



ELE&RO

Improving water heating and sanitisation globally since 1997

PROUDLY CELEBRATING



ALL TITANIUM

NANO SPA

The corrosion-resistant, Nano Spa is the most compact, space saving, spa heater on the market. Operating in complete silence with a flow rate as low as 1m³/h and capable of effortlessly heating the spa water to temperatures of up to 45°C.

FEATURES

- 11 models available, ranging from 1-kW to 8-kW
- Easy installation, fully equipped and pre-wired
- Robust, durable construction and compact design
- Ultra-reliable flow switch for safe operation
- Fitted with temperature thermostat and overheating sensor
- Analogue control with 1.2°C differential
- Titanium flow tube and titanium heating element
- Vortex, long life, stay clean heating element technology
- 100% efficiency throughout the product life
- Sea and salt chlorinated water compatible
- Can be floor or vertically wall mounted
- Silent operation

SUITABLE FOR:





Spa



ELECR0
ENGINEERING
MADE IN ENGLAND

CODE _____
SERIAL No. _____
kW _____
VOLT _____ 50/60Hz PHASE _____
AMP _____ Max. Amps 7.5 @ 7.4kW (10hp)
Elecro Engineering Ltd
www.elecro.co.uk
Made in Hertfordshire, England

SPECIFICATIONS

Power supply:	Single phase or 3-Phase
Min. flow rate:	1m ³ /h
Max. flow rate:	17m ³ /h
Heating element:	Grade 1 titanium
Flow tube:	Grade 1 titanium
Control thermostat:	Analogue: 0 > 45°C (1.2°C differential)
Safety thermal cut out:	60°C (manual reset)
Flow switch:	Gold tipped reed switch with titanium fulcrum pin
Relay:	Surface mount DPDT finder 66.82.8.230.0000
Seals:	High temperature special formula EPDM ferrules. TPE end fitting gaskets
Water connections:	1½" BSP female thread supplied with 1½"/50mm stepped ABS unions for rigid pipe and 1½"/1¼" stepped hose tails for flexible pipe
Ingress protection rating:	IP44
Frequency:	50/60 Hz
Working pressure:	4 bar maximum
Mounting:	Floor or wall mounting

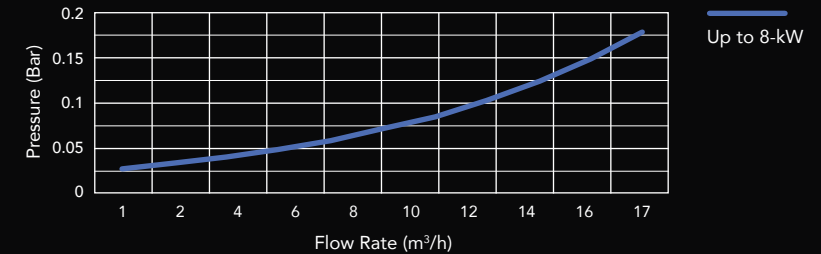


MODELS

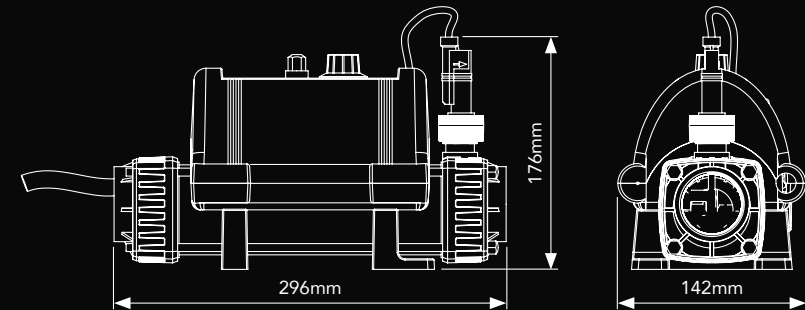
MODEL	POWER OUTPUT	LOAD (amp)	NET WEIGHT (kg)	GROSS WEIGHT (kg)	VOLUME (m ³)	PRODUCT CODE
220~240V 1-Phase	1-kW	4.5	2.8300	3.5400	0.0195	N-SPA-T1-R
	2-kW	8.5	2.8300	3.5400	0.0195	N-SPA-T2-R
	3-kW	13	2.8300	3.5400	0.0195	N-SPA-T3-R
	4-kW	18	2.8300	3.5400	0.0195	N-SPA-T4-R
	4.5-kW	20	2.8300	3.5400	0.0195	N-SPA-T4.5-R
	5-kW	22	2.8300	3.5400	0.0195	N-SPA-T5-R
400V 3-Phase*	6-kW	26	2.8300	3.5400	0.0195	N-SPA-T6-R
	8-kW	11.5	2.8300	3.5400	0.0195	N-SPA-T8-R
120V 1-Phase	1-kW	8.5	2.8300	3.5400	0.0195	N-SPA-T1-R-USA
	1.5-kW	12.5	2.8300	3.5400	0.0195	N-SPA-T1.5-R-USA
	2-kW	17	2.8300	3.5400	0.0195	N-SPA-T2-R-USA

*For voltages other than 400V, please add -380, -415 or -480 at the end of a product code e.g: N-SPA-T8-R-380

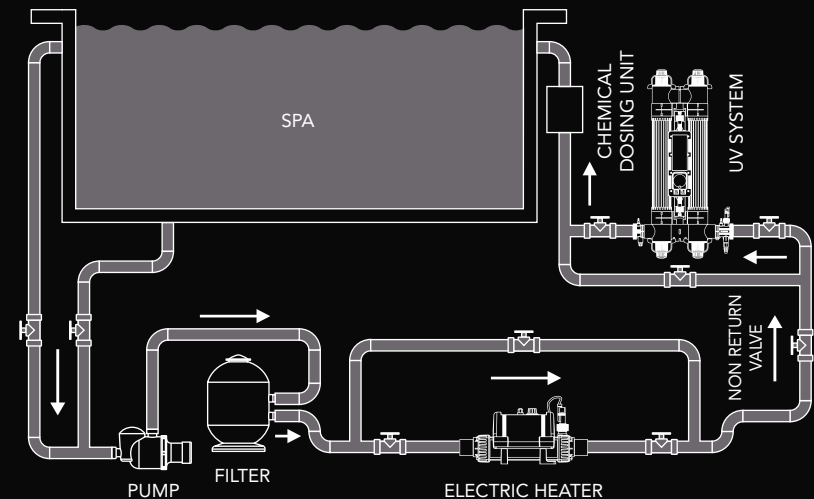
PRESSURE DROP

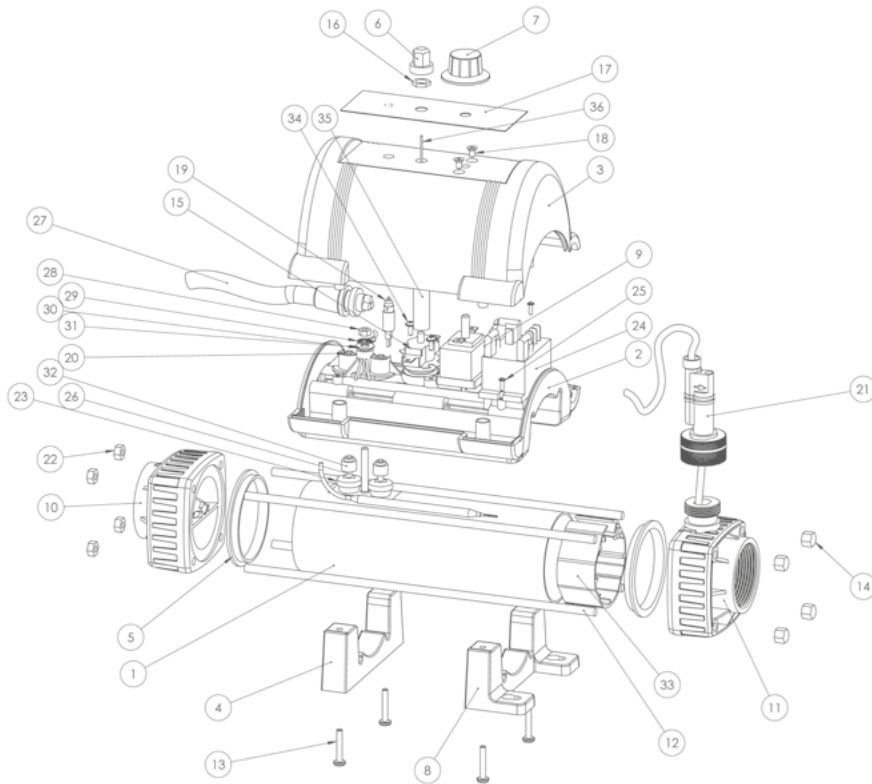


TECHNICAL DRAWINGS



SYSTEM SETUP

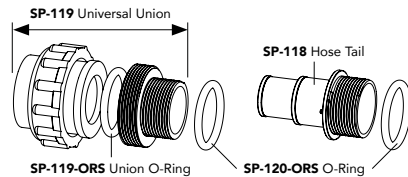




Nano Spa (Component Diagram)

Water Connections

See page 19 for full description and pcs/unit.



SPARE PARTS LIST

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
1	Titanium Flow Tube	1	X-TUB-TI200-1E
2	Electrical Bottom Cover / Bridge	1	Z-IM-NO-BC
3	Electrical Top Cover	1	Z-IM-NO-TC-BLU
4	Lower Foot (Without Key Hole Hooks)	1	Z-IM-NO-FL
5	TPE End Fitting Gasket	2	SP-117-GSK
6	Thermal Safety Cut-Out Cover	1	Z-MIS-HLS-CVR
7	Control Thermostat Dial	1	Z-MIS-CS-DIAL

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
8	Upper Foot (With Key Hole Hooks)	1	Z-IM-NO-FU
9	Control Thermostat	1	SP-MIS-CS
10	Left End Fitting (Non Flow Switch)	1	SP-117
11	Right End Fitting (Flow Switch)	1	SP-117B
12	273mm M6 Tie Bar	4	Z-STU-273
13	M4 x 25mm Zinc Coated Pozi Pan Screw	4	Z-FIX-M4X25
14	M6 Cap Nut	4	Z-FIX-M6CAP
15	Thermal Safety Cut Out (Manual Reset)	1	Z-MIS-BS-60-50
16	M8 Hex Nut (For Thermal Cut Out)	1	Supplied with #15
17	Nano SPA Ops Panel Overlay	1	Z-LAB-N-SPA
18	M4 x 6mm S/S CSK	2	Z-FIX-M4X6CS
19	Neon Indicator Lamp	1	Z-MIS-NEON
20	M4 Hex Nut	2	Z-FIX-M4HEX
21	Nano Flow Switch	1	SP-107-N-S
22	M6 S/S Hex Nut	4	Z-FIX-M6HEX
23	EPDM Element Ferrule	2	Z-IM-EL-FER
24	Surface Mount Relay	1	SP-109
25	M3 x 14mm FLG Pozi Zinc Coated	2	Z-FIX-M3X12-FLG
26	Titanium Heating Element 1-kW	1	SP-EL-Ti1KW7T
	Titanium Heating Element 2-kW	1	SP-EL-Ti2KW7T
	Titanium Heating Element 3-kW	1	SP-EL-Ti2.8KW7T
	Titanium Heating Element 4-kW	1	SP-EL-Ti4KW7T
	Titanium Heating Element 4.5-kW	1	SP-EL-Ti4.5KW7T
	Titanium Heating Element 5-kW	1	SP-EL-Ti5KW7T
	Titanium Heating Element 6-kW	1	SP-EL-Ti6KW7T
	Titanium Heating Element 8-kW*	1	SP-EL-Ti8KW7T
27	Power Supply Lead	1	X-CAB-N-SPA-R
28	M5 S/S Full Hex Nut	1	Z-FIX-M5HEX
29	M5 S/S Locking Washer	1	Z-FIX-M5LW
30	Earth Ring Terminal	1	Z-CON-YR53
31	M5 S/S Half Hex Nut	1	Z-FIX-M5HEX-N
32	Stepped Element Washer	2	Z-IM-EL-SW
33	Element Support	1	Z-IM-EL-SUP
34	M3 x 8mm FLG Pozi Zinc Coated	2	Z-FIX-M3X8FLG
35	Button Stat Holder	1	Z-MIS-N-BSH
36	Resetting pin	1	Z-MIS-N-RS
-	Nano Element Fixing Kit (Comprising of: 2x20, 2x23, 1x28, 1x29, 1x31, 2x32 & 1x33)	1	SP-EL-FIX-NANO

*For 8-kW titanium heating element, please specify the required voltage.

ALL TITANIUM

NANO SPLASHER

The most compact, rust-resistant, silent operated, above-ground pool heater on the market. Supplied with a plug for easy setup, the Nano Splasher is simple to operate, has dual safety features for peace of mind, and is capable of heating the pool water up to 45°C with a flow rate as low as 1m³/h and up to 17m³/h.

FEATURES

- 7 models available, ranging from 1-kW to 3-kW
- Easy installation, fully equipped and pre-wired
- Robust, durable construction and compact design
- Ultra-reliable flow switch for safe operation
- Fitted with temperature thermostat and overheating sensor
- Analogue control with 1.2°C differential
- Titanium flow tube and titanium heating element
- Vortex, long life, stay clean heating element technology
- 100% efficiency throughout the product life
- Sea and salt chlorinated water compatible
- Can be floor or vertically wall mounted
- Silent operation

SUITABLE FOR:



'Plug & Play'



US Plug



UK Plug



Euro Plug





TITANIUM
VFS POOL HEATER

ELECTRO
ENGINEERING
MADE IN ENGLAND

CODE _____
SERIAL No. _____
VOLT _____ 50/60Hz PHASE _____
AMP _____ kW _____
Max pressure 4 Bar / 58.3 PSI
Electro Engineering Ltd
www.electro.co.uk
Made in Hertfordshire, England

CE

IP44



SPECIFICATIONS

Power supply:	Single phase
Min. flow rate:	1m ³ /h
Max. flow rate:	17m ³ /h
Heating element:	Grade 1 titanium
Flow tube:	Grade 1 titanium
Control thermostat:	Analogue: 0 > 45°C (1.2°C differential)
Safety thermal cut out:	60°C (manual reset)
Flow switch:	Gold tipped reed switch with titanium fulcrum pin
Relay:	Surface mount DPDT finder 66.82.8.230.0000
Seals:	High temperature special formula EPDM ferrules. TPE end fitting gaskets
Water connections:	1½" BSP female thread supplied with 1½"/50mm stepped ABS unions for rigid pipe and 1½"/1¼" stepped hose tails for flexible pipe
Ingress protection rating:	IP44
Frequency:	50/60 Hz
Working pressure:	4 bar maximum
Mounting:	Floor or wall mounting

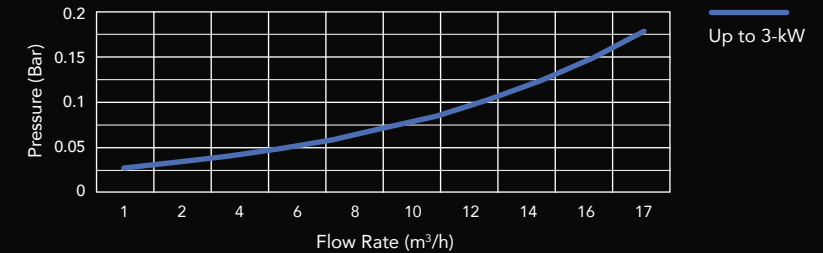


MODELS

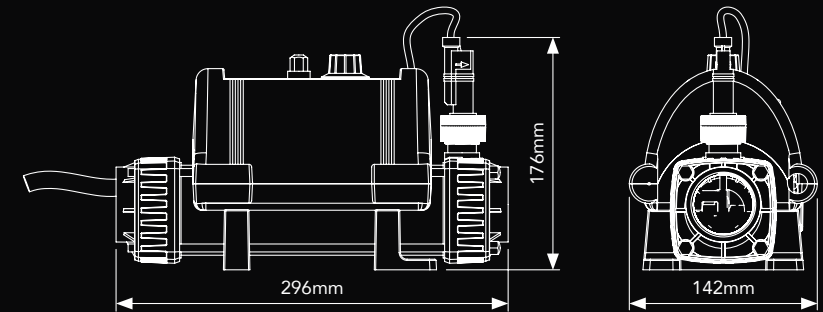
MODEL	POWER OUTPUT	LOAD (amp)	NET WEIGHT (kg)	GROSS WEIGHT (kg)	VOLUME (m ³)	PRODUCT CODE
220~240V 1-Phase	2-kW	8.5	17.0100	22.500	0.1224	N-AGP-UK-T2*
	3-kW	13	17.0100	22.500	0.1224	N-AGP-UK-T*
	2-kW	8.5	17.0100	22.500	0.1224	N-AGP-EU-T2*
	3-kW	13	17.0100	22.500	0.1224	N-AGP-EU-T*
120V 1-Phase	1-kW	8.5	17.0100	22.500	0.1224	N-AGP-USA-T1*
	1.5-kW	12.5	17.0100	22.500	0.1224	N-AGP-USA-T1.5*
	2-kW	17	17.0100	22.500	0.1224	N-AGP-USA-T2*

*Only sold in quantities of 6pcs.

