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X 1100 - X 1900

Packaged air conditioners
Vertical units

- Air cooled models (AC)
- Water cooled models (WC)
- Refrigerant R407C
- Capacities from 1.7 to 18.0 kW

Airwell Residential

Version: July, 2015

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Introduction

Within the context of the HCFC fluid replacement, these units have been optimized to operate with the R407c refrigerant which contains no chlorine and has no effect on the ozone layer.

PRESENTATION

The **X 1100** and **X 1900** packaged air conditioners are presented:

- → Single packaged for the **WATER** cooled models (**WC**).
- → With a separate outdoor condensing unit for the **AIR** cooled models (**AC**).

The air intake and discharge is provided:

- → Either directly by air intake grilles and a discharge plenum (accessory),
- → Or by ducts for intake and/or discharge, to be connected to the connection flanges (accessory).

This well-finished, single packaged unit combines many features such as east installation, high efficiency, quiet operation and reliability, which make it well suited for air conditioning and air filtering in offices, stores and industrial premises.

These packaged air conditioners can be equipped with:

- Electric heater (integrated or duct-mounted), (option)
- Hot water coil, (option)
- Fresh air intake (lateral or rear), (accessory)
- Remote control, (accessory)
- Air discharge plenum with double deflection (accessory).

They benefit from 30 years experience and are perfectly suited to working with:

- → Wasted water; its consumption being reduced to a minimum by a pressostatic valve (**XWC** on wasted water).
- → Recycled water; supplied by a cooling tower or an outdoor heat exchanger (**XWC** on recycled water).
- → Outside air; with the possibility of operating at very low temperatures (down to –10 °C with the “ALL SEASONS” option on the **AC** models).

MAIN FEATURES

- → Cabinet with reduced floor dimensions,
- → Standard ventilation: Three fan speeds (high/normal/low) which can be pre-selected on the terminal block to adapt to the ductwork air pressure drops.
- → Optional “High Speed Ventilation” equipment with a single speed motor.
- → Vertical discharge with or without duct, or horizontal discharge with plenum (accessory).
- → Two air intake possibilities: On the front with grilles or on the rear with ducts, with the rear air intake (accessory).
- → M1 filters, mounted on a metal frame with stiffening netting.
- → Integrated unit control (Control Panel) or remote control (accessory).
- → Electrical, water and refrigerant connections on the right or left side.
- → Cooling with wasted water with a pressostatic valve.
- → Two heating possibilities: Integrated electric coil or hot water heating coil.
- → Three control possibilities: Inverting type (standard), automatic thermostat for “heating/cooling” with neutral zone (accessory supplied with integrated electric heating) and air monitoring control (remote control accessory).
- → Two possibilities of refrigerant pipes (**AC** models): up to 25 m maximum with factory precharged pipes (accessory) or with pipes brazed and charged on site (set of female valves supplied as an accessory for pipes up to 45 m).

DESCRIPTION

Bodywork:

- → Panels and side faces made of profiled sheet steel covered with enamel finish, baked in a high temperature oven.
- → Intake grilles made of modular elements in flameproof, shock resistant polystyrene, classified UL-VO according to UL94.

Insulation and protection:

- → Thermal and acoustic insulation of the unit.
- → Watertight unit base for the possible collection of condensates or abnormal overflowing (e.g. condensate drain tray clogging).

Refrigerant circuit:

→ **All models**

- Hermetic type compressor fitted with thermal and electrical protections, linked to a factory sealed and brazed refrigerant circuit.
- Pressure switches and high and low pressure tapping points.
- Liquid line protected by a strainer (**WC** model) or by a filter (**AC** model).
- Evaporator composed of copper tubes with aluminium fins and anti-corrosion protected condensate tray.

→ **WC model**

- Coaxial condenser with counter flow circulation, equipped with finned copped tube in a steel cover.
- Pressostatic valve on the water inlet for reducing water consumption to a minimum (wasted water model).
- On request, the unit is supplied without a pressostatic valve but with an additional manometer pressure tapping point for independent control of the water flow (recycled water model).

→ **AC model**

- Reserve liquid receiver.
- Thermostatic expansion valve with pressure balancing.
- Liquid indicator and valve on liquid line.
- Shut off valves on indoor unit and outdoor condensing unit (CONA) for refrigerant pipes.
- Outdoor condensing unit with coils composed of copper tubes and aluminium fins.

Ventilation/Filters:

- → Fan equipped with two, direct drive, centrifugal wheels with double inlets.
- → Standard 3 speed fan motor (VS) switchable from the electrical terminal box (refer to electrical connections).
- → Specific “High Speed Ventilation” (FV) motor available as optional.
- → Fan-motor assembly mounted on a sliding chassis with anti-vibration seals for easy maintenance.
- → M1 flame retardant re-usable filters, made of synthetic fibres, with a metal frame and protective grille.
- → CONA with single phase 230 V fan motors.
- → Propeller fan of CONA with direct drive and low speed of rotation.

Electricity/ Safety:

Manufactured in large series, these air conditioners undergo numerous controls during fabrication and are systematically tested before delivery.

Safety devices effectively protect this equipment:

- → Protection of the compressor with fuses, thermal relay and electronic anti- short cycle timer.
- → Protection of the integrated electric heater (accessory) with fuses and dual automatic and manual reset overload protection devices.
- → Fuses on the control circuit.
- → Protection of the fan motors (VS and FV) by fuses and an internal safety device.
- → Low pressure pressostats with automatic reset and high pressure pressostats with manual reset.
- → Solenoid shut off valve on the liquid line (**AC** model).
- → Crankcase heater as standard on all models.
- → Protection of the CONA fan motor with internal thermostat.
- → Mains power supply 400V/3N~/50 Hz as standard. An option 400V/3~/50 Hz and 230V/3N~/50 Hz.
- → Terminal block for single phase 230V power supply to the control circuit with a 400V/230V transformer (not supplied) if the neutral wire is not available.

Control/Regulation:

- → Fascia grouping the controls (Main “ON/OFF” switch with control light – Heating “ON/OFF” and Cooling “ON/OFF”) and the regulation (inverting thermostat).
- → Automatic cooling/heating with neutral zone thermostat supplied with the integrated electric heater accessory.
- → Remote control with integrated inverting thermostat with the additional possibility of ventilation control (**VA** or **VB** connection).
- → **VA** connection: Continuous ventilation during cooling and heating.
- → **VB** connection: Ventilation regulated during heating and continuous ventilation during cooling.
- → “ALL SEASONS” system (option) controlling the condensing pressure; allowing cooling on the AC models down to –10 °C outdoor temperature.

AFTER SALES SERVICE/MAINTENANCE

CAUTION:

Procedures for working on the refrigerant circuit, and the technical characteristics, are different from the R22. Consult the corresponding instructions and follow the recommendations when carrying out any work.

Access to the air filters is from the front after removal of the air intake grille.

All the refrigeration, electrical and ventilation devices are easily accessible from the front of the unit after removal of the front panels.

Every accessory is supplied with fitting instructions (and adjustment instructions, if necessary).

The technical data, installation instructions, maintenance and operation instructions, exploded views and spare parts lists are available on request.

