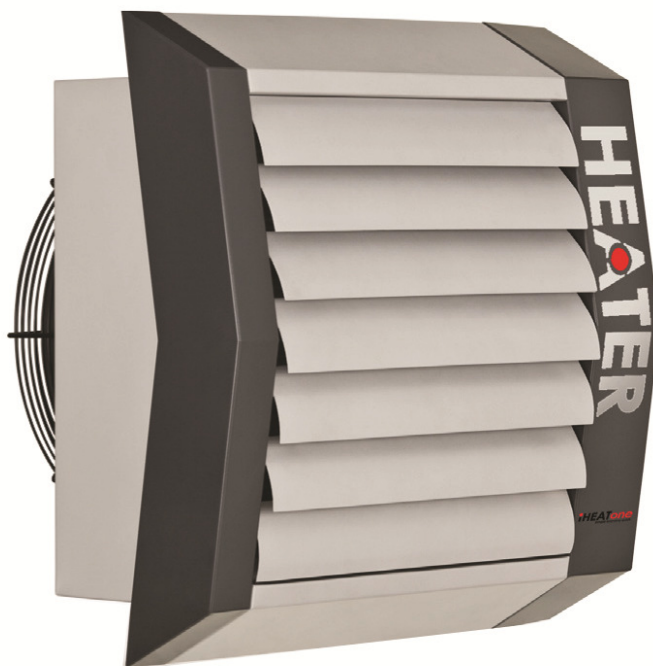


OPERATION AND MAINTENANCE DOCUMENTATION

HEATER

OPERATION AND MAINTENANCE DOCUMENTATION



iHEATone
simple economy quick

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NIP 547 214 71 38, Regon 243314664, kapitał zakładowy: 50.000 PLN

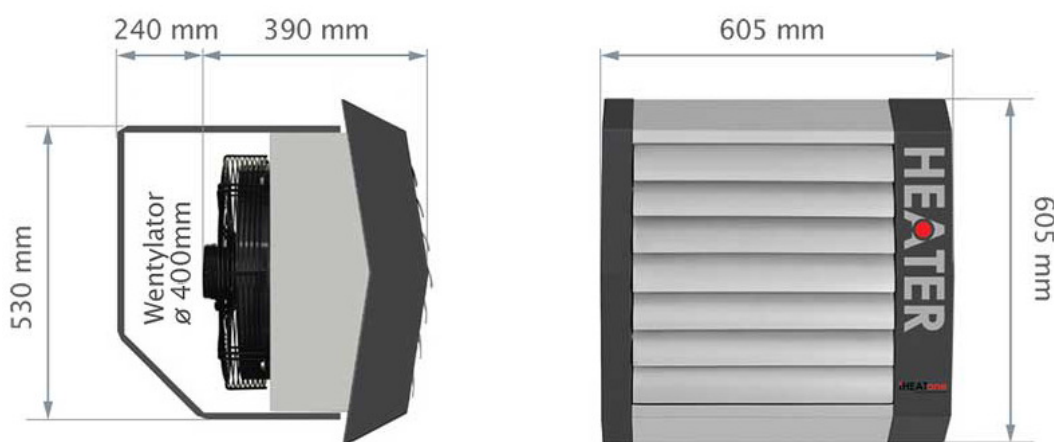
OPERATION AND MAINTENANCE DOCUMENTATION

1. WHERE TO APPLY

HEATER heating and ventilation devices are designed to be applied in the buildings of small and medium capacity, especially such as:

- Production and warehouse halls,
- Car showrooms and service stations,
- Sports halls and stadiums,
- Sacral buildings and churches,
- Retail stores and wholesales outlets,
- Agricultural facilities,
- Exhibition surfaces.

2. COSTRUCTION, DIMENSION AND BASIC TECHNICAL PARAMETERS



Basic elements of HEATER devices

- Casing made of powder-coated, galvanized plate ,
- Regulated air-conduits,
- Mounting brackets,
- Axial fan; fan is protected from direct access to revolving elements with safety netting
- Heat exchanger – (Cu/AL) made of copper tubes placed in an aluminum lamellar exchanger /block with stub connection 1/2", 3/4". Stub connections are equipped with air-release valves and heat outlet vent.

