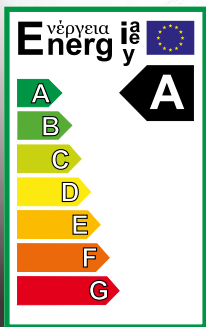




# ITT

## Hydronic electric heating

For heating or indirect domestic hot water provision  
As emergency or temporary heating  
heat capacity 6 – 15 kW

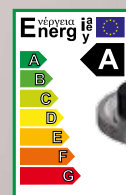
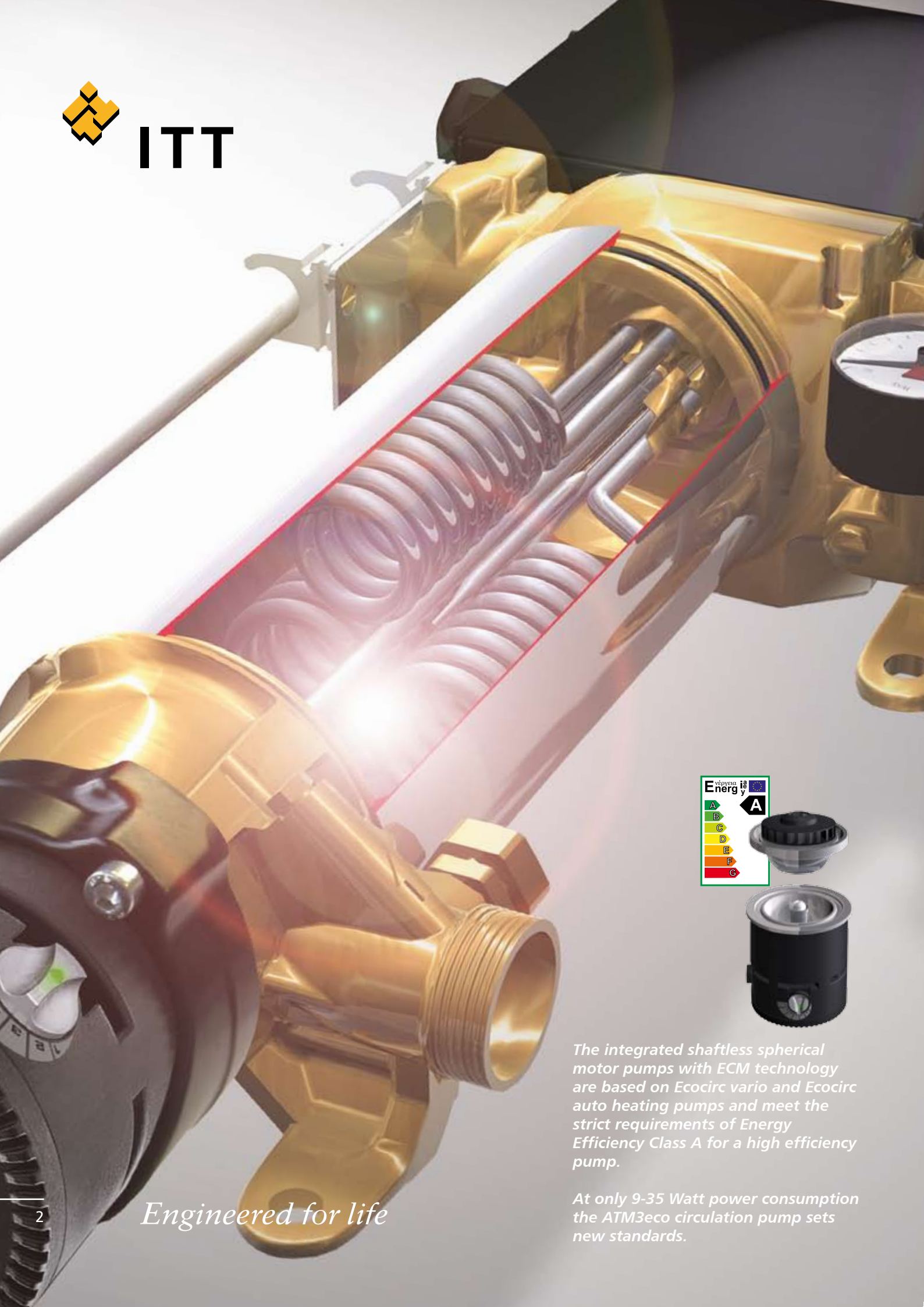


- Flexible, maintenance free, reliable
- No oil tank, no gas connection and no flue required
- No separate boiler room necessary
- Simple installation and operation
- Also suitable for industrial uses
- With highly efficient infinitely adjustable Energy Efficiency Class A circulation pump

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# ITT



The integrated shaftless spherical motor pumps with ECM technology are based on Ecocirc vario and Ecocirc auto heating pumps and meet the strict requirements of Energy Efficiency Class A for a high efficiency pump.

