

INSTALLATION AND OPERATION MANUAL

WARM AIR HEATERS

of EBA, EBC, EBV type



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Thank you for choosing a product of **ECO CALORIA Sp. z o.o.!!!**

We are glad to have you as our customers, we believe that you will be satisfied with the use of our heaters. Following the manual and caring out of installation and maintenance by qualified staff ensures proper and safe operation of the device. Not following the manufacturer's recommendations will void the device's warranty.

Foreword

1.1 GENERAL WARNINGS

The manual is a vital, integral part of the product and must be handed over to the user.

Read the warnings contained herein as they provide important information on how to install, use and maintain the unit safely.

Keep the manual safe for future reference.

The unit must be installed in compliance with the regulations in force, following the Manufacturer's instructions, by professionally qualified personnel. By professionally qualified personnel we mean persons with specific technical competence in working with heat system components and, more specifically, Servicing Centers authorized by the Manufacturer.

Incorrect installation may result in injury to people and animals and damage to property, for which the Manufacturer is not responsible.

Once you have removed all packaging, check contents for damage.

If in any doubt, do not use the equipment, and get in touch with the supplier.

Packaging must not be left within reach of children as it is a potential source of danger.

Before commencing cleaning or maintenance work of any kind, wait for the unit to cool down, disconnect it from the power mains using the system's master switch and cut off supplies to the unit with the relevant shutoff devices fitted.

Never obstruct the intake grille protecting the fan or the heater's outlet for any reason. This can result in irreparable damage to the unit and endanger people, animals and property.

If the unit breaks down and/or malfunctions, turn it off and refrain from attempting repairs or other work yourself.

Call in professionally qualified personnel only for the job.

If products need repairing, this must be performed only by a Servicing Center authorized by the Manufacturer, using Original Spare Parts only.

Failure to comply with the above instructions may compromise the unit's safety.

It is essential to have professionally qualified personnel carry out periodic maintenance following the Manufacturer's instructions if the unit is to work properly and efficiently.

If you decide not to use the unit, all parts that may constitute a potential source of danger must be rendered harmless.

If the unit is sold or transferred to a new owner, always make sure this manual goes with the unit so that it can be consulted by the new owner and/or maintenance operative.

When replacing parts on any unit featuring accessories or kits (electrical ones included), use Original Accessories only.

This unit must be used solely for the purpose for which it was expressly intended.

Note that any other use is improper and hence dangerous.

The Manufacturer is relieved of any contractual or non-contractual liability for damage caused by incorrect installation or use, or by non-compliance with the instructions issued by the actual Manufacturer.

IMPORTANT NOTE: These units must be installed in rooms with a sufficient supply of air only, except when they feature a sealed connection. The heater's proper operation depends on the unit being installed and put into operation correctly. Failure to comply with these rules shall make the warranty void forthwith and hence relieve the Manufacturer of any liability. The unit must be installed and maintained in conformity with the regulations in force and in a thoroughly professional manner.

1.2 General features and operating modes

Seria **EB** T-series heaters, which can be fuelled with methane gas or LPG (if you choose LPG, this must be specified when placing the order), meet the heating needs of medium and large industrial and commercial facilities etc.. They come in three different versions to give the installer a solution to every need:

- **EBA** types - types suitable for installation inside the environment being heated, for direct air throw.
- **EBC** types - types suitable for installation inside the environment being heated, for delivery through ducts and outlets,
- **EBV** types - for outside use, types suitable for installation outdoors, designed for connection to delivery ducts and outlets.

A complete set of accessories can be supplied with the unit, making the product functional and flexible and, at the same time, easy to install.

ECOair heater of **EBA, EBC, EBV** type is designed so that, in winter mode, its operation is slaved to a room thermostat or remote control (accessories, not standard issue). When the thermostat is appropriately set, the flame control device triggers the burner's ignition after a purge time lasting approx. 10 seconds. The air pressure switch enables the unit's switch-on if it finds the air supply for combustion is correct. The flame detection electrode is responsible for checking whether there is actually a flame or not: if there is no flame, the unit locks out. If ignition is completed correctly, a green indicator light on the lower part of the heater comes on. As soon as the exchanger reaches its operating temperature, the fan-thermostat triggers the air delivery fan's automatic start, thus initiating the room's heating. By fitting this thermostat, we have overcome the possible problem of cold air being sent into the room. Airflow direction can be altered by adjusting the angle of the horizontal and vertical louvers. Exchanger overheating is prevented by a limit thermostat, which trips when the preset temperature of 90°C is reached, cutting off the gas valve's supply. This results in fuel being cut off to the burner, hence causing the burner to shut down also.

ECOair heater of **EBA, EBC, EBV** can also work in summer mode, just to cause air to circulate in the environment being served. This option is activated with the relevant summer-winter selector. When using programmable thermostat, this selector comes ready fitted. When using the room thermostat, however, you are required to fit an appropriate additional selector. To operate the unit in ventilation-only mode, you must leave the room thermostat set to OFF or to the lowest setting and turn the selector to summer

