SPHERA EVO 2.0 Box Hybrid

SQKN-YEE 1 BC + MiSAN-YEE 1 S + GAS BOILER 2.1÷8.1

Wall-mounted air-to-water hybrid split heat pump for heating, cooling and domestic hot water production

HEAT PUMPS

ENERGY SAVING
- Solar integration (optional - DHW tank)
- Smart Grid ready
- Cascade
- €-Switch

COMFORT
- Heating Cooling
- DHW
- Silent
- High temperature

RELIABILITY
- Eurovent
- Keymark

HEALTH
- Eco-friendly refrigerant

CONVENIENCE
- Weekly schedule
- Contemporaneity
- Instant DHW

MANAGEMENT AND CONNECTIVITY
- Potential-free contact
- Modbus port
- Wi-fi Control
- ELFOControl management
- Clivet Eye monitoring
- User interface/ thermostat

TOP SYSTEM EFFICIENCY ErP 55°C A++ XL A

- ✓ Ideal for replacing old systems while keeping existing radiators
- ✓ Simultaneous production of DHW and cooling/heating
- ✓ It does not need to be coupled to a tank if DHW is produced by the boiler
- ✓ It uses renewable solar thermal energy by coupling to ELFOSun (can be connected to the boiler)
- ✓ Up to 6 units can be connected in cascade, for demands up to 100 kW

Without a thought

SPHERA EVO 2.0 Box Hybrid is the solution designed for upgrading old generators without having to alter the system. The system is in fact extremely versatile and able to adapt to whatever already exists: it simply replaces the generator that produces Heating and Domestic Hot Water, improving comfort and efficiency, but without much thought.

1. Inverter DC fan
2. Inverter DC twin-rotary compressor
3. Air-gas finned exchanger (blue fin treatment)
4. Gas/water plate exchanger
5. Inverter DC high efficiency pump
6. 8L system expansion tank
7. 3-way valve
8. Magnetic dirt separator filter
9. Combustion/water exchanger
10. Electric fan

CLIVET

configurations

PUMP:

-	Standard pump
1PUM	Single pump with larger available head

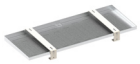
UNIT POWER SUPPLY (size 6.1÷8.1):

220M	Power supply 230/1/50
400TN	Power supply 400/3/50+N

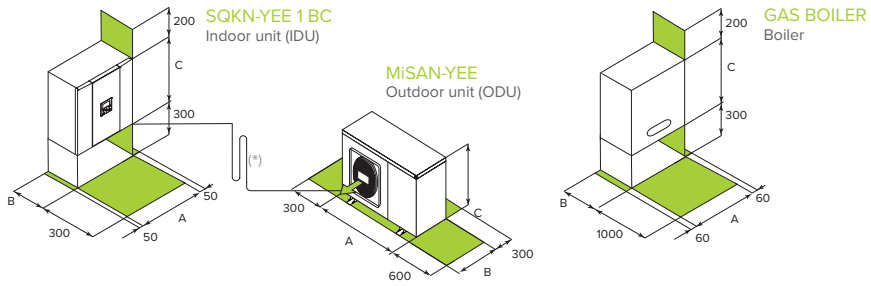
4-PIPE BOILER

HYSO24	24kW boiler
HYSO34	34kW boiler

accessories

	ACS200X	200-litre domestic hot water storage tank
	ACS300X	300-litre domestic hot water storage tank
	ACS500X	500-litre domestic hot water storage tank
	SCS08X	0.8 m² solar exchanger for flange installation *(for ACS200X e ACS300X)*
	SCS12X	1.2 m² solar exchanger for flange installation *(for ACS500X)*
	KCSX	Secondary circuit kit (1-litre circuit breaker + pump)
	KIRE2HLX	2 zones: external kit, high temperature + low temperature
	KIRE2HX	2 zones: external kit, high temperature
	DIX	1-litre circuit breaker
	DI50X	50-litre circuit breaker
	ACI40X	40L system inertial storage tank *(s. 2.1÷5.1)*
	ACI60X	60-litre system inertial storage tank
	SFCSTX	Additional probe for cascade function
	KSDFX	Splitter for boiler smoke discharge
	KCSAFX	Coaxial fitting for smoke discharge and intake (ø60/100)
	KITKX	Coaxial system for adjustable smoke discharge and intake (ø 60/100
	KITAK50X	Coaxial system for adjustable smoke discharge and intake (ø 80/125)
	KAS80X	Smoke intake and discharge fittings, 80 mm diameter
	KTCGPLX	Kit to convert boiler from methane to LPG
	DTX	Auxiliary condensate collection tray
	APAVX	Kit of antivibration mounts for floor installation
	ASTFX	Kit of antivibration mounts for wall bracket installation
	KSIPX	Kit with wall fixing brackets
	KISX	Simplified installation kit with fittings for Sphera EVO 2.0 Box Hybrid
	HID-TCBX	Black soft touch chronothermostat, with temperature control and management via App / Voice control
	HID-TCNX	White soft touch chronothermostat, with temperature control and management via App / Voice control
	SWCX	SwitchConnect radio receiver