At only 9-35 Watt power consumption the ATM3eco circulation pump sets new standards.



# ITT

## Electric hot water heating.

### Design principle

Laing electric heating heats the water that then circulates through the heating system. Laing electric heating is a complete functional unit, consisting of an electric heater with three stainless steel heater coils, a constantly quiet, high efficiency circulation pump, a safety temperature limiter and an electronic constant temperature control with additional functions. All components which come into contact with media are corrosion resistant. Options with a diaphragm pressure compensating tank as well as heating a circuit manifold are also available. The electric heating may be also mobile for emergency heating. A large control programme is provided for supplementary control of the stations.

### Applications

Laing electric heating serves as a heat source for radiator circuits or for underfloor heating. It is particularly suitable for low energy houses, for domestic water heating in summer, as supplementary heating for passive houses, in solar plants and heat pumps, for preventing frosting and icing and as emergency or building site heating. As all components coming into contact with media are corrosion resistant, they are ideally suited for use with underfloor heating with non-diffusion proof piping.

By comparison, it can easily and inexpensively be retrofitted in extensions or refurbishments. It needs little space and minimises the purchasing costs. It is a sensible alternative for holiday homes or weekend homes as well as for secondary or back-up heating for a primary heating system.

### Benefits of hot water electric heating

Electric heating is an economic and sensible alternative for well insulated rooms or buildings which are irregularly or infrequently heated. The characteristic benefits of the electric heating are:

- Low cost of acquisition and installation
- No costs for obtaining fuel
- Boiler room or fuel storage facility not needed
- No costs for storing the energy source
- No cost for chimney construction and maintenance
- No boiler or oil tank cleaning necessary, no exhaust gases or smells
- No potential hazard from leaking oil or escaping gas
- Simple retrofitting in existing apartments or houses
- High efficiency even in part load operation

An additional attraction is the range of special tariffs which are offered by the utility companies in many places for electric heating. Furthermore, losses which occur with conventional heating (for example when starting a burner or in the transition period in part load) are unknown with electric heating. It only needs power when heat is required.

A further benefit of electric water heating is the ability to change over to another energy source at practically any time. If usage habits have changed on a long-term basis, so that changing to a different heating system makes sense, electric heating offers the opportunity simply to retrofit in place of an oil or gas boiler. This changeover can be a sensible solution in rooms that once required occasional heating and now need heat on a permanent basis. If this is taken into consideration when designing the plant then the changeover is often possible at little expense.





# ITT

## Proven functional principle

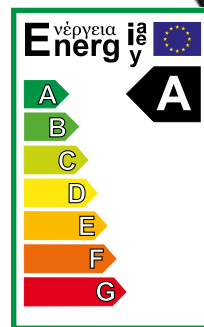
### Design of the electric heating

The core elements of Laing electric heating are the shaftless, high efficiency spherical motor pump, the stainless steel heating elements and the versatile, silent switching control technology.

### Function

The return of the water sucked in by the high efficiency pump enters the electric heating. Here there are three stainless steel heating elements which heat the water. An efficient reliable heat flow is created by the configuration of the heating elements behind the infinitely adjustable circulation pump, where the water is still in vigorous motion. The heated water leaves again through the feed located at the top. There is a safety valve and an automatic bleeder at the highest point of the electric heating system.

A corrosion resistant diaphragm pressure balance tank is connected to the connection provided on the return (not included in delivery). The safety temperature limiter and the electronic control are integrated into the connection housing. The constant temperature control and the pump control reliably protect against overheating. All components which come into contact with media are corrosion resistant.



### Mobile electric heating - S.O.S. Mobile heater

Mounted on a practical transport trolley, with robust capacity stepping switch and temperature setting (20-85 °C), corrosion resistant diaphragm pressure balance tank (6 l), connection thread with ball valve 1" internal thread, filler gauge, auto-diagnosis, connection cable, including DC plug (cable 2.5 m).