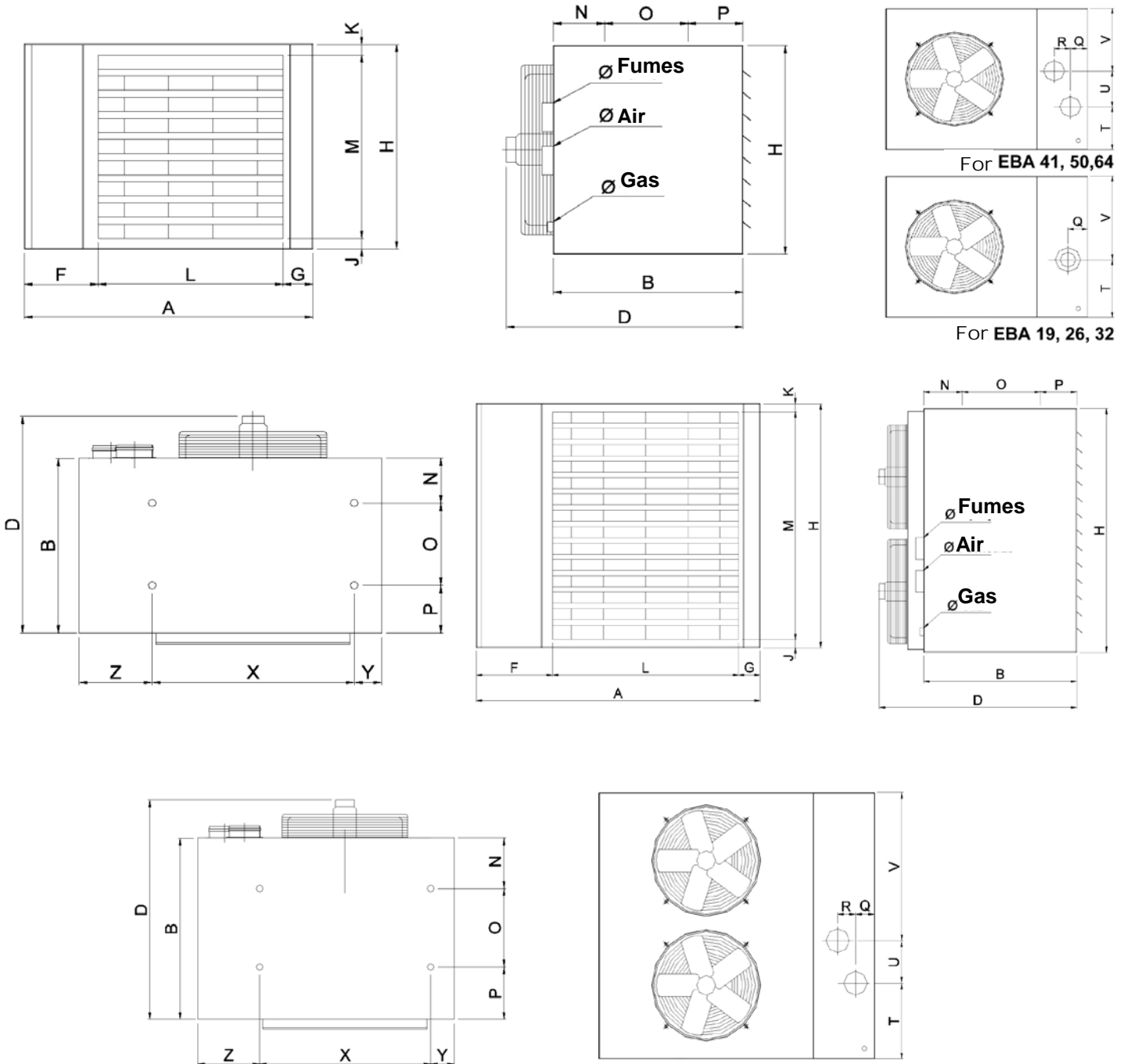
1.3 Specifications types EBA 19-86

EBA series heaters are suitable for installation inside the environment being heated. They feature a high-capacity low-noise helical fan. Two rows of adjustable slats mean direct air throw can be directed to cover an extensive target area with considerable range.



Model		EBA 19	EBA26	EBA 32	EBA 41	EBA 50	EBA 64	EBA 86								
Thermal capacity	kW	21.0	28.0	34.5	45.0	55.0	71.0	95.0								
Heat output	kW	18.9	25.2	31.5	40.5	49.5	63.9	85.5								
Efficiency	%	90	90	90	90	90	90	90								
Number of fans		1	1	1	1	1	1	2								
Air flow rate at 15 °C	m ³ /h	1450	2050	2900	4000	4900	5800	8000								
Air flow rate at 50 °C		1625	2250	3250	4400	5400	6400	8800								
Range	m	12	16	23	26	28	30	35								
Air thermal head	°C	40	36	32	30	30	32	32								
Gas flow rate at 15 °C	m ³ /h	2.22	2.96	3.70	4.76	5.82	7.40	10.00								
G 20 20 mbar									m ³ /h	2.46	3.29	4.11	5.28	6.43	8.22	11.10
G25 mbar																
G30/G31 28/37 mbar	kg/h	1.64	2.18	2.73	3.51	4.30	5.46	7.40								
Gas intake	Ø	1/2"					3/4"									
Flue gas exhaust outlet diameter	mm	80/125	80/125	80/125	100	130	130	130								
Air inlet diameter	mm				100	130	130	130								
Power supply		Single phase 230 V AC IP42														
Electric Power	W	300	310	320	350	500	580	750								
Weight	kg	82	82	90	105	127	145	185								
Sound pressure level At 6 meters in free field	dB (A)	43	46	49	51	52	53	55								

Dimensions:



	A	B	D	F	G	H	J	K	L	M	N	O	P	Q	R	T	U	V	Z	X	Y
EBA 19	1040	676,5	800	250	40	460	50	50	750	360	233,5	250	193	130	-	300	-	160	235,5	765	39,5
EBA 26	1040	676,5	800	250	40	460	50	50	750	360	233,5	250	193	130	-	300	-	160	235,5	765	39,5
EBA 32	1040	676,5	820	250	40	510	50	50	750	410	233,5	250	193	130	-	325	-	185	235,5	765	39,5
EBA 41	1040	676,5	820	250	40	570	50	50	750	470	233,5	250	193	130	0	230	140	200	235,5	765	39,5
EBA 50	1040	676,5	840	250	40	700	50	50	750	600	233,5	250	193	130	0	295	140	405	235,5	765	39,5
EBA 64	1120	676,5	840	330	40	825	50	50	750	725	233,5	250	193	135	58	240	217	365	315,5	765	39,5
EBA 86	1120	676,5	840	330	40	1120	50	50	750	1020	233,5	250	193	107	77	434	211	430	315,5	765	39,5

