DUAL VOLTAGE SPACE WARMER® KEROSENE/ DIESEL HEATER 50,000BTU/HR SPACE WARMER® WITH WHEELS

MODELS: **AB500DV, AB1850DV**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.


Refer to instructions


Warning! automatic start-up


Warning! Hot surfaces


Warning!


DO NOT cover

This product is not suitable for primary heating purposes.
This product is only suitable for well insulated spaces or occasional use.

1. SAFETY

1.1. **ELECTRICAL SAFETY**

❑ **WARNING!** It is the user's responsibility to check the following:
✓ Check all electrical equipment and appliances to ensure that they are safe before using.
✓ Inspect power supply leads, plugs and all electrical connections for wear and damage.
✓ Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply.
× **DO NOT** use worn or damaged cables, plugs or connectors.
✓ Ensure that any faulty item is repaired or replaced immediately by a Sealey qualified technician.
✓ If the cable or plug is damaged during use, switch off the electricity supply and remove from use.
✓ Sealey recommend that an RCD (Residual Current Device) is used with all electrical products.
Important: Ensure that the voltage rating on the appliance suits the mains power supply.
× **DO NOT** pull or carry the appliance by the power cable.
× **DO NOT** pull the plug from the socket by the cable.
✓ If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

1.2. **GENERAL SAFETY**

✓ Children from age 8 years and above, persons with reduced physical, sensory, or mental capabilities those with lack of experience and knowledge can use the appliance, if they have been given supervision or instruction concerning use of the appliance in a safe way to understand the hazards involved.
✓ Children shall NOT play with the appliance.
✓ Cleaning and user maintenance on the appliance shall not be made by children without supervision.
✓ The appliance shall be disconnected from its power source during service and when replacing parts.
✓ Read instructions carefully.
✓ Place instructions in a safe place for future reference.
× **DO NOT** allow anyone who has not read these instructions to assemble, light adjust or operate this heater.
✓ IF THE INFORMATION IN THIS MANUAL IS NOT FOLLOWED EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.
✓ Maintenance must only be performed by qualified personnel.
✓ UNVENTED PORTABLE HEATERS USE AIR (OXYGEN) FROM THE AREA IN WHICH IT IS USED. ADEQUATE COMBUSTION AND VENTILATION AIR MUST BE PROVIDED. REFER TO INSTRUCTIONS.
× **DO NOT** store or use petrol or other flammable substances in the vicinity of this or any other appliance.
❑ **WARNING!** FIRE, BURN, INHALATION, AND EXPLOSION HAZARD. KEEP SOLID COMBUSTIBLES, SUCH AS BUILDING MATERIALS, PAPER OR CARDBOARD, A SAFE DISTANCE AWAY FROM THE HEATER AS RECOMMENDED BY THE INSTRUCTIONS. NEVER USE THE HEATER IN SPACES WHICH DO OR MAY CONTAIN VOLATILE OR AIRBORNE COMBUSTIBLES, OR PRODUCTS SUCH AS GASOLINE, SOLVENTS, PAINT THINNER, DUST PARTICLES OR UNKNOWN CHEMICALS.
❑ **WARNING!** DIRECT-FIRED HEATERS MAY CAUSE CARBON MONOXIDE (CO) POISONING WHEN INCORRECTLY USED, E.G INDOORS WITHOUT ADEQUATE AIR CIRCULATION, OR IF NOT PROPERLY WORKING. CO POISONING MAY LEAD TO DEATH.
❑ **WARNING!** FAILURE TO COMPLY WITH THE PRECAUTIONS AND INSTRUCTIONS PROVIDED WITH THIS HEATER, CAN RESULT IN DEATH, SERIOUS BODILY INJURY AND PROPERTY LOSS OR DAMAGE FROM HAZARDS OF FIRE, EXPLOSION, BURN, ASPHYXIATION, CARBON MONOXIDE POISONING, AND/OR ELECTRICAL SHOCK. ONLY PERSONS WHO CAN UNDERSTAND AND FOLLOW THE INSTRUCTIONS SHOULD USE OR SERVICE THIS HEATER. IF YOU NEED ASSISTANCE OR HEATER INFORMATION SUCH AS AN INSTRUCTIONS MANUAL, LABELS, ETC. CONTACT THE MANUFACTURER.
❑ **WARNING!** NOT FOR HOME OR RECREATIONAL VEHICLE USE.
✓ The product is prohibited from being used in environments with temperatures above 45°C and below -20°C.
× **DO NOT** cover the heater. Do not block the air inlet and outlet.
✓ The heater outlet is very hot during operation and after use. Do not touch! Use personal protecting equipment if needed. Unplug the heater before moving it. Never pull the cable to unplug or move the unit.
× **DO NOT** leave the heater unattended when in use.