# ITT

Electronic constant temperature control with supplementary functions and safety temperature limiter

Safety valve and bleeder

Thermometer

Return connection with shut-off ball valve (included in supply) and 1" internal thread

Pressure gauge

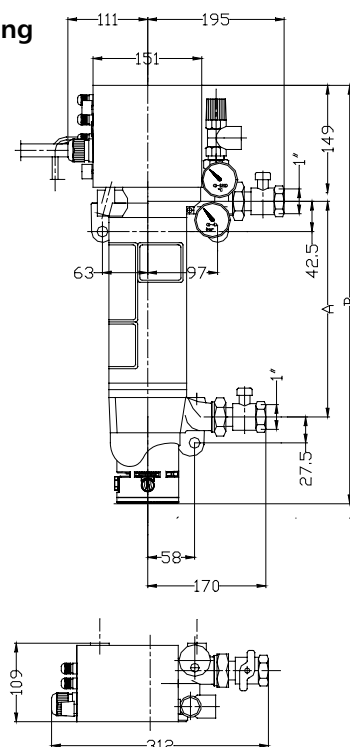
Electric heating: each has three individually switchable stainless steel heating elements

Connection pressure balance tank 3/8"

Connection return with shutoff ball valve (supplied) and 1" internal screw thread

Constant quiet, infinitely adjustable circulation pump with Laing spherical motor

Dimensional drawing  
EPR in mm



Model	Heat capacity	Heating area (depending on layout) resp. application
EPR 6	6 kW	up to approx. 80 m <sup>2</sup>
EPR 9	9 kW	up to approx. 120 m <sup>2</sup>
EPR 12	12 kW	up to approx. 160 m <sup>2</sup>
EPR 15	15 kW	up to approx. 200 m <sup>2</sup>
EPE 13 M	6 kW	Mobile emergency heater
EPE 6 M	13 kW	Mobile emergency heater

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# ITT

## For all the connections and places you'll ever need

Thanks to its compact construction and quiet running, Laing electric heating can be installed in many instances directly in the living area without any problems. The installation costs are brought down to the electric connection and the connection to the radiators or underfloor heating circuits.

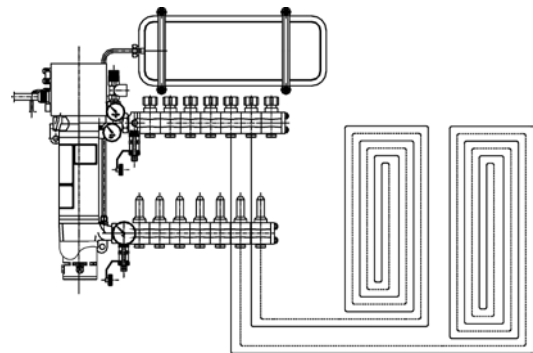
The shallow depth of the stations means that they can be mounted on or in the wall, so that there is practically no space needed for the heating unit. Underfloor heating circuits or radiators can be connected through manifolds (not included in delivery).

EPR can also be installed at one location in the building (e.g. in the attic or in the cellar), and supply centrally either radiator circuits or the underfloor heating manifold, or if required, can be combined with domestic water heating (see accessories - BWAS).

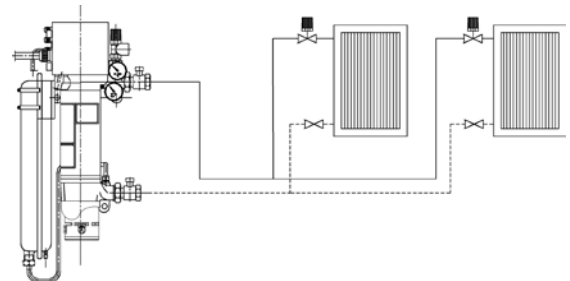
The integrated silent electronic constant temperature control can be extended to include room or outside temperature control components without any problem.

### **S.O.S. Mobile heating**

Quick and uncomplicated emergency heating is immediately to hand where there is a boiler breakdown or where it is being replaced. Also very good as a service unit for initial heating to protect a heat pump from icing up. We will be pleased to advise you on industrial applications – please contact us.



