ECOMAXI VB

Heat pump storage water heaters for wall-mounted and floor-mounted installations

CHARACTERISTICS

The appliances in this range are capable of producing domestic hot water using heat pump technology. A heat pump can transfer thermal energy from a lower-temperature source to a higher-temperature load, and vice versa.
The appliance uses a refrigerant circuit consisting of a compressor, an evaporator, a condenser and an expansion valve; a refrigerant fluid/gas circulates within the circuit.

Available in 2 wall-mounted models with 80- and 120-litre capacities, and in 3 floor-mounted models with 200- to 300-litre capacities. Version S is supplied with an auxiliary coil and features electronic control for use in combination with solar panels.

High operating quietness.

OPERATION

Anti-legionella function
To prevent bacterial growth in the tank water, if the water temperature does not reach 70°C within a defined period (168 hours), it will be heated to 70°C once.
Note: the anti-legionella function can be activated or deactivated from the control panel.

Anti-freeze function
When the heat pump is in standby mode, if an ambient temperature ⩽ 5°C is detected, the heat pump will automatically activate to keep the tank water between 20°C and 28°C.
Note: the anti-freeze function can be activated or deactivated from the control panel.

Photovoltaic function
When the digital input is activated, the heat pump heats the water up to 65°C.
Note: the photovoltaic function can be activated or deactivated from the control panel.

Solar pump circulation function
When the solar collector temperature ⩾ 30°C and the solar collector temperature ⩾ tank water temperature +7°C, the solar pump is activated.
When the solar collector temperature is below 30°C, or the solar collector temperature is ⩾ 120°C, or the solar collector temperature is ⩽ tank water temperature +4°C, the solar pump is deactivated.
Note: the solar pump circulation function can be activated or deactivated from the control panel.

E-Anodo function
The appliance is equipped as standard with a dual anode system: an electronic anode with E-Anodo function plus a replaceable magnesium anti-corrosion anode.
Note: the E-Anodo function can be activated or deactivated from the control panel.

Wi-Fi connectivity and remote-control APP
The appliance is equipped as standard with Wi-Fi connectivity, enabling connection to the home network and remote control of the main operating parameters via APP.
Note: the Wi-Fi function can be activated or deactivated from the control panel.

CONFORMITY

This appliance is intended for domestic use or small commercial applications and complies with the following European directives:
- EN 60335-2 Directive: Safety of household and similar electrical appliances;
- Directive 2014/30/EU: Electromagnetic Compatibility (EMC);
- Directive 2014/35/EU Low Voltage Directive (LVD).

RANGE

Model	Code
ECOMAXI VB 80	8115840
ECOMAXI VB 120	8115842
ECOMAXI VB 200	8115843
ECOMAXI VB 200 S	8115846
ECOMAXI VB 300	8115844
ECOMAXI VB 300 S	8115845

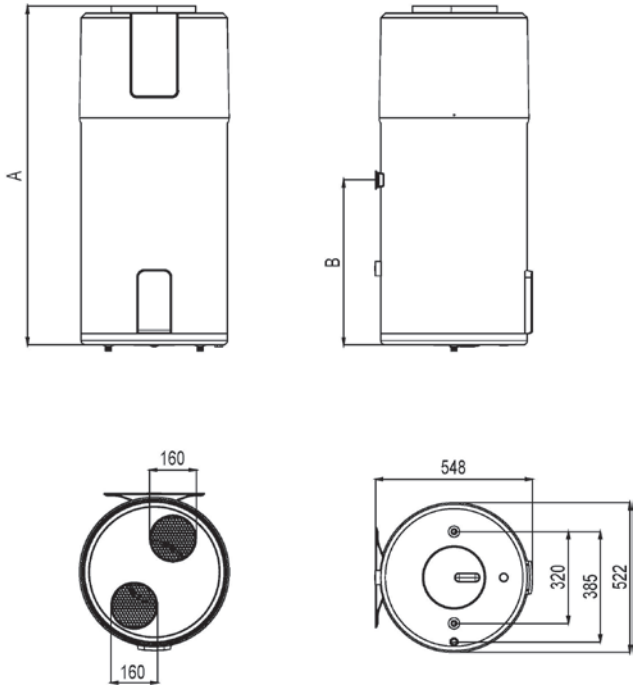
CAUTION
Any optional accessories can be ordered separately. The relevant codes and technical specifications can be found in the current price list.

ECOMAXI VB

Heat pump storage water heaters for wall-mounted and floor-mounted installations

DIMENSIONS AND WEIGHT

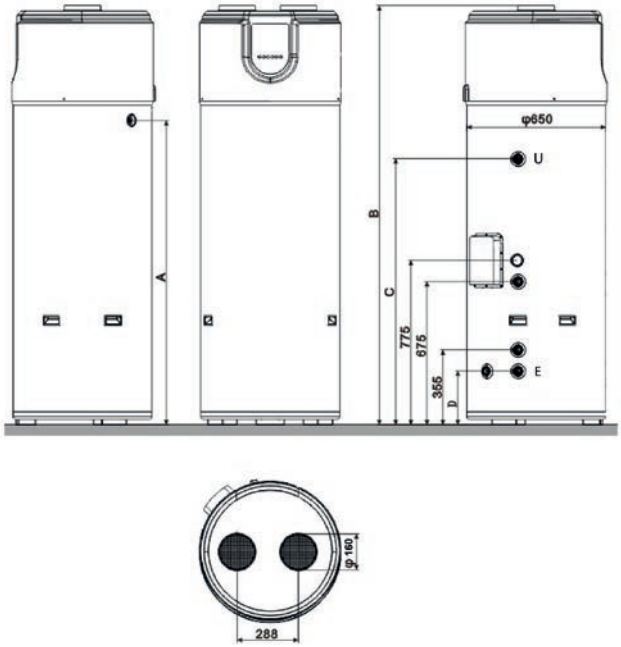
mod. 80 - 120



Model	80	120	
A	1181	1501	mm
B	575	935	mm
C	-	-	mm
D	-	-	mm
Net weight	57	67	kg
Weight with tank filled with water	137	187	kg