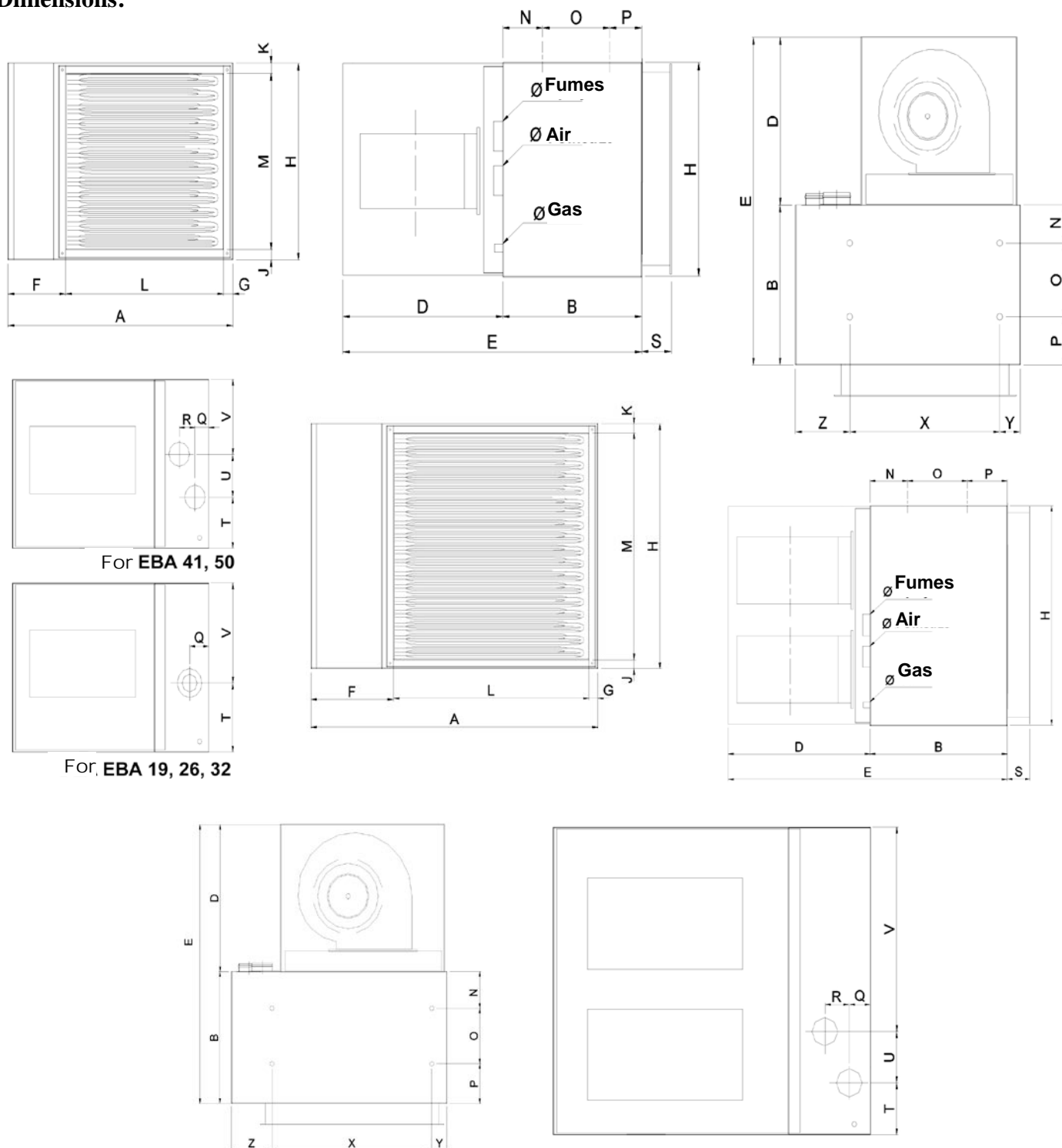
1.4 Specifications types EBC 19-86

EBC series heaters are suitable for installation indoors. They feature a high-capacity low-noise dual-intake centrifugal fan. This heater has a flange coupling for straightforward connection to a ducted delivery system. That way, air can be conveyed to where it is actually needed inside the environment served. A fan casing with return air intake grille is standard issue.



Model		EBC 19	EBC 26	EBC 32	EBC 41	EBC 50	EBC 64	EBC 86								
Thermal capacity	kW	21.0	28.0	34.5	45.0	55.0	71.0	95.0								
Heat output	kW	18.9	25.2	31.5	40.5	49.5	63.9	85.5								
Efficiency	%	90	90	90	90	90	90	90								
Number of fans		1	1	1	1	1	1	2								
Air flow rate at 15 °C	m ³ /h	1450	2050	2900	4000	4900	5800	8000								
Air flow rate at 50 °C		1625	2250	3250	4400	5400	6400	8800								
Range	m	12	16	23	26	28	30	35								
Air thermal head	°C	40	36	32	30	30	32	32								
Gas flow rate at 15 °C	m ³ /h	2.22	2.96	3.70	4.76	5.82	7.40	10.00								
G 20 20 mbar									m ³ /h	2.46	3.29	4.11	5.28	6.43	8.22	11.10
G25 mbar																
G30/G31 28/37 mbar																
Gas intake	Ø	1/2"					3/4"									
Flue gas exhaust outlet diameter	mm	80/125	80/125	80/125	100	130	130	130								
Air inlet diameter	mm				100	130	130	130								
Power supply		Single phase 230 V AC IP42														
Electric Power	W	600	600	750	1100	1470	2200	2200								
Weight	kg	97	97	105	120	147	170	215								
Sound pressure level At 6 meters in free field	dB (A)	43	46	49	51	52	53	55								

Dimensions:



For EBA 41, 50

For EBA 19, 26, 32

	A	B	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	T	U	V	Z	X	Y
EBC 19	1040	676	449	1125	250	40	460	50	50	750	360	233	250	193	130	-	300	-	160	235	765	39,5
EBC 26	1040	676	449	1125	250	40	460	50	50	750	360	233	250	193	130	-	300	-	160	235	765	39,5
EBC 32	1040	676	499	1275	250	40	510	50	50	750	410	233	250	193	130	-	325	-	185	235	765	39,5
EBC 41	1040	676	599	1275	250	40	570	50	50	750	470	233	250	193	130	0	230	140	200	235	765	39,5
EBC 50	1040	676	599	1275	250	40	700	50	50	750	600	233	250	193	130	0	295	140	405	235	765	39,5
EBC 64	1120	676	599	1275	330	40	825	50	50	750	725	233	250	193	135	58	240	217	365	315	765	39,5
EBC 86	1120	676	599	1275	330	40	1120	50	50	750	1020	233	250	193	107	77	434	211	430	315	765	39,5

