Библиотека СОК

DC Inverter Split System
Fenix System

Heat pump system for Heating, Cooling and DHW with heat recovery

Fenix system

Introduction

Fenix is the inverter heat pump (DC) system for HVAC that simultaneously combines direct expansion and hydronic terminals. The system also allows the production of free hot water by heat recovery, at the same time as it cools the rooms.

How does it work?

It uses outdoor air energy for HVAC with air/air and/or air/water systems, using the peculiar features of the R410A refrigerant gas and the Inverter DC technology (10-130% power modulation).

Cools in the summer

Warms in the winter

Hot water in every season

Why choose it?

Because the heat pump is the most efficient thermal machine versus any other heat generator on the market. Each kW of absorbed electricity can also generate more than 5 kW of thermal energy.

In addition, the added value of the Fenix system is that it overcomes the standard limits of a heat pump: it heats or cools using hydronic and direct expansion terminals at the same time. It also produces free domestic hot water while cooling and continuously without interrupting the refrigeration cycle.

Heat recovery

Direct expansion

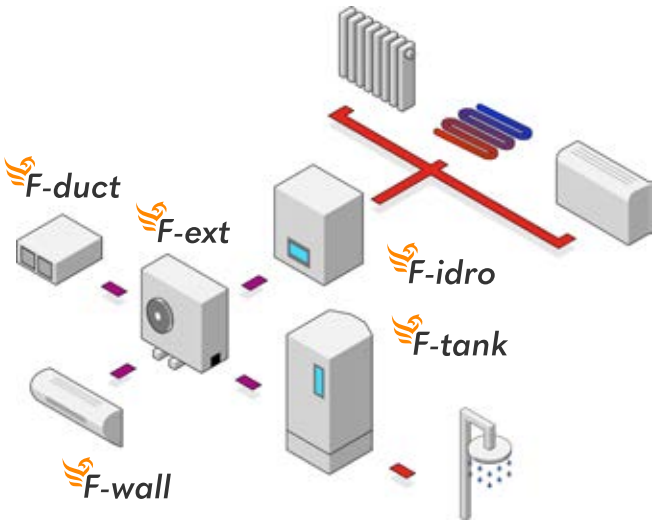
Hydronic

Who is it for?

Combining F-idro and F-Tank, with F-ext you get a split air/water heat pump, full DC inverter, 100% made in Italy, capable of heating, cooling and producing domestic hot water: the ideal solution to satisfy all the needs of a home, an office or a shop with a single system.

- Residential (villas, apartments)
- Offices
- Shops
- Bars
- Studies

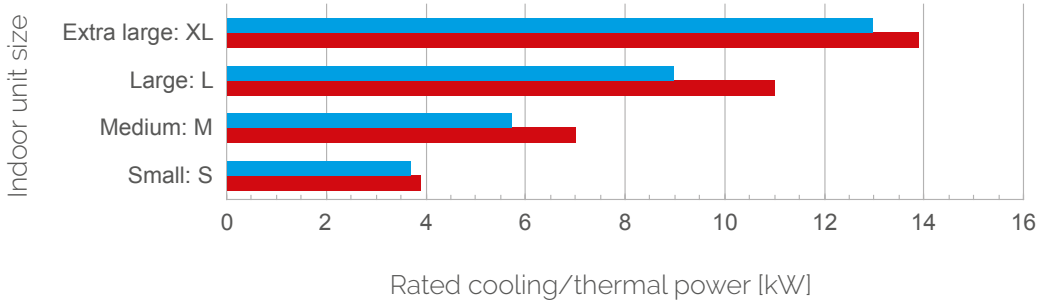
Fenix: Components



The system consists of the simple combination of outdoor and indoor units:

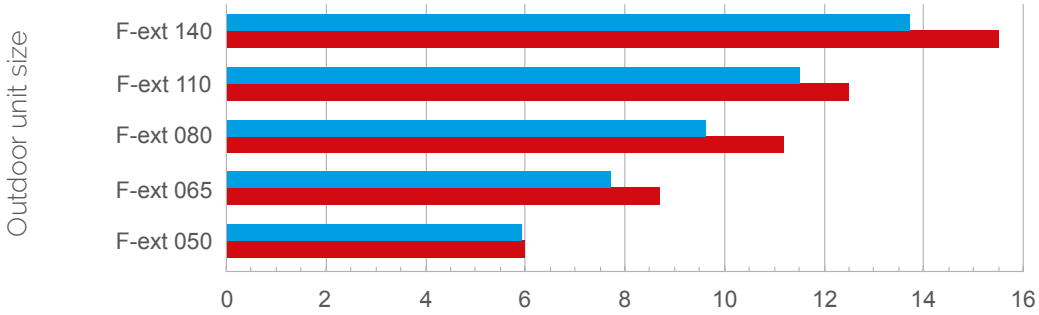
1. Outdoor unit: **F-ext** (condensing motion) see page 342
1. Indoor hydronic unit: **F-idro** see page 346
2. Indoor unit for DHW: **F-tank** see page 350
3. Indoor units with direct expansion: **F-wall** and **F-duct** see page 354 and 355

Indoor units: sizes and powers



The indoor units have a nominal thermal/cooling capacity shown in the graph above. According to the different power values, 4 reference sizes have been defined, respectively indicated with S, M, L and XL. For example, a size S indoor unit expresses a nominal thermal capacity of 3.9 kW and a cooling capacity of 3.7 kW.

Outdoor units: sizes and power ratings from 6 to 16 kW



Each unit is associated with a size corresponding to the nominal power. this makes it easier to combine the chosen configuration and the correct power size of the outdoor unit. The association between indoor units and outdoor unit is obviously conditioned by the capacity of the latter, summarised in the above graph (for more precise data please refer to the specific sheets).

Refrigeration power

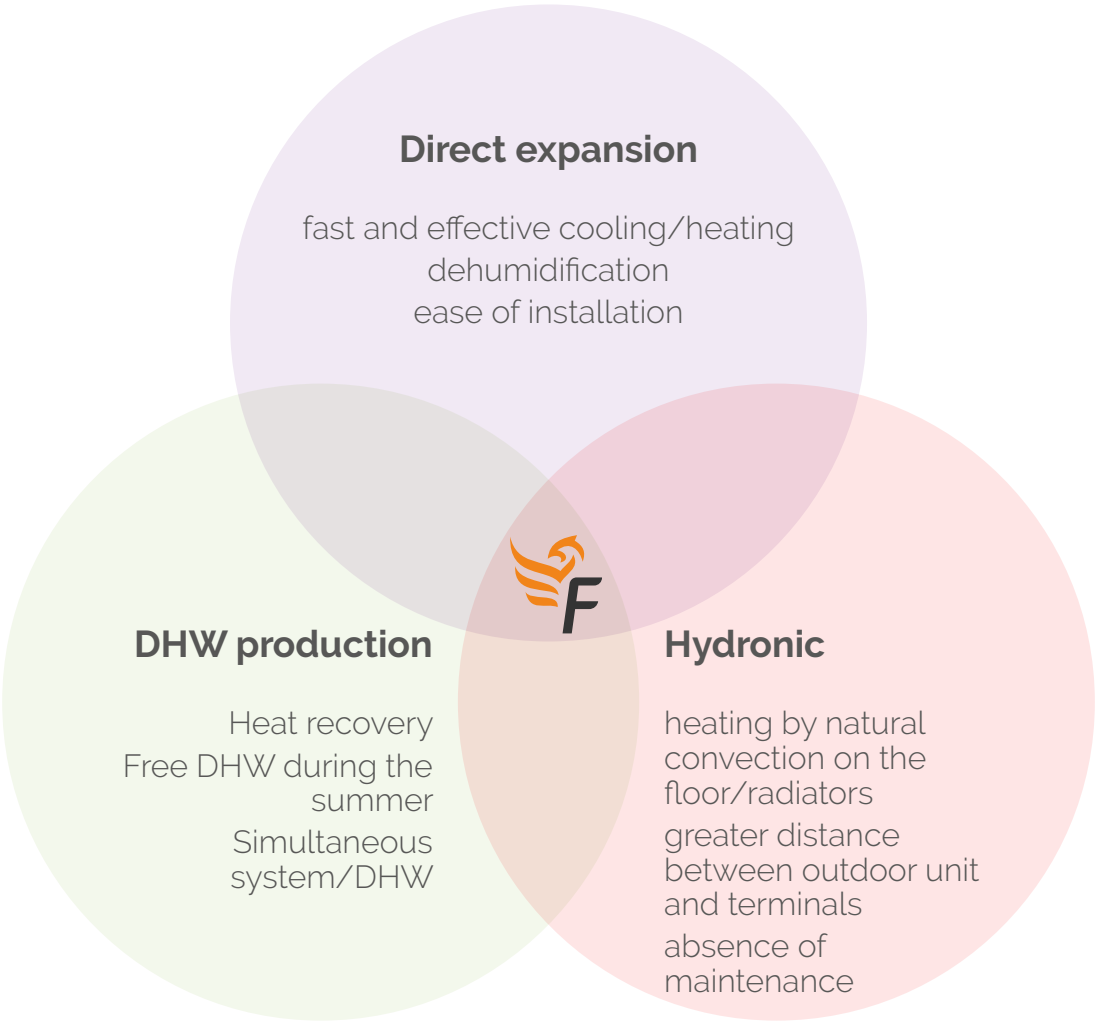
Thermal power

The values shown are related to the following working conditions:
A2A heating: Outside air T = 7 ° C, Ambient air T = 20 ° C
A2A cooling: Outdoor air temperature = 35 ° C, Ambient air temperature = 27 ° C
A2W heating: Outside air T = 7 ° C, Water T = 35 ° C
A2W cooling: Outside air T = 35 ° C, Water T = 18 ° C

A2A = air/air, A2W air/water

Fenix, a look at the renewable energy system for your home

The advantages of the Fenix system

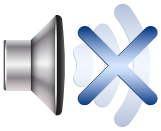


UNIQUE AND INNOVATIVE

Fenix is the only system capable of producing domestic hot water at the same time as heating and cooling environments. In addition, during the cooling of indoor environments, the water is heated free of charge, using the heat recovery technology of F-Tank.

HIGH PERFORMANCE AND SAVINGS

Fenix reaches the most efficient energy classes. As regards heating, its energy classes are A++ on hydronics (A2W) and A+ on direct expansion (A2A). As regards cooling, it reaches energy classes A ++ on direct expansion (A2A) and A + on hydronics (A2W).



EFFICIENT AND SILENT

The outdoor unit is equipped with a strict inverter compressor and fans, in order to guarantee high efficiency and maximum silence. Low sound levels are ensured by the use of sound-proofing materials and the ability of electronics to intelligently control the compressor cycle.

Outdoor F-ext units

The outdoor F-ext units allow to implement combined hydronic/direct expansion systems from mono to penta split in addition to the production of domestic hot water. The mono or bi-ventilated versions fulfil the needs in the residential or service sector. Each F-Ext has a door dedicated to the connection with F-tank, for the production and storage of domestic hot water.