	Model	80	120
E	Domestic hot water inlet	1/2"	1/2"
U	Domestic hot water output	1/2"	1/2"

mod. 200 - 200 S - 300 - 300 S

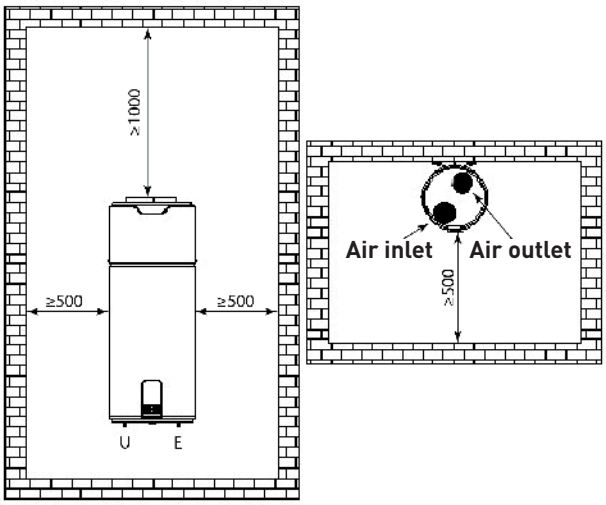


Model	200	200 S	300	300 S	
A	990	990	1430	1430	mm
B	1530	1530	1970	1970	mm
C	836	836	1250	1250	mm
D	255	255	255	255	mm
Net weight	100	110	121	136	kg
Weight with tank filled with water	300	310	421	436	kg

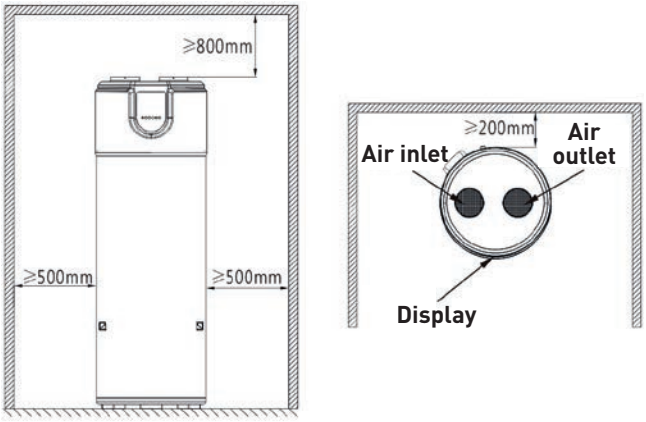
	Model	200	200 S	300	300 S
E	Domestic hot water inlet	3/4"	3/4"	3/4"	3/4"
U	Domestic hot water output	3/4"	3/4"	3/4"	3/4"

APPROXIMATE CLEARANCE MEASUREMENTS

mod. 80 - 120



mod. 200 - 200 S - 300 - 300 S



ECOMAXI VB

Heat pump storage water heaters for wall-mounted and floor-mounted installations

TECHNICAL SPECIFICATIONS

DESCRIPTION		ECOMAXI VB					
		80	120	200	200 S	300	300 S
Operating modes		Heat pump, automatic mode and boost					
Power supply		220-240V~ 50Hz					
Maximum absorbed power (in boost mode)	W	2300		2400			
Maximum input current (in boost mode)	A	10,2		10,43			
Maximum operating pressure of the refrigerant circuit (outlet side/inlet side)	MPa	2,4 / 0,6					
Thermal energy losses (Pes) at 7°C [1] / 14°C [2]		27 / 22	18 / 16	37 / 29		61 / 46	
Electrical protection class		Class I					
Nominal air flow rate	m^3/h	491		572			
Air duct: min. diam. / max. total length (inlet + outlet)		150mm / 3m		160mm / 6m			
IP degree of electrical protection		IPX1		IPX4			
Sound power level (3)	dB	58 (A)	60 (A)	58 (A)			
Net weight	kg	57	67	100		121	136
Gross weight	kg	61	75	/	/	/	/
Dimensions	mm	560*575*1230	560*575*1550	φ662x1530		φ662*1970	
HEAT PUMP							
Maximum absorbed power	W	800	800	900			
Average absorbed power of the heat pump	W	475	475	585			
Heating time	h:min	2:25	4:05	5:24		8:00	
Refrigerant		R134A					
Coolant quantity	g	540		600		650	
GWP / CO_2 tonnes		1430 / 0,77	1430 / 0,77	1430 / 0,85		1430 / 0,93	
Stated profile load		M	M	L		XL	
COPDHW		/	/	2,797 [1]	3,331 [2]	2,972 [1]	3,677 [2]
COPDHW (7/6°C)		2,45	2,45	/	/	/	/
COPDHW (14/13°C)		2,77	2,89	/	/	/	/
Mixed water at 40°C	l	79	135	243,7 [1]	247,1 [2]	403,8 [1]	398,4 [2]
Energy efficiency	%	/	/	117,7 [1]	139,6 [2]	125,5 [1]	154,7 [2]
Energy efficiency (7/6°C)	%	104,7%	102,1%	/	/	/	/
Energy efficiency (14/13°C)	%	117,6%	121,0%	/	/	/	/
Energy efficiency class		A+	A+	A+ [1]	A+ [2]	A+ [1]	A+ [2]
Annual electrical consumption	kWh	/	/	870 [1]	733 [2]	1335 [1]	1083 [2]
Maximum outlet water temperature	°C	65°C (default setting 50°C)		65°C (default setting 52°C)			
Operating temperature range	°C	-7 ~ +43					
ELECTRIC HEATING							
Rated absorbed power	W	1500					
Maximum outlet water temperature	°C	75					
STORAGE TANK							
Effective capacity	l	80	120	200	200	301	303
Maximum operating pressure	MPa	0,8		1			
Water inlet/outlet		DN15		DN20			
Solar energy inlet/outlet		/	/	/	/	DN20	
INSULATION							
Material		245fa polyurethane					
Thickness	mm	50					