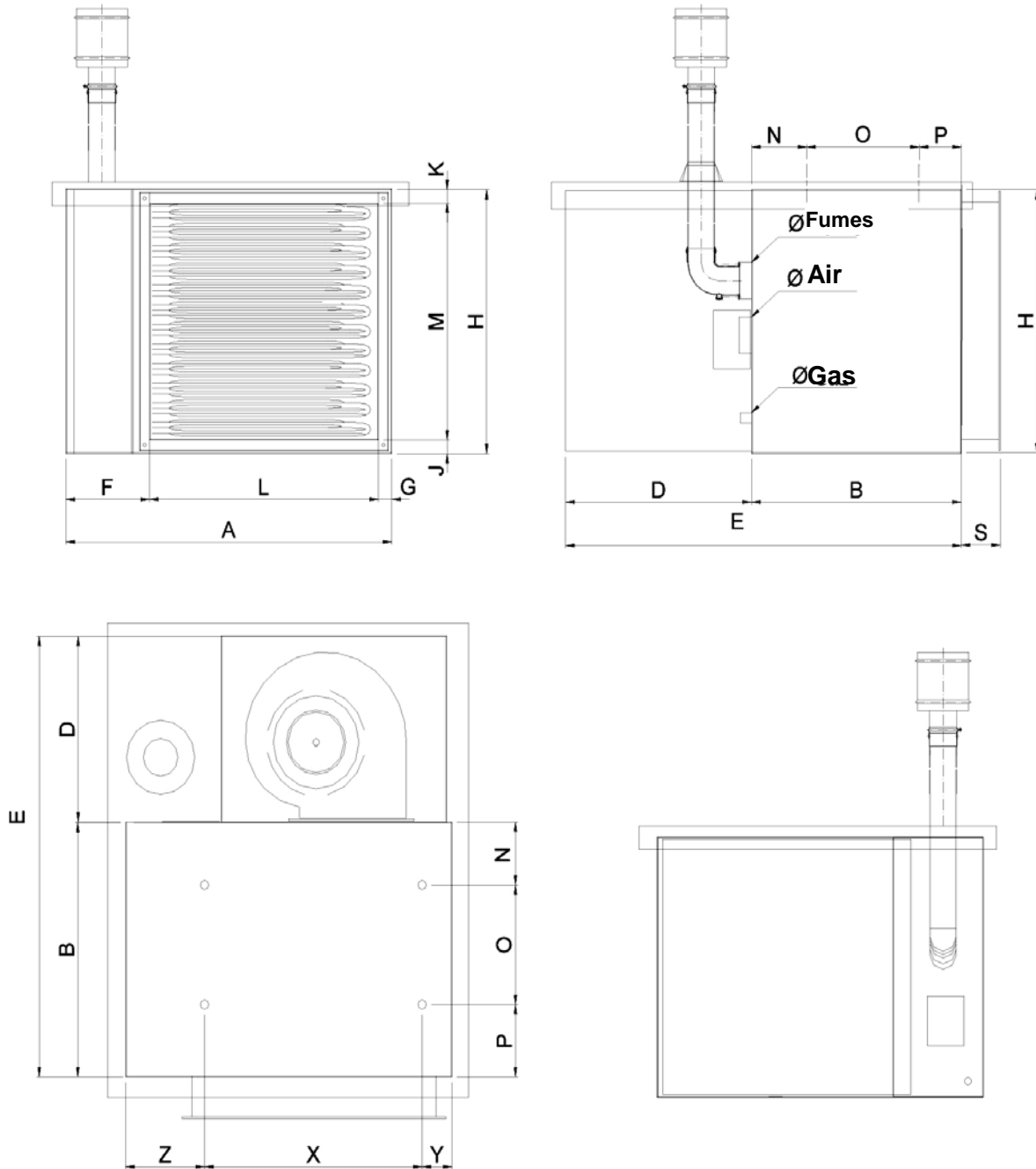
1.5 Specifications types EBV 19-86

EBV series heaters for outside use are suitable for installation outdoors. Standard-issue models come with a rainshield and sealed intake/exhaust kit and feature a high-capacity low-noise dual-intake centrifugal fan. This heater has a flange coupling for straightforward connection to a ducted delivery system, essential for passing through the outside wall of the room heated. That way, air can be conveyed to where it is actually needed inside the environment served. A fan casing with return air intake grille is standard issue.



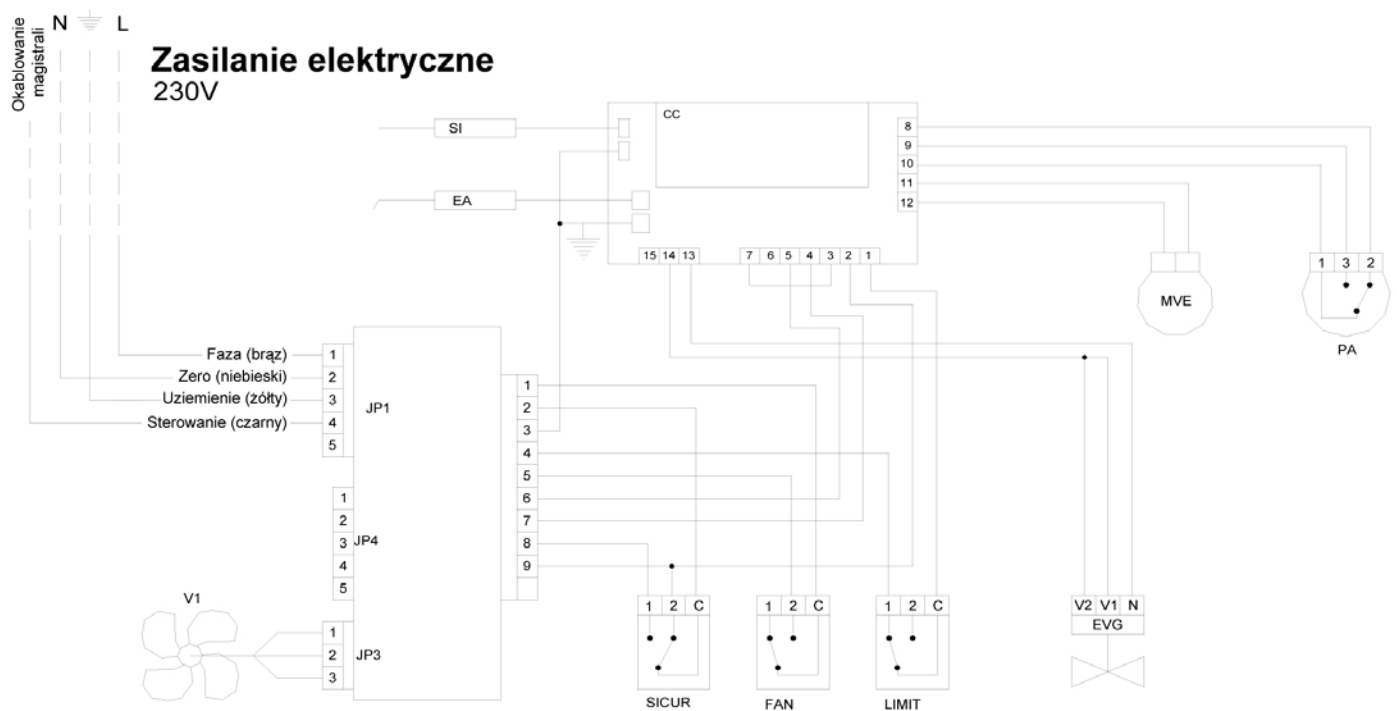
Model		EBV 19	EBV 26	EBV 32	EBV 41	EBV 50	EBV 64	EBV 86	
Thermal capacity	kW	21.0	28.0	34.5	45.0	55.0	71.0	95.0	
Heat output	kW	18.9	25.2	31.5	40.5	49.5	63.9	85.5	
Efficiency	%	90	90	90	90	90	90	90	
Number of fans		1	1	1	1	1	1	2	
Air flow rate at 15 °C	m ³ /h	1450	2050	2900	4000	4900	5800	8000	
Air flow rate at 50 °C		1625	2250	3250	4400	5400	6400	8800	
Range	m	12	16	23	26	28	30	35	
Air thermal head	°C	40	36	32	30	30	32	32	
Gas flow rate at 15 °C	m ³ /h	2.22	2.96	3.70	4.76	5.82	7.40	10.00	
G 20 20 mbar	m ³ /h	2.46	3.29	4.11	5.28	6.43	8.22	11.10	
G25 mbar	kg/h	1.64	2.18	2.73	3.51	4.30	5.46	7.40	
G30/G31 28/37 mbar									
Gas intake	Ø	1/2"					3/4"		
Flue gas exhaust outlet diameter	mm	80/125	80/125	80/125	100	130	130	130	
Air inlet diameter	mm				100	130	130	130	
Power supply		Jedna faza 230 V AC IP42							
Electric Power	W	600	600	750	1100	1470	2200	2200	
Weight	kg	97	97	105	120	147	170	215	
Sound pressure level At 6 meters in free field	dB (A)	43	46	49	51	52	53	55	