Plus:

- ✔ DC Inverter technology
- ✔ Twin Rotary compressors
- ✔ Operating limit -20 ° C / + 50 ° C
- ✔ Extremely silent
- ✔ intelligent defrost
- ✔ very high efficiency

model	code	price	V/Ph/Hz	connection ports split	F-TANK
F-EXT 050 dual	844040017X		230/1/50	2	✔
F-EXT 065 trial	844040018X		230/1/50	3	✔
F-EXT 080 quadri	844040019X		230/1/50	4	✔
F-EXT 110 quadri	844040020X		230/1/50	4	✔
F-EXT 140 penta	844040021X		400/3/50	5	✔

TAX INCENTIVES **HEAT MEASUREMENT** **TAX CREDIT** 65%

F-EXT 050 dual

F-EXT 065 trial

F-EXT 080 quadri

F-EXT 110 quadri

F-EXT 140 penta

Performance

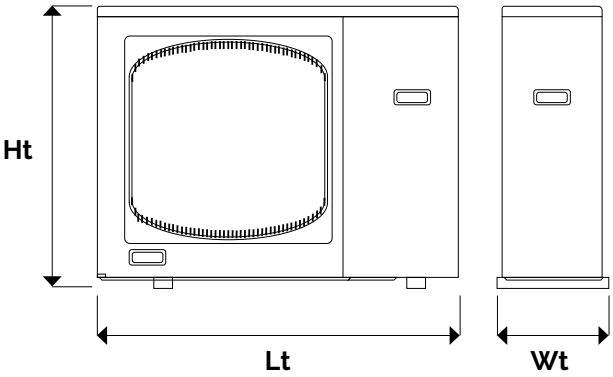
	Air-water (*)						Air-Air (**)						DHW (***)			
	power output (kW) EN 14511		EN 14511		Energy Class EN 14825		power output (kW) EN 14511		EN 14511		Energy Class EN 14825		EN 14825			
	Heating	Cooling	COP	EER	Heating 35°C	Heating 55°C	Heating	Cooling	COP	EER	Heating	Cooling	Load profile	ERP class	COP	% Efficiency
F-EXT 050 dual	4,10	5,30	4,00	3,68	A++	A+	5,00	4,92	4,29	3,35	A+	A++	XL	A	2,23	90
F-EXT 065 trial	6,50	5,60	4,18	3,64	A++	A+	6,50	5,80	4,32	3,64	A+	A++	XL	A	2,21	90
F-EXT 080 quadri	8,00	6,90	4,20	3,65	A++	A+	8,00	6,90	4,22	3,70	A+	A++	XL	A	2,23	89
F-EXT 110 quadri	10,63	9,10	4,07	3,62	A++	A+	11,00	8,70	4,24	3,51	A+	A++	XL	A	2,14	87
F-EXT 140 penta	13,80	11,60	4,01	3,63	A++	A+	12,00	10,60	5,50	3,40	A+	A++	XL	A	2,12	86

Performance referred to:
(*): Air + 35 ° C - Water 23/18 ° C / Air + 7 ° C - Water 30/35 ° C
(**): Outdoor air + 35 ° C - Indoor air 27 ° C / Outdoor air + 7 ° C - Indoor air 20 ° C
(***): Performances according to ERP Ecodesign EN 14825

Outdoor F-ext units: technical data

Dimensions and weights

	without packaging				with packaging			
model	Wt mm	Lt mm	Ht mm	weight kg	Wt mm	Lt mm	Ht mm	weight kg
F-EXT 050 dual	345	895	630	57	410	990	710	62
F-EXT 065 trial	400	1030	735	64	420	1140	900	70
F-EXT 080 quadri	400	1190	835	73	420	1270	1015	87
F-EXT 110 quadri	400	1190	1070	90	420	1270	1250	100
F-EXT 140 penta	450	1270	1335	145	470	1530	1350	160



Data according to norm UNI/TS 11300-4:2012

HEATING

	Outside dry bulb (wet bulb) air temperature											
		-10 (-11)°C		-7 (-8)°C		2 (1)°C		7 (6)°C		12 (11)°C	
model	LAT °C	Qh kW	COP	Qh kW	COP	Qh kW	COP	Qh kW	COP	Qh kW	COP
F-EXT 050 dual	20	3,70	2,68	3,90	2,91	3,70	2,57	6,00	3,35	6,70	3,86
F-EXT 065 trial	20	5,30	2,25	5,90	3,09	5,60	2,94	8,70	3,22	9,10	3,50
F-EXT 080 quadri	20	6,50	2,36	6,80	2,45	6,10	2,36	11,20	3,27	11,60	3,55
F-EXT 110 quadri	20	7,50	2,40	8,30	2,36	9,40	2,64	12,50	3,07	13,20	3,45
F-EXT 140 penta	20	8,20	2,29	10,10	2,76	10,90	2,46	15,50	3,10	16,30	3,51

COOLING

	Outdoor air temperature		
	35°C		
model	LAT °C	Qc kW	EER
F-EXT 050 dual	27 (19)	5,90	3,15
F-EXT 065 trial	27 (19)	7,70	3,32
F-EXT 080 quadri	27 (19)	9,60	3,74
F-EXT 110 quadri	27 (19)	11,50	3,36
F-EXT 140 penta	27 (19)	13,70	2,60

Data according to norm EN 14511-3:2013

HEATING

	Outside dry bulb (wet bulb) air temperature											
		-10 (-11)°C		-7 (-8)°C		2 (1)°C		7 (6)°C		12 (11)°C	
model	LAT °C	Qh kW	COP	Qh kW	COP	Qh kW	COP	Qh kW	COP	Qh kW	COP
F-EXT 050 dual	35	2,50	2,24	2,65	2,74	3,10	3,14	4,10	4,00	4,50	4,66
	45	2,52	1,87	2,49	1,99	2,47	2,37	3,83	3,03	4,29	3,56
	55	2,51	1,75	2,39	1,79	2,31	1,80	3,80	2,37	4,01	3,01
F-EXT 065 trial	35	5,10	2,54	5,59	3,21	6,05	3,45	6,50	4,18	7,58	4,66
	45	4,60	2,02	4,95	2,29	5,53	2,57	6,50	3,10	7,22	3,47
	55	4,00	1,59	4,59	1,54	4,76	1,86	5,00	2,31	5,95	2,70
F-EXT 080 quadri	35	6,30	2,55	7,09	2,89	7,80	3,34	8,00	4,20	11,46	4,62
	45	5,70	2,03	6,38	2,48	7,20	2,79	8,00	3,12	10,02	3,64
	55	4,90	1,60	4,99	1,99	5,49	2,10	6,10	2,32	7,78	2,71
F-EXT 110 quadri	35	7,30	2,22	8,14	2,80	8,81	3,29	10,63	4,07	12,15	4,70
	45	6,70	1,97	7,73	2,28	8,02	2,61	9,59	3,02	11,14	3,37
	55	6,11	1,55	6,24	1,93	7,03	2,02	8,13	2,37	9,55	2,41
F-EXT 140 penta	35	10,50	2,56	10,14	2,78	11,20	3,21	13,80	4,01	14,65	4,62
	45	9,50	1,96	10,20	2,22	11,05	2,58	13,40	3,00	14,15	3,28
	55	8,30	1,48	7,73	1,90	8,65	2,00	9,10	2,15	11,15	2,38

COOLING

	Outdoor air temperature		
	35°C		
model	LAT °C	Qc kW	EER
F-EXT 050 dual	7	3,70	2,38
	18	5,30	3,68
F-EXT 065 trial	7	4,00	2,12
	18	5,60	3,64
F-EXT 080 quadri	7	4,90	2,13
	18	6,90	3,65
F-EXT 110 quadri	7	6,50	2,06
	18	9,10	3,62
F-EXT 140 penta	7	8,30	2,19
	18	11,60	3,63

LAT: Internal air temperature
Qh: Thermal capacity
COP: Efficiency coefficient
Qc: Cooling capacity
EER: Cooling efficiency

Outdoor F-ext units: technical data

General summary table

				F-EXT 050 dual	
				Cooling	Heating
AIR/WATER					
Performance according to EN 14511	Air +35 °C - Water 23/18 °C	Nominal capacity	Kw	5,3	4,1
	Air + 7 °C - Water 30/35 °C	Electric power absorbed	kWel	1,44	1,03
		EER/COP		3,68	4
	Air +35 °C - Water 12/7 °C	Cooling / Thermal Capacity	kW	3,7	2,5
	Air - 7 °C - Water 30/35 °C	Electric power absorbed	kWel	1,55	1,12
		EER/COP		2,38	2,24
Performance according to ERP Ecodesign EN 14825	LOW TEMPERATURE	Nominal thermal power	kW	3,00	
	AVERAGE climate conditions	Seasonal energy efficiency	%	1,50	
		SCOP		3,83	
		Energy efficiency class		A++	
	MEDIUM TEMPERATURE	Nominal thermal power	kW	2,5	
	AVERAGE climate conditions	Seasonal energy efficiency	%	110,00	
		SCOP		2,73	
		Energy efficiency class		A+	
AIR/ AIR					
Performance according to EN 14511	Outdoor Air +35 °C - Indoor air 27 °C	Nominal capacity (min/max)	Kw	4,92 (0,84 / 5,90)	5,00 (0,95 / 6,00)
	Outdoor Air + 7 °C - Indoor air 20 °C	Electric power absorbed	kWel	1,47	1,16
		EER/COP		3,35	4,29
Performance according to ERP Ecodesign EN 14825	AVERAGE climate conditions	Pdesignc/Pdesignh	kW	5,4	4,3
		SEER/SCOP		6,4	4
		Energy efficiency class		A++	A+
DOMESTIC HOT WATER					
Performance according to ERP Ecodesign EN 14825		Load profile		XL	
		ERP class		A	
		COP		2,23	
		Efficiency	%	90	
GENERAL DATA					
Device data		Outdoor temperature operation range	°C	-15 / +43	-15 / +24
		Internal temperature operation range	°C	+10 / +47	+5 / +27
		Power Supply (Voltage / Frequency / Phases)	V/Ph/Hz	230/1+T/50-60	
		Maximum electrical absorption	kW/A	1,79 / 7,8	
		Sound pressure	dB(A)	45	
		Sound power	dB(A)	58	
Components and dimensions		Compressor type		Twin Rotary	
		Fan air flow m3/h		1700	
		Weight	kg	56,4	
		Size HtXLtXWt mm	mm	630x895x345	
Refrigeration lines		Diameters (liquid-gas)	inch	1/4"-3/8"(x2) + 3/8"-3/8"(F-tank)	
		Total piping length (standard charge)	m	multi 15 / mono 7,5	
		Total piping length (additional charge)	m	multi 30 / mono 20	
		Pipe length per unit (standard charge)	m	12	
		Pipe length per unit (additional charge)	m	25	
		Maximum height differenceo UI-UE	m	10	
		Maximum height difference UI-UI	m	5	
Coolant		Type and GWP		R410A / 2088 kg CO2 eq.	
		Quantity		1,3 kg / 2,71 Tonn CO2 eq.	