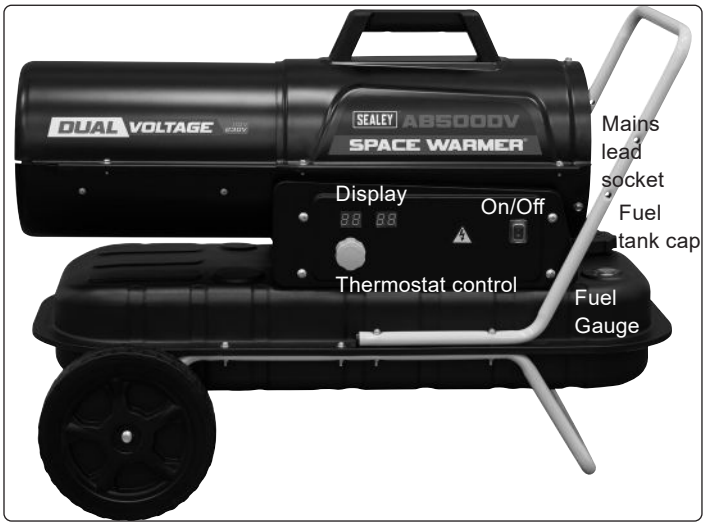
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2. INTRODUCTION

AB500DV: Dual voltage space warmer with 50,000Btu/hr (15kW) Heat output. The voltage can be easily changed using either 230V or 110V cables and plugs supplied. Clean burning and proven pump system can operate with either kerosene or diesel. Large 22L tank with an 13hr usage on a single tank of fuel it is ideal for use in workshops, garages or factories. With stainless steel combustion chamber and dual LED display makes it easy to keep the temperature of any workspace controlled. Fitted with safety cut-outs and fuel gauge, plus a sturdy handle and heavy-duty wheels for easy manoeuvrability.
AB1850DV: Dual voltage space warmer with 185,000Btu/hr (55kW) Heat output. Can be used with either 230V or 110V supply with the switch of a plug. Clean burning and proven pump system can operate with either kerosene or diesel. Large 50L tank with an 10hr usage on a single tank of fuel. Ideal for use in workshops, garages or factories. With its stainless steel combustion chamber and a dual LED Display, this unit makes it easy to keep the temperature of any workspace controlled. Fitted with safety cut-outs and fuel gauge, plus a sturdy handle and heavy-duty wheels for easy manoeuvrability.

