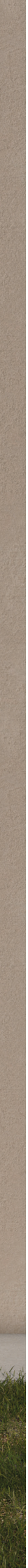
argo
improve your life

iM

MONOBLOC
air/water heat pump



iM
ADVANTAGES

Unique and innovative

iM is the only heat pump capable of producing domestic hot water at the same time as heating and cooling rooms, thanks to a special refrigerant gas connection. During cooling mode, water is heated free of charge using EMIX and EMIX TANK heat recovery technology.

High performance and savings

Thanks to the FULL DC INVERTER technology, which can optimise the operation of the compressor and fans, iM achieves an energy efficiency class A++ for heating and an energy efficiency class A for domestic hot water production, ensuring comfort and energy savings.

Efficient and silent

iM is equipped with circulation pump, compressor and DC inverter fans that modulate the power and speed based on real needs. The high level of soundproofing, the ability of the Argo-exclusive electronics to optimally operate the compressor cycle ("Smooth defrost") and the implementation of the ECO function all guarantee a low running noise.

Everything under control

iM is equipped with temperature control systems for the water and gas so as to optimise the system operation.
It is also fitted with control systems for the refrigerant pressure and water flow rate of the system to protect the system under any operating conditions.

Open and flexible system

iM is compatible with third-party control systems and advanced systems too, and can be integrated with additional external heating sources (gas boilers, solid-fuel generators, etc.). It can also be combined with solar panels used to provide hot water and heating or to generate electricity.

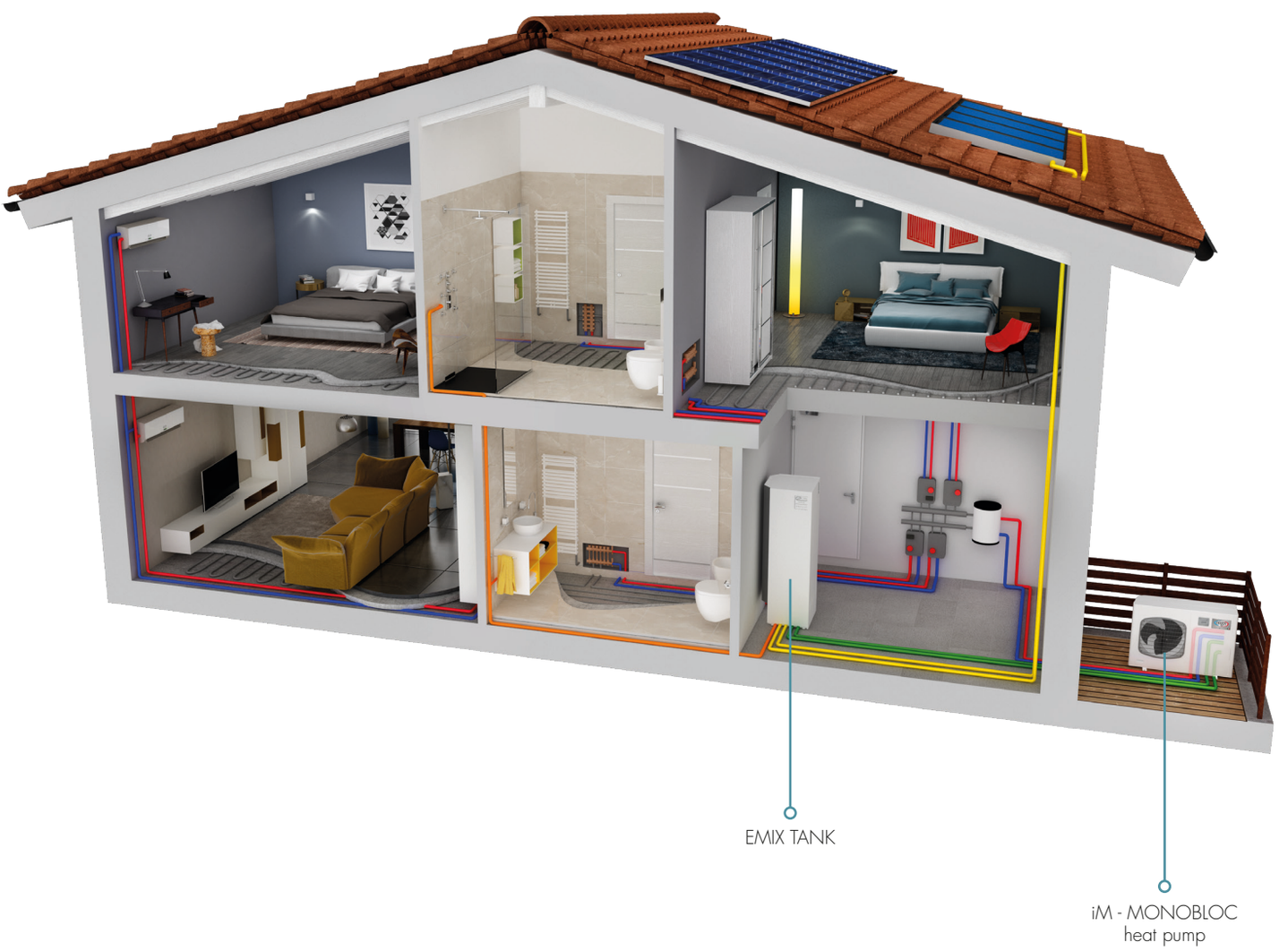
Simple and intuitive interface

Featuring an LCD display, the digital control panel is easy to use, both for operators (fitters and Service Centres) and for end users, who can also decide to add a second drive board to their household.

RENAWABLE ENERGY SYSTEM FOR MAXIMUM COMFORT

With iM, can you build your dream home with:

- Heating and cooling of rooms with hydronic terminals
- Domestic hot water production with high-efficiency systems and energy recovery features (EMIX and EMIX TANK models)
- Domestic hot water production with 3-way valve and DHW tank



iM

iM is a monoblock heat pump for heating, cooling and domestic hot water production. The range is composed by 6 outdoor units in R410A with a Twin Rotary Full DC Inverter compressor. It can be connected to EMIX and EMIX TANK to produce domestic hot water directly from the thermodynamic source, using heat recovery during air-conditioning mode in summer. The range is able to satisfy residential and commercial spaces and the heating capacity varies from 6 kW to 14 kW.