[1] Performance conditions: ambient air 7°C DB / 6°C WB, inlet/final water temperature 10°C / 52°C, according to EN 16147:2017, (EU) No 814/2013.

[2] Performance conditions: ambient air 14°C DB / 13°C WB, inlet/final water temperature 10°C / 52°C, according to EN 16147:2017, (EU) No 814/2013.

[3] Sound power level tested with air duct, according to EN 12102-1:2017, ISO 3744:2010.

EU REGULATION 812/2013 PRODUCT DATA SHEETS

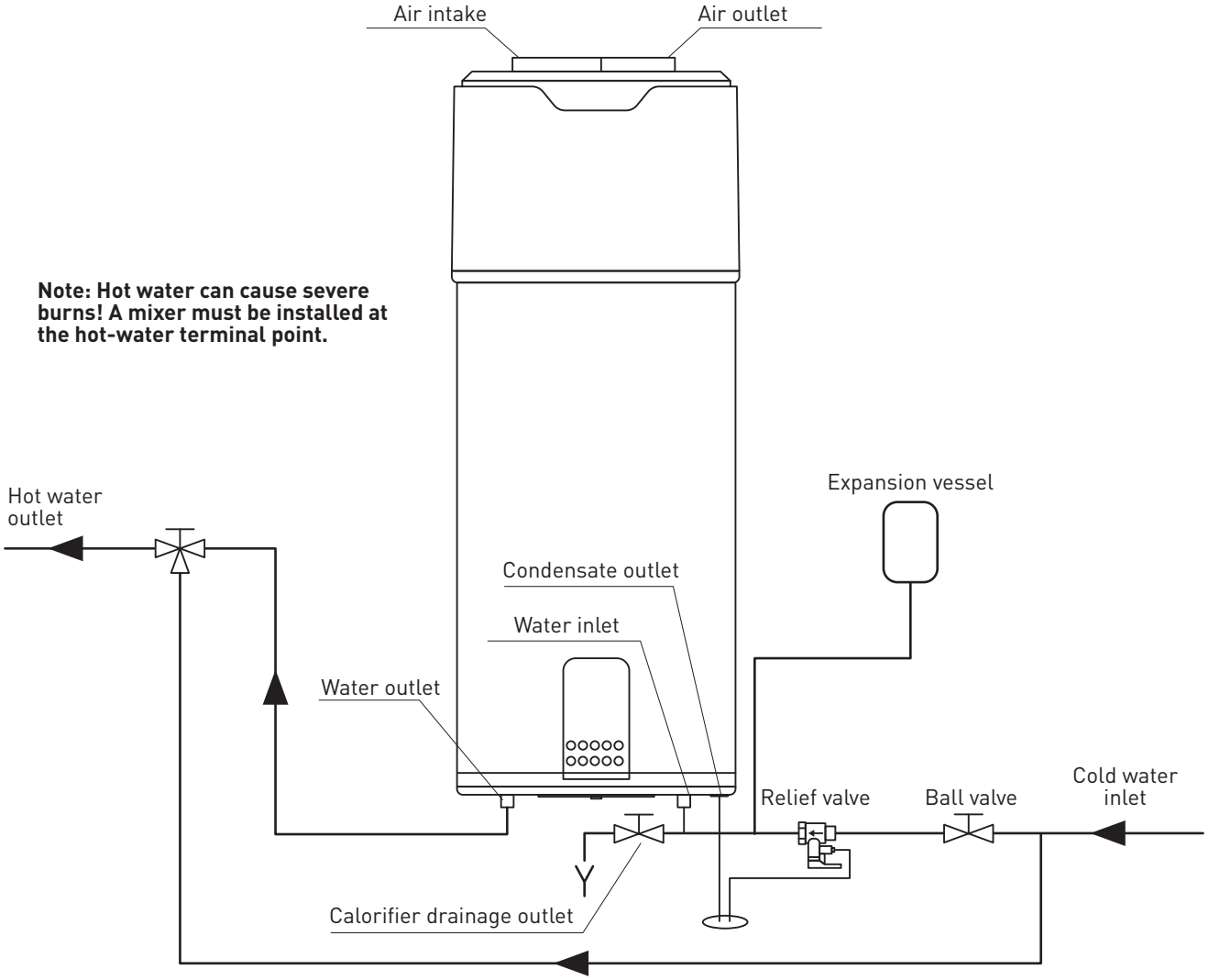
DESCRIPTION		ECOMAXI VB					
		80	120	200	200 S	300	300 S
Stated profile load		M		L		XL	
Water heating energy efficiency class		A +					
Thermostat temperature setting	°C	50		52			
Indoor sound power level LWA	dB(A)	58	60	58			
Installation and maintenance precautions		For installation and maintenance instructions, refer to the dedicated chapters in the user-installer manual					
WATER HEATING ENERGY EFFICIENCY							
Indoor air +20°C		N/A					
warmer climate conditions (+14°C)	%	117,6	121	139,6		154,7	
average climate conditions (+7°C)	%	104,7	102,1	117,7		125,5	
colder climate conditions (+2°C)	%	86,1	74,5	114,4			
ANNUAL ENERGY CONSUMPTION (FINAL ENERGY)							
Indoor air +20°C		N/A					
warmer climate conditions (+14°C)	kWh	437	424	733		1083	
average climate conditions (+7°C)	kWh	490	503	870		1335	
colder climate conditions (+2°C)	kWh	597	690	895		1467	

