



TECHNICAL MANUAL
INSTALLATION
USE
MAINTENANCE

GALAXY-ZENIT



MODELS UNIT:

**082A - 102A - 122A - 152A - 123A -
133A - 153A - 134A - 154A - 126A**

REF R410A



1.1 OPERATING LIMITS:

Cooling cycle (standard):

External air temperature D.B. + 15°C ÷ + 45°C (*)

Chilled water temperature (OUT) + 4°C ÷ + 18°C

Cooling cycle (with DCC accessory):

External air temperature D.B. - 15 °C ÷ + 45°C (*)

Chilled water temperature (OUT) + 4°C ÷ + 18 °C

Heating cycle:

External air temperature D.B. - 10 °C ÷ + 25°C

Hot water temperature (OUT) + 25°C ÷ + 55 °C (**)

(*) max air temp. limit referred to chilled water + 7 °C

(**) max water temp. referred to external air temp. 6 °C d.b.

1.3 CONFIGURATION: GALAXY P1/154 A

GALAXY ZENIT	P1	FC	154	A
TYPE UNIT	OPTIONAL WATER SECTION	OPTIONAL ENERGY SAVING	DIMENSION	TYPE REFRIGERANT
VERSION				
STANDARD			LOW NOISE	
REFRIGERANT TYPE				
A: R410a				

1.2 MAIN TECHNICAL DATA CHILLER

MODELS	GALAXY	082 A	102 A	122 A	152 A	123 A
Cooling capacity (A35/W7)	kW	39,5	49,7	58,4	75,9	84,5
Cooling capacity (A35/W18)	kW	54,1	68,1	80,2	103,9	115,9
Scroll compressors	n°	2	2	2	2	3
Refrigerant circuits	n°	1	1	1	1	1
Capacity steps	%	2	2	2	2	3
Supply voltage	V/Hz/Ph	400/50/3				
Plate heat exchanger	n°	1	1	1	1	1
Water flow	l/s	1,89	2,37	2,79	3,63	4,04
Pressure drops	kPa	21,6	26,8	25,7	25,4	18,7
USER PLANT WATER PUMP ST (OPTIONAL)						
Available externe pressure	kPa	139	130	125	117	117
Pump power input	kW	1,1	1,1	1,1	1,47	1,47
Pump current input	A	2,1	2,1	2,1	2,72	2,72
COMPRESSOR						
Max current input	A	15,9	18,2	22,3	28,7	22,3
DIMENSIONS AND WEIGHT						
Length	mm	1955	1955	1955	3005	3005
Width	mm	1123	1123	1123	1123	1123
Height	mm	1954	1954	1954	1954	1954
Weight (standard unit)	Kg	528	553	559	701	778
TOTAL ELECTRICAL ASSORBITION (FOR STANDARD VERSION)						
Nominal power (1)	kW	15,9	19,4	22,7	29,2	34,1
Nominal current (1)	A	27,0	32,9	38,6	49,6	58,0
Max current input	A	36,0	40,6	48,8	65,8	75,3
Starting current	A	112,8	131,1	142,2	172,5	166,4