dimensions and connections



For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

(*) Gas and water connections

technical data

Size (230M)					2.1	3.1	4.1	5.1	6.1	7.1	8.1
Heating (Heat pump)	Capacity	Water 35/30°C - Outdoor air 7°C	Nominal / Maximum	kW	**4,32 / 6,26**	**6,18 / 7,41**	**8,30 / 9,11**	**10,09 / 10,3**	**12,13 / 14,60**	**14,51 / 15,5**	**16,01 / 16,80**
	COP		Nominal	-	5,42	5,21	5,31	5,01	5,00	4,70	4,55
	Capacity	Water 35/30°C - Outdoor air -7°C	Nominal / Maximum	kW	4,17 / 6,25	6,05 / 6,97	7,33 / 8,35	8,20 / 9,30	10,49 / 13,85	12,23 / 14,09	13,43 / 14,33
	COP		Nominal	-	3,16	3,00	3,23	3,07	3,13	2,82	2,74
	Capacity	Water 45/40°C - Outdoor air 7°C	Nominal / Maximum	kW	4,16 / 5,96	6,03 / 7,13	8,22 / 8,98	10,01 / 10,30	12,30 / 14,50	14,00 / 15,70	16,01 / 16,60
	COP		Nominal	-	3,93	3,83	3,95	3,86	3,80	3,65	3,60
Heating (Boiler)	Nominal heating capacity (LHV)	Water 80/60°C	Nominal	kW	**22,94**	**22,94**	**22,94**	**22,94**	**33,35**	**33,35**	**33,35**
	Performance		Nominal	%	97,60	97,60	97,60	97,60	98,08	98,08	98,08
Cooling	Capacity	Water 18/23°C - Outdoor air 35°C	Nominal / Maximum	kW	**4,55 / 6,88**	**6,44 / 7,65**	**8,10 / 11,13**	**10,00 / 12,03**	**12,06 / 15,02**	**13,79 / 15,30**	**14,84 / 16,38**
	EER		Nominal	-	6,08	5,24	5,12	4,77	4,02	3,70	3,65
	Capacity	Water 7/12°C - Outdoor air 35°C	Nominal / Maximum	kW	4,26 / 6,14	6,25 / 6,39	7,46 / 7,94	8,67 / 9,10	11,16 / 11,80	11,72 / 12,86	12,88 / 14,20
	EER		Nominal	-	3,50	3,09	3,33	3,09	2,75	2,55	2,45
DHW	Power	-	Minimum / Maximum	kW	**2,90 / 23,50**	**2,90 / 23,50**	**2,90 / 23,50**	**2,90 / 23,50**	**4,10 / 34,00**	**4,10 / 34,00**	**4,10 / 34,00**
	Specific flow rate	Water with ΔT=30°C in 10 minutes		l/min	11,5	11,5	11,5	11,5	16	16	16
Electrical power for meter sizing				kW	2,20	2,50	3,30	3,60	5,40	5,70	6,10
Seasonal efficiency Medium climate	Heating 55°C	Energy class		-	**A++**	**A++**	**A++**	**A++**	**A++**	**A++**	**A++**
		Annual energy consumption		kWh/year	2.542	3.283	3.824	4.749	6.793	7.380	7.915
		SCOP		-	3,32	3,54	3,72	3,73	3,56	3,52	3,48
		ηs (seasonal output)		%	130	138	146	146	139	138	136
	Heating 35°C	Energy class		-	**A+++**	**A+++**	**A+++**	**A+++**	**A+++**	**A+++**	**A+++**
		Annual energy consumption		kWh/year	2.542	3.283	3.824	4.749	6.793	7.380	7.915
		SCOP		-	5,13	5,15	5,32	5,27	5,00	4,91	4,89
		ηs (seasonal output)		%	202	203	210	208	196	193	193
	DHW (Boiler)	Energy class		-	**A**	**A**	**A**	**A**	**A**	**A**	**A**
		DHW profile		-	XL	XL	XL	XL	XL	XL	XL
Indoor unit					**A**	**A**	**A**	**A**	**B**	**B**	**B**
Power supply	Voltage/Frequency/Phases			V/Hz/n°				230/50/1			
Water flow-rate			Nominal	l/s	0,21	0,30	0,41	0,49	0,57	0,67	0,75
Pump available pressure			Nominal	kPa	31,2	36,5	33,1	31,0	25,7	31,7	22,6
Expansion tank capacity				l				8			
Minimum system water content				l			40			60	
Sound power				dB(A)				41			
Sound pressure @1m				dB(A)				26			
Boiler											
Power supply	Voltage/Frequency/Phases			V/Hz/n°				230/50/1			
Power input				W			38			78	
Sound power				dB(A)				52			
Outdoor unit					**2.1**	**3.1**	**4.1**	**5.1**	**6.1**	**7.1**	**8.1**
Power supply	Voltage/Frequency/Phases			V/Hz/n°				230/50/1			
Sound power				dB(A)	55	57	58	60	63	64	66
Sound pressure @1m				dB(A)	42	44	45	47	50	51	53
Operating range											
Water supply temperature	Heating	Heat pump	Minimum / Maximum	°C				25 / 65			
		Boiler	Minimum / Maximum	°C				25 / 80			
	Cooling	-	Minimum / Maximum	°C				5 / 25			
Operating range (outdoor air)	Heating	Heat pump	Minimum / Maximum	°C				-25 / 43			
		Boiler	Minimum / Maximum	°C				-25 / 35			
	Cooling	-	Minimum / Maximum	°C				-5 / 43			
	DHW	Heat pump	Minimum / Maximum	°C				-25 / 43			
		Boiler	Minimum / Maximum	°C				-25 / 43			