EU REGULATION 814/2013 TECHNICAL PARAMETERS

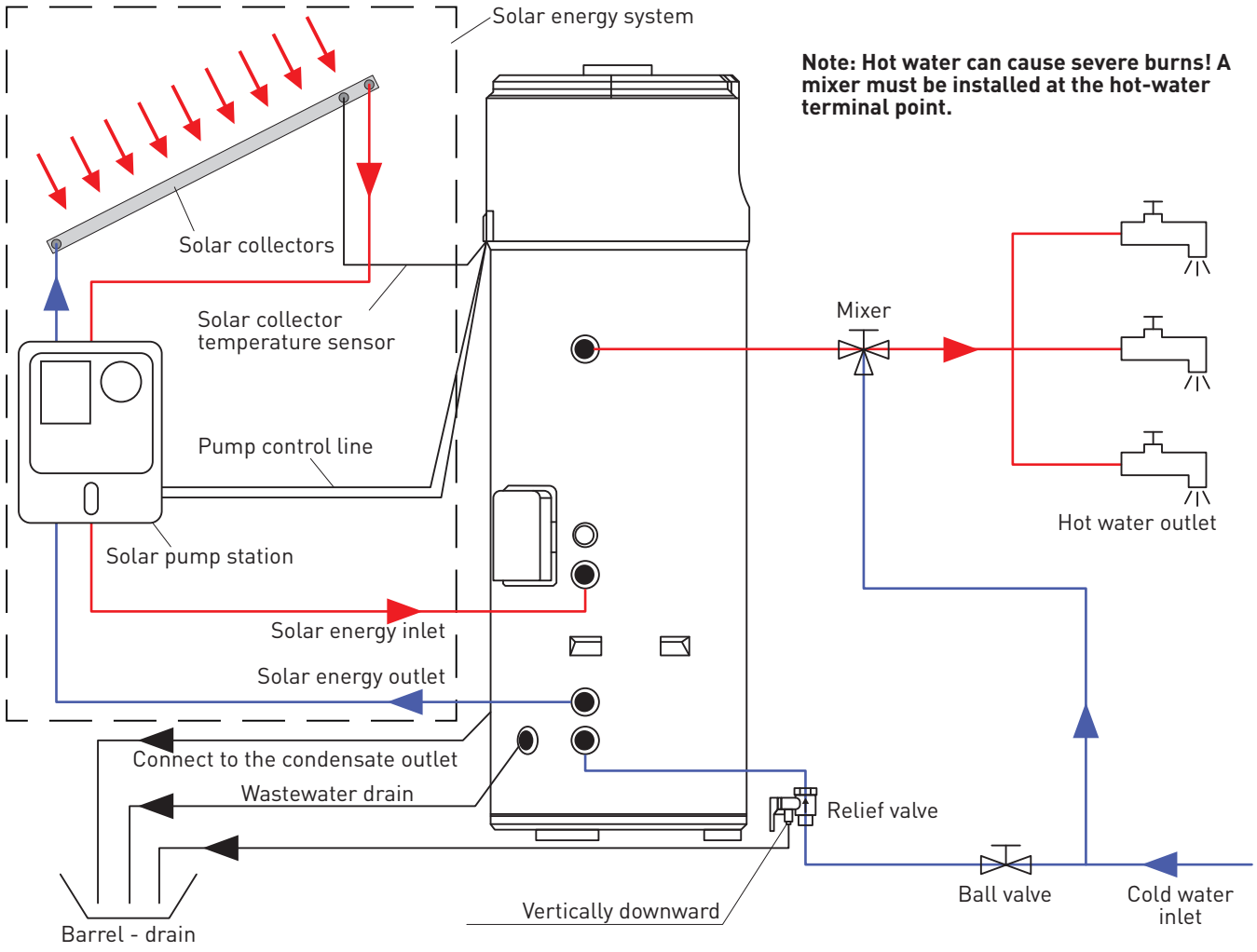
DESCRIPTION		ECOMAXI VB					
		80	120	200	200 S	300	300 S
Stated profile load		M		L		XL	
Indoor sound power level	dB(A)	58	60	58			
Mixed water at 40°C V40	l	79	135	243		404	
DAILY ELECTRICITY CONSUMPTION QELEC							
Indoor air +20°C		N/A					
warmer climate conditions (+14°C)	kWh	2110	2020	3507		5186	
average climate conditions (+7°C)	kWh	2383	2389	4177		6417	
colder climate conditions (+2°C)	kWh	2821	3339	4212		6855	
WATER HEATING ENERGY EFFICIENCY							
Indoor air +20°C		N/A					
warmer climate conditions (+14°C)	%	117,6	121	139,6		154,7	
average climate conditions (+7°C)	%	104,7	102,1	117,7		125,5	
colder climate conditions (+2°C)	%	86,1	74,5	114,4		114,4	

