



BLOWAIR



CE

Technical documentation:

S1

S2

S3

S4

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1. Introduction.

Thank you very much for purchasing our device. We would like to congratulate you on good choice.

1.1 Precautions.

The buyer and the user of the device should read carefully the following instructions and proceed to the content recommendations. Proceeding due to the following instruction guarantees the correct usage and safety. In case of any doubts please contact the producer.

The producer reserves the rights to make changes to the technical documentation without previous notice.

The producer is not responsible for the damages which occur due to improper installation, not keeping the device in repair or using the device out of line.

The installation should be carried out by the professional installers, who possess the qualifications to install these types of devices. The installers are responsible for making the installation as instructed in the technical data. Regulations and safety rules must be followed.

During the installation, use, service and periodical inspections all regulations and safety rules must be followed.

In case of unserviceable please plug out the device and contact with the authorized person or the producer.

1.2. Transport.

During the acceptance of goods it is needed to check the device in order to exclude any damages. During the transport it is needed to use the proper equipment, it is necessary to carry the device by two people. In case of any damages please fill in the damage report in presence of the supplier.

1.3. Package content

Heater
Instruction and warranty card

1.4. Use and principle of operation.

Devices BLOWAIR S1, S2, S3 and S4 are used to heat rooms such as : production halls, accommodation, commercial, services, garages, workshops, greenhouses, tents, shops, malls, shopping malls.

Air water heater has to be connected to central heating system.

Application of new technologies in Blowair devices guarantees high effectiveness and comfort of the consumption. Original colors of the devices match to every interior. The device is made very precisely and will work smoothly for many years. The product has got the two years of warranty.

2. SCHEMATIC DIAGRAM.

2.1. Construction.

Casing
Air stators
Heating coil
Axial fan
Holder
Rotational holder

Casing- is made of galvanizing steel, powder painting in RAL color 9005.

Air stators- are made of galvanizing steel, powder painting in RAL color 7048. It is possible to set the air stators up manually to achieve the needed direction of the air flow.

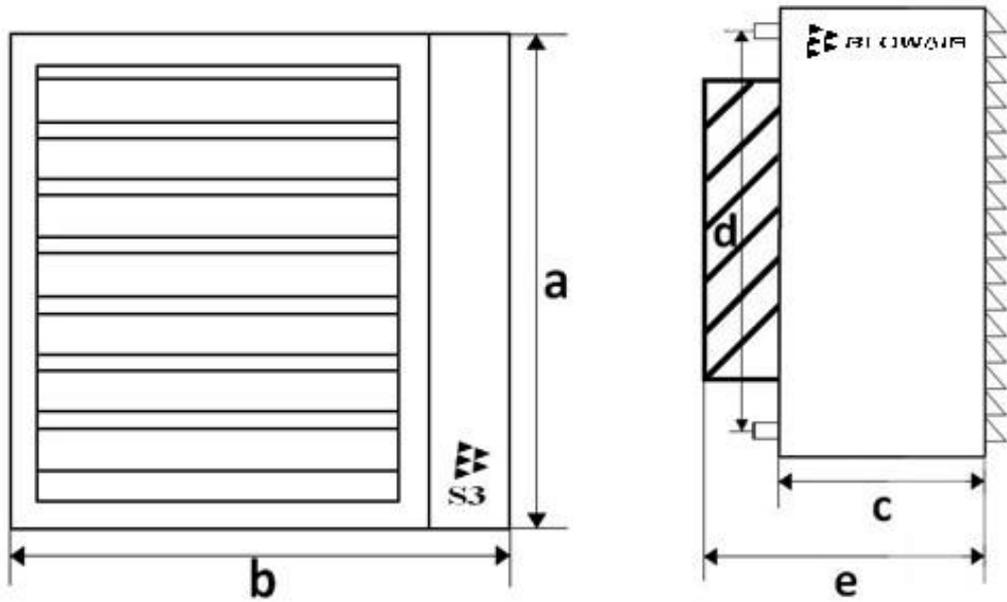
Heating coil- is made of aluminum and copper. The maximum temperature of the heating factor is 110°C ; maximum pressure 1,6 MPa; headers diameter $\frac{3}{4}''$. Depending of the size of the device we offer 1, 2 and 3 rows heating coils.