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TECHNICAL DATA

Models		X 1100	X 1900	
Sizes		**WC**	**AC**	**WC**
REFRIGERANT R407C				
Charge	g	1220	1704	2269 Wasted water/ 2850 Recycled water
COOLING CAPACITY (1)				
Nominal cooling capacity	W	11700	16200	18000
Nominal cooling capacity	BTU/ HR	39900	55300	61400
AIR FLOW				
Nominal treated air	m³/h	2000	3200	3200
Mini./maxi. treated air	m³/h	1500/2500	2500/3800	2500/3800
Nominal fresh air (with accessory)	m³/h	180	285	285
AVAILABLE STATIC PRESSURE (2) NOMINAL/MAXI.				
Standard ventilation - High speed	daPa	14/20	15/30	15/30
Standard ventilation - Normal speed	daPa	0/13	0/21	0/21
Standard ventilation - Reduced speed	daPa	0/4	0/4	0/4
High ventilation (optional)	daPa	20/25	25/35	25/35
POWER INPUT VENTILATION				
Standard ventilation - High speed	W	510	580	580
Standard ventilation - Normal speed	W	450	500	500
Standard ventilation - Reduced speed	W	260	380	380
High ventilation (optional)	W	570	980	980
SOUND PRESSURE INDOOR UNIT (3)				
High speed	dBA	58	62	61
Normal speed	dBA	52	56	55
Reduced speed	dBA	49	52	51
POWER SUPPLY				
Nominal voltage		400V/3N~/50 Hz		
Voltage range	V	360/440		
Total power input (1)	W	3800	7260	5800
CIRCUIT D'EAU (1)				
Wasted water - Flow	m³/h	0.7	-	0.95
Wasted water - Pressure drop	kPa	22	-	30
Recycled water - Flow	m³/h	2.1	-	3.05
Recycled water - Pressure drop	kPa	50	-	65
OUTDOOR CONDENSING UNIT (CONA)				
Model		-	CONA 54	-
Quantity		-	1	-
Air flow	m³/h	-	7600	-
Power input	W	-	611	-
Sound pressure	dB(A)	-	53	-
PACKING				
Indoor unit - WxDxH net	mm	890x430x1540	1000x500x1735	1000x500x1735
Indoor unit - WxDxH packed	mm	940x495x1690	1050x565x1890	1050x565x1890
Indoor unit - Weight net/packed	kg	151/160	182/195	199/212
Discharge plenum - WxDxH net	mm	890x430x220	1000x500x260	1000x500x260
Discharge plenum - WxDxH packed	mm	1020x550x340	1120x620x380	1120x620x380
Discharge plenum - Weight net/packed	kg	10/12	13/15	13/15
Outdoor condensing unit (CONA) - WxDxH net	mm	-	885x825x840	-
Outdoor condensing unit (CONA) - WxDxH packed	mm	-	940x850x980	-
Outdoor condensing unit (CONA) - Weight net/packed	kg	-	68/78	-
OPTIONS				
"High Ventilation" equipment		•	•	•
Power supply 400V/3~/50 Hz		•	•	•
Power supply 230V/3N~/50 Hz (5)		•	•	•
Electrical heater	kW	9	12	12
Hot water coil (6)	kW	15.5	29.7	29.7
ACCESSORIES				
Front discharge plenum		•	•	•
Fresh air intake		•	•	•
Discharge duct connection flange		•	•	•
Intake duct connection flange		•	•	•
Remote control		•	•	•
Crankcase heater		-	Standard	Standard
Female pipe fittings set		-	•	-
Refrigerant pipes (25 m maxi.)		-	•	-

(**1**) International standard ISO 51.51 conditions. Type A: 27°C/19°C wet bulb - Outside air: 35°C/24°C wet bulb. Wasted water: inlet + 15°C - Recycled water inlet/ outlet: 30°C/35 °C. (**2**) Nominal pressure with nominal air flow with nominal voltage without accessory. Maximum pressure with minimum air flow with nominal voltage without accessory. (**3**) Total sound pressure dB(A) (4m) under nominal conditions in a room of 1000m³ (reverberation 0.83s). (**4**) Total sound pressure dB(A) (4 m) under nominal conditions in free field on reflecting surface. (**5**) Voltage range: mini = 198V - maxi = 242V (the other electrical values are not changed). (**6**) Hot water coil 90/80°C - Treated air 20°C - 50 % with nominal air flow.

COOLING PERFORMANCES - **XAC 1900 MODEL**
Air flow 3200 m³/h

Air temperature at evaporator inlet (°C)				Air temperature at condenser inlet (°C)						
BH	**BS**			**15**	**20**	**25**	**30**	**35**	**40**	**45**
15		PT	W	16748	16140	15533	14925	14318	13710	13103
		PA	W	5301	5622	5943	6264	6585	6906	7228
	21	PS	W	10448	10675	10903	11130	11357	11584	11811
	23			11765	12021	12277	12533	12,789	13044	13103
	25			13083	13367	15461	14925	14318	13710	13103
	27			16300	16140	15533	14925	14318	13710	13103
	29			16748	16140	15533	14925	14318	13710	13103
	31			16748	16140	15533	14925	14318	13710	13103
17		PT	W	17782	17150	16518	15886	15255	14623	13991
		PA	W	5340	5668	5995	6323	6651	6979	7307
	21	PS	W	10042	10261	10479	10697	10915	11134	11352
	23			11446	11694	11943	12192	12441	12690	12939
	25			12849	13128	13408	13687	13966	14,246	13841
	27			14252	16300	16138	15879	15255	14623	13991
	29			16978	16978	16518	15886	15255	14623	13991
	31			17655	17150	16518	15886	15255	14623	13991
19		PT	W	18824	18168	17512	16856	16200	15544	14888
		PA	W	5408	5746	6084	6422	6760	7098	7436
	21	PS	W	8041	8216	8390	8565	8740	8915	9090
	23			9531	9738	9946	10153	10360	10567	10774
	25			11022	11261	11501	11740	11980	12220	12459
	27			12512	12784	13056	13328	13600	13872	14144
	29			14002	14307	14611	14916	15220	15544	14888
	31			17655	17655	17493	16856	16200	15544	14888
21		PT	W	19934	19245	18557	17868	17180	16491	15803
		PA	W	5649	5997	6345	6693	7041	7389	7738
	23	PS	W	7325	7484	7644	7803	7962	8121	8281
	25			8906	9099	9293	9486	9680	9874	10067
	27			10486	10714	10942	11170	11398	11626	11854
	29			12067	12329	12591	12854	13116	13378	13641
	31			13647	13944	14241	14537	14834	15131	15427
	33			15228	15559	15890	16221	17554	17101	16550
23		PT	W	21051	20330	19609	18889	18168	17447	16726
		PA	W	5933	6291	6649	7007	7366	7724	8082
	25	PS	W	6475	6616	6757	6898	7038	7179	7320
	27			8147	8324	8501	8678	8855	9032	9209
	29			9818	10032	10245	10459	10672	10885	11099
	31			11490	11739	11989	12239	12489	12739	12988
	33			13161	13447	13733	14019	14305	14592	14878

BS: Dry bulb temperature (°C)
BH: Wet bulb temperature (°C)
PT: Total cooling capacity (W)
PA: Power absorbed by the compressor (W) (without fan motor)
PS: Sensible cooling capacity (W)
Power absorbed by the indoor fan = 500 W

WORKING RANGE - MINIMUM TEMPERATURE

Indoor temperature		°C	Thi	13
			Tsi	17
Outdoor temperature	**Without TTS**	°C	Tse	+19
	With TTS*	°C	Tse	-10

***** With "All seasons kit" option
Thi: Wet bulb indoor temperature
Tsi: Dry bulb indoor temperature
Tse: Dry bulb outdoor temperature

WORKING RANGE - MAXIMUM TEMPERATURE

Indoor temperature	°C	Thi	22
		Tsi	32
Outdoor temperature	°C	Tse	47

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PERFORMANCES FRIGORIFIQUES - **WASTED WATER**
XWC 1100 & XWC 1900 MODELS

Air temperature at evaporator inlet (°C)						Waste water supply			
								X 1100	X 1900
BH	BS			X 1100	X 1900	Inlet water temperature	°C	15	15
15		PT	W	10372	15910	Water consumption	l/h	633	861
		PA	W	3246	5205				
	21	PS	W	7063	10994				
	23			8100	12585				
	25			9138	14176				
	27			10372	15910				
	29			10372	15910				
	31			10372	15910				
17		PT	W	11031	16950	Water consumption	l/h	666	905
		PA	W	3290	5235				
	21	PS	W	6625	10274				
	23			7728	11969				
	25			8831	13664				
	27			9935	15359				
	29			11031	16950				
	31			11031	16950				
19		PT	W	11700	18000	Water consumption	l/h	700	950
		PA	W	3350	5300				
	21	PS	W	4990	7800				
	23			6160	9600				
	25			7330	11400				
	27			8500	13200				
	29			9670	15000				
	31			10840	16800				
21		PT	W	12411	19086	Water consumption	l/h	739	1003
		PA	W	3475	5508				
	23	PS	W	4373	6881				
	25			5614	8790				
	27			6855	10698				
	29			8097	12607				
	31			9338	14516				
	33			10579	16424				
23		PT	W	13133	20182	Water consumption	l/h	779	1057
		PA	W	3616	5751				
	25	PS	W	3654	5807				
	27			4967	7825				
	29			6280	9843				
	31			7594	11861				
	33			8907	13879				

BS: Dry bulb temperature (°C)
BH: Wet bulb temperature (°C)
PT: Total cooling capacity (W)
PA: Power absorbed by the compressor (W) (without fan motor)
PS: Sensible cooling capacity (W)

WORKING RANGE

Working range	Temperature min.	Temperature max.
	Air temperature at evaporator inlet	
BH (°C)	15	23
BS (°C)	21	32
Water temperature (°C)	10	34

