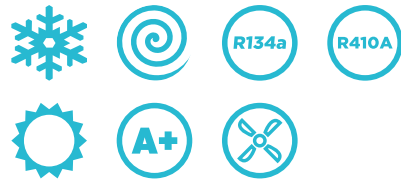


# ZENIT PLUS

*Air cooled reversible heat pump*



- High-efficiency heat pump
- R410a Multiscroll unit
- High efficiency at partial loads
- Optional internal hydronic kit
- Low noise level
- Available in a STD or SUPERSILENT (SLN) version
- Standard RS485 card
- Wide range of accessories (optional)
- Robust and well-finished metalwork

The ZENIT PLUS is a High efficiency air cooled reversible heat pumps for outdoor installations with scroll compressors.

Available in a wide range of models with multi-compressor and cooling capacity 230 up to 390 kW. All units are equipped with scroll compressors, with refrigerant R410A and are designed for optimal energy efficiency, particularly high operating at partial loads. The compactness and the presence of a wide range of equipments and accessories, allow the use of the Zenit Plus units in any plant environment

All standard models have the compressors assembled into a soundproofed compartment. The noise emission is very low and it is in compliance with the required normal standard. For particularly low noise requirements, a Low Noise version (SLN) is available. In addition to strengthening insulation of the compressor compartment, low speed fans and

increased heat exchange surfaces are used in order to ensure high energy efficiency.

Both standard and Low Noise version, can be integrated with options that allow adaptability to various needs of plants character.

Among the most used we remember:

- Water section with single pump P1;
- Water section with double pumps P2;
- Water section with pump (single or double) and buffer tank AP1 – AP2; pumps type HP also available APH1 – APH2;
- Buffer tank to be connected in series to the user plant or, with 4 connections, in order to be used as hydronic separator between the unit and the user plant.
- Partial heat recovery HRP;
- Electronic thermostatic valve.

# Accessories

1 pump	Rubber antivibration mountings std / hydronic kit
1 HP pump	Condensing coils protection grids
2 pumps	Compressors soft starter
2 HP pumps	Coils with prevarnished fins
1 pump hydronic kit + buffer tank	Condensers fully Electrofin® painted
1 HP pump hydronic kit + buffer tank	Condensers with copper fins
2 pumps hydronic kit + buffer tank	Power factor regulator kit (cos φ 0,95)
2 HP pumps hydronic kit + buffer tank	Electrical panel ventilation / Heating kit
Partial heat recovery (desuperheater)	Electrical panel ventilation
Refrigerants gauges	Modulating fan speed control
Top remote control	Electronic thermostatic expansion valve
Antifreeze evaporator heater + pipes	El. Exp. Valve backup battery
Antifreeze evaporator heater + buffer tank	EC Fans
Nordic kit	A.V mounts (spring type) only pipes
Compressor crankcase heater (INCLUDED)	A.V mounts (spring type) pumps+buffer tank
Compressor magnetothermal protection	Standard RS485 Modbus card (INCLUDED)
Rubber antivibration machine base/ hydronic kit	