Axial fan- fan casing – metal, powder painting, steel wire galvanized. The motor has got the safety degree IP 54.

Holder- is an additional element to assemble the device. It is solid and durable, it is possible to assemble the device on the wall or ceiling. It is also possible to regulate the angle of slope in three versions.

Rotational holder- is an additional element to assemble the device . It is solid and durable, it is possible to assemble the device on the wall or ceiling. It is possible to assemble the device in parallel on the angle 60° and 45° .

2.2 Dimensions.



Drawing 1. Dimensions.

Type	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]
S1	452	494	202	350	305
S2	552	545	252	450	380
S3	552	545	252	450	380
S4	660	696	252	560	384

2.3 Technical data.

Technical data	Unit of measure	S1	S2	S3	S4
Nominal heating capacity water 90/70°C and inlet air temperature 0°C	kW	16,7	29,4	52,1	59,2
Heating power range.	kW	7-17	13-29	23-52	26-59
Maximum airflow.	m³/h	1743	2973	2973	4400
Maximum range of air stream.	m	10-12	10-12	10-12	10-25
Number of rows in heater.	number	1	2	3	2
Weight including water/without water.	kg	15,5/15	22,3/21	24,9/23	29/27
Capacity of water.	dm³	0,5	1,3	1,9	2,0
Air temperature rise. *	°C	26,7	27,5	48,7	37,5
Maximum temperature of heating agent.	°C	110	110	110	110
Maximum operating pressure.	MPa	1,6	1,6	1,6	1,6
Rated current.	A	0,42	0,7	0,7	0,8
Power supply voltage.	V/Hz	230/50	230/50	230/50	230/50
Motor power	W	80	150	150	180
Motor speed.	rev/min	1380	1400	1400	1380
Motor IP.	-	54	54	54	54
Ferrules diameter	..	3/4	3/4	3/4	3/4

Temperature rise according to parameters: water 90/70°C and inlet air temperature 0°C.

Technical data of Blowair S1:

Parameters	S1				
Inlet and outlet water temperature [°C]	90/70				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	22.2	19.4	16.7	14.2	11.7
Outlet water temperature [°C]	12.8	19.8	26.7	33.4	40.0
Water flow [m³/h]	0.98	0.85	0.74	0.62	0.52
Pressure drop in the heat exchanger [kPa]	33	26	22	16	11
Parameters	S1				
Inlet and outlet water temperature [°C]	80/60				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	19.6	16.9	14.3	11.8	9.40
Outlet water temperature [°C]	9.1	16.0	22.8	29.5	36.1
Water flow [m³/h]	0.86	0.74	0.63	0.52	0.41
Pressure drop in the heat exchanger [kPa]	27	23	17	12	9
Parameters	S1				
Inlet and outlet water temperature [°C]	70/50				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	17.1	14.4	11.9	9.44	7.09
Outlet water temperature [°C]	5.3	12.2	19.0	25.6	32.2
Water flow [m³/h]	0.75	0.63	0.52	0.41	0.31
Pressure drop in the heat exchanger [kPa]	23	17	12	10	6
Parameters	S1				
Inlet and outlet water temperature [°C]	50/30				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	12	9.45	7.03	4.69	2.44
Outlet water temperature [°C]	-2.3	4.5	11.2	17.8	24.2
Water flow [m³/h]	0.52	0.41	0.31	0.2	0.11
Pressure drop in the heat exchanger [kPa]	13	10	6	5	2

Technical data of Blowair S2:

Parameters	S2				
Inlet and outlet water temperature [°C]	90/70				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	38.8	34.0	29.4	24.9	20.7
Outlet water temperature [°C]	13.7	20.6	27.5	34.2	40.8
Water flow [m³/h]	1.71	1.5	1.29	1.1	0.91
Pressure drop in the heat exchanger [kP]	24	19	14	11	7
Parameters	S2				
Inlet and outlet water temperature [°C]	80/60				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	34.5	29.8	25.3	20.9	16.8
Outlet water temperature [°C]	9.9	16.8	23.6	30.3	36.8
Water flow [m³/h]	1.52	1.31	1.11	0.92	0.74
Pressure drop in the heat exchanger [kP]	20	15	11	8	5
Parameters	S2				
Inlet and outlet water temperature [°C]	70/50				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	30.2	25.6	21.1	16.9	12.8
Outlet water temperature [°C]	6.2	13.0	19.7	26.4	32.8
Water flow [m³/h]	1.32	1.12	0.92	0.74	0.56
Pressure drop in the heat exchanger [kP]	16	11	8	5	3
Parameters	S2				
Inlet and outlet water temperature [°C]	50/30				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	21.4	17.0	12.8	8.7	4.71
Outlet water temperature [°C]	-1.4	5.3	12.0	18.4	24.7
Water flow [m³/h]	0.93	0.74	0.55	0.38	0.2
Pressure drop in the heat exchanger [kP]	9	6	3	2	1

Technical data of Blowair S3:

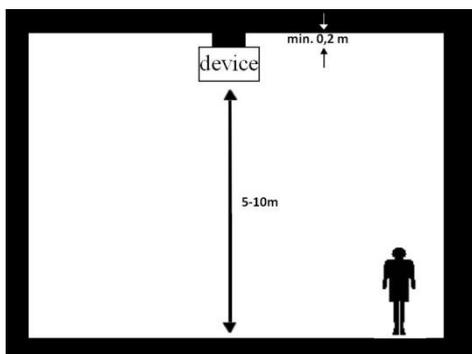
Parameters	S3				
Inlet and outlet water temperature [°C]	90/70				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	68.9	60.3	52.1	44.3	36.8
Outlet water temperature [°C]	39.8	44.3	48.7	52.9	56.9
Water flow [m³/h]	3.04	2.66	2.29	1.95	1.62
Pressure drop in the heat exchanger [kP]	52	41	31	23	16
Parameters	S3				
Inlet and outlet water temperature [°C]	80/60				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	61.5	53.0	45.0	37.4	30.1
Outlet water temperature [°C]	33.3	37.8	42.1	46.3	50.2
Water flow [m³/h]	2.7	2.33	1.98	1.64	1.32
Pressure drop in the heat exchanger [kP]	43	33	24	17	12
Parameters	S3				
Inlet and outlet water temperature [°C]	70/50				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	54	45.8	37.9	30.5	23.3
Outlet water temperature [°C]	26.8	31.3	35.5	39.5	43.4
Water flow [m³/h]	2.36	2.0	1.66	1.33	1.02
Pressure drop in the heat exchanger [kP]	35	26	18	12	7
Parameters	S3				
Inlet and outlet water temperature [°C]	50/30				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	38.9	31.1	23.6	16.3	9.23
Outlet water temperature [°C]	13.8	18.0	22.0	25.9	29.3
Water flow [m³/h]	1.69	1.35	1.02	0.71	0.4
Pressure drop in the heat exchanger [kP]	20	13	8	4	1

Technical data of Blowair S4:

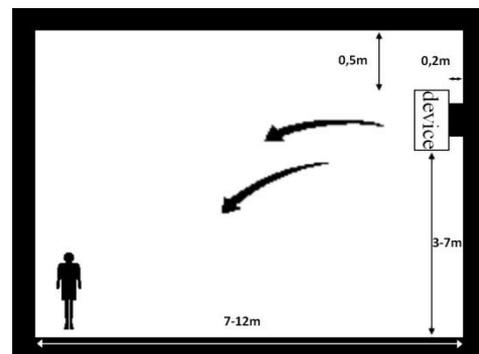
Parameters	S4				
Inlet and outlet water temperature [°C]	90/70				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	78.6	68.7	59.3	50.3	41.7
Outlet water temperature [°C]	26.0	31.9	37.5	43.0	48.3
Water flow [m³/h]	3.46	3.03	2.61	2.22	1.84
Pressure drop in the heat exchanger [kP]	38	29	22	16	12
Parameters	S4				
Inlet and outlet water temperature [°C]	80/60				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	69.9	60.2	51.0	42.2	33.8
Outlet water temperature [°C]	21.0	26.7	32.3	37.7	42.9
Water flow [m³/h]	3.07	2.64	2.24	1.85	1.48
Pressure drop in the heat exchanger [kP]	31	23	17	12	8
Parameters	S4				
Inlet and outlet water temperature [°C]	70/50				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	61.1	51.7	42.7	34.1	25.8
Outlet water temperature [°C]	15.8	21.5	27.0	32.3	37.5
Water flow [m³/h]	2.67	2.26	1.87	1.49	1.13
Pressure drop in the heat exchanger [kP]	24	18	13	8	5
Parameters	S4				
Inlet and outlet water temperature [°C]	50/30				
Outlet water temperature [°C]	-20	-10	0	10	20
Heating capacity [kW]	43.4	34.4	25.8	17.6	9.50
Outlet water temperature [°C]	5.4	11.0	16.3	21.5	26.4
Water flow [m³/h]	1.88	1.49	1.12	0.76	0.41
Pressure drop in the heat exchanger [kP]	13	9	5	3	1