Application underfloor heating\*

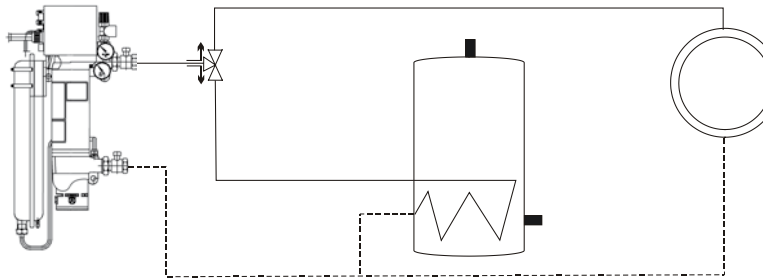


Application radiant heating\*

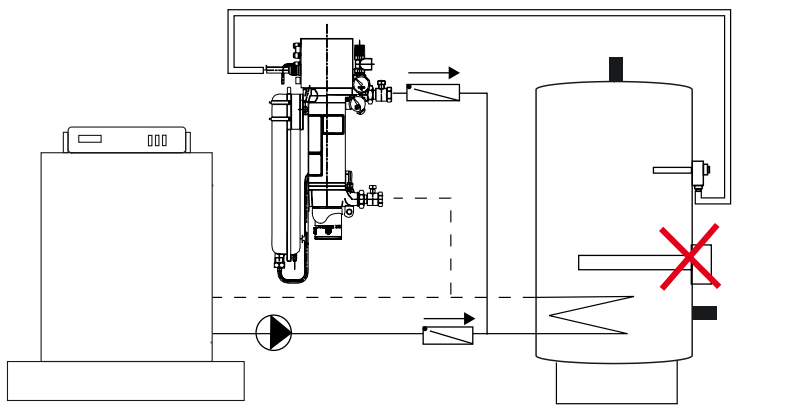
**\* All drawings are just examples. Please refer to your local rules and regulations. Safety fittings are not included in delivery and must be on site. Expansion tanks / pressure balance tanks and manifolds are not included in delivery!**



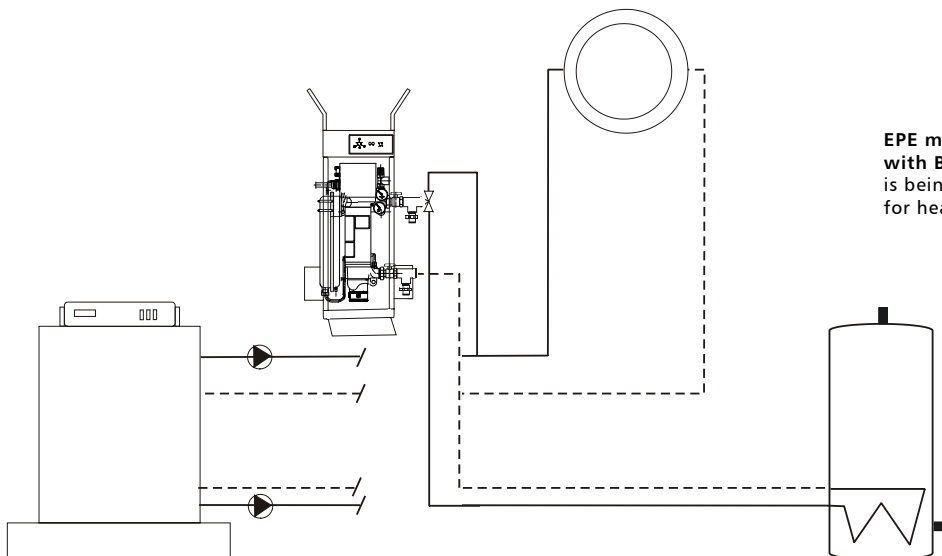
# ITT



Combined use floor or radiator heating\*,  
with domestic water heating (including  
BWAS additional control set )



Indirect hot water provision\* for summer  
operation when heating is turned off



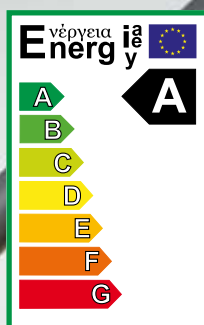
**EPE mobile supplementary heating**  
with BWAS Emergency heating when boiler  
is being replaced or there is a breakdown,  
for heating and domestic water

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# ITT



High efficiency pump

## Technical data

Electric Heating	EPR 6	EPR 9	EPR 12	EPR 15
Heat capacity	3x2 kW	3x3 kW	3x4 kW	3x5 kW
Nominal voltage (3 phase in V)	230/400	230/400	230/400	230/400
Nominal current per heat element	8,7 A	13 A	17,4 A	21,7 A

### Connection

Electric heating can be used with the following mains supplies with the appropriate wiring: 3 phase/400 V, 3 phase/230 V, 1 phase/230 V.  
The three stainless steel elements are supplied as star connections so that each element is always supplied with 230 V.