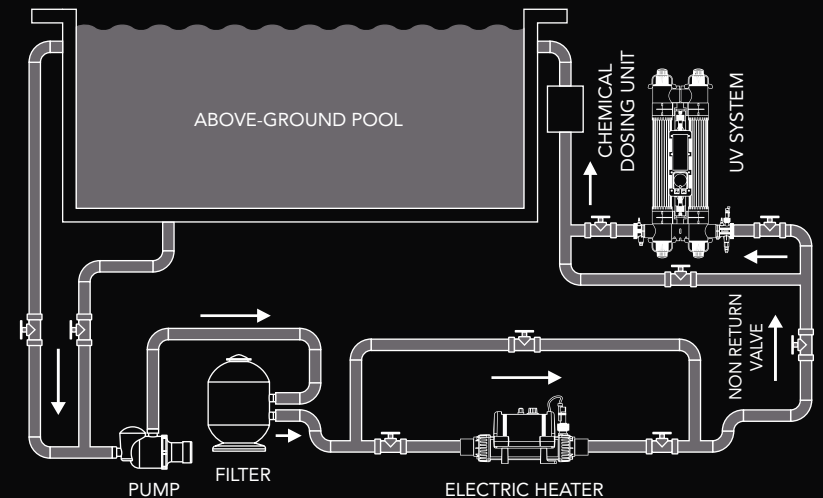
PRESSURE DROP

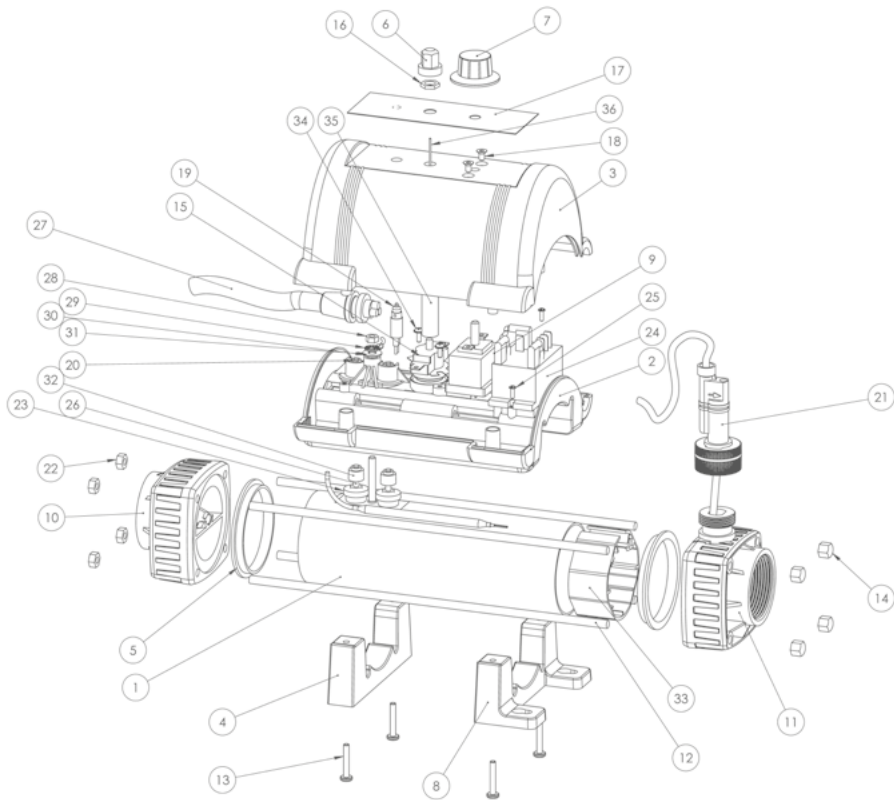


TECHNICAL DRAWINGS



SYSTEM SETUP

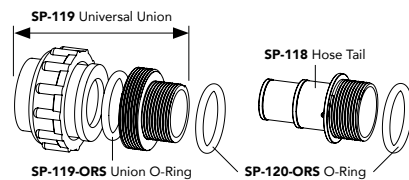




Nano Splasher (Component Diagram)

Water Connections

See below for full description and pcs/unit.



WATER CONNECTION PARTS

DESCRIPTION	PCS/UNIT	PART CODE
1½" BSP Hose Tail 1½/1¼" Flexible Pipe	2	SP-118
1½" BSP Universal Union for 1½"/50mm Pipe	2	SP-119
'O' Ring (Pack of 2pcs)	2	SP-120-ORS
44mm x 6mm Union 'O' Ring (Pack of 2pcs)	2	SP-119-ORS

SPARE PARTS LIST

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
1	Titanium Flow Tube	1	X-TUB-TI200-1E
2	Electrical Bottom Cover/Bridge	1	Z-IM-NO-BC
3	Electrical Top Cover	1	Z-IM-NO-TC-BLU
4	Lower Foot (Without Key Hole Hooks)	1	Z-IM-NO-FL
5	TPE End Fitting Gasket	2	SP-117-GSK
6	Thermal Safety Cut-Out Cover	1	Z-MIS-HLS-CVR
7	Control Thermostat Dial	1	Z-MIS-CS-DIAL
8	Upper Foot (With Key Hole Hooks)	1	Z-IM-NO-FU
9	Control Thermostat	1	SP-MIS-CS
10	Left End Fitting (Non Flow Switch)	1	SP-117
11	Right End Fitting (Flow Switch)	1	SP-117B
12	273mm M6 Tie Bar	4	Z-STU-273
13	M4 x 25mm Zinc Coated Pozi Pan Screw	4	Z-FIX-M4X25
14	M6 Cap Nut	4	Z-FIX-M6CAP
15	Thermal Safety Cut Out (Manual Reset)	1	Z-MIS-BS-60-50
16	M8 Hex Nut (For Thermal Cut Out)	1	Supplied with #15
17	Nano Ops Panel Overlay	1	Z-LAB-NANO-T
18	M4 x 6mm S/S CSK	2	Z-FIX-M4X6CS
19	Neon Indicator Lamp	1	Z-MIS-NEON
20	M4 Hex Nut	2	Z-FIX-M4HEX
21	Nano Flow Switch	1	SP-107-N-S
22	M6 S/S Hex Nut	4	Z-FIX-M6HEX
23	EPDM Element Ferrule	2	Z-IM-EL-FER
24	Surface Mount Relay	1	SP-109
25	M3 x 14mm FLG Pozi Zinc Coated	2	Z-FIX-M3X12-FLG
26	Titanium Heating Element 2-kW	1	SP-EL-Ti2KW7T
	Titanium Heating Element 3-kW	1	SP-EL-Ti2.8KW7T
27	Power Supply Lead (UK)	1	X-CAB-NANO-UK
	Power Supply Lead (Euro)	1	X-CAB-NANO-EU
28	M5 S/S Full Hex Nut	1	Z-FIX-M5HEX
29	M5 S/S Locking Washer	1	Z-FIX-M5LW
30	Earth Ring Terminal	1	Z-CON-YR53
31	M5 S/S Half Hex Nut	1	Z-FIX-M5HEX-N
32	Stepped Element Washer	2	Z-IM-EL-SW
33	Element Support	1	Z-IM-EL-SUP
34	M3 x 8mm FLG Pozi Zinc Coated	2	Z-FIX-M3X8FLG
35	Button Stat Holder	1	Z-MIS-N-BSH
36	Resetting pin	1	Z-MIS-N-RS
-	Nano Element Fixing Kit (Comprising of: 2x20, 2x23, 1x28, 1x29, 1x31, 2x32 & 1x33)	1	SP-EL-FIX-NANO

ALL TITANIUM

FLOWLINE 2

Reliable, accurate, silent and extremely efficient, the Flowline 2 heater is the perfect choice for residential pools and spas. A rust-resistant, fully titanium flow tube and heating element delivers greater longevity whilst multiple power options provide for a wider range of flow rates from as low as 1m³/h.

FEATURES

- 20 models available, ranging from 1-kW to 24-kW
- Non-wired. Requires connection to external contactor
- Robust, durable construction and compact design
- Ultra-reliable flow switch for safe operation
- Fitted with temperature thermostat and overheating sensor
- Analogue control with 1.2°C differential
- Titanium flow tube and titanium heating element(s)
- Vortex, long life, stay clean heating element technology
- 100% efficiency throughout the product life
- Sea and salt chlorinated water compatible
- Can be floor or vertically wall mounted
- Silent operation

SUITABLE FOR:



SPECIFICATIONS

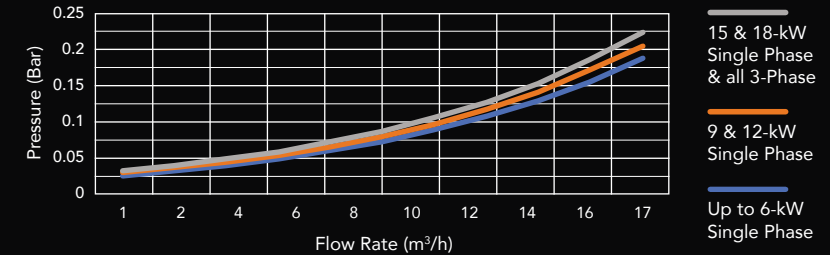
Power supply:	Single phase or 3-Phase
Min. flow rate:	Up to 3-kW: 1m ³ /hr, 4-kW to 6-kW: 1.5m ³ /hr, 8.4-kW & greater: 4m ³ /hr
Max. flow rate:	17m ³ /h
Heating element:	Grade 1 titanium
Flow tube:	Grade 1 titanium
Control thermostat:	Analogue: 0 > 45°C (1.2°C differential)
Safety thermal cut out:	60°C (manual reset)
Flow switch:	Gold tipped reed switch with titanium fulcrum pin
Seals:	High temperature special formula EPDM ferrules. TPE end fitting gaskets
Water connections:	1½" BSP female thread supplied with 1½"/50mm stepped ABS unions for rigid pipe and 1½"/1¼" stepped hose tails for flexible pipe
Ingress protection rating:	IP44
Frequency:	50/60 Hz
Working pressure:	4 bar maximum
Mounting:	Floor or wall mounting

MODELS

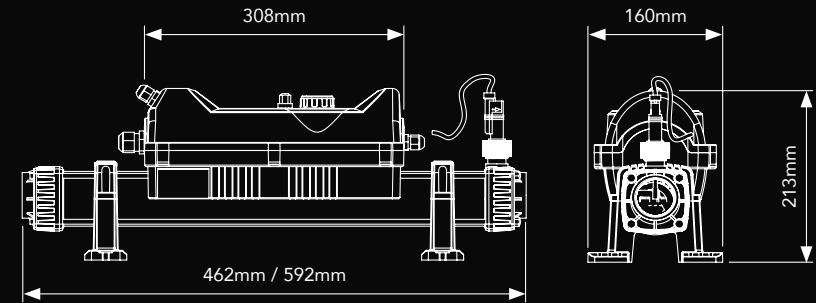
MODEL	POWER OUTPUT	LOAD (amp)	LENGTH (mm)	NET WEIGHT (kg)	GROSS WEIGHT (kg)	VOLUME (m ³)	PRODUCT CODE
220~240V 1-Phase	1-kW	4.5	462	2.9360	4.2300	0.0464	FL2-1-1
	2-kW	8.5	462	2.9360	4.2300	0.0464	FL2-1-2
	3-kW	13	462	2.9360	4.2300	0.0464	FL2-1-3
	4.5-kW	20	462	2.9360	4.2300	0.0464	FL2-1-4.5
	6-kW	26	462	2.9360	4.2300	0.0464	FL2-1-6
	9-kW	40	462	3.2360	4.5300	0.0464	FL2-1-9
400V 3-Phase*	6-kW	9	592	3.6560	4.9500	0.0464	FL2-3-6
	9-kW	13	592	3.6560	4.9500	0.0464	FL2-3-9
	12-kW	18	592	3.6560	4.9500	0.0464	FL2-3-12
	15-kW	22	592	3.6560	4.9500	0.0464	FL2-3-15
	18-kW	26	592	3.6560	4.9500	0.0464	FL2-3-18
	24-kW	34	592	3.6560	4.9500	0.0464	FL2-3-24
220~240V 3-Phase**	6-kW	15	592	3.7260	5.0200	0.0464	FL2-3-6-D
	9-kW	23	592	3.7260	5.0200	0.0464	FL2-3-9-D
	12-kW	30	592	3.7260	5.0200	0.0464	FL2-3-12-D
	15-kW	38	592	3.7260	5.0200	0.0464	FL2-3-15-D
120V 1-Phase	1-kW	8.5	462	2.9360	4.2300	0.0464	FL2-1-1-120
	1.5-kW	12.5	462	2.9360	4.2300	0.0464	FL2-1-1.5-120
	2-kW	17	462	2.9360	4.2300	0.0464	FL2-1-2-120

* For voltages other than 400V, please add -380, -415 or -480 at the end of a product code e.g: FL2-3-6-380. ** For voltage 208V please add: -208 at the end of a product code e.g: FL2-3-6-D-208.

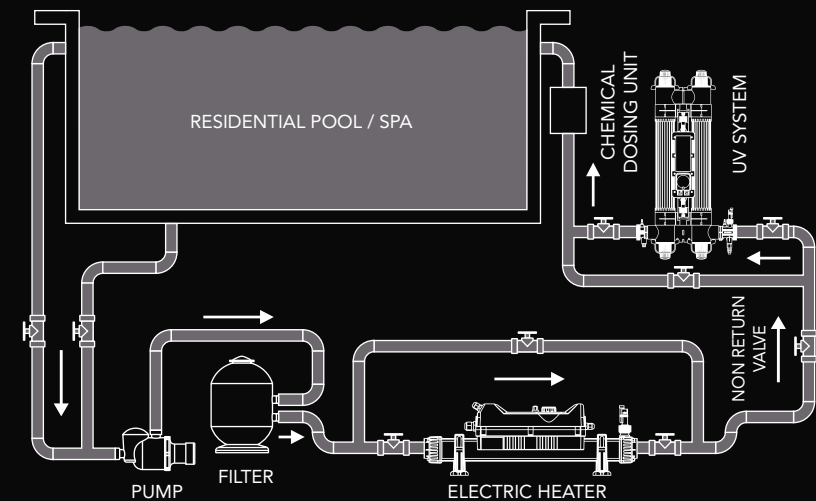
PRESSURE DROP

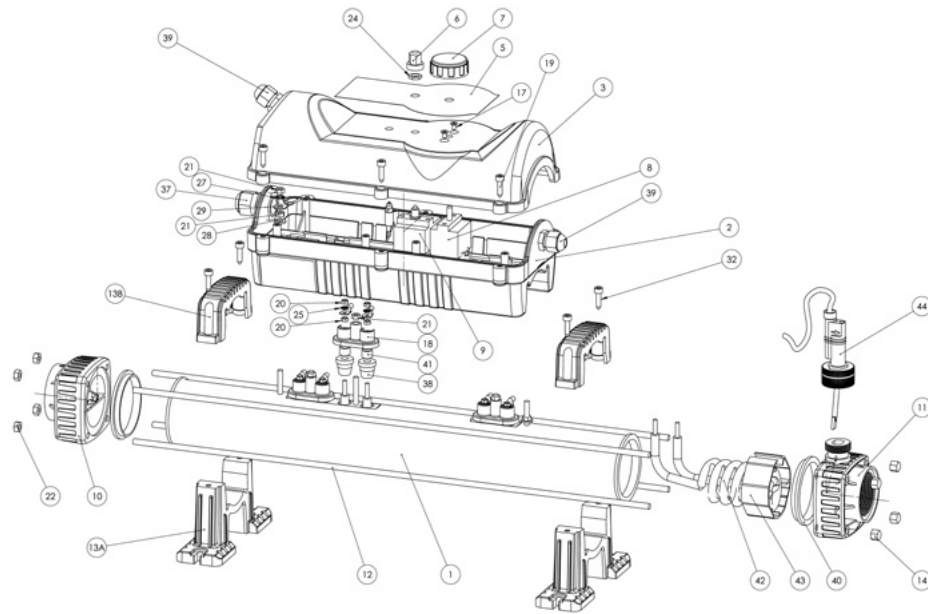


TECHNICAL DRAWINGS

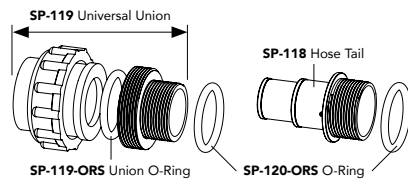


SYSTEM SETUP





Flowline 2 (Component Diagram)



Water Connections

See page opposite for full description and pcs/unit.

SPARE PARTS LIST

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
1	Titanium Flow Tube Up to 6-kW Single Phase	1	X-TUB-TI370-1E
	Titanium Flow Tube 9-kW & 12-kW Single Phase	1	X-TUB-TI370-2E
	Titanium Flow Tube 15-kW, 18-kW Single Phase	1	X-TUB-TI500-3E
	Titanium Flow Tube All 3-Phase	1	X-TUB-TI500-3E
2	Electrical Enclosure Base	1	Z-IM-E2-BC
3	Front Cover	1	Z-IM-E2-FLO-TC
5	Ops Panel Overlay	1	Z-LAB-FL
6	Manual Reset Button Cover	1	Z-MIS-HLS-CVR
7	Control Thermostat Dial	1	Z-IM-OC-ANA
8	Analogue Control Thermostat	1	SP-MIS-CS
9	High Limiting Safety Thermal Cut Out	1	SP-MIS-HLS
10	Left End Fitting (Non Flow Switch)	1	SP-117
11	Right End Fitting (Flow Switch)	1	SP-117B
12	M6 Tie Bar Up to 12-kW 230V Single Phase	4	Z-STU-443
	M6 Tie Bar 15-kW & 18-kW Single Phase	4	Z-STU-573
	M6 Tie Bar All 3-Phase	4	Z-STU-573
13A	Foot Lower	2	Z-IM-E2-FL
13B	Foot Upper	2	Z-IM-E2-FU
14	M6 Dome/Cap Nut	4	Z-FIX-M6CAP
	M4 x 6mm Screw	2	Z-FIX-M4X6CS
	Element Bridge Up to 6-kW Single Phase	1	Z-IM-EL-BRI
	Element Bridge 9-kW & 12-kW Single Phase	2	Z-IM-EL-BRI
	Element Bridge 15-kW & 18-kW Single Phase	3	Z-IM-EL-BRI
	Element Bridge All 3-Phase	3	Z-IM-EL-BRI
19	Enclosure Screws	6	Z-FIX-M4.8x19STS-SC
20	M4 Hex Nut Up to 6-kW Single Phase	2	Z-FIX-M4HEX
	M4 Hex Nut 9-kW & 12-kW Single Phase	4	Z-FIX-M4HEX
	M4 Hex Nut 15-kW & 18-kW Single Phase	6	Z-FIX-M4HEX
	M4 Hex Nut All 3-Phase	6	Z-FIX-M4HEX
21	M5 Hex Nut Up to 6-kW Single Phase	1	Z-FIX-M5HEX
	M5 Hex Nut 9-kW & 12-kW Single Phase	2	Z-FIX-M5HEX
	M5 Hex Nut 15-kW & 18-kW Single Phase	3	Z-FIX-M5HEX
	M5 Hex Nut All 3-Phase	3	Z-FIX-M5HEX
22	M6 Hex Nut	4	Z-FIX-M6HEX
24	M8 Hex Nut	1	Supplied with #9
25	M4 Locking Washer Up to 6-kW Single Phase	2	Z-FIX-M4LW
	M4 Locking Washer 9-kW & 12-kW Single Phase	4	Z-FIX-M4LW