3. Assembly.

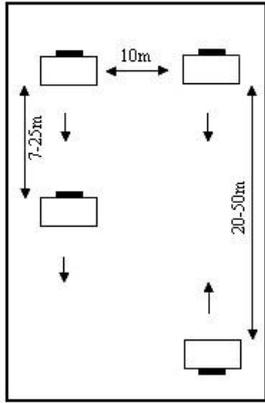
All devices Blowair S1, S2, S3 and S4 can be assembled on the wall or ceiling via holder or rotational holder, which are additional elements. The drawings below show the ways of assembly. In the bigger accommodation it is recommended to assemble more than one device. Follow the parameters which are provided on the drawings.



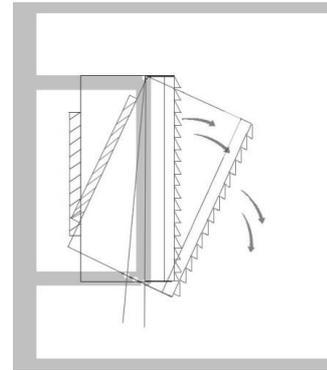
Drawing 2. Assembly on the ceiling.



Drawing 3. Assembly on the wall.

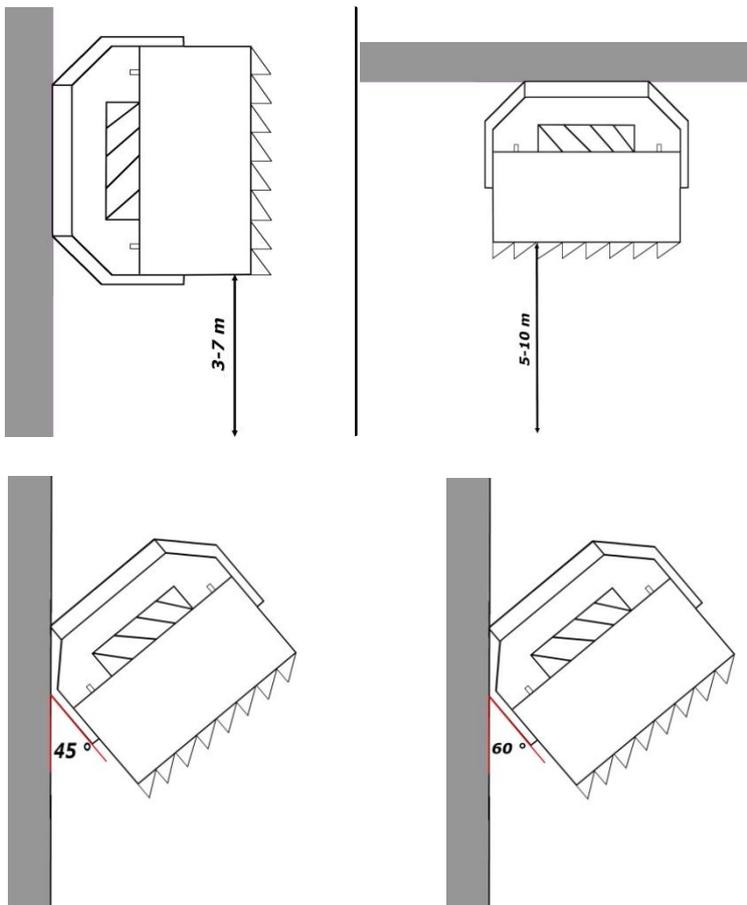


Drawing 4. Example arrangement for few devices in the room. using the holder.