	F-EXT 065 tria		F-EXT 080 quadri		F-EXT 110 quadri		F-EXT 140 quadri	
	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
	5,6	6,5	6,9	8	9,1	10,63	11,6	13,8
	1,54	1,56	1,89	1,9	2,51	2,61	3,2	3,44
	3,64	4,18	3,65	4,2	3,62	4,07	3,63	4,01
	4	5,1	4,9	6,3	6,5	7,3	8,3	10,5
	1,89	2,01	2,3	2,47	3,16	3,29	3,79	4,1
	2,12	2,54	2,13	2,55	2,06	2,22	2,19	2,56
	6,00		7,00		8,00		12,00	
	153,00		153,00		150,00		167,00	
	3,90		3,90		3,83		4,24	
	A++		A++		A++		A++	
	5,00		6,00		7,00		10,00	
	110,00		110,00		110,00		110,00	
	2,83		2,83		2,83		2,83	
	A+		A+		A+		A+	
	5,75 (1,57 / 7,65)	6,5 (1,82 / 8,67)	6,87 (1,60 / 9,62)	8,00 (1,7 / 11,2)	8,65 (1,8 / 11,5)	11,00 (1,9 / 13,5)	10,6 (2,6 / 13,7)	12,00 (3,10 / 15,5)
	1,58	1,5	1,86	2,6	2,46	2,59	3,12	2,6
	3,64	4,32	3,7	4,22	3,51	4,24	3,4	5,5
	6,5	6,4	9	7,7	10,6	9,4	13,6	11,5
	6,5	4	6,7	4,1	6,6	4,1	5,11	4,13
	A++	A+	A++	A+	A++	A+	A++	A+
	XL		XL		XL		XL	
	A		A		A		A	
	2,21		2,23		2,14		2,12	
	90		90		87		86	
	-15 / +43	-15 / +24	-15 / +43	-15 / +24	-15 / +43	-15 / +24	-15 / +43	-15 / +24
	+10 / +47	+5 / +27	+10 / +47	+5 / +27	+10 / +47	+5 / +27	+10 / +47	+5 / +27
	230/1+T/50-60		230/1+T/50-60		230/1+T/50-60		400/50/3+N+T	
	2,6 / 12		3,3/15		4,4/20		5,2/10x3	
	45		45		45		45	
	64		64		64		65	
	Twin Rotary		Twin Rotary		Twin Rotary		Twin Rotary	
	2400		3000		3500		3500	
	64		87		90		145	
	735x1030x400		835x1190x400		1070x1190x400		1335x1270x450	
	1/4"-3/8"(x2) + 1/4"-1/2" + 3/8"-3/8"(F-tank)		1/4"-3/8"(x3) + 1/4"-1/2" + 3/8"-3/8"(F-tank)		1/4"-3/8"(x3) / + 1/4"-1/2" + 3/8"-3/8"(F-tank)		1/4"-3/8"(x3)+1/4"-1/2"(x2)+1/2"-1/2"(F-tank)	
	multi 30 / mono 20		multi 40 / mono 30		multi 40 / mono 30		multi 40 / mono 30	
	multi 45 / mono 35		multi 65 / mono 50		multi 65 / mono 50		multi 100 / mono 50	
	dual 25 / trial 20		30		30		30	
	dual 30 / trial 25		30		30		30	
	10		10		10		10	
	5		5		5		5	
	R410A / 2088 kg CO2 eq.		R410A / 2088 kg CO2 eq.		R410A / 2088 kg CO2 eq.		R410A / 2088 kg CO2 eq.	
	2,7 kg / 5,63 Tonn CO2 eq.		2,9 kg / 6,05 Tonn CO2 eq.		3,38 kg / 7,05 Tonn CO2 eq.		4,4 kg / 9,18 Tonn CO2 eq.	

Hydronic module: F-idro

F-idro: the new indoor unit that supplies hydronic terminals, such as radiating wall, floor or ceiling systems, low temperature radiators and fan coils. F-idro is therefore an indoor hydronic module, equipped with an inverter circulator with a pressure of 6.5 to 7.5 MWC, a 7-litre expansion tank, a 3-bar safety valve and an electrical resistance of 2 kW. F-idro can be installed on the wall or above F-tank

				power output (kW)		
model	code	price	size	thermal	cooling	connectable to
F-idro	840010121X		S	≤ 4,1	≤ 5,3	F-EXT 050
F-idro	840010122X		M	≤ 6,5	≤ 5,6	F-EXT 065
F-idro	840010123X		L	≤ 10,6	≤ 9,1	F-EXT 080/110
F-idro	840010124X		XL	≤ 13,6	≤ 11,6	F-EXT 140

Plus

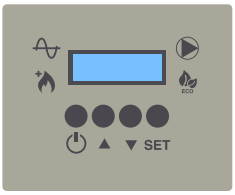
✔ SIMPLE AND INTUITIVE INTERFACE
The digital control panel equipped with an LCD display is easily used both by operators (Installers and Service Centres) and by end users.

✔ HAS EVERYTHING UNDER CONTROL
Equipped with temperature and water flow control systems that optimise system operation and guarantee high efficiency.

✔ OPEN AND FLEXIBLE
F-idro is open: i,e. compatible with third-party control systems, even advanced ones. It is flexible: suitable to use the available thermal power if the outdoor environmental conditions are particularly harsh.

✔ POWERFUL
The control system manages the switching on/off of indoor electrical resistances in all cases where a power supply is required.

F-idro
Technical data



The control panel in detail:

- ✔ F-idro is equipped with a control panel installed directly on board. You can connect it remotely.
- ✔ Check for any supplementary elements
- ✔ It defines the climatic curve that allows to change the temperature of the system water according to the outdoor temperature.
- ✔ Additional outdoor temperature sensor for compensation according to T_{ext} (supplied)
- ✔ Room thermostat management
- ✔ Seasonal change and remote on/off switch

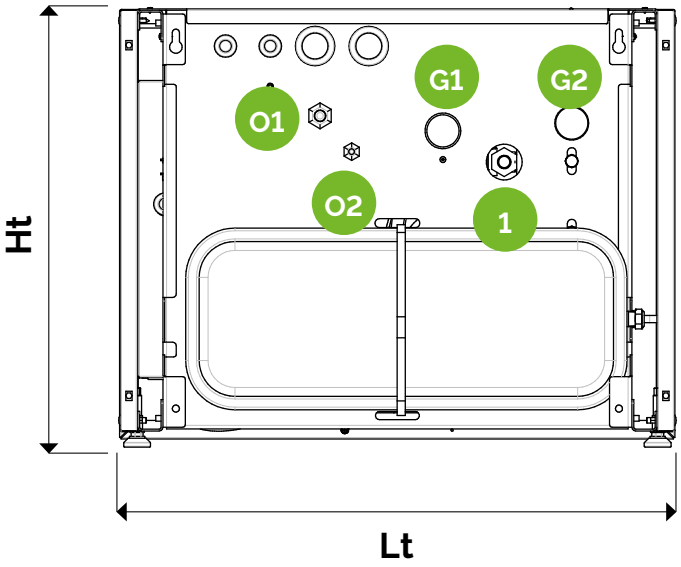
Technical features

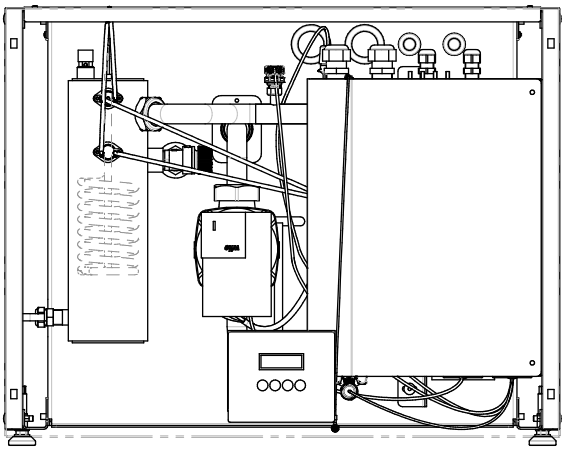
			SIZE			
			Small S	**Medium M**	**Large L**	**Extra large XL**
OPERATING DATA						
Water supply temp	MAX	° C	Up to 58	Up to 58	Up to 58	Up to 58
Water flow	35 ° C	l/min	11.5	18.3	30.0	39.2
	45 ° C	l/min	11.2	18.3	29.2	38.0
	55°C	l/min	-	9.2	15.0	19.7
Minimum water volume		l	40	40	80	80
Thermal power		kW	≤ 4.1	≤ 6.5	≤ 10.6	≤ 13.6
Refrigeration power		kW	≤ 5.3	≤ 5.6	≤ 9.1	≤ 11.6
COMPONENTS AND CONNECTIONS						
Expansion vessel		l	7	7	7	7
Residual pressure		mCA	6	7	7	7.5
Indoor electric resistance power		kW	2	2	2	2
Hydraulic connections		"	1 "	1 "	1 "	1 "
Liquid refrigerant connections	liquid	"	1/4 "	1/4 "	1/4 "	3/8 "
	gas	"	1/2 "	1/2 "	1/2 "	5/8 "
Safety valve		bar	3	3	3	3
ACCESSORIES						
Buffer tank		l	40/80	40/80	40/80	40/80
Electric resistance for MINI-HC		kW	2	2	2	2
Condensate collection tank			✔	✔	✔	✔

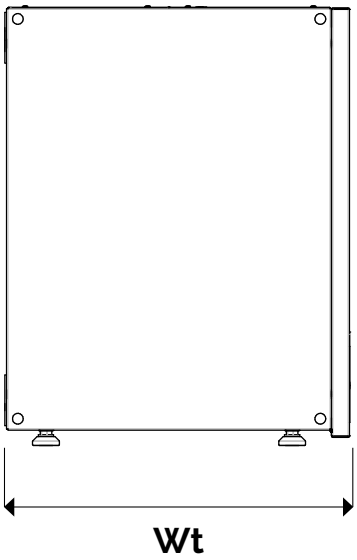
F-idro: technical data

Connections

Ref.	description	SIZE S	M	L	XL
G1	Water inlet connection	1"	1"	1"	1"
G2	Water outlet connection	1"	1"	1"	1"
O1	R410A gas inlet	1/2"	1/2"	1/2"	5/8"
O2	R410A gas outlet	1/4"	1/4"	1/4"	3/8"
1	Safety valve connection and drainage	18 mm	18 mm	18 mm	18 mm







size		Dimensions without packaging Wt mm	Ht mm	Lt mm	weight kg	Dimensions with packaging Wt mm	Ht mm	Lt mm	weight kg
F-IDRO	S/M/L/XL	390	490	620	34	440	540	670	36

F-idro: accessories

MINI-HC buffer tanks

The hydronic part of the system must have a minimum water content to guarantee the correct operation of the heat pump. MINI-HC inertial tanks can be used both to increase the system volume and to perform the hydraulic circuit breaker function.

Balancing Tank:
Its function is to make the primary circuit (F-idro/Mini HC) and secondary circuit (Mini HC/System) independent. In this case it becomes necessary to install an auxiliary pump on the secondary circuit (not supplied). The installation of the buffer tank is mandatory if the MINIMUM water content in the system is not observed, see p. 9. Two hydraulic distribution tanks are available with a volume of 40 litres for powers up to 8 kW and 80 litres for powers from 9 to 16 kW, which can be equipped with an additional electrical resistance of 2 kW.

MINI-HC 40 - MINI-HC 80 Description:
Made of carbon steel, Anti-condensation insulation. Designed to contain both hot and cold water in heating and cooling systems powered by a heat pump.

capacity	code	price	class energy	diameter of fittings "	dimensions with packaging cm	dimensions without packaging cm	weight kg	for sizes F-idro
40 Liter	817010175X		B	1" 1/2	50x50x50	46x46x48	25	S, M
80 Liter	817010176X		B	1" 1/2	50x50x100	46x46x87	35	L, XL

Electrical resistance

Single-phase electric heater which can be used as an addition to the storage tanks supplied complete with 20-70 ° C thermostat, manual reset safety thermostat, electric cable.

power W	code	price	voltage V	number elements	diameter of fittings "	length mm	temperature thermostat safety ° C
2000	824100167		230	1	1" 1/2	368	95

Condensate collection tray

code	price	Description
840030010X		Condensate tray kit

Domestic hot water producer: F-tank

DHW production unit through heat recovery with built-in glass-lined storage tank of 200 or 300 litres capacity.

Traditional heat pumps are designed to provide cooling or domestic hot water production, but not simultaneously.

The Fenix system breaks this limit thanks to the F-tank technology, making the **production of DHW simultaneously to cooling or heating** .

F-tank allows to bring the hot water temperature up to: 75 ° C when the heat pump operates in cooling mode and 55 ° C when it works in heating mode or only for domestic hot water production.

