

AIR SYSTEMS

# ACTIVA Rooftop

ARC-ARG-ARH-ARD 017 to 040 A



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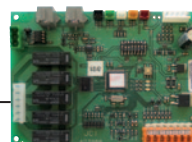
ARC-ARG-ARH-ARD

A complete range from 17 kW up to 40 kW



Available  
during 2011

**NEW**



**YKN2open**

## Features

- High efficiency EER and COP
- Low noise level
- Variable speed supply fan
- All configurations: Cooling only, Cooling + gas, Heating, Heating + Gas
- BMS connection (N2open protocol as standard)
- Compact design
- Energy recovery (enthalpy wheel)
- EC Return fan
- External HP & LP access
- Filters G4, F6 & F7 available

## A R C 032 A A Nomenclature

- A = Aluminium fin
- B = Blue fin
- C = Copper fin
- A = version
- Capacity range:**  
032 = 32 kW
- Product category:**  
C = Cooling  
H = Heat pump  
G = Cooling & Gas  
D = Heat pump & Gas (Dual)
- Rooftop
- Activa series



# ACTIVA Rooftop

## ARC-ARG-ARH-ARD 017 to 040 A

### Technical features (Preliminary data)

Cooling only models			ARC 017 A	ARC 022 A	ARC 032 A	ARC 040 A
Net cooling capacities	kW		17.2	22	30	40
Power input	kW		5.5	7.3	9.5	13.7
EER			3.1	3.0	3.1	2.9
Working range (full load / partial load)	°C		7°C ~ 46°C / -10°C ~ 52°C			
Heat pump models			ARH 017 A	ARH 022 A	ARH 032 A	ARH 040 A
Net cooling capacities	kW		17	21.5	30	39
Power input in cooling	kW		5.8	7.6	9.8	13.9
EER			2.9	2.8	3.0	2.8
Heating capacities (1)	kW		16.6	20.6	28.6	37.8
Power input in heating	kW		5.3	6.7	9.6	12.7
COP			3.1	3.0	3.0	3.0
Working range (full load / partial load)	°C		-10°C ~ 46°C / -10°C ~ 52°C			
Cooling only + Gas heating models			ARG 017 A	ARG 022 A	ARG 032 A	ARG 040 A
Net cooling capacities	kW		17.2	22	30	40
Cooling power input	kW		5.5	7.3	9.5	13.7
Standard Heating capacities (1) NET	kW		23	23	23	23
Natural gas 2ND-H, G20	m³/h		2.6	2.6	2.6	2.6
High Heating capacities (1) NET	kW		-	-	40	40
Natural gas 2ND-H, G20	m³/h		-	-	4.5	4.5
Working range (full load / partial load)	°C		-15°C ~ 46°C / -15°C ~ 52°C			
Heat pump + Gas heating models			ARD 017 A	ARD 022 A	ARD 032 A	ARD 040 A
Net cooling capacities	kW		17.2	21.5	30	39
Power input in cooling	kW		5.5	7.6	9.8	13.9
Heating capacities (1)	kW		16.6	20.6	28.6	37.8
Power input in heating	kW		5.3	6.7	9.6	12.7
Standard Heating capacities (1) NET	kW		23	23	23	23
Natural gas 2ND-H, G20	m³/h		2.6	2.6	2.6	2.6
High Heating capacities (1) NET	kW		-	-	40	40
Natural gas 2ND-H, G20	m³/h		-	-	4.5	4.5
Working range (full load / partial load)	°C		-15°C ~ 46°C / -15°C ~ 52°C			
Common characteristics						
Power supply			400V/3 + N/ 50Hz			
Main switch	A		20	25	40	50
Main cable	Nbr. x mm²		5 x 4	5 x 6	5 x 10	5 x 16
Cable to thermostat	Nbr. x mm²		10 x 0,22			
Number of circuits / Compressor type			1 / Scroll		1 (Tandem) / Scroll	
Evaporator fan at nominal airflow	Airflow	m³/h	3400	4300	5700	7400
	Power input	kW	1	1.7	2.9	2.9
Nett dimensions	Height	mm	1 420	1 420	1 420	1 420
	Length	mm	1 866	1 866	2 135	2 135
	Depth	mm	1 540	1 540	1 850	1 850
Nett weight	ARC / ARG	kg	420 / 455	440 / 465	576 / 616	580 / 620
Nett weight	ARH / ARD	kg	425 / 460	445 / 470	582 / 622	586 / 626

All the data are at EUROVENT conditions with 400V/3+N/50Hz.

