THERMALEC

POOLHEATERS

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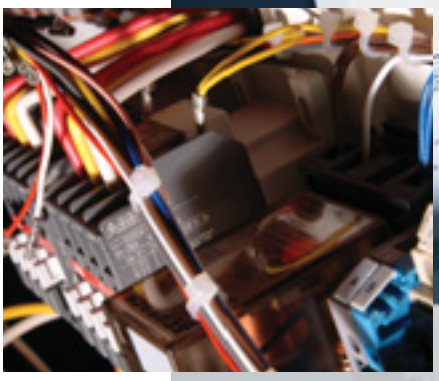


Thermalec Products founded in 1966, were the first company in the UK to manufacture a range of electric heaters specifically for the commercial and domestic swimming pool industry. In 1999, Thermalec joined the Meddings Group of Companies to enhance and diversify the Group's engineering activities, enabling Thermalec to widen it's horizons as part of a larger group.

Having established itself in the UK as the market leader Thermalec poolheaters have now become the No.1 choice for electric heaters in the Middle East, Thermalec's reputation for design, quality and reliability has allowed the company to expand into Europe, with agents in Germany, France, mainland Spain and the Balearics, sales into many emerging markets are now also taking place.

Environmentally, Thermalec heaters are well positioned, having no constantly moving parts, noise levels are practically non-existent(heat pumps have fans and motors), and having no fumes or emissions a clean environment around your pool is easy (oil and gas heaters produce emissions).

Inexpensive to buy, easy installation and low running costs with minimal maintenance, no compulsory annual inspection as an added advantage makes Thermalec Pool heaters the sensible option for heating your pool.

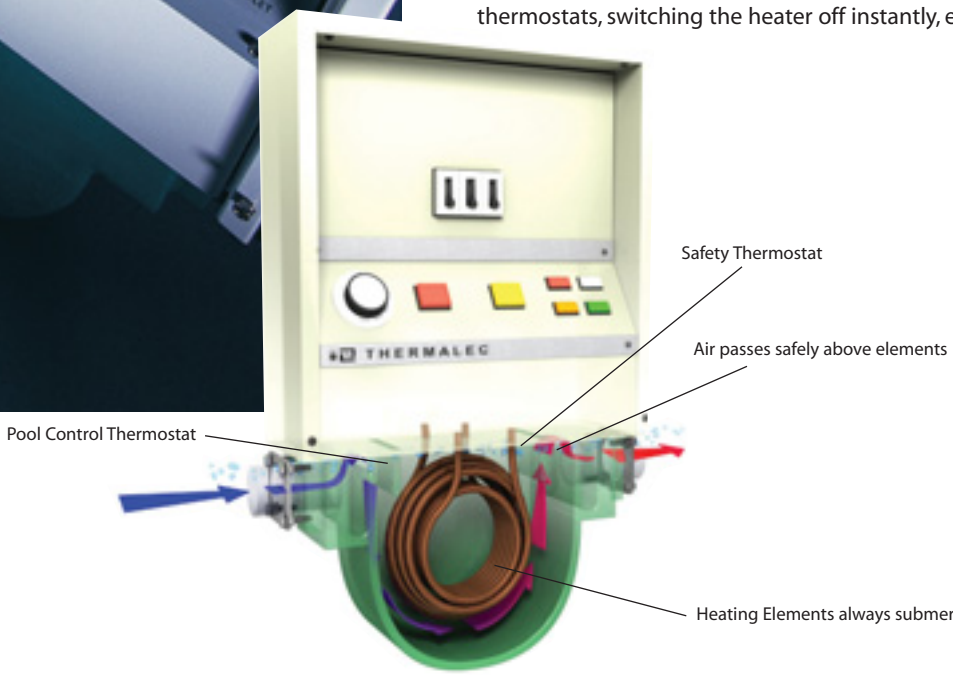
Mainly used for swimming pools, with models suitable for spas and fish ponds, no other heater has a lifetime guarantee of thermal efficiency – your running costs will not escalate due to the heater getting older.

Economy through Efficiency – Control by Design

The Low Cost Reliable Heating System for Swimming Pools & Spas

Thermalec Heaters are quiet, unobtrusive, easy to install and operate. Efficient and economical to run and when used in conjunction with a solar bubble cover, Thermalec takes full benefit of natures natural heat gain during the day, keeping your pool at a constant temperature throughout the season (not reliant on the weather).

- Unique design ensures cooler water from filter pump does not strike the elements direct (giving longer life)
- Unique spiral flow allows efficient heat removal from the elements, minimising the scale and sediment build up.
- Air generated from the pump passes harmlessly around the sides of the baffles and across the top of the heater. (heat pumps heat air and water)
- The control thermostat is positioned to sense the incoming water temperature and controls the pool to within 1°c.
- The safety thermostat senses the water temperature leaving the heater.
- Temperature rise within the heater due to poor flow is rapidly sensed by both thermostats, switching the heater off instantly, ensuring safety at all times.