MAIN HYDRAULIC CIRCUITS

mod. 80 - 120



mod. 200 - 200 S - 300 - 300 S



HEAT OUTPUT/COP

The diagrams below show the instantaneous heat output delivered by the heat pump to the water as the outdoor temperature changes. The air temperature refers to the dry bulb value, while the wet bulb value follows the relationship specified in EN 14511-4:2018. The curves represent different outlet water temperatures (45/55/65°C) and a single inlet temperature (15°C).

ECOMAXI VB 80												
AIR TEMP. - DRY BULB TEMP. [°C]		**-5**	**0**	**5**	**7**	**15**	**20**	**25**	**30**	**35**	**40**	**43**
Inlet temp. = 15°C Outlet temp. = 45°C	Pt [W]	799	968	1229	1291	1721	1967	2151	2397	2581	2704	2765
	Pa [W]	340	329	324	329	376	396	402	427	449	460	460
	COP [-]	2,35	2,94	3,79	3,92	4,57	4,96	5,36	5,62	5,75	5,88	6,01
Inlet temp. = 15°C Outlet temp. = 55°C	Pt [W]	983	1060	1229	1291	1690	1905	2120	2366	2520	2612	2673
	Pa [W]	398	399	391	402	417	443	480	500	524	560	579
	COP [-]	2,47	2,66	3,14	3,21	4,05	4,3	4,42	4,73	4,81	4,66	4,62
Inlet temp. = 15°C Outlet temp. = 65°C	Pt [W]	992	1080	1137	1197	1576	1781	1985	2219	2335	2394	2452
	Pa [W]	444	458	425	419	454	448	500	511	523	508	507
	COP [-]	2,23	2,36	2,68	2,85	3,48	3,97	3,97	4,34	4,47	4,72	4,84

ECOMAXI VB 120												
AIR TEMP. - DRY BULB TEMP. [°C]		**-5**	**0**	**5**	**7**	**15**	**20**	**25**	**30**	**35**	**40**	**43**
Inlet temp. = 15°C Outlet temp. = 45°C	Pt [W]	780	945	1200	1260	1680	1920	2100	2340	2520	2640	2700
	Pa [W]	328	318	313	318	363	382	387	411	433	444	444
	COP [-]	2,38	2,98	3,84	3,97	4,63	5,03	5,42	5,69	5,82	5,95	6,08
Inlet temp. = 15°C Outlet temp. = 55°C	Pt [W]	960	1035	1200	1260	1650	1860	2070	2310	2460	2550	2610
	Pa [W]	382	383	380	387	402	426	460	481	503	538	559
	COP [-]	2,51	2,7	3,16	3,26	4,1	4,37	4,5	4,8	4,89	4,74	4,67
Inlet temp. = 15°C Outlet temp. = 65°C	Pt [W]	969	1055	1110	1169	1539	1739	1938	2166	2280	2337	2394
	Pa [W]	428	442	409	404	437	432	482	493	504	489	489
	COP [-]	2,26	2,39	2,71	2,89	3,52	4,02	4,02	4,4	4,52	4,77	4,9

ECOMAXI VB 200												
AIR TEMP. - DRY BULB TEMP. [°C]		**-5**	**0**	**5**	**7**	**15**	**20**	**25**	**30**	**35**	**40**	**43**
Inlet temp. = 15°C Outlet temp. = 45°C	Pt [W]	1153	1397	1775	1863	2484	2839	3105	3460	3727	3904	3993
	Pa [W]	489	474	467	474	542	571	578	615	647	663	663
	COP [-]	2,36	2,95	3,8	3,93	4,58	4,98	5,37	5,63	5,76	5,89	6,02
Inlet temp. = 15°C Outlet temp. = 55°C	Pt [W]	1420	1531	1775	1863	2440	2751	3061	3416	3638	3771	3860
	Pa [W]	542	541	531	546	595	640	693	722	756	809	843
	COP [-]	2,62	2,83	3,34	3,41	4,1	4,3	4,42	4,73	4,81	4,66	4,58
Inlet temp. = 15°C Outlet temp. = 65°C	Pt [W]	1433	1559	1641	1728	2276	2571	2866	3203	3372	3456	3540
	Pa [W]	640	660	612	604	653	646	720	736	753	731	730
	COP [-]	2,24	2,36	2,68	2,86	3,48	3,98	3,98	4,35	4,48	4,73	4,85

