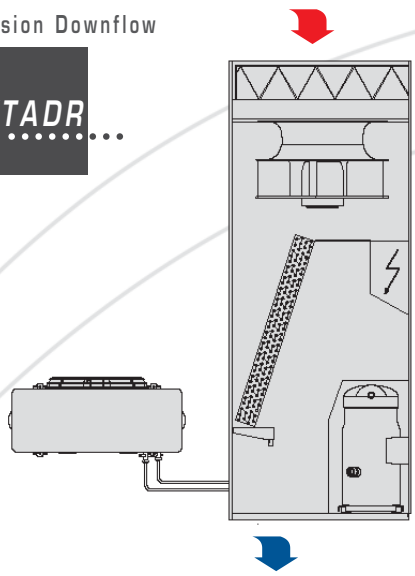
HiRef®

J.REF
T.REF

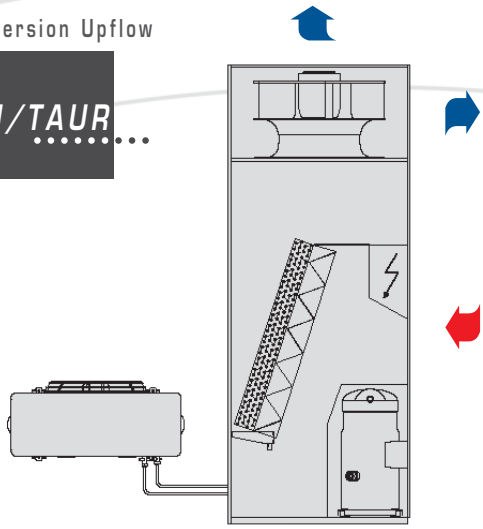
DX Version Downflow

J/TADR.....



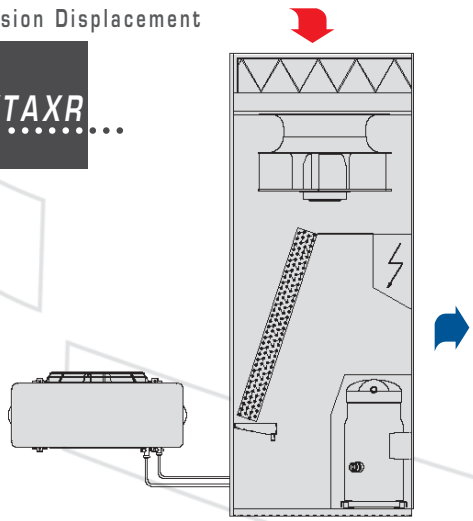
DX Version Upflow

J/TAUR.....



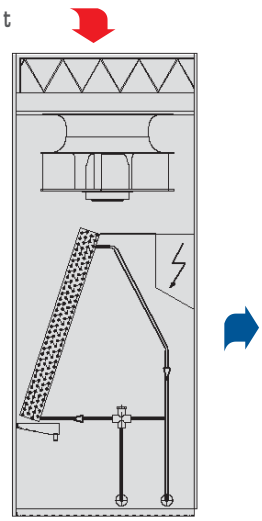
DX Version Displacement

J/TAXR.....



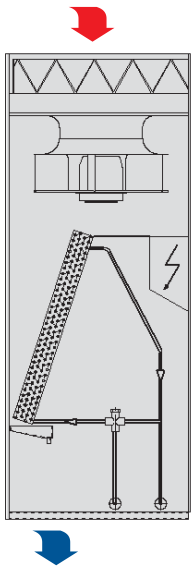
CW Version Displacement

J/TCXR.....



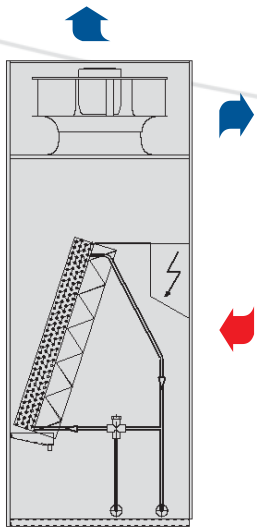
CW Version Downflow

J/TCDR.....