Parameters	Unit	HEATER ^{X20}	HEATER ^{X30}	HEATER ^{X50}
Number of heater rows	-	1	2	3
Max air output	[m ³ /h]	3300	3000	2800
Heat output range	[kW]	10-20	15-30	25-50
Power consumption	[A]	0,9	0,9	0,9
Max working pressure	[Mpa]	1,6	1,6	1,6
Max air flow	[m]	20	20	20
Diameter of connection nozzles	[inch]	1/2"	3/4"	3/4"
Power supply	[V/Hz]	230/50	230/50	230/50
Motor power	[kW]	0,18	0,18	0,18
Motor speed	[rpm]	1380	1380	1380
Protection class IP	-	IP54	IP54	IP54
Weight	[kg]	22	25	27

OPERATION AND MAINTENANCE DOCUMENTATION

3. GENERAL INFORMATION

HEATER heating and ventilation devices are manufactured in compliance with standards concerning quality, ecology, utility and work comfort.

HEATER devices are delivered ready-to-use in a cardboard package that is to protect from mechanical damages. The package consists of: the device, the Manual (Operation and Maintenance Documentation) and Guarantee. If the optional automatic control ordered, it shall be delivered in a separate package. Make sure all the aforementioned elements are in the package immediately after the delivery. In the absence of any element, please fill in the suitable carrier document.

NOTICE!

- ❶ Before mounting read the manual carefully and adhere to the rules concerning the mounting procedures. Not applying may result in the inappropriate functioning of the device and the loss of the guarantee rights.
- ❶ Pay special attention when working with electrical elements of the device.
- ❶ All installing works should be done by qualified staff.

Optionally the following elements of automatic control and mounting kit may be delivered with HEATER device

- Revolving mounting brackets,
- 3-speed controller 1.2A,
- Room thermostat – manual or programmed weekly,
- 2-way water valve with actuator; Valve should be installed with return stub pipe

4. ASSEMBLY

Take into consideration before installing the unit::

- Easily accessible for maintenance,
- Access to water and electrical installation,
- Appropriate air distribution in a room.

It is advisable to mount the device to the wall or the ceiling on original mounting brackets, supporting mount pins (not delivered with the device) or supporting constructions (shapes and dimensions of the supporting construction may be individually designed in compliance with durability and strength requirements).

- mounting on the ceiling – pay attention to air-release/venting of the device that may be reduced – it is advisable to release air/vent at the highest point of the pipework
- mounting on the wall – possible with mounting brackets and pins M 10

Remember that the distance between the back side of the device and the wall or ceiling of the room should be not less than 250mm. If not, the parameters of the unit may be lower and the functioning louder.

Make sure that the device is properly leveled as otherwise it may result in damaging its fan and consequently malfunction of the device.

NOTICE!

- ❶ Pay special attention to proper leveling of the device. If the device is placed in not horizontal or vertical position it may result in damaging the fan and consequently malfunction of the device.
- ❶ To sustain proper functioning of the device keep a safe distance– 200mm from its sides and 200mm from its backside (from the fan)

5. ELECTRICAL INSTALLATION

The electrical installation and connection to power supply must be done in compliance with the existing regulations and standards for building industry. The fan's engine is equipped with internal temperature limit fuse protecting the engine from its overheating.

The unit set does not consist of: a feeding cable, a master switch (see diagram)

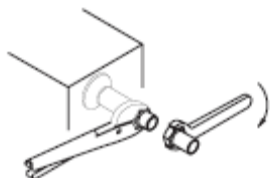
The electrical installation must be done by an authorized person, acquainted with the Manual. Connection of the feeding cable and master switch must be done in compliance with electrical diagram(with or without the automatic control, depending on the option chosen).

Any and all damages incurred as a result of the aforementioned causes are not provided with the Guarantee and the user will be charged with any costs of the device exchange. The connection of the automatic control should be carried out in accordance with the electrical diagram.

In case of any doubts or problems, unplug the device and contact the device's installer or iHEATone Authorized Service.