It is possible to reach such high water temperatures since F-tank operates on the recovery of the overheating heat of the refrigeration cycle. In particular:

- The energy required is taken directly from the refrigerant gas
- The production of DHW is WITHOUT cycle inversion
- In summer, with the indoor units doing cooling work, the heat taken from the rooms is transferred directly to the DHW without any increase in the consumption of electricity (energy recovery function). Therefore, **domestic hot water is free.**

Useful information

- Stainless steel heat exchanger for domestic hot water production
- Includes 2 back-up electrical resistors with operating software or manual
- Solar coil included
- Includes mixing valve to limit the temperature of the DHW at the tap
- Galvanised white painted steel cabinet
- Dynamic management of the **anti-legionella** cycle
- Up to 75 ° C from a thermodynamic cycle in summer operation
- Heat recovery and energy storage during cooling operation, **free hot water**
- Glazing according to DIN 4753.8
- Combined installation with F-idro (see page 346)

model	capacity l	cod.	price
F-TANK	200	842030143X	
F-TANK	300	842030144X	

F-tank in the Fenix system

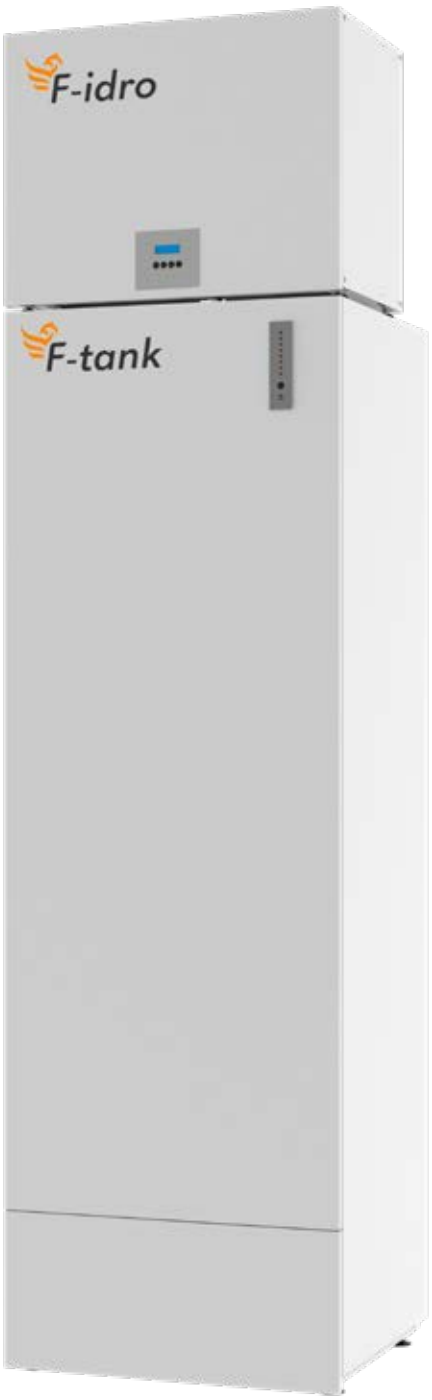
The F-Tank unit is managed by the Fenix system like any other indoor unit, and is exclusively intended for the production of DHW.

This is possible because the F-EXT outdoor units are equipped with an exclusive connection port dedicated to domestic water, to which only the F-tank unit can be connected.

All other indoor units, however, are connected via standard refrigerant connections.

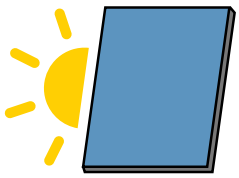
The setting of the desired temperature for hot water is also very simple: the set point can be set with a single button and the temperature is indicated via the LED interface.

The F-tank setting will take care of everything else. The system user does not have to worry about a thing: **the anti-legionella cycle is also managed automatically** .

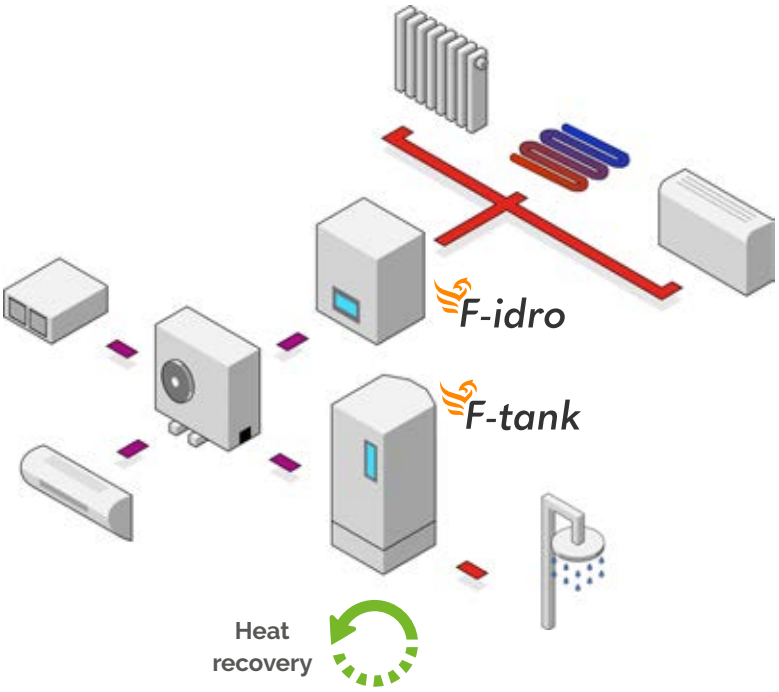


Combination with solar systems

F-Tank can be connected to solar systems both with natural circulation and forced circulation, thanks to its indoor fixed coil.



In this case it will work as a supplement to provide hot water when the efficiency of the solar panels is low (during winter or at night) or when there is a large demand for water from the users.

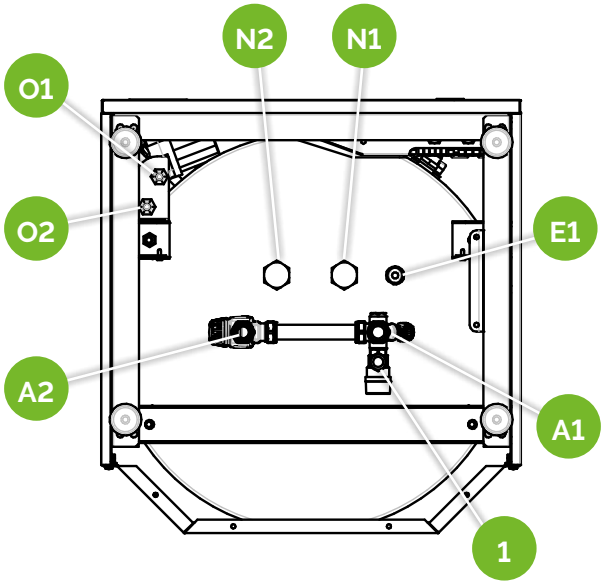


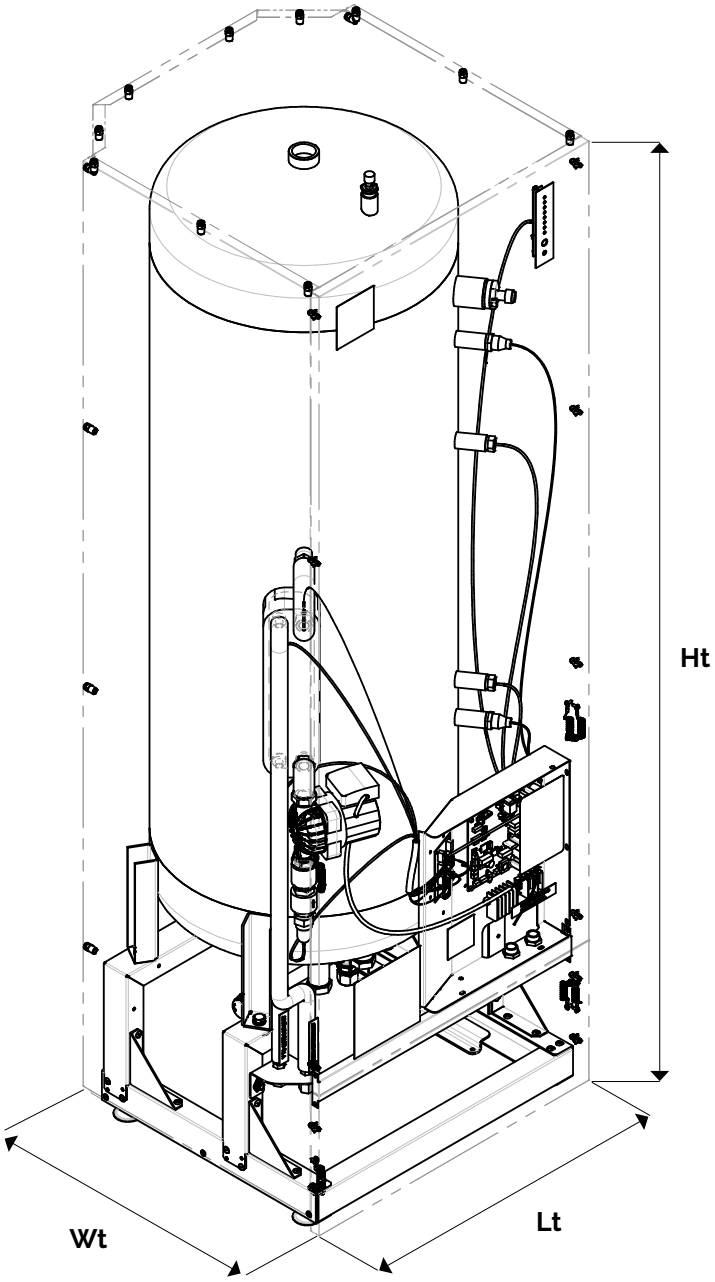
F-tank
Technical data

	Dimensions without packaging				Dimensions with packaging			
capacity l	Wt mm	Ht mm	Lt mm	weight kg	Wt mm	Ht mm	Lt mm	weight kg
200	640	1460	620	103	700	1600	700	115
300	640	1875	620	133	700	2000	700	145

Connections

Ref.	description	connections
A1	Cold water inlet	3/4"
A2	Hot water outlet	3/4"
E1	Boiler sensor shaft	7 mm
N1	Solar coil outlet	1"
N2	Solar coil inlet	1"
O1	Refrigerant circuit inlet	3/8"
O2	Refrigerant circuit outlet	3/8"
1	Safety valve outlet	1/2"





F-tank
Technical data

		F-TANK 200	F-TANK 300
TECHNICAL DATA			
Power supply	V/Ph/Hz	230/1/50	
Maximum electrical absorption (without electrical resistance)	W	60	
Maximum electrical absorption (with electrical resistance)	W	2000	
Hydraulic connections	inches	Press Fitting EN 1254-2 for Ø22" pipe	
Gas fittings	inches	3/8 "SAE	
Solar exchanger connections	inches	G 1"	
Solar exchanger pipe dimensions	mm	33.7 x 1.8	
Solar exchanger surface	m^2	1.4	
Solar exchanger length	mm	13200	
Solar exchanger material		carbon steel	
Maximum length of refrigeration piping	m	10	
Maximum height difference between indoor and outdoor unit	m	10	
Maximum height difference between indoor units (Fenix system installation)	m	5	
Additional R410a refrigerant load (if required)	g/m	15 for G 3/8", 20 for G1/2" pipes	
Tank capacity	l	200	300
Maximum working pressure	bar	6	
Sound power level	dB (A)	35	
PERFORMANCE OF DOMESTIC HOT WATER PRODUCTION ***			
ERP Class (*)	-	A	A
Loading profile (tapping) (*)	-	L	XL
Energy efficiency of water heating (*)	%	92	94
COP - DHW (**)	-	2.28	2.33
Annual electricity consumption (**)	kWh	1108	1783
Heating time from 10 ° C to 50 ° C	h: m	03:57	05:23
Maximum quantity of water mixed at 40 ° C	the	280	390

(*): with test method according to EN 16147
(**): average climate conditions
(***) Matching with F-EXT 050

F-wall: Indoor units with direct expansion

Indoor F-wall mounted units

- ✔ DC inverter technology
- ✔ Structure in PS satin white
- ✔ Sophisticated and discreet even at maximum power
- ✔ Consume as a LED lamp
- ✔ Save over 70% compared to traditional units

5 in 1

- ✔ **heating**
- ✔ **cooling**
- ✔ **dehumidification**
- ✔ **purification**
- ✔ **ventilation**

Elegant and discreet, available in sizes S and M, it is set up as an indoor unit with a pleasant design, suitable for all environments both due to its design and its thermal performance.