CW Version Upflow

J/TCUR.....



MAIN CONFIGURATIONS AVAILABLE

AIREF series

design and technology

HIGHTECH AIR CONDITIONERS FOR CLOSE CONTROL

HiRef

The new Series of AIREF Close Control Air Conditioning units are designed to guarantee and respect all environment protection parameters; they represent the perfect answer to all technical requirements of different technological plant concepts (control rooms, EDP rooms, textile industry, metrological rooms etc.).

••DESIGN••

The exclusive design with rounded edges, the innovative graphite grey colour and the excellent performances of the AIREF series have become the new high quality standard in the close control air conditioning sector.

••EFFICIENCY AND RELIABILITY••

Highest energy efficiency, smallest dimensions and lowest noise levels: this were HiRef's targets when developing it's new CCAC series, units designed in order to operate 24 hours a day, 365 days a year.

Only internationally well known quality components and newest technology devices are used in the Airef series in order to guarantee top efficiency and reliability. Technical features such as electronic expansion valves (which Hiref has registered the patent number n° B02002A000785), radial fans with reverse blades and electronically commutated DC motors offer various opportunities in energy saving. The reduction of energy consumption in comparison with traditional technologies reaches values up to 50%.

••MICROPROCESSOR CONTROL••

The Microprocessor control, available in Basic or Advanced Graphic version, manages all functions of the AIREF series. This control offer the opportunity to connect up to 16 units together creating a local network (LAN) and allowing, among different options, to balance operation times in an automatic stand by and rotation function. The microprocessor controls are available with a LCD display (Basic version) or with a graphic display (Advanced version) and are compatible with the most widespread communication protocols.
HiRef Software Development Team (HST) moreover, is able to develop control strategies according to customers special requirements.

••EASY MAINTENANCE••

All main components are reachable from the front part of the unit in order to reduce technical spaces necessary for installation and maintenance: e-panel, compressor, fans, humidifier, electrical heaters, expansion valve and liquid flow filter can be easily reached by just opening the front panel. This guarantees fast and safe intervention.
If necessary the front panels can be removed quickly and easily in order to facilitate the technician's operations.

TECHNICAL FEATURES

••FLEXIBILITY••

Airef series units are available in a wide range of configurations:

BASIC UNIT

JREF (5,9 - 22,2 kW)
TREF (21,2 - 118.5 kW)

VERSIONS:

- Cooling only
- Cooling + re-heating (electrical heaters / hot gas / hot water)
- Cooling + re-heating + humidity and temperature control

MODEL

- **DX version: direct expansion unit**

A: Direct expansion air cooled with remote condenser
W: Direct expansion water cooled
F: free cooling (with remote dry cooler)
D: Dual Cooled with Direct expansion (air condensed) and a separate chilled water circuit
Q: Dual Cooled with Direct expansion (water condensed) and a separate chilled water circuit

- **CW version: chilled water unit**

C: basic configuration
S: slave unit without control

AIR FLOW

D: downflow version
U: upflow version
X: displacement version

FANS

C: centrifugal with forward curved blades (except TREF models)
R: radial with backward curved blades

All versions can be integrated with a wide range of accessories: silent plenum, fire and smoke alarms, water alarm, adjustable base frame and many others. Moreover the units are available in monocircuit version with tandem compressors for a COP improvement. Various configurations of the Airef series offers always the right unit suitable for all kind of installations.