Size					2.1	3.1	4.1	5.1	6.1	7.1	8.1
Dimensions	Indoor unit	Length(A) x Height(C) x Depth(B)	mm		547x604x386				547x604x386		
	Outdoor unit	Length(A) x Height(C) x Depth(B)	mm		986x712x426		1.004x866x523		1.004x866x523		
	Boiler	Length(A) x Height(C) x Depth(B)	mm		410x642x307				410x642x330		
Weight	Indoor unit		kg		50				68		
	Outdoor unit		kg		58		77		112		
	Boiler		kg		35				44		
Max / min equivalent length		L	m					30 / 2			
Max difference in level ODU / IDU		H	m		25				20		
Refrigerant precharge[1]			type/GWP					R-32 / 675			
			kg / m		1,50 / 15		1,65 / 15		1.84 / 15		
			CO_2 tons		1,05		1,1		1,24		
Additional refrigerant charge			g/m		20				38		
External diameters	Refrigerant pipe	Liquid	inch		1/4"				3/8"		
		Gas	inch					5/8"			
	Indoor unit	Water (system)	inch					1"			
		Water (DHW)	inch					1/2"			
	Boiler	Gas	inch					3/4"			
		Intake air	mm					100			
		Exhaust gas	mm					60			

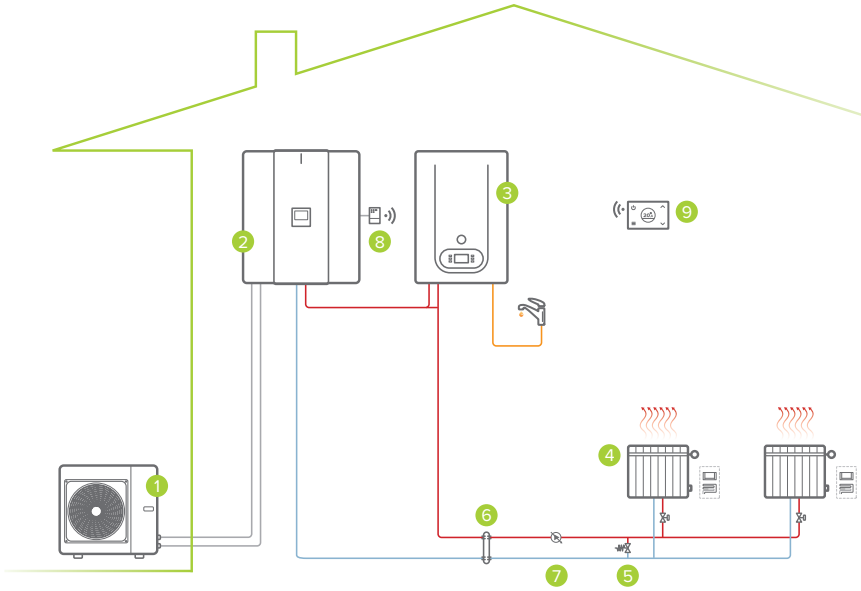
(1) Check in the manual if the indoor unit requires a minimum installation surface