They are also ideal in rooms with a very low ceiling, thanks to special anti-intrusion grids.

Infrared remote control included

model	code	price	size	thermal power (KW)	refrigeration power (KW)
F-wall S	844110001X		S	≤ 4,0	≤ 3,7
F-wall M	844110002X		M	≤ 7,0	≤ 5,7

		F-wall S	F-wall M
IO airflow (sb-b-m-a)	m^3/h	390-430-450-470	410-580-710-880
Dehumidification	l/h	1.5	2
Ventilation speed	No.	Auto + 3 from the remote control	
Sound pressure IO (sb-b-m-a)*	dB(A)	23-29-36-39	29-35-43-47
Power supply	V/Ph/Hz	230/1/50	
Max. absorbed power	kW	0.012	0.019
Engine type		DC Motor Inverter	
Diameter of the liquid pipe	"	1/4"	1/4"
Diameter of the gas pipe	"	3/8"	1/2"
Net weight	kg	8	12
Net size internal unit. (Ht/Lt/Wt)	mm	270x805x215	285x995x240

*2 m from source

F-duct: ducted indoor units

F-duct ducted indoor units

- ✔ The reliable and flexible ducted solution
- ✔ Indoor units with medium pressure standard ducts
- ✔ DC Motor Inverter
- ✔ Wired and infrared remote control included
- ✔ Temperature and humidity management
- ✔ Prepared for home automation with removable filters

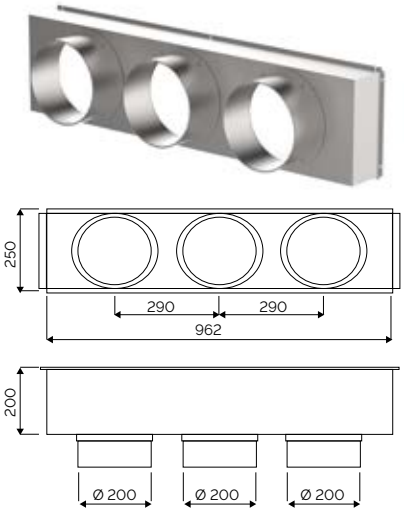
F-duct is mainly intended for the service sector and is made with great care in the choice of materials and in the assembly of parts. Available in size M and L, it is equipped with high quality centrifugal fans and condensate drain pump; it is also equipped with washable filters easily accessible and manageable through the wired or wireless Fenix universal remote control.

Pressure up to 62 Pa
A special function that can be activated by removing a jumper on the circuit board, increasing the pressure for ducting at greater distances.

Humidex
The units are equipped with a special humidity sensor. The signal coming from this sensor is used by the control software that correlates the humidity of the room and the temperature measured by the air sensor with the Humidex index that measures the temperature perceived by the human body (which is a combination of these two factors). This function is only available when the unit operates in auto mode both in cooling and in heating mode.

F-duct is the medium pressure ducted unit, to be combined with a standard plenum or set up on site

model	code	price	size	thermal power (KW)	Refrigeration power (KW)
F-duct M	844110003X		M	≤ 7,0	≤ 5,7
F-duct L	844110004X		L	≤ 11,0	≤ 9,0
3-way PLENUM conveyor	844070024X		-	-	-

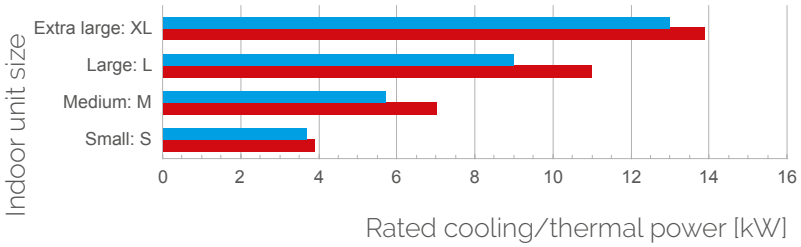


		F-duct M	F-duct L
IO airflow (b-m-a-aa)	m^3/h	450/550/720/850	600/720/950/1050
Dehumidification	l/h	2.3	2.5
Ventilation speed	No.	Auto + 3 from the remote control	
Useful pressure	Pa	50/62	50/62
Sound pressure IO (sb-b-m-a)*	dB(A)	32-35-42-47	35-40-46-49
Power supply	V/Ph/Hz	230/1/50	
Absorbed power	kW	0.076	0.118
Current consumption	A	0.68	0.95
Diameter of the liquid pipe	"	1/4 "	1/4 "
Diameter of the gas pipe	"	1/2 "	1/2 "
Net weight IO	kg	23.5	23.5
Net size IO. (Ht/Lt/Wt)		266 x 1175 x 636	266 x 1175 x 636

*2 m from source

Set up your own system

Depending on the different thermal/ cooling power values, the indoor units have been grouped into 4 reference sizes: S, M, L and XL.
Grouping indoor units in 4 sizes allows a quick and intuitive association with the corresponding outdoor unit, according to a precise series of combinations.



To configure your system, simply choose the size of the outdoor unit, depending on your heating needs; the sizes of the indoor units will be chosen among the possible combinations indicated in the following tables and compatible with the power of the outdoor unit.

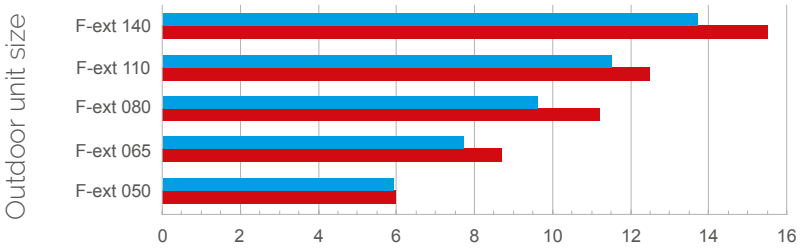


Table reading examples:

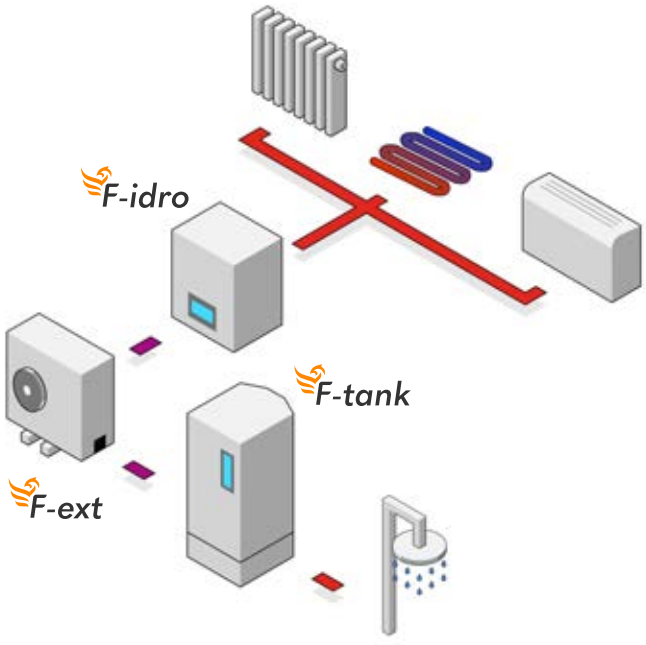
Hydronic HVAC + DHW> Outdoor unit F-ext 080 >> F-type combinable L size

Fenix takes care of everything else, taking advantage of the DC inverter technology: it modulates power and therefore consumption to obtain the desired comfort level. Domestic hot water is always guaranteed thanks to the dedicated F-tank door

SYSTEM SOLUTIONS - SUGGESTED COMBINATION TABLES

1. Hydronic heating and cooling + DHW

Ref.	Indoor unit size	V/Ph/Hz	F-idro	F-tank
1	F-EXT 050 dual	230/1/50	S	✔
2	F-EXT 065 trial	230/1/50	M	✔
3	F-EXT 080 quadri	230/1/50	L	✔
4	F-EXT 110 quadri	230/1/50	L	✔
5	F-EXT 140 penta	400/3/50	XL	✔



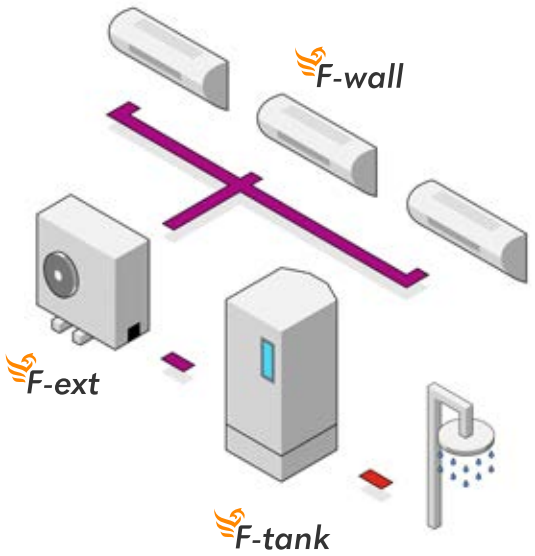
2. Direct Expansion heating and cooling + DHW

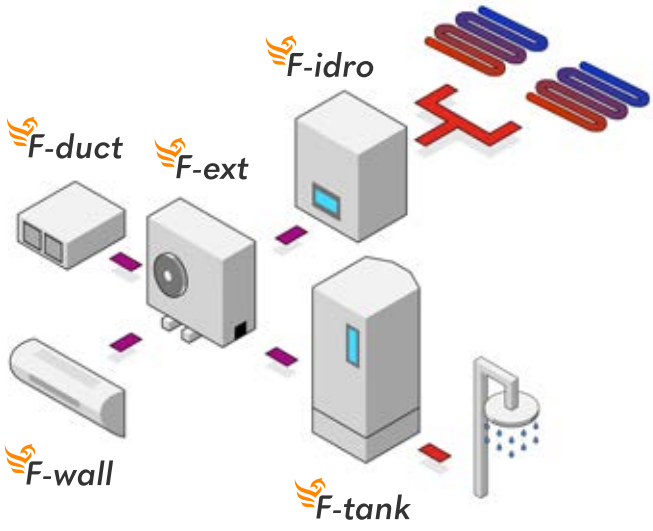
Ref.	Indoor unit size	V/Ph/Hz	F-wall / F-duct	F-tank
6	F-EXT 050 dual	230/1/50	S	✔
7			M	✔
8	F-EXT 065 trial	230/1/50	M	✔
9			S + S	✔
10			S + M	✔
11	F-EXT 080 quadri	230/1/50	L	✔
12			S + M	✔
13			S + S + S	✔
14			S + S + M	✔
15	F-EXT 110 quadri	230/1/50	XL	✔
16			S + M	✔
17			S + L	✔
18			M + M	✔
19			S + S + S	✔
20			S + S + M	✔
21			S + S + S + S	✔
22	F-EXT 140 penta	400/3/50	S + XL	✔
23			S + S + L	✔
24			S + S + S + S	✔
25			S + S + S + M	✔
26			S + S + S + S + S	✔

3. Hydronic heating and cooling + direct expansion + DHW*

Ref.	Outdoor unit size	V/Ph/Hz	F-idro	F-wall / F-duct	F-tank
27	F-EXT 050 dual	230/1/50	S	S	✔
28	F-EXT 065 trial	230/1/50	M	S + S	✔
29				M	✔
30	F-EXT 080 quadri	230/1/50	S	S + S + S	✔
31				S + M	✔
32			M	S + S + S	✔
33				S + M	✔
34			L	S + S	✔
35	F-EXT 110 quadri	230/1/50	M	S + S + S	✔
36				S + S + M	✔
37				M + M	✔
38			L	S + S + S	✔
39				S + M	✔
40	F-EXT 140 penta	400/3/50	L	S + S + S	✔
41				S + S + M	✔
42				S + S + S + S	✔
43				S + S + S + M	✔
44			XL	S + M	✔
45				S + S + S	✔

