



Model EEHI  
1,000 - 10,000 liters  
storage capacity



Model EEII  
200 - 540 liters  
storage capacity



Model EEHE  
1,000 - 10,000 liters  
storage capacity



## ECOTHERM is the leading brand for turnkey hot water, steam and solar systems for hotels, hospitals and industry in the Middle East.

ECOTHERM amazes its customers with “Individual Heat Transfer Solutions” for hot water, steam and solar generation. The following advantages mark these solutions:

### **Individuality**

ECOTHERM realizes extensive turnkey systems as well as the production of separate components. Each single plant is specifically aligned to the customer’s individual requirements. The basis is an own production in Austria and a wide product portfolio.

### **Premium quality**

All products made of high-class duplex stainless steel guarantee a long-life cycle and perfect hygiene. ECOTHERM is certified to ISO 9001 : 2008 with all required European standards.

### **Innovation**

We are always open to the new, we constantly investigate new technologies and we develop path-breaking and future-oriented products.

### **Premium service**

Clients benefit from extensive service at consulting, planning, engineering, supervision and training. ECOTHERM regularly improves the know-how of its partners and clients via selective trainings.

### **Efficiency**

The ECOTHERM Group managed by the owner has slim decision-making structures. ECOTHERM turnkey solutions from one single source and the economical handling of energy resources offer an optimal cost-benefit ratio.

### **Experience**

With thousands of installations the past 30 years in Europe, the Middle East, Asia, North Africa and Central America, ECOTHERM has become one of the technology and innovation leaders for individual hot water, steam and solar solutions on the market.

### **Reliability**

ECOTHERM systems are monitored around the clock and can be serviced at low cost, quickly and efficiently via an advance control panel. Our designed plants have low maintenance requirements and are totally dependable.

### **Sustainability**

ECOTHERM products help our customers to save energy and money. We save valuable resources through the use of renewable energies. ECOTHERM high-performance plants have minimal space requirements and provide maximum energy savings. When planning new products ECOTHERM engineers take all the qualitative and economic principles into account in accordance with ecological principles.

### **Partnership**

We live in a partnership with all our customers, suppliers and employees. This relationship is characterized by honesty, commitment, openness, trust and reliability. The object is a joint long-term success.

### **Internationality**

The international alignment of ECOTHERM with branches in Dubai, Kuwait, Mexico, Hungary, India and partners in more than 20 countries is the basis for our flexible and efficient project implementation that is always on schedule.

## ECOTHERM Electric Water Heaters



**Find your optimal solution**

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### Products:



- **Model EERI-S: Electric Water Heaters with internal Incoloy 825 heating elements for residential applications**  
200 liters - 450 liters storage capacity

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- **Model EECI-S: Electric Water Heaters with internal Incoloy 825 heating elements for commercial applications**  
540 liters - 750 liters storage capacity

Page 9



- **Model EEHI-S: Electric Water Heaters with internal Incoloy 825 heating elements for industrial & commercial applications**  
1,000 liters - 10,000 liters storage capacity

Page 10



- **Model EEHE-S: Electric Water Heaters high storage capacity with external Incoloy 825 heating elements for industrial and commercial applications**  
1,000 liters - 10,000 liters storage capacity

Page 11



- **Model EERI-C & EECI-C & EEHI-C: Electric Water Heaters with internal ceramic heating elements for residential & commercial applications**  
1,000 liters - 10,000 liters storage capacity

Page 12



- **Model EEII-S: Instantaneous Electric Water Heaters with Incoloy 825 heating elements**  
Vertical or horizontal type

Page 13



- **Model EEII-C: Instantaneous Electric Water Heaters with ceramic heating elements**  
Vertical or horizontal type

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- **Control Panels**

Pages 15 - 17



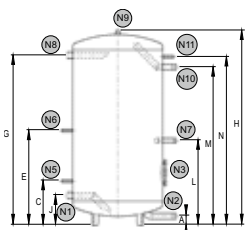
- **Heating Elements & Accessories**

Pages 18 - 20



**Advantages**

Pages 21 - 25



**Technical Specifications**

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## Products

ECOTHERM electric water heaters are the result of more than 20 years of research and development. Each model is individually manufactured due to the requirements of the project. Different standardized models have been established to meet different applications: residential buildings, commercial applications or high capacity water demands as for hotels, hospitals or industry.

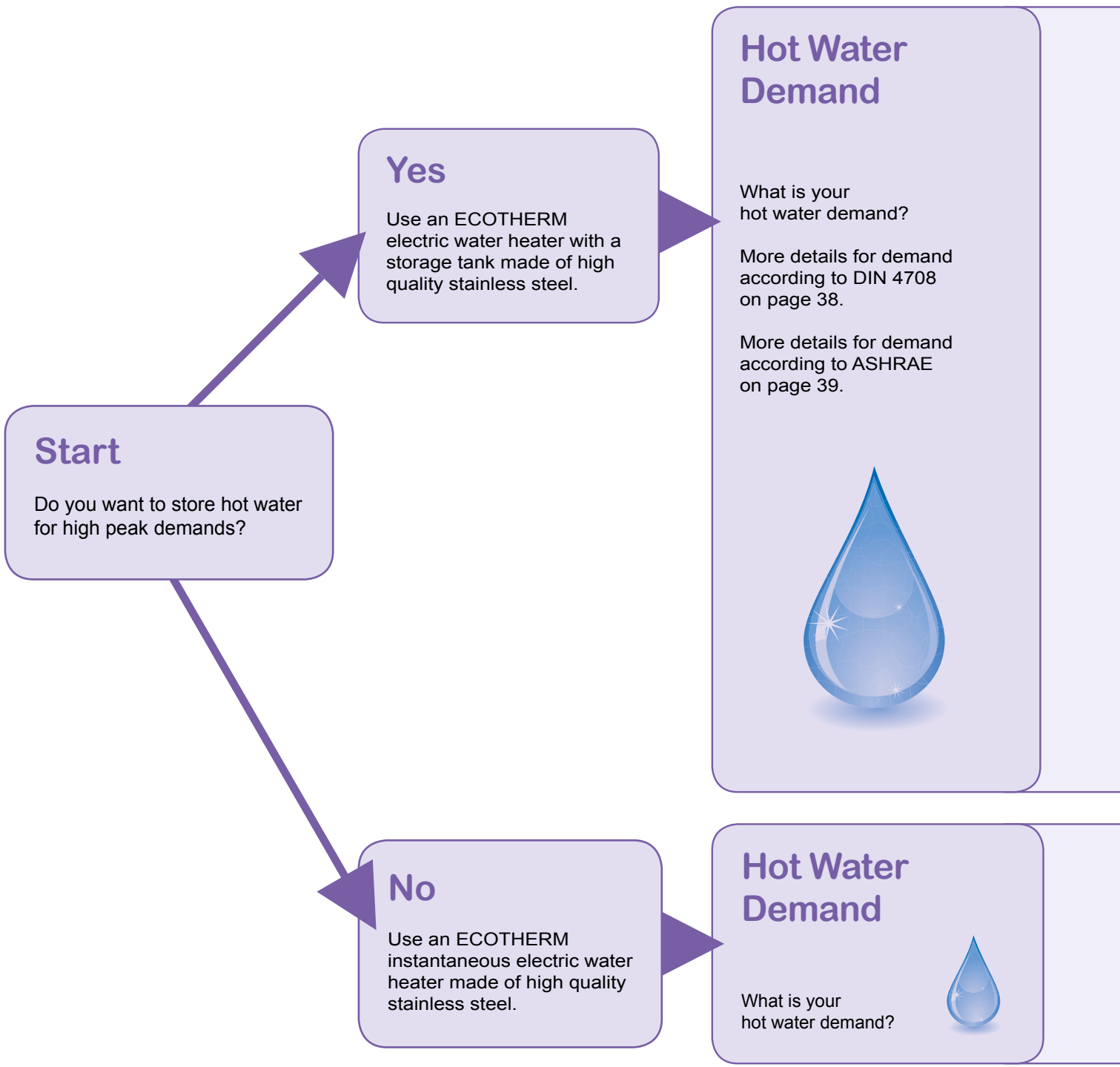
One of the most impressive ECOTHERM references is the Abraj Al Bait Towers and Mecca Royal Clock Tower in Mecca, Kingdom of Saudi Arabia. 63 stainless steel electric water heaters produce the hot water for the whole building complex, which can house over 30,000 people. A second interesting reference is the turnkey hot water and steam system for the Sheraton Hotel & Towers in Hong Kong. A combination of electric water heaters with 800 kW and a total capacity of 10,000 liters was installed together with four heat pumps - each 350 kW - and two electric steam boilers, each with 1,800 kg/h at 10 bar.

# Find your optimal ECOTHERM solution

ECOTHERM electric water heaters are premium quality products. The storage tank is made of high quality stainless steel at the production facility at the ECOTHERM headquarters in Austria. All models are equipped with the ECOTHERM fibre-fleece insulati-

on. Therefore the heat losses of the storage tank in the stand-by mode are minimized. For all applications you can individually configure the optimal ECOTHERM electric water heater. Different models, different heating elements, different control panels and

selected accessories offer a huge range of possible configurations. Due to its own production facility in Austria, ECOTHERM can individually manufacture your optimal solution.



## EEHE-.S

1,000 - 10,000 liters storage capacity with external heating elements.

More details on page 11.



## Incoloy Heating Elements

- space saving
- low initial costs
- no limits to nominal rating
- easy installation

## Ceramic Heating Elements

- easy to replace during operation - no need to drain storage tank
- low maintenance costs

## Nominal power rating

What is the nominal rating of your hot water system?

You can use our online software ECOSIZE at the member area at [www.ecotherm.com](http://www.ecotherm.com) in order to calculate the nominal power rating.

Register at [www.ecotherm.com](http://www.ecotherm.com)



## EERI-.S

200 - 450 liters storage capacity. More details on page 8.



## EERI-.C

200 - 450 liters storage capacity. More details on page 12.



## EECI-.S

540 - 750 liters storage capacity. More details on page 9.



## EECI-.C

540 - 750 liters storage capacity. More details on page 12.



## EEHI-.S

1,000 - 10,000 liters storage capacity. More details on page 10.



## EEHI-.C

1,000 - 10,000 liters storage capacity. More details on page 12.



## Nominal power rating

What is the nominal rating of your hot water system?

