



INDOOR UNITS



Split-system
R-410A Refrigerant
Indoor unit with centrifugal fan
Configuration flexibility

40ZS/ZF 90 - 600

The **40ZS/ZF** series are units with horizontal construction designed for installation indoors, connected to a network of ducts.

They are equipped with centrifugal fan (EC plug-fan also available in models 90 to 360), and expansion valve.

A vast number of options meet numerous operating demands.

All of the units are tested and checked in the factory.

Range

- 1 circuit:
 - Models: 90 / 100 / 120 / 160 / 180 / 182
- 2 circuits:
 - Models: 200 / 240 / 320 / 360 / 420 / 485 / 540 / 600

PRESENTATION

COOLING

HEATING

AIR TREATMENT

CONTROLS

UNIT COMPONENTS

- Casing made of galvanised steel metal with polyester paint, white colour RAL 7035. Self-supporting frame.
- Reusable air filters, assembled on a frame.
- Condensate drain pan.

Air circuit

- Coil(s) with copper pipes and aluminium fins.
- Centrifugal fan(s) coupling by pulleys and belts. Electric motor(s) with tensioner, class F, IP55 and internal thermal protection. Double-intake turbines, with an impeller of front-curved blades. Greased spherical bearings, with no maintenance required.

Cooling circuit

- Thermostatic expansion valve(s) with external equalisation (check valve in 40ZF series).

Protections

- Main door switch.

OPTIONS

Outdoor environment

Corrosion

- Coil with copper pipes and copper fins.
- INERA® coil with copper pipes and fins of an aluminium alloy, of high performance and great resistance to the corrosion.
- Coil with copper pipes and aluminium fins with polyurethane and Blygold® coating (indoor unit and/or hot water coil).
- Condensates drain pan in stainless steel.

Humidity

- Stop-drop in the indoor air coil. Recommended in cases where a high moisture content in the air is foreseen or when the air flow is high.
- Stop-drop in the outdoor air intake.

Comfort / heating options

- Hot water auxiliary coil, with three-way valve. Two options:
 - Nominal coil for heating in cooling-only units.
 - Auxiliary coil for heating in heat pump units.

If the unit includes hot water coil and free-cooling, and works with negative temperatures of outdoor air, an anti-freeze thermostat as safety system is mandatory.

- Auxiliary electrical heaters. With this option, the air flow controller is included.

Comfort / indoor air quality options

- Filtration of the supply air:
 - Gravimetric filter G4.
 - Gravimetric filter G4 + creased opacimetric filters F6 to F9.
- Filtration of the return air (with return fan):
 - Gravimetric filter G4.
 - Gravimetric filter G4 + creased opacimetric filters F6.

Safety

- Soft starter of the supply and/or return centrifugal fans which prolongs the set time mainly aimed at installations with cloth ducts. Compulsory for motors with an output of 15 kW and above.
- Differential pressostat for the detection of clogged filters.
- Differential pressostat for control of air flow.
- Smoke detecting station in accordance with the NF S 61-961 standard.
- Refrigerant leak detector (with CARRIERrtc control). This allows prompt identification of gas leaks, guaranteeing the safety of any people in the vicinity. Installation of the device ensures compliance with European standards F-GAS and EN378 as well as ASHRAE 15.