ECOMAXI VB 200 S												
AIR TEMP. - DRY BULB TEMP. [°C]		**-5**	**0**	**5**	**7**	**15**	**20**	**25**	**30**	**35**	**40**	**43**
Inlet temp. = 15°C Outlet temp. = 45°C	Pt [W]	1153	1397	1775	1863	2484	2839	3105	3460	3727	3904	3993
	Pa [W]	489	474	467	474	542	571	578	615	647	663	663
	COP [-]	2,36	2,95	3,8	3,93	4,58	4,98	5,37	5,63	5,76	5,89	6,02
Inlet temp. = 15°C Outlet temp. = 55°C	Pt [W]	1420	1531	1775	1863	2440	2751	3061	3416	3638	3771	3860
	Pa [W]	542	541	531	546	595	640	693	722	756	809	843
	COP [-]	2,62	2,83	3,34	3,41	4,1	4,3	4,42	4,73	4,81	4,66	4,58
Inlet temp. = 15°C Outlet temp. = 65°C	Pt [W]	1433	1559	1641	1728	2276	2571	2866	3203	3372	3456	3540
	Pa [W]	640	660	612	604	653	646	720	736	753	731	730
	COP [-]	2,24	2,36	2,68	2,86	3,48	3,98	3,98	4,35	4,48	4,73	4,85

ECOMAXI VB 300												
AIR TEMP. - DRY BULB TEMP. [°C]		**-5**	**0**	**5**	**7**	**15**	**20**	**25**	**30**	**35**	**40**	**43**
Inlet temp. = 15°C Outlet temp. = 45°C	Pt [W]	1116	1352	1716	1802	2403	2746	3004	3347	3604	3776	3862
	Pa [W]	493	478	470	478	546	574	582	619	651	667	667
	COP [-]	2,26	2,83	3,65	3,77	4,4	4,78	5,16	5,41	5,54	5,66	5,79
Inlet temp. = 15°C Outlet temp. = 55°C	Pt [W]	1373	1480	1716	1802	2360	2660	2961	3304	3519	3647	3733
	Pa [W]	563	561	550	567	605	641	693	725	758	811	845
	COP [-]	2,44	2,64	3,12	3,18	3,9	4,15	4,27	4,56	4,64	4,5	4,42
Inlet temp. = 15°C Outlet temp. = 65°C	Pt [W]	1386	1508	1588	1671	2201	2487	2772	3098	3261	3343	3424
	Pa [W]	644	664	616	608	658	650	725	741	758	736	735
	COP [-]	2,15	2,27	2,58	2,75	3,35	3,82	3,82	4,18	4,3	4,54	4,66

ECOMAXI VB 300 S												
AIR TEMP. - DRY BULB TEMP. [°C]		**-5**	**0**	**5**	**7**	**15**	**20**	**25**	**30**	**35**	**40**	**43**
Inlet temp. = 15°C Outlet temp. = 45°C	Pt [W]	1116	1352	1716	1802	2403	2746	3004	3347	3604	3776	3862
	Pa [W]	493	478	470	478	546	574	582	619	651	667	667
	COP [-]	2,26	2,83	3,65	3,77	4,4	4,78	5,16	5,41	5,54	5,66	5,79
Inlet temp. = 15°C Outlet temp. = 55°C	Pt [W]	1373	1480	1716	1802	2360	2660	2961	3304	3519	3647	3733
	Pa [W]	563	561	550	567	605	641	693	725	758	811	845
	COP [-]	2,44	2,64	3,12	3,18	3,9	4,15	4,27	4,56	4,64	4,5	4,42
Inlet temp. = 15°C Outlet temp. = 65°C	Pt [W]	1386	1508	1588	1671	2201	2487	2772	3098	3261	3343	3424
	Pa [W]	644	664	616	608	658	650	725	741	758	736	735
	COP [-]	2,15	2,27	2,58	2,75	3,35	3,82	3,82	4,18	4,3	4,54	4,66

REHEAT TIMES

The reheat times shown below are indicative and may vary.
The data are derived from internal laboratory tests based on uniform tank temperature reheat according to EN16147.

		ECOMAXI VB							
		80		120		200 - 200 S		300 - 300 S	
		Water 10 -> 55°C EN16147							
		-	with heating element activated	-	with heating element activated	-	with heating element activated	-	with heating element activated
Air 20°C	[h:min]	01:54	00:56	03:14	01:37	05:14	02:37	05:42	02:51
Air 15°C	[h:min]	01:56	00:58	03:20	01:40	05:24	02:42	05:54	02:57
Air 7°C	[h:min]	02:24	01:12	03:56	01:58	04:01	02:00	08:11	04:05