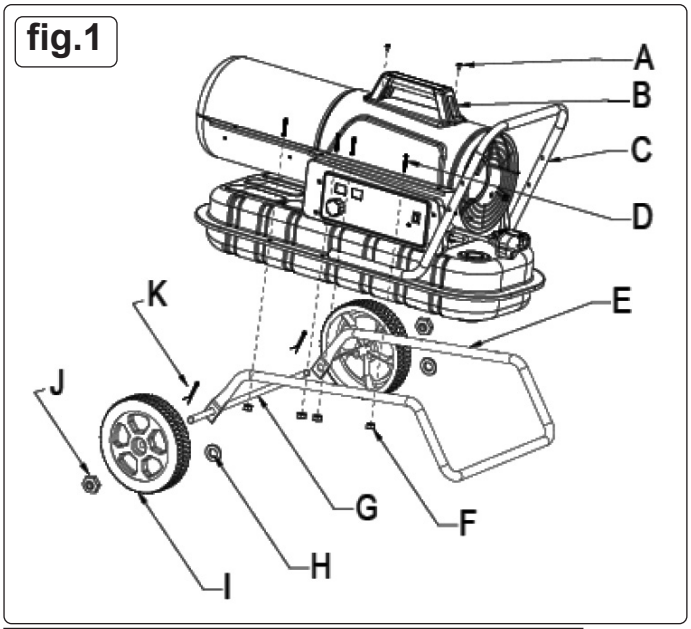
3. SPECIFICATION

Model	AB500DV	AB1850DV
Fuel Tank	22L	50L
Fuel	Kerosene/Diesel	
Fuse Rating	5A on 230V, 5A on 110V	
Heated Area	8,800ft³(200-300m²)	55,000ft³(1500m³), 500-720m²
Motor Power	170W using 230V, 150W using 110V	290W using 230V 270W using 110V
Output	50,000Btu (15kW)	185,000Btu (55kW)
Power Supply Cable Length	1.3m	
Running Time Per Filling	13hrs - 1.2kg/hr	10hrs - 4.3kg/hr
Supply	230v 50hz or 110V 50Hz	



4. FEATURES (SEE ABOVE RIGHT)

5. CONTENTS



No:	Description	Qty
A	Screw M5*12	2
B	Plastic handle	1
C	Handle	1
D	Screw (M5*40/M5*25)	8
E	Feet pipe	1
F	Nut M5	8
G	Wheel shaft	1
H	Plain washer Ø13mm	2
I	Wheel	2
J	Nut M12	2
K	Cotter	2
L	Mains plug leads	Not shown

6. ASSEMBLY

6.2.1. Insert the wheel shaft G to the corresponding hole of feet pipe E, insert the cotter K to the corresponding holes; put plain washer H to the two sides of shaft, slide the wheel I over the wheel shaft G, screw the nut J to fix the wheel on the shaft.
6.2.2. Put the heater body on the feet pipe assembly, make sure the 4 holes of handle C point towards the corresponding 4 holes on the feet pipe.
6.2.3. Using the screw D, and nut F to fix the feet pipe assembly and handle to the tank.
6.2.4. Fit the plastic handle B with screws A.

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7. INSTALLATION

7.1. Position the heater on a flat, level, non-flammable, solid surface.
7.2. Direct-fired heaters are intended for use in outdoor open areas or in indoor well ventilated areas. For indoor use, provide permanent ventilation openings of at least 25 cm²/kW, equally distributed between floor and high level, with a minimum of 250 cm².
7.3. Minimum Opening Size: AB500DV 375cm² AB1850DV 1375cm²
7.4. Only install the heater in normal upright position.
× **DO NOT** place the heater near walls, corners or low ceilings.
× **DO NOT** place the heater below a socket outlet.
× **DO NOT** place the heater on moving vehicles or where it can tip over.
7.5. Keep the heater away from flammable, combustible, explosive or corrosive materials.
7.6. Keep the heater away from curtains or similar materials that could block the air inlet and outlet.
7.7. Never block or restrict the air inlet and outlet for any reason.
7.8. Keep the power cable away from heat sources, sharp edges, cutting and moving parts.
× **DO NOT** expose directly to the weather or to excessive humidity.
7.9. **DO NOT** place the heater in the immediate surroundings of a bath, shower or swimming pool.
7.10. Follow general and special fire safety regulations in force in all fields of applications.
7.11. Ensure the following minimum safety clearances from materials or objects in the surroundings of the heater:
Side: 0.6 m
Air inlet side: 1 m
Top: 1.5 m
Hot air outlet side: 3 m
Floor: 0 m
7.12. Floors and ceilings must be made of fireproof materials in the place where the heater is operated.
× **DO NOT** connect direct-fired heaters to air ducts.