# Zenit Plus STD Technical Data

ZENIT PLUS STD UNIT		136A	146A	156A	234A	284A	304A		
HEATING	HEATING MODE SEASONAL EFFICIENCY (Low temp. application / Average climate area) Reg. UE 813/2013_								
	SCOP		3,2	3,52	3,45	3,31	3,36	3,19	
	η		125	138	135	129	131	125	
	Energetic class		-	-	-	-	-	-	
	A7/W35	Heating capacity	kW	234,4	248,9	285,8	321,8	345,0	391,4
		Total power input	kW	59,1	61,7	67,0	79,7	85,2	94,3
		COP (EN 14511-2013)		3,9	4,0	4,2	4,0	4,0	4,1
	A7/W45	Heating capacity	kW	225,4	236,0	264,7	313,7	336,5	381,0
		Total power input (1)	kW	70,4	73,4	79,7	98,1	105,2	116,2
		COP (EN 14511-2013)		3,2	3,2	3,3	3,2	3,2	3,2
	A2/W35	Heating capacity	kW	207,7	220,1	252,8	285,7	306,1	346,9
		Total power input (1)	kW	58,4	61,0	66,3	79,7	85,0	94,0
		COP (EN 14511-2013)		3,5	3,6	3,8	3,6	3,6	3,7
	A2/W45	Heating capacity	kW	201,7	210,4	234,3	280,5	301,1	340,6
		Total power input (1)	kW	69,8	72,7	78,6	98,0	105,2	116,0
COP (EN 14511-2013)			2,9	2,9	3,0	2,9	2,8	2,9	
COOLING	COOLING MODE SEASONAL EFFICIENCY (Reg. UE 2016/2281)								
	SEER		3,83	3,79	3,98	3,87	3,80	3,82	
	η		150	149	156	152	149	150	
	A35/W7	Cooling capacity	kW	193,0	203,1	228,0	266,6	286,6	322,3
		Total power input (1)	kW	70,8	75,1	81,6	96,2	105,6	116,7
	EER (EN 14511-2013)		2,7	2,7	2,8	2,8	2,7	2,7	
	A35/W18	Cooling capacity	kW	262,4	273,3	302,6	359,5	387,7	435,7
		Total power input (1)	kW	76,7	81,7	89,0	102,7	114,5	126,7
		EER (EN 14511-2013)		3,3	3,3	3,3	3,4	3,3	3,4
	Max current	A	186,6	194,8	211,2	249,1	267,1	293,1	
Current at start	A	288,8	321,9	338,3	492,1	501,1	514,1		
Scroll Compressors	n°	6	6	6	4	4	4		
Refrigerant circuits	n°	2	2	2	2	2	2		
Capacity steps	n°	6	6	6	4	4	4		
Supply voltage	V/Ph/Hz	400/3/50							
Sound power Lw (2)	dB(A)	85,2	85,8	86,7	88,9	89,6	90,2		
Sound pressure Lp (2)	dB(A)	53,0	53,6	54,5	56,6	57,3	57,8		
<b>USER PLANT HEAT EXCHANGER</b>									
Type of fluid		clean water							
Brazed plate exchanger	n°	1	1	1	1	1	1		
Water flow (A35/W7)	l/s	9,22	9,7	10,9	12,7	13,7	15,4		
Pressure drops (A35/W7)	KPa	39	38,2	38,6	48,2	38,9	39,9		
<b>FAN SECTION</b>									
Fans	n°	4	4	4	6	6	6		
Air flow	m3/s	23,7	23,7	22,8	35,1	35,1	33,6		
Rotation speed	min-1	885	885	885	885	885	885		
Unit power input	kW	1,7	1,7	1,7	1,7	1,7	1,7		
Unit current input	A	3,7	3,7	3,7	3,7	3,7	3,7		
<b>SIZES AND WEIGHT</b>									
Length	mm	4125	4125	4125	5125	5125	5125		
Width	mm	2205	2205	2205	2205	2205	2205		
Height	mm	2266	2266	2266	2266	2266	2266		
Weight	Kg	1841	1848	1944	2356	2375	2499		

A7/W35 Ambient temperature: 7 °C - Medium (water) temperature: 30/35 °C  
A7/W45 Ambient temperature: 7 °C - Medium (water) temperature: 40/45 °C  
A2/W35 Ambient temperature: 2 °C - Medium (water) temperature: 30/35 °C  
A2/W45 Ambient temperature: 2 °C - Medium (water) temperature: 40/45 °C  
A35/W7 Ambient temperature: 35 °C - Medium (water) temperature: 12/7 °C

A35/W18 Ambient temperature: 35 °C - Medium (water) temperature: 23/18 °C

(1) Total power input without water pumps  
(2) Sound power level according to ISO3744. Average sound pressure level 10 m distance with unit standing on a reflecting surface



