
THERMALEC
POOL CONTROL CENTRES
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EMERGENCY
STOP
FILTER PUMP
TIMED - OFF - CONT
U/W LIGHT
OFF - ON
SWEEP
HEAT PUMP
ONE SHOT SWEEP
TO STOP ALL PUMPS & ACTIVATE REMOTE ALARM - PRESS EMERGENCY STOP
REMOTE ISOLATOR
Thermalec Products Ltd.
Kingsley Close · East Way · Lee Mill Industrial Estate · Ivybridge · Devon PL21 9GD
Telephone 01752 313343 Fax 01752 313353
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THERMALEC

POOL CONTROL CENTRES – NOW WITH EMERGENCY STOP FOR ALL PUMPS

Added safety – added feature!

Thermalec Pool Control Centres

When you build an elegant pool, does your plant room tell a different story? With a Thermalec Control Centre your customers will see that your electrical work is first class as well.

Every panel is built to IP 55 for dust and moisture protection
All controls used regularly are waterproof and immediately to hand on the front of the panel.
All other controls requiring occasional use may be accessed by opening a robust transparent door.

Every panel is purpose-made to your exact requirements.

Model WP12S
295 x 400 x 147mm

Model WP12L available with extended lower panel
295 x 550 x 147mm
Not illustrated

INCORPORATE YOUR NAME

ROBUST HINGED TRANSPARENT DOOR
For occasional access to timeswitch, isolator, circuit breakers and indicating lamps

NEW EMERGENCY STOP BUTTON

MOTOR STARTERS WITH OVER-LOAD AND RESET BUTTONS

CONTROLS USED REGULARLY
Manual switches for filter pump, timeswitch override, heating, underwater lights, etc.

Model WP24
295 x 550 x 147mm

BEAUTY THAT IS NOT JUST SKIN DEEP

Inside the robust casing are:-

- Circuit breakers matched to protect your equipment
- Contactors with overloads to match the pumps specified
- A time-switch to control pumping and heating
- Indicator lights to identify specific equipment operational
- Clearly marked terminals for every wire
- Colour coded wires to help identify circuits
- A wiring diagram to match the panel serial number

Thermalec Products Ltd.
For further information, contact Thermalec on 01752 313343 or fax 01752 313353

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THERMALEC

RANGE OF ELECTRIC POOL HEATERS

12PHR
3kW – 12kW

24PHR
15kW – 24kW

36PHR
30kW – 36kW

72PHR
48kW – 72kW

120PHR
84kW – 120kW

SPECIFICATION

HEATER BODY: Cast in BS-EN-1561-1997-ENGJL-200 iron, with a heavy fusion bonded epoxy coating impervious to chemically treated pool water, constructed in accordance with British Patent 2.092,282 Design pressure of 35psi (2.46kg/cm2) with 3/4" safety valve(s) set to operate at the maximum normal working pressure of 30psi (2.1kg/cm2) giving protection to both the heater and the installation as a whole against over pressure. A 1/2" drain valve at the lowest point allows the heater to be left empty in winter. Flow connections consist of easily removable uPVC stub flanges into which the pipes may be fitted using suitable adhesive, as the flanges can be released easily from the heater no unions are required, nor is any form of heat sink needed. Flow direction is from left to right, but may reversed quite simply on site following the installation instructions.

HEATER ELEMENTS: Heavy duty nickel plated copper sheathed elements to BS3456:Part201:1990, BS-EN-60335-1, with low Watt density for long life, are mounted individually in a removable top plate, which allows complete inspection of the interior of the vessel.

CONTROLS: Heavy duty contactors control the power supply to the elements. The contactors are switched in turn by a filter pump interlock relay, a pool temperature controller with less than 1°C differential, and a manually reset safety thermostat to operate before the temperature reaches 53°C. The control circuit is protected by a 2A fuse. A minimum of 6 indicator lights monitor every stage for simple diagnostic servicing. The controls are mounted in a plastic coated steel enclosure above the heater body. Cable entry is through a removable plate in the rear panel.

MODEL VARIATIONS. Due to the variation in power output of the different models, the heaters have additional controls as follows:

12PHR STANDARD MODEL. Additionally to the above controls switching the main contactor, an On/Off switch is provided to control the main power to the heating elements.

ALL OTHER STANDARD MODELS
24PHR – 36PHR – 72PHR – 120PHR AND ALL POWER BOOST MODELS. Circuit breakers are fitted instead of the On/Off switch and protect the heavy power circuits of the heater against short circuit. These not only act as the main switch, but in the event of a water temperature rise within the heater being sufficient to operate the safety thermostat, a trip is triggered within the breaker such that the heater is totally isolated at its point of supply. The unit will not operate again until both the safety thermostat and the circuit breakers are manually reset. Operation of the safety thermostat switches off the working contactors before energising the in-built shunt trip of the breaker, giving the unique Thermalec double protection against overheating and damage to the elements.