PERFORMANCES FRIGORIFIQUES - **RECYCLED WATER**
XWC 1100 & XWC 1900 MODELS

Air temperature at evaporator inlet (°C)						Recycled water supply			
								X 1100	X 1900
						Inlet water temperature	°C	29	29
						Water pressure	kPa	50	65
BH	BS			X 1100	X 1900	Water consumption	l/h	2100	3050
15		PT	W	10372	15910	Outlet water temperature	°C	35	35
		PA	W	3246	5205				
	21	PS	W	7063	10994				
	23			8100	12585				
	25			9138	14176				
	27			10372	15910				
	29			10372	15910				
	31			10372	15910				
17		PT	W	11031	16950	Outlet water temperature	°C	35	35
		PA	W	3290	5235				
	21	PS	W	6625	10274				
	23			7728	11969				
	25			8831	13664				
	27			9935	15359				
	29			11031	16950				
	31			11031	16950				
19		PT	W	11700	18000	Outlet water temperature	°C	35	35
		PA	W	3350	5300				
	21	PS	W	4990	7800				
	23			6160	9600				
	25			7330	11400				
	27			8500	13200				
	29			9670	15000				
	31			10840	16800				
21		PT	W	12411	19086	Outlet water temperature	°C	35	36
		PA	W	3475	5508				
	23	PS	W	4373	6881				
	25			5614	8790				
	27			6855	10698				
	29			8097	12607				
	31			9338	14516				
	33			10579	16424				
23		PT	W	13133	20182	Outlet water temperature	°C	36	36
		PA	W	3616	5751				
	25	PS	W	3654	5807				
	27			4967	7825				
	29			6280	9843				
	31			7594	11861				
	33			8907	13879				

BS: Dry bulb temperature (°C)
BH: Wet bulb temperature (°C)
PT: Total cooling capacity (W)
PA: Power absorbed by the compressor (W) (without fan motor)
PS: Sensible cooling capacity (W)

WORKING RANGE

Working range	Temperature min.	Temperature max.
	Air temperature at evaporator inlet	
BH (°C)	15	23
BS (°C)	21	32
Water temperature (°C)	10	34

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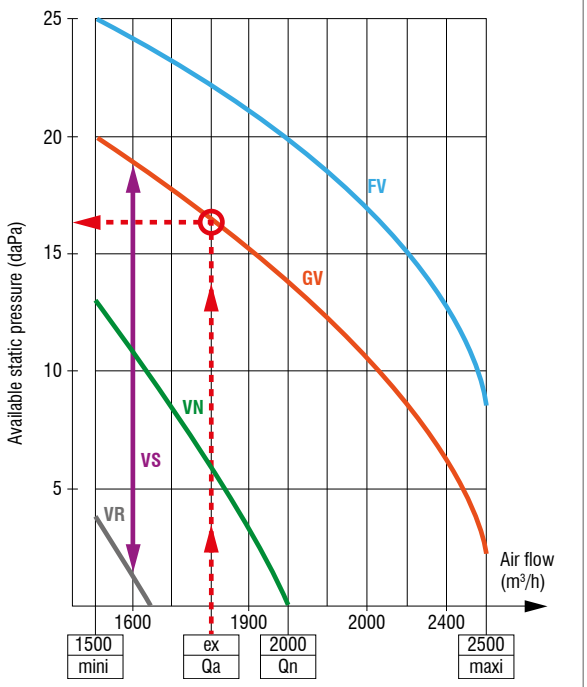
AIR FLOW DATA - **AC & WC MODELS**

Front and rear air intake with clean air filter

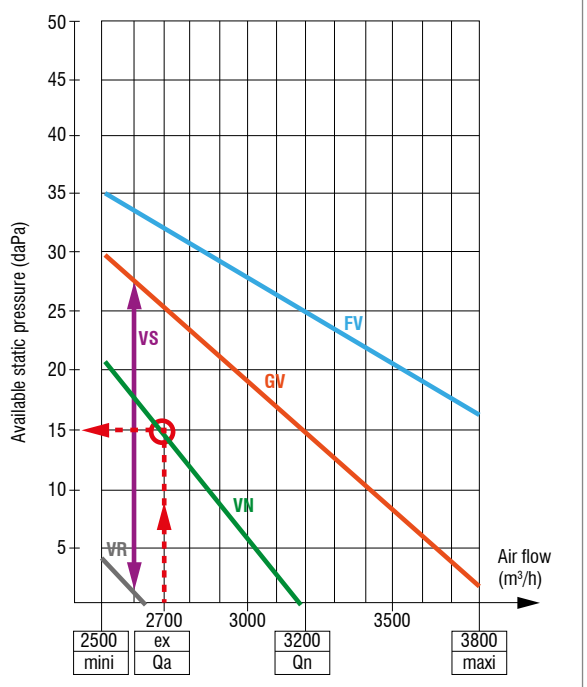
X 1100 model



EXAMPLE X 1100 MODEL

Qa = 1800 m³/h
Standard ventilation (VS) with high rotation speed (GV)
Available static pressure: 17 daPa
Fan rotation speed: 1000 rpm
Power input: 510 W

X 1900 model



EXAMPLE X 1900 MODEL

Qa = 2700 m³/h
Standard ventilation (VS) with normal rotation speed (VN)
Available static pressure: 15 daPa
Fan rotation speed: 800 rpm
Power input: 480 W

Ventilation equipment		"Standard ventilation" (VS) Motor 0.3 kW			"High ventilation" (FV) Motor 0.43 kW
Ventilation		GV High	VN Normal	VR Reduce	FV High
Rotational speed motor/ fan wheel (rpm)		1000	850	670	1360
Available pressure (daPa)	Nominal	14	0	0	20
	Maximal	20	13	4	25
Power input (W)		510	405	260	570

Ventilation equipment		"Standard ventilation" (VS) Motor 0.43 kW			"High ventilation" (FV) Motor 1 kW
Ventilation		GV High	VN Normal	VR Reduce	FV High
Rotational speed motor/ fan wheel (rpm)		900	800	670	1265
Available pressure (daPa)	Nominal	15	0	0	25
	Maximal	30	21	4	35
Power input (W)		580	480	380	980

Accessory pressure drop (Qn = 2000 m³/h)		
Hot water coil	daPa	1
Discharge plenum	daPa	2

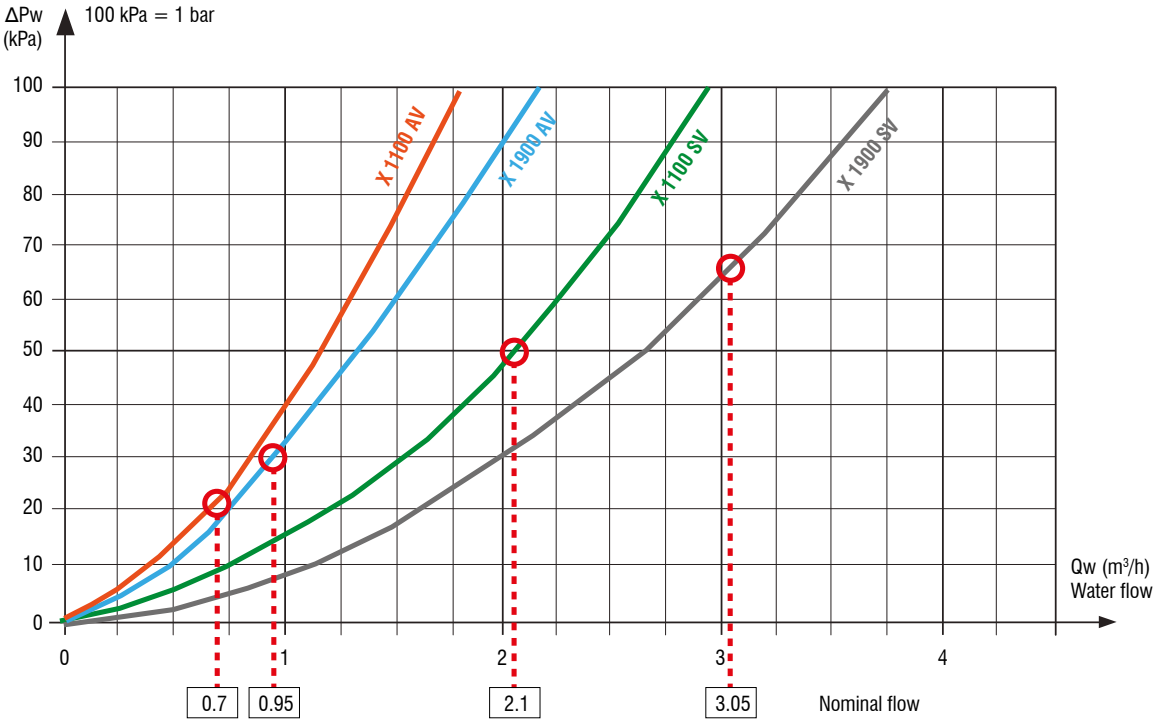
Accessory pressure drop (Qn = 3200 m³/h)		
Hot water coil	daPa	1
Discharge plenum	daPa	2

Qn airflow correction	0,8xQn	0,9xQn	Qn	1,1xQn	1,2xQn
Total cooling capacity	0.940	0.970	1.000	1.020	1.040
Sensible cooling capacity	0.890	0.950	1.000	1.050	1.100
Power absorbed	0.970	0.985	1.000	1.005	1.010

Qa: Treated air flow
Qn: Nominal air flow

HYDRAULIC CHARACTERISTICS - **WC MODEL**
CONDENSER SUPPLY

Water pressure drop with pressostatic valve (AV) and without pressostatic valve (SV)



AV = WITH valve (for wasted water)
SV = WITHOUT valve (for recycled water)

Water supply		Wasted water		Recycled water	
Models		**X 1100**	**X 1900**	**X 1100**	**X 1900**
WATER PRESSURE					
Minimum	kPa	50	50	-	-
Maximum	kPa	1000	1000	1000	1000
CONNECTION ON HOSES - LENGTH 1 M					
Type		Female nut			
Ø Inlet/Outlet	mm	F 20x27	F 20x27	F 20x27	F 26x34

Hydraulic connections - Condensate water outlets - WC/AC models

Models		X 1100/X 1900
Condensate water draining hose	mm	Ø 20x25
Bottom tray outlet (for hose Ø 20x25 mm)		Ø 7/8" (Ø 22 mm ext.)