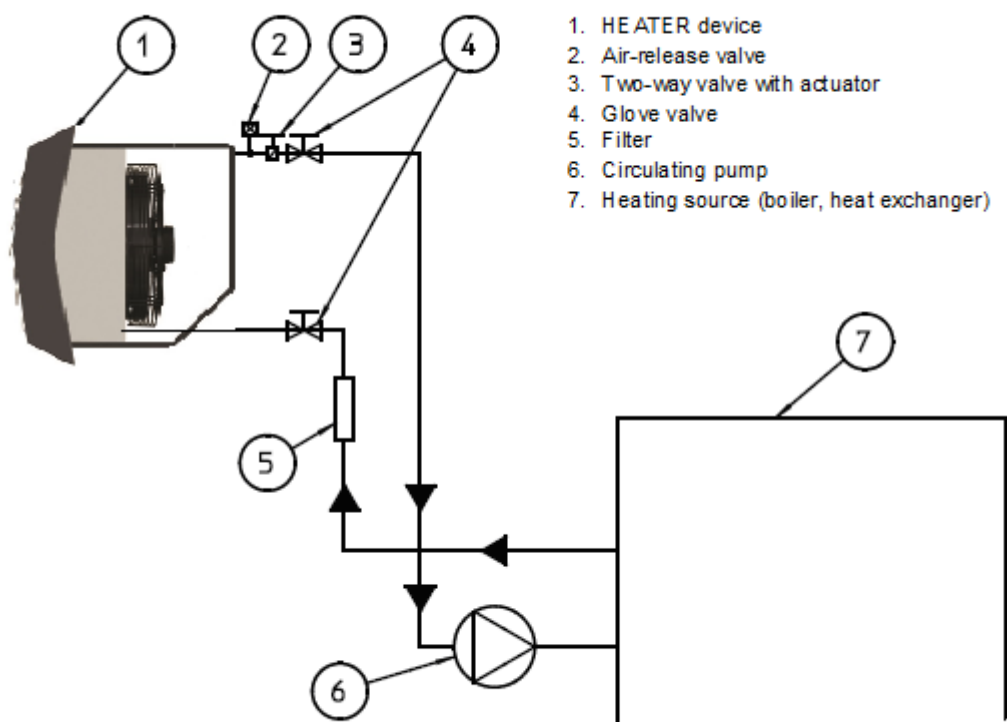
6. WATER INSTALLATION

The installation of the unit should be done in a way enabling maintenance service; on both stub pipes manual closing valves should be installed in order to cut off the device. Feeding cables of the heater shall be connected in accordance with the symbols/markings on the casing (inlet/outlet). In case of electromagnetic valve (with the option of the automatic control) it should be installed on the outlet as it may be damaged otherwise. When the pipework is being connected to the exchanger, secure the connections of the heater from oscillating torque (see figure) that may cause leakage in the exchanger.



OPERATION AND MAINTENANCE DOCUMENTATION

Examples of installation



7. AUTOMATIC CONTROL – INSTALLATION

A set of automatic control may be used (powered 230V) that consists of the following:

- transformer motor revs controller,
- ON/OFF electromagnetic water valve – powered 230, starting/closing time – 7 seconds, valve with an outlet stub pipe,
- Room thermostat with the temperature set controlling the heater's valve work.

The system is ready to start once the connections between thermostat and valve actuator are done, 230V power is supplied to the thermostat and the fan's motor is powered by the revs controller.

8. FIRST START

Do all the connections (electrical, water and automatic control), check for tightness of all connections done by an installer and air-release/vent the device then start the device in the following sequence:

1. Set revs controller to the "0" position,
2. Switch on the mains,
3. Set requested speed of fan on revs controller,
4. Set requested temperature on thermostat,

Lighting lamp on controller signals the device's activation. The fan operates continuously irrespective of whether the heater's valve is opened or not.

9. TURNING OFF

To switch the device off do the followings:

1. Set minimum temperature on thermostat – after 7 seconds valve will be closed and heating switched off.
2. Set main switch to the "0" position (off); fan will be switched off and the thermostat will be off the power.