# Zenit Plus SLN Technical Data

ZENIT PLUS SLN UNIT		136A	146A	156A	234A	284A		
HEATING MODE SEASONAL EFFICIENCY (Low temp. application / Average climate area) Reg. UE 813/2013_								
SCOP		3,39	3,83	3,44	3,58	3,63		
η		133	150	135	140	142		
Energetic class		-	-	-	-	-		
HEATING	A7/W35	Heating capacity	kW	237,5	252,7	290,9	325,0	349,2
	A7/W35	Total power input	kW	57,1	59,7	67,5	76,7	82,2
	A7/W35	COP (EN 14511-2013)		4,1	4,2	4,2	4,2	4,2
	A7/W45	Heating capacity	kW	227,9	238,8	270,2	316,5	339,9
	A7/W45	Total power input (1)	kW	68,4	71,4	80,2	95,0	102,2
	A7/W45	COP (EN 14511-2013)		3,3	3,3	3,3	3,3	3,3
	A2/W35	Heating capacity	kW	210,0	222,8	258,3	288,4	309,2
	A2/W35	Total power input (1)	kW	56,4	59,0	66,8	76,6	82,0
	A2/W35	COP (EN 14511-2013)		3,7	3,7	3,8	3,7	3,7
	A2/W45	Heating capacity	kW	203,7	212,7	239,1	282,9	303,9
	A2/W45	Total power input (1)	kW	67,8	70,7	79,2	95,0	102,1
	A2/W45	COP (EN 14511-2013)		3,0	3,0	3,0	3,0	3,0
COOLING MODE SEASONAL EFFICIENCY (Reg. UE 2016/2281)								
SEER		4,01	4,02	4,12	3,87	3,88		
η		157	158	162	152	152		
COOLING	A35/W7	Cooling capacity	kW	192,1	202,0	234,2	265,5	285,1
	A35/W7	Total power input (1)	kW	69,2	73,5	79,7	93,7	103,3
	A35/W7	EER (EN 14511-2013)		2,7	2,7	2,9	2,8	2,7
	A35/W18	Cooling capacity	kW	260,7	271,4	312,6	357,3	385,0
	A35/W18	Total power input (1)	kW	75,3	80,4	86,3	100,6	112,6
	A35/W18	EER (EN 14511-2013)		3,4	3,3	3,5	3,5	3,3
Max current		A	180,0	188,2	204,6	239,2	257,2	
Current at start		A	282,2	315,3	331,7	482,2	491,2	
Scroll Compressors		n°	6	6	6	4	4	
Refrigerant circuits		n°	2	2	2	2	2	
Capacity steps		n°	6	6	6	4	4	
Supply voltage		V/Ph/Hz	400/3/50					
Sound power Lw (2)		dB(A)	82,1	82,8	83,8	86,6	86,6	
Sound pressure Lp (2)		dB(A)	49,9	50,6	51,6	54,3	54,3	
<b>USER PLANT HEAT EXCHANGER</b>								
Type of fluid			clean water					
Braze plate exchanger		n°	1	1	1	1		
Water flow (A35/W7)		l/s	9,2	9,7	11,2	12,7	13,6	
Pressure drops (A35/W7)		KPa	38,6	37,8	40,7	47,8	38,5	
<b>FAN SECTION</b>								
Fans		n°	4	4	4	6	6	
Air flow		m³/s	18,8	18,8	29,1	27,7	27,7	
Rotation speed		min <sup>-1</sup>	720	720	720	720	720	
Unit power input		kW	1,2	1,2	1,2	1,2	1,2	
Unit current input		A	2,1	2,1	2,1	2,1	2,1	
<b>SIZES AND WEIGHT</b>								
Length		mm	4125	4125	5125	5125	5125	
Width		mm	2205	2205	2205	2205	2205	
Height		mm	2266	2266	2266	2266	2266	
Weight		Kg	1965	1977	2198	2512	2531	

A7/W35 Ambient temperature: 7 °C - Medium (water) temperature: 30/35 °C  
A7/W45 Ambient temperature: 7 °C - Medium (water) temperature: 40/45 °C  
A2/W35 Ambient temperature: 2 °C - Medium (water) temperature: 30/35 °C  
A2/W45 Ambient temperature: 2 °C - Medium (water) temperature: 40/45 °C  
A35/W7 Ambient temperature: 35 °C - Medium (water) temperature: 12/7 °C