## EEII-.S

More details on page 13.



## EEII-.C

More details on page 14.



## Model EERI-.S: Electric Water Heaters with internal Incoloy 825 heating elements for residential applications

200 liters - 450 liters storage capacity; individual nominal ratings on request



Internal model type  
with Incoloy 825 heating elements

Technical details on page 28.

### Features

- Stainless steel construction
- Different control panels

### Standard features:

- Vertical or horizontal type
- Stainless steel tank AISI 316 Ti or duplex stainless steel
- Incoloy 825 heating elements
- Fibre-fleece insulation with a robust PP exterior shell RAL7037, patented aluminum closure strips and patented self-fixing covering rosettes. Quick and easy installation, insulation with 80 mm. 100% recyclable, fire protection class B2 (B1 upon request).

### Standard accessories:

- Automatic air and vacuum vent including fast venting cock
- Dial thermometer 100 mm 0 - 120°C
- Safety pressure relieve valve
- Pressure gauge 60 mm 0 - 16 bar
- Fitted inspection flange cover 200 mm
- Dielectric isolator kits for piping connections
- Individual over heating protection for each heating element with manual reset

### Simple termination control panel:

- see pages 15 - 17

### Optional:

- Pressure switch
- Non sacrificial electric anode (optional only for good water quality, otherwise mandatory) - without anode warranty is reduced from five to three years

### Operating pressure:

- 6, 10 or 16 bar
- Higher pressures on request

### Benefits

- Compact design
- High performance
- Maximum hygiene
- Energy saving
- Certified and approved system (according to ISO 3834-2)



# Model EECI-.S: Electric Water Heaters with internal Incoloy 825 heating elements for commercial applications

540 liters - 750 liters storage capacity; individual nominal ratings on request



Internal model type with Incoloy 825 heating elements

### Standard features:

- Vertical or horizontal type
- Stainless steel tank AISI 316 Ti or duplex stainless steel
- Incoloy 825 heating elements
- Fibre-fleece insulation with a robust PP exterior shell RAL7037, patented aluminum closure strips and patented self-fixing covering rosettes. Quick and easy installation, insulation with 80 mm. 100% recyclable, fire protection class B2 (B1 upon request).

### Standard accessories:

- Automatic air and vacuum vent including fast venting cock
- Dial thermometer 100 mm 0 - 120°C
- Non sacrificial electric anode
- Safety pressure relieve valve
- Pressure gauge 60 mm 0 - 16 bar
- Fitted inspection flange cover 200 mm
- Dielectric isolator kits for piping connections
- Individual over heating protection for each heating element with manual reset

### Controls:

- see pages 15 - 17

### Optional:

- Pressure switch
- Non sacrificial electric anode (optional only for good water quality, otherwise mandatory) - without anode warranty is reduced from five to three years

### Operating pressure:

- 6, 10 or 16 bar
- Higher pressures on request

Technical details on page 29.

### Features

- Stainless steel construction
- Different control panels

### Benefits

- Compact design
- High performance
- Maximum hygiene
- Energy saving
- Certified and approved system (according to ISO 3834-2)

# Model EEHI-.S: Electric Water Heaters with internal Incoloy 825 heating elements for industrial & commercial applications

1,000 liters - 10,000 liters storage capacity; individual nominal ratings on request



Internal model type with Incoloy 825 heating elements

Technical details on pages 30 - 31.

### Features

- Stainless steel construction
- Different control panels

### Standard features:

- Vertical or horizontal type
- Stainless steel tank AISI 316 Ti or duplex stainless steel
- Incoloy 825 heating elements
- Fibre-fleece insulation with a robust PP exterior shell RAL7037, patented aluminum closure strips and patented self-fixing covering rosettes. Quick and easy installation, insulation with 100 mm. 100% recyclable, fire protection class B2 (B1 upon request).

### Standard accessories:

- Automatic air and vacuum vent including fast venting cock
- Dial thermometer 100 mm 0 - 120°C
- Non sacrificial electric anode
- Safety pressure relieve valve
- Pressure gauge 60 mm 0 - 16 bar
- Fitted inspection flange cover 200 mm
- Dielectric isolator kits for piping connections
- Individual over heating protection for each heating element with manual reset

### Controls:

- see pages 15 - 17

### Optional

- Pressure switch
- Inspection flange 400 mm for tanks < 4,000 liters
- Volt free output contacts for BMS
- Non sacrificial electric anode (optional only for good water quality, otherwise mandatory) - without anode warranty is reduced from five to three years

### Operating pressure:

- 6, 10 or 16 bar
- Higher pressures on request

### Benefits

- Compact design
- High performance
- Maximum hygiene
- Energy saving
- Certified and approved system (according to ISO 3834-2)

# Model EEHE-.S: Electric Water Heaters high storage capacity with external Incoloy 825 heating elements for industrial and commercial applications

1,000 liters - 10,000 liters storage capacity; individual nominal ratings on request



External model type with Incoloy 825 heating elements, removeable without draining the tank

Technical details on pages 32 - 33.

## Features

- Stainless steel construction
- Different control panels - also with touch panel
- High efficiency water pump for optimal heating controlled by control panel

## Standard features:

- Vertical or horizontal type of storage tank
- External Incoloy 825 heating elements
- Stainless steel tank AISI 316 Ti or duplex stainless steel
- Fibre-fleece insulation with a robust PP exterior shell RAL7037, patented aluminum closure strips and patented self-fixing covering rosettes. Quick and easy installation, insulation with 100 mm. 100% recyclable, fire protection class B2 (B1 upon request).
- Frame for control panel made of stainless steel
- Removeable without draining the tank

## Standard accessories:

- Automatic air and vacuum vent including fast venting cock
- Dial thermometer 100 mm 0 - 120°C
- Non sacrificial electric anode
- Safety pressure relieve valve
- Pressure gauge 60 mm 0 - 16 bar
- Fitted inspection flange cover 200 mm
- Dielectric isolator kits for piping connections
- Individual over heating protection for each heating element with manual reset
- Circulation pump
- Check valve

## Controls:

- see pages 15 - 17

## Optional:

- Pressure switch
- Inspection flange 400 mm for tanks < 4,000 liters
- Volt free output contacts for BMS
- Non sacrificial electric anode (optional only for good water quality, otherwise mandatory) - without anode warranty is reduced from five to three years

## Operating pressure:

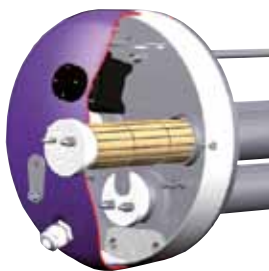
- 6, 10 or 16 bar
- Higher pressures on request

# Model EERI-.C: Electric Water Heaters with internal Model EECl-.C ceramic heating elements for residential Model EEHI-.C and commercial applications

1,000 liters - 10,000 liters storage capacity; individual nominal ratings on request



Internal model type  
with ceramic heating elements,  
removeable without draining the tank



## Benefits

- Compact design
- High performance
- Maximum hygiene
- Energy saving
- Ventilator and safety temperature control for heating elements

## Standard features:

- Vertical or horizontal type
- Stainless steel tank AISI 316 Ti or duplex stainless steel
- Ceramic heating elements
- Unique upgradable design allows subsequent addition of external heating battery
- Fibre-fleece insulation with a robust PP exterior shell RAL7037, patented aluminum closure strips and patented self-fixing covering rosettes. Quick and easy installation, insulation with 100 mm. 100% recyclable, fire protection class B2 (B1 upon request).
- Removeable without draining the tank

## Standard accessories:

- Automatic air and vacuum vent including fast venting cock
- Dial thermometer 100 mm 0 - 120°C
- Non sacrificial electric anode
- Safety pressure relieve valve
- Pressure gauge 60 mm 0 - 16 bar
- Fitted inspection flange cover 200 mm
- Dielectric isolator kits for piping connections
- Individual over heating protection for each heating element with manual reset

## Controls:

- see pages 15 - 17

## Optional:

- Pressure switch
- Inspection flange 400 mm for tanks < 4,000 liters
- Volt free output contacts for BMS
- Non sacrificial electric anode (optional only for good water quality, otherwise mandatory) - without anode warranty is reduced from five to three years

## Operating pressure:

- 6, 10 or 16 bar
- Higher pressures on request

Technical details on pages 34 - 35.

# Model EEII-.S: Instantaneous Electric Water Heaters with Incoloy 825 heating elements



EEII-TS-...-VA-... (vertical type)



EEII-TS-...-HA-... (horizontal type)

**Standard features:**

- Vertical or horizontal type
- Stainless steel tank AISI 316 Ti or duplex stainless steel
- Incoloy 825 heating elements
- Fibre-fleece insulation with a robust PP exterior shell RAL7037, patented aluminum closure strips and patented self-fixing covering rosettes. Quick and easy installation, insulation with 80 or 100 mm. 100% recyclable, fire protection class B2 (B1 upon request).

**Standard accessories:**

- Automatic air and vacuum vent including fast venting cock
- Dial thermometer
- Pressure gauge
- Dielectric isolator kits for piping connections
- Safety pressure relieve valve
- Flow switch

**Controls:**

- see pages 15 - 17

**Optional:**

- Skid mounting
- Non sacrificial electric anode (optional only for good water quality, otherwise mandatory) - without anode warranty is reduced from five to three years

**Operating pressure:**

- 6, 10 or 16 bar
- Higher pressures on request

Technical details on page 36.

**Features**

- Optimal for pool heating or process heating

**Benefits**

- Compact design
- High performance
- Maximum hygiene
- Energy saving
- Certified and approved system (according to ISO 3834-2)

## Model EII-.C: Instantaneous Electric Water Heaters with ceramic heating elements



### Standard features:

- Vertical or horizontal type
- Stainless steel tank AISI 316 Ti or duplex stainless steel
- Ceramic heating elements
- Fibre-fleece insulation with a robust PP exterior shell RAL7037, patented aluminum closure strips and patented self-fixing covering rosettes. Quick and easy installation, insulation with 80 or 100 mm. 100% recyclable, fire protection class B2 (B1 upon request).
- Safety pressure relieve valve
- Removeable without draining the tank

### Benefits

- Compact design
- High performance
- Maximum hygiene
- Energy saving
- Ventilator and safety temperature control for heating elements

### Standard accessories:

- Automatic air and vacuum vent including fast venting cock
- Dial thermometer
- Pressure gauge
- Dielectric isolator kits for piping connections
- Safety pressure relieve valve
- Flow switch

### Controls:

- see pages 15 - 17

### Optional:

- Skid mounting
- Non sacrificial electric anode (optional only for good water quality, otherwise mandatory) - without anode warranty is reduced from five to three years

### Operating pressure:

- 6, 10 or 16 bar
- Higher pressures on request

Technical details on page 37.