SCOP VALUES FOR HEAT PUMP WATER HEATERS

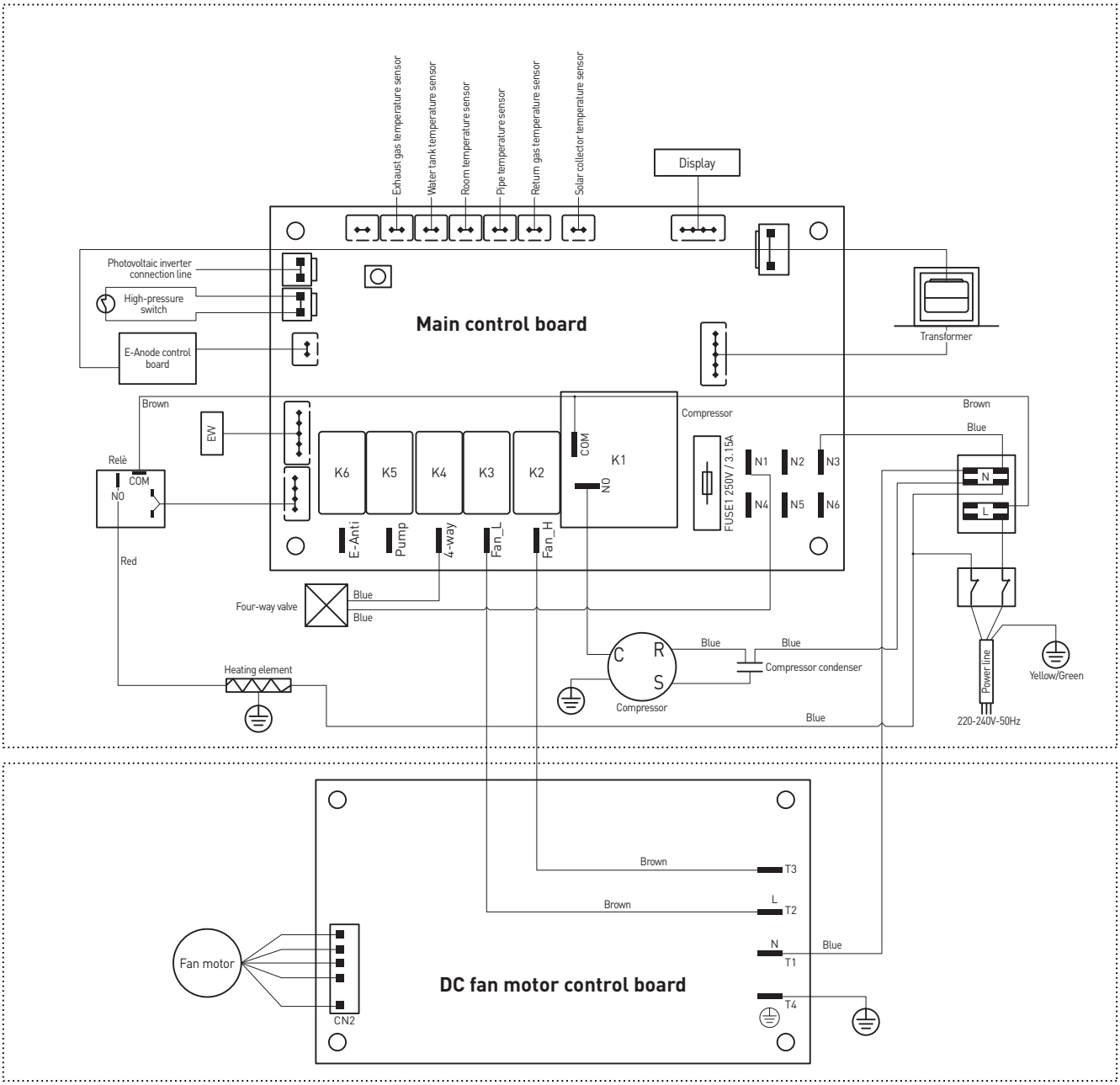
Below are the SCOPDHW values, as defined in UNI EN 16147:2017, section 7.14.2, for products in the series **ECOMAXI VB**. The reported data were obtained through simulations and computer calculations based on the actual measured values (7 and 14°C).

MODEL NAME	ECOMAXI VB			
	80	120	200 - 200 S	300 - 300 S
Load profile				
SCOPDHW @7 °C *	2,45	2,45	2,8	2,97
SCOPDHW @14 °C **	2,77	2,89	3,33	3,68
SCOPDHW @15 °C **	2,79	2,91	3,35	3,72
SCOPDHW @16 °C **	2,85	2,97	3,42	3,79
SCOPDHW @17 °C **	2,9	3,03	3,48	3,87
SCOPDHW @18 °C **	2,96	3,08	3,55	3,94
SCOPDHW @19 °C **	3,01	3,14	3,62	4,02
SCOPDHW @20 °C **	3,07	3,2	3,69	4,09
SCOPDHW @21 °C **	3,12	3,26	3,75	4,17
SCOPDHW @22 °C **	3,18	3,32	3,82	4,24
SCOPDHW @23 °C **	3,24	3,38	3,89	4,32
SCOPDHW @24 °C **	3,29	3,43	3,95	4,39
SCOPDHW @25 °C **	3,35	3,49	4,02	4,46
SCOPDHW @26 °C **	3,4	3,55	4,09	4,54
SCOPDHW @27 °C **	3,43	3,58	4,12	4,58
SCOPDHW @28 °C **	3,46	3,61	4,15	4,61

