

# ELECRO

## ENGINEERING

### TITAN Optima

### TITAN Optima *plus*

Swimming Pool Heater  
with Ultra Efficient Titanium  
Heating Elements

18-kW – 120-kW (380 > 440 V - 3 phase)

24-kW – 75-kW (220/230 V - 3 phase)



### Features

- Easy Installation, floor or vertical wall mount
- Super safe operation
- Robust, durable construction
- Digital water flow signal, no pump interlock required
- Low element Watts density reduces encrustation
- Titanium heating elements - zero corrosion guaranteed
- 316 stainless steel flow tube (Titan Optima)
- Titanium flow tube (Titan Optima *plus*)
- Dual cascade wired *Schneider* contactors on each element bank
- Digital timers for staged energisation
- Easy programming using touch screen
- Digital controls provide more accurate temperature control
- Epoxy powder coated aluminium cabinet

### Construction

The Titan Optima is manufactured from top quality components and materials at the Elecro works in Hertfordshire, England.

Construction consists of three flow tubes which are fitted to the uniquely designed manifold mouldings made from specially formulated polymer alloy material. Spiral wound titanium heating elements provide a 'Vortex' water flow, these are positioned equidistantly along each flow tube providing ultra efficient performance, the 'Low watts density' of these elements guarantees extended life and reliability. The outlet manifold accommodates a flow switch which provides a digital signal to the control board. The inlet manifold is equipped with a titanium temperature pocket fitted with a temperature sensor.

The heater is supported by two G/F polyamide Chassis End Panel mouldings, these together with durable aluminium panels form an enclosure finished in tough epoxy powder coat paint. The enclosure houses the cascade wired *Schneider* contactors (2 per element bank) timers and control board. The enclosure design encourages induced cooling giving an extended switch gear life span.

The heater control panel is on the top of cabinet containing the indication and fault lights as well as the digital touch control screen. The unit can be floor or wall mounted, and comes supplied complete with a bracket for vertical wall mounting offering the simplest and tidiest of installations even in limited spaces, thus making it particularly suitable for parallel multi-unit installations.



## Operation

The Elecro Titan Optima can be easily operated using the control panel touch screen. The inlet manifold has been designed to minimise flow imbalance between the flow tubes, greatly reducing the risks of air locking. Safety and equipment protection is provided by the highly reliable flow switch, over temperature protection is provided by the four safety thermal cut out's (auto-reset) and a safety thermal cut out (manual reset).

The digital control board allows accurate control of pool water temperature thanks to its high precision. The blue digital characters on the touch screen are clearly legible, even in bright sunlight.

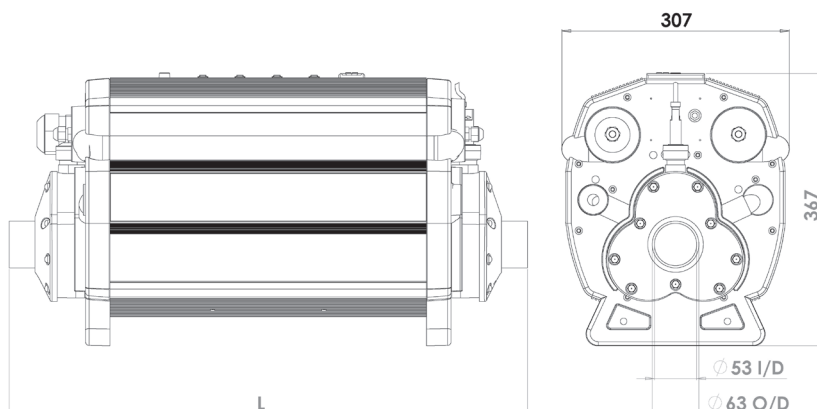
To reduce voltage drop on start-up, the heater element banks are energised in a staged cascaded sequence, with a time delay between energising each bank.

## Specification & Models

<b>Heating Elements:</b>	Titanium, high MgO compaction - 21.4 and 25.4 Watts/cm <sup>2</sup> at 230V 3ph and 400V 3ph resp
<b>Flow tubes:</b>	BS 316 stainless steel (Titan Optima) or pure titanium (Titan Optima plus)
<b>Cladding panels:</b>	Moulded aluminium, epoxy powder coated
<b>Contactors:</b>	Cascade wired dual <i>Schneider</i> contactors for each element bank
<b>Thermostats:</b>	1 x 60 C safety thermal cut out (auto reset) per flow tube against over-temperature 1 x 60 C safety thermal cut out (auto reset) against enclosure over-temperature 1 x 55 C safety thermal cut out (manual reset)
<b>Flow switch:</b>	Gold tipped reed switch with titanium fulcrum pin
<b>Wiring:</b>	High temperature, silicone sheathed, multi-strand copper conductors
<b>Seals:</b>	High temperature special formula EPDM
<b>Water connections:</b>	63 mm spigot with adaptor for 2" NB
<b>Working pressure:</b>	4 bar maximum
<b>Mounting:</b>	Floor or wall mounting (wall bracket supplied)
<b>Standards compliance:</b>	European Electromagnetic Compatibility directive 89/336/EEC and 93/068/EEC
<b>Harmonised Standards:</b>	EN 55014 – EN55104, EN 5501, EN 5502, CEI 801-4, CEI 801-2, CEI 801-3 The European Low Voltage Directive 72/23/EEC The Harmonised Standard EN 60335-2-35

380V > 440V 3 Phase Power Output	Load	Dimension 'L'	Titan Optima Product Code	Titan Optima Plus Product Code	220V > 230V 3 Phase Power Output	Load	Dimension 'L'	Titan Optima Product Code	Titan Optima Plus Product Code
18-kW	26-Amp	699-mm	C-18	CP-18	24-kW	61-Amp	699-mm	C-24-DELTA	CP-24-DELTA
24-kW	35-Amp	699-mm	C-24	CP-24	30-kW	76-Amp	699-mm	C-30-DELTA	CP-30-DELTA
30-kW	44-Amp	699-mm	C-30	CP-30	36-kW	91-Amp	877-mm	C-36-DELTA	CP-36-DELTA
36-kW	52-Amp	699-mm	C-36	CP-36	45-kW	113-Amp	877-mm	C-45-DELTA	CP-45-DELTA
45-kW	66-Amp	699-mm	C-45	CP-45	60-kW	151-Amp	1042-mm	C-60-DELTA	CP-60-DELTA
54-kW	78-Amp	699-mm	C-54	CP-54	75-kW	189-Amp	1042-mm	C-75-DELTA	CP-75-DELTA
60-kW	87-Amp	877-mm	C-60	CP-60					
72-kW	104-Amp	877-mm	C-72	CP-72					
96-kW	139-Amp	1042-mm	C-96	CP-96					
120-kW	174-Amp	1042-mm	C-120	CP-120					

## Dimensions



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