Drawing 5. Three versions of the assembly position while using the holder.

Blowair devices can be assembled on the wall or ceiling via holder or rotational holder , which are additional elements . It is possible to assemble the device in parallel on the angle 60° and 45° .



4. Installation instructions.

The installation should be made by the qualified staff, who possess the needed rights to install electrical devices, as instructed in the following documentation. To install the air waiver heater Blowair S1, S2, S3, S4 use the duct size 2 x 2,5mm².

5. Precautions & warnings.

All works concerning electrical installation should be made by the qualified staff, who possess the qualifications due to the domestic and local norms. These recommendations include service and disassembly as well. Not following to the recommendations may cause electrocution, device damages or its incorrect work.

Before service or exchange of the device it is obligatory to cut off the current supply. Do not cover the inlet and outlet of the device.

Do not use the device in room with high moisture or close to the water basin.

Do not install, service the device with wet hands or barefoot.

Do not use the device in room with inflammable fumes, gas and high concentration of dust.

The device should be kept out of reach of children and animals.

During the assembly use the filter on the hydraulic supply.

Please use the following valves.

- vent valve in the highest place on the hydraulic installation,
- cut off valve on the supply and return of the device.

The device should be secured against pressure increase in the water installation.

Before plugging the electric supply check the leak tightness.

The device does not consist of the anti-frost protection. The temperature in the room should not go below 0°C. In such case please empty the device out of water.

It is recommended to check the electric installation before the first start.

It is recommended to use the external current differential protection.

After the turn off, the elements of device may be warm.

After operating time of the device, please utilize it concerning the local norms and regulations.

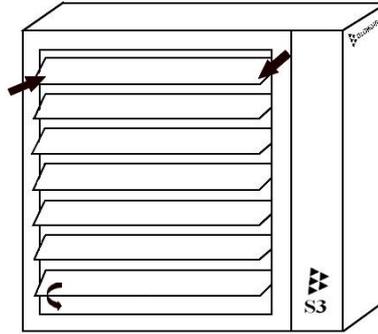
It is recommended to clean the device periodically:

- heating coil blow through by compressed air,
- fan casing and blades clean form the dirt.

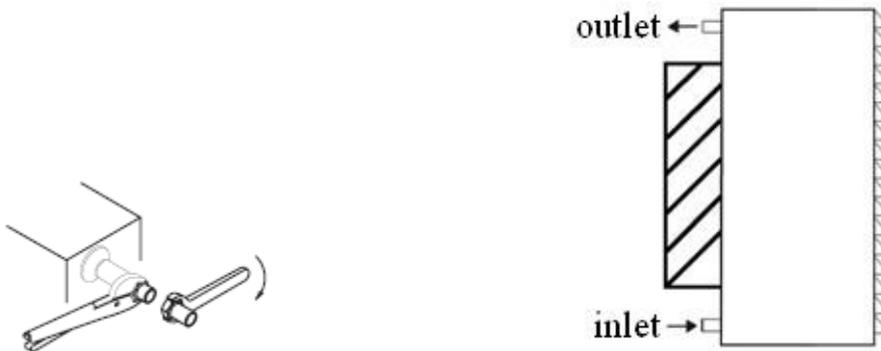
If the device is not used for a longer time disconnect the voltage supply.

The device is transported with the closed air stators. It is essential to open them in 30 % before first start. Not keeping to the following recommendation may cause the damages of the fan.

Opening the air stators must be made by two hands in parallel. Not keeping to the following recommendation may cause the damages of the air stators.



While plugging the device to the water installation do remember to hold its stub pipes by pipes spanner, not keeping to the recommendation may cause the damages of the heating coil.



6. Blowair automatics.

To make easier the usage of the Blowair devices we also offer the additional automatics:

5-stage speed controller Blowair- is used to control the speed in single-phase fans. It consists of 5 controls 0 - 70 - 85 - 105 - 145 - 230V, power supply voltage-230VAC / 50-60Hz, allowable current output: 1,2A; protection: thermal breaker switch; dimensions: 126mm x 176mm x 56mm; weight: 1,3 kg. It is recommended to use one speed controller to each Blowair device.