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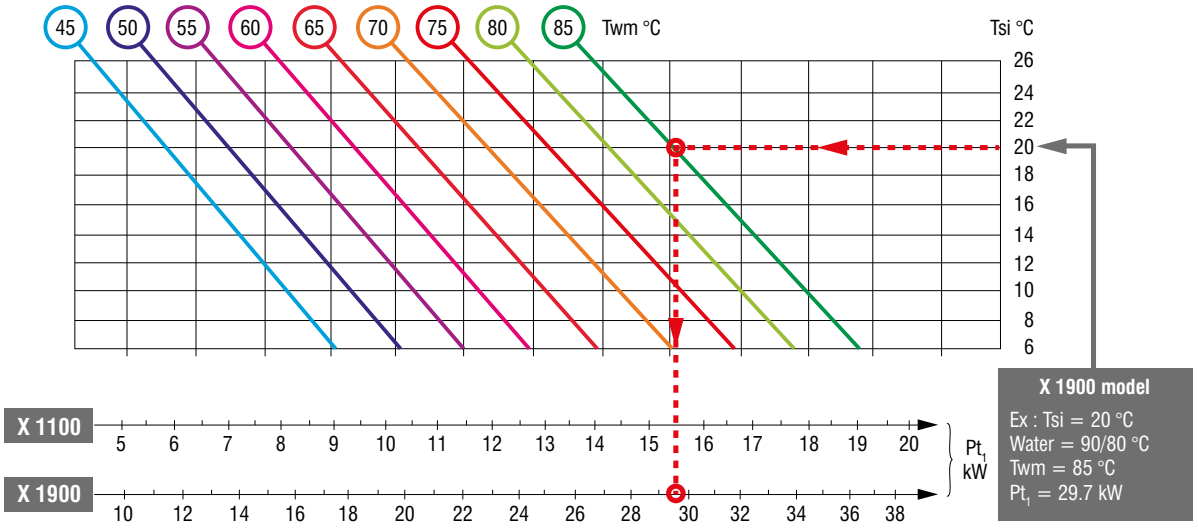
HEATING PERFORMANCE HOT WATER COIL
OPTION OF AC/WC MODELS

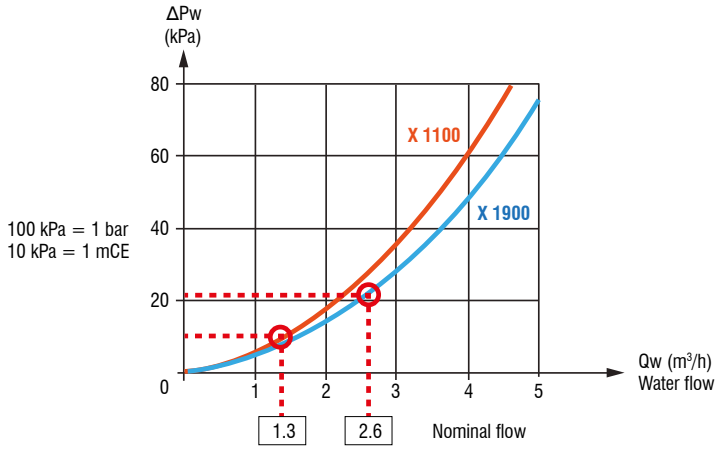


Pt = K1xK2xPt1									
K1 COEFFICIENT AIR FLOW									
Qa/Qn					**K1**				
0.80					0.87				
0.90					0.95				
1					1				
1.1					1.06				
1.2					1.13				
K2 COEFFICIENT ΔTW									
ΔTw°K	4	6	8	10	12	14	16	18	20
K2	1.05	1.03	1.01	1	0.98	0.96	0.95	0.94	0.92
WATER FLOW									
$Qw\ (m^3/h) = \frac{0,86xPt\ (kW)}{\Delta Tw}$									
ANTI-FREEZE PROTECTION									
Nota: Anti-freeze mandatory in summer and winter									

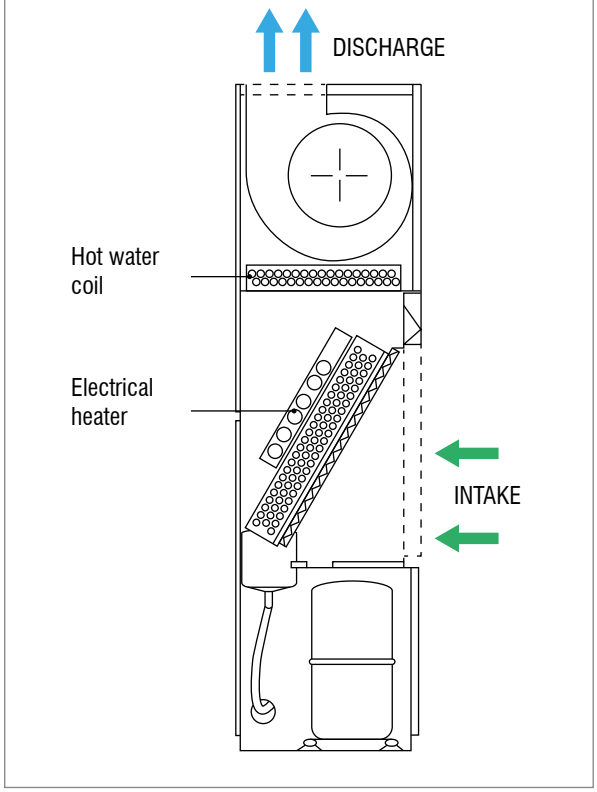
Pt1: Total heating capacity with nominal air flow.
Pt: Total heating capacity.
Tsi: Dry indoor temperature.
Qa: Treated air flow.
Qn: Nominal air flow.
Qw: Water flow.
Tws: Hot water outlet temperature.
Twe: Hot water inlet temperature.
ΔTw: Difference in temperature water inlet/outlet.
Twm: Hot water average temperature.
ΔPw: Hot water pressure drops.

		X 1100	X 1900
Water content	l	2	3
Nominal water flow	m³/h	1.3	2.6
Maxi. water pressure	kPa	1000	1000
Maxi. water inlet temperature (Twe)	°C	90	90
Mini. dry indoor temperature (Tsi)	°C	+6	+6
Ø connection	mm	M 26x34	M 26x34

Water pressure drops



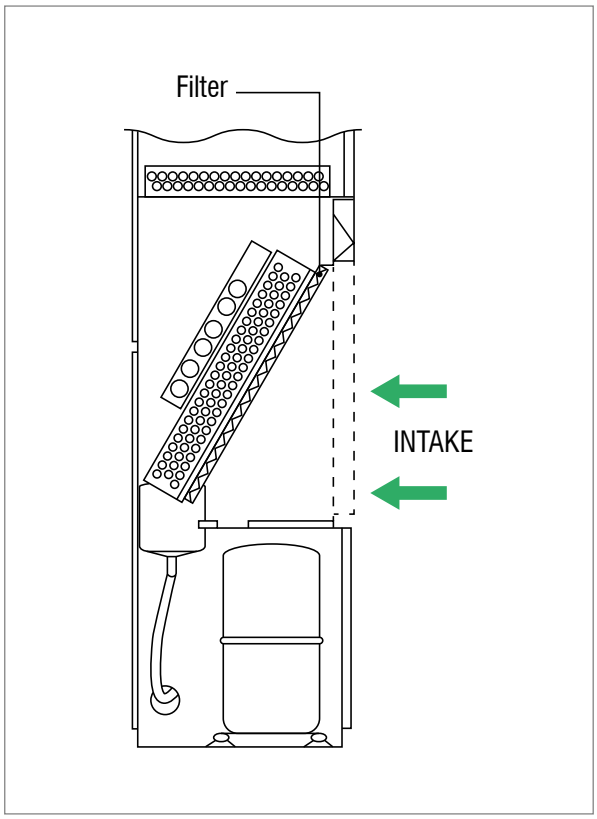
ELECTRICAL HEATER/HOT WATER COIL **OPTIONS**



Models		X 1100	X 1900
HOT WATER COIL			
Nominal power input	kW	15.5	29.7
Nominal water flow	m³/h	1.3	2.6
Water pressure drop	kPa	10	22
Ø connections	mm	M 26x34	
ELECTRICAL HEATER			
Total power input	kW	9	12
Number of stages		1	1
Number of stages		3	3
Power input/element	kW	3	4

Notes:
The electrical heater and the hot water coil can not be fitted together. Provide for a separate regulation for the hot water coil.
The integrated electric heater is supplied with an automatic cooling/heating thermostat with neutral zone and is equipped with 2 temperature limit controls (manual/automatic).