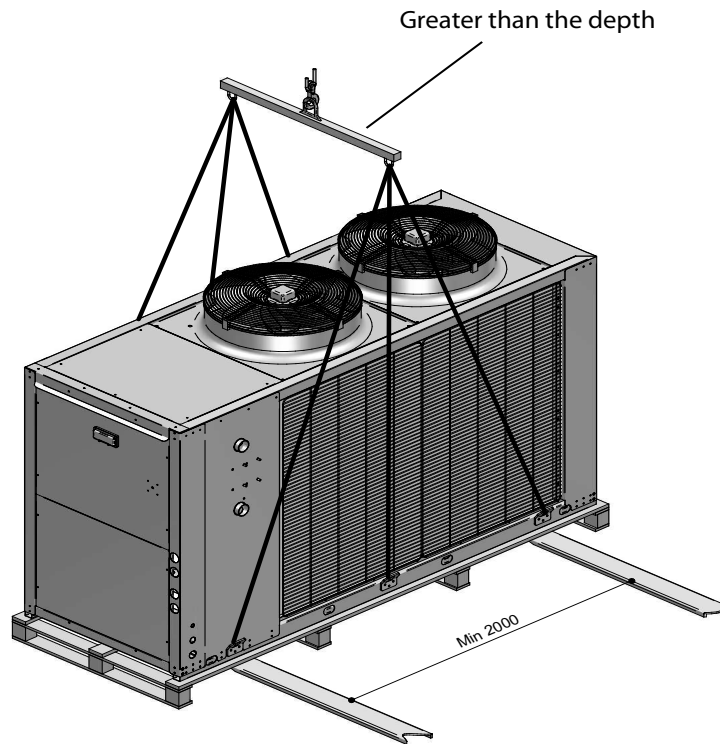
(1) External air temp. 35 °C - Out water temp. 7 °C