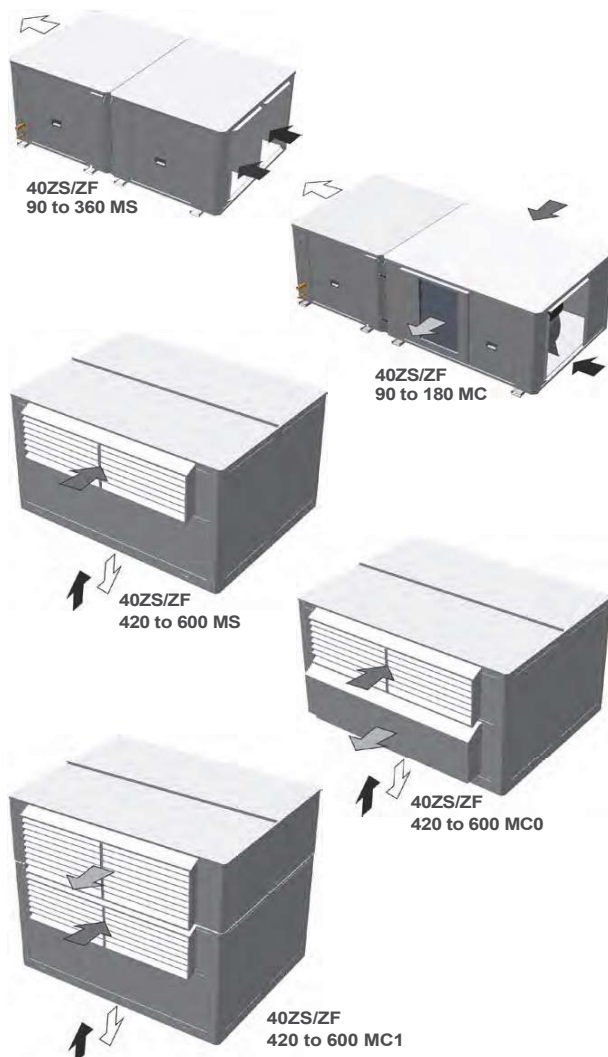


OPTIONS (CONT.)

Installation options

- Antivibration mounts made of rubber.
 - Position of supply and/or return of the indoor unit air.
 - Supply and/or return fan with high available pressure.
 - Electronic plug-fan in the air supply in models 90 to 360.
 - Assemblies with **mixing box** for air renewal and free-cooling:
 - 2 motorised dampers:
 - MS assembly: fresh air intake.
 - 3 motorised dampers:
 - MC assembly: fresh air intake, air extraction and return with centrifugal fan (models 90 to 180 and 420 to 600) or EC plug-fan (models 420 to 600 with MC0 assembly).
- Note: EC plug-fan in models 420 to 600 with MC0 assembly: upon request.

Note: CARRIERrtc electronic control is mandatory with EC plug-fans.



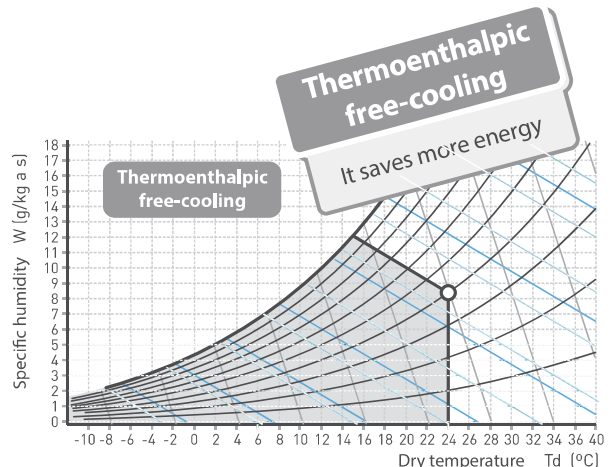
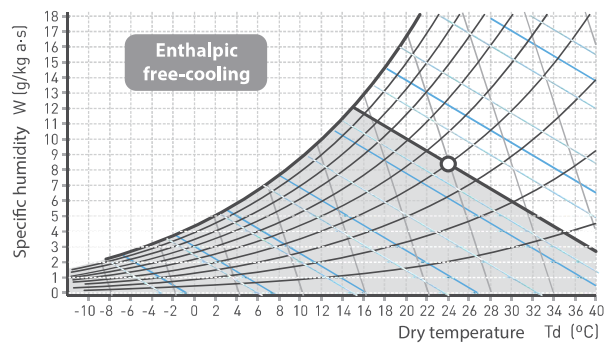
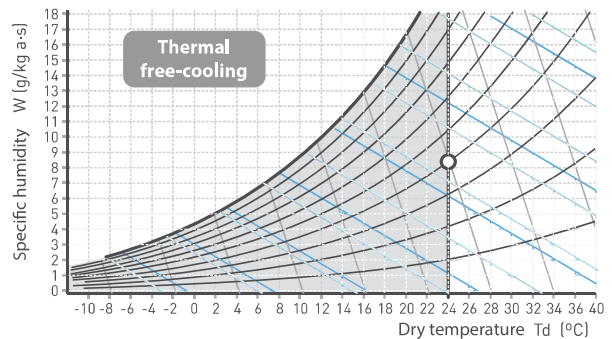
All the possible combinations of "Assemblies with mixing boxes" are represented on the following page.

Free-cooling

On units with mixing box, the free-cooling can be managed by the electronic control. Running the unit in free-cooling mode allows it to make best use of outdoor air conditions when these are more favourable than the return air conditions. This allows the cooling capacity to be reduced.