## T2: Microprocessor control panel



### Industrial control panel:

- Industrial standard control panel mounted on tank with hinged door and microprocessor
- multi stage
- IP55 protection (dust, spray)
- Mains power cut-off switch coupled to door lock
- Electronic temperature sensor
- ELC11 ECOTHERM state of the art logic control
- Remote control via volt free output contacts for Building Management System
- Low water cut-out with high and low pressure sensing device
- All elements electrically tested, wired and pre-assembled for easy installation
- All parts meet European safety standards
- Maximum ambient air temperature 40°C
- Anti legionella possible

### Manual control for alternative operation:

- Heater indicator LED for each heating stage
- Power-on LED
- Auto-off-manual switch for each heating stage

### T2: ELC11 ECOTHERM Logic Controller

ECOTHERM electric water heater models can be equipped with an own ELC logic control unit to ensure permanent control and performance monitoring of hot water output at all times.

The control panel is an intelligent terminal for programming and visualization of automated processes. The process of diagnosis and the operation and monitoring of automated processes are simplified by this installation terminal.

A touch screen is used to enter data and process parameters. The output is displayed on a 5.7" VGA TFT color display.

The operator has complete control of all water heater functions via the keypad and display on the front of the control unit. The operator sets the desired performance parameters, and the control unit operates the water heater fully automatically, constantly monitoring temperatures and controlling the pumps and valves to match the current hot water demand with the lowest possible fuel consumption. All automatic functions can be adjusted, switched on/off or manually overridden by the operator at any time.



### Features:

- Temperature sensors
- Control of pumps and valves
- Exact temperature control
- Flexible control facilities
- Performance logging
- Fuel saving program
- Anti-fouling cycle
- Legionella decontamination cycle
- Early warning fouling alarm
- Remote control and BMS

## T1: Microprocessor control panel



### Industrial control panel:

- Industrial standard control panel mounted on tank with hinged door and microprocessor
- 3 heating stages
- IP55 protection (dust, spray)
- Mains power cut-off switch coupled to door lock
- Electronic temperature sensor
- PMA KS 40 Peak-off control timer with programmable stage cascading control and LED digital display
- Remote control via volt free output contacts for Building Management System
- Low water cut-out with high and low pressure sensing device
- All elements electrically tested, wired and pre-assembled for easy installation
- All parts meet European safety standards
- Maximum ambient air temperature 40°C

### Manual control for alternative operation:

- Heater indicator LED for each heating stage
- Power-on LED
- Auto-off-manual switch for each heating stage

### T1: Compact industrial controller PMA KS 40

The KS 40 compact controllers features microcomputer operation for cost-effective temperature control. KS 40 controllers are plug-in modules which ensures fast replacement out any tools. Electrical connections are made via rear flat-pin connectors.



#### Simple termination control panel:

- Simplest operation
- Bright LED display
- Plug-in controller module
- Confident handling under extreme conditions
- Precise control behavior
- Self-tuning
- Long lifetime
- Low price and fast delivery

Standard on all versions are self-tuning, a second set-point with ramp function, an additional input for monitoring heating current, a logic output for heating, and a 115/230V mains transformer.

Only four robust keys are used for all settings and adjustments.

**Operating Level** for set-point adjustment.

**Parameter Level** for adjusting the required control parameters, limit values, etc.

**Configuration Level** for adjusting the controller functions. It is possible to disable set-point adjustment and display in the Operating Level.

The unit is configurable as a two-point controller (heating) or as a three-point controller (heating/cooling).

#### Alarm functions:

- **Relative alarm** for monitoring the control deviation (relative to set-point).
- **Absolute alarm** for limit monitoring (independent of set-point setting).

**Switching controllers:** 2 relays and 1 logic output

Furthermore, the KS 40 controllers meet European Standards EN 50 081 - 1 and EN 50 082 - 2, and have therefore qualified for CE-marking. Their construction meets the safety regulations of VDE 0411. Each unit is tested with 3 kV before shipment.



## B0: Mains Switch



### Mains switch:

- I-O switch
- Industrial standard IP 65 protection class:
- All parts meet European safety standards
- Suitable only for maximum of two heating elements, each maximum and 12kW and a total maximum nominal rating of 18kW

## B1: Simple control panel



### Simple termination control panel:

- Industrial standard IP 54 enclosure
- Control panel mounted on tank
- Magnetic type trip switch for over current protection
- Manual reset
- All elements electrically tested, wired and pre-assembled for easy installation
- All parts meet European safety standards
- Maximum ambient air temperature 50°C
- Suitable only for maximum of four heating elements, each maximum and 12kW and a total maximum nominal rating of 24kW

## B2: Basic control panel



### Control panel:

- Industrial standard basic control panel mounted on tank with hinged door
- Standard volt free contact with common fault indication
- IP55 protection (dust, spray)
- Main power cut-off switch coupled to door lock
- Automatic electric cut-outs for each heating stage
- Selector switch 0/1 automatic for each heating stage
- Volt free output contacts for Building Management System
- Heating element indication light
- Automatic temperature limiter with high limit switch
- All elements electrically tested, wired and pre-assembled for easy installation
- All parts meet European safety standards
- Maximum ambient air temperature 50°C
- Suitable for all nominal ratings

### Optional:

- Low water cut-out with low pressure sensing device

## Incoloy 825 heating elements



- Incoloy 825 (UNS NO 8825/W.Nr. 2.4858)  
Nickel-iron-chromium molybdenum, copper and titanium alloy is designed to provide exceptional resistance to many corrosive environments.
- Low watt density down to 4.57 W/cm<sup>2</sup> significantly reduces fouling and increases service life
- Thermostat: TR/STB
- 1 year warranty

### Selection table

Type	Power rating kW	Head Ø HE Ø Inch	Length mm	Power supply V	Tube Ø mm	Surface load W/cm <sup>2</sup>	Switches	Cable cross section nos. x mm <sup>2</sup>	Cable length m	TR / STB	Full load current Amps.
EHK-I-2000	2	1½"	250	230/400	8.5	7.81	1	4x1.5 <sup>2</sup>	1.5	x	3
EHK-I-3000	3	1½"	500	230/400	"	4.57	1	4x1.5 <sup>2</sup>	1.5	x	4.5
EHK-I-4500	4.5	1½"	500	230/400	"	6.85	1	4x1.5 <sup>2</sup>	1.5	x	6.5
EHK-I-6000	6	1½"	500	230/400	"	9.13	1	4x1.5 <sup>2</sup>	1.5	x	9
EHK-I-7500	7.5	1½"	500	230/400	"	11.42	1	4x1.5 <sup>2</sup>	1.5	x	11
EHK-I-9000	9	1½"	750	230/400	"	8.51	1	4x1.5 <sup>2</sup>	1.5	x	13.5
EHK-I-12000	12	1½"	750	230/400	"	11.35	1	4x2.5 <sup>2</sup>	1.5	x	17.5
EHK-I-12000	12	1½"	900	230/400	"	9.36	1	4x2.5 <sup>2</sup>	2	x	17.5
EHK-I-15000	15	2½"	1100	400	"	5.1	1	4x6 <sup>2</sup>	2	-	27
EHK-I-18000	18	2½"	1100	400	"	5.1	1	4x6 <sup>2</sup>	2	-	27
EHK-I-25000	25	2½"	1100	400	"	6.8	1	4x10 <sup>2</sup>	2	-	36

Tube material: 2 4858, Incoloy 825

Head material: 1½": stainless steel 316Ti; 2½" brass

EHK 2-12 kW: TR = Thermostat (30-75°C),

STB = Safety temperature limiter (98°C), IP55

EHK 15-30 kW: no thermostat installation available

## Electrical flange-heaters

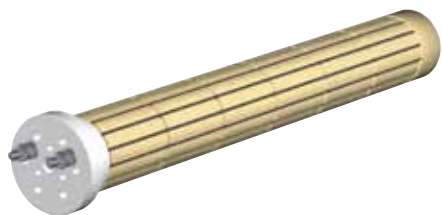


- Material flange plate: stainless steel 316Ti
- With welded heating rods
- Material heating surface:  
Stainless steel 1.4539-X1NiCrMoCu25-20-5
- 1 year warranty

### Selection table (6.0 to 1,000 kW, working pressure: 10 bar, design pressure 12 bar)

Type	Dimension DN	Length of electric heating flanges			
		500 mm kW / Amps	1,000 mm kW / Amps	1,500 mm kW / Amps	2,000 mm kW / Amps
DN 65	65	6 / 9	13.5 / 20	21 / 30	36 / 52
DN 100	100	12 / 17	27 / 39	42 / 61	72 / 104
DN 125	125	18 / 26	40 / 58	63 / 91	108 / 156
DN 150	150	24 / 35	54 / 78	84 / 121	144 / 208
DN 200	200	48 / 69	108 / 15	168 / 243	288 / 416
DN 250	250	72 / 104	162 / 234	252 / 364	432 / 624
DN 300	300	108 / 156	243 / 351	378 / 546	648 / 936
DN 350	350	132 / 191	297 / 429	462 / 668	792 / 1145
DN 400	400	175 / 253	394 / 569	612 / 884	1000 / 1445
DN 500	500	310 / 448	700 / 1012	1000 / 1445	-

## Ceramic heating elements



- Removable without draining the tank
- Longer life expectancy
- 1 year warranty

### Selection table

Type	Power rating	Head Ø	Length	Connection	Tube Ø	Surface load	Full load current
	kW	mm	mm	Volt, AC	mm	W/cm <sup>2</sup>	Amps.
EHK-K-2000	2	47	370	230/400	50	5.03	2.9
EHK-K-2500	2.5	47	425	230/400	50	5.25	3.6
EHK-K-3000	3	47	480	230/400	50	5.39	4.3
EHK-K-4000	4	47	900	400	50	4.41	5.8
EHK-K-4500	4.5	47	800	400	50	4.23	6.5
EHK-K-5000	5	47	1200	400	50	4.01	7.2
EHK-K-6000	6	47	1200	400	50	4.12	8.7
EHK-K-7000	7	47	2000	400	50	4.14	10.1
EHK-K-8000	8	47	2000	400	50	3.99	11.6
EHK-K-9000	9	47	2000	400	50	3.88	13
EHK-K-10000	10	47.5	2000	400	50	4.04	14.5