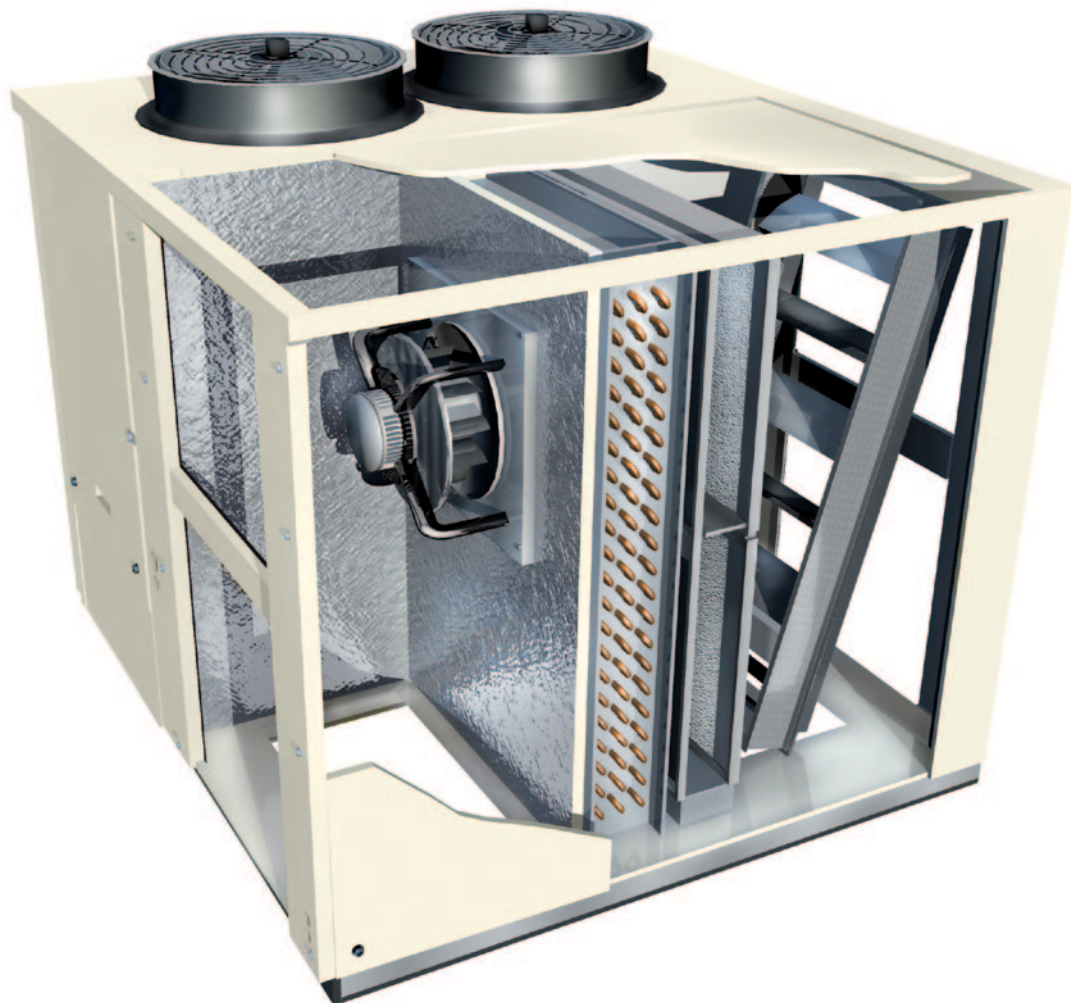
Cooling : Entering indoor coil temp. 27°C / 19°C WB and outdoor temperature 35°C - Heating : Entering indoor coil temp. 20°C and outdoor temperature 7°C / 6°C WB

(1) Add indoor fan motor consumption to know total heating capacity.

### Codes

Cooling only models		ARC 017 A	ARC 022 A	ARC 032 A	ARC 040 A
		S661752410	S661752420	S661752430	S661752450
Heat pump models		ARH 017 A	ARH 022 A	ARH 032 A	ARH 040 A
		S661752413	S661752423	S661752433	S661752453
Cooling only + Gas heating models		ARG 017 A	ARG 022 A	ARG 032 A	ARG 040 A
		S661752411	S661752421	S661752431	S661752451
Heat pump + Gas heating models		ARD 017 A	ARD 022 A	ARD 032 A	ARD 040 A
		S661752412	S661752422	S661752432	S661752452
Thermostat					
to be ordered separately		DPC-1			

# Activa rooftop details & features



## **High Efficiency**

High efficiency compressor and fans managed by an smart control allows the unit to achieve and maintain the level of comfort required in the most efficient way, reducing therefore the energy bill.