<b>Safety temperature limiter</b>	
Switching temperature	105 °C +/- 5K
<b>Minimum water circulation rate</b>	100 l/h
<b>Max. system pressure</b>	2.5 bar (for industrial use without integrated safety valve up to 6 bar)
<b>Pump</b>	High efficiency infinitely adjustable circulation pump with shaftless spherical motor, Energy Efficiency Class A
Voltage	230 V/50 Hz
Power consumption	9 - 35 W





# ITT

## EPR electric heaters

### Application

The Laing EPR is designed as supplementary or bridging heating, or as a frost preventer for existing heating plants. The necessary pressure balance tank must be already in situ.

### Construction of the EPR

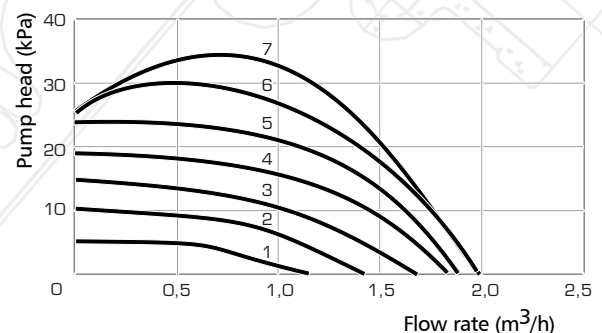
All EPR electric heaters have three stainless steel heating elements, an infinitely adjustable, high efficiency circulation pump, safety temperature limiter, electronic control and, safety valve, as well as pressure gauge and thermometer. All parts which come into contact with media are completely corrosion resistant. Screw connection with ball valve 1" internal thread. All components are incorporated in a compact unit.

### The integrated electronic control contains:

- Silent running circuit breaker for each heat register
- Constant temperature control
- The three heating elements can either be time networked together or switched in temperature steps through the temperature gradients (integrated cascade connection)
- Connection possibility for time networked switch on/off (cascade connection in situ)

- Stainless steel heating elements (cascade connection available on site)
- Dry running protection for the heating elements
- Connection possibility for external thermostat and zone control for e.g. weather, room or outside temperature based control, as well as boiler charge
- When connected to an external thermostat or zone module a 2 minute pump shut off delay can be selected to feed the remaining heat though the circuit
- Pump capacity can be set on the pump
- Alarm signal capacity
- Main switch

### Pump curve



### EPR hydronic electric heaters

Electrical heater with three stainless-steel heating elements, integrated highly efficient circulator of the energy efficiency class A with stepless manual speed adaptation, safety temperature limiter, electronic constant temperature control with additional features, manometer and thermometer, all wetted parts corrosion resistant, union connection with ball valve 1" female thread.

Accessories: connection set BWAS 25 for combined use of heating and domestic hot water.

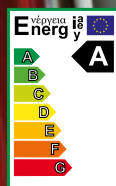
Model	Part. No.	Heat capacity	Distance connection nozzles (= dimension A*)	Dimension B*	Product category
EPR 6	LH 40 00 300	6 kW (3x2 kW)	300 mm	571 mm	7 Y
EPR 9	LH 40 00 330	9 kW (3x3 kW)	300 mm	571 mm	
EPR 12	LH 40 00 360	12 kW (3x4 kW)	365 mm	636 mm	
EPR 15	LH 40 00 390	15 kW (3x5 kW)	365 mm	636 mm	

\*All dimension refer to the dimensional drawing on page 5.

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# ITT



## Technical data

<b>Electric heater</b>	<b>3 Phase / 400V</b>	<b>1 Phase / 230V</b>	<b>Compensation tank</b>	
	DC plug	Adapter plug	Design	Diaphragm pressure (corrosion resistant)
<b>EPE 13 M</b>			Volume	6 l
Heat capacity	13 kW (3+5+5 kW)	3 kW	Permitted operating pressure	3 bar
Nominal current	13 A/21,7 A/21,7 A	13 A	Filling over pressure	0,75 + 0,2 bar
<b>EPE 6 M</b>			<b>Pump</b>	high efficiency, infinitely adjustable circulation pump with shaftless spherical motor and energy efficiency class A
Heat capacity	6 kW (2+2+2 kW)	6 kW	Voltage	230 V/50 Hz
Nominal current	8,7 A/8,7 A/8,7 A	26,1 A	Power consumption	9 - 35 W
<b>Control</b>			Protection type/insulation	IP44/F
Constant temperature control	20 - 85 °C		<b>Dimensions</b>	
Safety temperature limiter	105 °C +/- 5 K		Transport dimensions	H 1120 x W 520 x D 500 mm
<b>Max. system pressure</b>	2,5 bar		Distance between feed and return nozzles	EPE 13 M: 365 mm; EPE 6 M: 365 mm



# ITT

## S.O.S Mobile heater

### Application

Quick and uncomplicated emergency heating is ensured with a S.O.S. Mobile heater for boiler breakdowns or when changing boilers. It is also very good as building site heating as well as when installing underfloor heating. It is completely preassembled, including control, safety devices and self-diagnosis system against wrong electrical connection. The S.O.S. Mobile heater can also be pushed into difficult access work areas.