## Non sacrificial titanium anodic protection



- Non sacrificial electric anode provided with 240V power socket
- No maintenance required
- No anode consumption
- Permanent potential control
- Using the non sacrificial electric anode increases the warranty from 2 years to 5 years

### Selection table

Type	Model for stainless steel tanks
FSA-402	Non sacrificial titanium anodic protection 402 mm Art.60000038 (for storage tanks 200 litres - 540 litres)
FSA-832	Non sacrificial titanium anodic protection 832 mm Art.60000043 (for storage tanks > 550 litres)

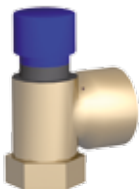
## Vacuum breakery



- Prevents vacuum in the tank
- Material: stainless steel
- Set differential pressure: 6bar
- Connection: 1/2"

Type	Description
VB12	Brass; Art. 24640001
VB21	Stainless Steel; Art. 24640014

## Pressure / Safety Valve



- Additional temperature monitoring
- Set temperature 93-98°C
- Material: brass
- Stainless steel drain pipe included

Type	Description
DN20 - 6bar	Art. 24610093
DN25 - 6bar	Art. 24610042
DN20 - 10bar	Art. 24610052
DN25 - 10bar	Art. 24610047
DN20 - 16bar	Art. 24610097
DN25 - 16bar	Art. 24610096



## Advantages

ECOTHERM electric water heaters are high quality products with several advantages for your individual heat transfer solution:

- Premium quality
- Individuality
- ECOTHERM Academy
- Easy control
- Simple on-site assembly
- Maximum hygiene
- Fresh water system
- Experience
- ECOTHERM fibre-fleece insulation

## Premium quality



The quality management system of ECOTHERM for sizing, design, production and distribution of hot water, steam and solar systems as well as of pressure vessels and heat exchangers is certified according to ISO 9001 : 2008.

The products are manufactured in high quality stainless steel according to the highest European standards as e. g. ISO 3834-2 and therefore guarantee long service life and perfect hygiene. Our own test bench assures the highest quality and reliability.

## Individuality

If you do not have access to the software ECOSIZE, the ECOTHERM engineers design your individual hot water system according to the project specifications. The basis is our own production in Austria.

Already in the design stage 3d models are created in order to visualize the system in the plant room. Several hundred models can be configured.



## ECOSIZE Configurator

With the design software ECOSIZE it is possible to configure the desired

ECOTHERM electric water heaters. This software ensures a high standard

for all offers made by certified ECOTHERM partners - worldwide.



## ECOTHERM Academy

The purpose of the ECOTHERM Academy is the strategically planned training of all employees and partners. The ECOTHERM Academy systematically detects the needs and wishes of all participants for further training.



The strategic goals of the company for the next three years are also be considered in planning. In addition, the Academy offers voluntary courses from different areas. The ECOTHERM International Support Center in Dubai plays a central role in the implementation of courses at an international level. The basis for the trainings is a library of so-called "ECOCELLS". These presentations or videos cover all important topics, which have to be trained.

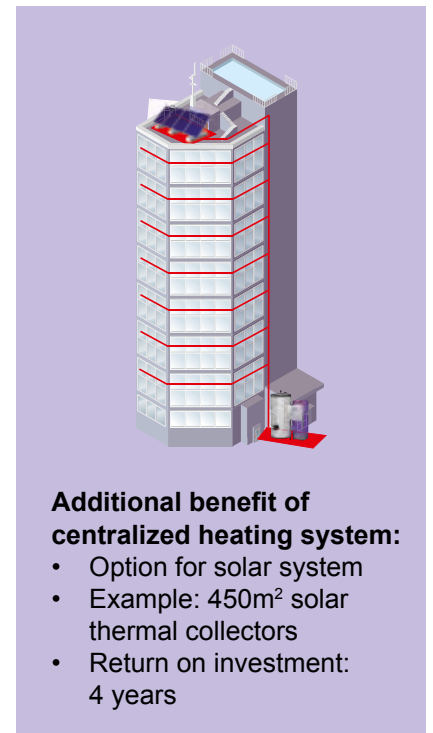
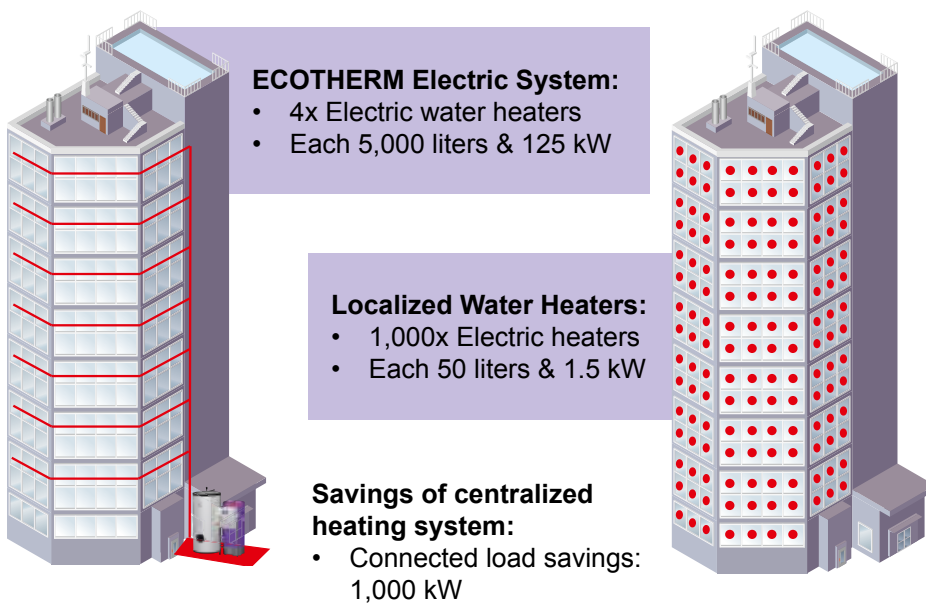


## Advantages of centralized electric water heater system

ECOTHERM turnkey systems are premium quality products. Therefore the initial costs are higher compared to other products. But the annual savings and the long life-time are convincing arguments to choose an ECOTHERM system.

**Central system vs. localized heaters**  
The following example shows the savings of a central electric water heater system compared to localized water heaters. Additionally a centralized system allows to include a solar thermal system for supporting the hot wa-

ter generation. For a 500 apartment house and 450m<sup>2</sup> solar thermal collectors the return on investment is only four years.



## ECOTHERM control panels

The experienced ECOTHERM engineers select the suitable control panel for your optimal individual solution. One important criterion is for example the ambient air temperature in the plant room. All parts meet European safety standards, as. e. g. ip classifications from 54 to 65, which define the resistance of the control panel against dust and spray. For easy and compact systems only a manual switch is used. For more complex systems, which have to be controlled by a microprocessor, a touch panel can be used in order to provide maximum convenience and perfect clarity.



## Maximum hygiene



For several decades stainless steel has been the standard for applications where uncompromising hygiene must be constant over time. This is one of the main reasons why ECOTHERM used only high quality

stainless steel for the production of its electric water heaters. Stainless steel is characterized by a particularly smooth and inert surface. On the scratch-and abrasion-resistant surface no holding primer is created for bacteria. The passive layer of stainless steel is not attacked by acids or bases. The hard and homogeneous condition of stainless steel surfaces enables to meet the highest standards of hygiene.

## Experience

As a result of our more than thousand installations in Europe, the Middle East, Asia, North Africa and in Central America over the past twelve years, ECOTHERM has become one of the technology and innovation leaders on the market for hot water, steam and solar systems. The employees have long service records with the company and they continuously refresh their know-how through the training and seminars at the ECOTHERM Academy.







## ECOTHERM fibre-fleece insulation

ECOTHERM offers unequalled value for money with an own developed fibre-fleece insulation solution. Compared to standard foam insulations the ECOTHERM insulating polyester fibre-fleece reduces the heat losses in the standby mode for up to 30 percent. This material is produced from recycled PET bottles with no chemical additives and is itself 100% recyclable. The insulation is flame retardant according to DIN 4102-1 class B2, and is available upon request in B1. The robust outer PP cover is food safe, can easily be transported and is extremely impact resistant.

### Patented components

The patented closure strip allows for simple and quick opening of the outer sheathing by only one person.

This means any servicing and maintenance work can be carried out simply and quickly.

The newly developed covering rosettes for the connecting sleeves provide an optimal and completely reliable seal while the tight and secure fit prevents any heat loss at the connection points.