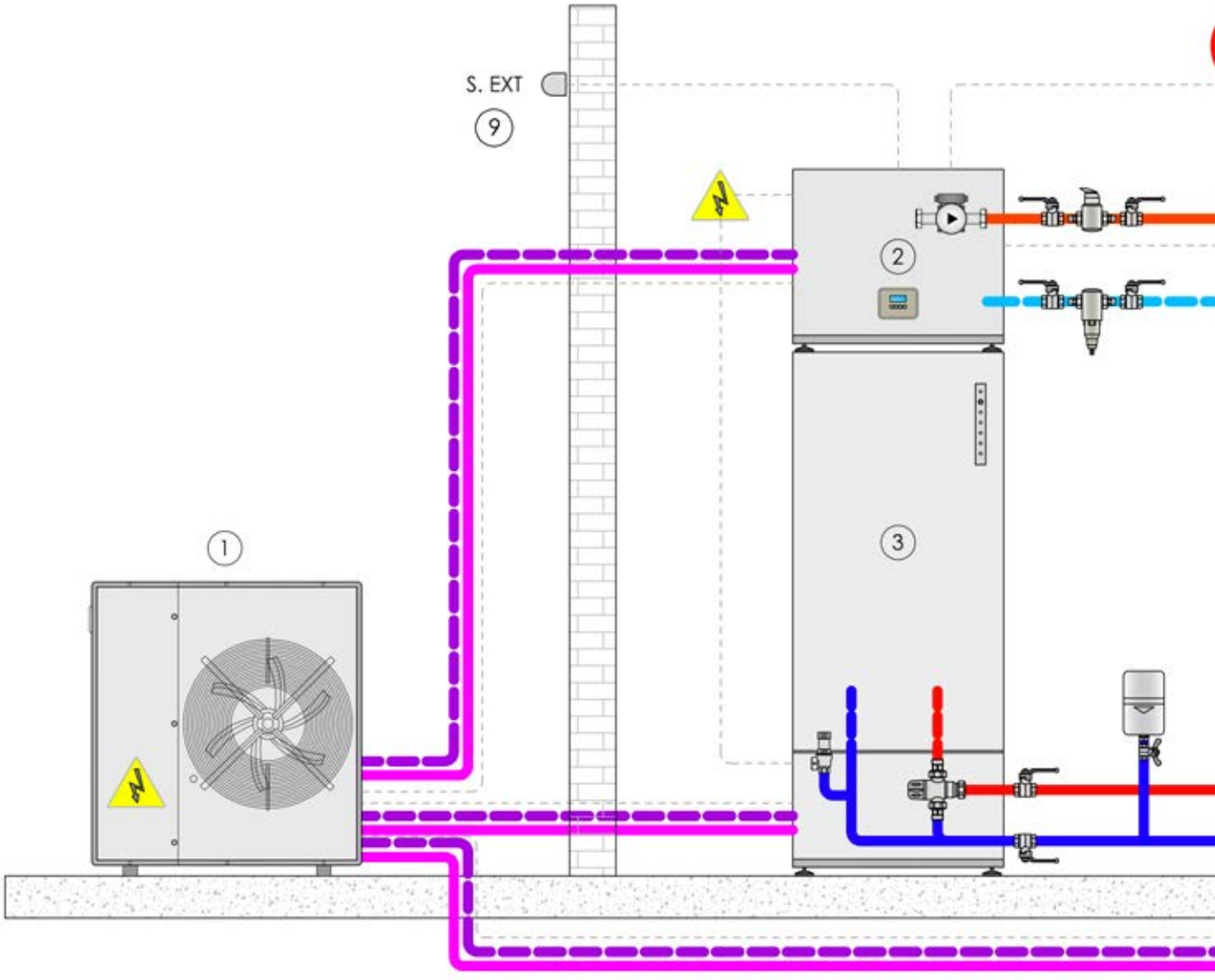
* For mixed solutions: air / water for heating and air / air for cooling, not in simultaneous operation



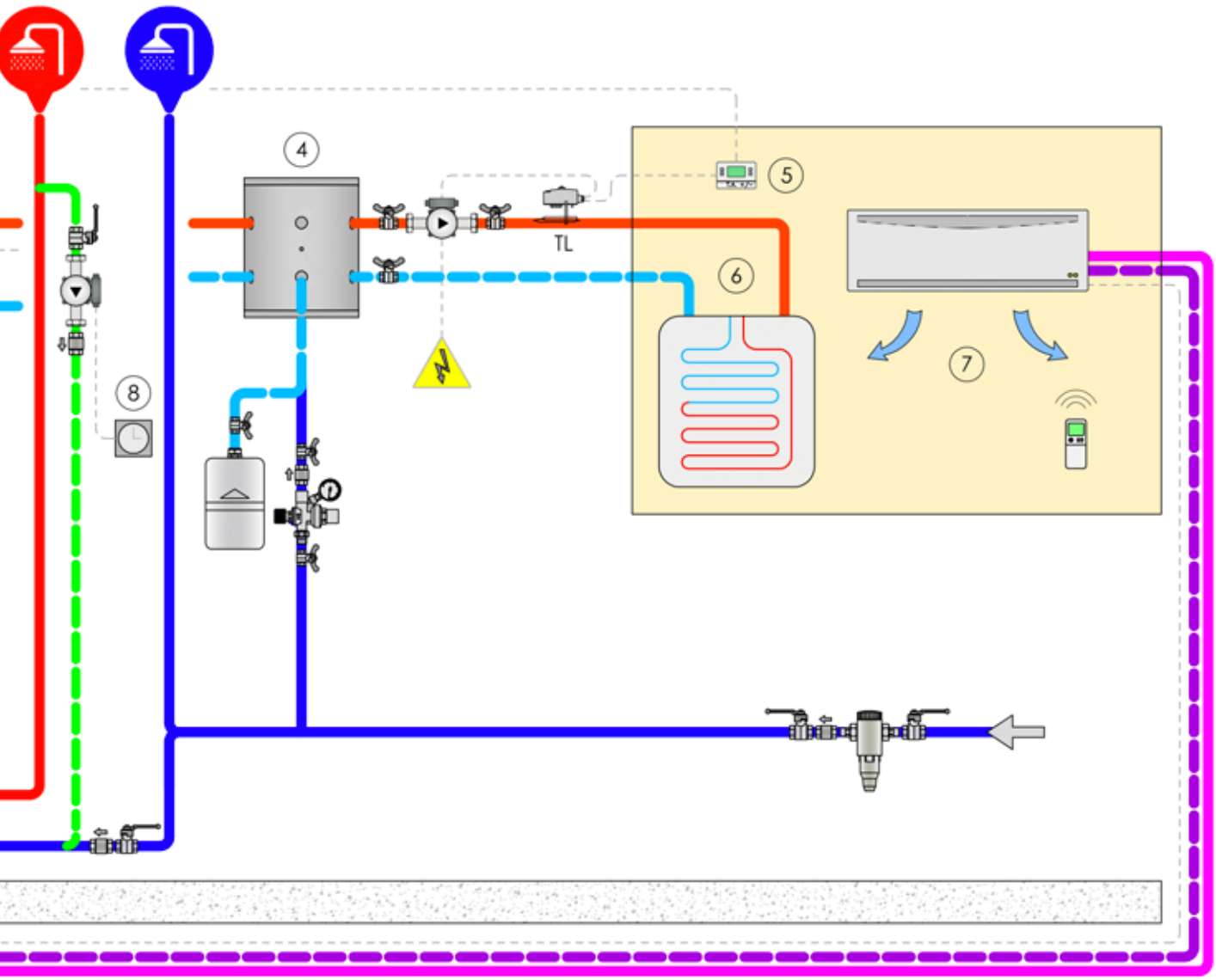


Type A diagram

Hydronic heating with F-idro and cooling with direct expansion unit, single thermal zone. Production of DHW with F-TANK.



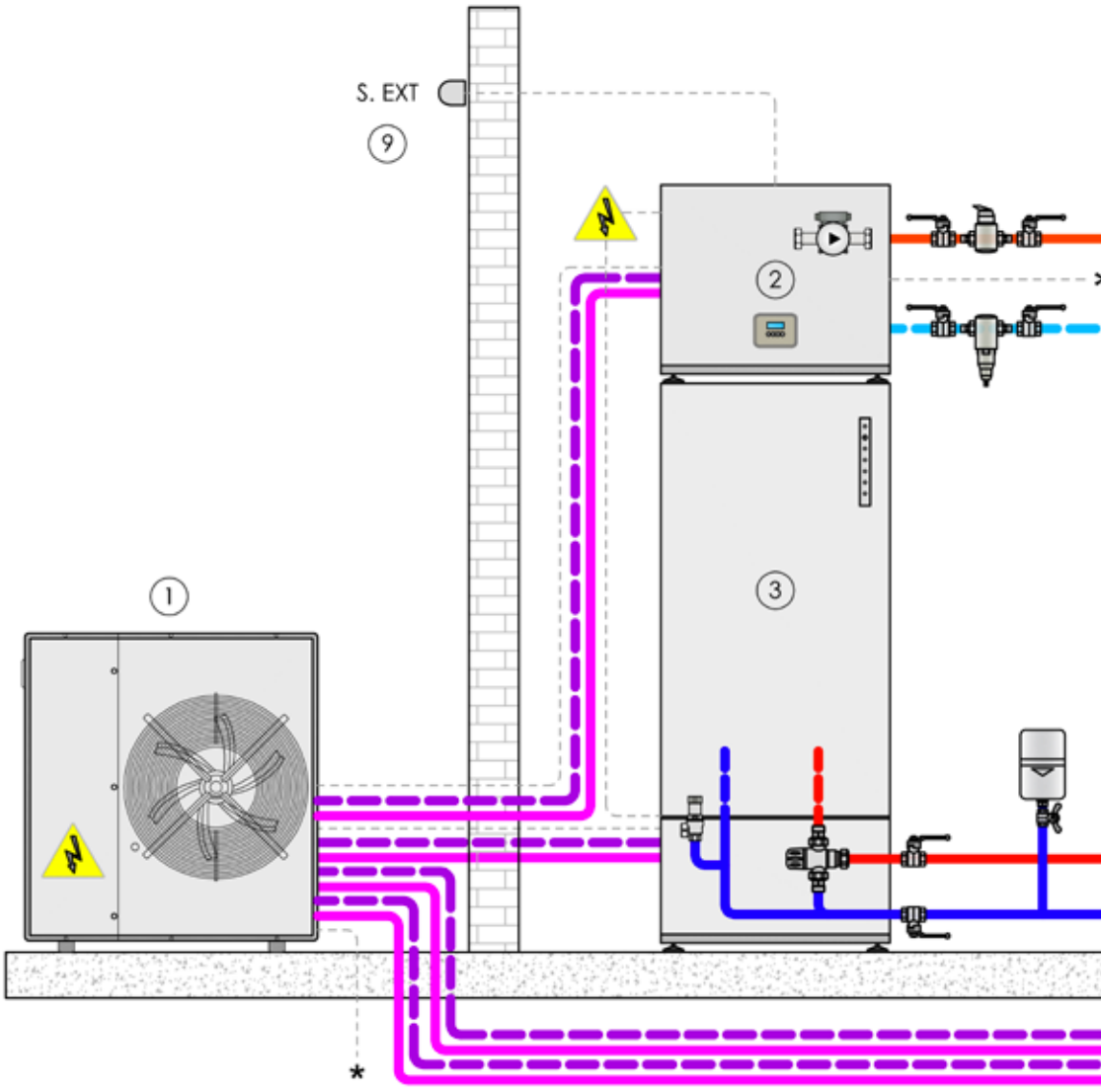
	Caption
1	Outdoor unit of the Fenix system, F-Ext series
2	Indoor unit of the Fenix, F-idro
3	Indoor unit of the Fenix system, F-tank 200/300
4	MINI HC inertial storage tank (or hydraulic circuit breaker), available from 40 or 80 litres
5	Room thermostat or chrono-thermostat (not supplied)
6	Hydronic circuit (circulator and regulation not supplied)
7	Direct expansion unit, F-wall
8	Sanitary recirculation pump, if any. Not supplied and not controlled by F-idro.
9	Outdoor climate sensor: the outdoor F-ext unit is already sold with an outdoor sensor of its own; however, if it is installed in an area with variable temperature, a second remote sensor can be used (supplied with F-idro).