36PHR – 72PHR – 120PHR MODELS. Fitted with a thermometer to indicate the outlet temperature, which enables flow rates to be adjusted when heaters are either fitted with a by-pass, branched off a much larger flow pipe, are used in multiples or are operated in parallel with an alternative means of heating.

72PHR MODELS. Fitted with a time delay relay to bring the contactors on in two stages, reducing electrical surges. Additionally a 2-step temperature controller overrides the time delay in the event of a rapid temperature rise. To cope with the increased power, two safety valves are fitted.

120PHR MODELS. Fitted with two time delay relays to bring the contactors on in three stages, reducing electrical surges. Additionally a 2-step temperature controller overrides the time delay in the event of a rapid temperature rise. To cope with the increased power, four safety valves are fitted.

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. We will repair or replace during this period any goods returned to our factory for inspection. This guarantee does not cover misuse or neglect of the heater.

The above specification has been evolved over more than 35 years of electric pool heating experience and cannot be matched by any other heater in the World today, even though "all necessary controls and safety devices" is a much used phrase.

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THERMALEC

THERMALEC + ECONOMY 7 = LOW RUNNING COSTS ALL YEAR ROUND

Wake up with a warm smile and benefit from minimal costs – and low upkeep!

Every Thermalec owner wakes up to find that the 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. That smile also comes from knowing that keeping the pool at an even temperature all summer long will not have cost as much as other systems because both the heating and the filtration will have been carried out using Economy 7 only. Satisfaction too in knowing how little the heater cost to buy and maintain.

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

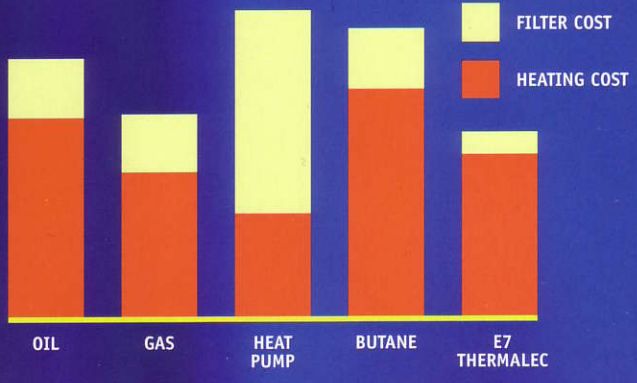
The introduction and almost universal acceptance of the use of floating solar blankets has been the greatest advance we have seen in over 30 years of specialising in pool heating. The blanket allows the Sun's rays to penetrate deeply into the water. It also seals the surface preventing evaporation and cutting heat loss night and day – halving the running cost.

MOST SYSTEMS COMPETE WITH THE SUN

On many days of the year the Sun, working through the solar blanket, will hold, or even raise, the temperature of the pool without the need for the heater to operate. Most heating systems will start to heat in the early morning unaware that the Sun will do all the work necessary and so they start to heat while the Sun is out – wasting energy competing with the Sun.

ONLY THE THERMALEC SYSTEM COMPLEMENTS THE SUN

Because the Thermalec operates only during the Economy 7 period, starting at about midnight, it's very sensitive control thermostat can detect exactly how well the water has been warmed by natural means, then makes sure that the pool is exactly at the temperature you have set for your morning dip. After a warm day it may not have to heat at all, but after a dull day it may run for most of the night. During a typical summer it will operate for 3 or 4 hours on average, after the initial warm up period at the beginning of the season.



Most people we talk to do not realise that a pool only alters in temperature 2 or 3 degrees in 24 hours, but being a large mass of water it is thermally very stable. Consequently, heating a pool by night is the perfect way of using Economy 7 which is now much less than half-price electricity – much nearer 1/3rd of the daytime rate. The Thermalec utilises this power in the most economic way possible. Unlike a Storage Heater, which heats its core up to a very high temperature, much of which heat must be given off during the following day – the Thermalec simply heats its storage medium, the water you swim in, to the exact temperature you want and not one degree more.

THE LOWEST RUNNING COST FOR THE FAMILY POOL

The running cost of a pool is a combination of the heating and filtration. The cost of operating the filter pump can be as much as the heating, or even more.

Filtration of a family pool normally requires 7 or 8 hours to keep the water clean and fresh. For a typical family pool 30ft x 15 ft, the filter pump may have a fairly modest 3/4HP or 0.55kW output. As motors are only about 50% efficient, this pump in fact uses about 1.1kW per hour which does not amount to a great deal for 7 hours on Economy 7, in fact less than £30 for a season May to September because the cost per Unit is less than 2.7p. Filtration is required even when the pool is not being used, and this is where enormous savings are made with the Thermalec system.