### Individual design

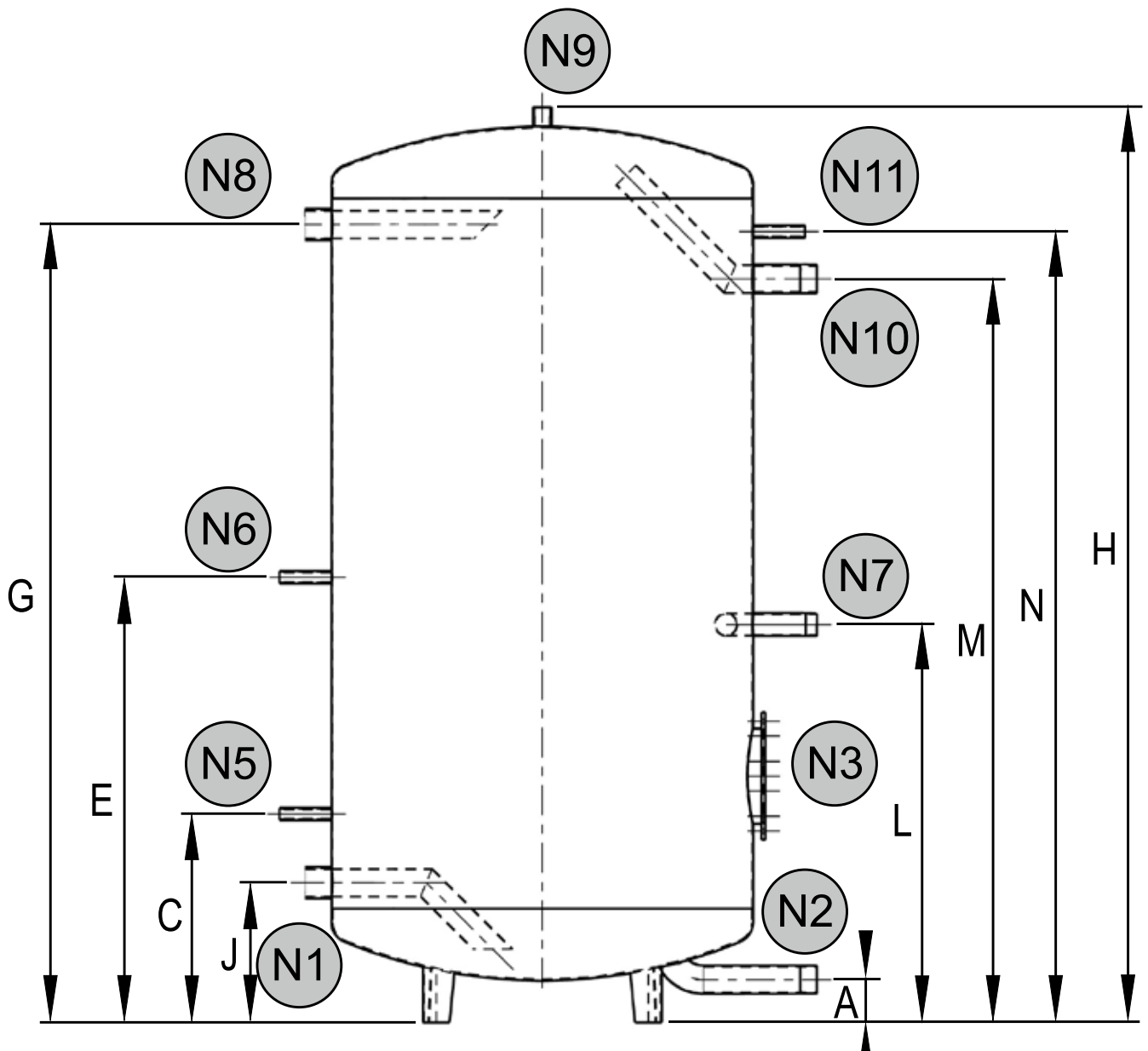
ECOTHERM can print the sheathing individually to your wishes. This visual enhancement is particularly useful for storage tanks in the visible interior or exterior.



*Cartons protect the insulation during transport.*



*The patented aluminum closure strips enable easy and fast opening of the outer sheathing by a single person.*



## ECOSIZE

Use our own developed software "ECOSIZE" in order to design your optimal ECOTHERM solution. Register for your personal login to the online software ECOSIZE.

[ecosize.ecotherm.com](http://ecosize.ecotherm.com)

## Technical Specifications

For all products technical details are supplied in this chapter. If you need further information, ask our ECOTHERM engineers.

## Model types

### Type

- 1st digit: E = ECOTHERM
- 2nd digit: E = Electric Water Heater
- 3rd digit: R = Residential applications  
C = Commercial applications  
H = High storage capacity for industrial and commercial application  
L = Instantaneous heater
- 4th digit: E = External electric heater  
L = Internal electric heater

### C - Control

- 5th digit: B0 = Mains switch  
B1 = Simple basic control panel  
B2 = Basic control panel  
T1 = Microprocessor control panel PMA KS 40  
T2 = Microprocessor control panel ELC11

### E - Element

- 6th digit: S = Incoloy 825 heating elements  
C = Ceramic heating elements

### Key to model number

Type	C	E	kW	Vol	Opt	Press	Mat
<u>EE</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
1 2 3 4	5 6	7	8	9 10	11	12	

### kW

7th digit: Electric heater performance rating in kilowatt

### Vol - Volume

8th digit: Tank capacity in liters

### Opt - Options

- 9th digit: V = Vertical type  
H = Horizontal type
- 10th digit: A = Electric Anode

### Press - Pressure (higher pressure rating on request)

- 11th digit: 6 = 6bar operating pressure  
10 = 10bar operating pressure

### Mat - Material

- 11th digit: SS = Stainless Steel  
MS = Mild Steel

## Examples for using keymodel number



### EERI-B1S-9-400-VA-SS

Stainless Steel  
 Vertical type  
 Electric Anode  
 400 liters capacity  
 9 kW - Electric heater performance rating in kilowatt  
 B1 Basic simple control panel  
 S = Incoloy 825 elements  
 ECOTHERM  
 Electric water heater for  
 Residential applications  
 Internal electric heater



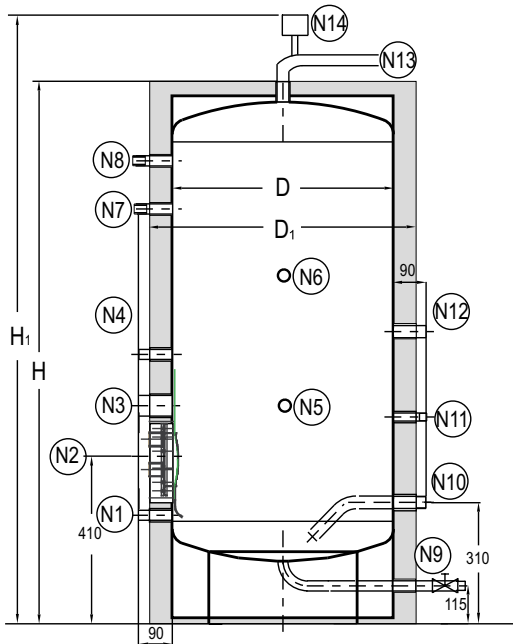
### EEHI-T2S-270-5000-HA-SS

Stainless Steel  
 Horizontal type  
 Electric Anode  
 5000 liters capacity  
 270 kW - Electric heater performance rating in kilowatt  
 T2 = Microprocessor control panel with ELC11 Logic Control  
 S = Incoloy 825 elements  
 ECOTHERM  
 Electric  
 High storage capacity water heater for industrial and commercial application  
 Internal electric heater

**EERI-.S Models: Electric Water Heaters with internal Incoloy 825 heating elements for residential applications**  
 200 liters - 450 liters storage capacity

**Connections, dimensions and heights**

**Tank capacity 200 - 450 liters**



Electric Water Heater	Storage Capacity		Dimension				Weight empty
	Liters	US Gallons	D mm	D <sub>1</sub> mm	H mm	H <sub>1</sub> mm	kg
EERI 200	200	52.8	500	660	1450	1650	49
EERI 300	300	81.9	500	660	1920	2120	53
EERI 450	450	121.5	600	760	1920	2120	64

**Tabular of sample models (individual configurations are possible)**

**Tank capacity 200 - 450 liters, domestic water 10°/20°→60°C with Incoloy 825 heating elements**

Model No.	Capacity		Power rating kW	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output*
	Liters	Gallons				liters/hour	liters/hour	liters/hour	DIN 4708 NL1
						10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EERI-BS-9-200-VA	200	52.8	9	2	4.5	155	193	383	2
EERI-BS-12-200-VA	200	"	12	2	6.0	206	258	448	2
EERI-BS-15-200-VA	200	"	15	2	7.5	258	322	512	3
EERI-BS-22.5-200-VA	200	"	22.5	3	7.5	387	484	674	5
EERI-BS-9-300-VA	310	81.9	9	2	4.5	155	193	488	3
EERI-BS-12-300-VA	310	"	12	2	6.0	206	258	552	4
EERI-BS-15-300-VA	310	"	15	2	7.5	258	322	617	5
EERI-BS-22.5-300-VA	310	"	22.5	3	7.5	387	484	778	6
EERI-BS-9-450-VA	460	121.5	9	2	4.5	155	193	630	4
EERI-BS-12-450-VA	460	"	12	2	6.0	206	258	695	5
EERI-BS-15-450-VA	460	"	15	2	7.5	258	322	759	6
EERI-BS-22.5-450-VA	460	"	22.5	3	7.5	387	484	921	8

\*) Nominal output according to DIN 4708, T1 and T3. For further information see "Guide to hot water demand" page 40

\*\*) Living units: Nominal output type NL1 for living quarters - Further information see page 41

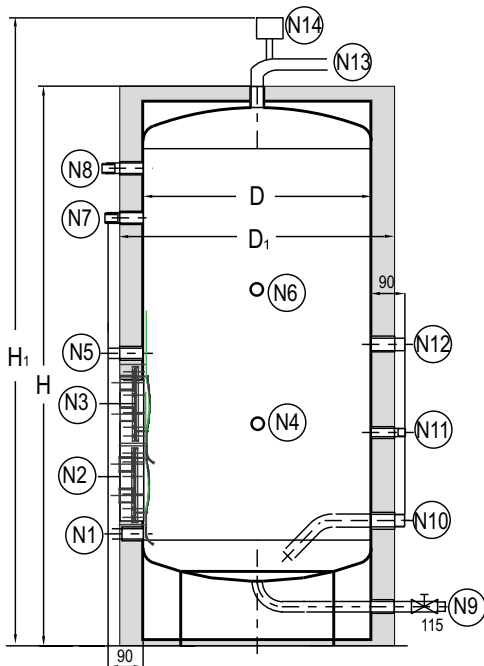
\*\*\*) Peak hot water output = Continuous hot water output + approx. 95% of tank capacity at 60°C

Horizontal type dimensions are available on request.

**EECI-.S Models: Electric Water Heaters with internal Incoloy 825 heating elements for commercial applications**  
540 liters - 750 liters storage capacity

**Connection dimensions and heights**

**Tank capacity 540 - 750 liters**



Electric Water Heater	Storage Capacity		Dimension				Weight empty
	Liters	US Gallons	D mm	D <sub>1</sub> mm	H mm	H <sub>1</sub> mm	kg
EECI 540	540	142.7	650	810	1940	2140	81
EECI 750	750	192.9	700	860	1980	2180	128

Horizontal type dimensions are available on request.