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10. OPERATION

The engine and fan used in HEATER units are maintenance-free devices but regular check-ups are advised, especially motor and bearing (fan's rotor should rotate freely, free from any axial and radial throws and undesired knocks/rattles).

NOTICE!

- ① In case of any metallic knocks, vibration or increase in sound level check if the fan mounting/fixing does not work loose – contact an installer or iHEATone Authorized Service

11.MAINTENANCE

The heat exchanger requires systematical cleaning all dirt /impurities off. Before the start of the heating period the heat exchanger is advised to be cleaned with compressed air directed to the air outlets; there is no need for dismantling of the device. Pay special attention when cleaning the exchanger's fin due to high possibility of damaging them. If the fin is bent use a special tool. If the device has not been used for a longer period of time, unplug it before the next use. The heat exchanger is not equipped with any fire protection device. The heat exchanger may be damaged if the room temperature goes below 0 C; anti-freeze liquid must be added to the water circulation/system. Anti-freeze liquid must be appropriate for the material the exchanger is made of (copper) as well as other elements of the hydraulic system/circulation. The liquid must be diluted with water according to the solution recommended by the anti-freeze manufacturer.

OPERATION AND MAINTENANCE DOCUMENTATION

12. TECHNICAL PARAMETERS

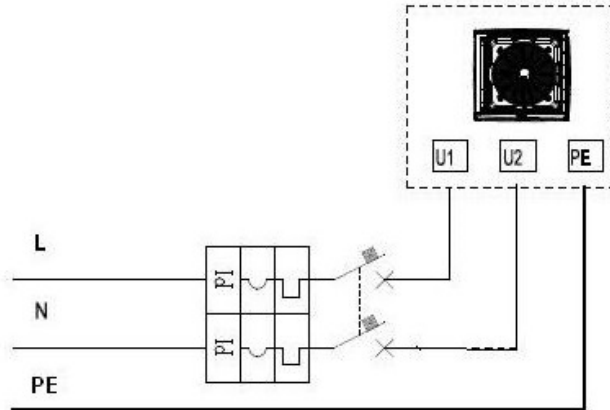
HEATER X20																
inlet/outlet water temperature		90/70					80/60					70/50				
inlet air temperature		0	5	10	15	20	0	5	10	15	20	0	5	10	15	20
air flow 3300 m3/h (speed 3)																
heat output	kW	20,30	18,63	17,56	16,45	15,36	16,73	15,64	14,64	13,57	12,56	13,72	12,65	11,76	10,69	8,79
outlet air temperature	°C	17,87	22,17	26,38	30,79	35,11	15,14	19,35	23,51	27,32	31,12	12,44	16,63	20,59	24,37	28,31
water flow	m3/h	0,79	0,76	0,72	0,68	0,65	0,65	0,61	0,58	0,54	0,50	0,54	0,50	0,47	0,43	0,40
pressure drop	kPa	10,31	9,70	9,10	8,51	7,89	7,78	7,18	6,57	5,96	5,35	5,53	4,92	4,33	3,72	3,11
air flow 2250 m3/h (speed 2)																
heat output	kW	13,22	12,48	11,76	11,26	10,48	11,21	10,48	9,78	9,04	8,31	8,65	7,95	7,30	6,60	5,92
outlet air temperature	°C	22,29	26,48	30,73	34,52	38,61	19,45	23,73	27,62	31,82	36,11	16,60	20,12	24,52	28,82	33,21
water flow	m3/h	0,65	0,61	0,58	0,54	0,50	0,54	0,50	0,47	0,43	0,40	0,40	0,36	0,32	0,29	0,25
pressure drop	kPa	7,50	6,95	6,45	4,90	4,21	5,45	4,96	4,45	3,96	2,75	3,89	3,18	2,60	2,02	1,36
air flow 1650m3/h (speed 1)																
heat output	kW	10,26	9,49	8,77	8,18	7,74	8,76	7,83	7,38	6,45	6,34	7,07	6,35	5,92	5,43	4,82
outlet air temperature	°C	25,21	29,79	33,54	37,81	42,21	23,65	27,81	31,72	35,80	40,11	19,95	24,11	28,32	32,45	36,54
water flow	m3/h	0,47	0,43	0,40	0,36	3,24	0,43	0,40	0,36	3,24	2,88	0,40	0,36	0,32	0,29	0,25
pressure drop	kPa	6,15	5,74	5,36	4,95	4,56	3,90	3,51	3,11	2,72	2,31	2,81	2,43	2,11	1,74	1,33