8. OPERATION

8.1. Fill tank with clean fuel. Only use Diesel or Kerosene. The fuel gauge on top of the tank allows to check fuel level.
8.2. Select appropriate plug for power supply being used. Plug lead into socket on rear face of heater.
8.3. Connect the power cord plug to a AC110V or 230V 50 Hz earthed electrical supply system. Earthing is mandatory.
8.4. The left display window shows "--", the right display window shows ambient temperature.
8.5. Push the power switch to "ON"(1) position.
8.6. The default temperature setting is 20°C, (shown on the left display window).
8.7. If the ambient temperature is below the default temperature, both the electrodes and the fan work simultaneously, and the heater starts
8.8. If the ambient temperature is higher than the default temperature, turn the thermostat control knob to the desired temperature, the electrodes begin to spark, the motor works simultaneously, and the heater starts.
8.9. **COLD START-UP:** at low temperature keep the air vent hole (fig.2) closed by a finger during ignition to make start-up easier.
8.10. **ABNORMAL OPERATION:** in case of malfunction (flame failure, reduced air flow, bad combustion, etc.) the heater stops and the indicator light starts FLASHING (THE LOCK-OUT MODE code will be showed on the display window).
8.11. **MANUAL RESET/RESTART:** If the heater is in lock-out mode, check and remove the cause of lock-out before restarting the heater. To reset, turn the ON/OFF switch to 0 and then again to I. In case of repeated malfunction, call Sealey technical service. Turning the thermostat control knob will NOT reset the heater.
8.12. **SHUT-DOWN:** Move switch to "OFF" (O) position. Unplug the unit when it is not used for a long time.
× **DO NOT** cover the heater. **DO NOT** block the air inlet and outlet.
8.13. The heater outlet is very hot during operation and after use. **DO NOT** touch! Use personal protection equipment if needed.
8.14. Unplug the heater before moving it. Never pull the cable to unplug or move the unit.
× **DO NOT** leave the heater unattended when in use.
8.15. Remove mains lead and store separately when not in use.

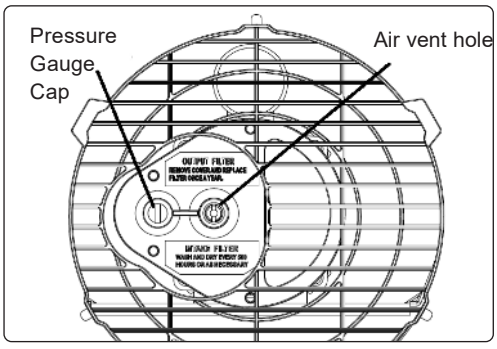


fig.2

9. MAINTENANCE

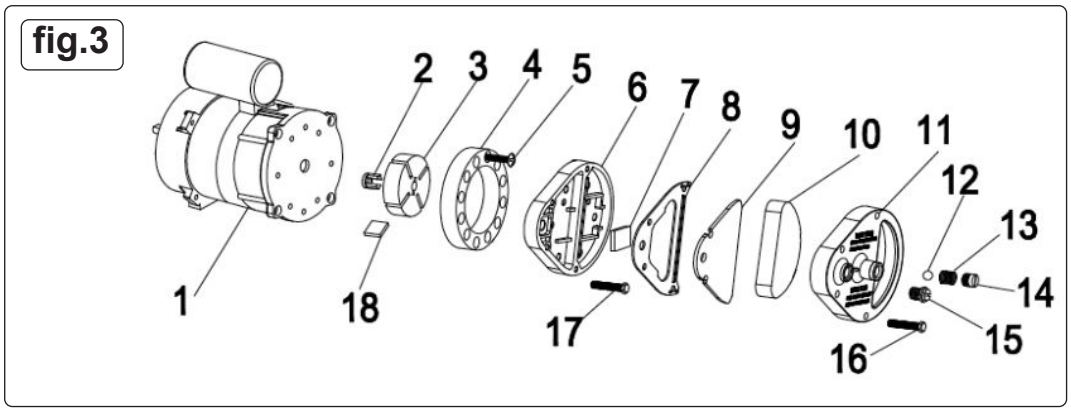
❑ **WARNING!** Before starting any maintenance task, shut down, unplug and let the heater cool down for at least 15 minutes.
9.1. Regularly wipe the enclosure using a soft sponge or cloth. For very dirty parts, use a sponge wetted with lukewarm water and a mild detergent, then dry using a clean cloth. When cleaning, make sure that water does not enter the unit.
9.2. Keep air inlet and fan free from dust and dirt. To clean inner parts, gently blow compressed air through air inlet.
9.3. Regularly inspect the power cable: if worn, cracked or damaged have it replaced by technical service.
9.4. Before storing the heater, make sure it is perfectly cool and dry. Cover the unit with a plastic bag, put it in its packing box and store it in a dry, ventilated place.
× **DO NOT** attempt any electrical repair yourself. If the heater needs service or repair, contact a qualified technician.
× **DO NOT** use a faulty unit unless a qualified technician has inspected and repaired it.
9.5.
× **DO NOT** open the enclosure to clean the inner parts. **DO NOT** spray water into the heater.
9.6. Never use solvents, gasoline, toluene and similar aggressive chemicals to clean the heater.