Size (400TN)						6.1	7.1	8.1
Heating (Heat pump)	Capacity	*Water 35/30°C - Outdoor air 7°C*	Nominal / Maximum	kW		**12,13 / 14,60**	**14,51 / 15,5**	**16,01 / 16,80**
	COP		Nominal	-		5,00	4,70	4,55
	Capacity	*Water 35/30°C - Outdoor air -7°C*	Nominal / Maximum	kW		10,49 / 13,85	12,23 / 14,09	13,43 / 14,33
	COP		Nominal	-		3,13	2,82	2,74
	Capacity	*Water 45/40°C - Outdoor air 7°C*	Nominal / Maximum	kW		12,30 / 14,50	14,00 / 15,70	16,01 / 16,60
	COP		Nominal	-		3,80	3,65	3,60
Heating (Boiler)	Nominal heating capacity (LHV)	*Water 80/60°C*	Nominal	kW		**33,35**	**33,35**	**33,35**
	Performance		Nominal	%		98,08	98,08	98,08
Cooling	Capacity	*Water 18/23°C - Outdoor air 35°C*	Nominal / Maximum	kW		**12,06 / 15,02**	**13,79 / 15,30**	**14,84 / 16,38**
	EER		Nominal	-		4,02	3,70	3,65
	Capacity	*Water 7/12°C - Outdoor air 35°C*	Nominal / Maximum	kW		11,16 / 11,80	11,72 / 12,86	12,88 / 14,20
	EER		Nominal	-		2,75	2,55	2,45
DHW	Power	-	Minimum / Maximum	kW		**4,10 / 34,00**	**4,10 / 34,00**	**4,10 / 34,00**
	Specific flow rate	Water with ΔT=30°C in 10 minutes		l/min		16	16	16
Electrical power for meter sizing				kW		5,40	5,70	6,10
Seasonal efficiency Medium climate	Heating 55°C	Energy class		-		**A++**	**A++**	**A++**
		Annual energy consumption		kWh/year		6.793	7.380	7.915
		SCOP		-		3,56	3,52	3,48
		ηs (seasonal output)		%		139	138	136
	Heating 35°C	Energy class		-		**A+++**	**A+++**	**A+++**
		Annual energy consumption		kWh/year		6.793	7.380	7.915
		SCOP		-		5,00	4,91	4,89
		ηs (seasonal output)		%		196	193	193
	DHW (Boiler)	Energy class		-		**A**	**A**	**A**
		DHW profile		-		XL	XL	XL
Indoor unit						**B**	**B**	**B**
Power supply	Voltage/Frequency/Phases			V/Hz/n°			230/50/1	
Water flow-rate			Nominal	l/s		0,57	0,67	0,75
Pump available pressure			Nominal	kPa		25,7	31,7	22,6
Expansion tank capacity				l			8	
Minimum system water content				l			60	
Sound power				dB(A)			41	
Sound pressure @1m				dB(A)			26	
Boiler								
Power supply	Voltage/Frequency/Phases			V/Hz/n°			230/50/1	
Power input				W			78	
Sound power				dB(A)			52	
Outdoor unit						**6.1**	**7.1**	**8.1**
Power supply	Voltage/Frequency/Phases			V/Hz/n°			230/50/1	
Sound power				dB(A)		63	64	66
Sound pressure @1m				dB(A)		50	51	53
Operating range								
Water supply temperature	Heating	Heat pump	Minimum / Maximum	°C			25 / 65	
		Boiler	Minimum / Maximum	°C			25 / 80	
	Cooling	-	Minimum / Maximum	°C			5 / 25	
Operating range (outdoor air)	Heating	Heat pump	Minimum / Maximum	°C			-25 / 43	
		Boiler	Minimum / Maximum	°C			-25 / 35	
	Cooling	-	Minimum / Maximum	°C			-5 / 43	
	DHW	Heat pump	Minimum / Maximum	°C			-25 / 43	
		Boiler	Minimum / Maximum	°C			-25 / 43	

Data according to EN 14511:2018 and EN 14825:2016

The Product complies with the European ErP Directive (EU Regulations 811/2013 - 813/2013 - 2016/2281). Energy classes with ELFOControl3 EVO system control