HEATER X30																
inlet/outlet water temperature		90/70					80/60					70/50				
inlet air temperature		0	5	10	15	20	0	5	10	15	20	0	5	10	15	20
air flow 3000 m3/h (speed 3)																
heat output	kW	30,13	28,59	26,90	25,30	23,66	25,94	24,07	22,82	20,95	19,70	21,54	19,19	18,58	17,09	15,61
outlet air temperature	°C	32,67	35,97	39,20	42,21	45,51	29,17	32,47	35,76	38,98	42,11	18,06	21,56	24,98	28,10	31,60
water flow	m3/h	1,69	1,62	1,55	1,48	1,40	1,40	1,33	1,26	1,19	1,12	1,15	1,08	1,01	0,94	0,86
pressure drop	kPa	12,66	11,97	11,26	10,51	9,89	9,66	9,45	9,26	8,99	8,78	6,62	6,43	6,21	6,01	5,80
air flow 2100 m3/h (speed 2)																
heat output	kW	20,18	19,15	18,00	16,96	15,82	17,38	16,15	14,98	13,81	12,60	14,43	13,30	12,14	10,95	9,80
outlet air temperature	°C	36,52	39,72	42,81	45,89	49,17	33,23	37,32	41,15	45,19	49,11	22,11	24,25	28,19	32,27	36,19
water flow	m3/h	1,44	1,37	1,30	1,22	1,15	1,15	1,08	1,01	0,94	0,86	0,90	0,83	0,76	0,68	0,61
pressure drop	kPa	9,11	8,52	7,93	7,32	6,75	6,96	6,35	5,67	5,03	4,45	4,25	3,64	3,09	2,43	1,85
air flow 1550 m3/h (speed 1)																
heat output	kW	15,20	18,35	21,43	24,67	27,93	13,10	11,62	10,15	8,65	7,19	10,95	9,46	7,96	6,43	5,96
outlet air temperature	°C	39,63	42,72	45,65	48,63	51,72	36,18	39,23	42,13	45,10	47,90	25,11	28,26	31,37	34,32	37,29
water flow	m3/h	1,15	1,08	1,01	0,94	0,86	0,86	0,79	0,72	0,65	0,58	0,61	0,54	0,47	0,40	0,32
pressure drop	kPa	7,12	6,61	6,19	5,67	5,14	5,11	4,65	4,19	3,67	3,16	3,45	2,95	2,44	1,99	1,45