## **Low Noise**

Ultra quiet fans and optimized airflow reduces the noise level increasing the comfort. Compressors are mounted on shock absorbers and anti-vibration springs are available to avoid vibration transmissions into de building.



## **Easy Installation and Maintenance**

The high level of usability of the control, the internal solutions adopted (like direct driven fans with variable speed) and the easy access to components simplify and reduce the need of external interventions. Full information on commissioning and maintenance plan are provided to help to ensure unit keeps running always in optimal conditions.



## **Compact Design**

The refrigerant circuit layout has been redesigned and high efficiency exchangers been used to reduce the footprint and improve the transport and handling. Transition roofcurbs are available to fit in existing installations.



# Accessories & options

## Accessories & options

	Code	Cooling only				Heat pump				Cooling + gas heating				Heat pump + gas heating			
		017	022	032	040	017	022	032	040	017	022	032	040	017	022	032	040
Thermostat DPC-1	S603786044	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dry bulb triple input economizer or motorized air damper with rain hood	S611752301	O	O			O	O			O	O			O	O		
	S611752311			O	O			O	O			O	O			O	O
Enthalpy probes	S613990081	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Indoor air quality sensor	S606819964	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Power Exhaust	S611752302	A	A			A	A			A	A			A	A		
	S611752312			A	A			A	A			A	A			A	A
Barometric relief damper and rain hood	S611752472	A	A			A	A			A	A			A	A		
	S611752473			A	A			A	A			A	A			A	A
Fresh air damper and rain hood (2)	S611752303	A	A			A	A			A	A			A	A		
	S611752313			A	A			A	A			A	A			A	A
Low ambient kit	S611752381	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Roofcurb adapter (3)	S611752886	A	A			A	A			A	A			A	A		
	S611752887			A	A			A	A			A	A			A	A
Fixed roof curb	S611752881	A	A			A	A			A	A			A	A		
	S611752882			A	A			A	A			A	A			A	A
Adjustable roof curb	S611752883	A	A			A	A			A	A			A	A		
	S611752884			A	A			A	A			A	A			A	A
Dirty filter switch	S613990085	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Smoke detector	S613995382	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Fire detection thermostat	S613903003	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Hot water coil	S611752351	O	O			O	O			O	O			O	O		
	S611752352			O	O			O	O			O	O			O	O
Electric heaters	12 kW	S611752512	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	25 kW	S611752525	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	37 kW	S611752537	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Propane conversion Kit	S611752780									A	A	A	A	A	A	A	A
High heat gas	S611752790											O	O			O	O
Filter kit F6	S611752401	O	O			O	O			O	O			O	O		
	S611752402			O	O			O	O			O	O			O	O
Filter kit F7	S611752411	O	O			O	O			O	O			O	O		
	S611752412			O	O			O	O			O	O			O	O
Grill condenser coil protection	S611752451	O	O			O	O			O	O			O	O		
	S611752452			O	O			O	O			O	O			O	O
Antivibration mounting kit	S611752461	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Return fan bottom duct *	S611752361	A	A			A	A			A	A			A	A		
	S611752362			A	A			A	A			A	A			A	A
Energy recovery *	S611752501	A	A			A	A			A	A			A	A		
	S611752511			A	A			A	A			A	A			A	A
Filter kit F6 for energy recovery	S611752506	O/A	O/A			O/A	O/A			O/A	O/A			O/A	O/A		
	S611752516			O/A	O/A			O/A	O/A			O/A	O/A			O/A	O/A
Filter kit F7 for energy recovery	S611752507	O/A	O/A			O/A	O/A			O/A	O/A			O/A	O/A		
	S611752517			O/A	O/A			O/A	O/A			O/A	O/A			O/A	O/A
Copper-copper coil	Contact us	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Blue fin	Contact us	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

O=Option (factory fitted). A=Accessory (supplied loose). O/A=If you want this item factory fitted, precise it in the order form.

(1) Energy recovery accessory include: economizer, rain hood, indoor air quality sensor, enthalpy probe and G4 filters.