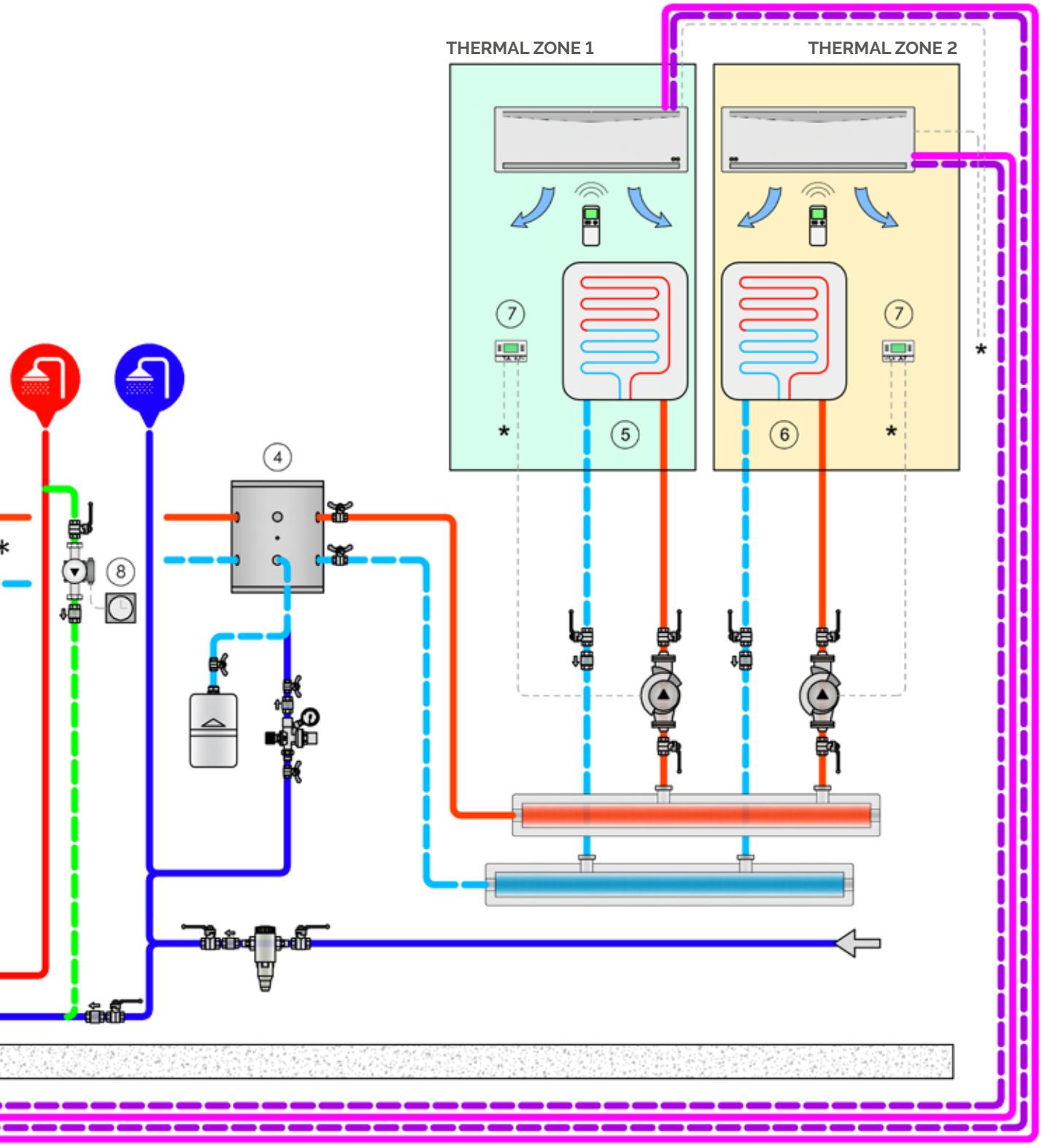


Type B diagram

Hydronic heating and cooling with F-idro and dehumidification/combined with direct expansion unit. Multiple thermal zone.
Production of DHW with F-TANK.

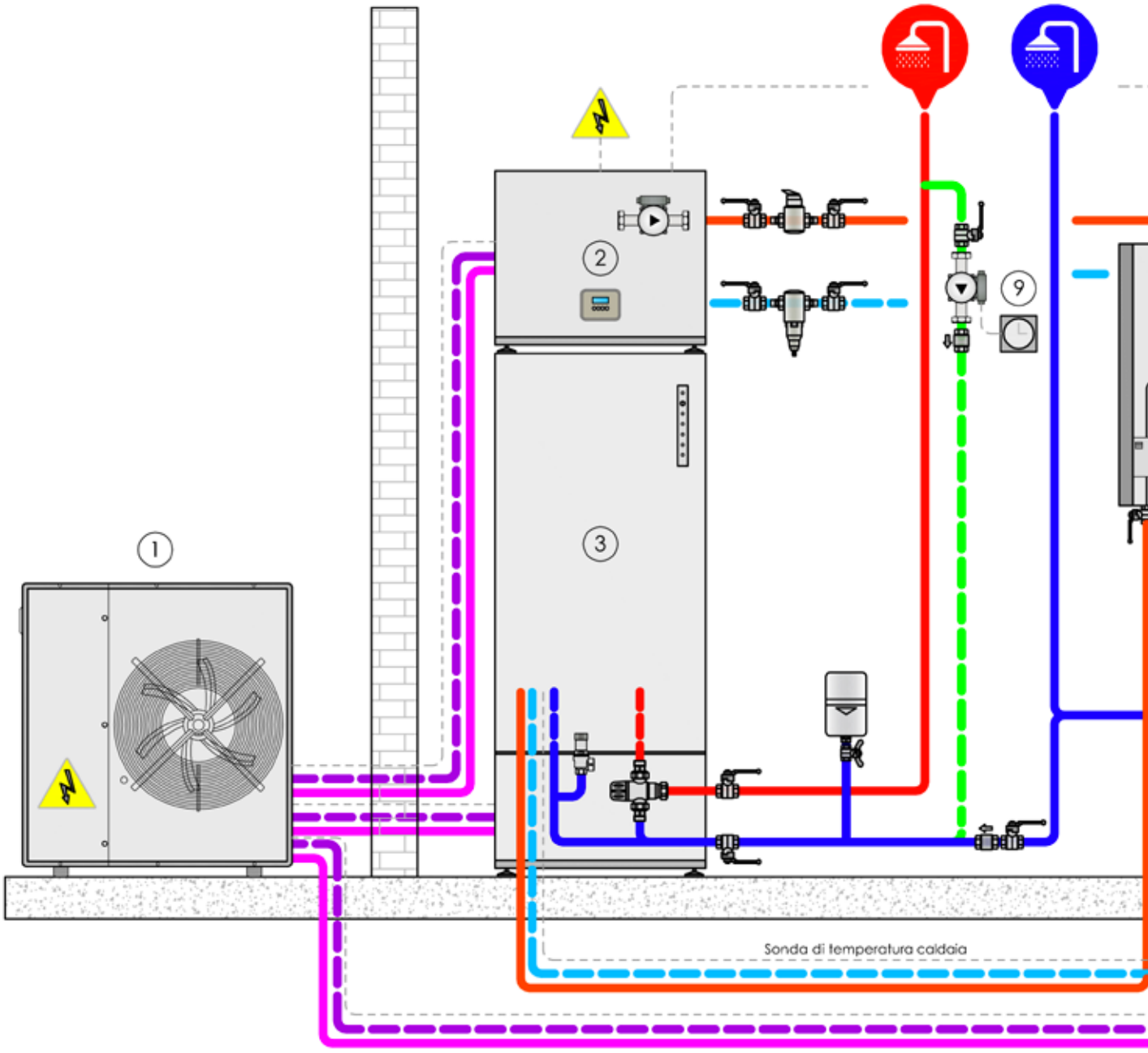
	Caption
1	Outdoor unit of the Fenix system, F-Ext series
2	Indoor unit of the Fenix, F-idro
3	Indoor unit of the Fenix system, F-tank 200/300
4	MINI HC inertial storage tank (or hydraulic circuit breaker), available from 40 or 80 litres
5	THERMAL ZONE 1 - Hydronic circuit and direct expansion terminal, F-wall
6	THERMAL ZONE 2 - Hydronic circuit and direct expansion terminal, F-wall
7	Room thermostat or chrono-thermostat (not supplied) or other clean contacts (e.g. home automation systems, etc.)
8	Sanitary recirculation pump, if any. Not supplied and not controlled by F-idro.
9	Outdoor climate sensor: the outdoor F-ext unit is already sold with an outdoor sensor of its own; however, if it is installed in an area with variable temperature, a second remote sensor can be used (supplied with F-idro).