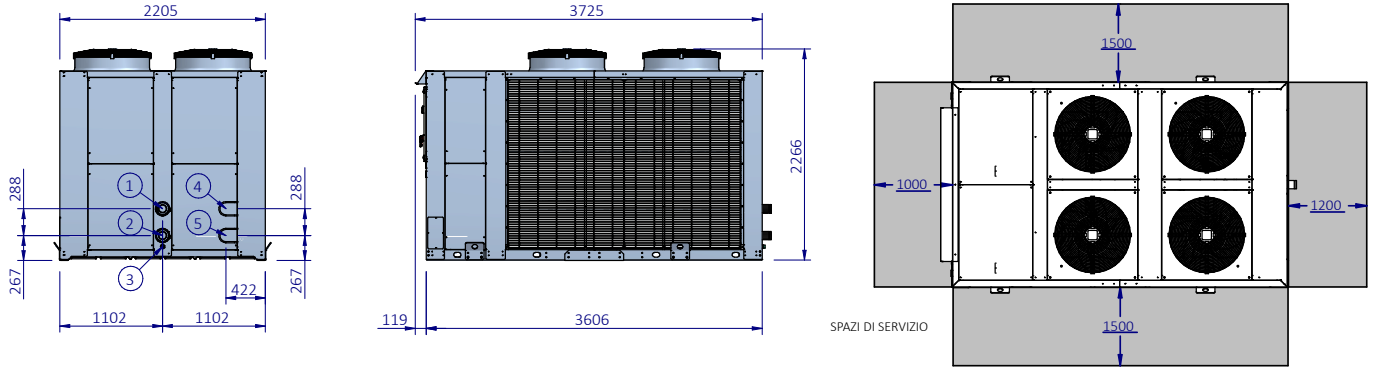
A35/W18 Ambient temperature: 35 °C - Medium (water) temperature: 23/18 °C  
(1) Total power input without water pumps  
(2) Sound power level according to ISO3744. Average sound pressure level 10 m distance with unit standing on a reflecting surface