(2) External air temp. 35 °C - Out water temp. 18 °C

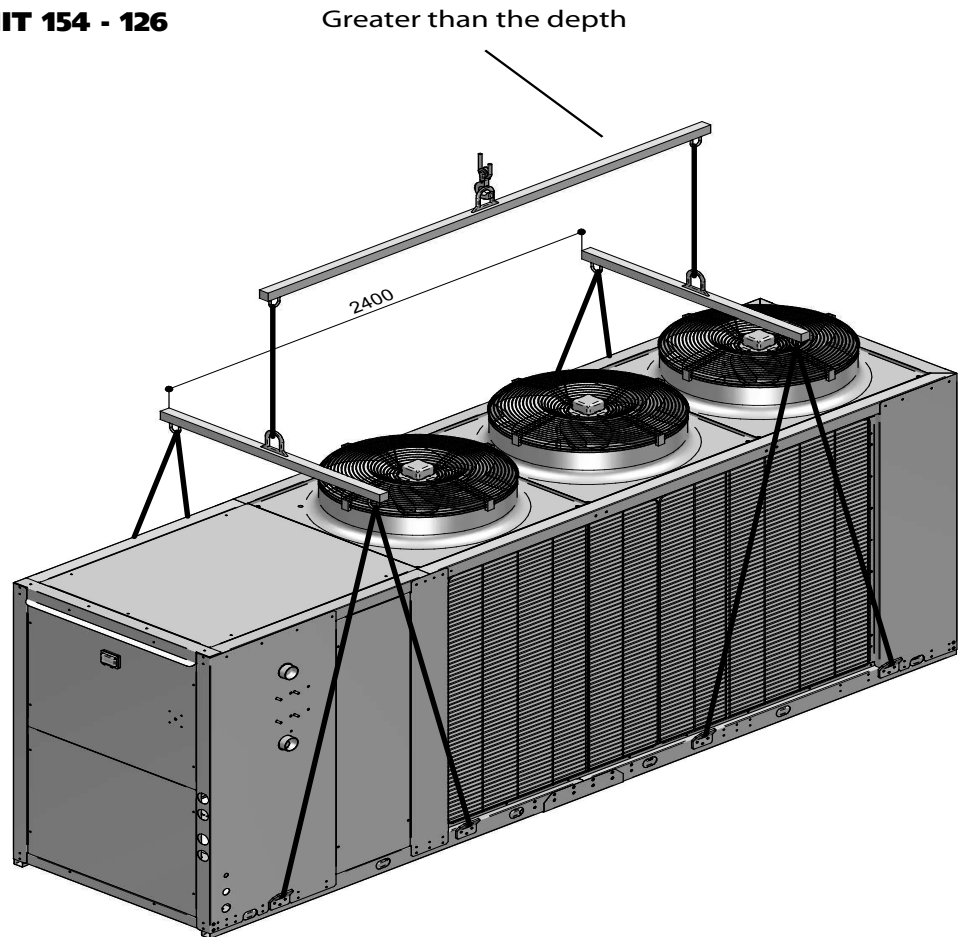
1.5 MAIN TECHNICAL DATA HEAT PUMP

MODELS	ZENIT	082 A	102 A	122 A	152 A	123 A
Cooling capacity (A35/W7)	kW	38,7	48,7	57,3	74,4	82,8
Cooling capacity (A35/W18)	kW	53,0	66,7	78,6	101,9	113,6
Heating capacity (A7/W35)	kW	47,4	54,6	66,2	91,8	103,1
Heating capacity (A7/W45)	kW	46,2	53,2	64,6	83,5	100,4
Scroll compressors	n°	2	2	2	2	3
Refrigerant circuits	n°	1	1	1	1	1
Capacity steps	%	2	2	2	2	3
Supply voltage	V/Hz/Ph			400/50/3		
Plate heat exchanger	n°	1	1	1	1	1
Water flow	l/s	1,89	2,37	2,79	3,63	4,04
Pressure drops	kPa	21,6	26,8	25,7	25,4	18,7
USER PLANT WATER PUMP ST (OPTIONAL)						
Available externe pressure	kPa	139	130	125	117	117
Pump power input	kW	1,1	1,1	1,1	1,47	1,47
Pump current input	A	2,1	2,1	2,1	2,7	2,7
COMPRESSOR						
Max current input	A	15,9	18,2	22,3	28,7	22,3
DIMENSIONS AND WEIGHT						
Length	mm	1955	1955	1955	3005	3005
Width	mm	1123	1123	1123	1123	1123
Height	mm	1954	1954	1954	1954	1954
Weight (standard unit)	Kg	578	603	609	751	828
TOTAL ELECTRICAL ASSORBITION (FOR STANDARD VERSION)						
Nominal power (1)	kW	12,7	14,4	17,8	23,9	27,7
Nominal current (1)	A	20,8	26,2	32,3	43,4	55,0
Max current input	A	36,0	40,6	48,8	65,8	75,3
Starting current	A	112,8	131,1	142,2	172,5	166,4