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
	M4 Locking Washer 15-kW & 18-kW Single Phase	6	Z-FIX-M4LW
	M4 Locking Washer All 3-Phase	6	Z-FIX-M4LW
27	M5 Locking Washer	2	Z-FIX-M5LW
28	M6 Flat Washer	2	Z-FIX-M6FW
29	Earth Terminal	2	Z-CON-YR53
32	Foot Screws	4	Z-FIX-M4.8x19STS-SC
37	PG-21 Cable Entry Gland (Inc Back Nut)	1	Z-CON-PG21BK + Z-CON-PG21NUT
38	Element Ferrule (2pcs per Kit/Element):		
	Up to 6-kW Single Phase	2	Z-IM-EL-FER
	9-kW & 12-kW Single Phase	4	Z-IM-EL-FER
	15-kW & 18-kW Single Phase	6	Z-IM-EL-FER
	All 3-Phase	6	Z-IM-EL-FER
39	PG-9 Cable Entry Gland (Inc Back Nut)	2	Z-CON-PG9BK
40	End Fitting Gasket (Pack of 2pcs)	2	SP-117-GSK
41	Element Stepped Washer (2pcs per Kit):		
	Up to 6-kW Single Phase	2	Z-IM-EL-SW
	9-kW & 12-kW Single Phase	4	Z-IM-EL-SW
	15-kW & 18-kW Single Phase	6	Z-IM-EL-SW
	All 3-Phase	6	Z-IM-EL-SW
42	Titanium Heating Element 2-kW Single Phase	1	SP-EL-Ti2KW7T
	Titanium Heating Element 3-kW Single Phase	1	SP-EL-Ti2.8KW7T
	Titanium Heating Element 4.5-kW Single Phase	1	SP-EL-Ti4.5KW7T
	Titanium Heating Element 6-kW Single Phase	1	SP-EL-Ti6KW7T
	Titanium Heating Element 9-kW Single Phase	2	SP-EL-Ti4.5KW7T
	Titanium Heating Element 12-kW Single Phase	2	SP-EL-Ti6KW7T
	Titanium Heating Element 15-kW Single Phase	3	SP-EL-Ti5KW7T
	Titanium Heating Element 18-kW Single Phase	3	SP-EL-Ti6KW7T
	Titanium Heating Element 6-kW 3-Phase*	3	SP-EL-Ti2KW7T
	Titanium Heating Element 9-kW 3-Phase*	3	SP-EL-Ti2.8KW7T
	Titanium Heating Element 12-kW 3-Phase*	3	SP-EL-Ti4KW7T
	Titanium Heating Element 15-kW 3-Phase*	3	SP-EL-Ti5KW7T
	Titanium Heating Element 18-kW 3-Phase*	3	SP-EL-Ti6KW7T
	Titanium Heating Element 24-kW 3-Phase*	3	SP-EL-Ti8KW7T
43	Element Support (1pc per kit):		
	Up to 6-kW Single Phase	2	Z-IM-EL-SUP
	9-kW & 12-kW Single Phase	4	Z-IM-EL-SUP

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
	15-kW & 18-kW Single Phase	6	Z-IM-EL-SUP
	All 3-Phase	6	Z-IM-EL-SUP
44	Flow Switch Up to 3-kW	1	SP-107-FL-A
	Flow Switch 4-kW to 6-kW	1	SP-107-FL-B
	Flow Switch 9-kW & above	1	SP-107-FL-C

*For all 3-Phase titanium heating elements, please specify the required voltage.

REPLACEMENT TANK ASSEMBLY

MODEL	OUTPUT	DESCRIPTION	PART CODE
1-Phase	2-kW	2-kW 370mm Tank	SP-TA-2-Ti
	3-kW	3-kW 370mm Tank	SP-TA-3-Ti
	4.5-kW	4.5-kW 370mm Tank	SP-TA-4.5-Ti
	6-kW	6-kW 370mm Tank	SP-TA-6-Ti-1P
	9-kW	9-kW 370mm Tank	SP-TA-9-Ti-1P
	12-kW	12-kW 370mm Tank	SP-TA-12-Ti-1P
	15-kW	15-kW 500mm Tank	SP-TA-15-Ti
	18-kW	18-kW 500mm Tank	SP-TA-18-Ti
3-Phase	6-kW	6-kW 500mm Tank	SP-TA-6-Ti-3P
	9-kW	9-kW 500mm Tank	SP-TA-9-Ti-3P
	12-kW	12-kW 500mm Tank	SP-TA-12-Ti-3P
	15-kW	15-kW 500mm Tank	SP-TA-15-Ti
	18-kW	18-kW 500mm Tank	SP-TA-18-Ti
	24-kW	24-kW 500mm Tank	SP-TA-24-Ti-3P

WATER CONNECTION PARTS

DESCRIPTION	PCS/UNIT	PART CODE
1½" BSP Hose Tail 1½"/1¼" Flexible Pipe	2	SP-118
1½" BSP Universal Union for 1½"/50mm Pipe	2	SP-119
'O' Ring (Pack of 2pcs)	2	SP-120-ORS
44mm x 6mm Union 'O' Ring (Pack of 2pcs)	2	SP-119-ORS

ALL TITANIUM

EVOLUTION 2

Our most popular electric pool heater worldwide, the Evolution 2, is available in analogue or multi-lingual digital display. This corrosion resistant, all titanium heater, provides high performance, safe, silent operation and complete reliability to effortlessly heat any residential pool or spa to its desired temperature.

FEATURES

- 23 models available, ranging from 1-kW to 24-kW
- Easy installation, fully equipped and pre-wired
- Robust, durable construction and compact design
- Ultra-reliable flow switch for safe operation
- Fitted with temperature thermostat and overheating sensor
- Analogue control with 1.2°C differential or digital control with 0.5°C differential and selectable multi-lingual display
- Titanium flow tube and titanium heating element
- Vortex, long life, stay clean heating element technology
- 100% efficiency throughout the product life
- Sea and salt chlorinated water compatible
- Can be floor or vertically wall mounted
- Silent operation

SUITABLE FOR:



Above-Ground Pools



Spas



Residential Pools



Evolution 2
(Digital)

Evolution 2
(Analogue)





SPECIFICATIONS

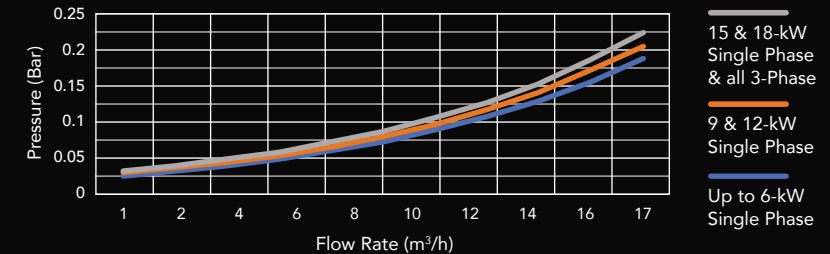
Power supply:	Single phase or 3-Phase
Min. flow rate:	Up to 3-kW: 1m ³ /hr, 4-kW to 6-kW: 1.5m ³ /hr, 8.4-kW & greater: 4m ³ /hr
Max. flow rate:	17m ³ /h
Heating element:	Grade 1 titanium
Flow tube:	Grade 1 titanium
Control thermostat:	Analogue: 0 > 45°C (1.2°C differential). Digital: 0 > 45°C (0.5°C differential)
Safety thermal cut out:	60°C (manual reset)
Flow switch:	Gold tipped reed switch with titanium fulcrum pin
Contactors:	Siemens 3RT2023 or 3RT2027
Seals:	High temperature special formula EPDM ferrules. TPE end fitting gaskets
Water connections:	1½" BSP female thread supplied with 1½"/50mm stepped ABS unions for rigid pipe and 1½"/1¼" stepped hose tails for flexible pipe
Ingress protection rating:	IP44
Frequency:	50/60 Hz
Working pressure:	4 bar maximum
Mounting:	Floor or wall mounting

MODELS

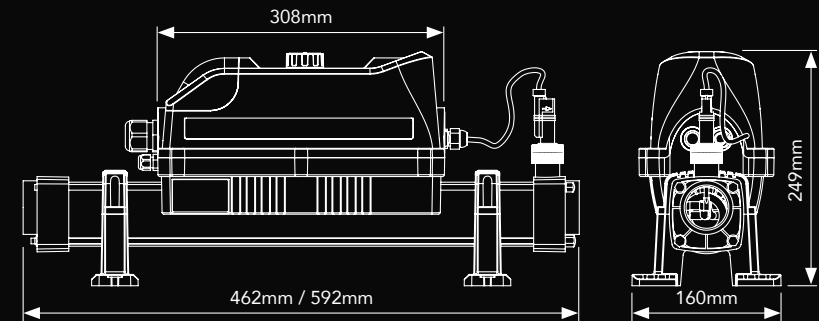
MODEL	POWER OUTPUT	LOAD (amp)	LENGTH (mm)	NET# WEIGHT (kg)	GROSS# WEIGHT (kg)	VOLUME (m ³)	PRODUCT CODE	
							ANALOGUE	DIGITAL
220~240V 1-Phase	1-kW	4.5	462	3.9300	5.5300	0.0571	E2-1-1	E2D-1-1
	2-kW	8.5	462	3.9300	5.5300	0.0571	E2-1-2	E2D-1-2
	3-kW	13	462	3.9300	5.5300	0.0571	E2-1-3	E2D-1-3
	4.5-kW	20	462	3.9300	5.5300	0.0571	E2-1-4	E2D-1-4
	6-kW	26	462	3.9300	5.5300	0.0571	E2-1-6	E2D-1-6
	9-kW	40	462	4.2300	5.8300	0.0571	E2-1-9	E2D-1-9
	12-kW	53	462	4.2300	5.8300	0.0571	E2-1-12	E2D-1-12
	15-kW	66	462	4.5500	6.1500	0.0571	E2-1-15	E2D-1-15
230/400V Versatile*	6-kW	26/8.5	592	4.7700	6.3700	0.0571	E2-V-6	E2D-V-6
	9-kW	40/13	592	4.7700	6.3700	0.0571	E2-V-9	E2D-V-9
	12-kW	53/18	592	4.7700	6.3700	0.0571	E2-V-12	E2D-V-12
	15-kW	22	592	4.5500	6.1500	0.0571	E2-3-15	E2D-3-15
400V 3-Phase*	18-kW	26	592	4.5500	6.1500	0.0571	E2-3-18	E2D-3-18
	24-kW	34	592	4.5500	6.1500	0.0571	E2-3-24	E2D-3-24
	6-kW	15	592	4.5500	6.1500	0.0571	E2-3-6-D	E2D-3-6-D
220~240V 3-Phase**	9-kW	23	592	4.5500	6.1500	0.0571	E2-3-9-D	E2D-3-9-D
	12-kW	30	592	4.5500	6.1500	0.0571	E2-3-12-D	E2D-3-12-D
	15-kW	38	592	4.5500	6.1500	0.0571	E2-3-15-D	E2D-3-15-D
	18-kW	46	592	4.5500	6.1500	0.0571	E2-3-18-D	E2D-3-18-D
120V 1-Phase	1-kW	8.5	462	3.9300	5.5300	0.0571	E2-1-1-120	E2D-1-1-120
	1.5-kW	12.5	462	3.9300	5.5300	0.0571	E2-1-1.5-120	E2D-1-1.5-120
	2-kW	17	462	3.9300	5.5300	0.0571	E2-1-2-120	E2D-1-2-120

* For voltages other than 400V, please add -380, -415 or -480 at the end of a product code e.g: E2-3-15-380. ** For voltage 208V please add: -208 at the end of a product code e.g: E2-3-6-D-208. Weights stated above are for analogue models only. #Please subtract 0.17kg for digital models.

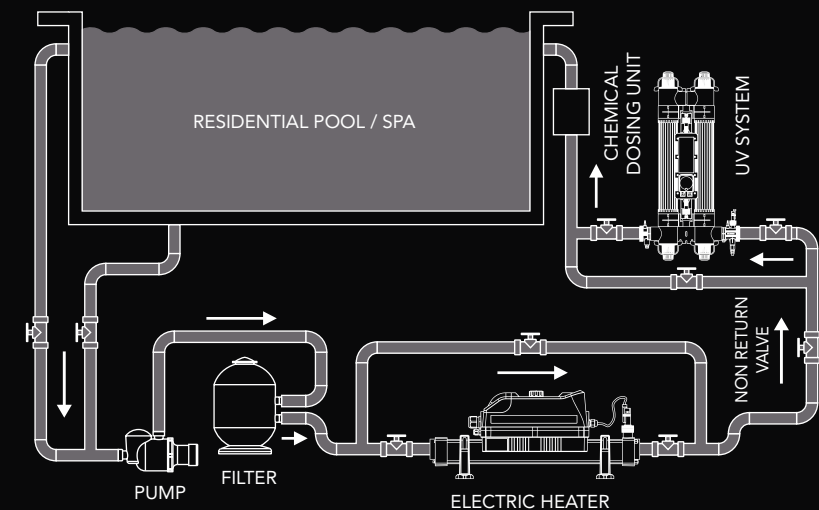
PRESSURE DROP

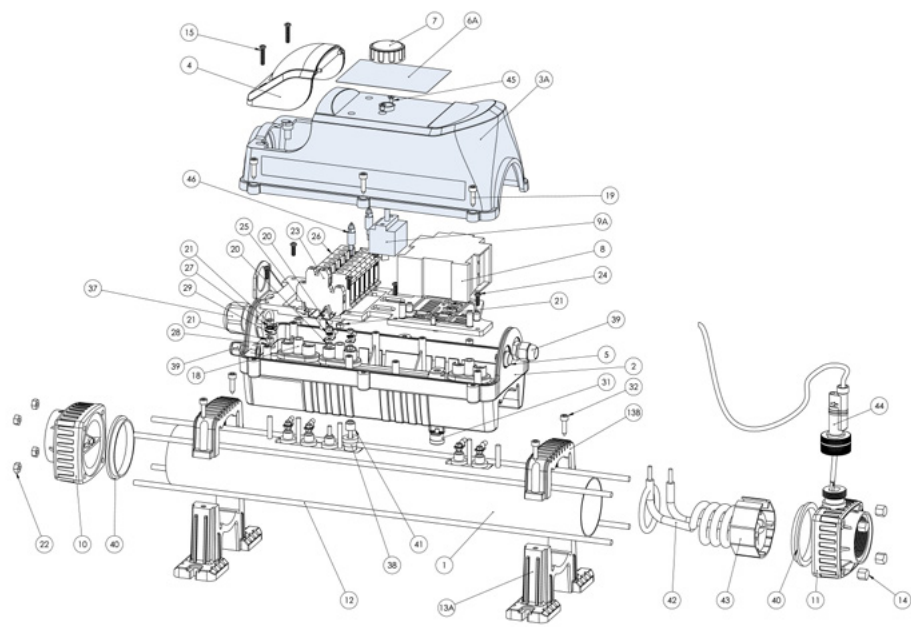


TECHNICAL DRAWINGS

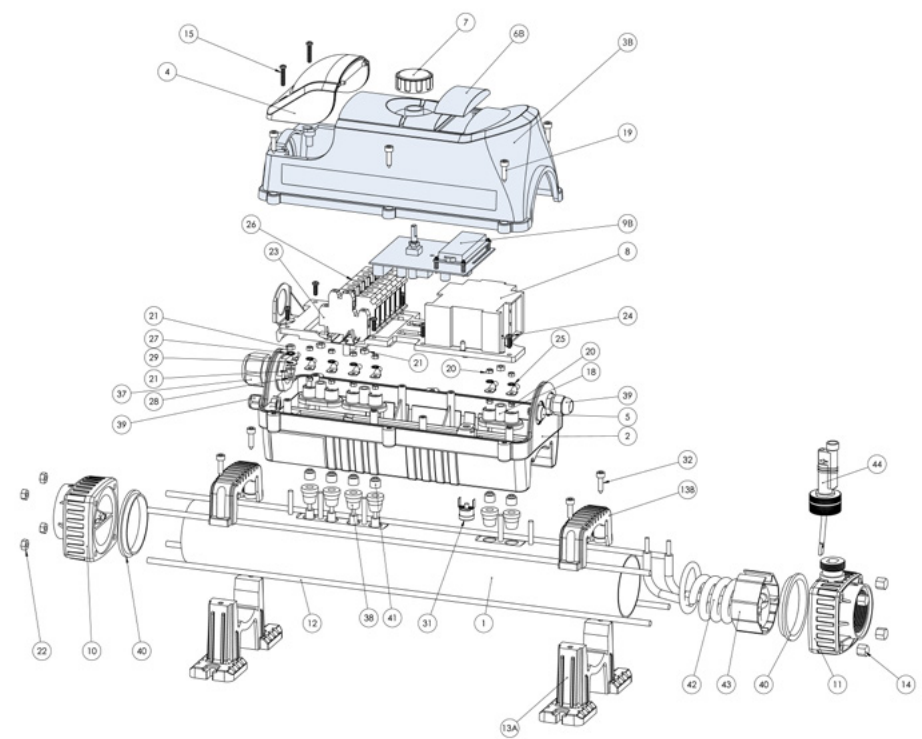


SYSTEM SETUP





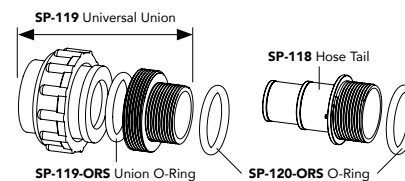
Evolution 2 ~ Analogue (Component Diagram)



Evolution 2 ~ Digital (Component Diagram)

Water Connections

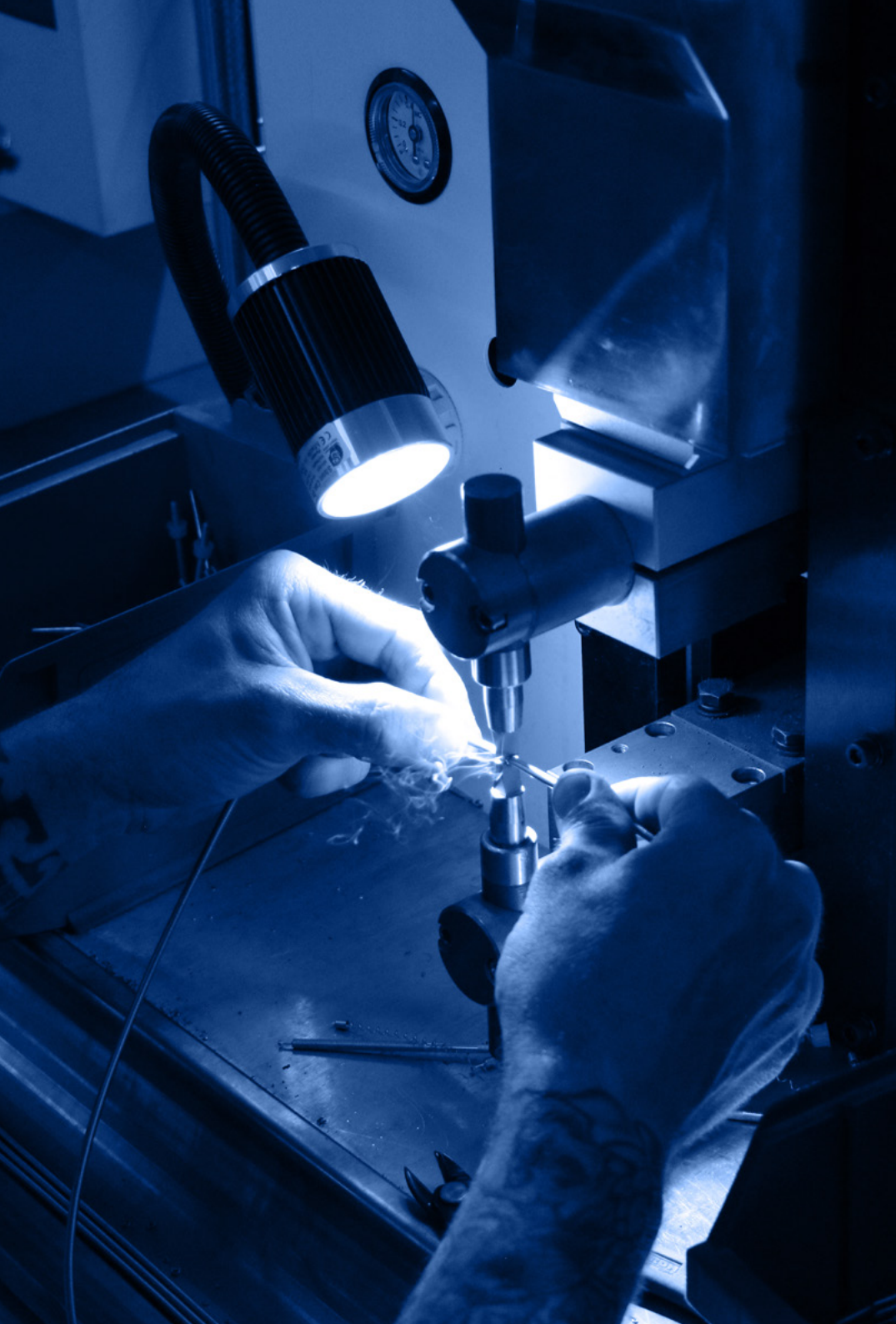
See page 29 for full description and pcs/unit.