120PHR 84KW – 120KW

72PHR 48kW – 72kW

36PHR 30kW – 36kW

24PHR 15kW – 24kW

12PHR 3kW – 12kW

RANGE OF ELECTRIC POOL HEATERS

SPECIFICATION

Heater body: Cast iron with heavy fusion bonded epoxy coating impervious to salt and chemically treated pool water.
35psi design pressure operating at a normal working pressure of 30psi gives protection to the whole installation.
The drain valve allows the heater to be emptied for winterisation. Removable uPVC stub flanges mean no unions or heat sink are required. Flow direction is left to right, can be reversed on site (simple instructions in installation manual).

Heating Elements: Copper, Incoloy or Titanium elements are individually mounted in a removable top plate, allowing easy element renewal and inspection of the interior of the vessel.

Controls: Heavy duty contactors controlling the power supply to the elements are switched in turn by a filter pump interlock relay, control thermostat and safety thermostat, set to operate before the water temperature reaches 53°C.
A 2a fuse protects the control circuit and a minimum of 6-indicator lamps monitor every stage of operation for simple diagnostic servicing.

Model Variations: Due to the variations in power output of different models, the heaters have the following additional controls:

12PHR standard model: As above plus additional On/Off switch controlling the main power to the heating elements.

All other standard models: 24PHR – 36PHR – 72PHR – 120PHR and POWER BOOST MODELS – Circuit breakers are fitted replacing the On/Off switch to protect against short circuit, they also act as a main switch. In the event of the safety thermostat operating due to excess temperature rise a trip is triggered within the breaker, totally isolating the heater at its point of supply. The heater will not work again until these devices are manually reset.

36PHR – 72PHR – 120PHR models: Includes a thermometer to indicate outlet temperature, enables flow rates to be adjusted if fitted with a by-pass or used in multiples or operated in parallel with an alternative means of heating.

72PHR models: A time delay relay, engages the contactors in two stages, reducing electrical surges, a 2-step temperature controller overrides the time delay in the event of rapid temperature rises, 2 safety valves to cope with increased power.

120PHR models: Two time delay relays, engage the contactors in three stages, 2-step temperature controller and four safety valves.

In view of our policy of continuous improvement, we reserve the right to change this specification without notice.

GUARANTEE TWO YEARS:

- Against faulty workmanship or materials.
- Repair or replacement of faulty components returned to our factory for inspection.
- This guarantee does not cover misuse or neglect of the heater.

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THERMALEC + ECONOMY 7 = LOW RUNNING COSTS ALL YEAR ROUND

Every Thermalec owner wakes up to find their pool water is just as inviting as it was yesterday and the day before. That is the great advantage of having a positive and powerful heating system keeping your pool at an even temperature all summer long.

THE GREATEST ADVANCE IN POOL HEATING: THERMALEC + E7+ SOLAR COVER

COST OF RUNNING A POOL – HEATING & FILTRATION

Taking a pool with a solar cover, maintained at 80°F (27°C) for the normal British 22 week season (early May to the end of September), our experience over 40 years shows that you can expect an average heat loss equal to 28 units of electricity per sq.ft or 300 units per M^2 of pool surface area.

This is the average heat loss from any pool of this size, held at 80°F (27°C) regardless of the type of heating system used. This now gives you a yardstick by which to compare running costs of different heating systems.

For example a 12' x 24' pool has a surface area of 288 sq.ft, multiply this by 28 and you have 8064 units. If the price you pay for E7 electricity in your area is 3.62p** per unit, the total cost per season is 3.62p x 8064 units = £291.91 per year.

One of the many benefits of using a Thermalec on Economy 7 is the dramatic reduction made on the cost of filtration. In private pools it is possible to arrange for the filter pump to run during the E7 period only. A 3/4 HP pump uses 1.1 units per hour or 8 units in 7 hours, which at 3.62 pence** per units costs 25p per night or £39.00 per season. The heating and filtration costs amount to just **£330.91** using the Thermalec system.

LIFE-TIME EFFICIENCY GUARANTEE

Only Thermalec heaters are guaranteed to maintain their efficiency over the years without regular cleaning, because it is the only system that does not rely upon the transfer of heat from outside the water. Even if scale should form on the heating elements, since they are totally surrounded by water, the heat passes through the scale into the flowing water with no loss of power. Compare this with a fired boiler where less heat goes into the water than goes up the flue, as scale or dirt forms on the heating surfaces.