Filter



Models		X 1100	X 1900
Filter type		Flat with metal frame, mounted on sliding rails	
Media type		Flame retardant synthetic fibres	
Number of filters		1 - Re-usable	
Dimensions WxDxH	mm	740x12x525	790x12x615
Efficiency (1)	%	83.8	
Eurovent/CSTB classification (2)		EU3/M1	
Access		Air intake grilles (front)	

(1) Test report 603 325/3 dated 05.05.76 issued by the L.N.E. (PARIS)
(2) Test report 82.18176 dated 12.05.82

Notes:
The filters also provide clean air from the fresh air intake (fresh air intake accessory) and the rear air intake.

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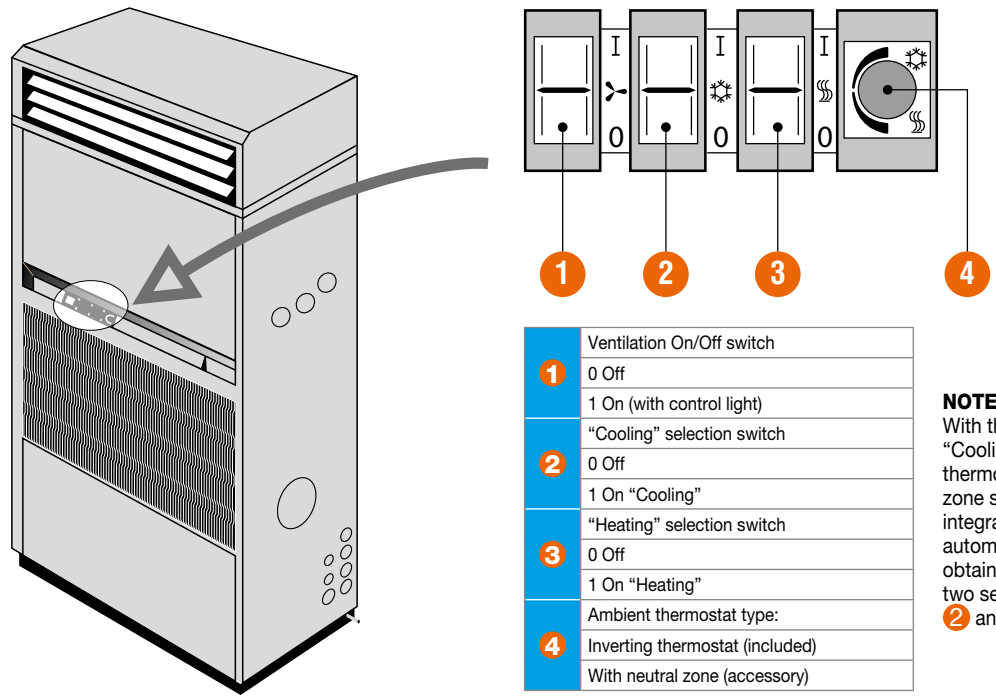
CONTROLS AND REGULATION

Control panel



1	Ventilation On/Off switch
	0 Off
	1 On (with control light)
2	"Cooling" selection switch
	0 Off
	1 On "Cooling"
3	"Heating" selection switch
	0 Off
	1 On "Heating"
4	Ambient thermostat type:
	Inverting thermostat (included)
	With neutral zone (accessory)

NOTE:
With the automatic "Cooling/Heating" thermostat with neutral zone supplied with the integrated electric heater, automatic operation is obtained by placing the two selection switches 2 and 3 on position 1.

REMOTE CONTROL (accessory)

→ Ventilation operation

There are two possibilities:

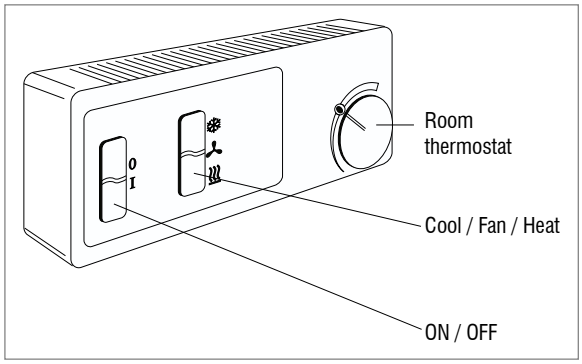
- **CONTINUOUS FAN OPERATION FOR HEATING AND COOLING (VA)**
  Fan operation is continuous in both HEATING and COOLING modes. Terminal A of the REMOTE CONTROL unit must be connected to the terminal 7 on the air conditioner (VA wiring
- **ON/OFF FAN OPERATION IN HEATING MODE AND CONTINUOUS OPERATION IN COOLING MODE (VB)**
  Fan operation is regulated in HEATING mode but continuous in COOLING mode. Terminal B of the remote control unit must be connected to terminal 7 on the air conditioner (VB wiring).

→ Operation without electric heating

Terminal 8 of the remote control unit must be connected.
Shunt (SHC*) must be placed across terminals 13 and 14 of the air conditioner.

→ Operation with electric heating

Terminal 8 of the remote control unit must be connected to terminal 12 of the air conditioner.
Shunt (SHC*) must be removed and replaced by heating safety devices (FC5* and FC8*) wired in series across terminals 13 and 14 of the air conditioner.



HEATING CONTROL

→ In-built electrical heater

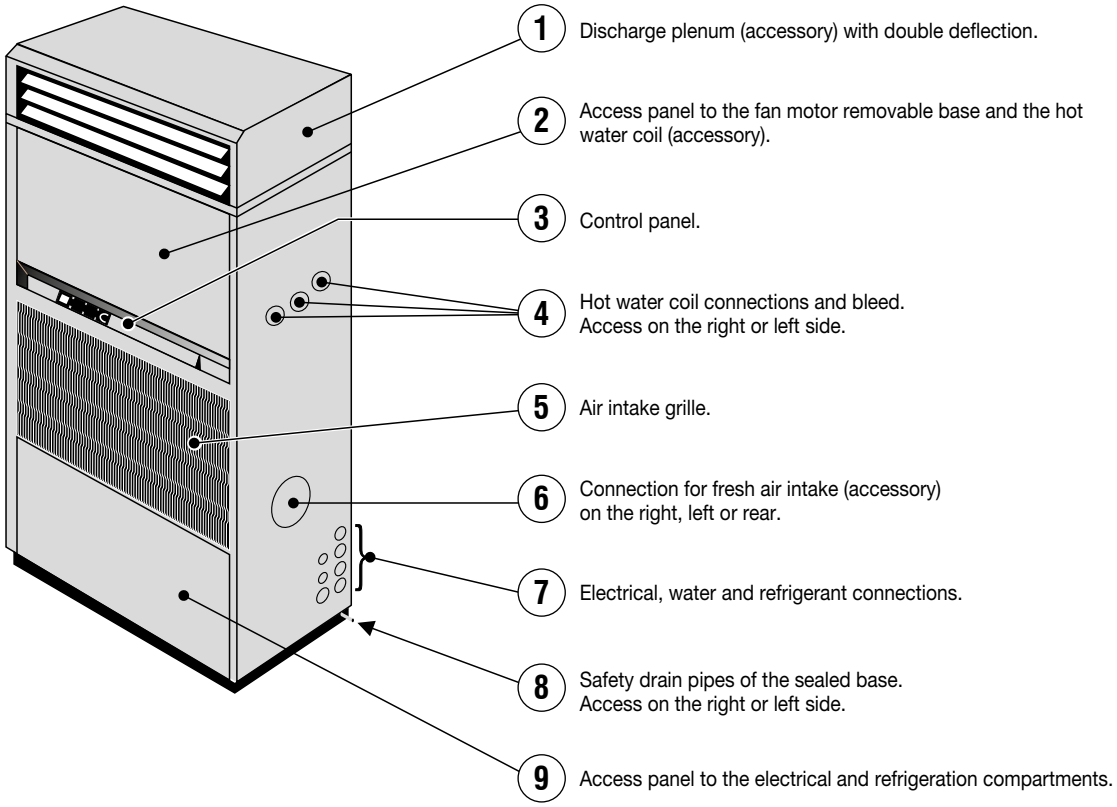
This accessory is supplied with an automatic "Cooling/Heating" thermostat with neutral zone which replaces the ambient thermostat 4 supplied with the unit.
In the case of a remote control (accessory) the inverting thermostat pilots the cooling or the heating according to the position of the "Cooling/Heating" reversing switch (item 3).