••JREF CW chilled water unit••

Model		JCDC0080 JCUC0080	JCDC0110 JCUC0110	JCDC0140 JCUC0140	JCDC0160 JCUC0160	JCDC0200 JCUC0200	JCDC0230 JCUC0230
Total cooling capacity [1]	kW	7,6	10,6	13,9	15,6	19,3	22,2
SHR		0,83	0,83	0,84	0,83	0,84	0,83
Nominal air flow	m^3/h	1.785	2.150	3.530	3.470	5.115	4.990
Coil frontal surface	m^2	0,29	0,29	0,47	0,47	0,65	0,65
Coil rows	nr	3	4	3	4	3	4
No. of fans	nr	1	1	2	2	2	2
AESP	Pa	30	30	30	30	30	30
Water flow	l/s	0,36	0,50	0,66	0,74	0,92	1,06
Sound pressure level[3]	dB(A)	48	50	51	51	52	52
Power supply	V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Dimensions LxHxD [6]	mm	600x1.875x449	600x1.875x449	900x1.875x449	900x1.875x449	1.200x1.875x449	1.200x1.875x449
Weight	kg	125	135	150	160	170	175

••JREF DX direct expansion unit••

Model		JADC0060 JAUC0060	JADC0080 JAUC0080	JADC0100 JAUC0100	JADC0110 JAUC0110	JADC0130 JAUC0130	JADC0160 JAUC0160	JADC0190 JAUC0190
Total cooling capacity [2]	kW	5,9	7,7	9,3	10,6	12,6	15,6	18,2
SHR		1	1	1	1	0,96	0,98	0,98
Compressor absorbed power	kW	1,5	1,9	2,3	2,6	3,2	4,1	4,7
EER		3,93	4,05	4,04	4,04	3,93	3,80	3,87
No. of compressors	nr	1	1	1	1	1	1	1
Nominal air flow	m^3/h	1.785	2.150	3.530	3.530	3.470	5.115	4.990
Coil frontal surface	m^2	0,29	0,29	0,47	0,47	0,47	0,65	0,65
Coil rows	nr	3	4	3	3	3	3	4
No. of fans	nr	1	1	2	2	2	2	2
AESP	Pa	20	20	20	20	20	20	20
Sound pressure level[3]	dB(A)	46	48	48	49	51	52	53
Refrigerant		R407C	R407C	R407C	R407C	R407C	R407C	R407C
Power supply	V/Ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
Dimensions LxHxD [6]	mm	600x1.875x449	600x1.875x449	900x1.875x449	900x1.875x449	900x1.875x449	1.200x1.875x449	1.200x1.875x449
Weight	kg	150	157	195	210	230	245	255

••TREF CW chilled water unit••

Model		TCDR0300 TCUR0300	TCDR0400 TCUR0400	TCDR0500 TCUR0500	TCDR0650 TCUR0650	TCDR0900 TCUR0900	TCDR1000 TCUR1000
Total cooling capacity (1)	kW	32,4	37,5	51,8	63,8	87,4	101,4
SHR		0,83	0,84	0,83	0,82	0,84	0,82
Nominal air flow	m^3/h	8.120	14.500	14.500	14.500	22.450	22.450
Maximum air flow	m^3/h	10.450	18.615	18.615	18.615	28.145	28.145
Maximum air flow cooling capacity (1)	kW	38.7	47.5	61.2	69.8	94.7	118.6
Coil surface	m^2	1,05	1,85	1,85	1,85	2,80	2,80
Coil rows (5)	nr	4	2	3	4	3	4
No. of fans	nr	1	2	2	2	3	3
AESP (maximum speed)	Pa	380	430	405	385	405	405
Water flow	l/s	1,55	1,80	2,47	3,05	4,17	4,84
Sound pressure level(4)	dB(A)	58	60	61	61,5	63	63,5
Power supply	V/Ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
Dimensions LxHxD (6)	mm	1.000x1.998x795	1.750x1.998x795	1.750x1998x795	1.750x1.998x795	2.500x1.998x795	2.500x1.998x795
Weight	kg	310	370	410	430	490	510