DEPRECIATION & MAINTENANCE

Any survey of running costs must include capital depreciation and maintenance. Thermalec heaters, at much less than half the price of an equivalent Heat Pump or oil-fired boiler, having no continuously moving parts and no fuel ignition system, only requiring the filter pump to operate for 7 hours in every 24, has to win hands down.

Simply select the size of heater you require from our sizing chart. Consult your Electricity Supply Company to make sure that it is possible to operate from the existing supply, advising them that it will be operating during the night and (in most cases) the summer only. Ask them to offer you other suitable tariffs with up to 10 hour charge periods – which would allow the use of a smaller heater for a given pool size.

OUTDOOR POOL WARM-UP TIME

When good weather arrives it is natural to want your pool to reach a comfortable swimming temperature as quickly as possible. Sizing the heater according to our charts and operating entirely on Economy 7, the pool will take about 5 nights (35 hours) to reach temperature. This compares favourably with a pool relying on a Heat Pump, which must operate 24 hours per day to match the heat produced by the Thermalec in just 7 hours. The output from the Heat Pump will depend upon the average day and night air temperatures and in early May will only give about 75% of the heat it will produce in mid-summer.

DELUXE MODEL – providing economic heating for your pool and simplistic control of your filter pump.

The Deluxe model has extra features to simplify your pool system, allowing the heaters to provide all the control and protection required for the filter pump, packaged within the heater controls, eliminating the need for a specific control panel. Terminals are also provided for the connection of an underwater light.

A Deluxe heater arrives on site; the filter pump is connected to the clearly marked terminals within the heater. The pump is protected by its own circuit breaker together with a motor starter with overload protection – as called for in the IEE Wiring Regulations.

A quartz timeswitch maintains the correct time even in the event of a power failure, ensuring that the heater only uses power during the low cost period.

The more powerful Deluxe heaters, from 15kw upwards, have a Power Boost facility to run during the day at a reduced load. Pressing the Boost button warms the pool up twice as quickly. It does this by operating on full load at night and at a reduced load during the day for the first day or two of the season. Once the pool reaches the temperature you have selected, the heater automatically reverts to operation on Economy 7 for the rest of the season.

THE MOST ENVIRONMENTALLY FRIENDLY OF ALL POSITIVE POOL HEATING SYSTEMS

Thermalec heaters have no fumes or smells, no fans or compressors and most importantly of all, there are no emissions into the atmosphere, CFCs or other refrigerants for you to worry about.

The clean solution to pool heating.

**All figures are approximate and vary depending on Electricity Supply Company

INSTALLATION DETAILS

All models are 390mm wide across casing

Model Type	Casing Height (mm)	Casing Depth (mm)	Pipe Centre to Floor (mm)	Pipe Centre to Wall (mm)	Flow and Return
12PHR	360	140	183	200	1 1/2"
24PHR	630	210	175	260	2"
36PHR	630	270	175	300	2"
72PHR	630	430	175	380	2"
120PHR	630	645	150	580	3"
12PHR/DL*	630	140	183	260	1 1/2"

**All deluxe models as above unless otherwise stated.*

Flow connections are plain uPVC stub flanges (plain bore) and require no unions for removal of heater, nor is a heat sink required. Flow from left to right but can be reversed on site if required. Simply install in return pipe from filter to pool. The heaters are designed to IP20 and must be installed in dry conditions under cover and in accordance with IEE Regulations at least 3.5m away from the pool.

EXPORT SHIPPING SPECIFICATION

12PHR	24PHR	36PHR	72PHR	20PHR
430 x 390 x 210mm	710 x 450 x 350mm	710 x 450 x 410mm	550 x 450 x 730mm	710 x 450 x 730mm
28kg	46kg	62kg	95kg	142kg

TO CONVERT

kW to B.Th.U.s multiply by 3412 | kW to kilocalories multiply by 860 | M^2 to sq. ft. multiply by 10.764
cu. ft. to gallons multiply by 6.23 | litres to gallons multiply by 0.22 | M^3 to gallons multiply by 220

HEATER SIZING CHART FOR 7 HOUR HEATING PERIOD PER 24 HOURS WITH FLOATING SOLAR COVER (IF FLOATING SOLAR BLANKET NOT USED INCREASE HEATER SIZE BY 50%)