AIM06EMX

AIM08EMX

AIM11EMX
AIM11EMX3PH

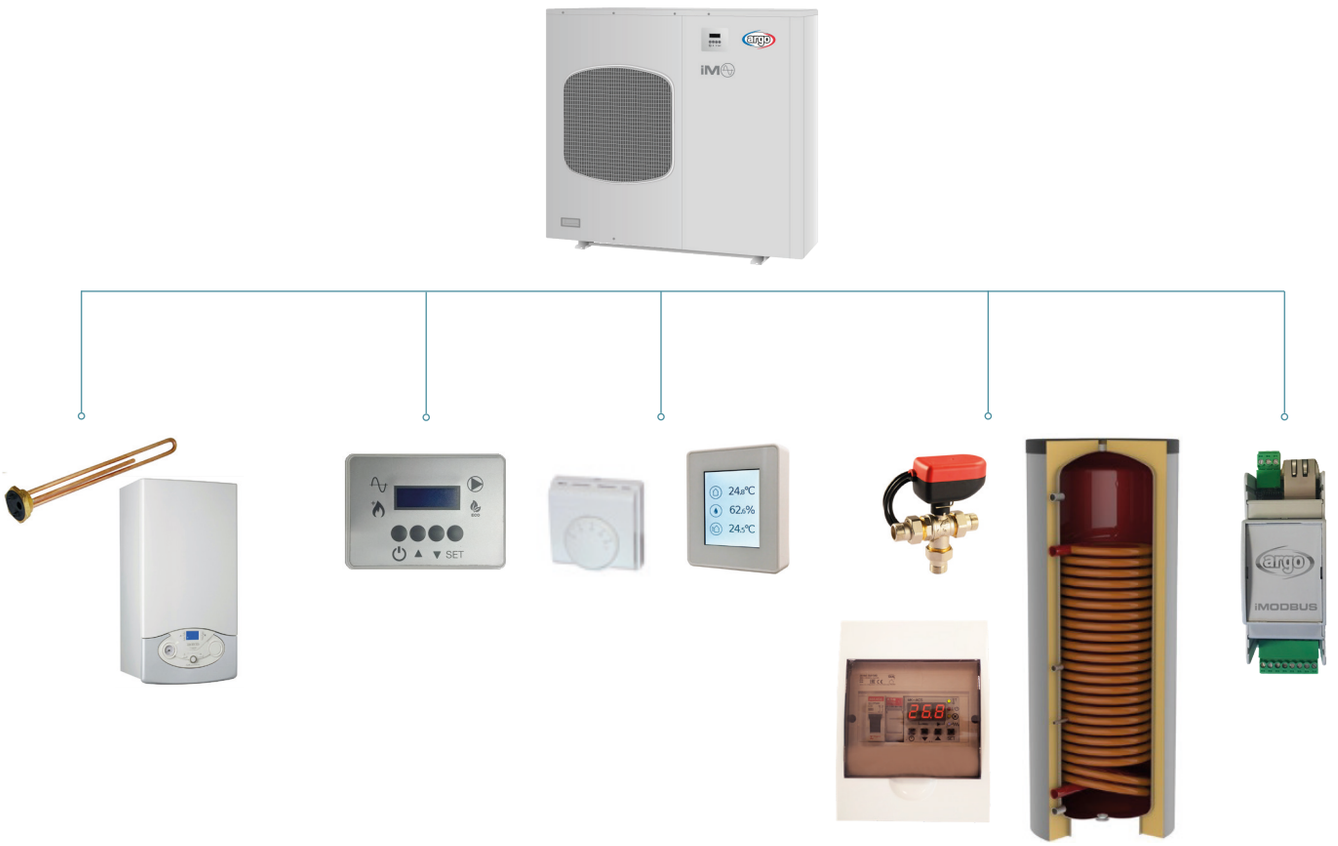
AIM14EMX
AIM14EMX3PH

Code	Model	*Heating nominal capacity [kW]	**Cooling nominal capacity [kW]
387032080	AIM06EMX	5,8	4,8
387032081	AIM08EMX	8,1	5,9
387032082	AIM11EMX	10,4	7,7
387032083	AIM11EMX3PH	10,4	7,7
387030086	AIM14EMX	13,6	10,0
387032084	AIM14EMX3PH	13,6	10,0

Reference condition:
* Heating capacity with outdoor air temperature 12/7 °C, outlet water temperature 30/35 °C
**Cooling capacity with outdoor air temperature 30/35 °C, outlet water temperature 23/18 °C

CONNECTIVITY

INPUTS AND OUTPUTS OF iM



N° 4 DIGITAL INPUTS (dry contacts or configurable 24 VAC contacts)

1) ON/OFF: stand by or operating;
2) Summer/Winter: summer/winter switching;
3) DHW SET POINT or SECOND SET POINT;
4) ECO MODE: if the contact is open, the maximum usable electric power is 100%; if it's closed it can be set with a parameter which is a percentage of the maximum value.

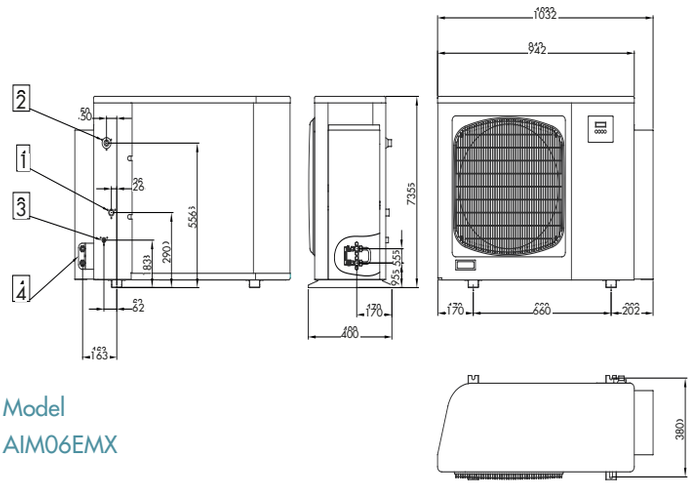
N° 4 DIGITAL OUTPUTS

1) 230 VAC output for the DHW diverter valve servomotor (deviation towards DHW);
2) 230 VAC output for the DHW diverter valve servomotor (re-deviation towards system - optional);
3) 230 VAC output for ALARM/DEFROST/DHW PRODUCTION which can be configured individually or in combination;
4) 230 VAC output for additional element (electric heating element and boiler, etc.) through external dedicated relay switch if required.