SPARE PARTS LIST

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
1	Titanium Flow Tube Up to 6-kW Single Phase	1	X-TUB-TI370-1E
	Titanium Flow Tube 9-kW & 12-kW Single Phase	1	X-TUB-TI370-2E
	Titanium Flow Tube 15-kW & 18-kW Single Phase	1	X-TUB-TI500-3E
	Titanium Flow Tube All 3-Phase	1	X-TUB-TI500-3E
2	Electrical Enclosure Base	1	Z-IM-E2-BC
3A	Front Cover (Analogue model only)	1	Z-IM-E2-ANA-TC
3B	Front Cover (Digital model only)	1	Z-IM-E2-DIG-TC
4	Electrical Access Cover	1	Z-IM-E2-AC

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
5	Test Button	1	Z-MIS-PBS
6A	Ops Panel Overlay (Analogue model only)	1	Z-LAB-EVO2
6B	Window (Digital model only)	1	Z-IM-E2-W
7	Control Thermostat Dial	1	Z-IM-OC-ANA
8	Contactor Up to 18-kW 3-Phase 400V	1	SP-SIE-2023-40A
	Contactor Up to 9-kW 3-Phase 230V	1	SP-SIE-2023-40A
	Contactor 24-kW 3-Phase 400V	1	SP-SIE-2027-50A
	Contactor 12, 15 & 18-kW 3-Phase 230V	1	SP-SIE-2027-50A



ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
9A	Analogue Control Thermostat	1	SP-MIS-CS
9B	PCB Digital Thermostat Board	1	Z-PCB-BUD
10	Left End Fitting (Non Flow Switch)	1	SP-117
11	Right End Fitting (Flow Switch)	1	SP-117B
12	M6 Tie Bar Up to 12-kW Single Phase 230V	4	Z-STU-443
	M6 Tie Bar 15-kW & 18-kW Single Phase	4	Z-STU-573
	M6 Tie Bar All 3-Phase	4	Z-STU-573
13A	Foot Lower	2	Z-IM-E2-FL
13B	Foot Upper	2	Z-IM-E2-FU
14	M6 Dome/Cap Nut	4	Z-FIX-M6CAP
15	M4 x 25 mm Pozi Pan Screw	2	Z-FIX-M4x25
18	Element Bridge Up to 6-kW Single Phase	1	Z-IM-EL-BRI
	Element Bridge 9-kW & 12-kW Single Phase	2	Z-IM-EL-BRI
	Element Bridge 15-kW & 18-kW Single Phase	3	Z-IM-EL-BRI
	Element Bridge All 3-Phase	3	Z-IM-EL-BRI
19	Enclosure Screws	7	Z-FIX-M4.8x19STS-SC
20	M4 Hex Nut Up to 6-kW Single Phase	2	Z-FIX-M4HEX
	M4 Hex Nut 9-kW & 12-kW Single Phase	4	Z-FIX-M4HEX
	M4 Hex Nut 15-kW & 18-kW Single Phase	6	Z-FIX-M4HEX
	M4 Hex Nut All 3-Phase	6	Z-FIX-M4HEX
21	M5 Hex Nut Up to 6-kW Single Phase	1	Z-FIX-M5HEX
	M5 Hex Nut 9-kW & 12-kW Single Phase	2	Z-FIX-M5HEX
	M5 Hex Nut 15-kW & 18-kW Single Phase	3	Z-FIX-M5HEX
	M5 Hex Nut All 3-Phase	3	Z-FIX-M5HEX
22	M6 Hex Nut	4	Z-FIX-M6HEX
23	RCD Terminal Block With Resistor	1	Z-MIS-TB-RCD
24	M4 x 12mm Pozi Pan Screw	9	Z-FIX-M4x25
25	M4 Locking Washer Up to 6-kW Single Phase	2	Z-FIX-M4LW
	M4 Locking Washer 9-kW & 12-kW Single Phase	4	Z-FIX-M4LW
	M4 Locking Washer 15-kW & 18-kW Single Phase	6	Z-FIX-M4LW
	M4 Locking Washer All 3-Phase	6	Z-FIX-M4LW
26	Terminal Block All Single Phase	3	Z-MIS-TB-130A
	Terminal Block All 3-Phase	5	Z-MIS-TB-130A
	Terminal Block All Versatile	6	Z-MIS-TB-130A
27	M5 Locking Washer	2	Z-FIX-M5LW
28	M6 Flat Washer	2	Z-FIX-M6FW

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
29	Earth Terminal	2	Z-CON-YR53
31	Auto Button Stat	1	Z-MIS-BS-60-40-NO
32	Foot Screws	4	Z-FIX-M4.8x19STS-SC
37	PG-21 Cable Entry Gland (Inc Back Nut)	1	Z-CON-PG21BK + Z-CON-PG21NUT
38	Element Ferrule (2pcs per Kit/Element):		
	Up to 6-kW Single Phase	2	Z-IM-EL-FER
	9-kW & 12-kW Single Phase	4	Z-IM-EL-FER
	15-kW & 18-kW Single Phase	6	Z-IM-EL-FER
	All 3-Phase	6	Z-IM-EL-FER
39	PG-7 Cable Entry Gland (Inc Back Nut)	1	Z-CON-PG7BK
40	End Fitting Gasket (Pack of 2pcs)	2	SP-117-GSK
41	Element Stepped Washer (2pcs per Kit):		
	Up to 6-kW Single Phase	2	Z-IM-EL-SW
	9-kW & 12-kW Single Phase	4	Z-IM-EL-SW
	15-kW & 18-kW Single Phase	6	Z-IM-EL-SW
	All 3-Phase	6	Z-IM-EL-SW
42	Titanium Heating Element 2-kW Single Phase	1	SP-EL-Ti2KW7T
	Titanium Heating Element 3-kW Single Phase	1	SP-EL-Ti2.8KW7T
	Titanium Heating Element 4.5-kW Single Phase	1	SP-EL-Ti4.5KW7T
	Titanium Heating Element 6-kW Single Phase	1	SP-EL-Ti6KW7T
	Titanium Heating Element 9-kW Single Phase	2	SP-EL-Ti4.5KW7T
	Titanium Heating Element 12-kW Single Phase	2	SP-EL-Ti6KW7T
	Titanium Heating Element 15-kW Single Phase	3	SP-EL-Ti5KW7T
	Titanium Heating Element 18-kW Single Phase	3	SP-EL-Ti6KW7T
	Titanium Heating Element 6-kW 3-Phase/Versatile*	3	SP-EL-Ti2KW7T
	Titanium Heating Element 9-kW 3-Phase/Versatile*	3	SP-EL-Ti2.8KW7T
	Titanium Heating Element 12-kW 3-Phase/Versatile*	3	SP-EL-Ti4KW7T
	Titanium Heating Element 15-kW 3-Phase/Versatile*	3	SP-EL-Ti5KW7T
	Titanium Heating Element 18-kW 3-Phase/Versatile*	3	SP-EL-Ti6KW7T
	Titanium Heating Element 24-kW 3-Phase/Versatile*	3	SP-EL-Ti8KW7T
43	Element Support (1pc per kit):		
	Up to 6-kW Single Phase	2	Z-IM-EL-SUP
	9-kW & 12-kW Single Phase	4	Z-IM-EL-SUP
	15-kW & 18-kW Single Phase	6	Z-IM-EL-SUP
	All 3-Phase	6	Z-IM-EL-SUP

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
44	Flow Switch Up to 3-kW	1	SP-107-A
	Flow Switch 4-kW to 6-kW	1	SP-107-B
	Flow Switch 9-kW & above	1	SP-107-C
45	M4 x 6mm Screw	2	Z-FIX-M4X6CS
46	Neon Indicator Lamp	1	Z-MIS-NEON

*For all 3-Phase/Versatile titanium heating elements, please specify the required voltage.

REPLACEMENT TANK ASSEMBLY

MODEL	OUTPUT	DESCRIPTION	PART CODE
1-Phase	2-kW	2-kW 370mm Tank	SP-TA-2-Ti
	3-kW	3-kW 370mm Tank	SP-TA-3-Ti
	4.5-kW	4.5-kW 370mm Tank	SP-TA-4.5-Ti
	6-kW	6-kW 370mm Tank	SP-TA-6-Ti-1P
	9-kW	9-kW 370mm Tank	SP-TA-9-Ti-1P
	12-kW	12-kW 370mm Tank	SP-TA-12-Ti-1P
	15-kW	15-kW 500mm Tank	SP-TA-15-Ti
	18-kW	18-kW 500mm Tank	SP-TA-18-Ti
3-Phase & Versatile	6-kW	6-kW 500mm Tank	SP-TA-6-Ti-3P
	9-kW	9-kW 500mm Tank	SP-TA-9-Ti-3P
	12-kW	12-kW 500mm Tank	SP-TA-12-Ti-3P
	15-kW	15-kW 500mm Tank	SP-TA-15-Ti
	18-kW	18-kW 500mm Tank	SP-TA-18-Ti
	24-kW	24-kW 500mm Tank	SP-TA-24-Ti-3P

WATER CONNECTION PARTS

DESCRIPTION	PCS/UNIT	PART CODE
1½" BSP Hose Tail 1½"/1¼" Flexible Pipe	2	SP-118
1½" BSP Universal Union for 1½"/50mm Pipe	2	SP-119
'O' Ring (Pack of 2pcs)	2	SP-120-ORS
44mm x 6mm Union 'O' Ring (Pack of 2pcs)	2	SP-119-ORS

ALL TITANIUM

OPTIMA COMPACT

For the home owner who demands the best - the Optima Compact delivers everything you need in a pool heater. Safety, reliability, efficiency and touchscreen digital programming for any modern lifestyle. A highly robust, durable construction, makes this a desirable solution for any residential pool or spa.

FEATURES

- 23 models available, ranging from 1-kW to 24-kW
- Easy installation, fully equipped and pre-wired
- Robust, durable construction and compact design
- Ultra-reliable flow switch for safe operation
- Fitted with temperature thermostat and overheating sensor
- Touchscreen control with soft-start for power supply protection
- Titanium flow tube and titanium heating element(s)
- Vortex, long life, stay clean heating element technology
- 100% efficiency throughout the product life
- Sea and salt chlorinated water compatible
- Can be floor or vertically wall mounted
- Silent operation

SUITABLE FOR:



SIMPLIFY YOUR LIFE WITH THE ELECR0 APP

Connection via Bluetooth, Wi-Fi and 4G enables you to take full control of your swimming pool heating from anywhere in your home or office with a simple app on your smartphone.



SPECIFICATIONS

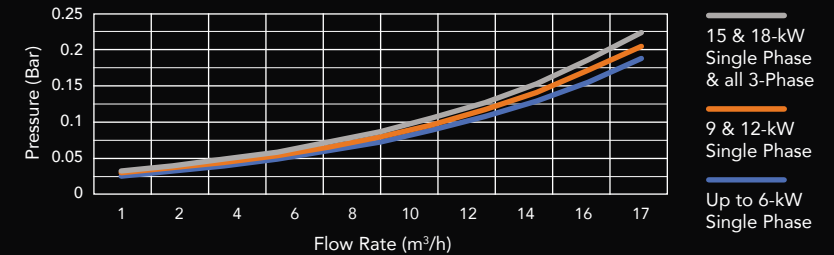
Power supply:	Single phase or 3-Phase
Min. flow rate:	Up to 3-kW: 1m ³ /hr, 4-kW to 6-kW: 1.5m ³ /hr, 8.4-kW & greater: 4m ³ /hr
Max. flow rate:	17m ³ /h
Heating element:	Grade 1 titanium
Flow tube:	Grade 1 titanium
Control thermostat:	Touch Screen 0 > 45°C (0.5°C differential)
Safety thermal cut out:	60°C (manual reset)
Flow switch:	Gold tipped reed switch with titanium fulcrum pin
Contactors:	Dual Siemens 3RT2023 or 3RT2027
Seals:	High temperature special formula EPDM ferrules. TPE end fitting gaskets
Water connections:	1½" BSP female thread supplied with 1½"/50mm stepped ABS unions for rigid pipe and 1½"/1¼" stepped hose tails for flexible pipe
Ingress protection rating:	IP44
Frequency:	50/60 Hz
Working pressure:	4 bar maximum
Mounting:	Floor or wall mounting

MODELS

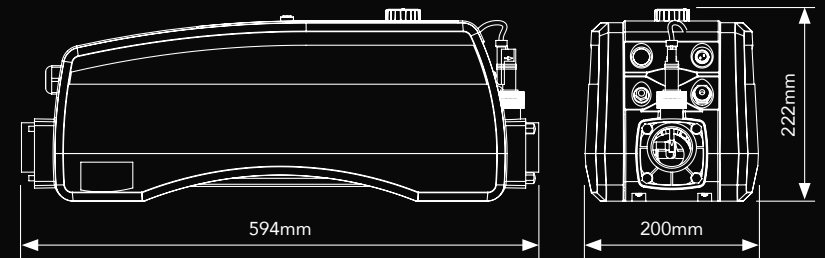
MODEL	POWER OUTPUT	LOAD (amp)	NET WEIGHT (kg)	GROSS WEIGHT (kg)	VOLUME (m ³)	PRODUCT CODE
220~240V 1-Phase	1-kW	4.5	7.1900	8.8300	0.0571	OCPD-1-1
	2-kW	8.5	7.1900	8.8300	0.0571	OCPD-1-2
	3-kW	12	7.1900	8.8300	0.0571	OCPD-1-3
	4.5-kW	20	7.1900	8.8300	0.0571	OCPD-1-4
	6-kW	26	7.1900	8.8300	0.0571	OCPD-1-6
	9-kW	40	7.5100	9.1500	0.0571	OCPD-1-9
	12-kW	53	7.5100	9.1500	0.0571	OCPD-1-12
	15-kW	66	7.8400	9.4800	0.0571	OCPD-1-15
230/400V Versatile*	6-kW	26/8.5	7.7200	9.3600	0.0571	OCPD-V-6
	9-kW	40/13	7.7200	9.3600	0.0571	OCPD-V-9
	12-kW	53/18	7.7200	9.3600	0.0571	OCPD-V-12
400V 3-Phase*	15-kW	22	7.7200	9.3600	0.0571	OCPD-3-15
	18-kW	26	7.7200	9.3600	0.0571	OCPD-3-18
	24-kW	34	7.7200	9.3600	0.0571	OCPD-3-24
220~240V 3-Phase**	6-kW	15	7.7200	9.3600	0.0571	OCPD-3-6-D
	9-kW	23	7.7200	9.3600	0.0571	OCPD-3-9-D
	12-kW	30	7.7200	9.3600	0.0571	OCPD-3-12-D
	15-kW	38	7.7200	9.3600	0.0571	OCPD-3-15-D
120V 1-Phase	1-kW	8.5	7.1900	8.8300	0.0571	OCPD-1-1-120
	1.5-kW	12.5	7.1900	8.8300	0.0571	OCPD-1-1.5-120
	2-kW	17	7.1900	8.8300	0.0571	OCPD-1-2-120

* For voltages other than 400V please add: -380, -415 or -480 at the end of a product code e.g: OCPD-3-15-380. ** For voltage 208V please add: -208 at the end of a product code e.g: OCPD-3-6-D-208.