(2) Fresh air damper can not be installed if economizer or motorized damper is fitted

(3) Transition roofcurbs to fit in existing installations

\* Ask JCI for availability

# Design details



## Cabinet features

- Build to last, all cabinet with heavy gauge galvanized steel and powder paint backed on oven.
- Copper-copper coils or blue fin delivered upon request.
- Side or bottom duct connections to be realized on site.
- Excellent water-tightness even with high internal negative pressure.
- External slopes to remove rain water.
- Only 4 solid points to crane.



Copper-copper coil



Blue fin



## Designed to service

- Quick and easy access to all components.
- Doors equipped with hinges and 1/4 turn lock.
- Service valves.
- Inspection window for sight glass.
- Internal drain pan slope to remove drain water.
- YKtool for comissioning, monitoring and controlling unit parameters.



## Electrical features

- YKN2open regulation and control.
- Vertical hermetic scroll compressor, with compressor module and crankcase heater.
- Smooth start indoor fan.
- Phase detector.
- Main power switch.
- Numbered wires in cable trunking.
- Motor protection.

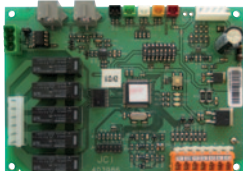


## Quality and ELT

Design, built and tested under ISO9001 quality system certification, we are constantly listening to customer comments. For this reason, our End of Line Test ELT strives to be as close as possible to the commissioning you carry out on site.

# Control System

## YK<sup>N2open</sup>



The YKlon is a controller regulating all components and accessories. It will pro actively manage cool and heat stages to maintain a stable room temperature maximizing the efficiency.

Additionally, the benefits are:

- Redundancy on cool and heat stages (if one step is locked out, the PCB starts another one automatically).
- Random start between units to minimise electrical tariff.
- All stages will start in sequence to reduce peak inrush.
- Reduces nuisance calls by using 3 times "you are out" on all safeties before a hard lockout occurs.
- Automatic restart after power failure. Compressors run time priority.
- Alarm output relay and led diagnostic code. No parameters to check before starting.
- Lockout and incident level of protection. Last 10 lockouts stored in a non-volatile memory.
- 4 heating stages on hot water heating.
- BMS connection (N2 Open protocol).

## YK<sup>tool</sup> N2open



The Yktool is the perfect tool to use on a regular basis for comissioning and service on site. For comissioning, it will override the thermostat and start the cooling or heating stages. Being a plug and play device, you will have direct access to all sensors and status of each components and accessories installed (lockout & incidents, temperatures, defrost test...).

Code: S613786031



## Features and benefits Thermostat DPC-1

- Day (normal), night (economy) and unoccupied (stand by).
- Lockout code on screen gives direct diagnostics.
- ON/OFF or programmable from dip switch setting.
- Day or night programmable state avoids wide internal temperature variation.
- 3 preset and 3 programmable profiles.
- Temperature override.
- Select the control sensor you want to use (integrated in the thermostat, return air in duct or room sensor).
- Turbo, normal or economy logic from dip switch setting.
- From -3°C to +3°C sensor offset.
- Average temperature with room or duct sensors.

## Thermostats with integrated sensors

Thermostat models		DPC-1	DPC-1R	
	Code	S603786044	S603786045	
Roomtop	RTC and RTH	X	0	
Rooftop	All models	X (1)	0	
Split system	VAC and VAH	X	0	
	VCH	X	0	

Main features			
Strategy	Turbo, normal or economy		
Auto restart after power failure	•		•
Number of cool stages	2	1	2
Number of heat stages	2	1	2
Auxiliary Heat	•		•
Automatic Heat/Cool change over	•		•
Continuous or auto indoor fan	•		•
Manual setback (Day/Night key)	Day, night and unoccupied		
Override possibility	•		•
Compressor anti short cycle	•		•
°C Range cooling / heating	10 to 32°C / 9 to 32°C		
Programmable, 7-day	•		•
Lockout codes	•		•
Outdoor air temperature	•		with YKlon
Sensor selection	•		•

X : Delivered as standard with the unit. X (1) : Standard but has to be ordered separately.  
O : Optional. • : Function available.

Duct sensor	Ambiance sensor*	Room sensor
DS-1	AS-1	RS-1
S603786047	S603786049	S603786042

\* To control up to 4 temperature sensors. To be fitted with DPC-1 version 2.0 or superior.



DS-1



AS-1



RS-1