N° 2 ANALOGUE INPUTS

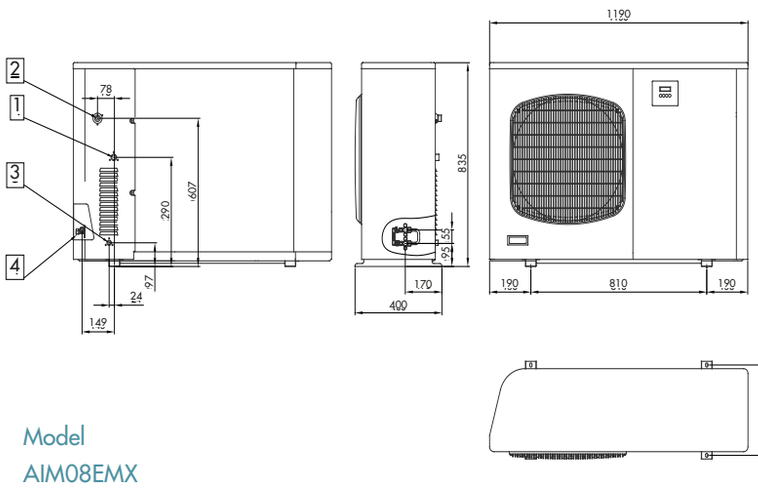
1) Analogue input 0÷10 V for external regulator or advanced room thermostat;
2) Input for additional external air sensor: installation of a second external air sensor to read the temperature in a more suitable position (if required). Automatic recognition of the unit.

DIMENSIONAL DATA



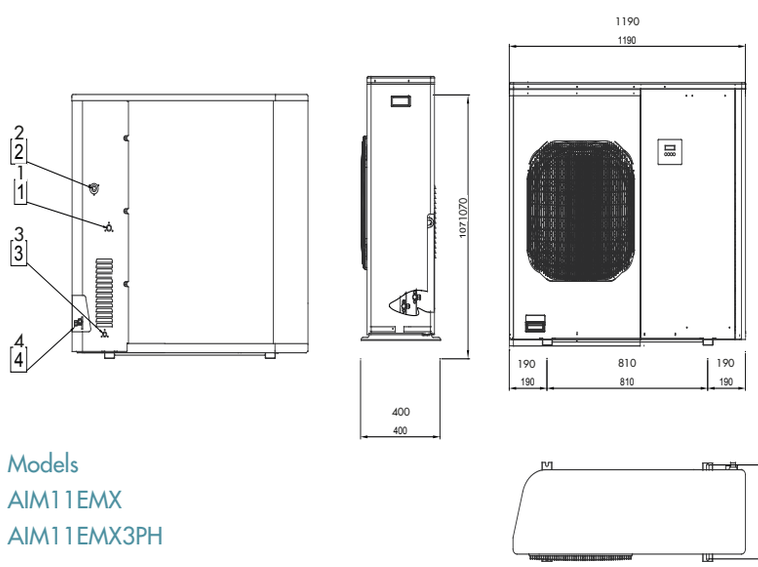
Model
AIM06EMX

Key
1. 3/4'' M water inlet
2. 3/4'' M water outlet
3. 1/2'' M refiling/draining water circuit
4. Inlet/outlet of refrigerant pipes for EMIX



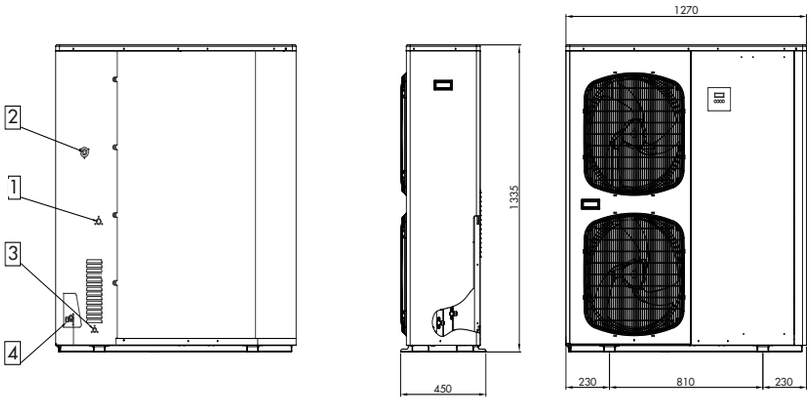
Model
AIM08EMX

Key
1. 3/4'' M water inlet
2. 3/4'' M water outlet
3. 1/2'' M refiling/draining water circuit
4. Inlet/outlet of refrigerant pipes for EMIX



Models
AIM11EMX
AIM11EMX3PH

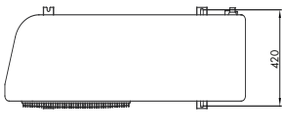
Key
1. 3/4'' M water inlet
2. 3/4'' M water outlet
3. 1/2'' M refiling/draining water circuit
4. Inlet/outlet of refrigerant pipes for EMIX



Models

AIM14EMX

AIM14EMX3PH



Key

1. 3/4'' M water inlet
2. 3/4'' M water outlet
3. 1/2'' M refiling/draining water circuit
4. Inlet/outlet of refrigerant pipes for EMIX

Model	Weight (kg)
AIM06EMX	64
AIM08EMX	73
AIM11EMX	90
AIM11EMX3PH	90
AIM14EMX	160
AIM14EMX3PH	160

TECHNICAL DATA

MODEL				AIM06EMX	AIM08EMX
Matchable units for Domestic Hot Water (DWH) production				EMIX TANK V2 200-300 litres EMIX V1 Esternal Tank	
AIR/WATER					
Performance according to EN 14511	Air +35 °C - Water 23/18 °C	Nominal-max. Cooling capacity	kW	5,15 - 5,85	6,24 - 7,0
		Nominal electric power input	kW_{el}	1,42	1,73
		Nominal EER		3,63	3,61
	Air +35 °C - Water 12/7 °C	Nominal Cooling capacity	kW	3,57	5,12
		Nominal electric power input	kW_{el}	1,48	2,12
		Nominal EER		2,41	2,41
	Air +7 °C - Water 30/35 °C	Nominal-max. Heating capacity	kW	5,8 - 6,8	8,1 - 9,1
		Nominal electric power input	kW_{el}	1,41	1,93
		Nominal COP		4,12	4,19
	Air -7 °C - Water 30/35 °C	Nominal Heating capacity	kW	4,60	5,76
		Nominal electric power input	kW_{el}	1,69	2,11
		Nominal COP		2,71	2,74
Air/water LOW temperature heating					
Performance according to ERP Ecodesign EN 14825	AVERAGE climate	Nominal Heating capacity	kW	5	7
		Seasonal energy efficiency η_s	%	153	159
		SCOP		3,89	4,05
		Energy efficiency class		A++	A++
Air/water MEDIUM temperature heating					
Performance according to ERP Ecodesign EN 14825	AVERAGE climate	Nominal Heating capacity	kW	4	6
		Seasonal energy efficiency η_s	%	111	113
		SCOP		2,85	2,91
		Energy efficiency class		A+	A+
DHW with 300 L tank and diverting valve - AVERAGE					
DHW Performance according to EN 16147		Load profile		XL	XL
		Energy efficiency class		A	A
		DHW COP		2,19	2,26
		ERP efficiency	%	91	94
		Heating-up time from 10 °C to 47 °C		04:04	3:41
DHW with EMIX TANK 200 V2 (AIM06) and with EMIX TANK 300 V2 (AIM08) - AVERAGE					
DHW Performance according to EN 16147		Load profile		L	XL
		Energy efficiency class		A	A
		DHW COP		2,52	2,58
		ERP efficiency	%	105	106
		Heating-up time from 10 °C to 50 °C	h:m	03:09	3:33
GENERAL SPECIFICATIONS					
Operation data		Maximum outlet water temperature	°C	Fino a 58	
		Outdoor temperature range	°C	-20 / +35	
		Outdoor temperature range	°C	-10 / +47	
		Nominal water flow rate to 35 °C	m^3/h	1,00	1,39
		Nominal water flow rate to 45 °C		0,76	1,31
		Nominal water flow rate to 55 °C		0,45	0,70
		Minimum efficient water volume of the system	l	40	40
		Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1+T/50	230/1+T/50
		Maximum electric consumption	kW/A	2,3/10	3,5/15,9
		Fuse		16 A	20 A
		Sound pressure	dB(A)	40	44
Components		Expansion vessel	l	2	4
		Maximum pump pressure	m.c.a.	6 (vedi grafici H/Q)	7 (vedi grafici H/Q)
		Water connection	inch (")	3/4"	3/4"
		Safety valve	bar	3	
		Compressor type		Twin Rotary	
Refrigerant pipes to EMIX / EMIX TANK		Diameters (gas/liquid)	inch (")	3/8"	3/8"
		Maximum lenght	m	10	
		Minimum lenght	m	5	
		Max height difference IU-OU	m	10	
Refrigerant		Type and GWP		R410A / 2088 kg CO_2 eq.	
		Standard charge	kg/Tonn CO_2 eq.	1,30/2,71	1,46/ 3,05