→ Hot water heating

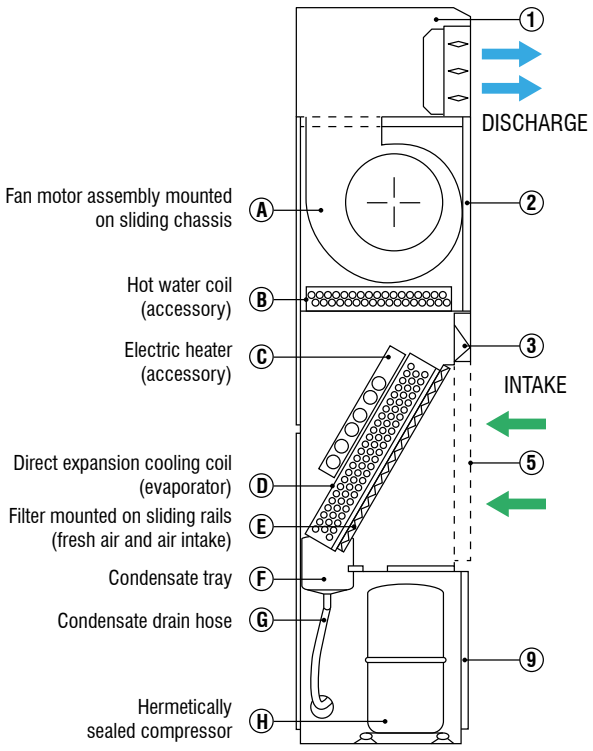
This accessory must be equipped with an anti-freeze safety device and a regulation system (not supplied) compatible with the installation.

* Reference on electrical diagram.

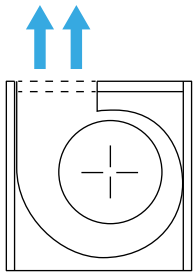
DESCRIPTION OF INDOOR UNIT



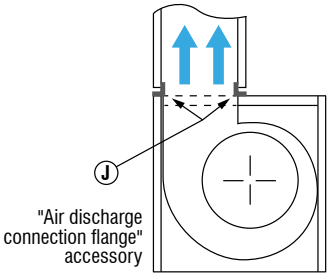
FRONT DISCHARGE (WITH "Plenum" accessory)



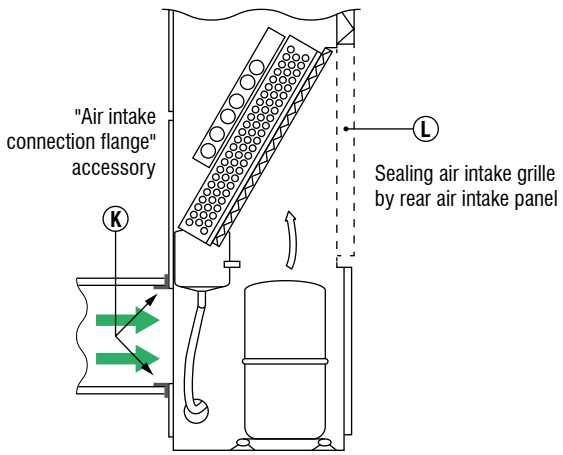
VERTICAL DISCHARGE (WITHOUT accessory)



DISCHARGE WITH DUCTS (WITH "Connection flange" accessory)



REAR AIR INTAKE (WITH "Air intake connection flange" accessory)



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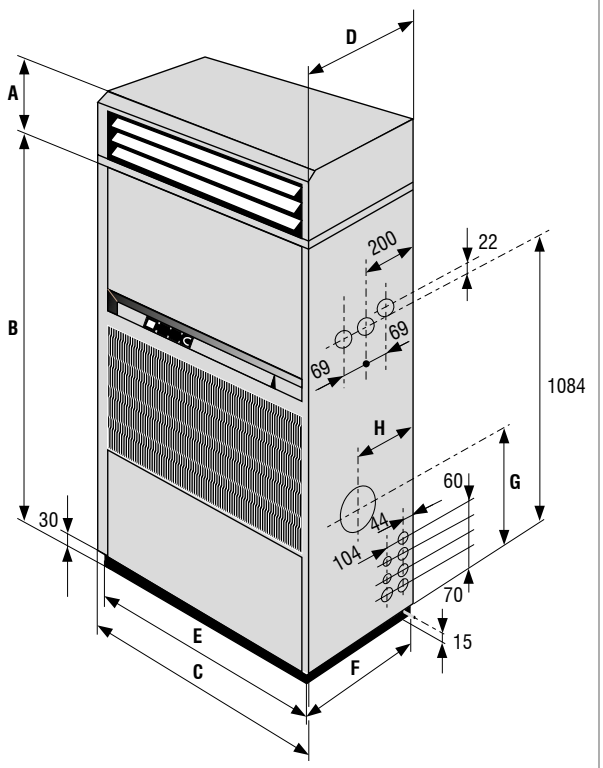
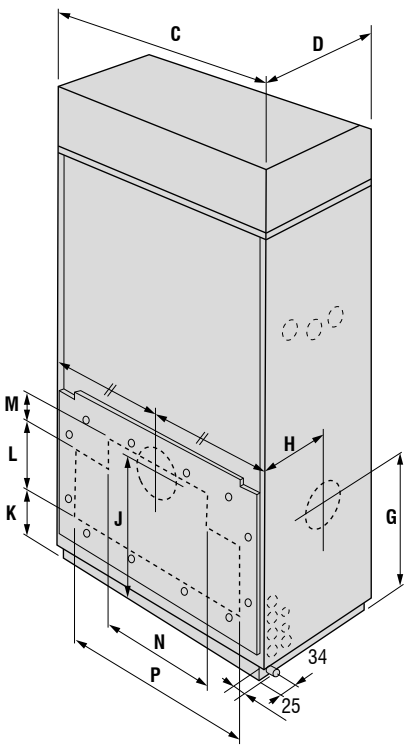
DIMENSIONS (in mm) - INSTALLATION

Indoor unit

FRONT VIEW

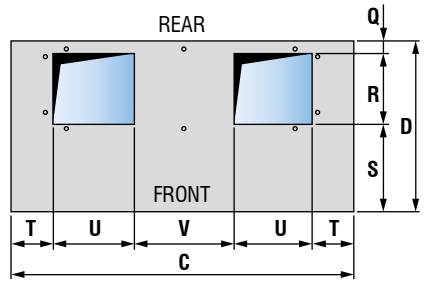


REAR VIEW



	Models	
	X 1100	X 1900
A	220	260
B	1540	1735
C	890	1000
D	430	500
E	834	944
F	404	474
G	515	580
H	220	260
J	471	542
K	168	180
L	210	270
M	140	155
N	410	460
P	750	860
Q	22	32
R	182	295
S	226	173
T	105	192
U	208	273
V	264	271

TOP VIEW (without plenum)



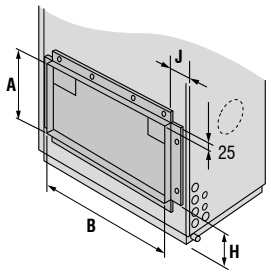
CLEARANCES (mm)

FRONT		REAR		SIDE	
discharge		intake		Side	
Vertical	Plenum	Front	Rear	Connected	Opposite
650	1200	-	650	650	-

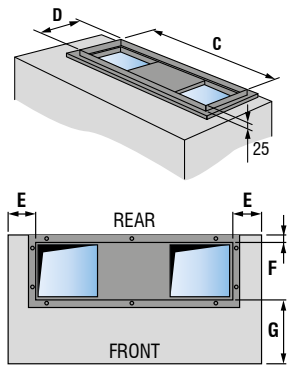
Models	A	B	C	D	E	F	G	H	J
X 1100	350	750	682	184	104	21	225	168	70
X 1900	425	860	819	297	90,5	31	172	180	70

ACCESSORIES (external dimensions)

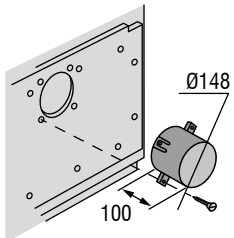
Air intake duct connection flange (rear view)



Air discharge duct connection flange (top view)