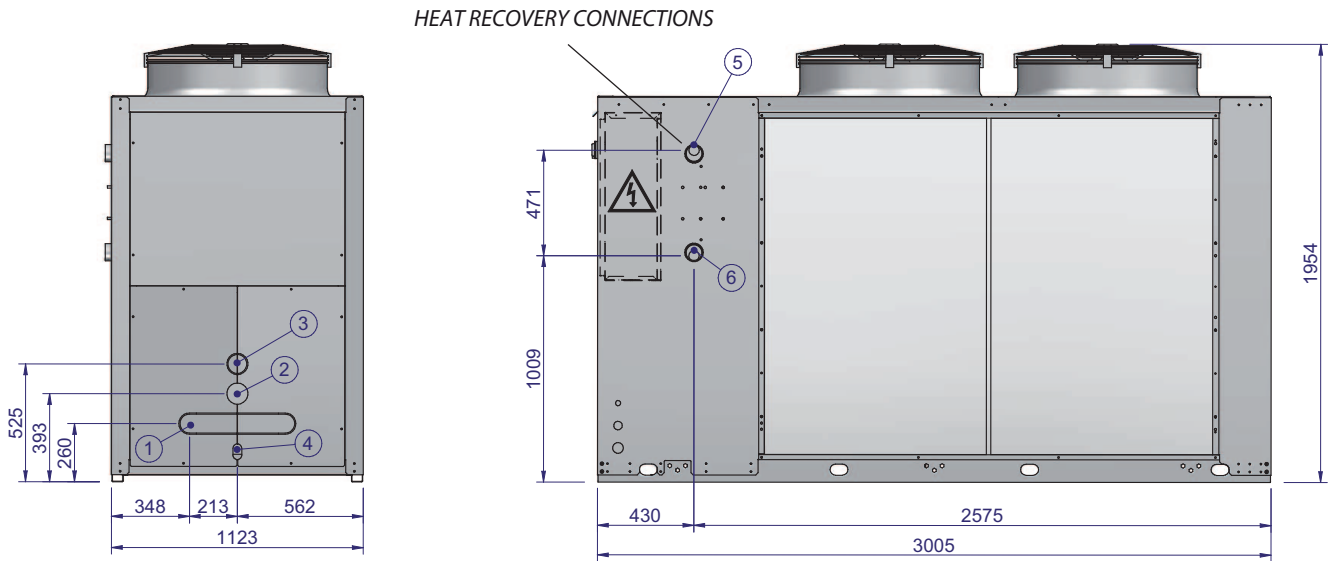
MODELS GALAXY ZENIT 152 - 134



MODELS GALAXY ZENIT 154 - 126



MEDIUM SIZE FRAME

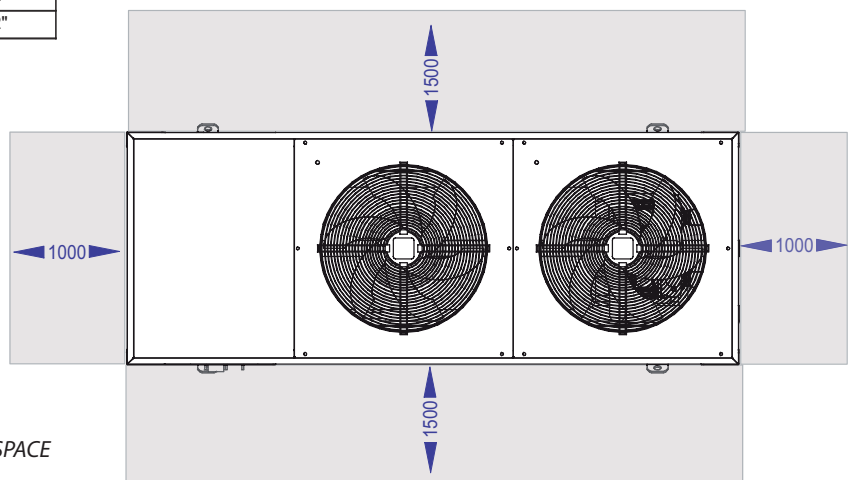


USER PLANT CONNECTIONS

	Size	STD - SERIES		PARALLEL			DRAINAGE TANK	OUT RECOVERY	IN RECOVERY
		1	2	2	3	4			
Galaxy - Zenit STD	152	2"	2"	2"	2"	1/2" M	2"	2"	
	123	2"	2"	2"	2"	1/2" M	2"	2"	
	133	2"	2"	2"	2"	1/2" M	2"	2"	
	153	2"	2"	2"	2"	1/2" M	2"	2"	
	134	2"1/2	2"1/2	2"1/2	2"1/2	1/2" M	2"1/2	2"1/2	
Galaxy - Zenit Low Noise	122	1"1/2	1"1/2	1"1/2	1"1/2	1/2" M	1"1/2	1"1/2	
	152	2"	2"	2"	2"	1/2" M	2"	2"	
	123	2"	2"	2"	2"	1/2" M	2"	2"	
	133	2"	2"	2"	2"	1/2" M	2"	2"	
Galaxy Free Cooling	102	1"1/2	1"1/2						
	122	1"1/2	1"1/2						
	152	2"	2"						
	123	2"	2"						
Galaxy Free Cooling - Low Noise	102	1"1/2	1"1/2						
	122	1"1/2	1"1/2						
	152	2"	2"						
	123	2"	2"						

		IN	OUT
Galaxy Free Cooling	102	1"1/2	1"1/2
	122	1"1/2	1"1/2
	152	2"	2"
	123	2"	2"
Galaxy Free Cooling - Low Noise	102	1"1/2	1"1/2
	122	1"1/2	1"1/2
	152	2"	2"
	123	2"	2"

Models	GALAXY		ZENIT		GALAXY F.C.	
	Std.	SLN	Std.	SLN	Std.	SLN
102					X	X
122		X		X	X	X
152	X	X	X	X	X	X
123	X	X	X	X	X	X
133	X	X	X	X		
153	X	X	X	X		
134	X		X			



SERVICE SPACE

PLUMBING CONNECTIONS

3.0 PIPING

The system pipes may be made from steel, galvanised steel, polyethylene or PVC.