Data declared in accordance with REGULATION (EU) N. 811/2013 of 18 February 2013 with regarde to the energy labelling of space heaters and combination heaters and with COMMISION REGULATION (EU) N. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regarde to ecodesign requirements for space heaters and combination heaters.

MODEL				AIM11EMX AIM11EMX3PH	AIM14EMX AIM14EMX3PH
Matchable units for Domestic Hot Water (DWH) production				EMIX TANK V2 200-300 litres EMIX V1 Esternal Tank	
AIR/WATER					
Performance according to EN 14511	Air +35 °C - Water 23/18 °C	Nominal-max. Cooling capacity	kW	7,85 - 9,0	10,66 - 12,73
		Nominal electric power input	kW_{el}	2,17	2,94
		Nominal EER		3,62	3,62
	Air +35 °C - Water 12/7 °C	Nominal Cooling capacity	kW	6,47	8,45
		Nominal electric power input	kW_{el}	2,65	3,50
		Nominal EER		2,44	2,41
	Air +7 °C - Water 30/35 °C	Nominal-max. Heating capacity	kW	10,16 - 12,5	13,57 - 17,10
		Nominal electric power input	kW_{el}	2,54	3,35
		Nominal COP		4,00	4,06
	Air -7 °C - Water 30/35 °C	Nominal Heating capacity	kW	7,00	9,48
		Nominal electric power input	kW_{el}	2,49	3,5
		Nominal COP		3,81	2,71
Air/water LOW temperature heating					
Performance according to ERP Ecodesign EN 14825	AVERAGE climate	Nominal Heating capacity	kW	8	9,83
		Seasonal energy efficiency η_s	%	151	153
		SCOP		3,86	3,91
		Energy efficiency class		A++	A++
Air/water MEDIUM temperature heating					
Performance according to ERP Ecodesign EN 14825	AVERAGE climate	Nominal Heating capacity	kW	7	9,52
		Seasonal energy efficiency η_s	%	114	111
		SCOP		2,92	2,84
		Energy efficiency class		A+	A+
DHW with 300 L tank and diverting valve - AVERAGE					
DHW Performance according to EN 16147		Load profile		XL	XL
		Energy efficiency class		A	A
		DHW COP		2,14	2,06
		ERP efficiency	%	89	85
		Heating-up time from 10 °C to 47 °C		2:40	2:40
DHW with EMIX TANK 300 V2					
DHW Performance according to EN 16147		Load profile		XL	XL
		Energy efficiency class		A	A
		DHW COP		2,57	2,53
		ERP efficiency	%	106	105
		Heating-up time from 10 °C to 50 °C	h:m	2:25	2:24
GENERAL SPECIFICATIONS					
Operation data		Maximum outlet water temperature	°C	Fino a 58	
		Outdoor temperature range	°C	-20 / +35	
		Outdoor temperature range	°C	-10 / +47	
		Nominal water flow rate to 35 °C	m^3/h	1,35	2,31
		Nominal water flow rate to 45 °C		1,68	2,18
		Nominal water flow rate to 55 °C		0,89	1,16
		Minimum efficient water volume of the system	l	80	80
		Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1+T/50-60 (1ph) 400/3+N+T/50 (3ph)	220-240/1+T/50 (1ph) 400/3+N+T/50 (3ph)
		Maximum electric consumption	kW/A	4,5/19,1 (1ph) 4,2/6,7 (3ph)	5,2/23,8 (1ph) 5,2/9 (3ph)
		Fuse		25 A (1ph)/30 A (3ph)	10 A
		Sound pressure	dB(A)	44	45
Components		Expansion vessel	l	6	8
		Maximum pump pressure	m.c.a.	7,5 (vedi grafici H/Q)	7,5 (vedi grafici H/Q)
		Water connection	inch (")	1"	1"
		Safety valve	bar	3	
		Compressor type		Twin Rotary	
Refrigerant pipes to EMIX / EMIX TANK		Diameters (gas/liquid)	inch (")	3/8"	1/2"
		Maximum lenght	m	10	
		Minimum lenght	m	5	
		Max height difference IU-OU	m	10	
Refrigerant		Type and GWP		R410A / 2088 kg CO_2 eq.	
		Standard charge	kg/Tonn CO_2 eq.	2,50/5,22	3,10/6,47

The equipment described in this catalogue contains HFC-410A-type flourinated greenhouse gases. These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014

TECHNICAL DATA

AIM06EMX model

Heating

LWT [°C]	Outdoor air temperature - Dry Bulb (Wet Bulb) - °C									
	-7 (-8)		-2 (-3)		2 (1)		7 (6)		12 (11)	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
35	4,60	2,71	3,99	3,06	3,50	3,34	5,80	4,12	6,56	4,69
45	3,90	2,01	3,38	2,27	2,97	2,48	4,63	2,73	5,24	3,11
55	3,10	1,70	2,81	1,68	2,57	1,67	4,09	1,98	4,34	2,10