**Tabular of sample models (individual configurations are possible)**

**Hot Water Storage 540 liters (142.7 gallons), domestic water 10°/20°→60°C with Incoloy 825 heating elements**

Model No.	Power rating	No. of elements	kW per element	Continuous hot water output liters/hour	Continuous hot water output liters/hour	Peak hot water output*** liters/hour	Nominal output* DIN 4708 NL1
	kW			10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EECI-BS-12-540-VA	12	2	6	206	258	771	6
EECI-BS-15-500-VA	15	2	7.5	258	322	835	7
EECI-BS-18-500-VA	18	3	6	310	387	900	8
EECI-BS-22.5-500-VA	22.5	3	7.5	387	484	997	9
EECI-BS-24-500-VA	24	4	6	413	516	1029	10
EECI-BS-30-500-VA	30	4	7.5	516	645	1158	11
EECI-BS-37.5-500-VA	37.5	5	7.5	645	806	1319	14
EECI-BS-45-500-VA	45	6	7.5	774	967	1480	16

\* ) Nominal output according to DIN 4708, T1 and T3. For further information see "Guide to hot water demand" page 40

\*\* ) Living units: Nominal output type NL1 for living quarters - Further information see page 41

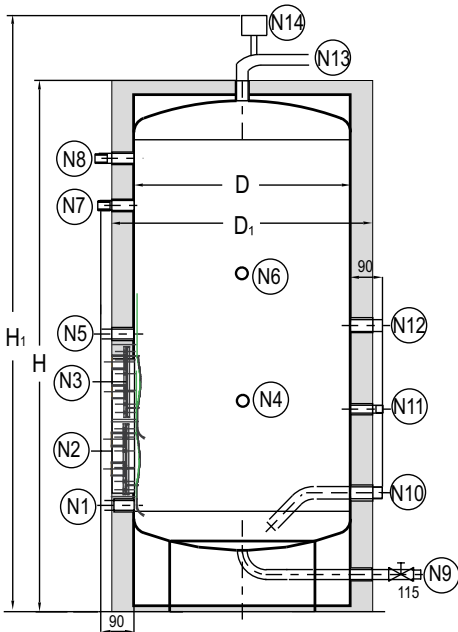
\*\*\* ) Peak hot water output = Continuous hot water output + approx. 95% of tank capacity at 60°C

Horizontal type dimensions are available on request.

**EEHI-.S Models: Electric Water Heaters with internal Incoloy 825 heating elements and high storage capacity for industrial and commercial applications**  
 1,000 liters - 10,000 liters storage capacity

**Connection dimensions and heights**

**Tank capacity 1,000 - 10,000 liters**



**Dimensions & weight**

Electric Water Heater	Storage Capacity		Dimension				Weight empty
	Liters	US Gallons	D mm	D <sub>1</sub> mm	H mm	H <sub>1</sub> mm	appr. kg
EEHI 1000	1000	274.8	890	1110	1980	2160	147
EEHI 1500	1500	396.3	1050	1270	2025	2205	228
EEHI 2000	2000	528.4	1250	1470	2050	2230	371
EEHI 3000	3000	792.6	1350	1570	2615	2795	466
EEHI 4000	4000	1,056.8	1500	1720	2630	2810	557
EEHI 5000	5000	1,321.0	1600	1820	3100	3280	662
EEHI 6000	6000	1,585.2	1680	1820	3150	3330	787
EEHI 7000	7000	1,849.4	1680	1820	3650	3830	1151
EEHI 8000	8000	2,113.6	1680	1820	4200	4380	1235
EEHI 9000	9000	2,377.8	1900	2120	3800	4080	1210
EEHI 10000	10000	2,642.0	1900	2120	4200	4380	1320

Horizontal type dimensions are available on request

**Tabular of sample models (individual configurations are possible)**
**Hot Water Storage 1000 liters (274.8 gallons), domestic water 10°/20°→60°C with Incoloy 825 heating elements**

Model No.	Power rating	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output*
	kW			liters/hour	liters/hour	liters/hour	DIN 4708 NL1
				10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EEHI-BS-24-1000-VA	24	2	12	413	516	1504	16
EEHI-BS-36-1000-VA	36	3	12	619	774	1762	20
EEHI-BS-48-1000-VA	48	4	12	825	1032	2020	23
EEHI-BS-60-1000-VA	60	5	12	1032	1290	2278	29
EEHI-BS-72-1000-VA	72	6	12	1238	1548	2536	32
EEHI-BS-90-1000-VA	90	6	15	1548	1935	2923	39
EEHI-BS-105-1000-VA	105	7	15	1806	2257	3245	45
EEHI-BS-120-1000-VA	120	8	15	2064	2580	3568	51
EEHI-BS-135-1000-VA	135	9	15	2322	2902	3890	58

**Hot Water Storage 2000 liters (528.4 gallons), domestic water 10°/20°→60°C with Incoloy 825 heating elements**

Model No.	Power rating	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output*
	kW			liters/hour	liters/hour	liters/hour	DIN 4708 NL1
				10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EEHI-BS-25-2000-VA	25	1	25	430	537	2437	28
EEHI-BS-50-2000-VA	50	2	25	860	1075	2975	38
EEHI-BS-75-2000-VA	75	3	25	1290	1612	3512	48
EEHI-BS-100-2000-VA	100	4	25	1720	2150	4050	59
EEHI-BS-125-2000-VA	125	5	25	2150	2687	4587	68
EEHI-BS-150-2000-VA	150	6	25	2580	3224	5124	79
EEHI-BS-175-2000-VA	175	7	25	3009	3762	5662	88
EEHI-BS-200-2000-VA	200	8	25	3439	4299	6199	100
EEHI-BS-225-2000-VA	225	9	25	3869	4837	6737	112
EEHI-BS-275-2000-VA	275	11	25	4729	5911	7811	132

**Hot Water Storage 5000 liters (1,321 gallons), domestic water 10°/20°→60°C with Incoloy 825 heating elements**

Model No.	Power rating	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output*
	kW			liters/hour	liters/hour	liters/hour	DIN 4708 NL1
				10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EEHI-BS-25-5000-VA	25	1	25	430	537	5287	50
EEHI-BS-50-5000-VA	50	2	25	860	1075	5825	70
EEHI-BS-75-5000-VA	75	3	25	1290	1612	6362	88
EEHI-BS-100-5000-VA	100	4	25	1720	2150	6900	100
EEHI-BS-125-5000-VA	125	5	25	2150	2687	7437	112
EEHI-BS-150-5000-VA	150	6	25	2580	3224	7974	120
EEHI-BS-175-5000-VA	175	7	25	3009	3762	8512	132
EEHI-BS-200-5000-VA	200	8	25	3439	4299	9049	144
EEHI-BS-225-5000-VA	225	9	25	3869	4837	9587	156
EEHI-BS-275-5000-VA	275	11	25	4729	5911	10661	176

\*) Nominal output according to DIN 4708, T1 and T3. For further information see "Guide to hot water demand" page 40

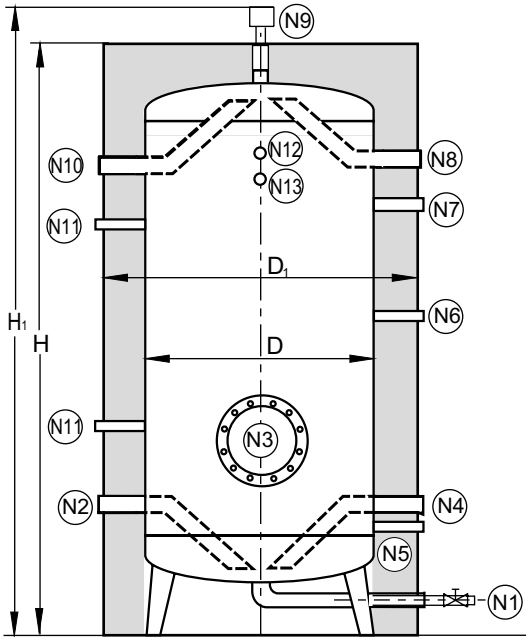
\*\*) Living units: Nominal output type NL1 for living quarters - Further information see page 41

\*\*\*) Peak hot water output = Continuous hot water output + approx. 95% of tank capacity at 60°C

Higher capacities are available on request.

**EEHE-.S Models: Electric Water Heaters high storage capacity with external Incoloy 825 heating elements for industrial and commercial applications**  
 1,000 liters - 10,000 liters storage capacity

**Tank capacity 1,000 - 10,000 liters**



**Dimensions & weight**

Storage Water Heater	Storage Capacity		Dimension				Weight empty
	Liters	US Gallons	D mm	D <sub>1</sub> mm	H mm	H <sub>1</sub> mm	appr. kg
EEHE 1000	1000	274.8	890	1110	1980	2160	147
EEHE 1500	1500	396.3	1050	1270	2025	2205	228
EEHE 2000	2000	528.4	1250	1470	2050	2230	371
EEHE 3000	3000	792.6	1350	1570	2615	2795	466
EEHE 4000	4000	1,056.8	1500	1720	2630	2810	557
EEHE 5000	5000	1,321.0	1600	1820	3100	3280	662
EEHE 6000	6000	1,585.2	1680	1820	3150	3330	787
EEHE 7000	7000	1,849.4	1680	1820	3650	3830	1151
EEHE 8000	8000	2,113.6	1680	1820	4200	4380	1235
EEHE 9000	9000	2,377.8	1900	2120	3800	4080	1210
EEHE 10000	10000	2,642.0	1900	2120	4200	4380	1320

Horizontal type dimensions are available on request



**Tabular of sample models (individual configurations are possible)**
**Hot Water Storage 1000 liters (274.8 gallons), domestic water 10°/20°→60°C with Incoloy 825 heating elements**

Model No.	Power rating	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output*
	kW			liters/hour	liters/hour	liters/hour	DIN 4708 NL1
				10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EEHE-TS-36-1000-VA	36	3	12	619	774	1762	25
EEHE-TS-48-1000-VA	48	4	12	825	1032	2020	29
EEHE-TS-60-1000-VA	60	5	12	1032	1290	2278	34
EEHE-TS-72-1000-VA	72	6	12	1238	1548	2536	40
EEHE-TS-90-1000-VA	90	6	15	1548	1935	2923	49
EEHE-TS-105-1000-VA	105	7	15	1806	2257	3245	56
EEHE-TS-120-1000-VA	120	8	15	2064	2580	3568	64
EEHE-TS-135-1000-VA	135	9	15	2322	2902	3890	72
EEHE-TS-150-1000-VA	150	10	15	2580	3224	4212	79
EEHE-TS-180-1000-VA	180	12	15	3095	3869	4857	97