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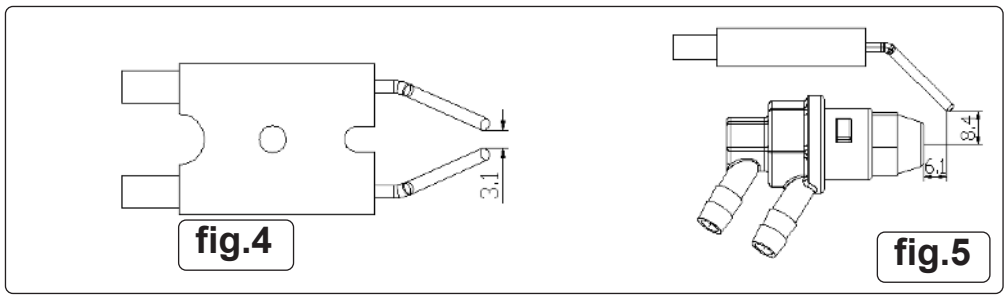
9.7. The following checks BY QUALIFIED PERSONNEL ONLY are recommended before every seasonal use:

9.7.1. **NOZZLE:** Carefully unscrew nozzle from nozzle fitting. Blow compressed air through nozzle orifice to free it from dirt. Replace nozzle if necessary, fig.4.

9.7.2. **AIR FILTERS:** Clean air filters. Remove filter end cover (11), wash air intake filter (10) using a light detergent and dry it thoroughly before re-installing. Replace air delivery filter (9) once a year (Fig.3.)



9.7.3. **IGNITION ELECTRODES:** Clean, adjust and if necessary replace ignition electrode. For electrode gaps see Fig. 4-5 (dimensions in mm).



9.7.4. **COMPRESSOR PRESSURE ADJUSTMENT (Fig.2)**

The compressor pressure is factory set and must be checked and adjusted by qualified technicians only. Tampering with the unit may be dangerous.

Remove pressure gauge cap. Connect a pressure gauge on the pressure measuring port on the rear guard. Start heater and read air pressure value. If necessary adjust pressure to the correct value turning the adjusting screw (the air vent hole in the adjusting screw middle) clockwise to increase, anticlockwise to decrease the pressure.

AB500DV: 0.35 (bar) AB1850DV: 0.45 (bar)

9.7.5. **ELECTRICAL:** Inspect cables, electrical components and connections.

10. TROUBLESHOOTING

Problem	Cause	Remedy
Motor does not start E1 displayed on the screen	No power or low voltage	Check power line and voltage
		Check fuse and replace if necessary
	Faulty or damaged power cord	Check and replace if needed
	Faulty motor/capacitor	Check and if necessary replace
	Lock-out of appliance due to previous overheating	Detect the cause of overheating Shut the appliance down Check air inlet and outlet Wait some minutes and restart the appliance
E2 displayed on the screen	The temperature probe is faulted or the connector for temperature probe is loosen	Check and replace if the temperature probe if needed
		Check and replace the PCB if needed
E9 displayed on the screen	The power module is in poor contact with the display module	Check the display board wiring or restart the machine
	The cable of the display board is faulty or damaged	Check and replace the PCB if needed