LWT: Leaving water temperature
Qh: Heat capacity
COP: Coefficient of performance

Application data
Water inlet/outlet temperature difference = 5 °C, 8° for LWT = 55°C

Cooling

LWT [°C]	Inlet outdoor air temperature - °C	
	35	
	Qc [kW]	EER
7	3,57	2,41
18	5,15	3,63

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

Applicationdata
Water inlet/outlet temperature difference = 5 °C

AIM08EMX model

Heating

LWT [°C]	Outdoor air temperature - Dry Bulb (Wet Bulb) - °C									
	-7 (-8)		-2 (-3)		2 (1)		7 (6)		12 (11)	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
35	5,76	2,74	5,09	3,08	4,54	3,35	8,10	4,19	9,52	4,94
45	5,43	2,38	4,78	2,68	4,27	2,91	7,11	3,31	8,38	3,95
55	4,87	1,83	4,66	2,01	4,50	2,15	6,89	2,37	7,87	2,79

LWT: Leaving water temperature
Qh: Heat capacity
COP: Coefficient of performance

Application data
Water inlet/outlet temperature difference = 5 °C, 8° for LWT = 55 °C

Cooling

LWT [°C]	Inlet outdoor air temperature - °C	
	35	
	Qc [kW]	EER
7	5,12	2,41
18	6,24	3,61

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

Applicationdata
Water inlet/outlet temperature difference = 5 °C

AIM11EMX / AIM11EMX3PH models

Heating

LWT [°C]	Outdoor air temperature - Dry Bulb (Wet Bulb) - °C									
	-7 (-8)		-2 (-3)		2 (1)		7 (6)		12 (11)	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
35	7,00	2,81	6,44	3,04	6,00	3,23	10,16	4,00	11,61	4,67
45	6,90	2,33	6,35	2,52	5,92	2,68	9,89	3,16	10,80	3,06
55	6,11	1,62	5,90	1,72	5,73	1,81	7,92	1,92	8,94	2,20

LWT: Leaving water temperature
Qh: Heat capacity
COP: Coefficient of performance

Application data
Water inlet/outlet temperature difference = 5 °C, 8° for LWT = 55 °C

Cooling

LWT [°C]	Inlet outdoor air temperature - °C	
	35	
	Qc [kW]	EER
7	6,47	2,44
18	7,85	3,62

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

Applicationdata
Water inlet/outlet temperature difference = 5 °C

AIM14EMX / AIM14EMX3PH models

Heating

LWT [°C]	Outdoor air temperature - Dry Bulb (Wet Bulb) - °C									
	-7 (-8)		-2 (-3)		2 (1)		7 (6)		12 (11)	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
35	9,48	2,71	8,21	2,97	7,20	3,18	13,57	4,06	16,20	4,89
45	8,69	1,91	8,05	2,08	7,06	2,23	12,04	3,12	14,37	3,76
55	8,42	1,58	7,97	1,61	7,61	1,64	10,26	2,13	10,58	2,18

LWT: Leaving water temperature
Qh: Heat capacity
COP: Coefficient of performance

Application data
Water inlet/outlet temperature difference = 5 °C, 8° for LWT = 55 °C

Cooling

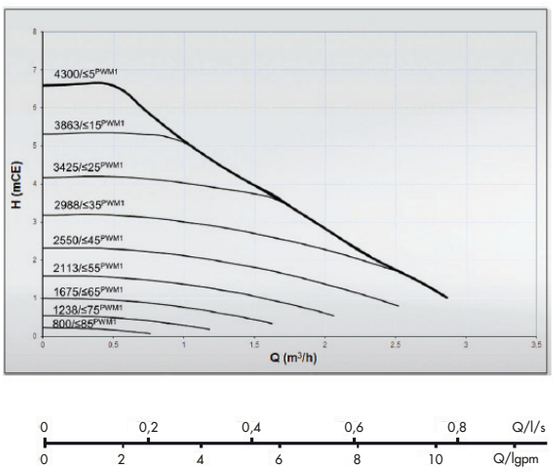
LWT [°C]	Inlet outdoor air temperature - °C	
	35	
	Qc [kW]	EER
7	8,45	2,41
18	10,66	3,62

LWT: Leaving water temperature
Qc: Cooling capacity
EER: Energy efficiency ratio

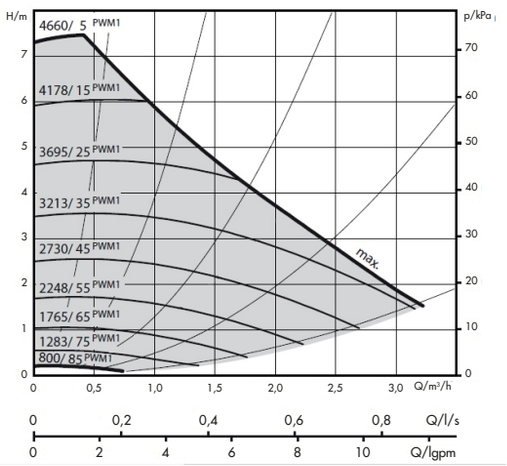
Applicationdata
Water inlet/outlet temperature difference = 5 °C