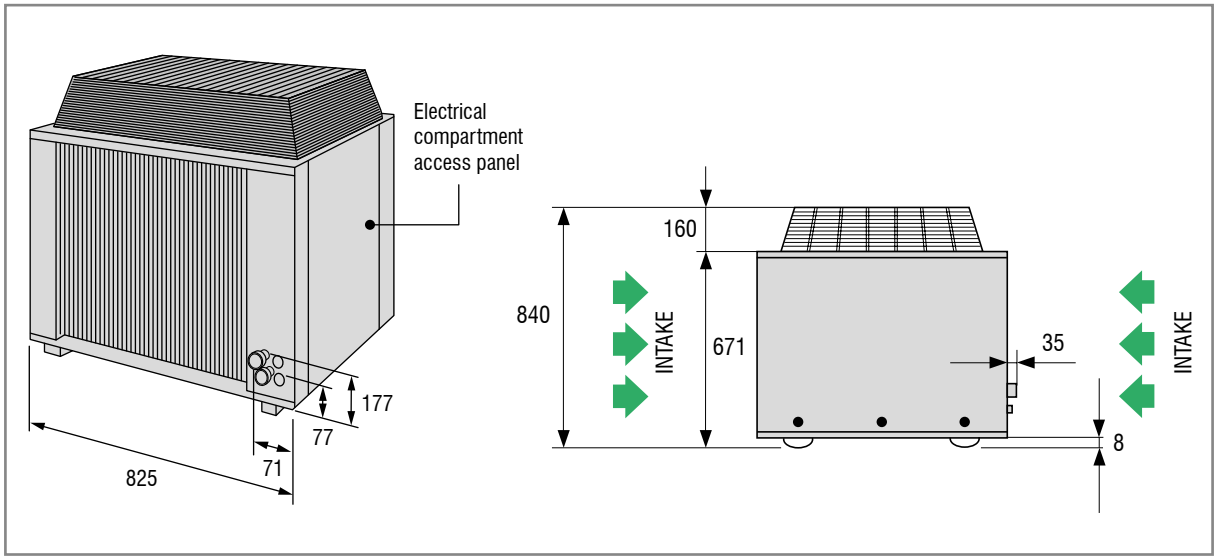


Fresh air intake (rear view)

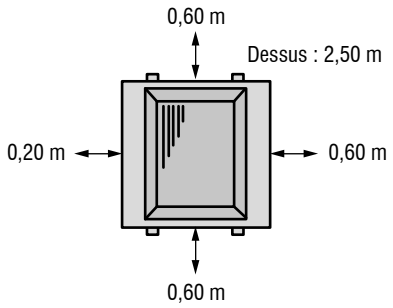


DIMENSIONS (in mm) - INSTALLATION

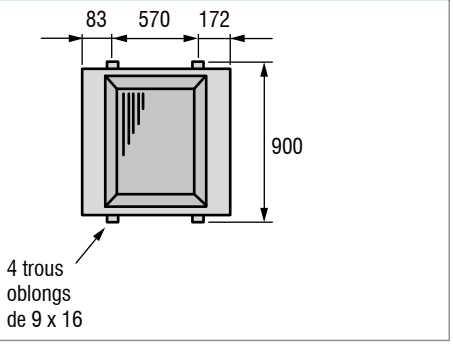
Outdoor condensing unit - Type CONA 54 - AC models



CLEARANCES



FLOOR MOUNTING AND FIXING



Models		CONA 54
Air flow	m³/h	5000
Rotational speed ventilation	tr/min	630
Sound pressure at 10 m (1)	dBA	45
Power input	W	611
Motor coupling 230 V		•
Power supply		~ 230 V - 50 Hz

(1) Sound pressure in free field on reflecting surface

"ALL SEASONS" SYSTEM - **AC MODELS**

The "ALL SEASONS" system permits running the air cooled units in "Cooling" position with low outdoor temperatures down to –10 °C for air conditioning of rooms with high internal heat load.

→ **XAC 1900 + CONA 54**
Accessory located in CONA condensing unit including: **1 voltage inverter.**

***** References on wiring diagram.

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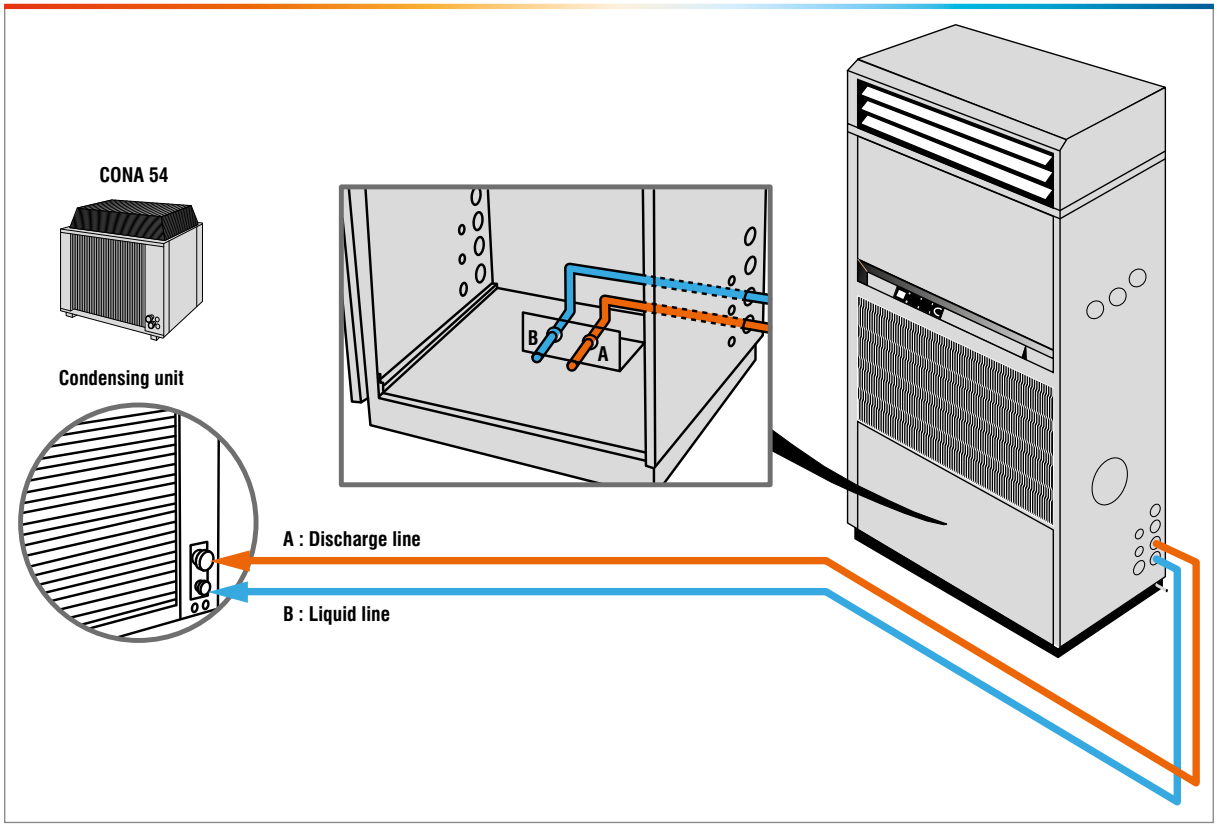
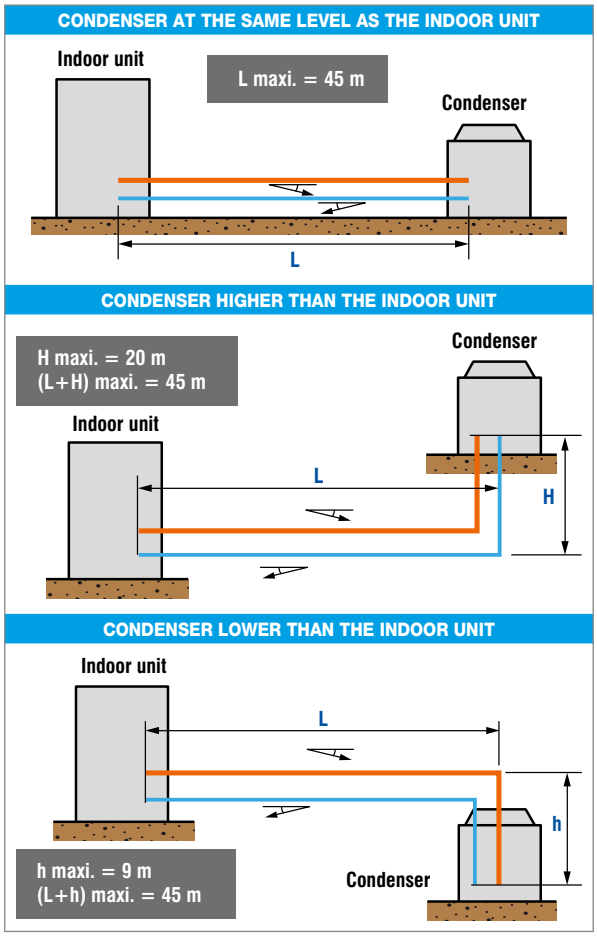
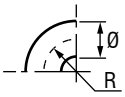
REFRIGERANT CONNECTIONS - **AC MODELS**