The percentage of outdoor air can vary between 0% and 100%. There are three options for free-cooling management:

- Thermal, by comparing the temperatures.
- Enthalpic, by comparing the enthalpies. Recommended in cases where a high moisture content in the air is foreseen.
- Thermoenthalpic, by comparing the enthalpies and correcting for temperature. This is the optimum solution as it takes the variability of the climate into account.

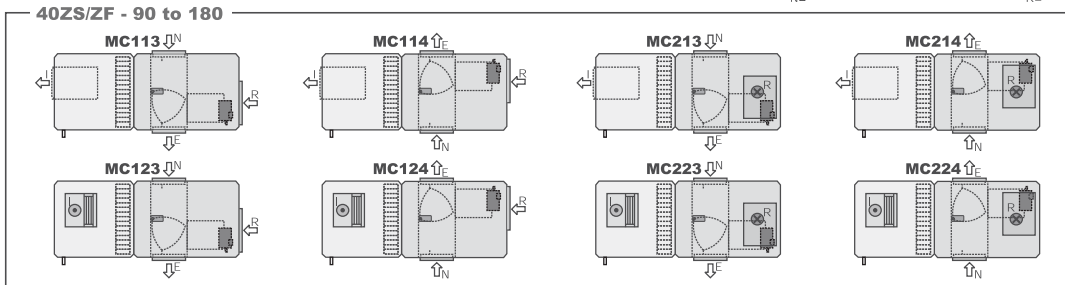
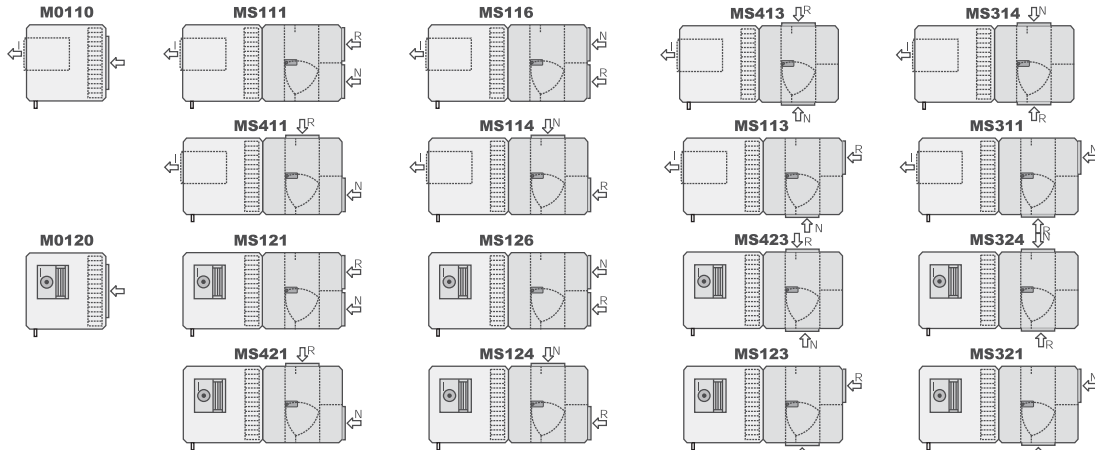


Note: CARRIERrtc electronic control is mandatory with enthalpic or thermoenthalpic free-cooling.

OPTIONS (CONT.)

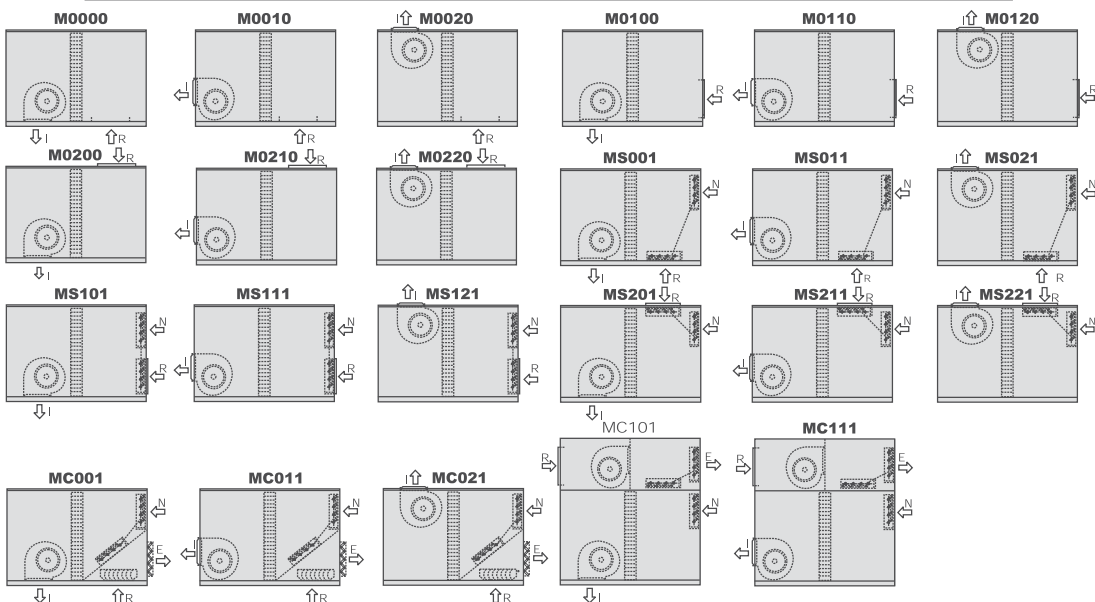
40ZS/ZF - 90 to 360: assemblies with mixing box (plan view)