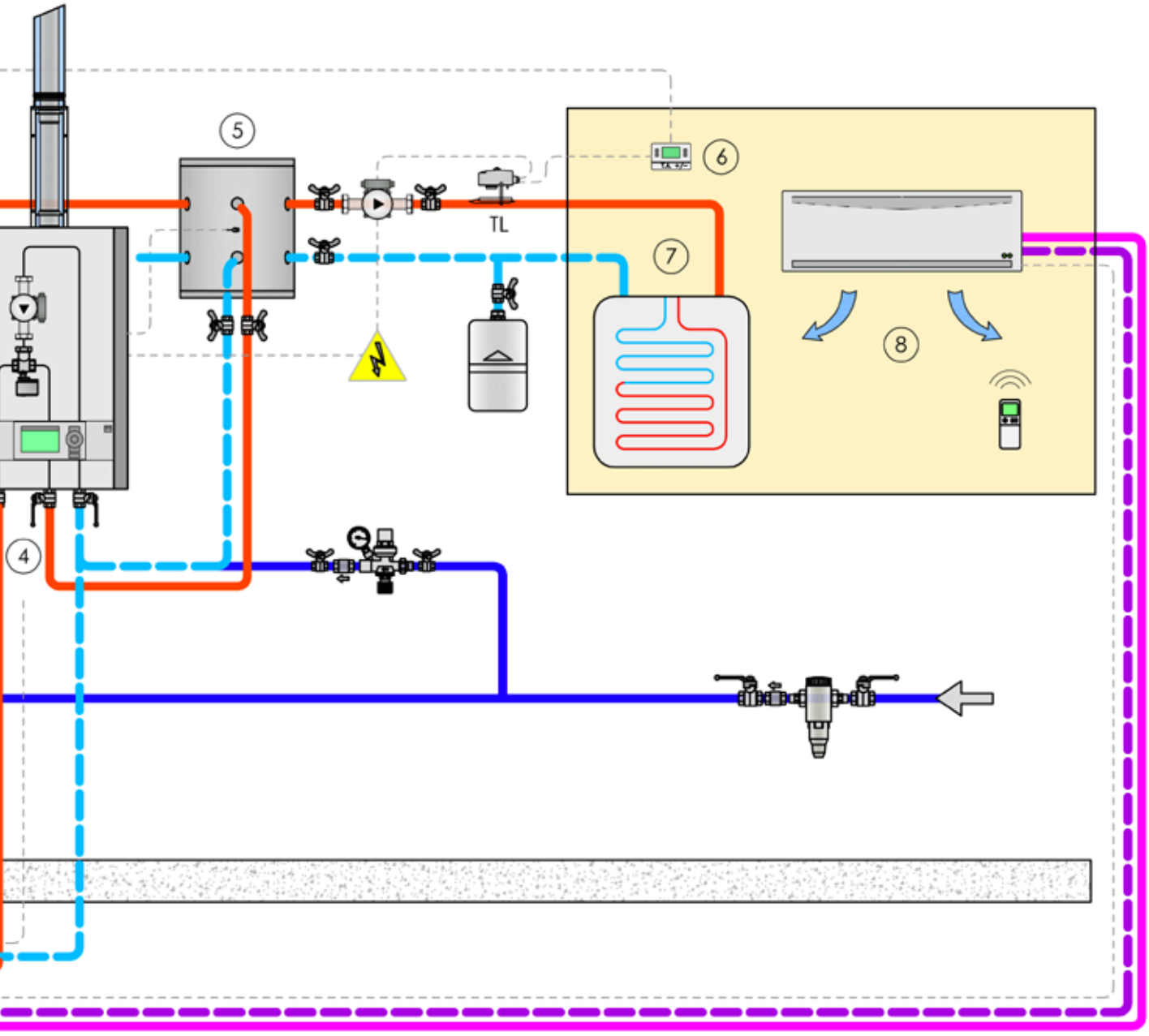

THERMAL ZONE 1
THERMAL ZONE 2
7
7
5
6
4
8
*
*
*

Type C diagram

Hydronic heating with F-idro combined with boiler, cooling with direct expansion unit, single thermal zone.
Production of DHW with F-TANK combined with boiler.

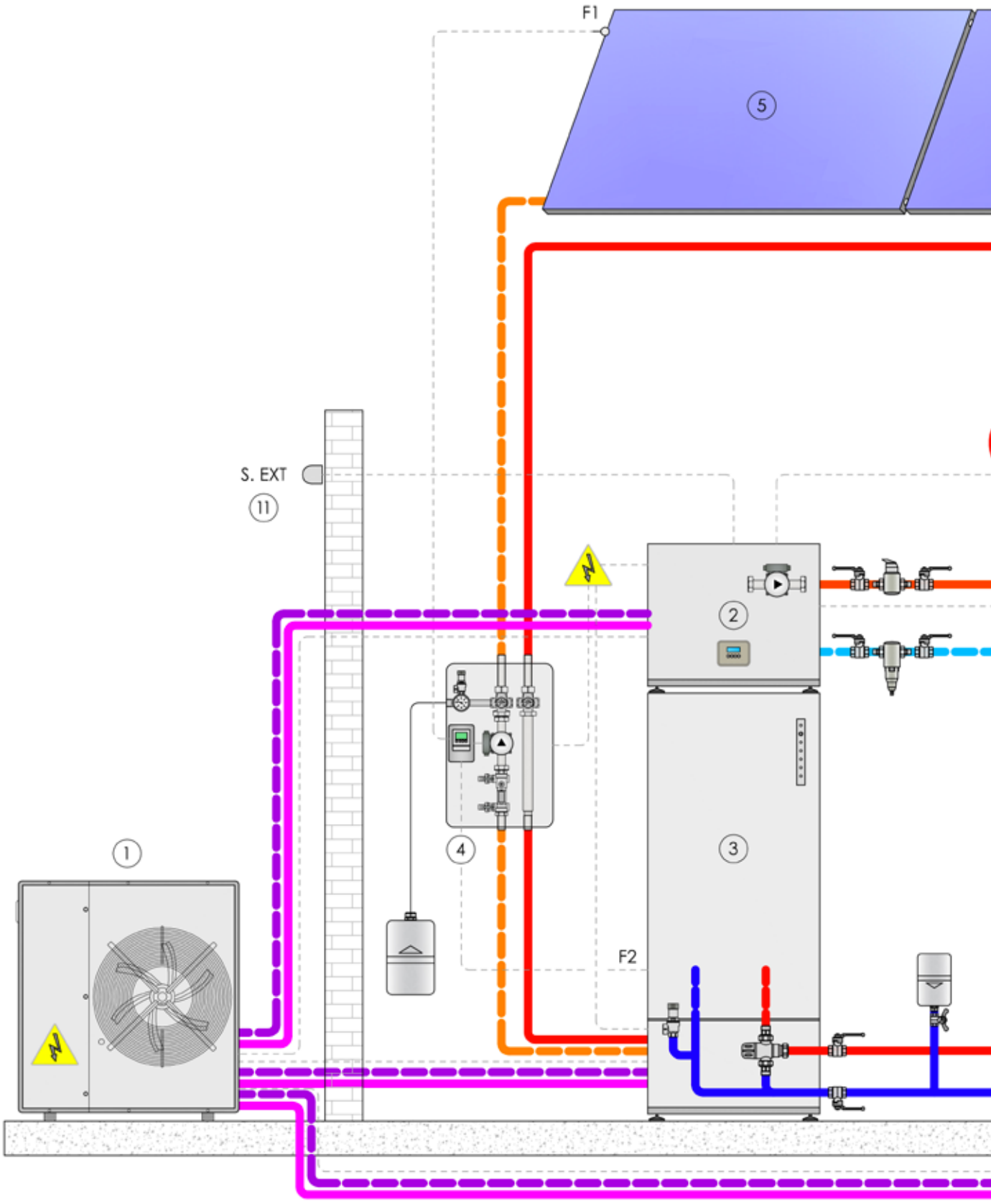


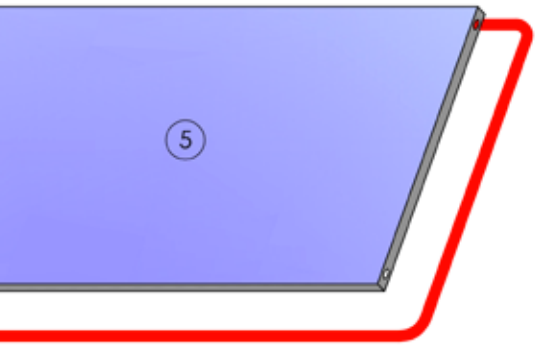
	Caption
1	Outdoor unit of the Fenix system, F-Ext series
2	Indoor unit of the Fenix, F-idro
3	Indoor unit of the Fenix system, F-tank 200/300
4	Combined boiler for heating only, with immersion NTC sensor
5	MINI HC inertial storage tank (or hydraulic circuit breaker), available from 40 or 80 litres
6	Room thermostat or chrono-thermostat (not supplied)
7	Heating circuit (circulator and regulation not supplied)
8	Direct expansion terminal, F-wall
9	Sanitary recirculation pump, if any. Not supplied and not controlled by F-idro.



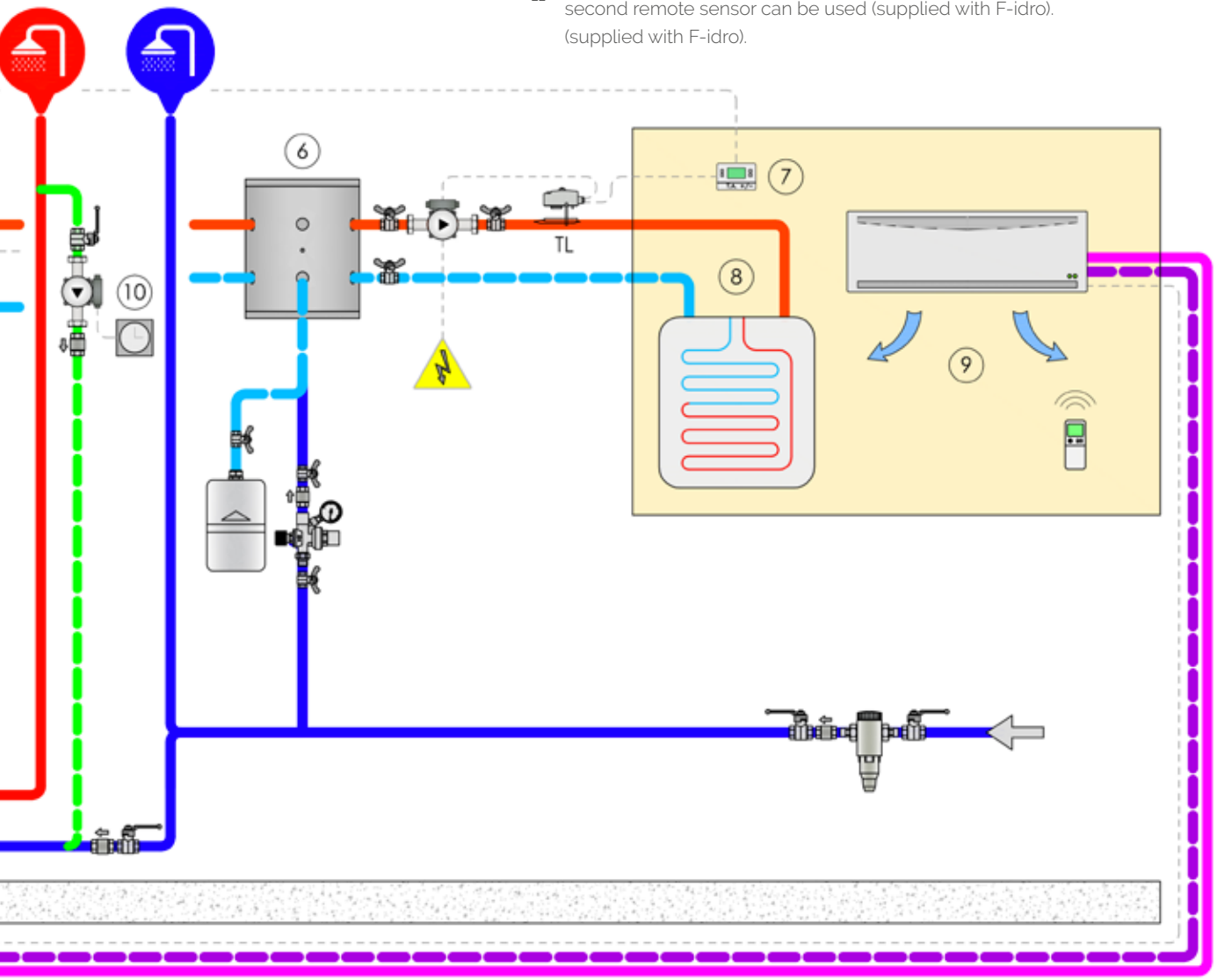
Type D diagram

Hydronic heating with F-idro and cooling with direct expansion unit, single thermal zone. Production of DHW with F-TANK combined with solar thermal unit.





	Caption
1	Outdoor unit of the Fenix system, F-Ext series
2	Indoor unit of the Fenix, F-idro
3	Indoor unit of the Fenix system, F-tank 200/300 with E-MIX module at the base
4	Solar thermal recovery unit, S2 SOLAR 30 module
5	Fiorini H 2000 solar thermal collectors
6	MINI HC inertial storage tank (or hydraulic circuit breaker), available from 40 or 80 litres
7	Room thermostat or chrono-thermostat (not supplied)
8	Hydronic circuit (circulator and regulation not supplied)
9	Direct expansion terminal, F-wall
10	Sanitary recirculation pump, if any. Not supplied and not controlled by F-idro.
11	Outdoor climate sensor: the outdoor F-ext unit is already sold with an outdoor sensor of its own; however, if it is installed in an area with variable temperature, a second remote sensor can be used (supplied with F-idro). (supplied with F-idro).



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