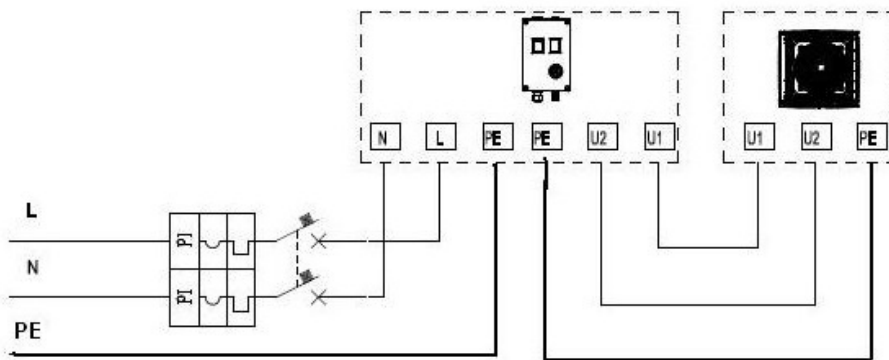
HEATER X50																
inlet/outlet water temperature		90/70					80/60					70/50				
inlet air temperature		0	5	10	15	20	0	5	10	15	20	0	5	10	15	20
air flow 2800 m3/h (speed 3)																
heat output	kW	49,62	46,11	42,60	39,23	35,83	42,54	39,07	35,53	32,19	28,74	37,30	31,24	26,28	20,97	15,89
outlet air temperature	°C	43,94	45,71	47,79	49,69	51,25	38,72	41,12	43,99	46,28	48,57	33,46	35,85	38,21	40,65	43,16
water flow	m3/h	2,34	2,27	2,20	2,12	2,05	1,94	1,87	1,80	1,73	1,66	1,58	1,51	1,44	1,37	1,30
pressure drop	kPa	15,77	14,93	14,12	13,31	12,50	12,77	12,16	11,56	10,95	10,34	9,77	9,16	8,56	7,95	7,34
air flow 1850 m3/h (speed 2)																
heat output	kW	33,37	31,08	28,78	26,49	24,13	27,93	25,83	23,74	21,67	19,56	25,25	22,71	20,41	18,12	15,83
outlet air temperature	°C	47,99	49,85	51,73	53,82	55,79	42,88	44,79	46,81	48,85	50,75	37,55	39,61	41,58	43,70	45,65
water flow	m3/h	1,91	1,87	1,80	1,73	1,66	1,55	1,48	1,40	1,33	1,26	1,30	1,22	1,15	1,08	1,01
pressure drop	kPa	12,15	12,43	11,71	10,98	10,25	8,85	8,14	7,43	6,75	6,04	6,75	6,04	5,34	4,62	3,89
air flow 1400 m3/h (speed 1)																
heat output	kW	24,87	23,21	21,39	19,82	18,11	21,31	19,60	18,04	16,07	14,31	18,34	15,66	13,14	10,46	8,09
outlet air temperature	°C	51,50	53,49	55,58	57,38	59,63	45,93	47,85	49,89	51,78	53,80	40,65	42,59	44,55	46,68	48,63
water flow	m3/h	1,58	1,51	1,44	1,37	1,15	1,40	1,33	1,26	1,19	1,12	1,19	1,12	1,04	0,97	0,90
pressure drop	kPa	7,14	6,53	5,95	5,32	4,75	5,55	4,93	4,34	3,73	3,14	4,43	3,85	3,26	2,65	2,14