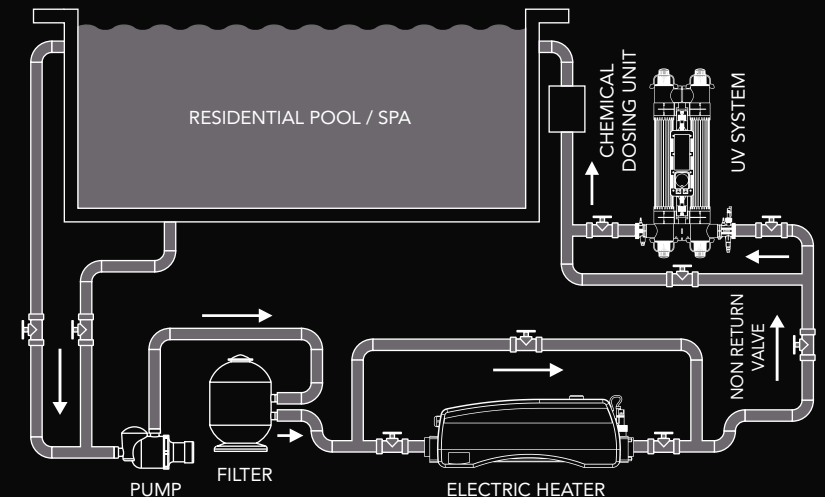
PRESSURE DROP

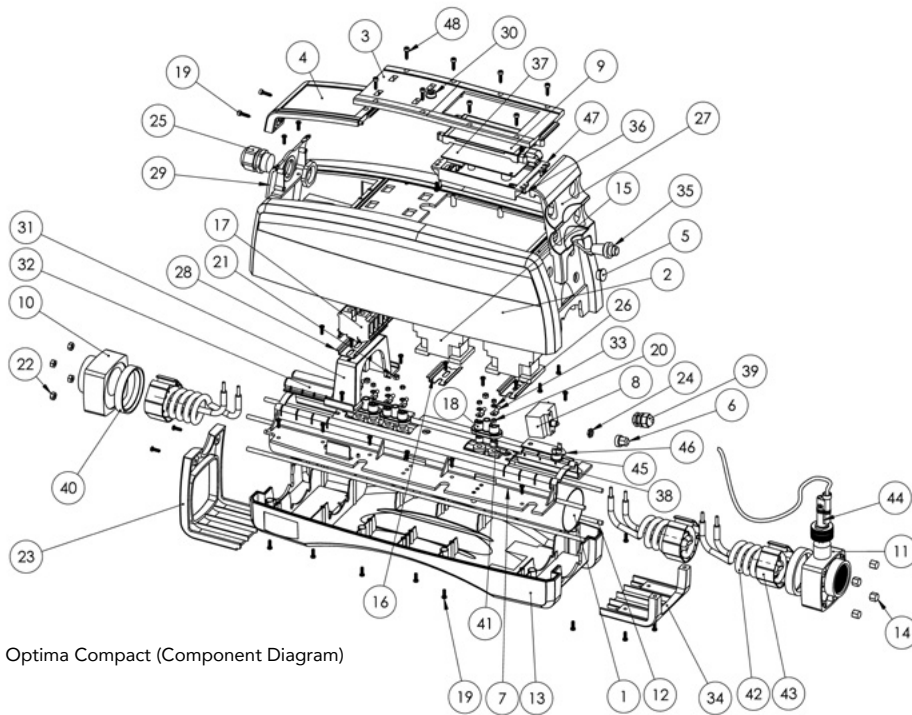


TECHNICAL DRAWINGS



SYSTEM SETUP

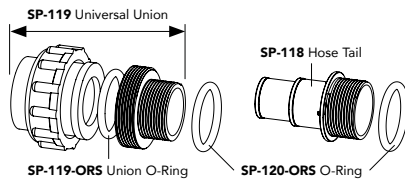




Optima Compact (Component Diagram)

Water Connections

See page opposite for full description and pcs/unit.



SPARE PARTS LIST

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
1	Titanium Flow Tube Up to 6-kW Single Phase	1	X-TUB-TI500-1E-OC
	Titanium Flow Tube 9-kW & 12-kW Single Phase	1	X-TUB-TI500-2E-OC
	Titanium Flow Tube 15-kW & 18-kW Single Phase	1	X-TUB-TI500-3E-C
	Titanium Flow Tube All 3-Phase	1	X-TUB-TI500-3E-C
2	Electrical Enclosure (Top Cover)	1	Z-IM-OC-TC
3	Touch Screen Control Panel	1	Z-IM-OC-CP-DIG
4	Electrical Access Cover	1	Z-IM-OC-AC
5	PG9 Blanking Cap	2	Z-CON-PG9DBC

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
6	Safety Thermal Cut Out Cover	1	Z-MIS-HLS-CVR
7	Chassis Plate (Supplied with item no.8)	1	Z-IM-OC-CP
8	High Limit Safety Thermal Cut Out (Complete)	1	SP-MIS-HLS
9	Touch Screen	1	Z-MIS-BMS-TS
10	Left End Fitting (Non Flow Switch)	1	SP-117
11	Right End Fitting (Flow Switch)	1	SP-117B
12	M6 Tie Bar	4	Z-STU-573
13	Base	1	Z-IM-OC-B
14	M6 Dome/Cap Nut	4	Z-FIX-M6CAP
15	SIEMENS Contactor 2-kW to 18-kW Single Phase	2	SP-SIE-2023-40A
	SIEMENS Contactor 6-kW to 18-kW 3-Phase	2	SP-SIE-2023-40A
	SIEMENS Contactor 24-kW 3-Phase	2	SP-SIE-2027-50A
16	55mm Din Rail	2	X-DIN-55
17	Terminal Block 2-kW to 18-kW Single Phase	3	Z-MIS-TB130A
	Terminal Block 6-kW to 18-kW 220V 3-Phase	4	Z-MIS-TB130A
	Terminal Block 6-kW to 24-kW 400V 3-Phase	5	Z-MIS-TB130A
	Terminal Block 6-kW to 12-kW Versatile	6	Z-MIS-TB130A
18	Element Bridge 2-kW to 6-kW Single Phase	1	Z-IM-EL-BRI
	Element Bridge 9-kW to 12-kW Single Phase	2	Z-IM-EL-BRI
	Element Bridge 6-kW to 24-kW 400V 3-Phase	3	Z-IM-EL-BRI
	Element Bridge 15-kW & 18-kW Single Phase	3	Z-IM-EL-BRI
19	M4 x 12mm Enclosure Screws	30	Z-FIX-M4x12
20	M4 Hex Nut 2-kW to 6-kW Single Phase	2	Z-FIX-M4HEX
	M4 Hex Nut 9-kW to 12-kW Single Phase	4	Z-FIX-M4HEX
	M4 Hex Nut 6-kW to 24-kW 400V 3-Phase	6	Z-FIX-M4HEX
	M4 Hex Nut 15-kW & 18-kW Single Phase	6	Z-FIX-M4HEX
21	M5 Hex Nut 2-kW to 6-kW Single Phase	1	Z-FIX-M5HEX
	M5 Hex Nut 9-kW to 12-kW Single Phase	2	Z-FIX-M5HEX
	M5 Hex Nut 6-kW to 24-kW 400V 3-Phase	3	Z-FIX-M5HEX
	M5 Hex Nut 15-kW & 18-kW Single Phase	3	Z-FIX-M5HEX
22	M6 Hex Nut	4	Z-FIX-M6HEX
23	Lower Left Cover Panel	1	Z-IM-OC-DC-L
24	M8 Hex Nut (Supplied with item no.8)	1	Z-FIX-M8HEX
25	PG21 Cable Entry Gland	1	Z-CON-PG21BK + Z-CON-PG21NUT
26	M4 Locking Washer 2-kW to 6-kW Single Phase	2	Z-FIX-M4LW
	M4 Locking Washer 9-kW to 12-kW Single Phase	4	Z-FIX-M4LW
	M4 Locking Washer 6-kW to 24-kW 400V 3-Phase	6	Z-FIX-M4LW

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
	M4 Locking Washer 15 & 18-kW Single Phase	6	Z-FIX-M4LW
27	Right Upper Cover Panel	1	Z-IM-OC-DC-RT-D
28	115mm Din Rail	1	X-DIN-115
29	Cable Entry Gland Panel	1	Z-IM-OC-CGH
30	Fuse Holder (Complete)	1	Z-MIS-FH
31	Terminal Block Bridge	1	Z-IM-OC-TBB
32	Capillary Bulb Holder	1	Z-IM-OC-BH
33	Copper Tube Terminal		Various
34	Lower Right Cover Panel	1	Z-IM-OC-DC-RB
35	2 Way Connector Cable	1	Z-CAB-ILPM
36	M3x12 Flange Screw	4	Z-FIX-M3x12-FLG
37	PCB Digital Thermostat Board	1	Z-PCB-BMS
38	Element Ferrule (2pcs per Kit/Element):		
	2-kW to 6-kW Single Phase	2	Z-IM-EL-FER
	9-kW & 12-kW Single Phase	4	Z-IM-EL-FER
	6-kW to 24-kW 400V 3-Phase	6	Z-IM-EL-FER
	15-kW and 18-kW Single Phase	6	Z-IM-EL-FER
39	PG-9 Cable Entry Gland (Inc Back Nut)	2	Z-CON-PG9
40	End Fitting Gasket (Pack of 2pcs)	2	SP-117-GSK
41	Element Stepped Washer (2pcs per Kit):		
	2-kW to 6-kW Single Phase	2	Z-IM-EL-SW
	9-kW to 12-kW Single Phase	4	Z-IM-EL-SW
	6-kW to 24-kW 400V 3-Phase	6	Z-IM-EL-SW
	15-kW and 18-kW Single Phase	6	Z-IM-EL-SW
42	Titanium Heating Element 2-kW Single Phase	1	SP-EL-Ti2KW7T
	Titanium Heating Element 3-kW Single Phase	1	SP-EL-Ti2.9KW7T
	Titanium Heating Element 4.5-kW Single Phase	1	SP-EL-Ti4.5KW7T
	Titanium Heating Element 6-kW Single Phase	1	SP-EL-Ti6KW7T
	Titanium Heating Element 9-kW Single Phase	2	SP-EL-Ti4.5KW7T
	Titanium Heating Element 12-kW Single Phase	2	SP-EL-Ti6KW7T
	Titanium Heating Element 15-kW Single Phase	3	SP-EL-Ti5KW7T
	Titanium Heating Element 18-kW Single Phase	3	SP-EL-Ti6KW7T
	Titanium Heating Element 6-kW 3-Phase/Versatile*	3	SP-EL-Ti2KW7T
	Titanium Heating Element 9-kW 3-Phase/Versatile*	3	SP-EL-Ti2.9KW7T
	Titanium Heating Element 12-kW 3-Phase/Versatile*	3	SP-EL-Ti4KW7T
	Titanium Heating Element 15-kW 3-Phase/Versatile*	3	SP-EL-Ti5KW7T
	Titanium Heating Element 18-kW 3-Phase/Versatile*	3	SP-EL-Ti6KW7T
	Titanium Heating Element 24-kW 3-Phase/Versatile*	3	SP-EL-Ti8KW7T

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
43	Element Support (1pc per kit):		
	2-kW to 6-kW Single Phase	1	Z-IM-EL-SUP
	9-kW to 12-kW Single Phase	2	Z-IM-EL-SUP
	6-kW to 24-kW 400V 3-Phase	3	Z-IM-EL-SUP
	15-kW and 18-kW Single Phase	3	Z-IM-EL-SUP
44	Flow Switch 2-kW & 3-kW	1	SP-107-OCD-A
	Flow Switch 4-kW & 6-kW	1	SP-107-OCD-B
	Flow Switch 9-kW & above	1	SP-107-OCD-C
45	High Limit Auto Reset 60°C	1	Z-MIS-BS-60-40
46	High Limit Holder	1	Z-SMW-BSH
47	Digital Controller Mounting Bracket	1	Z-IM-OC-DIG-MB
48	M4x16 Socket Cap	8	Z-FIX-M4x16-SC-ST

*For all 3-Phase/Versatile titanium heating elements, please specify the required voltage.

REPLACEMENT TANK ASSEMBLY

MODEL	OUTPUT	DESCRIPTION	PART CODE
1-Phase	2-kW	2-kW 500mm Tank	SP-TA-OCP-1-2
	3-kW	3-kW 500mm Tank	SP-TA-OCP-1-3
	4.5-kW	4.5-kW 500mm Tank	SP-TA-OCP-1-4
	6-kW	6-kW 500mm Tank	SP-TA-OCP-1-6
	9-kW	9-kW 500mm Tank	SP-TA-OCP-1-9
	12-kW	12-kW 500mm Tank	SP-TA-OCP-1-12
	15-kW	15-kW 500mm Tank	SP-TA-OCP-1-15
	18-kW	18-kW 500mm Tank	SP-TA-OCP-1-18
3-Phase & Versatile	6-kW	6-kW 500mm Tank	SP-TA-OCP-3-6
	9-kW	9-kW 500mm Tank	SP-TA-OCP-3-9
	12-kW	12-kW 500mm Tank	SP-TA-OCP-3-12
	15-kW	15-kW 500mm Tank	SP-TA-OCP-3-15
	18-kW	18-kW 500mm Tank	SP-TA-OCP-3-18
	24-kW	24-kW 500mm Tank	SP-TA-OCP-3-24

WATER CONNECTION PARTS

DESCRIPTION	PCS/UNIT	PART CODE
1½" BSP Hose Tail 1½"/1¼" Flexible Pipe	2	SP-118
1½" BSP Universal Union for 1½"/50mm Pipe	2	SP-119
'O' Ring (Pack of 2pcs)	2	SP-120-ORS
44mm x 6mm Union 'O' Ring (Pack of 2pcs)	2	SP-119-ORS

ALL TITANIUM

SFS JOEY

Reliable, accurate and long-lasting performance. The SFS Joey, fully titanium heater, is the ideal choice for maintaining high temperatures in commercial pools where the water contains high TDS, debris laden water and a reduced flow rate.

FEATURES

- 19 models available, ranging from 18-kW to 120-kW
- Easy installation, fully equipped and pre-wired
- Robust, durable construction and compact design
- Ultra-reliable flow switch for safe operation
- Fitted with temperature thermostat and overheating sensor
- Analogue control with 1.2°C differential or digital control with 0.5°C differential and selectable multi-lingual display
- Titanium flow tube and titanium heating element(s)
- Vortex, long life, stay clean heating element technology
- 100% efficiency throughout the product life
- Sea and salt chlorinated water compatible
- Can be floor or vertically wall mounted
- Silent operation

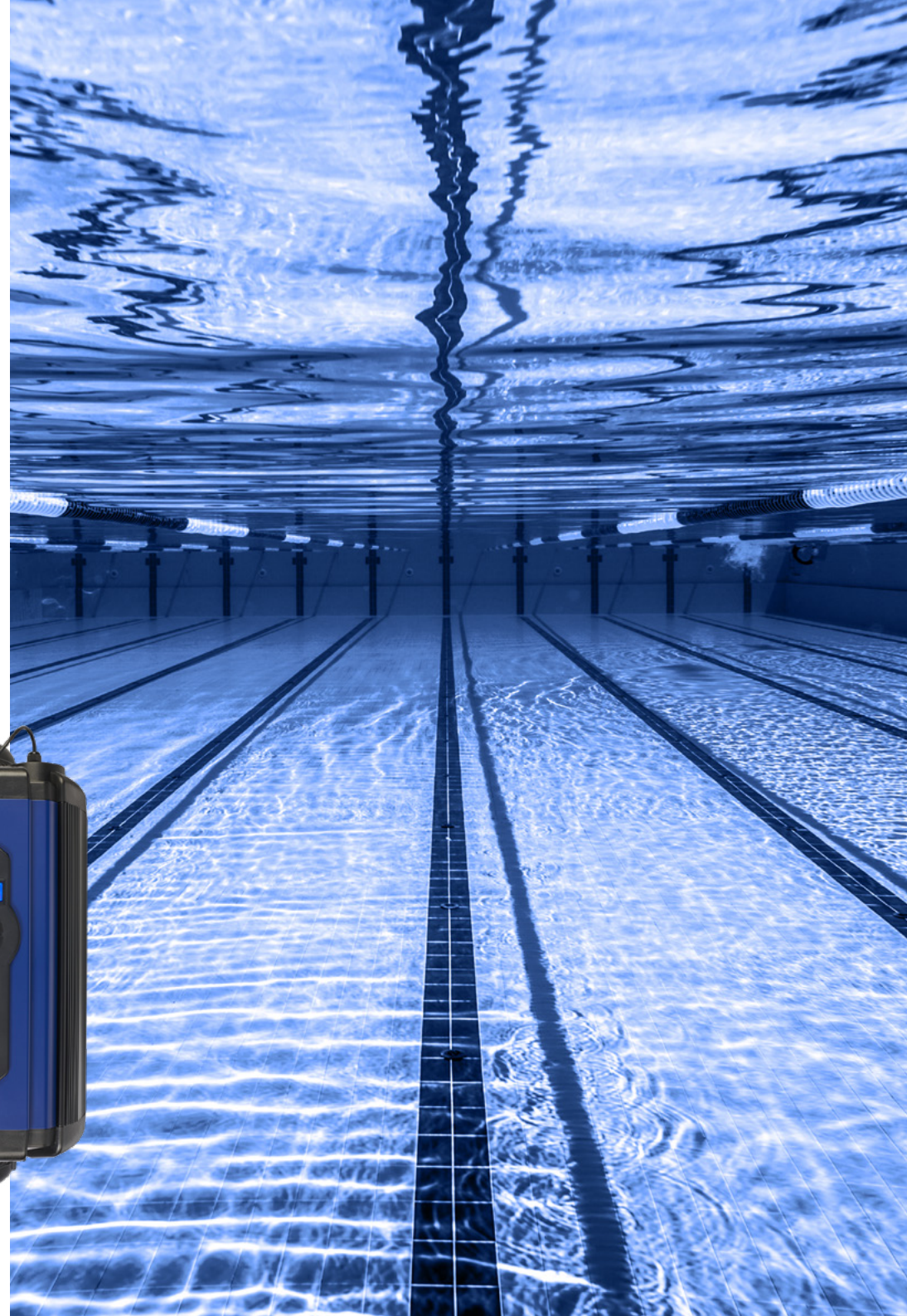
SUITABLE FOR:



SFS Joey (Analogue)



SFS Joey (Digital)



SPECIFICATIONS

Power supply:	3-Phase
Min. flow rate:	8m ³ /h (Recommended)
Max. flow rate:	15m ³ /h
Heating element:	Grade 1 titanium
Flow tube:	Grade 1 titanium
Control thermostat:	Analogue: 0 > 45°C (1.2°C differential), Digital: 0 > 45°C (0.5°C differential)
Safety thermal cut out:	65°C (auto reset) against enclosure over-temperature 60°C (manual reset)
Flow switch:	Gold tipped reed switch with titanium fulcrum pin
Contactors:	Cascade wired dual Siemens 3RT2023 or 3RT2027 for each element bank
Seals:	High temperature special formula EPDM ferrules. TPE end fitting gaskets
Water connections:	63mm spigot with 2"/63mm stepped ABS unions
Ingress protection rating:	IP44
Frequency:	50/60 Hz
Working pressure:	4 bar maximum
Mounting:	Floor or wall mounting