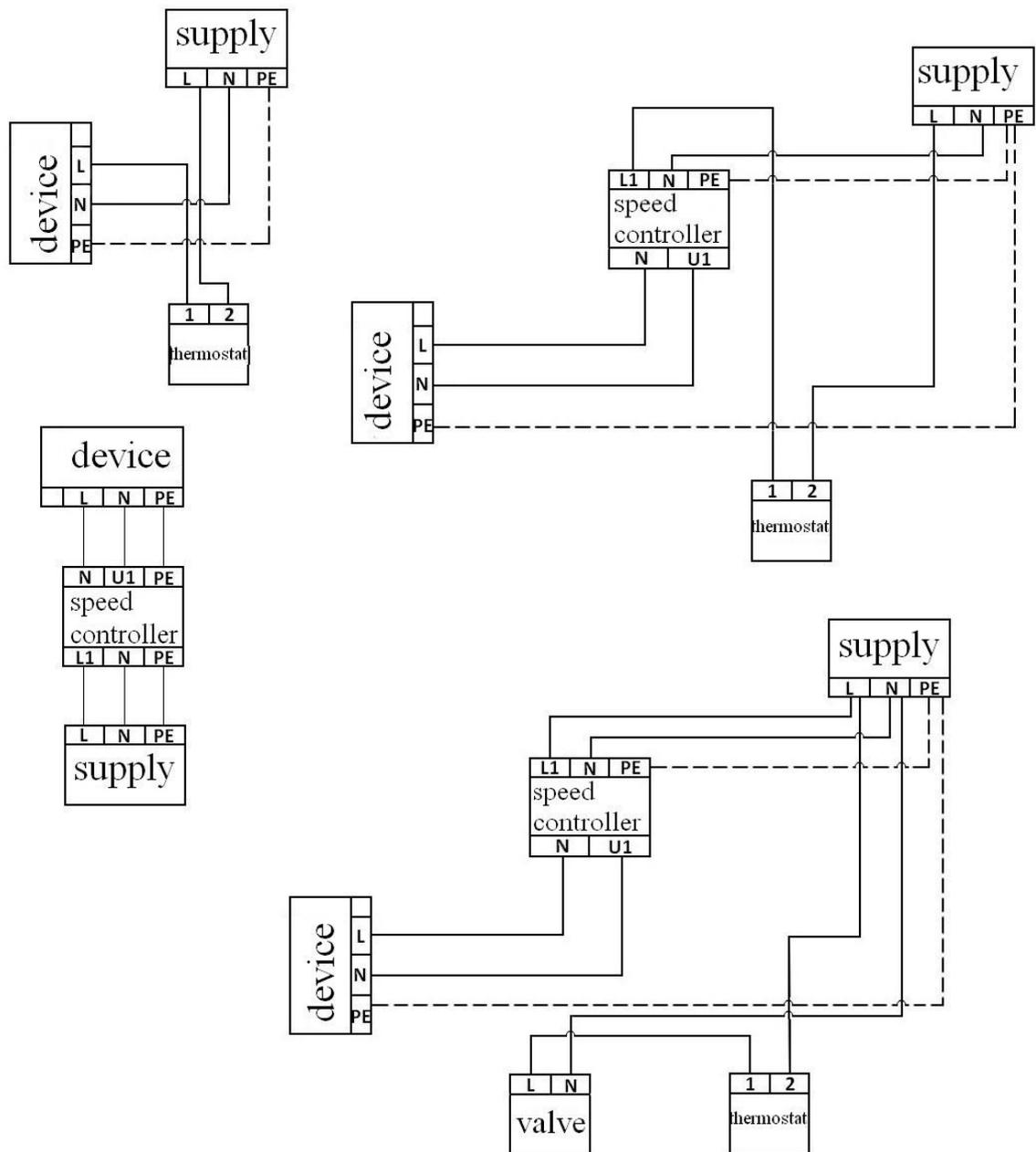
Two-way valve with actuator- connection diameter $\frac{3}{4}$ ". It should be installed on the return (outlet) pipe. Using it, lowers the living costs. It is essential to use it with the temperature controller. After reaching the wanted temperature the valve cuts off the water inlet. Water runs in cycle and does not cool. The valve is not noisy. It is recommended to use one two-way valve with actuator to each Blowair device.