The Thermalec system packs such a punch that within the required 7 hours of filtration it will be able to heat the pool adequately. Heating systems that need the pump to run 24 hours a day in order to transfer the heat to the pool, using normal day-rate electricity at nearly 6.9p per Unit, and with the same 3/4HP pump, will increase the filtration bill to a figure in excess of £255 for the same period. The effect of this can be clearly seen in the chart below.

TOTAL COST OF RUNNING A POOL - HEATING AND FILTRATION

Typical comparative costs for a pool 12ft x 24ft over 22 weeks from the beginning of May to the end of September held at 80°F using a 3/4HP filter pump. The heat loss being taken as 8000kWhrs for the period – regardless of the method used to replace that loss. Each is shown with just 7 hours filtration except the heat pump which requires 24 hours to give its full output. During periods when the pool is not in use the filtration cost is shown by the size of the filter cost blocks.

HOW CAN IT COST SO LITTLE TO RUN?
To understand why the Thermalec running cost is lower than the heat pump it must be appreciated that although the heat pump draws extra heat from the air and puts into the pool between 4 and 5 times as much heat as it takes from the mains, the Thermalec takes all its heat from the mains but at less than 39% of the cost per Unit. The saving on filtration cost more than compensates for the remaining difference.

LIFE TIME EFFICIENCY GUARANTEE
The Thermalec will always be as efficient as the day you installed it.
Of the four systems, only the Thermalec is guaranteed to maintain its 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 and more goes up the flue as scale or dirt form on the heating surfaces.

DEPRECIATION AND MAINTENANCE
Any survey of running costs must include capital depreciation and maintenance. The Thermalec, at much less than half the price of an equivalent Heat Pump or oil-fired boiler, has no continuously moving parts, no fuel ignition system, and requires the filter pump to operate for only 7 hours in every 24, has to win hands down – even before you enquire of the trade about Thermalec's reputation for reliability.

If, having read this far, you agree that we are talking sense, you must be asking yourself why every pool is not fitted with a Thermalec poolheater. Unfortunately, because the Thermalec has to be very powerful to carry out the heating in just 7 hours, not every house has sufficient power laid on for the size of heater you may need.

Select the size of heater you require from our sizing chart, then consult your Electricity Supply Company to make sure that it is possible to operate from the existing supply, bearing in mind that it will be operating during the night during, in most cases, summer only. The Supply Company may well be able to reinforce the supply if it is not adequate. They may offer 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 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 temperature and in early May will only give about 75% of the heat it will produce in mid-summer.

The Thermalec can be made to produce an enormous punch – giving as much as 340% of its normal output simply by switching it on to run continuously for the first day and a half. This enables the pool to reach temperature in about 36 hours instead of waiting five nights. Obviously this increases the cost by running the heater on the day-time rate, but it is a one-shot expense, as the heater can then be left to run on Economy 7 for the rest of the season.

DELUXE MODELS – With Built-in Controls for the Filter Pump and the Underwater Light.
All Thermalec poolheaters come complete with all the controls required for pool water heating. Our Deluxe version therefore does not have enhanced heating controls – its purpose is to provide all the control and protection required for the filter pump – all packaged with the heater controls. Terminals are also provided for the connection of an underwater light.

When a Deluxe model arrives on site, the filter pump can be simply wired up to the clearly marked terminals in the heater. The pump is protected by a circuit breaker together with a motor starter with overload protection – as called for in the IEE Wiring Regulations. A quartz timeswitch allows the filter pump to run at night when the heater is operating, giving maximum economy, with a second period of filtration only, during the day, if required. The 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 Deluxe 12PHR models have the same specification as the 24PHR, which includes a Main Circuit Breaker for the heater as well as the filter pump. Because of the additional controls this model is taller than the standard 12PHR model. Heaters up to 12kW may be able to operate at full load during the day provided that other heavy power loads are not also being used, so that a pool can be warmed up rapidly using day-rate electricity to catch a sudden spell of good weather.

DELUXE WITH POWER BOOST – For fast warm-up times.
All the more powerful Deluxe models in the range from 15kW to 72kW have a Power Boost facility to run during the day at a reduced load whilst operating at full load during the night. Simply press the BOOST button and the pool warms up twice as quickly when the first good weather arrives. It does this by operating at full load at night, and also at 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
Using night rate electricity in the middle of summer, when there is little other demand, is beneficial to the efficiency of our large modern power stations, and will therefore be a socially acceptable way of heating swimming pools in this 21st Century and will help to save our fossil fuels for future generations.

The owner of a nice warm pool and no indication of how it is heated is almost certainly using a Thermalec. There are no fumes or smells to spoil his enjoyment of his garden and not only does the heater operate in virtual silence, but even the hum from the filter pump is absent during the day whilst relaxing around the pool. There are no fans or compressors to disturb the neighbours. Most important of all, there are no emissions to the atmosphere and no CFCs or other refrigerants to worry about.

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