MODELS

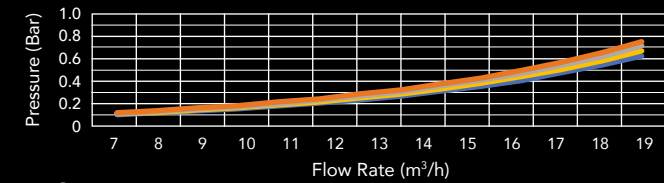
MODEL	POWER OUTPUT	LOAD (amp)	LENGTH (mm)	NET WEIGHT (kg)	GROSS WEIGHT (kg)	VOLUME (m ³)	PRODUCT CODE	
							ANALOGUE	DIGITAL
400V 3-Phase*	18-kW	26	699	20.8000	24.4000	0.1880	SFS-18	SFSD-18
	24-kW	34	699	20.8000	24.4000	0.1880	SFS-24	SFSD-24
	30-kW	44	699	20.8000	24.4000	0.1880	SFS-30	SFSD-30
	36-kW	53	699	20.8000	24.4000	0.1880	SFS-36	SFSD-36
	45-kW	66	699	23.2000	26.8000	0.1880	SFS-45	SFSD-45
	54-kW	79	699	23.2000	26.8000	0.1880	SFS-54	SFSD-54
	60-kW	87	699	23.8000	27.4000	0.1880	SFS-60	SFSD-60
	72-kW	105	699	23.8000	27.4000	0.1880	SFS-72	SFSD-72
	96-kW	139	1042	32.8000	36.4000	0.2685	SFS-96	SFSD-96
	120-kW	174	1042	34.1000	38.4000	0.2685	SFS-120	SFSD-120
220~240V 3-Phase**	18-kW	46	699	21.0000	24.6000	0.1880	SFS-18-D	SFSD-18-D
	24-kW	61	699	21.0000	24.6000	0.1880	SFS-24-D	SFSD-24-D
	30-kW	76	699	21.0000	24.6000	0.1880	SFS-30-D	SFSD-30-D
	36-kW	91	699	21.0000	24.6000	0.1880	SFS-36-D	SFSD-36-D
	45-kW	114	699	23.8000	27.4000	0.1880	SFS-45-D	SFSD-45-D
	54-kW	136	699	23.8000	27.4000	0.1880	SFS-54-D	SFSD-54-D
	60-kW	151	1042	32.1000	36.4000	0.2685	SFS-60-D	SFSD-60-D
	72-kW	181	1042	32.1000	36.4000	0.2685	SFS-72-D	SFSD-72-D
	90-kW	227	1042	34.1000	38.4000	0.2685	SFS-90-D	SFSD-90-D

* For voltages other than 400V, please add -380, -415 or -480 at the end of a product code e.g: SFS-36-380

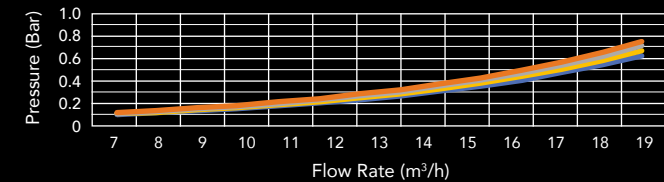
** For voltage 208V please add: -208 at the end of a product code e.g: SFS-18-D-208

PRESSURE DROP

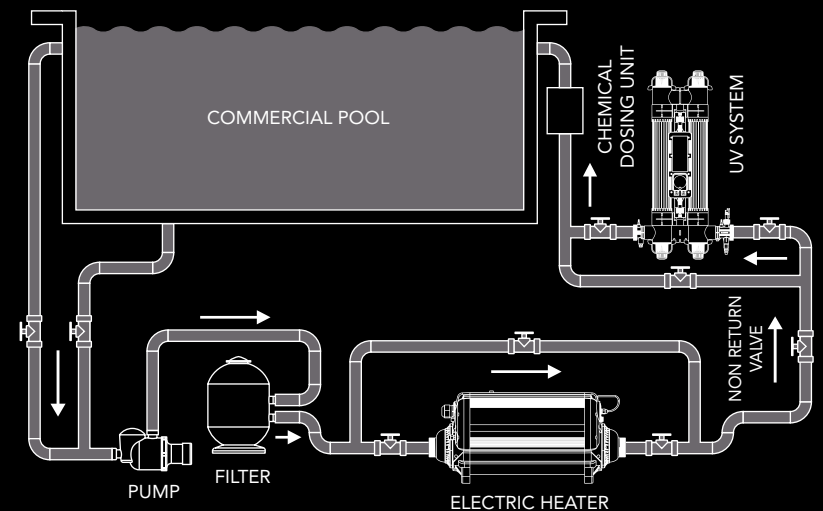
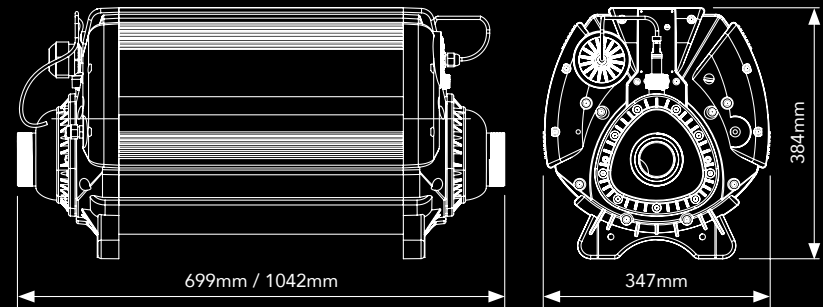
3-Phase 380-415V

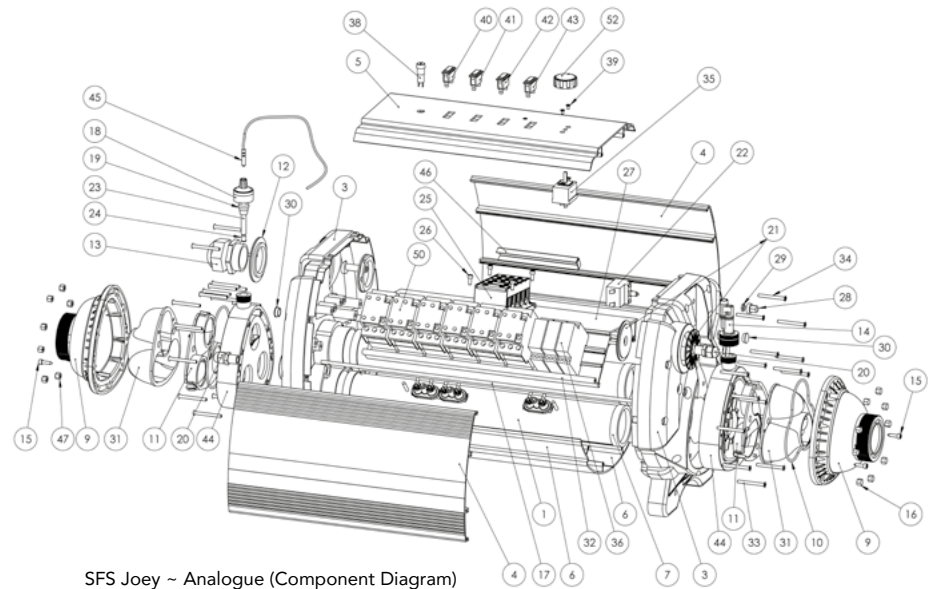


3-Phase 220-240V



TECHNICAL DRAWINGS & SYSTEM SETUP

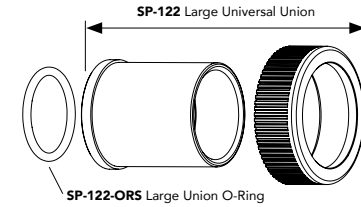




SFS Joey ~ Analogue (Component Diagram)

Water Connections

See page 45 for full description and pcs/unit.



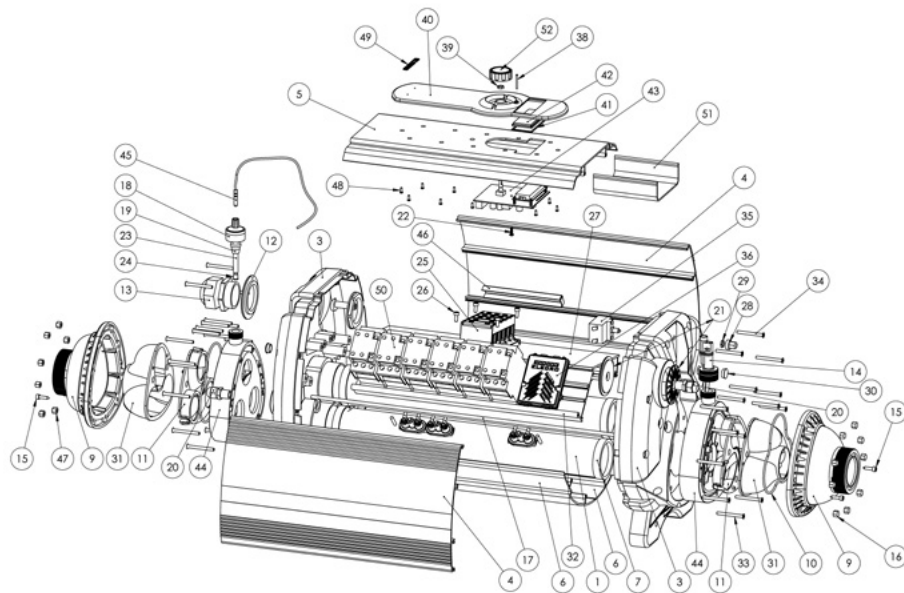
SPARE PARTS LIST

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
1	Titanium Flow Tube 380~440V 3-Phase:		
	18-kW, 24-kW, 30-kW & 36-kW (500mm)	1	X-TUB-TI500-2E-C
	45-kW, 54-kW, 60-kW & 72-kW (500mm)	1	X-TUB-TI500-3E-C
	96-kW (843mm)	1	X-TUB-I843-4E-C
	120-kW (843mm)	1	X-TUB-TI843-5E-C
	Titanium Flow Tube 220~240V 3-Phase:		
	18-kW, 24-kW, 30-kW & 36-kW (500mm)	1	X-TUB-TI500-2E-C
	45-kW & 54-kW (500mm)	1	X-TUB-TI500-3E-C
	60-kW & 72-kW (843mm)	1	X-TUB-TI843-4E-C
	90-kW (843mm)	1	X-TUB-TI843-5E-C
3	End Panel	2	Z-IM-SFS-EP
4	Silver Side Panel (Small)	2	Z-SMW-SFS-SPS
	Silver Side Panel (Large)	2	Z-SMW-SFS-SPL

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
5	Top Panel (Small)	1	Z-SMW-SFS-TPS-A
	Top Panel (Large)	1	Z-SMW-SFS-TPL-A
6	Bottom Panel (Small)	2	Z-SMW-SFS-BPS
	Bottom Panel (Large)	2	Z-SMW-SFS-BPL
7	HNBR Flow Tube Gasket	6	SP-HE-GSK
9	Manifold Cover	2	Z-IM-SFS-MF-CVR
10	Manifold 'O' Ring	2	Z-ORS-MANI
11	Manifold SFS Insert B	2	Z-IM-SFS-INS-B
12	SFS PG36 Face Plate	1	Z-IM-SFS-PG36-FP
13	PG36 Cable Entry Gland (Inc Back Nut)	1	Z-CON-PG36BK + Z-CON-PG36NUT
	PG48 Cable Entry Gland (Inc Back Nut)	1	Z-CON-PG48BK + Z-CON-PG48NUT
14	Flow Switch	1	SP-107-D
15	M4.8 x 19mm S/S Socket Cap Screw	4	Q-FIX-M4.8X19STS-SC
16	M6 Cap Nut	9	Z-FIX-M6CAP
17	M6 Tie Bar (Small)	9	Z-STU-604
	M6 Tie Bar (Large)	9	Z-STU-947
18	Thermostat Pocket Cap	1	Z-IM-HE-SPC
19	EPDM Ferrule	1	Z-IM-EL-FER
20	PG9 Cable Entry Gland (Inc Back Nut)	2	Q-CON-PG9BK
21	PG9 Face Plate	2	Z-IM-SFS-PG9-FP
22	Safety Thermal Cut Out	1	SP-MIS-HLS
23	8.5mm ØD Titanium Thermostat Pocket	1	Z-TUB-Ti8.5-90
24	EPDM Thermostat Pocket Seal	1	Z-IM-GSK-BUNG
25	Terminal Block	1	U-TB-230A
26	M5 x 10mm Terminal Block Fixing Set	4	Z-FIX-M5X10SC + Z-FIX-M5HEX + Z-FIX-M5LW
	Terminal Block Cross Rail (Small)	1	Z-SMW-C-CRS-TB
	Terminal Block Cross Rail (Large)	1	Z-SMW-C-CRL-TB
28	Thermal Cut Out Cover (Black)	1	Z-MIS-HLS-CVR
29	Thermal Cut Out Nut M8	1	Supplied with #22
30	PG9 Blanking Cover	2	Q-CON-PG9DBC
31	Manifold SFS Insert A	2	Z-IM-SFS-INS-A
32	DIN Cross Rail (Small)	1	Z-SMW-C-CRS
	DIN Cross Rail (Large)	1	Z-SMW-C-CRL
33	M5 x 50mm S/S CSK Socket Cap	16	Q-FIX-M5X50CS-SC
34	M5 x 50mm S/S CSK Pozi Drive	4	Q-FIX-M5X50CS-PD

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE	
35	Analogue Control Thermostat	1	SP-MIS-CS	
36	OMRON Delay Timer 3-Phase 380~440V: 18-kW, 24-kW, 30-kW & 36-kW 45-kW, 54-kW, 60-kW & 72-kW 96-kW 120-kW	2	Z-OM-TIM	
		3	Z-OM-TIM	
		4	Z-OM-TIM	
		5	Z-OM-TIM	
	OMRON Delay Timer 3-Phase 220~240V: 18-kW, 24-kW, 30-kW & 36-kW 45-kW & 54-kW 60-kW & 72-kW 90-kW	2	Z-OM-TIM	
		3	Z-OM-TIM	
		4	Z-OM-TIM	
		5	Z-OM-TIM	
38	Fuse Holder	1	Z-MIS-FH	
39	M4 x 6mm Screw	2	Q-FIX-M4-6CS	
40	Over temp. Indicator	1	Z-MIS-NEON-AMB	
41	No/Low Flow Indicator	1	Z-MIS-NEON-CLR	
42	Heater On Indicator	1	Z-MIS-NEON-RED	
43	Power Indicator	1	Z-MIS-NEON-CLR	
44	SFS Manifold	1	Z-IM-SFS-MF	
45	NTC Temperature Sensor	1	U-NTC-EP	
46	Capillary Bulb Holder	1	X-SMW-HLS-CBH	
47	M6 S/S Full Hex Nut	9	Q-FIX-M6HEX	
50	Contactors 380~440V 3-Phase: 18-kW to 36-kW - SIEMENS Contactor 2023 40Amp AC1 45-kW & 54-kW - SIEMENS Contactor 2023 40Amp AC1 60-kW & 72-kW - SIEMENS Contactor 2027 50Amp AC1 96-kW - SIEMENS Contactor 2027 50Amp AC1 120-kW - SIEMENS Contactor 2027 50Amp AC1	4	Z-SIE-2023-40A	
		6	Z-SIE-2023-40A	
		6	Z-SIE-2027-50A	
		8	Z-SIE-2027-50A	
		10	Z-SIE-2027-50A	
		Contactors 220~240V 3-Phase: 18-kW to 36-kW - SIEMENS Contactor 2027 50Amp AC1 45-kW & 54-kW - SIEMENS Contactor 2027 50Amp AC1 60-kW & 72-kW - SIEMENS Contactor 2027 50Amp AC1 90-kW - SIEMENS Contactor 2027 50Amp AC1	4	Z-SIE-2027-50A
			6	Z-SIE-2027-50A
			8	Z-SIE-2027-50A
			10	Z-SIE-2027-50A
52	Control Thermostat Dial	1	Z-IM-OC-ANA	

FOR REPLACEMENT HEAT ELEMENTS AND REPLACEMENT TANK ASSEMBLY, SEE PAGE 39.



SFS Joey ~ Digital (Component Diagram)

(For water connections, see illustration on page 36 or full description and pcs/unit on page 45)

SPARE PARTS LIST

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
1	Titanium Flow Tube 3-Phase 380~440V:		
	18-kW, 24-kW, 30-kW & 36-kW (500mm)	1	X-TUB-TI500-2E-C
	45-kW, 54-kW, 60-kW & 72-kW (500mm)	1	X-TUB-TI500-3E-C
	96-kW (843mm)	1	X-TUB-TI843-4E-C
	120-kW (843mm)	1	X-TUB-TI843-5E-C
1	Titanium Flow Tube 3-Phase 220~240V:		
	18-kW, 24-kW, 30-kW & 36-kW ((500mm)	1	X-TUB-TI500-2E-C
	45-kW & 54-kW (500mm)	1	X-TUB-TI500-3E-C
	60-kW & 72-kW (843mm)	1	X-TUB-TI843-4E-C
	90-kW (843mm)	1	X-TUB-TI843-5E-C
3	End Panel	2	Z-IM-SFS-EP
4	Silver Side Panel (Small)	2	Z-SMW-SFS-SPS
	Silver Side Panel (Large)	2	Z-SMW-SFS-SPL
5	Top Panel (Small)	1	Z-SMW-SFS-TPS
	Top Panel (Large)	1	Z-SMW-SFS-TPL
6	Bottom Panel (Small)	2	Z-SMW-SFS-BPS
	Bottom Panel (Large)	2	Z-SMW-SFS-BPL
7	HNBR Flow Tube Gasket	6	SP-HE-GSK
9	Manifold Cover	2	Z-IM-SFS-MF-CVR