### Uses

- Emergency heating and emergency hot water preparation if there is a heating boiler breakdown or a heating boiler is being changed in a hot water heating or air conditioning system
- Interim heating and frost protection in new build or refurbishment
- Building site heating
- Installation of underfloor heating (preheating the floor heating pipes for ease of laying; screeding heating, drying out screeding)
- Protection of heat pumps from icing when heating up for the first time

### Construction

Two versions are available: EPE 13 M with 13 kW heat capacity or EPE 6 M with 6 kW heat capacity. Each S.O.S. Mobile heater is supplied ready to connect. It is mounted on a robust transport pallet.

The electric heating construction is straightforward, simple and efficient: the integrated, infinitely adjustable high efficiency pump feeds the heating water through three high quality stainless steel electric heating elements installed in a stainless steel tube which are designed for continuous operation. The heating elements have, depending on the type, a heating capacity of 13 kW (3+5+5 kW) or 6 kW (2+2+2 kW).

The heating capacity can be adjusted to suit requirements by a step switch or set to the maximum capacity, which is possible because of the fuse protection of the mains supply. The

desired feed temperature can be set through the integrated temperature setting. An S.O.S. Mobile heater is equipped with all the necessary safety and connection fittings. All parts coming into contact with media are completely corrosion resistant. A special anticlogging, high efficiency, long life, shaftless spherical motor pump is used as the circulation pump. The only moving part is a spherical rotor/impeller unit with a self-adjusting bearing which sits on an ultra-hard, wear-resistant ceramic ball and can cope with small dirt particles.

The S.O.S. Mobile heater can be connected by the preassembled connection cable with DC plug to a 3 phase/ 400 V power supply. The self-diagnosis system detects any wrong electrical connection on site. Using an adapter plug, available separately, it is also possible to operate through a single phase/230 V power supply: in the case of the EPE 13 M, the heating capacity is then internally reduced to 3 kW through the AS-3 adapter plug (nominal current 13 A), as the higher heating capacity would blow the 16 A fuse (commonly used in Germany). An EPE 6M can be connected to a 230 V power supply at the full 6kW heating capacity, using a single phase AS-6 adapter plug. Care should be taken that the fuse corresponds to the capacity set on the stepping switch (2 kW = 8.7 A; 4 kW = 17.4 A; 6 kW = 26.1 A).

Feed and return of the mobile electric heating have 1" internal threads through which they can be connected on site to the existing heating system by rigid or flexible connecting lines.

For preparing domestic water, we recommend connecting to an indirect storage water heater through the EPM AS 25 connection set. In addition a T-piece should be provided in the feed on site for connection to the storage water heater. It is possible to heat the domestic water through the electric heating using the through flow principle; however, this can lead to the unit having to be descaled more frequently.