MODEL REF	IMPERIAL						HEATER SIZE	METRIC					
	75°F		80°F		85°F			24°C		27°C		30°C	
	SQ.FT.	GALLS.	SQ.FT.	GALLS.	SQ.FT.	GALLS.		M^2	M^3	M^2	M^3	M^2	M^3
12PHR/3	63	1750	50	1400	42	1170	**3kW**	6	8	5	7	4	5
12PHR/6	125	3500	100	2800	83	2340	**6kW**	12	16	10	13	8	11
12PHR/7.5	156	4370	125	3500	104	2920	**7.5kW**	15	21	12	16	10	13
12PHR/9	188	5250	150	4200	125	3500	**9kW**	18	25	14	20	12	16
12PHR/12	250	7000	200	5600	167	4670	**12kW**	24	33	19	26	15	21
24PHR/15	313	8750	250	7000	208	5840	**15kW**	30	41	24	33	19	27
24PHR/18	375	10500	300	8400	250	7000	**18kW**	36	49	29	39	23	32
24PHR/21	438	12250	350	9800	292	8170	**21kW**	42	58	34	46	27	37
24PHR/24	500	14000	400	11200	334	9340	**24kW**	48	66	38	53	31	42
36PHR/30	625	17500	500	14000	417	11670	**30kW**	60	82	48	66	39	53
36PHR/36	750	21000	600	16800	500	14000	**36kW**	72	99	58	79	46	64
72PHR/48	1000	28000	800	22400	667	18680	**48kW**	96	132	77	105	62	85
72PHR/60	1250	35000	1000	28000	834	23350	**60kW**	120	165	96	132	77	106
72PHR/72	1500	42000	1200	33600	1001	28020	**72kW**	144	197	115	158	93	127
120PHR/84	1750	49000	1400	39200	1167	32680	**84kW**	168	230	134	184	108	149
120PHR/96	2000	56000	1600	44800	1334	37350	**96kW**	192	263	154	210	124	170
120PHR/108	2250	63000	1800	50400	1501	42020	**108kW**	216	296	173	237	139	191
120PHR/120	2500	70000	2000	56000	1668	46690	**120kW**	240	329	192	263	155	212

The sizing chart is for outdoor pools in the South of England, running from the beginning of May until the end of September. For pools in the North, multiply the heater size by 1.3 - 1.5 depending upon the exposure of the pool.

The figures shown for capacity of pool – in gallons or M3 – are based upon an average depth of 4'6" (1.36m) and are provided as a guide when the exact surface area is not known.

For indoor pools, provided the air temperature is maintained at least 1oC above the pool temperature by an alternative form of heating 24 hours per day, the heater size may be reduced by multiplying by 0.7, but since running costs are related to the size of pool and the temperature required, not the size of the heater, we advise keeping to the table where possible.

In countries where off-peak electricity is not available, heaters sized at 1kW per 1000 gallons (4500 litres) with the heater operating 24 hours per day, will normally be adequate and will give an 8oF (4.4oC) rise in 24 hours assuming no losses.

HEATER POWER CALCULATIONS FOR POOLS IN THE MIDDLE EAST

This sheet is intended to help select the correct size of heater to be fitted into a pool installation, based upon the volume of the pool and its environment.

Design assumptions (based upon nearly 40 years experience):

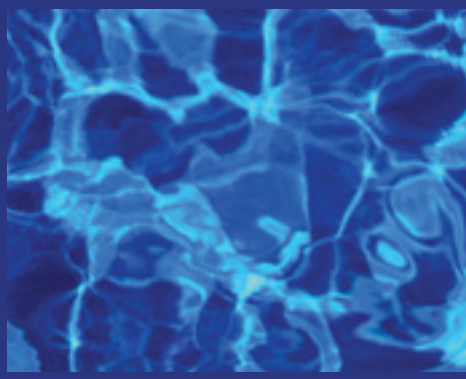
1. Pool heater is running twenty-four hours per day.

2. In a twenty-four hour period an unheated swimming pool will experience a temperature drop of less than 8°F (4.4°C).

3. One kW of heater power for every 1000 gallons of volume will result in a temperature rise of 8°F (4.4°C). This is assuming no thermal losses.

4. Theoretical heater power should be multiplied by the following factors to calculate the actual size of Thermalec heater required.

• Indoor pool temperature greater than air temperature	=	1.25
• Indoor pool temperature less than air temperature	=	0.75
• Outdoor pool without cover	=	1.50
• Outdoor pool in exposed environment	=	1.30
• Any pool less than 1 metre deep	=	1.50



Conversions

Gallons to Litres: multiply by 4.55

Litres to gallons: multiply by 0.22

Metre^3 to gallons: multiply by 220

Feet^3 to gallons: multiply by 6.23

Worked Example

For an indoor pool of volume of 850m^3 where the air temperature is less than the pool temperature, calculation is as follows:

- Gallons = 850m^3 x 220 = 187,000
- Allowing 1kW per 1000 gallons the theoretical heater power would be 187kW
- Multiply by 1.25 to allow for temperature differential = 233.75 kW
- Nearest Thermalec heater is 120kW, two will be required (2 x120 kW = 240 kW)

Thermalec Pool Heaters
Recognised in the Middle East as the Number One Electric Pool Heater

For further information contact your local agent:

THERMALEC

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