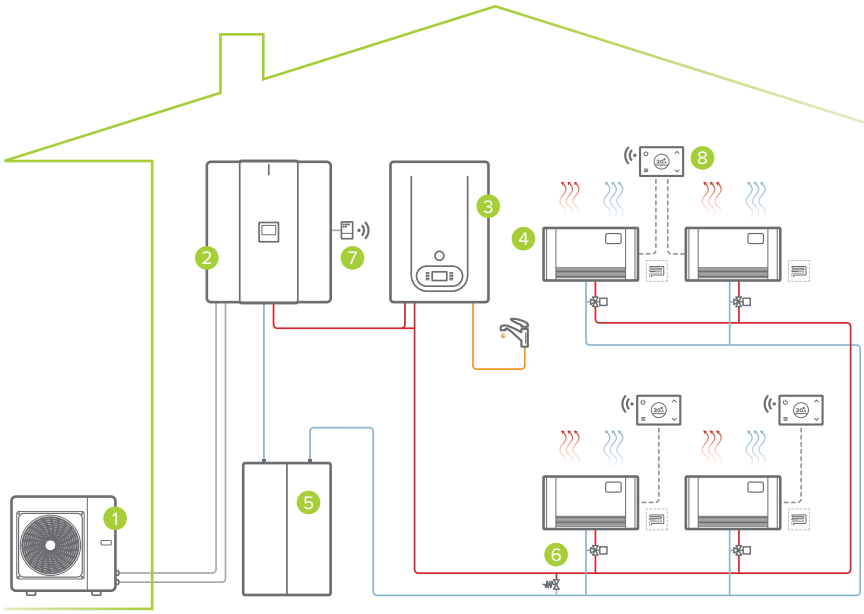
system diagrams



Single area system: heating/DHW

1. outdoor unit
2. indoor unit
3. boiler
4. heating area (radiator / fan coils / radiant)
5. bypass*
6. hydraulic separator (optional)
7. secondary circuit pump*
8. SwitchConnect Wi-Fi receiver (optional)
9. HID-TConnect Wi-Fi chronothermostat (optional)

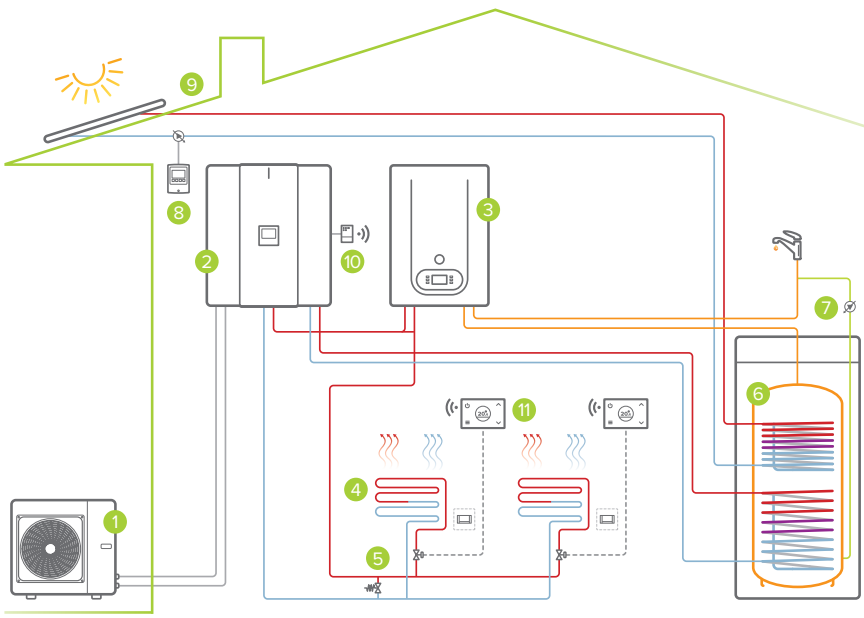
*from external supply



Single area system: heating/cooling/DHW

1. outdoor unit
2. indoor unit
3. boiler
4. heating/cooling area (fan coils / radiant)
5. system inertial storage tank (optional)
6. bypass*
7. SwitchConnect Wi-Fi receiver (optional)
8. HID-TConnect Wi-Fi chronothermostat (optional)

*from external supply



Single area system: heating/cooling/DHW

1. outdoor unit
2. indoor unit
3. boiler
4. heating/cooling area (fan coils / radiant)
5. bypass*
6. DHW tank with solar predisposition (optional)
7. DHW recirculation pump*
8. solar circulation kit (optional)
9. ELFOSun solar thermal (optional)
10. SwitchConnect Wi-Fi receiver (optional)
11. HID-TConnect Wi-Fi chronothermostat (optional)

*from external supply

REF - DG21N007GB-00