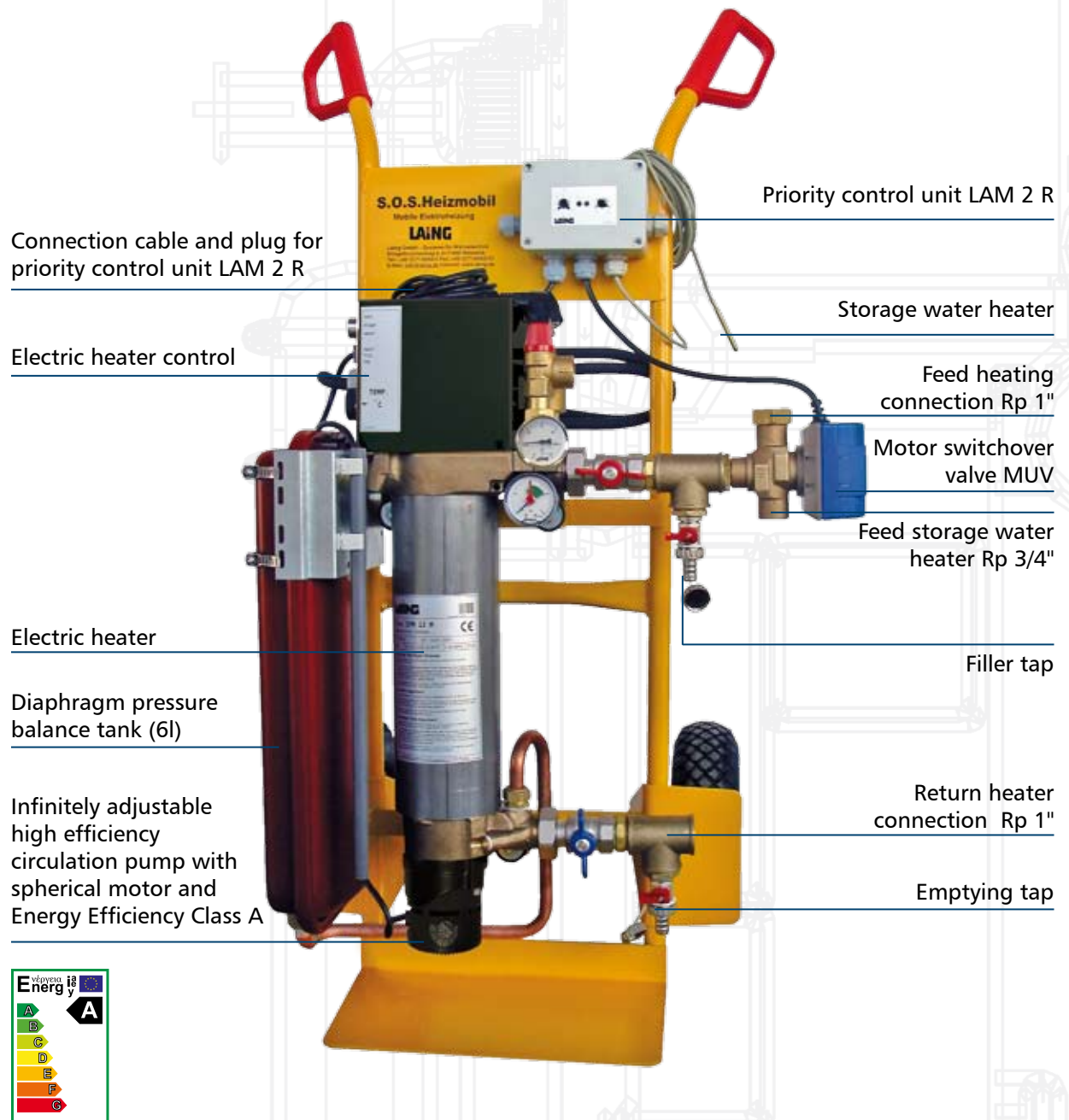
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# ITT

## S.O.S. Mobile heater Type EPE 13 M configuration with connection set for storage water heater





# ITT



## Product range

Electric heater with 3 heating registers, capacity step switch, infinitely adjustable, high efficiency circulation pump, temperature setting (20-85 °C), safety temperature limiter, diaphragm pressure balance tank (6 l), safety valve, pressure gauge, thermometer, connection with ball valve 1" internal thread, filler fittings, completely corrosion resistant, with connection cable including 3 phase plug (2.5 m), mounting on transport trolley.

Model	Part No.	Heat capacity	Product category
EPE 13 M	LH 51 00 400	13/8/3 kW @ 400 V, or 3 kW @ 230 V with adapter plug	7 Y
EPE 6 M	LH 51 00 401	6/4/2 kW @ 400 V or 2 kW @ 230 V with adapter plug	