**Hot Water Storage 2000 liters (528.4 gallons), domestic water 10°/20°→60°C with Incoloy 825 heating elements**

Model No.	Power rating	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output*
	kW			liters/hour	liters/hour	liters/hour	DIN 4708 NL1
				10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EEHE-TS-25-2000-VA	25	1	25	430	537	2437	35
EEHE-TS-50-2000-VA	50	2	25	860	1075	2975	48
EEHE-TS-75-2000-VA	75	3	25	1290	1612	3512	60
EEHE-TS-100-2000-VA	100	4	25	1720	2150	4050	72
EEHE-TS-125-2000-VA	125	5	25	2150	2687	4587	85
EEHE-TS-150-2000-VA	150	6	25	2580	3224	5124	99
EEHE-TS-175-2000-VA	175	7	25	3010	3762	5662	110
EEHE-TS-200-2000-VA	200	8	25	3440	4299	6199	125
EEHE-TS-225-2000-VA	225	9	25	3870	4837	6737	140
EEHE-TS-250-2000-VA	250	10	25	4300	5374	7274	150
EEHE-TS-275-2000-VA	275	11	25	4730	5911	7811	165
EEHE-TS-300-2000-VA	300	12	25	5160	6449	8349	180

**Hot Water Storage 5000 liters (1,321 gallons), domestic water 10°/20°→60°C with Incoloy 825 heating elements**

Model No.	Power rating	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output*
	kW			liters/hour	liters/hour	liters/hour	DIN 4708 NL1
				10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EEHE-TS-25-5000-VA	25	1	25	430	537	5287	63
EEHE-TS-50-5000-VA	50	2	25	860	1075	5825	87
EEHE-TS-75-5000-VA	75	3	25	1290	1612	6362	110
EEHE-TS-100-5000-VA	100	4	25	1720	2150	6900	125
EEHE-TS-125-5000-VA	125	5	25	2150	2687	7437	140
EEHE-TS-150-5000-VA	150	6	25	2580	3224	7974	150
EEHE-TS-175-5000-VA	175	7	25	3010	3762	8512	165
EEHE-TS-200-5000-VA	200	8	25	3440	4299	9049	180
EEHE-TS-225-5000-VA	225	9	25	3870	4837	9587	195
EEHE-TS-250-5000-VA	250	10	25	4300	5374	10124	210
EEHE-TS-275-5000-VA	275	11	25	4730	5911	10661	220
EEHE-TS-300-5000-VA	300	12	25	5160	6449	11199	235

\*) Nominal output according to DIN 4708, T1 and T3. For further information see "Guide to hot water demand" page 40

\*\*) Living units: Nominal output type NL1 for living quarters - Further information see page 41

\*\*\*) Peak hot water output = Continuous hot water output + approx. 95% of tank capacity at 60°C

Higher capacities are available on request.

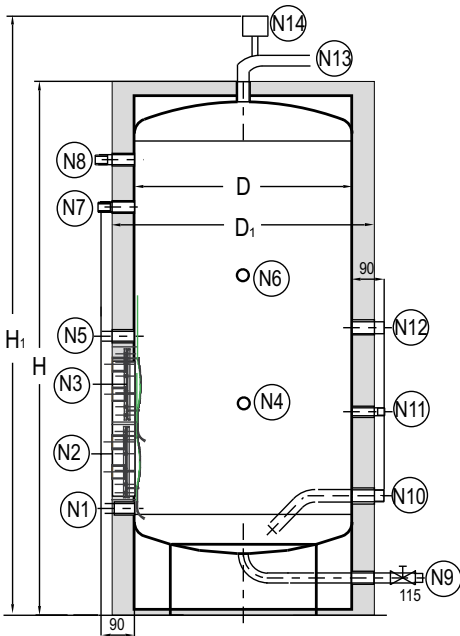
**EERI-.C Models:**  
**EECI-.C Models:**  
**EEHI-.C Models:**

**Electric Water Heaters with internal ceramic heating elements for industrial applications**  
 200 liters - 10,000 liters storage capacity



**Connection dimensions and heights**

**Tank capacity 200 - 10,000 liters vertical types**



**Dimensions & weight vertical types**

Electric Water Heater	Storage Capacity		Dimension				Weight empty
	Liters	US Gallons	D mm	D <sub>1</sub> mm	H mm	H <sub>1</sub> mm	appr. kg
EERI 200	200	52.8	500	660	1450	1650	49
EERI 300	300	81.9	500	660	1920	2120	53
EERI 450	450	121.5	600	760	1920	2120	64
EECI 540	540	142.7	650	810	1940	2140	81
EECI 750	750	192.9	700	860	1980	2180	128
EEHI 1000	1040	274.8	890	1110	1980	2160	143
EEHI 1500	1500	396.3	1050	1270	2025	2205	228
EEHI 2000	2000	528.4	1250	1470	2050	2230	371
EEHI 3000	3000	792.6	1350	1570	2615	2795	466
EEHI 4000	4000	1,056.8	1500	1720	2630	2810	557
EEHI 5000	5000	1,321.0	1600	1820	3100	3280	662
EEHI 6000	6000	1,585.2	1680	1820	3150	3330	787
EEHI 7000	7000	1,849.4	1680	1820	3650	3830	1151
EEHI 8000	8000	2,113.6	1680	1820	4200	4380	1235
EEHI 9000	9000	2,377.8	1900	2120	3800	4080	1210
EEHI 10000	10000	2,642.0	1900	2120	4200	4380	1320

**Tabular of sample models (individual configurations are possible)**

**Tank capacity 200 - 460 liters, domestic water 10°/20°→60°C with CERAMIC heating elements**

Model No.	Capacity		Power rating kW	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output*
	Liters	Gallons				liters/hour	liters/hour	liters/hour	DIN 4708 NL1
EERI-BC-9-200-VA	200	52.8	9	3	3	155	193	383	2
EERI-BC-9-300-VA	300	81.9	9	3	3	155	193	488	3
EERI-BC-9-450-VA	450	121.5	9	3	3	155	193	630	4
EERI-BC-12-450-VA	450	121.5	12	6	2	206	258	695	5
EERI-BC-18-450-VA	450	121.5	18	6	3	310	387	824	6

**Tank capacity 450 - 750 liters, domestic water 10°/20°→60°C with CERAMIC heating elements**

Model No.	Capacity		Power rating	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output* DIN 4708 NL1
	Liters	Gallons				liters/hour	liters/hour		
		kW			10°C→60°C	20°C→60°C	20°C→60°C	Living units**	
EECI-BC-9-450-VA	450	121.5	9	3	3	155	193	630	4
EECI-BC-12-450-VA	450	121.5	12	6	2	206	258	695	5
EECI-BC-18-450-VA	450	121.5	18	6	3	310	387	824	6
EECI-BC-12-500-VA	540	142.7	12	6	2	206	258	771	6
EECI-BC-18-500-VA	540	142.7	18	6	3	310	387	900	8
EECI-BC-18-700-VA	750	192.9	18	6	3	310	387	1080	10
EECI-BC-24-700-VA	750	192.9	24	6	4	413	516	1209	12
EECI-BC-36-700-VA	750	192.9	36	9	4	619	774	1467	16

**Hot Water Storage 1000 liters (274.8 gallons), domestic water 10°/20°→60°C with CERAMIC heating elements**

Model No.	Power rating	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output* DIN 4708 NL1	
				liters/hour	liters/hour			
		kW			10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EEHI-BC-18-1000-HA	18	3	6	310	387	1375	14	
EEHI-BC-36-1000-HA	36	6	6	619	774	1762	20	
EEHI-BC-54-1000-HA	54	9	6	929	1161	2149	26	
EEHI-BC-72-1000-HA	72	12	6	1238	1548	2536	32	
EEHI-BC-90-1000-HA	90	15	6	1548	1935	2923	39	

**Hot Water Storage 2000 liters (528.4 gallons), domestic water 10°/20°→60°C with CERAMIC heating elements**

Model No.	Power rating	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output* DIN 4708 NL1	
				liters/hour	liters/hour			
		kW			10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EEHI-BC-54-2000-HA	54	9	6	967	1161	3061	40	
EEHI-BC-72-2000-HA	72	12	6	1238	1548	3448	46	
EEHI-BC-90-2000-HA	90	15	6	1548	1935	3835	54	
EEHI-BC-108-2000-HA	108	18	6	1857	2322	4222	61	
EEHI-BC-126-2000-HA	126	21	6	2167	2709	4609	69	
EEHI-BC-144-2000-HA	144	24	6	2476	3095	4995	77	
EEHI-BC-162-2000-HA	162	27	6	2786	3482	5382	84	
EEHI-BC-180-2000-HA	180	30	6	3095	3869	5769	92	

**Hot Water Storage 5000 liters (1,321 gallons), domestic water 10°→60°C with CERAMIC heating elements**

Model No.	Power rating	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output* DIN 4708 NL1	
				liters/hour	liters/hour			
		kW			10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EEHI-BC-150-5000-H	150	15	10	2580	3224	7974	120	
EEHI-BC-180-5000-H	180	18	10	3095	3869	8619	136	
EEHI-BC-210-5000-H	210	21	10	3611	4514	9264	148	
EEHI-BC-240-5000-H	240	24	10	4127	5159	9909	160	
EEHI-BC-270-5000-H	270	27	10	4643	5804	10554	176	
EEHI-BC-300-5000-H	300	30	10	5159	6449	11199	188	

\*) Nominal output according to DIN 4708, T1 and T3. For further information see "Guide to hot water demand" page 40

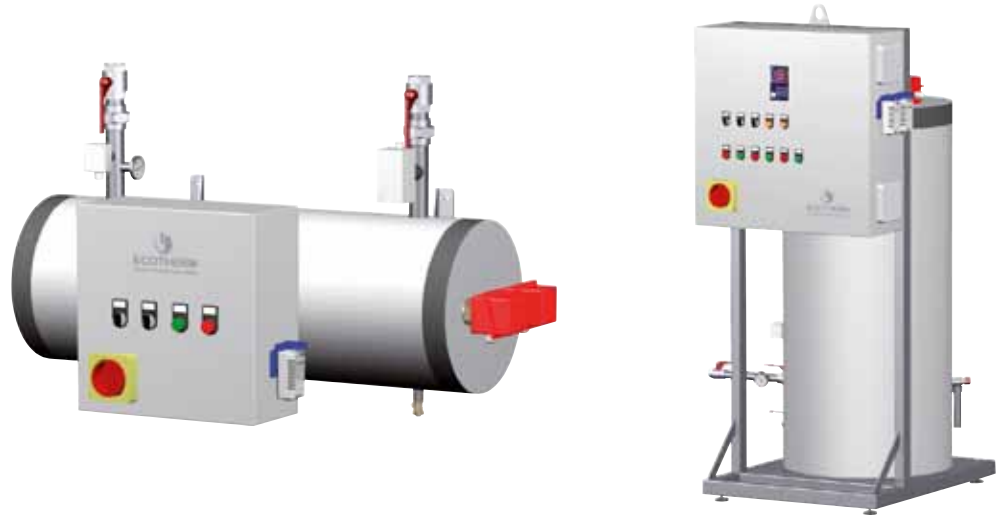
\*\*) Living units: Nominal output type NL1 for living quarters - Further information see page 41

\*\*\*) Peak hot water output = Continuous hot water output + approx. 95% of tank capacity at 60°C

Horizontal type dimensions are available on request.