••TREF DX direct expansion unit (1 compressor)••

Model		TADR0201 TAUR0201	TADR0251 TAUR0251	TADR0271 TAUR0271	TADR0301 TAUR0301	TADR0401 TAUR0401
Total cooling capacity (2)	kW	21,2	23,2	27,3	31,5	41,2
SHR		1	1	1	0,99	0,97
Compressor absorbed power	kW	5,8	6,1	7,3	8,4	11,1
EER		3,65	3,80	3,74	3,75	3,71
No. of compressors	nr	1	1	1	1	1
Nominal air flow	m^3/h	7.280	7.280	12.950	12.950	12.950
Coil frontal surface	m^2	0,75	0,75	1,34	1,34	1,34
Coil rows	nr	4	4	3	3	4
No. of fans	nr	1	1	2	2	2
AESP (maximum speed)	Pa	380	380	425	425	355
Sound pressure level(4)	dB(A)	52	53	55	56,5	60
Refrigerant		R407C	R407C	R407C	R407C	R407C
Power supply	V/Ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
Dimensions LxHxD (6)	mm	1.000x1.998x795	1.000x1.998x795	1.750x1.998x795	1.750x1.998x795	1.750x1.998x795
Weight	kg	375	385	570	585	595

••TREF DX direct expansion unit (2 compressors)••

Model		TADR0272 TAUR0272	TADR0302 TAUR0302	TADR0362 TAUR0362	TADR0422 TAUR0422	TADR0452 TAUR0452	TADR0552 TAUR0552	TADR0602 TAUR0602	TADR0692 TAUR0692	TADR0762 TAUR0762
Total cooling capacity (2)	kW	26,9	31,9	35,9	41,9	44,3	54,4	61,4	68,7	76,2
SHR		1	0,99	0,98	0,97	0,98	1	0,96	0,95	0,93
Compressor absorbed power	kW	6,8	8,5	9,8	11,6	12,2	14,6	16,9	19,7	22,4
EER		3,95	3,75	3,66	3,61	3,63	3,72	3,63	3,49	3,41
No. of compressors	nr	2	2	2	2	2	2	2	2	2
Nominal air flow	m^3/h	12.950	12.950	12.950	12.950	12.950	19.415	19.415	19.415	19.415
Coil frontal surface	m^2	1,34	1,34	1,34	1,34	1,34	2,00	2,00	2,00	2,00
Coil rows	nr	3	3	3	4	4	3	4	4	4
No. of fans	nr	2	2	2	2	2	3	3	3	3
AESP (maximum speed)	Pa	425	425	425	355	355	405	378	378	378
Sound pressure level (4)	dB(A)	56	58	59	62	62	64	65	65	65
Refrigerant		R407C	R407C	R407C	R407C	R407C	R407C	R407C	R407C	R407C
Power supply	V/Ph/Hz	400/ 3+N/50	400/ 3+N/50	400/ 3+N/50	400/3+N/ 50	400/3+N/ 50	400/3+N/ 50	400/3+N/ 50	400/3+N/ 50	400/3+N/ 50
Dimensions LxHxD (6)	mm	1.750x 1.998x 795	1.750x 1.998x 795	1.750x 1.998x 795	1.750x 1.998x 795	1.750x 1.998x 795	2.500x 1.998x 795	2.500x 1.998x 795	2.500x 1.998x 795	2.500x 1.998x 795
Weight	kg	565	580	590	605	615	905	940	958	979

(1) Water in/out: 7/12°C, Room conditions: 24°C 50% U.R

(2) Room conditions: 24°C 50% r.h., condensing T: 50°C

(3) At 1,5 meters height, 2 meters frontal distance in free field – downflow units

(4) At 1,5 meters height, 2 meters frontal distance in free field – downflow units (20 Pa AESP)

(5) "Extended Range" available in versions with 5 and 6 rows for technological applications with high thermal loads and specified water conditions of 10/15°C

(6) LxHxD = length " L " - height " H " - depth " D "

09-2003
AIREF
0 BR GB 00

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