13. ELECTRICAL CONNECTION SCHEMES

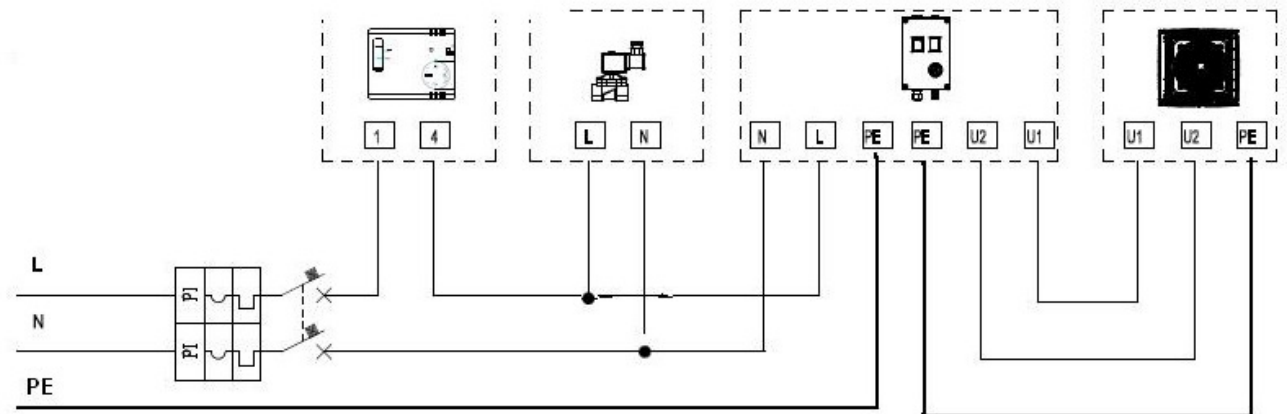
1. CONNECTING THE HEATER



2. CONNECTING THE HEATER TO THE SPEED REGULATOR

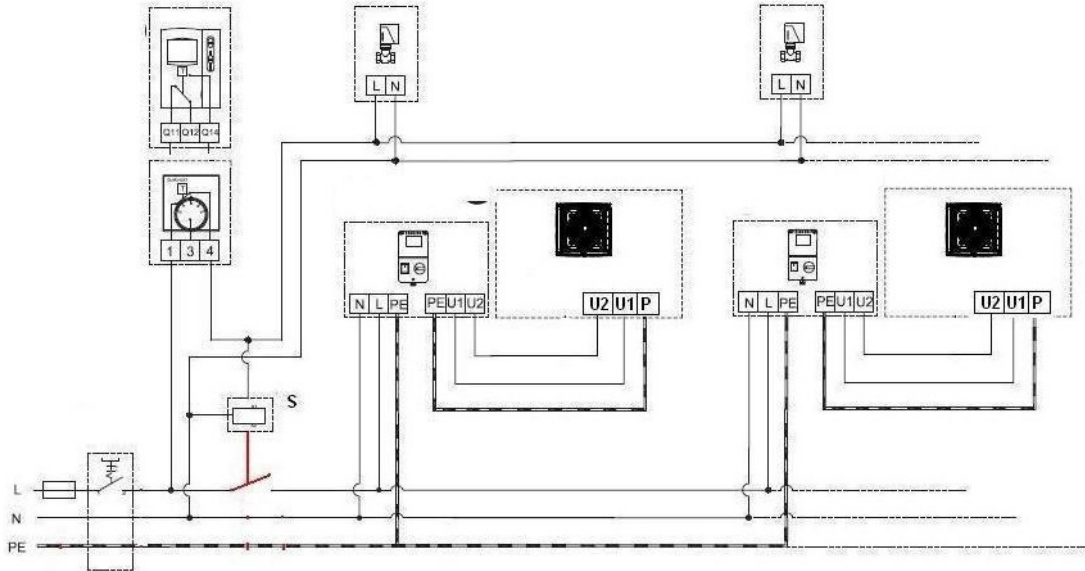


3. CONNECTING THE HEATER TO THE VALVE/ACTUATOR/SPEED REGULATOR



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CONNECTING MORE THAN ONE UNIT TO THE AUTOMATIC CONTROL



Thermostat turns off valve and engine in the same time. While selection of contactor please notice that one HEATER unit consumes 0,8A. In case of multiply use please select proper contactor

OPERATION AND MAINTENANCE DOCUMENTATION

GUARANTEE TERMS AND CONDITIONS

§1 Guarantee Scope

1. This Guarantee covers material defects of the device which make its functioning impossible. This Warranty does not extend to the installation and maintenance works.
2. The Guarantee for the product sold by the Seller covers 24 months. The guarantee period commences upon delivery of the device to the Buyer specified in the sales invoice. The warranty covers any and all parts/components specified in the scope of the delivery.
3. Products delivered by third persons are guaranteed by this supplier.
4. Devices may be started and serviced only by qualified persons trained in the areas of maintenance and operation of the device. Any and all operations related to start, maintenance and repairs must be noted that such operations have occurred in the Guarantee Card.
5. The precondition for issuing the Guarantee by the manufacturer is the assembly and activation of the device in accordance with the Operation and Maintenance Documentation not later than 6 months after the date of purchase.
6. The product is guaranteed for a full period of warranty only if service works implied in the Operation and Maintenance Documentation for the device specified in the 'Maintenance' section are carried out. All services related to the maintenance of the device are carried out at the User's cost and expenses.
7. The provision of warranty services does not cease or suspend the duration of the Warranty. The warranty for replaced or repaired parts/elements shall end with the expiry of the Guarantee for the device.