## Accessories, components and spare parts

Model	Part. No.	Description	Product category
AS-6	LH 95 00 046	Adapter plug for 230 V connection of EPE 6 M	7 Z
AS-3	LH 95 00 045	Adapter plug for 230 V connection of 3 kW heat register of EPE 13 M	
EPM AS 25	LH 95 00 013	Connection set for storage water heater, wired ready to plug in, consisting of priority control unit LAM2R with fixing screws and plug connection cable (2 m), storage feed filler TF3, motor switchover valve MUV 25	
AT	LH 95 00 400	Contact thermostat, control range 20-90 °C, for use with BWAS in combination with underfloor heating, or as thermal fuse	
ATM3eco	LH 24 00 603	High efficiency standard exchange pump for EPR 6/9/12/15 and EPM and EPE, delivery head 4m, max. 35 Watt	
HDG	LH 95 00 177	Connection set for EPR (2 ball valves 1" inside thread flat sealing connection)	
TH 14	LH 95 00 215	Thermometer	
SV 2,5	LH 95 00 208	Safety valve R 1/2", 2.5 bar	
MA 2,5	LH 95 00 209	Pressure gauge 2.5 bar, R 3/8", axial connection	
DG 6	LH 95 00 205	Diaphragm pressure balance tank (6 l, corrosion resistant primary pressure 0.75 bar)	
HR 13	LH 95 00 524	Heating element 13 kW (3 + 5 + 5)	
HR 6	LH 95 00 520	Heating element 6 kW (2 + 2 + 2)	
EPEH	LH 55 00 931	PC-board for EPM / EPE	
STBR	LH 55 00 921	Switch set for EPR-/EPE-/EPE safety temperature limiter	
LAM 2 R	LH 55 00 009	Domestic water priority control unit (setting range 25-75°C) with switch (without plug cable)	
TF 3	LH 55 00 944	Storage temperature sleeve sensor (length 55 cm) incl. cable (3 m)	
MUV 25	LH 95 00 510	Motor switchover valve DN 25 for 230 V / 50 Hz	
Entkalker	LH 95 00 048	Quick descaler concentrate (1l)	



# ITT

## Accessories, components and spares

Model	Part. No.	Description	Product category
A1-150	LH 95 00 285	Replacement pump for EH 2 KR and EHR 2 KR and EH mini	7 Z
A1-150 U	LH 95 00 286	Replacement pump for EH 2 KRU and EHR 2 KRU	
A1-150 W	LH 95 00 287	Replacement pump for EH 2 KR and EHR 2 KR and EH mini	
ATM1eco	LH 24 00 601	High efficiency exchange pump for EP and EPR 6000/9000/12000 and 15000 (without switch/outside condenser), discharge head 4m, max. 35 Watt	
ATM3eco	LH 24 00 603	High efficiency standard exchange pump for EPR 6/9/12/15 and EPM and EPE, delivery head 4m, max. 35 Watt	
ATM6eco	LH 24 00 606	High efficiency standard exchange pump for EPR 6/9/12/15 and EPM und EPE, delivery head 6m, max. 63 Watt	
VSVA	LH 95 00 113	Manifold segment feed with valve for underfloor heating	
VSRA	LH 95 00 115	Manifold segment return with flow meter for underfloor heating	
D180	LH 95 00 212	Flow meter element for VSRA colour green, measuring range 30-177 l/h	
D250	LH 95 00 213	Flow meter element for VSRA colour red, measuring range 60-250 l/h	
HDG	LH 95 00 177	Connection set for EPR (2 ball valves 1" inside thread flat sealing connection)	
AEB 1"	LH 95 00 265	1" connection block for right hand manifold end	
DXG	LH 95 00 175	Duplex connection, feed and return manifold with 2 connections for EHR	
AT	LH 95 00 400	Contact thermostat, control range 20-90 °C, for use with BWAS in combination with underfloor heating, or as thermal fuse	
TH14	LH 95 00 215	Thermometer	
SV 2,5	LH 95 00 208	Safety valve R ½", 2.5 bar	
MA 2,5	LH 95 00 209	Pressure gauge 2.5 bar, R 3/8", axial connection	
STBR	LH 55 00 921	Switch set for EPR-/EPE-/EPE safety temperature limiter	
EPRH	LH 55 00 927	Main PC Board for EPR and EPR Z	
EPRWH	LH 55 00 928	Main PC Board for EPR W	
EPEH	LH 55 00 931	PC Board for EPM/EPE	
THMA	LH 95 00 216	Combined thermometer/pressure gauge for EPRW	





**ITT**

**Notes**

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# ITT

## Lowara

ITT-Lowara ([www.lowara.com](http://www.lowara.com)), headquarters of "Residential and Commercial Water - EMEA" part of the ITT Corporation and located in Montecchio Maggiore, Vicenza - Italy, is a leading manufacturer of hydraulic pumps and water handling and control systems. It has 1.819 employees in Europe, 675 operating in Italy. In 2009 its consolidated sales totalled about 286 million €, or over 396 million \$.

ITT Corporation is a high-technology engineering and manufacturing company operating on all seven continents in three vital markets: water and fluids management, global defense and security, and motion and flow control. With a heritage of innovation, ITT partners with its customers to deliver extraordinary solutions that create more livable environments, provide protection and safety and connect our world. Headquartered in White Plains, N.Y., the company generated 2009 revenue of \$10.9 billion.

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