Dimensions:



	A	B	D	F	G	H	J	K	L	M	N	O	P	Z	X	Y
EBV 19-26	1040	676	800	250	40	500	50	100	750	360	233	250	193	235	765	39.5
EBV 32	1040	676	820	250	40	550	50	100	750	410	233	250	193	235	765	39.5
EBV 41	1040	676	820	250	40	610	50	100	750	470	233	250	193	235	765	39.5
EBV 50	1040	676	840	250	40	740	50	100	750	600	233	250	193	235	765	39.5
EBV 64	1120	676	840	330	40	865	50	100	750	725	233	250	193	315	765	39.5
EBV 86	1120	676	840	330	40	1170	50	100	750	1020	233	250	193	315	765	39.5

1.6 WIRING DIAGRAM EBA



In the model IHP T 95 the cooling fans (V1) are two.

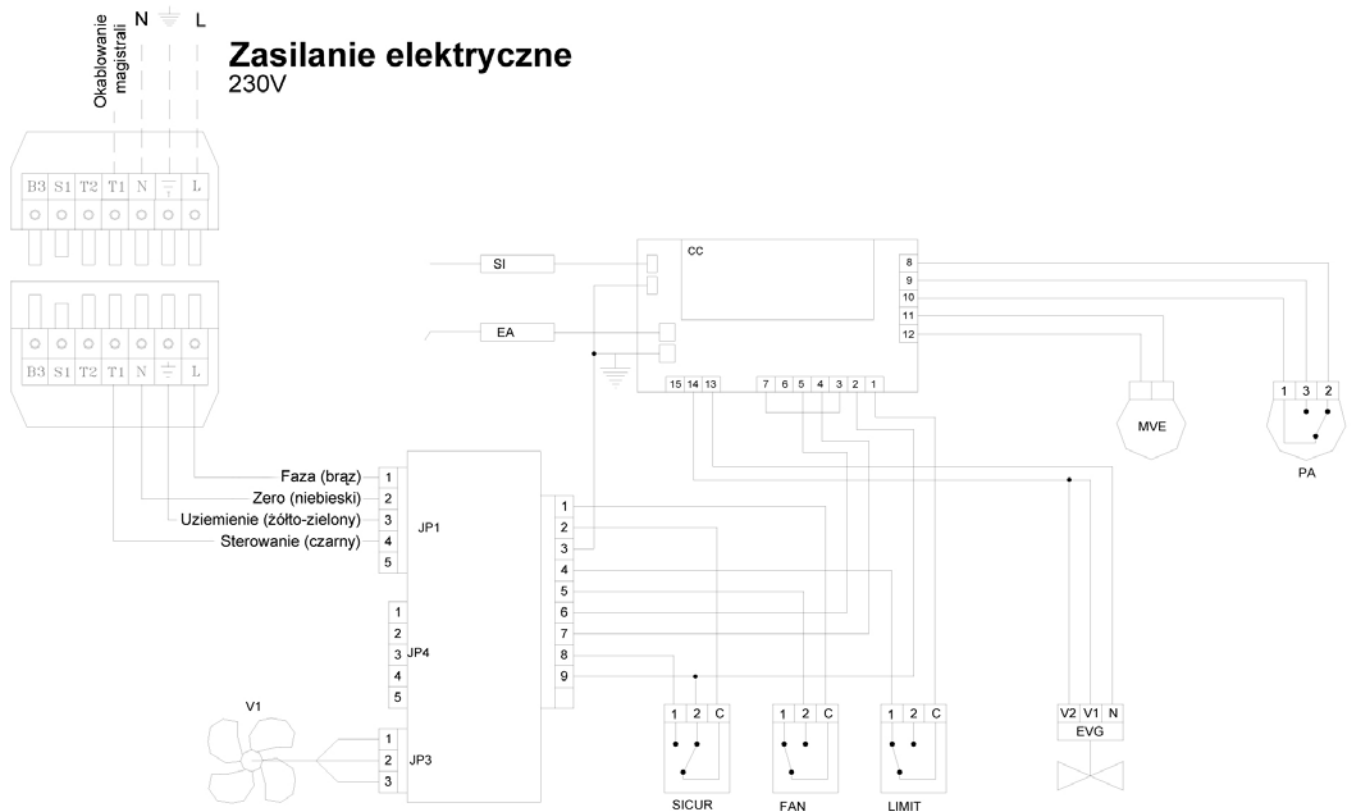
Note:

1 Press the button only once to reset the equipment (do not keep the button pressed for more than 5 seconds).

Legenda:

- EGV** – Gas solenoid valve
- V1** – Air delivery fan
- MVE** – Flue gas exhaust fan
- SI** – Ionization probe
- FAN** – Fan thermostat
- Reset** – Burner reset
- EA** – Ignition electrode
- SICUR** – Manual reset safety thermistat
- E/I** – Cooling/heating selector
- CC** – Flame control unit
- LIMIT** – Limit or control thermostat
- TA** – Room thermostat
- RFP** – Electronic board
- PA** – Burner air pressure-switch

1.7 WIRING DIAGRAM EBC, EBV 19-50



In the model IHP T 95 the cooling fans (V1) are two.