§2 Warranty Exclusions/Disclaimers

1. The Warranty does not extend to the mechanical damages and damages to electrical parts caused by improper use, transport, abnormal voltage or other damages arising from a product defect. For the above reasons, the Warranty is solely limited to the replacement of parts/components having construction defects that shall be delivered without any additional costs only if the defective part/component has been returned.
2. The Warranty for devices does not apply to when technical mistakes occurred during the procedures concerning installation, regulation and controlling including any of the following:
 - a) Defects caused by connecting a device to an inappropriately designed ventilation system that allows additional heat loads that do not meet any standards and decrease the efficiency of heat exchanger.
 - b) Defects caused by connecting to the components or parts that are part of the heating system but have not been delivered by the Seller and whose inappropriate functioning has a negative impact on the device's functioning.
 - c) Defects caused by connecting to the components that are not original spare parts
 - d) Defects incurred by reselling of the product by the first buyer/user to another buyer who dismantles/installs the device that was previously installed and operated in a specific building and its conditions.
 - e) Defects caused by an improper expertise and insufficient knowledge of the installer and technical staff who, in an improper way carry out after-sale service of the device
 - f) Defects caused by special conditions of use that differ from typical/standard applications unless the parties (the Seller and customer's technical staff) have previously agreed otherwise in writing.
 - g) Defects incurred by natural disasters such as fire, explosions and other incidents that may result in damages to mechanical, electrical and protection devices
 - h) Defects caused by inappropriate cleaning of the technical facility or place where the device has been installed; cleaning must take place periodically to suit the specific working conditions and the amount of dust.
 - i) Defects arising from the absence or improper cleaning of heat exchangers; cleaning must be done periodically to suit the specific working conditions and the amount of dust.
 - j) Defects incurred by the inappropriate installation inadequate for low outside temperature of working conditions.
 - k) Defects incurred by low temperature if no protection device is installed by the installing contractor to avoid:
 - low temperatures on electrical and mechanical parts such as valves, electric and electronic controlling devices,
 - water condensation and frost/ice near the device,
 - thermal shock of the heater and heat exchanger caused by sudden changes of outside temperature.

§3 iHEATone is not liable to:

1. Current maintenance works, inspections following from Operation and Maintenance Documentation and device programming.
2. Defects caused by banking of a device while waiting for the warranty service.
3. Any and all defects caused to the company's property.

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§4. Complaint Procedure

1. In the event of the complaint under the Warranty conditions the user may make lodge a complaint directly to the Distributor.
2. All repairs covered by the warranty shall be done as part of the activity of an installation company and Factory Service. All repairs ensuing from the guarantee shall be done in a place where the device is installed.
3. The user with respect to the service activities is obliged to:
 - Allow to have full access to the rooms where the devices were installed and provide the necessary facilities allowing direct access to the device (lift, scaffolding etc.) in order to do all the servicing covered by the guarantee.
 - Present the original of the Guarantee Card and VAT invoice recording the purchase,
 - Ensure the safety while doing the servicing,
 - Allow to start works immediately after the arrival of the Service.
4. In order to make a complaint under the warranty it is necessary to deliver to the Distributor's address the following documents:
 - a. a correctly filled-in complaint form that is available at the website of www.iHEATone.com
 - b. a copy of the Guarantee Card
 - c. a copy of the proof-of-purchase - the sales invoice
5. Repair service including the replacement of the parts shall be done free of charge only if the representative of the installing contractor or the Service claim that the defect or faulty device is caused by fault of the producer.
6. Any and all costs (cost of repair, travel and exchanged components) incurred due to the unjustified complaint especially in the situation when the representative of the Installing Contractor of the Factory Repair Service claims that defect/damage was caused as a result of breaching the guidelines provided in the Operation and Maintenance Documentation or notices the exclusions under **§2 (Warranty exclusions) will be** requested from the Buyer/Customer who reported the failure.
7. The Claimant is obliged to give a written confirmation of the service provided.
8. iHEATone is entitled to refuse the warranty service if iHEATone has not received full payment for the product complained about under the Guarantee or any previous servicing activities.

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WARRANTY CARD

INVESTMENT NAME.....

Unit type.....

Unit number.....

Purchase date.....

Startup date.....

Installation company date:

Name of startup Installer:.....

Company name.....

.....

Address:.....

Phone.....

Signature of startup installer.....:

Maitanance and repair registration:

date	Maitanance and repair description	Stamp and signature of installation company