[*] Measured values
[**] Calculated values

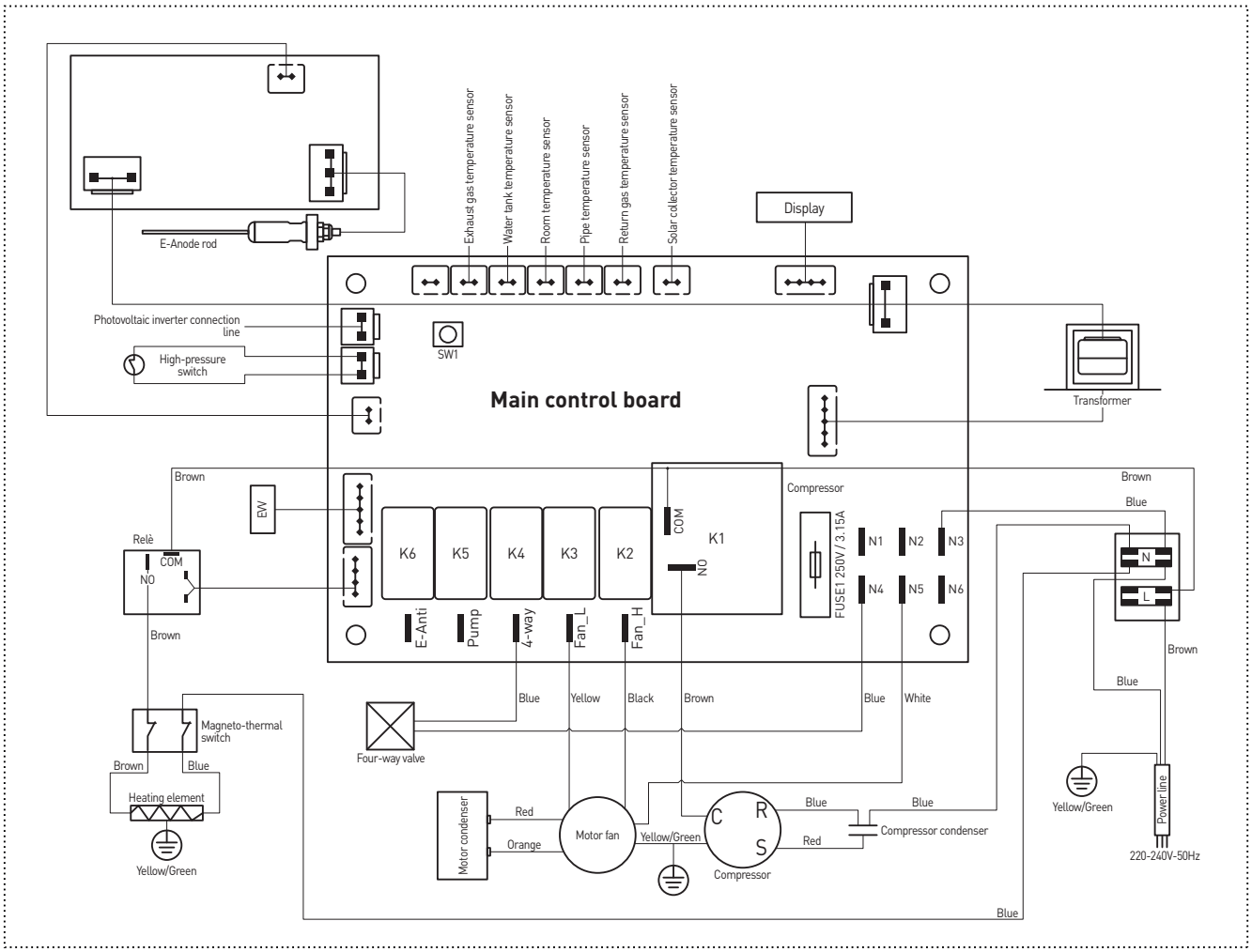
WIRING DIAGRAM

mod. 80 - 120



Error	Description
E0	Communication data transmission error
E2	Ambient temperature sensor fault
E3	Evaporator coil temperature sensor fault
E5	Water tank temperature sensor fault
E6	Outlet temperature sensor fault
E7	Inlet temperature sensor fault
E8	Solar collector temperature sensor fault
P1	High-pressure switch fault
P2	Outlet high-temperature protection
P3	E-Anodo fault

mod. 200 - 200 S - 300 - 300 S



Error	Description
E0	Communication data transmission error
E2	Ambient temperature sensor fault
E3	Evaporator coil temperature sensor fault
E5	Water tank temperature sensor fault
E6	Outlet temperature sensor fault
E7	Inlet temperature sensor fault
E8	Solar collector temperature sensor fault
P1	High-pressure switch fault
P2	Outlet high-temperature protection
P3	E-Anodo fault

TEXT FOR SPECIFICATIONS

ECOMAXI VB 80-120 -Litre models

Air-to-water heat pump water heater, gas-fired type R134A, for domestic hot water production, manufactured in vitreous enamelled steel, wall-mounted (energy efficiency class A+ according to ErP), with polyurethane foam insulation, 220-240V - 50Hz power supply, average absorbed electrical power 475 W, and 1500 W auxiliary electric heating element.
Anti-legionella function, anti-freeze function, photovoltaic function, E-Anodo function, Wi-Fi connectivity and remote-control APP.
Appliance protection rating:IPX1

The water heater is managed via a user interface that allows the operator to:
- set the operating mode;
- adjust operating parameters;
- display and manage any alarm conditions;
- check the status of system resources.

ECOMAXI VB 200-300 -Litre models

Air-to-water heat pump water heater, gas-fired type R134A, for domestic hot water production, manufactured in vitreous enamelled steel, floor-mounted (energy efficiency class A+ according to ErP), with polyurethane foam insulation, 220-240V - 50Hz power supply, average absorbed electrical power 585 W, and 1500 W auxiliary electric heating element.
Anti-legionella function, anti-freeze function, photovoltaic function, solar pump circulation function (mod. **300 S**only), E-Anodo function, Wi-Fi connectivity and remote-control APP.
Mod. **200 S** and **300 S** are equipped with an internal coil for integration with a solar thermal system; They are therefore not combinable with the control unit or solar unit with standard control unit because they are already equipped with integrated solar electronic management.
Appliance protection rating:IPX4

The water heater is managed via a user interface that allows the operator to:
- set the operating mode;
- adjust operating parameters;
- display and manage any alarm conditions;
- check the status of system resources.

NOTE