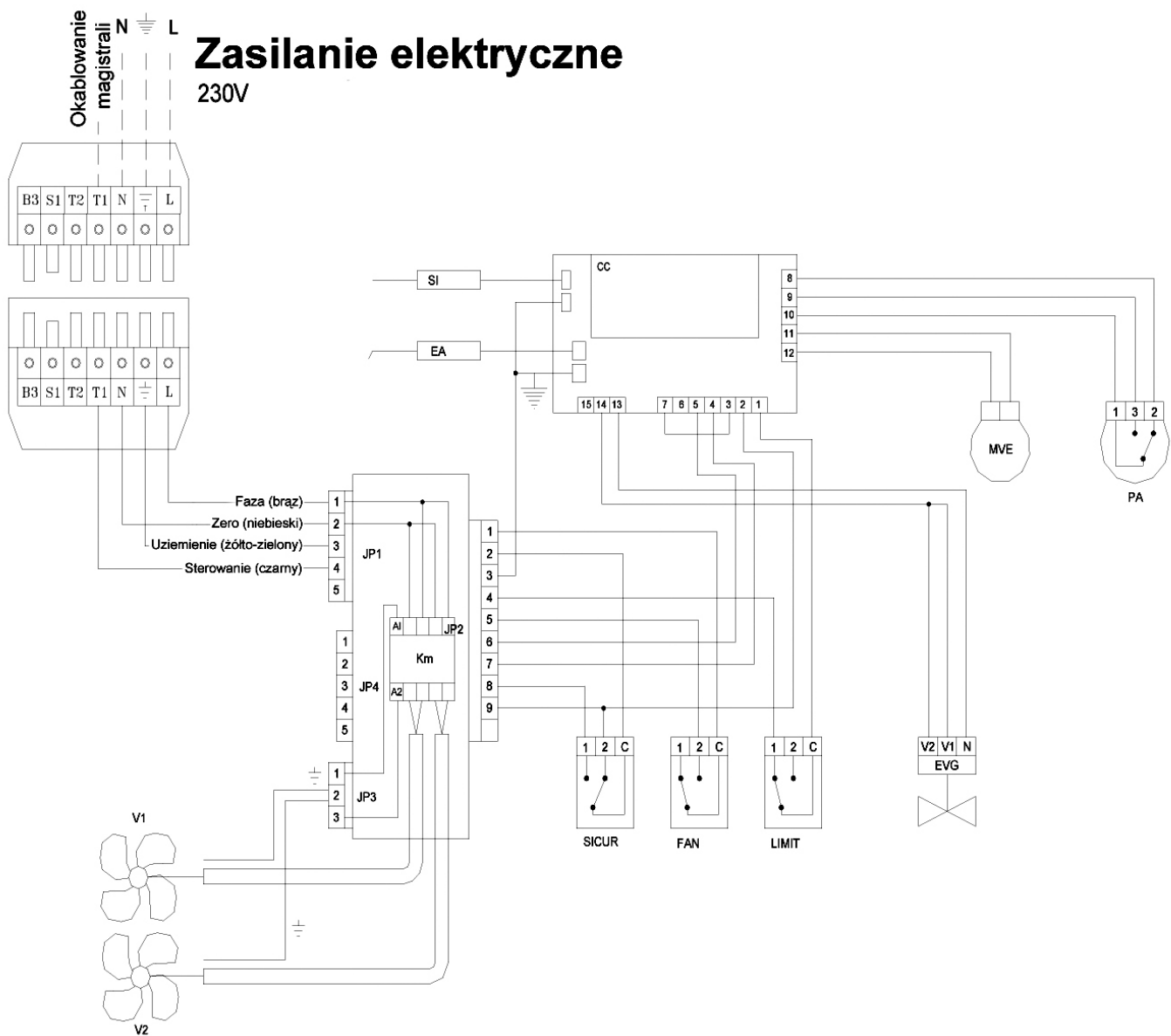
Note:

1 Press the button only once to reset the equipment (do not keep the button pressed for more than 5 seconds).

Legenda:

- EGV** – Gas solenoid valve
- V1** – Air delivery fan
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- FAN** – Fan thermostat
- Reset** – Burner reset
- EA** – Ignition electrode
- SICUR** – Manual reset safety thermistat
- E/I** – Cooling/heating selector
- CC** – Flame control unit
- LIMIT** – Limit or control thermostat
- TA** – Room thermostat
- RFP** – Electronic board
- PA** – Burner air pressure-switch

1.8 WIRING DIAGRAM EBC, EBV 64



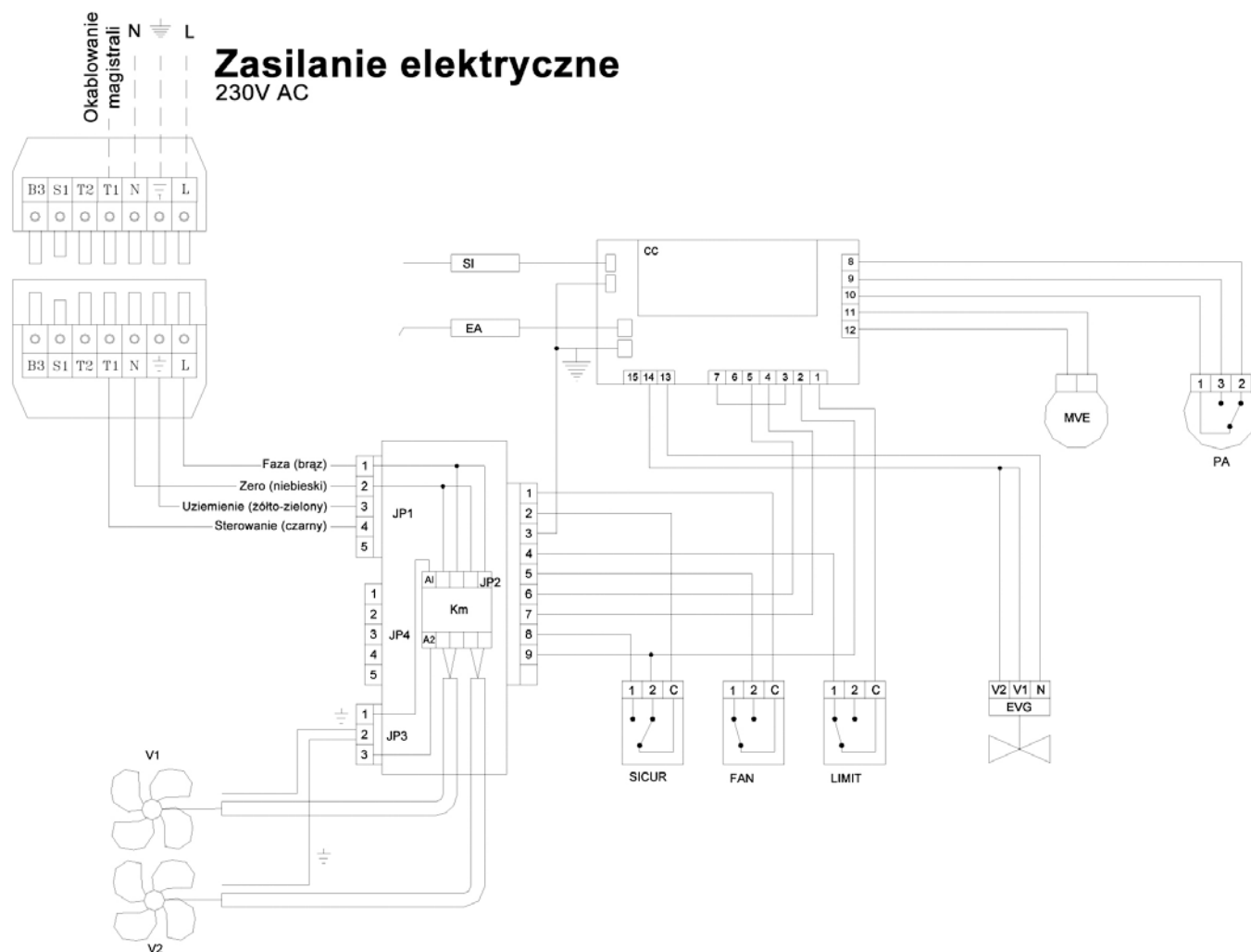
Legenda:

- EGV** – Gas solenoid valve
- V1** – Air delivery fan
- MVE** – Flue gas exhaust fan
- SI** – Ionization probe
- FAN** – Fan thermostat
- Reset** – Burner reset
- EA** – Ignition electrode
- SICUR** – Manual reset safety thermistat
- E/I** – Cooling/heating selector
- CC** – Flame control unit
- LIMIT** – Limit or control thermostat
- TA** – Room thermostat
- RFP** – Electronic board
- PA** – Burner air pressure-switch

Note:

1 Press the button only once to reset the equipment (do not keep the button pressed for more than 5 seconds).

1.9 WIRING DIAGRAM EBC, EBV 86



Legenda:

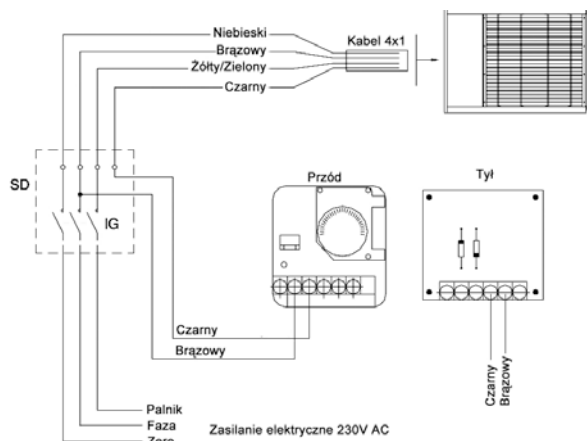
- EGV – Gas solenoid valve
- V1 – Air delivery fan
- MVE – Flue gas exhaust fan
- SI – Ionization probe
- FAN – Fan thermostat
- Reset – Burner reset
- EA – Ignition electrode
- SICUR – Manual reset safety thermistat
- E/I – Cooling/heating selector
- CC – Flame control unit
- LIMIT – Limit or control thermostat
- TA – Room thermostat
- RFP – Electronic board
- PA – Burner air pressuere-switch

Note:

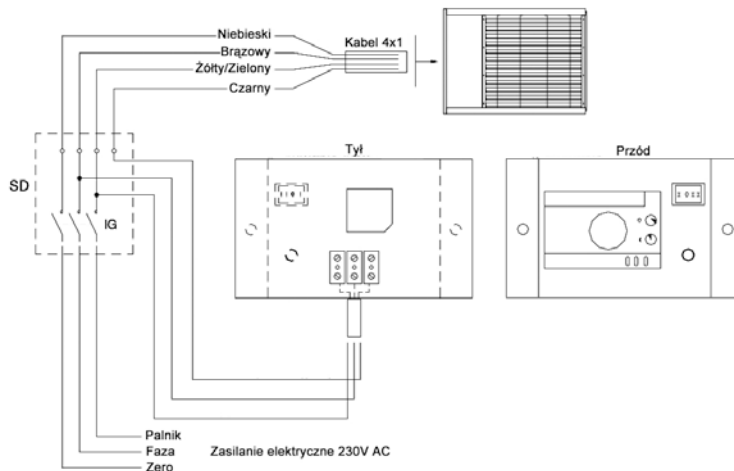
1 Press the button only once to reset the equipment (do not keep the button pressed for more than 5 seconds).

1.10 Wiring diagrams and thermostat programmable thermostat

Connect the thermostat:



Connecting a programmable thermostat:



Legenda:

SD - transfer case

The installation must be in accordance with applicable standards.

IG - the main switch

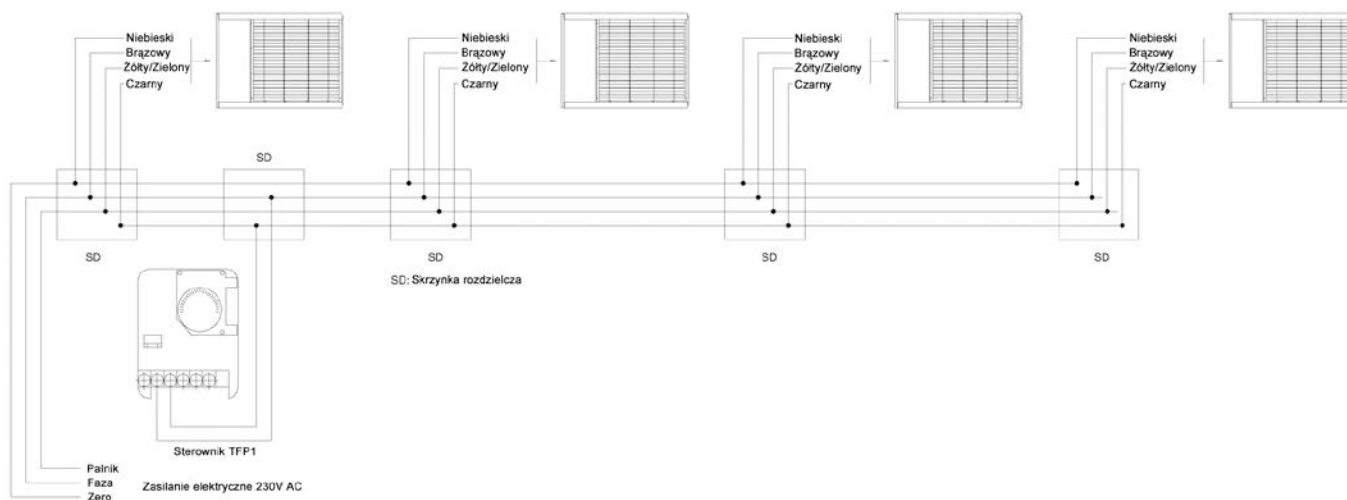
The controller must be connected according to the diagram.

Note: Do not replace with another neutral. If there is no neutral isolation transformer should be used.

1.11 Diagrams heaters with thermostat

The thermostat and programmable thermostat, you can connect up to 12 devices.