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
10	Manifold 'O'Ring	2	Z-ORS-MANI
11	Manifold SFS Insert B	2	Z-IM-SFS-INS-B
12	SFS PG36 Face Plate	1	Z-IM-SFS-PG36-FP
13	PG36 Cable Entry Gland (Inc Back Nut)	1	Z-CON-PG36BK + Z-CON-PG36NUT
	PG48 Cable Entry Gland (Inc Back Nut)	1	Z-CON-PG48BK + Z-CON-PG48NUT
14	Flow Switch	1	SP-107-D
15	M4.8 x 19mm S/S Socket Cap Screw	4	Q-FIX-M4.8X19STS-SC
16	M6 Cap Nut	9	Z-FIX-M6CAP
17	M6 Tie Bar (Small)	9	Z-STU-604
	M6 Tie Bar (Large)	9	Z-STU-947
18	Thermostat Pocket Cap	1	Z-IM-HE-SPC
19	EPDM Ferrule	1	Z-IM-EL-FER
20	PG9 Cable Entry Gland (Inc Back Nut)	2	Q-CON-PG9BK
21	PG9 Face Plate	2	Z-IM-SFS-PG9-FP
22	M4 x 14-mm S/S Pozi Pan Screw	1	Z-FIX-M4X14
23	8.5mm ØD Titanium Thermostat Pocket	1	Z-TUB-TI8.5-90
24	EPDM Thermostat Pocket Seal	1	Z-IM-GSK-BUNG
25	Terminal Block	1	U-TB-230A
26	M5 x 10mm Terminal Block Fixing Set	4	Z-FIX-M5X10SC + Z-FIX-M5HEX + Z-FIX-M5LW
27	Terminal Block Cross Rail (Small)	1	Z-SMW-C-CRS-TB
	Terminal Block Cross Rail (Large)	1	Z-SMW-C-CRL-TB
28	Thermal Cut Out Cover (Black)	1	Z-MIS-HLS-CVR
29	Thermal Cut Out Nut M8	1	Supplied with #35
30	PG9 Blanking Cover	2	Q-CON-PG9DBC
31	Manifold SFS Insert A	2	Z-IM-SFS-INS-A
32	DIN Cross Rail (Small)	1	Z-SMW-C-CRS
	DIN Cross Rail (Large)	1	Z-SMW-C-CRL
33	M5 x 50mm S/S CSK Socket Cap	16	Q-FIX-M5X50CS-SC
34	M5 x 50mm S/S CSK Pozi Drive	4	Q-FIX-M5X50CS-PD
35	Safety Thermal Cut Out (Manual Reset)	1	SP-MIS-HLS
36	Delay Timer up to 72-kW	1	U-SFS-DT-3
	Delay Timer up to 96-kW & 120-kW	1	U-SFS-DT-5
38	Light Pole	1	Z-MIS-EVO2-LP
39	Encoder Nut	1	Supplied with #43
40	Top cover panel	1	Z-IM-SFS-TCP
41	SFS Window Gasket	1	Z-F-SFS-W
42	SFS Window	1	Z-IM-SFS-W
43	PCB Digital Thermostat	1	Z-PCB-BUD

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
44	SFS Manifold	1	Z-IM-SFS-MF
45	NTC Temperature Sensor	1	Z-MIS-NTC-1000
46	Capillary Bulb Holder	1	X-SMW-HLS-CBH
47	M6 S/S Full Hex Nut	9	Q-FIX-M6HEX
48	M3 x 12mm FLG Pozi Zinc Coated	12	Z-FIX-M3X12-FLG
49	Electro Diamond Cut Aluminium Badge	1	Z-MB-ELE
50	Contactors 380~440V 3-Phase:		
	18-kW to 36-kW - SIEMENS Contactor 2023 40Amp AC1	4	Z-SIE-2023-40A
	45-kW & 54-kW - SIEMENS Contactor 2023 40Amp AC1	6	Z-SIE-2023-40A
	60-kW & 72-kW - SIEMENS Contactor 2027 50Amp AC1	6	Z-SIE-2027-50A
	96-kW - SIEMENS Contactor 2027 50Amp AC1	8	Z-SIE-2027-50A
	120-kW - SIEMENS Contactor 2027 50Amp AC1	10	Z-SIE-2027-50A
	Contactors 3-Phase 220~240V:		
	18-kW to 36-kW - SIEMENS Contactor 2027 50Amp AC1	4	Z-SIE-2027-50A
	45-kW & 54-kW - SIEMENS Contactor 2027 50Amp AC1	6	Z-SIE-2027-50A
	60-kW & 72-kW - SIEMENS Contactor 2027 50Amp AC1	8	Z-SIE-2027-50A
	90-kW - SIEMENS Contactor 2027 50Amp AC1	10	Z-SIE-2027-50A
51	PCB Cover	1	Z-SMW-SFS-PCB
52	Encoder Dial	1	Z-IM-OC-ANA

REPLACEMENT HEAT ELEMENTS

MODEL	OUTPUT	DESCRIPTION	PCS/UNIT	PART CODE
380~440V 3-Phase* (Analogue & Digital)	18-kW	Titanium 2.8-kW Kit	6	SP-EL-Ti2.8KW7T
	24-kW	Titanium 4-kW Kit	6	SP-EL-Ti4KW7T
	30-kW	Titanium 5-kW Kit	6	SP-EL-Ti5KW7T
	36-kW	Titanium 6-kW Kit	6	SP-EL-Ti6KW7T
	45-kW	Titanium 5-kW Kit	9	SP-EL-Ti5KW7T
	54-kW	Titanium 6-kW Kit	9	SP-EL-Ti6KW7T
	60-kW	Titanium 6.7-kW Kit	9	SP-EL-Ti6.7KW7T
	72-kW	Titanium 8-kW Kit	9	SP-EL-Ti8KW7T
	96-kW	Titanium 8-kW Kit	12	SP-EL-Ti8KW7T
	120-kW	Titanium 8-kW Kit	15	SP-EL-Ti8KW7T
220~240V 3-Phase* (Analogue & Digital)	18-kW	Titanium 2.8-kW Kit	6	SP-EL-Ti2.8KW7T
	24-kW	Titanium 4-kW Kit	6	SP-EL-Ti4KW7T
	30-kW	Titanium 5-kW Kit	6	SP-EL-Ti5KW7T
	36-kW	Titanium 6-kW Kit	6	SP-EL-Ti6KW7T
	45-kW	Titanium 5-kW Kit	9	SP-EL-Ti5KW7T
	54-kW	Titanium 6-kW Kit	9	SP-EL-Ti6KW7T
	60-kW	Titanium 5-kW Kit	12	SP-EL-Ti5KW7T
	72-kW	Titanium 6-kW Kit	12	SP-EL-Ti6KW7T
	90-kW	Titanium 6-kW Kit	15	SP-EL-Ti6KW7T

*For all 3-Phase titanium heating elements, please specify the required voltage.

REPLACEMENT TANK ASSEMBLY

MODEL	OUTPUT	DESCRIPTION	PART CODE
380~440V 3-Phase (Analogue & Digital)	18-kW	6-kW 500mm Tank 400V	SP-TA-CP-500-6
	18-kW	6-kW 500mm Tank 380V	SP-TA-CP-500-6-380
	18-kW	6-kW 500mm Tank 415V	SP-TA-CP-500-6-415
	24-kW	8-kW 500mm Tank 400V	SP-TA-CP-500-8
	24-kW	8-kW 500mm Tank 380V	SP-TA-CP-500-8-380
	24-kW	8-kW 500mm Tank 415V	SP-TA-CP-500-8-415
	30-kW	10-kW 500mm Tank 400V	SP-TA-CP-500-10
	30-kW	10-kW 500mm Tank 380V	SP-TA-CP-500-10-380
	30-kW	10-kW 500mm Tank 415V	SP-TA-CP-500-10-415
	36-kW	12-kW 500mm Tank 400V	SP-TA-CP-500-12
	36-kW	12-kW 500mm Tank 380V	SP-TA-CP-500-12-380
	36-kW	12-kW 500mm Tank 415V	SP-TA-CP-500-12-415
	45-kW	15-kW 500mm Tank 400V	SP-TA-CP-500-15
	45-kW	15-kW 500mm Tank 380V	SP-TA-CP-500-15-380
	45-kW	15-kW 500mm Tank 415V	SP-TA-CP-500-15-415
	54-kW	18-kW 500mm Tank 400V	SP-TA-CP-500-18
	54-kW	18-kW 500mm Tank 380V	SP-TA-CP-500-18-380
	54-kW	18-kW 500mm Tank 415V	SP-TA-CP-500-18-415
	60-kW	20-kW 500mm Tank 400V	SP-TA-CP-500-20
	60-kW	20-kW 500mm Tank 380V	SP-TA-CP-500-20-380
	60-kW	20-kW 500mm Tank 415V	SP-TA-CP-500-20-415
	72-kW	24-kW 500mm Tank 400V	SP-TA-CP-500-24
	72-kW	24-kW 500mm Tank 380V	SP-TA-CP-500-24-380
	72-kW	24-kW 500mm Tank 415V	SP-TA-CP-500-24-415
	96-kW	32-kW 843mm Tank 400V	SP-TA-CP-843-32
	96-kW	32-kW 843mm Tank 380V	SP-TA-CP-843-32-380
	96-kW	32-kW 843mm Tank 415V	SP-TA-CP-843-32-415
	120-kW	40-kW 843mm Tank 400V	SP-TA-CP-843-40
	120-kW	40-kW 843mm Tank 380V	SP-TA-CP-843-40-380
	120-kW	40-kW 843mm Tank 415V	SP-TA-CP-843-40-415
220~240V 3-Phase (Analogue & Digital)	18-kW	6-kW 500mm Tank	SP-TA-CP-500-6
	24-kW	8-kW 500mm Tank	SP-TA-CP-500-8
	30-kW	10-kW 500mm Tank	SP-TA-CP-500-10
	36-kW	12-kW 500mm Tank	SP-TA-CP-500-12
	45-kW	15-kW 500mm Tank	SP-TA-CP-500-15
	54-kW	18-kW 500mm Tank	SP-TA-CP-500-18
	60-kW	20-kW 843mm Tank	SP-TA-CP-843-20
	72-kW	24-kW 843mm Tank	SP-TA-CP-843-24
	90-kW	32-kW 843mm Tank	SP-TA-CP-843-32

ALL TITANIUM

TITAN OPTIMA

Reliable, accurate and highly efficient, the Titan Optima, fully titanium heater, is a top-of-the-range heater with digital touchscreen display. A robust and durable design makes this the perfect choice for a long-term heater for all commercial pools.

FEATURES

- 19 models available, ranging from 18-kW to 120-kW
- Easy installation, fully equipped and pre-wired
- Robust, durable construction and compact design
- Ultra-reliable flow switch for safe operation
- Fitted with temperature thermostat and overheating sensor
- Touchscreen control with soft-start for power supply protection
- Titanium flow tube and titanium heating element(s)
- Vortex, long life, stay clean heating element technology
- 100% efficiency throughout the product life
- Sea and salt chlorinated water compatible
- Can be floor or vertically wall mounted
- Silent operation

SUITABLE FOR:



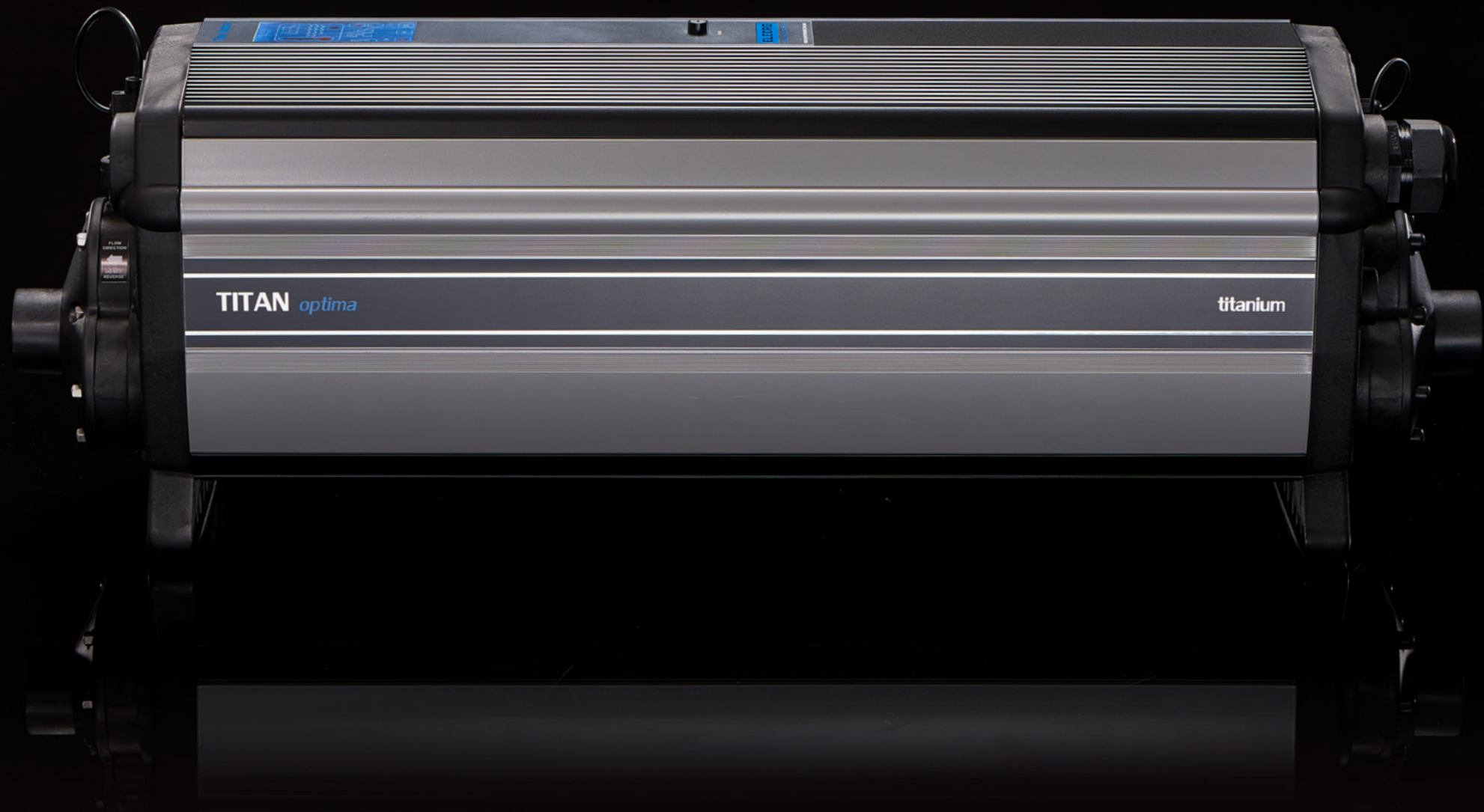
Commercial Pools



SIMPLIFY YOUR LIFE WITH THE ELECTRO APP

Connection via Bluetooth, Wi-Fi and 4G enables you to take full control of your swimming pool heating from anywhere in your home or office with a simple app on your smartphone.





TITAN *optima*

titanium

SPECIFICATIONS

Power supply:	3-Phase
Min. flow rate:	12m ³ /h
Max. flow rate:	45m ³ /h. (Recommended: 30m ³ /h)
Heating element:	Grade 1 titanium
Flow tube:	Grade 1 titanium
Control thermostat:	Touch Screen 0 > 45°C (0.5°C differential)
Safety thermal cut out:	65°C (auto reset) against enclosure over-temperature 60°C (manual reset)
Flow switch:	Gold tipped reed switch with titanium fulcrum pin
Contactors:	Cascade wired dual Siemens 3RT2023 or 3RT2027 for each element bank
Seals:	High temperature special formula EPDM ferrules. TPE end fitting gaskets
Water connections:	63mm spigot with 2" / 63mm stepped ABS unions
Ingress protection rating:	IP44
Frequency:	50/60 Hz
Working pressure:	4 bar maximum
Mounting:	Floor or wall mounting

MODELS

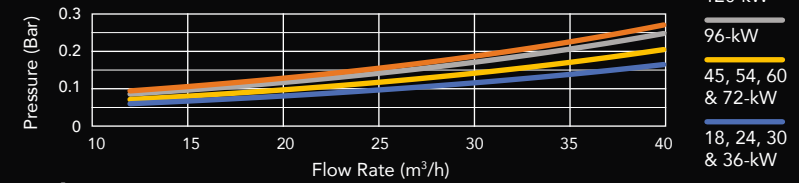
MODEL	POWER OUTPUT	LOAD (amp)	LENGTH (mm)	NET WEIGHT (kg)	GROSS WEIGHT (kg)	VOLUME (m ³)	PRODUCT CODE
400V 3-Phase*	18-kW	26	699	19.9000	23.5000	0.1880	CP-TS-18
	24-kW	34	699	19.9000	23.5000	0.1880	CP-TS-24
	30-kW	44	699	19.9000	23.5000	0.1880	CP-TS-30
	36-kW	53	699	19.9000	23.5000	0.1880	CP-TS-36
	45-kW	66	699	22.3000	25.9000	0.1880	CP-TS-45
	54-kW	79	699	22.3000	25.9000	0.1880	CP-TS-54
	60-kW	87	699	22.9000	26.5000	0.1880	CP-TS-60
	72-kW	105	699	22.9000	26.5000	0.1880	CP-TS-72
	96-kW	139	1042	31.2000	35.5000	0.2685	CP-TS-96
220~240V 3-Phase**	18-kW	46	699	19.9000	23.5000	0.1880	CP-TS-18-D
	24-kW	61	699	19.9000	23.5000	0.1880	CP-TS-24-D
	30-kW	76	699	19.9000	23.5000	0.1880	CP-TS-30-D
	36-kW	91	699	19.9000	23.5000	0.1880	CP-TS-36-D
	45-kW	114	699	22.3000	25.9000	0.1880	CP-TS-45-D
	54-kW	136	699	22.9000	26.5000	0.1880	CP-TS-54-D
	60-kW	151	1042	22.9000	26.5000	0.1880	CP-TS-60-D
	72-kW	181	1042	22.9000	26.5000	0.1880	CP-TS-72-D
	90-kW	227	1042	33.2000	37.5000	0.2685	CP-TS-90-D

* For voltages other than 400V, please add -380, -415 or -480 at the end of a product code e.g: CP-TS-18-380

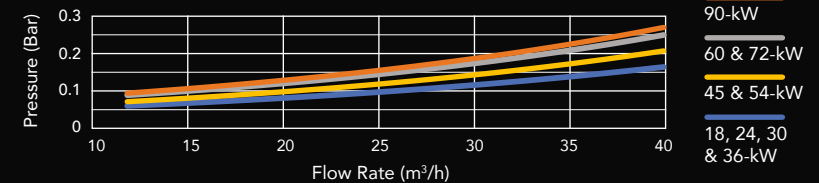
** For voltage 208V please add: -208 at the end of a product code e.g: CP-TS-18-D-208