The pipes must be sized based on the nominal water flow, the system pressure drops and the characteristics of the circulating pump or other pump used in the system.

The units equipped with a pump able to guarantee the useful static pressure indicated in the enclosed table. In this case, the pipes must necessarily be sized based on the pump performance, carefully evaluating the pressure drops present in the system.

All the pipes should be suitably insulated to prevent heat build-ups (with a consequent decline in unit performance) and the formation of condensation on the outer surface.

Use closed-cell insulation material with a thickness of at least 10 mm for this purpose.

In order to prevent vibrations being transmitted from the unit to the user system and to compensate for thermal expansion, it is good practice to install elastic joints on the unit's plumbing connections.

The system should be developed in keeping with national regulations or those of the country of installation.

In any case, it is good practice **to install the following devices in order to guarantee correct use and maintenance of the unit.**

- anti-vibration elastic joints (in/out);
 - shut-off cocks;
 - **metal mesh filter, must be installed as possible to the unit and positioned to allow easy access for routine maintenance;**
 - air bleed devices;
 - automatic filling assembly;
 - drain cock;
 - expansion tank (1);
- control volume of the expansion vessel with the maximum capacity of user plant water at working conditions;
- safety water valve (1)

(1) - These devices are already installed on the machine only AP versions.

In order for correct working order and high performance to be guaranteed, every unit requires a constant nominal water flow as indicated in the table below.

The use of lower water flows could generate an operating anomaly, leading to serious consequences and damage to some important components such as the compressor.

TECHNICAL DATA TABLE FOR
PLUMBING CIRCUIT SIZING:

MODEL		082 A	102 A	122 A	152 A	123 A	133 A	153 A	134 A	154 A	126A
Plate heat exchanger	n°	1	1	1	1	1	1	1	1	1	1
Water flow	l/s	1,89	2,37	2,79	3,63	4,04	4,46	5,38	6,18	7,25	8,29
Pressure drops	kPa	21,6	26,8	25,7	25,4	18,7	22,8	22,9	31,3	35,8	34,4
Pump external static pressure (version STD)	kPa	139	130	125	117	117	105	84	111	80	80
Pump external static pressure (version HIGH)	kPa	172	160	154	156	157	146	127	152	123	154

DEPENDING ON THE MODELS AND TYPE OF USER SYSTEM CONFIGURATION, THE MACHINES SHOULD BE EQUIPPED WITH A SERIES OF COMPONENTS, LISTED ABOVE, IN ORDER TO ENSURE THE WORKING ORDER OF THE SYSTEM. HOWEVER, THESE DEVICES MUST BE CHECKED FROM TIME TO TIME TO MAKE SURE THAT THEY ARE WORKING PROPERLY.

- * CHECK THE INTERVENTION OF THE WATER DIFFERENTIAL PRESSURE SWITCH PERIODICALLY.
- * CHECK THE READING ON THE ANTIFREEZE PROBE AND COMPARE IT WITH A CERTIFIED INSTRUMENT. IF THE VALUE IS WRONG, CALIBRATE THE PROBE.
- * PERIODICALLY CLEAN THE MESH FILTER INSTALLED ON THE MACHINE HEAT EXCHANGER INLET.
- * MAKE SURE THAT THE PLUMBING SYSTEM PRESSURE IS WITHIN THE SAFETY LIMITS (MAX 6 bar).