Bending of refrigeration pipes: R ≥ Ø 3.5

Minimum slope downwards: 1 cm/m

Discharge line

Liquid line

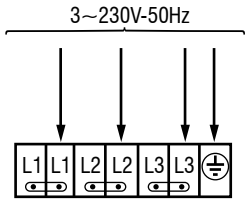
Refrigerant charge R407c		X 1100	X 1900
AIR TREATMENT			
Model AC	g	-	1704
CONDENSING UNITS			
Type CONA 54	g	-	3796
PRECHARGED REFRIGERANT PIPES (maxi. length 25 m)			
Discharge line	Ø	-	1/2"
	charge	-	Precharged
Liquid line	Ø	-	3/8"
	charge (g/m*)	-	55
MODEL WC (INDOOR UNIT)			
Charge	g	1260	2850

(*) From 2 meters of refrigerant pipe

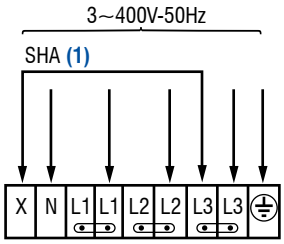
Notes:
For pipes between 25 and 45 m long (made on the site) the choice of the pipes (diameter) and the installation must be made professionally.

ELECTRICAL CONNECTIONS - MAIN POWER SUPPLY

POWER SUPPLY 3~ 230 V + EARTH (regulated in France)

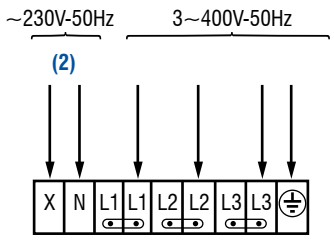


POWER SUPPLY 3 N~ 400 V + EARTH (with neutral)



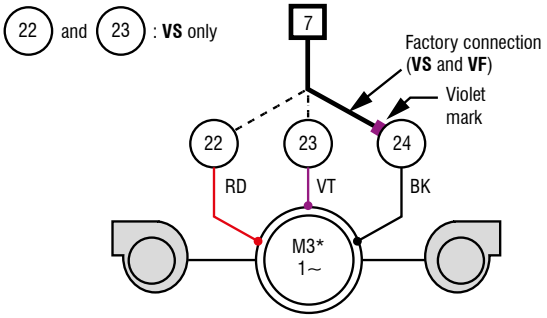
SHA = SHUNT supplied factory mounted

POWER SUPPLY 3~ 400 V + EARTH (without neutral)



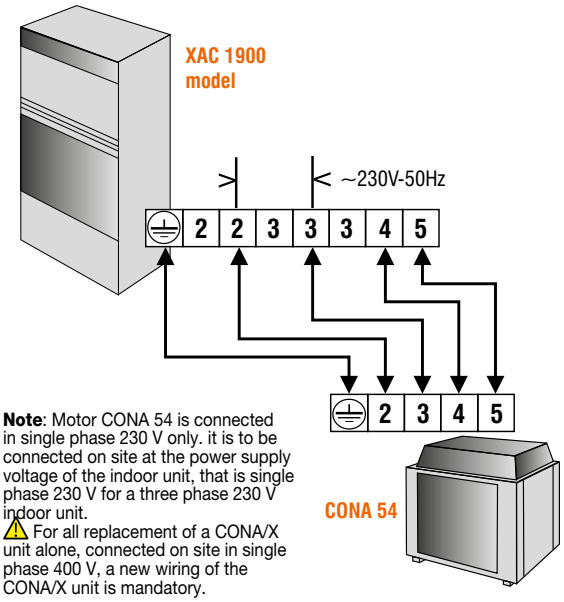
The SHUNT SHA (1) must be suppressed

CHOICE OF THE INDOOR UNIT FAN SPEED



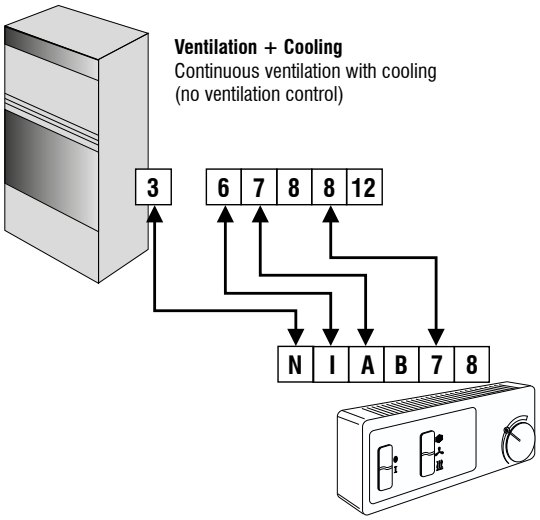
Fan speed	VR (reduced)	VN (normal)	GV (high)	FV (high)
Motor wire	Red (RD)	Violet (VT)	Black (BK)	Black (BK)
Connection	22-7	23-7	24-7	24-7

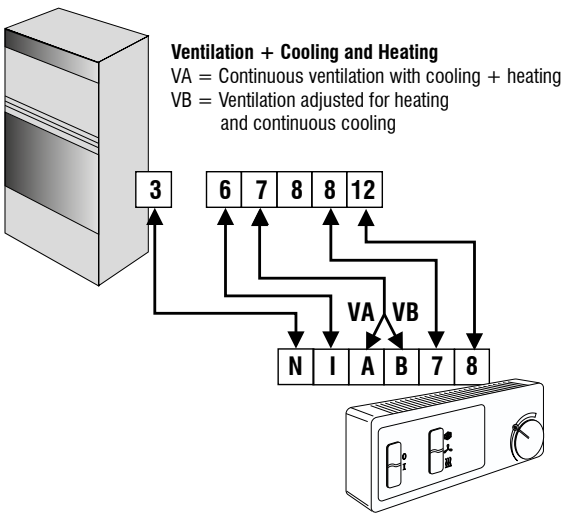
INTERCONNECTIONS WITH OUTDOOR CONDENSING UNIT (CONA)



Note: Motor CONA 54 is connected in single phase 230 V only. it is to be connected on site at the power supply voltage of the indoor unit, that is single phase 230 V for a three phase 230 V indoor unit.
⚠ For all replacement of a CONA/X unit alone, connected on site in single phase 400 V, a new wiring of the CONA/X unit is mandatory.

INTERCONNECTIONS WITH REMOTE CONTROL





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ELECTRICAL SPECIFICATIONS - MAIN POWER SUPPLY

		1100		1900	
		230V/3~N	400V/3~N	230V/3~N	400V/3~N
NOMINAL POWER INPUT (VS/FV)					
Cooling mode XAC	kW			TBD	5.7/6.2
Cooling mode XWC on wasted water	kW	3.8/4.0	3.8/4.0	TBD	5.1/5.6
Cooling mode XWC on recycled water	kW	3.6/3.8	3.6/3.8	TBD	4.6/5.1
Electrical heating mode	kW	9.4/9.6	9.4/9.6	TBD	12.5/13
COOL-ONLY UNIT (VS/FV)					
Maximum intensity	A	22/23	13/14	TBD	15/18
Starting intensity	A	60/61	38/39	TBD	76/79
Fuse rating	A aM	25	16	TBD	16/20
COOL-ONLY UNIT WITH ELECTRICAL HEATING (VS/FV)					
Maximum intensity	A	30/31	19/20	TBD	23/26
Starting intensity	A	60/61	38/39	TBD	76/79
Fuse rating	A aM	32	20	TBD	25/32

VS: Standard ventilation - FV: High ventilation.

Interconnections with outdoor unit - AC models

Sizes		X 1900
Outdoor unit		**CONA 54**
Power supply		~230V-50Hz
Nominal power input	W	611
Maximum intensity	A	3.1
Starting intensity	A	5.5

Interconnections with remote control - Transformer

INTERCONNECTION WITH REMOTE CONTROL			
Sizes		**X 1100**	**X 1900**
COOLING + VENTILATION (VS/FV)			
Nominal intensity	A	2.1/2.8	2.4/4.7
Maximum intensity	A	3/4	3/6
Starting intensity	A	4/5	5/9
Cable size	mm²	4x1.5	4x1.5
HEATING + VENTILATION (VS/FV)			
Nominal intensity	A	2.1/2.8	2.4/4.7
Maximum intensity	A	3/4	3/6
Starting intensity	A	4/5	5/9
Cable size	mm²	5x1.5	54x1.5

TRANSFORMER (not supplied) For power supply 3~400V + Earth, without neutral				
Models			**WC**	**AC**
Nominal power single phase transformer 400 V/230 V in VA	VS		630	1000
	FV	X 1100	1000	1000
		X 1900	1600	1600

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