CHARACTERISTIC CURVE OF THE PUMP

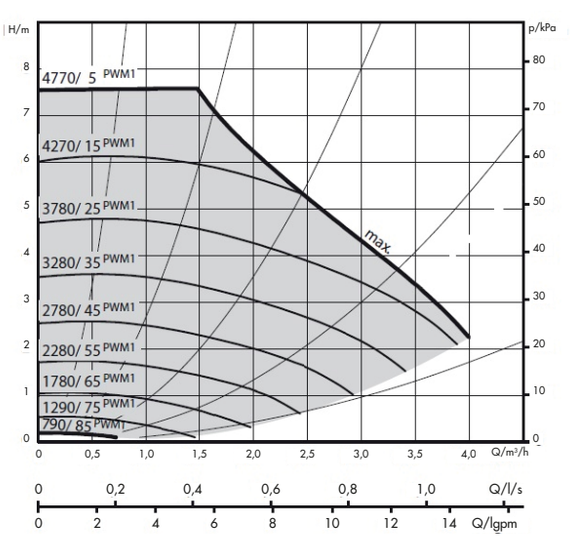
AIM06EMX



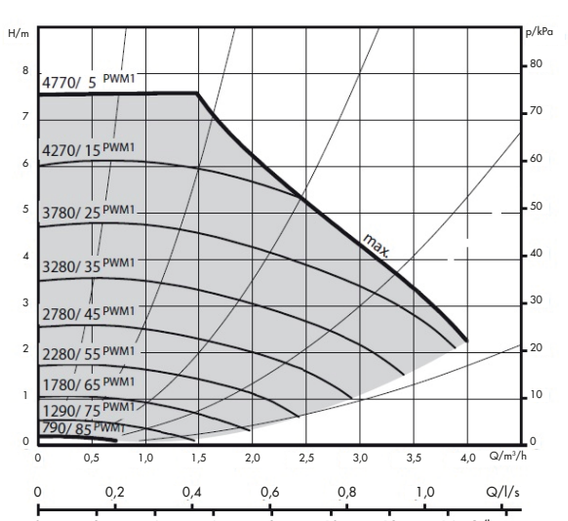
AIM08EMX



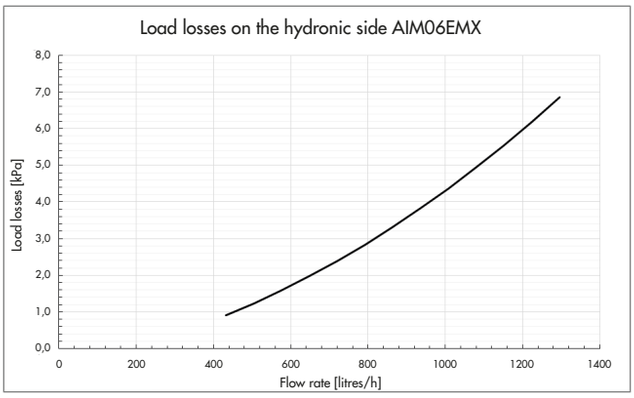
AIM11EMX

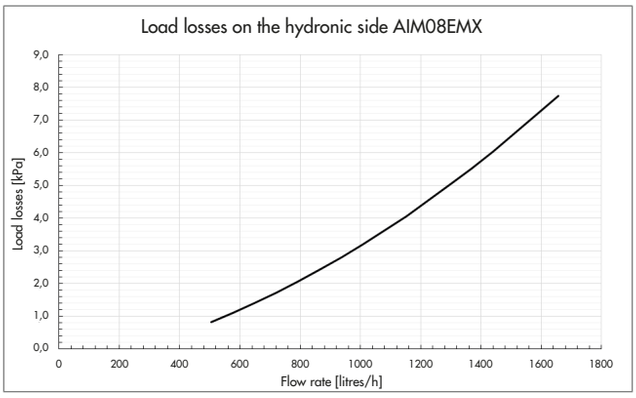


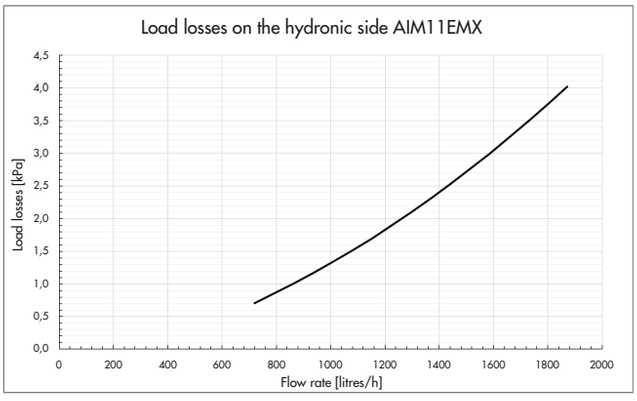
AIM14EMX

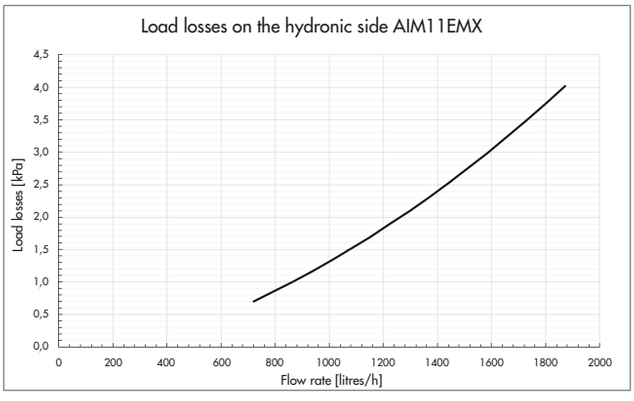


LOAD LOSSES IN THE UNIT