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Motor runs, but the heater does not ignite and locks out after a short time E1 displayed on the screen	Empty fuel tank, dirty or wrong fuel	Remove dirty or wrong fuel. Fill tank with clean fuel.
	Fuel filter clogged	Clean or replace fuel filter
	Air leaks in oil line	Check hoses, tighten connections, if necessary replace
	Burner nozzle clogged	Clean nozzle by blowing through with compressed air, replace if necessary
	Fuel viscosity increased due to low temperature	Mix Diesel with 10-20% kerosene
Flames come out of flue outlet E1 displayed on the screen	Insufficient airflow into combustion chamber	Check air inlet, fan, motor
	Compressor pressure too high	Check air pressure, adjust if necessary
Heater stops during operation Ambient temperature displayed on screen	The room temperature set on room thermostat has been reached	Normal operation To start turn the temperature control knob clockwise on a higher setting
Heater stops during operation E1 displayed on the screen	Flame failure	Check and remove the cause(s) of malfunction To reset, turn On/Off switch to 0 and then to I Call technical service if the problem persists
	Bad combustion	
	Reduced airflow	
	Overheating	
LC displayed on the screen	3 ignition failures will lock the PCB and heater will stop working	To unlock: with mains power on, switch power switch to ON 3 times in 10 seconds

11. END OF LIFE

11.1. At the end of its life the product must be dismantled (perform reverse of Assembly section) and disposed of according to regulations in force.

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ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

REGISTER YOUR PURCHASE HERE

WEEE REGULATIONS

Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.

NOTE: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts
IMPORTANT: No Liability is accepted for incorrect use of this product.
WARRANTY: Guarantee is 36 months from purchase date, proof of which is required for any claim.

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Information requirements for gaseous/liquid fuel local space heaters

Model identifier(s): AB500DV v1							
Indirect heating functionality: Yes No ✓							
Direct heat output: 15 (kW)				Indirect heat output: NA (kW)			
Fuel				Space heating emissions NO_x nitrogen oxides			
Select fuel type: Gaseous Liquid ✓		Specify: Diesel		97 [mg/kWh_{input}] (GCV)			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Heat output				**Useful efficiency (NCV)**			
Nominal heat output	P_{nom}	15	kW	Useful efficiency at nominal heat output	$\eta_{th,nom}$	100	%
Minimum heat output (indicative)*	P_{min}	NA	kW	Useful efficiency at minimum heat output (indicative)*	$\eta_{th,min}$	NA	%
				Seasonal space heating efficiency	η_s	84.4	%
Auxiliary electricity consumption				**Type of heat output/room temperature control (select one)**			
At nominal heat output	el_{max}	0.06	kW	Single stage heat output, no room temperature control		Yes	No ✓
At minimum heat output	el_{min}	0.06	kW	Two or more manual stages, no room temperature control		Yes	No ✓
Power consumption				With mechanical thermostat room temperature control		Yes	No ✓
In off-mode	P_O	0.00	W	With electronic room temperature control		Yes ✓	No
In standyby mode	P_{sm}	0.95	W	With electronic room temperature control plus day timer		Yes	No ✓
In idle mode	P_{dle}	0.95	W	With electronic room temperature control plus week timer		Yes	No ✓
In networked standby mode	P_{nsm}	0.00	W	**Other control options (multiple selections possible)**			
Standby mode with display information or status		YES		Room temperature control, with presence detection		Yes	No ✓
				Room temperature control, with open window detection		Yes	No ✓
				With distance control option		Yes	No ✓
* *Enter figure or NA*				With adaptive start control		Yes	No ✓
Permanent pilot flame power requirement				With working time limitation		Yes	No ✓
Pilot flame power required (if applicable)*	P_{pilot}	NA	kW	With black bulb sensor		Yes	No ✓
				With self-learning functionality		Yes	No ✓
				With control accuracy		Yes	No ✓