Room thermostat- work environment parameters $0^{\circ}\text{C}-40^{\circ}\text{C}$; setting range $10^{\circ}\text{C}-30^{\circ}\text{C}$; regulation accuracy 1°C ; temperature number levels 1; power supply voltage 230V. It is possible to use one room thermostat to maximum 5 Blowair devices.

Programmable temperature controller-saving energy up to 30%. It is possible to regulate the temperature up and down. LCD liquid crystal display. Temperature setting every $0,2^{\circ}\text{C}$. It consists of 9 programmers. 3 levels of temperature- day, night, anti-frozen. Work environment parameters $0^{\circ}\text{C}-40^{\circ}\text{C}$. Setting range $5^{\circ}\text{C}-30^{\circ}\text{C}$. Power supply 2 alkaline battery AA (1,5V). Permitted control output load 230 VAC 50Hz 5

(3) A. It is possible to use one programmable temperature controller to maximum 5 Blowair devices.

7. Connection schemes.





8. Terms of warranty.

I. WTS Wysocki Tomasz 3 Montażowa Street , 43-300 Bielsko- Biała, Poland, is the producer of the Blowair brand. The warranty concerns the following devices and it is valid for 2 years:

- air heater S1,
- air heater S2,
- air heater S3,
- air heater S4.

II. Warranty is valid in European Union.

III. The terms of warranty are valid from purchasing the device (the date issuing a document confirming the purchase of the device) but not further than 30 months from leaving the Blowair's warehouse.

IV. The defects revealed during the warranty period will be removed free of charge in 14 working days. The service will be done by the installation company due to the terms of warranty included in warranty card. The elements will be supplied by the Blowair producer during the warranty period.

V. Warranty does not cover the parts of the device subject to normal maintenance and the cases as below:

- a) Mechanical defects, damages from the impact of the improper transportation or damages through improper storage.
- b) Defects through:
 - improper usage and service,
 - using the device in the improper conditions (too high humidity, too high or too low temperature, impact of the surrounding, sun ect.,
 - modified equipment that has been modified or repaired without written agreement of the producer;
 - connecting additional equipment, which is not recommended by the producer or inconsistent with the technical documentation,
 - improper power supply.
- c) Elements which wear and tear such as discolor or using.

VI. All changes in record in the warranty terms or any constructive modifications, independent service outside the Blowair service or use, uncaring, makes the warranty not valid.

VII. To obtain the service it is needed to send to the producer warranty card with the signature, document confirming the purchase, (copy of the invoice) and correctly filled the warranty form.

VIII. Not following to any of warranty regulations makes the warranty not valid.

IX. All correspondence, returns, complains should be send to the following address: Blowair WTS Wysocki Tomasz 3 Montażowa Street, 43-300 Bielsko-Biała or e-mail: serwis@blowair.pl

The producer reserves the rights to make changes to the technical documentation without previous notice.

8.1. Warranty card.

 BLOWAIR WTS Wysocki Tomasz 3 Montażowa Street 43-300 Bielsko-Biała Poland
Stamp and signature of the installation company:
Factory number of the device:
Address and place of assembly. City: Postal code: Street: Number: Place:

8.2. Warranty form.

The company reporting the complaint:
The company installing the device.
Factory number of the device.
Date of assembly:
Date and circumstances of noticing the defect:
Date of declaration the complaint:
Address and place of assembly the device:
Contact Name and Surname:
Telephone number/ e-mail address:
Description of the defect:

8.3 Service card.

Lp.	Date of declaration the complaint	Date of repair	Description of the repair	Service stamp

WTS Wysocki Tomasz 3 Montażowa Street, 43-300 Bielsko-Biała Poland
Mobile +48 791 40 40 40; +48 792 40 40 40; +48 793 40 40 40; Fax. +48 33 444 61 04