The diagram shows the connection of 4 devices to a thermostat:

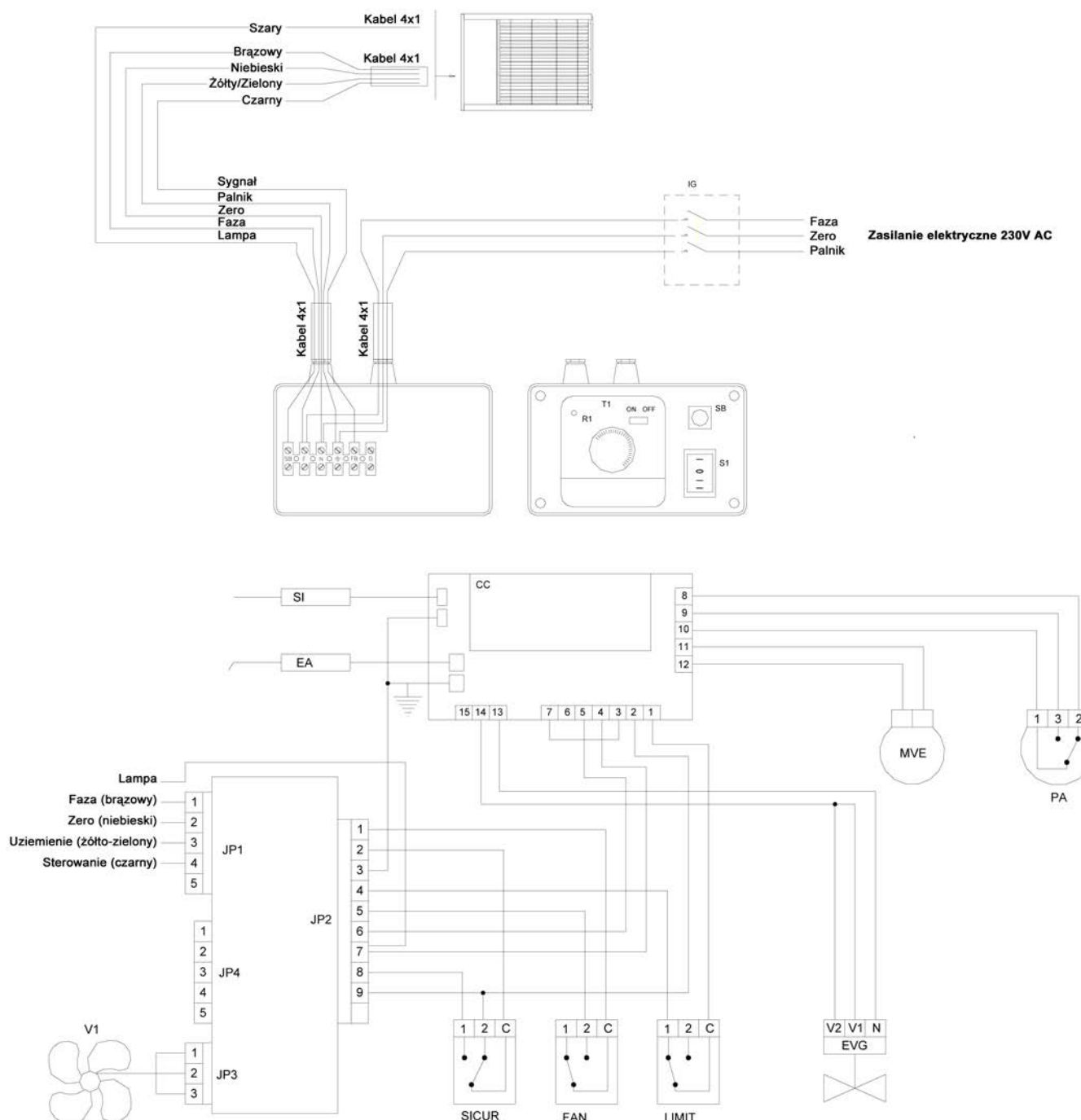


Note: Do not replace with another neutral. If there is no neutral isolation transformer should be used.

1.12 Diagrams heater with thermostat programmable

The thermostat allows to control the operation of up to 12 devices at the same time. The thermostat allows the heater funkcjonowanie summer ventilation mode.

The following diagram sets the programmable thermostat connection with four heaters:



Legenda:

T1 – thermostat

S1 – mode switch summer / winter

SB –lamp

IG – main switch

R1– reset

1.13 Thermostat

The thermostat is required for the heater. Alternatively, you can use a programmable thermostat.

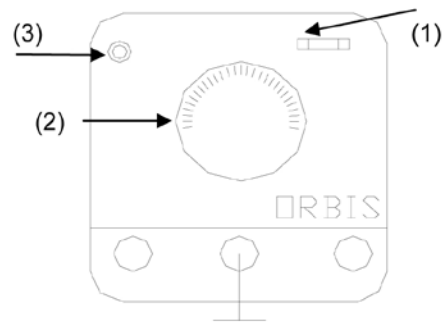
Features:

1. Switching on and off.
2. Setting the temperature in the room.
3. Resetting the heater.

Note: Be sure that the device was connected exactly as in the diagram. Make sure that the cables phase / neutral are connected correctly, because the heater and the controller may be damaged

Technical data

Power:	230 V ± 10%, 50 Hz
The adjustment range:	6 - 30 °C
Temperature range:	0 °C - + 50 °C
IP:	IP20
Color:	Biały
Dimensions:	75x75x34 mm
Weight:	95 g



NOTE! The thermostat must be located at a distance of about 1.5 m above the floor and away from drafts and where it is not exposed to direct sunlight or heat sources (such as sunlight or warm air generated by the heaters). As far as possible it should not be installed on the exterior walls.

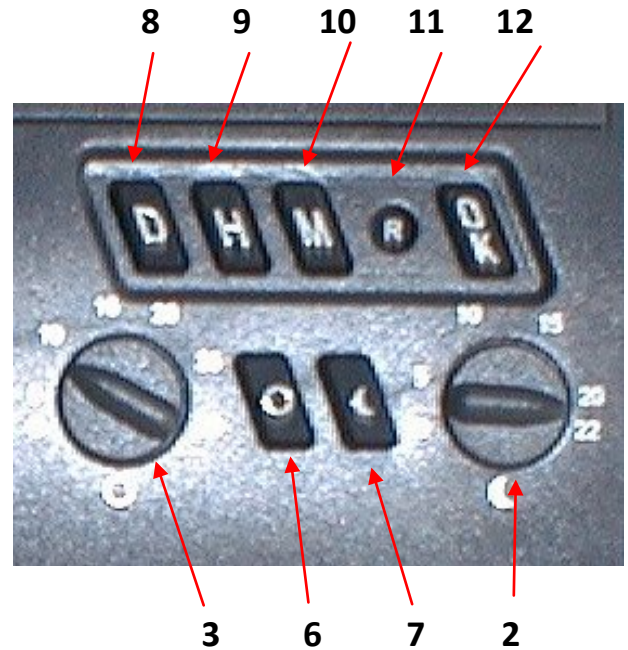
1.14 Programmable thermostat

Programmable thermostat has the following features: weekly timer, selector switch summer / winter reset. The thermostat allows you to control up to 12 devices at the same time.



Features thermostat::

- Switch I/0/II (1)
 - a) I: heating (winter mode)
 - b) 0: OFF
 - c) II: Ventilation (summer mode)
- Reset (2)
- Programmable thermostat (3)



Legend:

1. Batteries.
2. Temperature control night (6-20 ° C).
3. Daily temperature control (6-35 ° C).
4. Display.
5. Cover.
6. Selecting a living.
7. Selection of the night.
8. Set the day of the week.
9. Set time.
10. To set the minute.
11. Reset.
12. Confirm the selection.



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