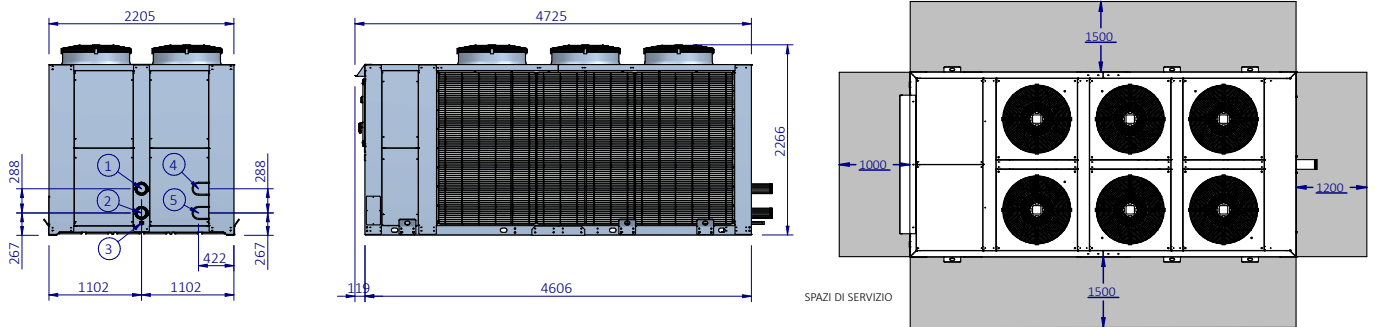
# Plant hydronic kit technical data

MODELLI ZENIT PLUS		136A	146A	156A	234A	284A	304A
<b>KIT IDRONICO IMPIANTO (ACCESSORIO)</b>							
Fluid flow (A35/W7) STD	l/s	9,23	10,14	11,09	12,74	14,21	16,00
Safety valve	Bar	6	6	6	6	6	6
Expansion vessels	l	1 x 25	1 x 25	1 x 25	2 x 25	2 x 25	2 x 25
Plant fluid max pressure	Bar	6	6	6	6	6	6
<b>VERSIONS: 1 std pump</b>							
Pump nr.	n°	1	1	1	1	1	1
Available externe pressure	kPa	114	102	93	118	106	120
Single power input	kW	2,2	2,2	2,2	3,0	3,0	4,0
Single current input	A	4,6	4,6	4,6	6,3	6,3	7,8
Empty weight	Kg	55	55	55	80	80	80
<b>VERSIONS: 1 HP pump</b>							
Pump nr.	n°	1	1	1	1	1	1
Available externe pressure	kPa	157	147	149	135	186	174
Single power input	kW	3	3	4	4	5,5	5,5
Single current input	A	6,3	6,3	7,8	7,8	10,4	10,4
Empty weight	Kg	62	62	62	87	87	87
<b>VERSION: 2 std pumps</b>							
Pump nr.	n°	2	2	2	2	2	2
Available externe pressure	kPa	114	102	93	118	106	120
Single power input	kW	2,2	2,2	2,2	3,0	3,0	4,0
Single current input	A	4,6	4,6	4,6	6,3	6,3	7,8
Empty weight	Kg	98	98	98	133	133	133
<b>VERSION: 2 HP pumps</b>							
Pump nr.	n°	2	2	2	2	2	2
Available externe pressure	kPa	157	147	149	135	186	174
Single power input	kW	3	3	4	4	5,5	5,5
Single current input	A	6,3	6,3	7,8	7,8	10,4	10,4
Empty weight	Kg	112	112	112	147	147	147
<b>VERSION: 1 std pump + buffer tank</b>							
Storage water tank	l	500	500	500	750	750	750
Pump nr. n°	n°	1	1	1	1	1	1
Available externe pressure	kPa	114	102	93	118	106	120
Single power input	kW	2,2	2,2	2,2	3,0	3,0	4,0
Single current input	A	4,6	4,6	4,6	6,3	6,3	7,8
Empty weight	Kg	121	121	121	176	176	176
<b>VERSION: 1 HP pump + buffer tank</b>							
Storage water tank	l	500	500	500	750	750	750
Pump nr. n°	n°	1	1	1	1	1	1
Available externe pressure	kPa	157	147	149	135	186	174
Single power input	kW	3	3	4	4	5,5	5,5
Single current input	A	6,3	6,3	7,8	7,8	10,4	10,4
Empty weight	Kg	128	128	128	183	183	183
<b>VERSION: 2 std pumps + buffer tank</b>							
Storage water tank	l	500	500	500	750	750	750
Pump nr. n°	n°	2	2	2	2	2	2
Available externe pressure	kPa	114	102	93	118	106	120
Single power input	kW	2,2	2,2	2,2	3,0	3,0	4,0
Single current input	A	4,6	4,6	4,6	6,3	6,3	7,8
Empty weight	Kg	164	164	164	229	229	229
<b>VERSION: 2 HP pumps + buffer tank</b>							
Storage water tank	l	500	500	500	750	750	750
Pump nr. n°	n°	2	2	2	2	2	2
Available externe pressure	kPa	157	147	149	135	186	174
Single power input	kW	3	3	4	4	5,5	5,5
Single current input	A	6,3	6,3	7,8	7,8	10,4	10,4
Empty weight	Kg	178	178	178	243	243	243

# Zenit Plus STD/SLN sizes and operating spaces



ZENIT PLUS				User side			HRP		HRT		
MODEL	STD	n° ventil.	SLN	n° ventil.	1	2	3	4	5	4	5
136	STD	4	SLN	4	V	V	G	V	V	V	V
146		4		4	3"	3"	1"	1"1/2	1"1/2	n.a.	n.a.
156		4		n.a.	3"	3"	1"	1"1/2	1"1/2	n.a.	n.a.



ZENIT PLUS				User side			HRP		HRT		
MODEL	STD	n° ventil.	SLN	n° ventil.	1	2	3	4	5	4	5
156	STD	n.a.	SLN	6	V	V	G	V	V	V	V
234		6		6	4"	4"	1"	2"	2"	n.a.	n.a.
284		6		6	4"	4"	1"	2"	2"	n.a.	n.a.
304		6		n.a.	4"	4"	1"	2"	2"	n.a.	n.a.

1	Medium inlet
2	Medium outlet
3	Drain (1)
4	Medium outlet
5	Medium inlet
G	Male threaded connection
V	Victaulic connection
(1)	With water section accessory only
n.a.	not available