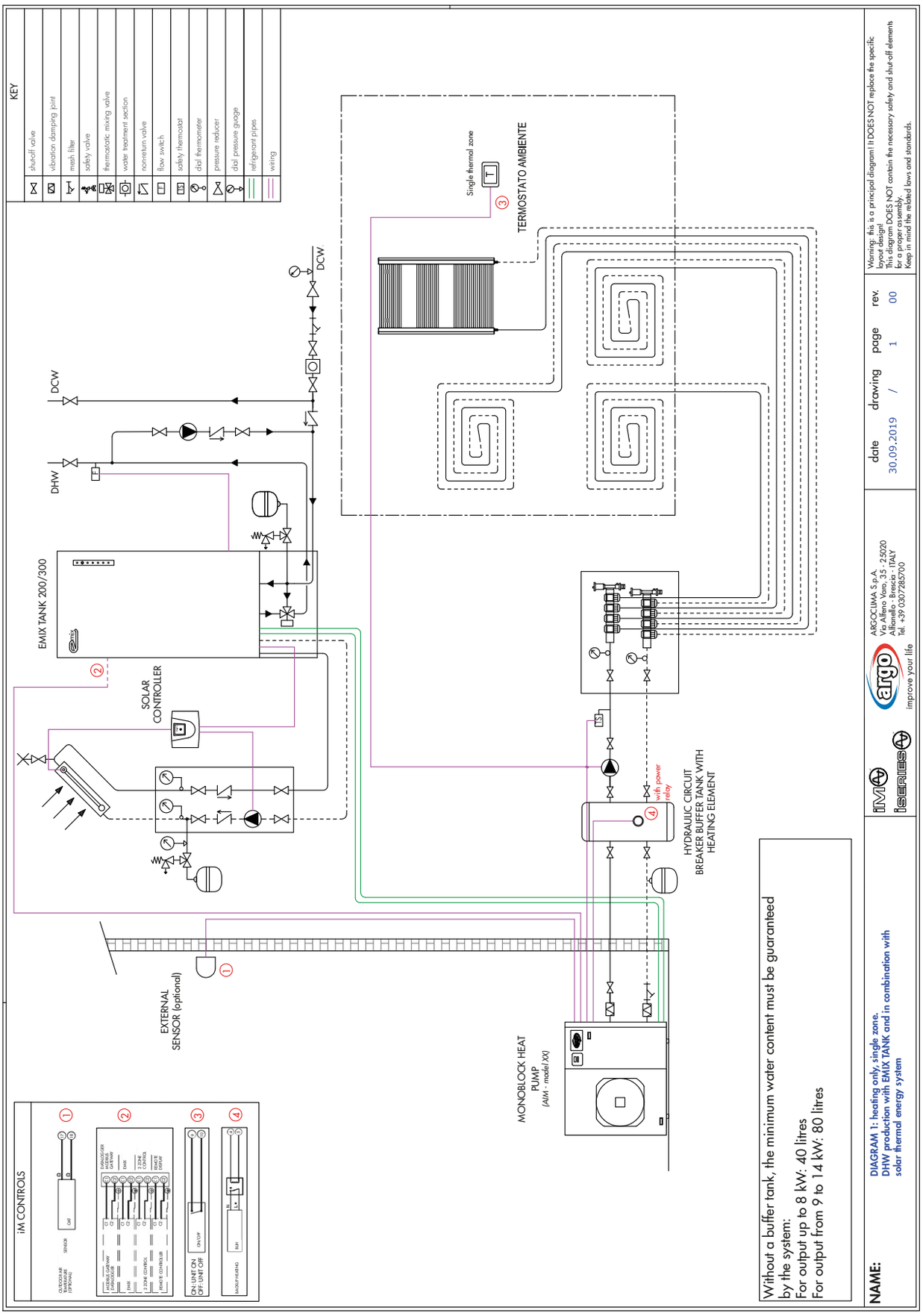


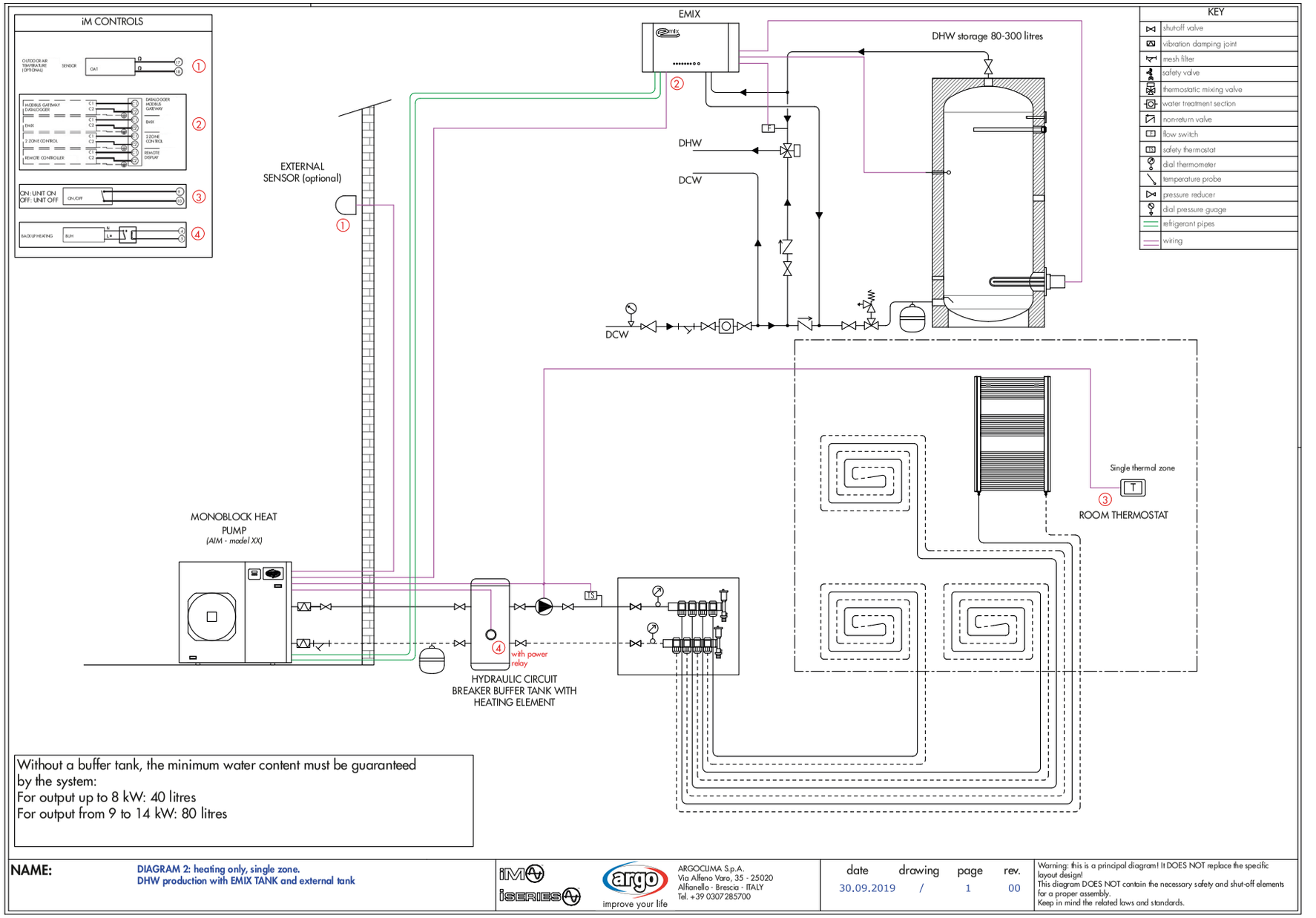






INSTALLATION EXAMPLES





Without a buffer tank, the minimum water content must be guaranteed by the system:
For output up to 8 kW: 40 litres
For output from 9 to 14 kW: 80 litres

NAME: DIAGRAM 2: heating only, single zone.
DHW production with EMIX TANK and external tank