<p>Air circulation</p> <p>I = Outlet R = Return N = Fresh air intake E = Air extraction</p> <p>⊗ Air inlet ⊙ Air outlet</p>	<p>Designation</p> <p>Assembly: 0 = Standard S = Fresh air intake with damper C = Return fan</p> <p>Return: 1 = Rear 2 = Top 3 = Right-hand side (*) 4 = Left-hand side (*)</p> <p>Supply: 1 = Front 2 = Top</p> <p>Fresh air: 1,6 = Rear 3 = Right-hand side (*) 4 = Left-hand side (*)</p> <p>(*) Seen in the direction of airflow</p>
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40ZS/ZF - 420 to 600: assemblies with mixing box (raised view)

<p>Air circulation</p> <p>I = Supply R = Return N = Fresh air intake E = Air extraction</p>	<p>Designation</p> <p>Assembly: 0 = Standard S = Fresh air intake with damper C0 = Lower return with plug-fan C1 = Return in top box with centrifugal fan</p> <p>Return: 0 = Bottom 1 = Side 2 = Top</p> <p>Supply: 0 = Bottom 1 = Side 2 = Top</p> <p>Fresh air: 0 = No intake 1 = Side</p>
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TECHNICAL CHARACTERISTICS

40ZS/ZF		90	100	120	160	180	182	200	
Centrifugal fan	Nominal air flow (m ³ /h)	4.000	4.600	5.200	7.000	7.000	8.000	9.200	
	Available static pressure (mm.w.c)	15	15	15	15	15	15	20	
	Number / turbines	1 / 1				2 / 2			
	Motor output (kW)	1,1	1,1	1,1	1,5	1,5	2 x 0,75	2 x 1,1	
	Power input (kW)	0,61	0,83	0,88	1,08	1,08	2 x 0,59	2 x 0,91	
	Speed (r.p.m.)	985	1049	916	761	761	963	1126	
Max. absorbed current	Fan (A)	2,7	2,7	2,7	3,6	3,6	4,2	5,4	
Dimensions	Length (mm)	1.190			1.520		2.144		
	Width (mm)	950			1.028		950		
	Height (mm)	731			731		731		
Weight	(kg)	147	147	190	199	199	262	262	

40ZS/ZF		240	320	360	420	485	540	600	
Centrifugal fan	Nominal air flow (m ³ /h)	10.300	14.000	15.500	18.000	18.200	20.400	24.000	
	Available static pressure (mm.w.c)	20	20	20	20	20	20	20	
	Number / turbines	2 / 2			1 / 3				
	Motor output (kW)	2 x 1,5	2 x 1,5	2 x 2,2	4	4	4	5,5	
	Power input (kW)	2 x 0,94	2 x 1,15	2 x 1,39	2,52	2,82	2,96	3,40	
	Speed (r.p.m.)	974	789	816	677	677	643	681	
Max. absorbed current	Fan (A)	7,2	7,2	10,0	9,0	9,0	9,0	11,6	
Dimensions	Length (mm)	2.144	2.804		2.853				
	Width (mm)	950	1.028		2.160				
	Height (mm)	731	800		1.524				
Weight	(kg)	262	365	365	920	920	963	964	

SOUND LEVELS dB(A)

Sound power level on the indoor unit

Sound power level in the indoor fan supply to be taken into account for the silencer calculation:

40ZS/ZF	90	100	120	160	180	182	200	240	320	360	420	485	540	600
Total dB(A)	79	82	80	80	80	82	85	82	83	85	86	87	89	92