Other KW rating and higher capacities are available on request.

**EEII-.S Models: Instantaneous Electric Water Heaters with Incoloy 825 heating elements**  
 huge range of heating powers available on request



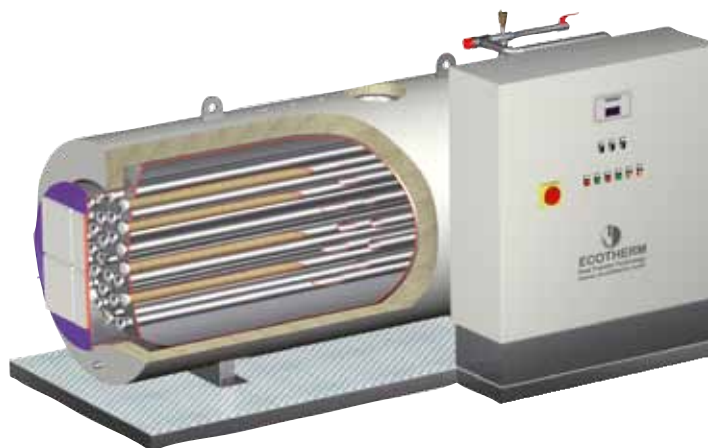
**Tabular of sample models (individual configurations are possible)**

**Domestic water 10°/20°→60°C, pool heating or HVAC applications with Incoloy 825 heating elements**

Model No.	Capacity		Power rating kW	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output*
	Liters	Gallons				liters/hour	liters/hour	liters/hour	DIN 4708 NL1
						10°C→60°C	20°C→60°C	20°C→60°C	Living units**
EEII-TS-45-200-VA	200	52.8	45	3	15	774	967	1157	11
EEII-TS-60-200-VA	200	52.8	60	4	15	1032	1290	1480	14
EEII-TS-75-300-VA	300	81.9	75	3	25	1290	1612	1907	26
EEII-TS-100-300-VA	300	81.9	100	4	25	1720	2150	2444	34
EEII-TS-125-300-VA	300	81.9	125	5	25	2150	2687	2982	41
EEII-TS-150-450-VA	450	121.5	150	6	25	2580	3224	3661	60
EEII-TS-175-450-VA	450	121.5	175	7	25	3009	3762	4199	70
EEII-TS-200-450-VA	450	121.5	200	8	25	3439	4299	4736	81
EEII-TS-250-500-VA	540	142.7	250	10	25	4299	5374	5887	105
EEII-TS-300-500-VA	540	142.7	300	12	25	5159	6449	6962	125
EEII-TS-350-500-VA	540	142.7	350	14	25	6019	7524	8037	145
EEII-TS-400-500-VA	540	142.7	400	16	25	6879	8598	9111	165

Other kW rating per element 18, 25, 30 or 35 kW and higher capacities are available on request.  
 Horizontal types are available on request.

**EEII-.C Models: Instantaneous Electric Water Heaters with ceramic heating elements**  
huge range of heating powers available on request



**Tabular of sample models (individual configurations are possible)**

**Domestic water 10°/20°→60°C, pool heating or HVAC applications with CERAMIC heating elements**

Model No.	Capacity		Power rating kW	No. of elements	kW per element	Continuous hot water output	Continuous hot water output	Peak hot water output***	Nominal output*
	Liters	Gallons				liters/hour 10°C→60°C	liters/hour 20°C→60°C	liters/hour 20°C→60°C	DIN 4708 NL1 Living units**
EEII-TC-36-200-VA	200	52.8	36	9	4	619	774	964	9
EEII-TC-45-300-VA	300	81.9	45	9	5	774	967	1262	16
EEII-TC-45-450-VA	450	121.5	45	9	5	774	967	1404	19
EEII-TC-54-450-VA	450	121.5	54	9	6	629	1161	1598	23
EEII-TC-72-500-VA	540	142.7	72	12	6	1238	1548	2061	31
EEII-TC-90-500-VA	540	142.7	90	15	6	1548	1935	2448	40
EEII-TC-150-700-VA	750	192.9	150	15	10	2580	3224	3918	74
EEII-TC-210-700-VA	750	192.9	210	21	10	3611	4514	5208	100
EEII-TC-300-1000-VA	1000	274.8	300	30	10	5159	6449	7437	160
EEII-TC-390-1500-VA	1500	396.3	400	39	10	6879	8598	100023	230

Other kW rating per element 9, 12, 18, 25, 30 or 35 kW and higher capacities are available on request.  
Horizontal types are available on request.

# Guide to hot water demand according to european standard and DIN 4708

Use these guidelines as a rough check for your hot water requirement. The actual requirement can vary depending on usage patterns. Refer to your planning consultant for further information.

## Maximum demand rates (liters of hot water per hour at 60°C)

Building	Demand Factor	Bath	Shower	Bidet	Private Hand Basin	Public Hand Basin	Kitchen Sink	Bar Sink	Slop Sink
Hotel & Hostel	0,5	50	50	10	10	15	80	100	50
Hospital	0,7	60	70	10	10	15	80	-	50
Restaurant	1,0	-	-	-	5	25	140	100	100
Sport Centre	1,0	-	220	-	5	15	80	100	40
Day School	0,8	-	180	-	5	20	80	-	40
University	0,8	-	220	-	5	25	80	-	40
Offices	1,0	-	-	-	5	10	40	-	40
Factory	1,0	-	120	-	5	20	80	-	50

## Calculation example

Hotel with 300 rooms      liters / hour at 60°C

300 bath / showers	=	15,000
300 private handbasins	=	3,000
300 bidets	=	3,000
60 public handbasins	=	900
25 kitchen sinks	=	2,000
15 bar sinks	=	1,500
15 slop sinks	=	750

Total = 26,150 x demand factor 0,5 (hotel)  
**Demand = 13,075 liters / hour continuous at 60°C**

## Demand capacity for apartments

(with shared water heating)

ECOTHERM Stainless Steel Storage Water Heaters are commonly used in apartment houses and other buildings with shared water heating. The maximum number of standard apartments (according to DIN 4708) that each ECOTHERM Water Heater will serve are indicated in the performance tables pages 18, 19, 22, 23, 25.

## Hot water demand

for standard apartments (DIN4708\*)

Number of Apartments	Cont. requirement Liters per hour	
	60°C	45°C
50	3000	4300
100	5200	7500
150	7200	10400
200	9100	13200
250	10700	15500
300	12000	17400

### Standard Apartment (DIN4708\*)

A standard apartment is defined as having 4 rooms, 3-4 persons, 150 liters bath (filling time 10 min.), 1 hand basin and 1 kitchen sink.

### \*) DIN4708

specifies that the performance of the heat exchanger and the hot water storage capacity are both significant factors in determining the number of apartments a water heater can serve.

## Nominal Power Rating NL1

The nominal dwelling unit is a 4 room apartment with 3,5 (3 to 4) persons and sanitary equipment with a bath tub, a washstand and a kitchen rinse. The hot water requirement for each dwelling with  $W_b=5820$  Wh includes that of a of a bath tub (small bath tub with typical capacity of 140 liters) and a minimum temperature increase of

35K from cold water. Occupation or equipment deviations from nominal parameters are to be compensated by adjusting the number of nominal dwellings according to DIN 4708 part 2. The nominal power rating according to DIN 4708 part 3 must correspond to the nominal demand using DIN 4708 part 2. Distribution frequency is com-

pared to requirements shown in fig. 1 and fig. 2 and discharge rates allocated accordingly. Design parameters: Tank contents heated to 60°C (then mixed down to 45°C), a desired water temperature of 45°C, continuous reheating to 45°C during discharge, and heating to 60°C during waiting periods.

## Guide to hot water demand according to Ashrae

Use these guidelines as a rough check for your hot water requirement. The actual requirement can vary depending on usage patterns. Refer to your planning consultant for further information.

### Maximum demand rates (liters of hot water per hour at 60°C)

Building	Demand Factor	Bathtubs	Shower	Bidet	Private Hand Basin	Public Hand Basin	Kitchen Sink	Pantry Sink	Service Sink	Storage tank capacity
Hotel	0.25	75.7	283.9	7.6	7.6	30.3	113.6	37.9	113.6	0.8
Hospital	0.25	75.7	283.9	7.6	7.6	22.7	75.7	37.9	75.7	0.6
School	0.4	-	851.6	7.6	7.6	20	75.7	37.9	75.7	1.0
Gymnasium	0.4	113.6	851.6	7.6	7.6	30.3	-	-	-	1.0
Offices	0.3	-	113.6	7.6	7.6	22.7	75.7	37.9	75.7	2.0
Factory	0.4	-	851.6	7.6	7.6	45.4	75.7	-	75.7	1.0

### Calculation example

Hotel with 30 rooms	liters / hour at 60°C
60 lavatories x7,6	= 456
30 bathtubs x75,7	= 2,271
30 showers x283,9	= 8,517
60 kitchen sinks x113,6	= 6,816
15 laundry tubs x75,7	= 1,135

Total	= 9,525.6 x demand factor 0.25 (hotel)
<b>Demand</b>	= <b>2,381.4 liters / hour continuous at 60°C</b>
<b>Storage tank capacity</b>	= 2,381.4 liters x demand factor 0.8 (hotel) = <b>approx. 2,000 liters</b>

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