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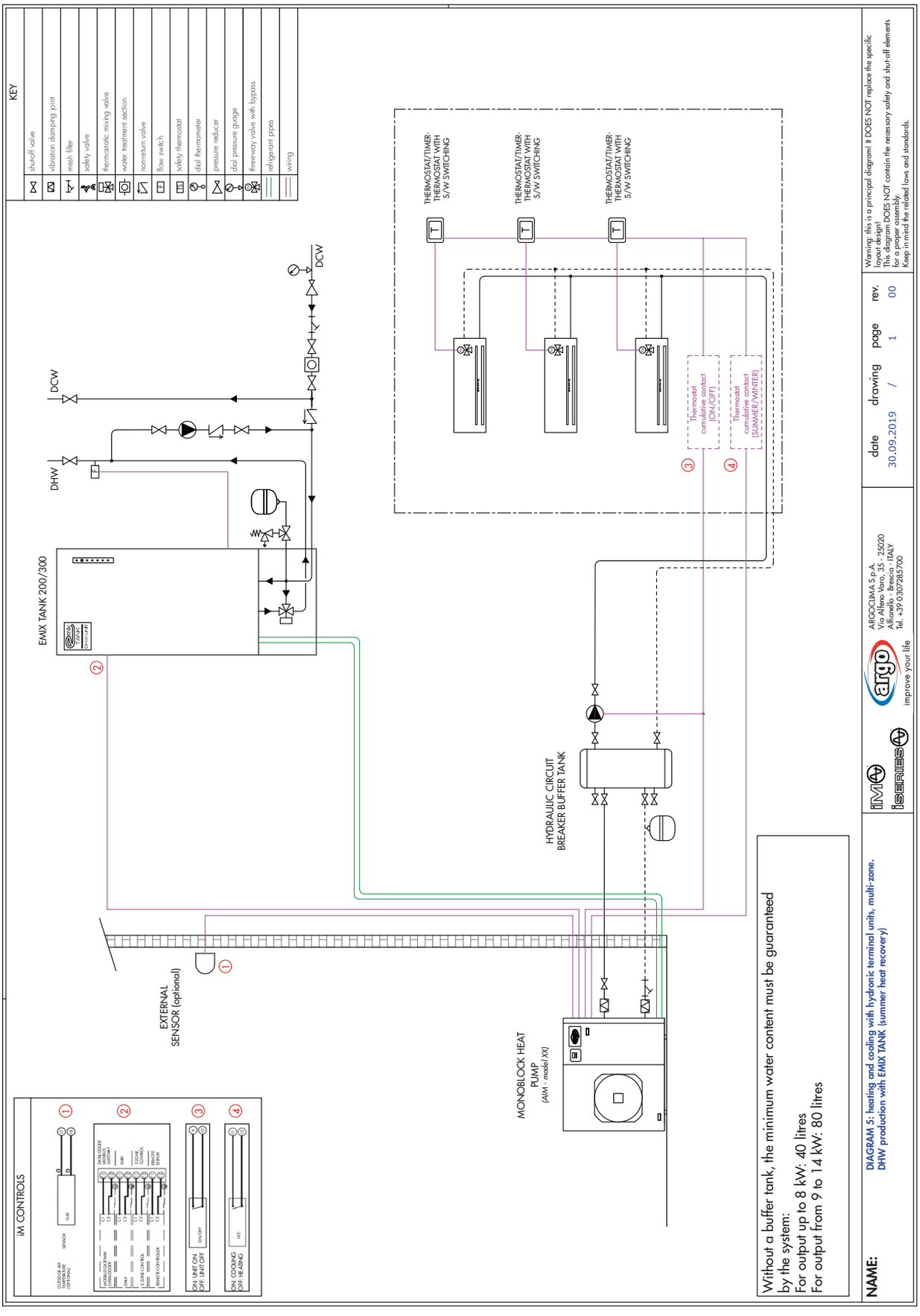
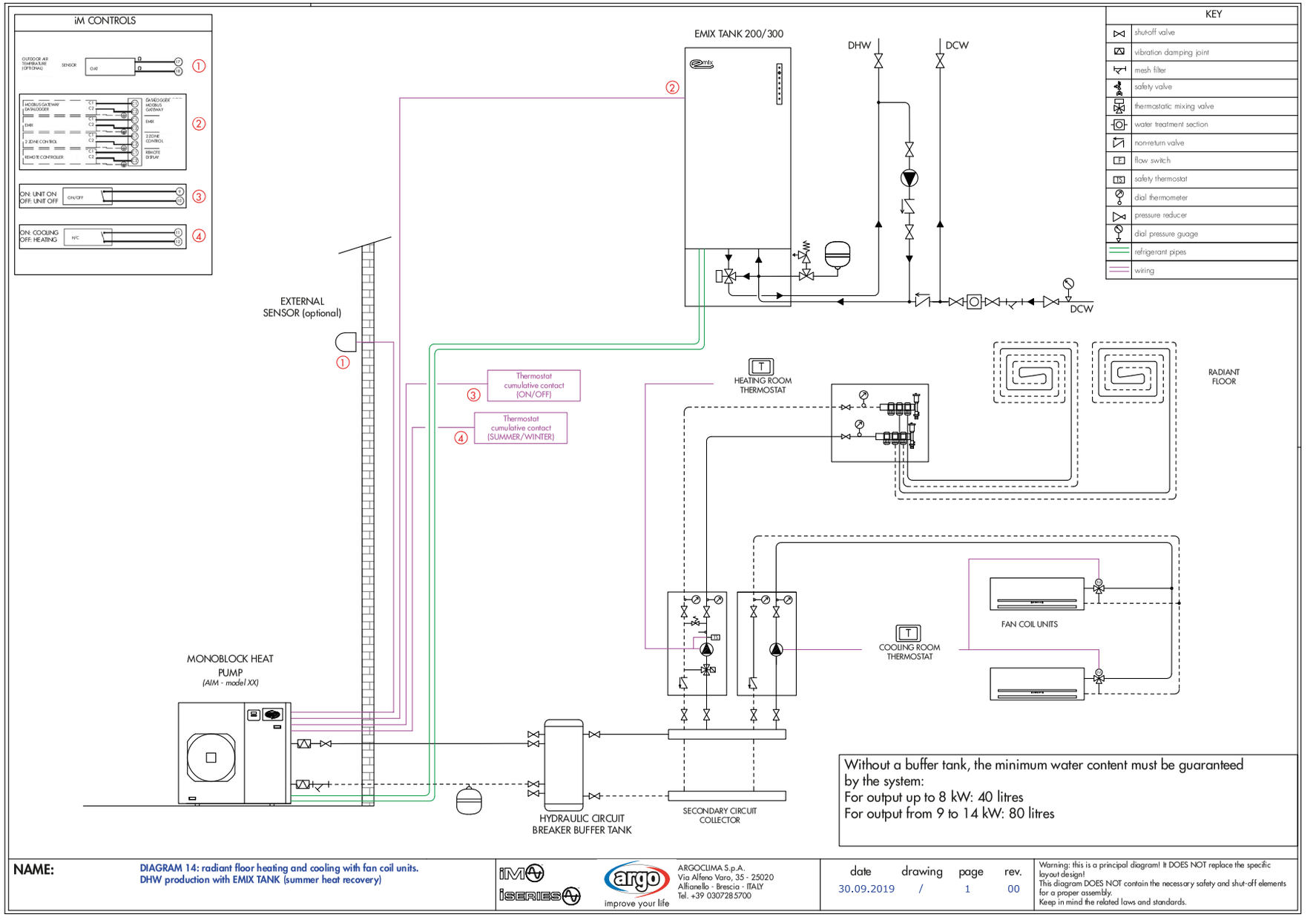
Warning: this is a principal diagram! It DOES NOT replace the specific layout design!
This diagram DOES NOT contain the necessary safety and shut-off elements for a proper assembly.
Keep in mind the related laws and standards.

INSTALLATION EXAMPLES





NAME: DIAGRAM 14: radiant floor heating and cooling with fan coil units. DHW production with EMIX TANK (summer heat recovery)

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