PRESSURE DROP

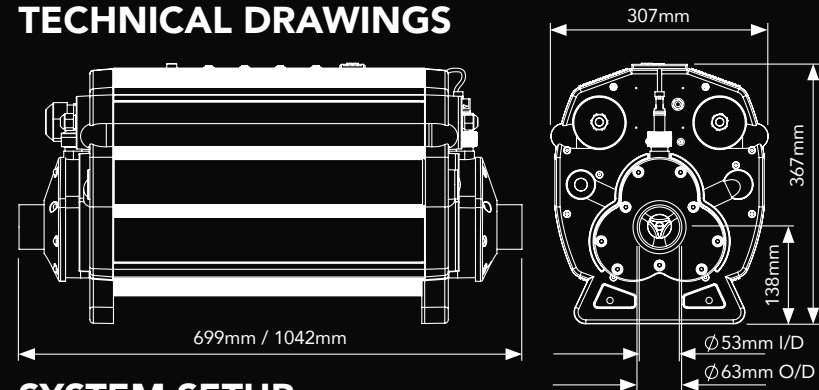
3-Phase 380-415V



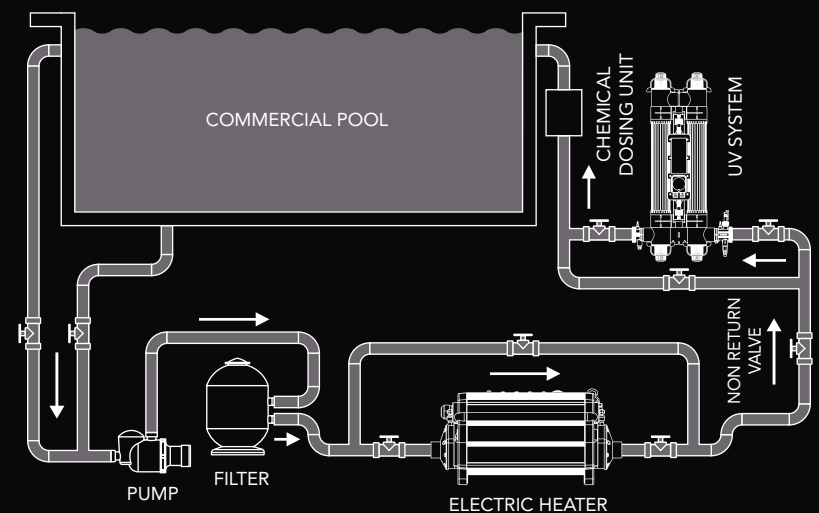
3-Phase 220-240V

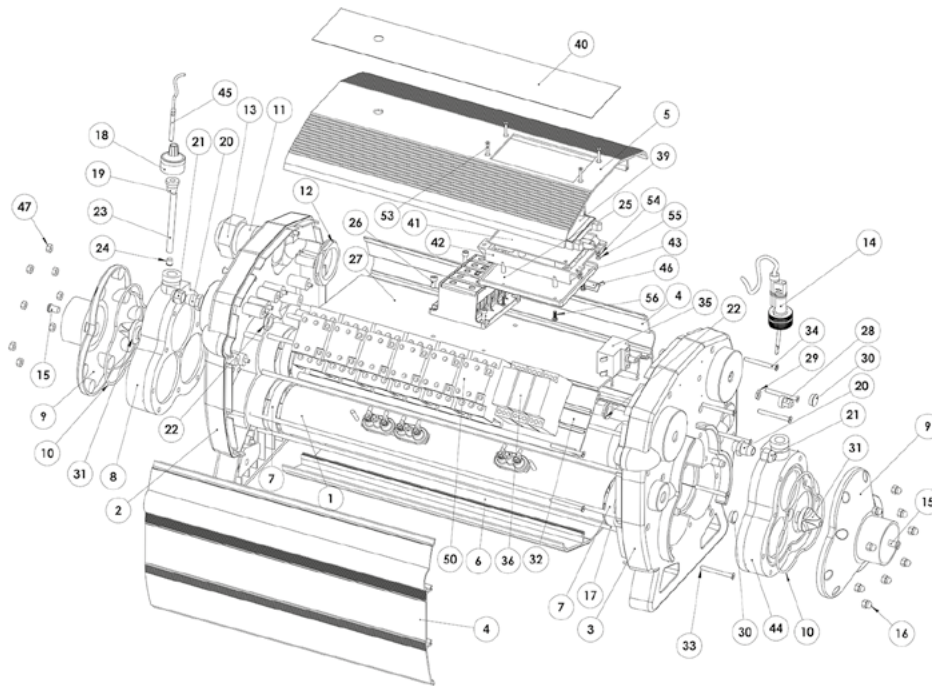


TECHNICAL DRAWINGS

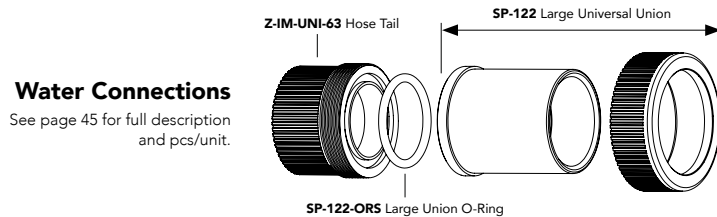


SYSTEM SETUP





Titan Optima (Component Diagram)

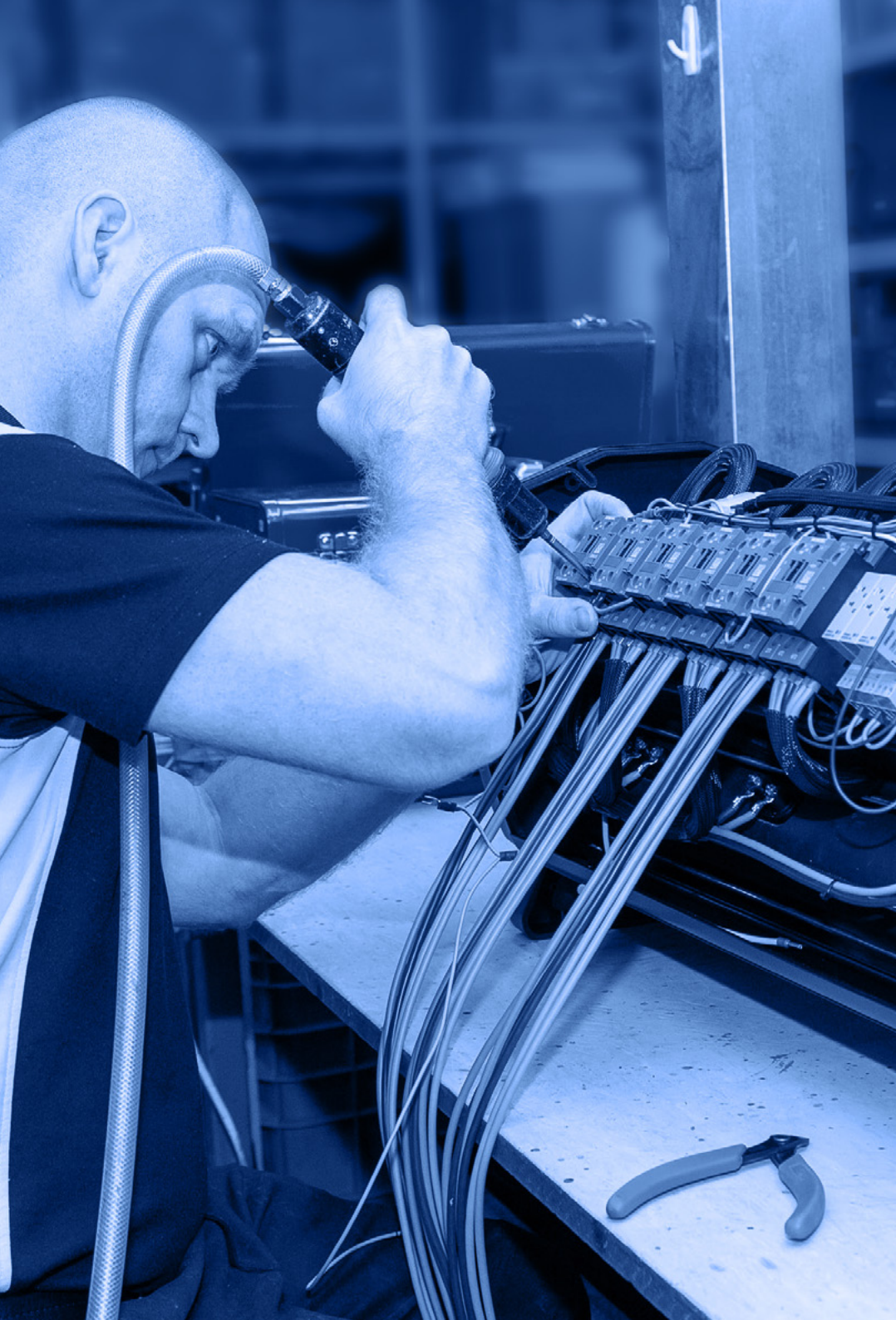


Water Connections
See page 45 for full description and pcs/unit.

SPARE PARTS LIST

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
1	Titanium Flow Tube 3-Phase 380V~440V:		
	18-kW, 24-kW, 30-kW & 36-kW (500mm)	1	X-TUB-TI500-2E-C
	45-kW, 54-kW, 60-kW & 72-kW (500mm)	1	X-TUB-TI500-3E-C
	96-kW (843mm)	1	X-TUB-TI843-4E-C
	120-kW (843mm)	1	X-TUB-TI843-5E-C
Titanium Flow Tube 3-Phase 220V~240V:			
	18-kW, 24-kW, 30-kW & 36-kW (500mm)	1	X-TUB-TI500-2E-C
	45-kW & 54-kW (500mm)	1	X-TUB-TI500-3E-C

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
	60-kW & 72-kW (843mm)	1	X-TUB-TI843-4E-C
	90-kW (843mm)	1	X-TUB-TI843-5E-C
2	Left Hand End Panel PG36 18-kW to 54-kW 400V	1	X-IM-C-EP-L
	Left Hand End Panel PG36 24-kW & 36-kW DELTA	1	X-IM-C-EP-L
	Left Hand End Panel PG48 60-kW to 120-kW 400V	1	X-IM-C-EP-L48
	Left Hand End Panel PG48 36-kW to 90-kW DELTA	1	X-IM-C-EP-L48
3	Right Hand End Panel	1	Z-IM-C-EP-R
4	Silver Side Panel (Small)	2	Z-SMW-C-SPS
	Silver Side Panel (Large)	2	Z-SMW-C-SPL
5	Top Panel (Small)	1	Z-SMW-C-TPS
	Top Panel (Large)	1	Z-SMW-C-TPL
6	Bottom Panel (Small)	1	Z-SMW-C-BPS
	Bottom Panel (Large)	1	Z-SMW-C-BPL
7	HNBR Flow Tube Gasket	6	SP-HE-GSK
8	Inlet (Left) Manifold	1	Z-IM-MF-CL
9	Manifold Cover	1	Z-IM-MF-CVR
10	Manifold 'O' Ring	1	Z-ORS-MANI
11	PG36 Cable Entry Gland (Inc Back Nut)	1	Z-CON-PG36BK + Z-CON-PG36NUT
13	PG48 Cable Entry Gland (Inc Back Nut)	1	Z-CON-PG48BK + Z-CON-PG48NUT
14	Flow Switch	1	SP-107-D
15	M8 x 12mm S/S Slot Pan Screw	2	Z-FIX-M8X12
16	M6 Cap Nut	9	Z-FIX-M6CAP
17	M6 Tie Bar (Small)	9	Z-STU-604
	M6 Tie Bar (Medium)	9	Z-STU-782
	M6 Tie Bar (Large)	9	Z-STU-947
18	Thermostat Pocket Cap	1	Z-IM-HE-SPC
19	EPDM Ferrule	1	Z-IM-EL-FER
20	PG9 Cable Entry Gland (Inc Back Nut)	2	Z-CON-PG9BK
21	PG9 Cable Entry Gland (Inc Back Nut)	2	Z-CON-PG9BK
22	PG9 Cable Entry Gland (Inc Back Nut)	2	Z-CON-PG9BK
23	8.5mm ØD Titanium Thermostat Pocket	1	Z-TUB-Ti8.5-90
24	EPDM Thermostat Pocket Seal	1	Z-IM-GSK-BUNG
25	Terminal Block	1	U-TB-230A
26	M5 x 10mm Mounting Screw Set		Z-FIX-M5X10SC + Z-FIX-M5HEX + Z-FIX-M5LW
		4	



ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
27	Terminal Block Cross Rail (Small)	1	Z-SMW-CRS-TB
	Terminal Block Cross Rail (Medium)	1	Z-SMW-CRM-TB
	Terminal Block Cross Rail (Large)	1	Z-SMW-CRL-TB
28	Thermal Cut Out Cover (Black)	1	Z-CON-PG9DBC
29	Thermal Cut Out Nut M8	1	Supplied with #35
30	PG9 Blanking Cover	1	Z-CON-PG9DB
31	Manifold Diffuser	2	Z-IM-MF-DIF
32	DIN Cross Rail (Small)	1	Z-SMW-C-CRS
	DIN Cross Rail (Large)	1	Z-SMW-C-CRL
33	M5 x 50mm S/S CSK Socket Cap	12	Z-FIX-M5X50CS-SC
34	M5 x 50mm S/S CSK Pozi Drive	4	Z-FIX-M5X50CS-PD
35	Safety Thermal Cut Out (Manual Reset)	1	SP-MIS-HLS
36	OMRON Delay Timer 380V~440V 3-Phase:		
	18-kW, 24-kW, 30-kW & 36-kW	2	Z-OM-TIM
	45-kW, 54-kW, 60-kW & 72-kW	3	Z-OM-TIM
	96-kW	4	Z-OM-TIM
	120-kW	5	Z-OM-TIM
OMRON Delay Timer 220V~240V 3-Phase:			
	18-kW, 24-kW, 30-kW & 36-kW	2	Z-OM-TIM
	45-kW & 54-kW	3	Z-OM-TIM
	60-kW & 72-kW	4	Z-OM-TIM
	90-kW	5	Z-OM-TIM
38	Fuse Holder	1	Z-MIS-FH
39	Touch Screen	1	Z-MIS-BMS-TS
40	Touch Screen Overlay	1	Z-LAB-C-TS
41	PCB Digital Thermostat Board	1	Z-PCB-BMS
42	Digital Controller Mounting Bracket	1	Z-IM-OC-DIG-MB
43	PCB Board Cover	1	Z-SMW-SFS-PCB
44	Outlet (Right) Manifold	1	Z-IM-MF-CR
45	NTC Temperature Sensor	1	Z-MIS-NTC-1000
46	Capillary Bulb Holder	1	X-SMW-HLS-CBH
47	M6 S/S Full Hex Nut	9	Z-FIX-M6HEX
50	Contactor 380V~440V 3-Phase:		
	18-kW to 36-kW - SIEMENS Contactor 2023 40Amp AC1	4	Z-SIE-2023-40A
	45-kW & 54-kW - SIEMENS Contactor 2023 40Amp AC1	6	Z-SIE-2023-40A
	60-kW & 72-kW - SIEMENS Contactor 2027 50Amp AC1	6	Z-SIE-2027-50A
	96-kW - SIEMENS Contactor 2027 50Amp AC1	8	Z-SIE-2027-50A
	120-kW - SIEMENS Contactor 2027 50Amp AC1	10	Z-SIE-2027-50A

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
	Contactors 220V~240V 3-Phase:		
	18-kW to 36-kW - SIEMENS Contactor 2027 50Amp AC1	4	Z-SIE-2027-50A
	45-kW & 54-kW - SIEMENS Contactor 2027 50Amp AC1	6	Z-SIE-2027-50A
	60-kW & 72-kW - SIEMENS Contactor 2027 50Amp AC1	8	Z-SIE-2027-50A
	90-kW - SIEMENS Contactor 2027 50Amp AC1	10	Z-SIE-2027-50A
53-55	M3 x 22mm Mounting Screw Set	4	Z-FIX-M3x22CS-PD + Z-FIX-M3HEX + Z-FIX-M3FW

WATER CONNECTION PARTS

DESCRIPTION	PCS/UNIT	PART CODE
63mm / 2" ABS UV/SST Large Union	2	SP-122
56mm x 5.3mm Large Union 'O' Ring EPDM Shore 70 (Pack of 2pcs)	2	SP-122-ORS
63mm Manifold Socket for Big Union (For Titan Optima model only)	2	Z-IM-UNI-63

REPLACEMENT HEAT ELEMENTS

MODEL	OUTPUT	DESCRIPTION	PCS/UNIT	PART CODE
380~440V 3-Phase*	18-kW	Titanium 2.8-kW Kit	6	SP-EL-Ti2.8KW7T
	24-kW	Titanium 4-kW Kit	6	SP-EL-Ti4KW7T
	30-kW	Titanium 5-kW Kit	6	SP-EL-Ti5KW7T
	36-kW	Titanium 6-kW Kit	6	SP-EL-Ti6KW7T
	45-kW	Titanium 5-kW Kit	9	SP-EL-Ti5KW7T
	54-kW	Titanium 6-kW Kit	9	SP-EL-Ti6KW7T
	60-kW	Titanium 6.7-kW Kit	9	SP-EL-Ti6.7KW7T
	72-kW	Titanium 8-kW Kit	9	SP-EL-Ti8KW7T
	96-kW	Titanium 8-kW Kit	12	SP-EL-Ti8KW7T
	120-kW	Titanium 8-kW Kit	15	SP-EL-Ti8KW7T
220~240V 3-Phase*	18-kW	Titanium 2.8-kW Kit	6	SP-EL-Ti2.8KW7T
	24-kW	Titanium 4-kW Kit	6	SP-EL-Ti4KW7T
	30-kW	Titanium 5-kW Kit	6	SP-EL-Ti5KW7T
	36-kW	Titanium 6-kW Kit	6	SP-EL-Ti6KW7T
	45-kW	Titanium 5-kW Kit	9	SP-EL-Ti5KW7T
	54-kW	Titanium 6-kW Kit	9	SP-EL-Ti6KW7T
	60-kW	Titanium 5-kW Kit	12	SP-EL-Ti5KW7T
	72-kW	Titanium 6-kW Kit	12	SP-EL-Ti6KW7T
	90-kW	Titanium 6-kW Kit	15	SP-EL-Ti6KW7T

*For all 3-Phase titanium heating elements, please specify the required voltage.

REPLACEMENT TANK ASSEMBLY

MODEL	OUTPUT	DESCRIPTION	PART CODE
380~440V 3-Phase	18-kW	6-kW 500mm Tank 400V	SP-TA-CP-500-6
	18-kW	6-kW 500mm Tank 380V	SP-TA-CP-500-6-380
	18-kW	6-kW 500mm Tank 415V	SP-TA-CP-500-6-415
	24-kW	8-kW 500mm Tank 400V	SP-TA-CP-500-8
	24-kW	8-kW 500mm Tank 380V	SP-TA-CP-500-8-380
	24-kW	8-kW 500mm Tank 415V	SP-TA-CP-500-8-415
	30-kW	10-kW 500mm Tank 400V	SP-TA-CP-500-10
	30-kW	10-kW 500mm Tank 380V	SP-TA-CP-500-10-380
	30-kW	10-kW 500mm Tank 415V	SP-TA-CP-500-10-415
	36-kW	12-kW 500mm Tank 400V	SP-TA-CP-500-12
	36-kW	12-kW 500mm Tank 380V	SP-TA-CP-500-12-380
	36-kW	12-kW 500mm Tank 415V	SP-TA-CP-500-12-415
	45-kW	15-kW 500mm Tank 400V	SP-TA-CP-500-15
	45-kW	15-kW 500mm Tank 380V	SP-TA-CP-500-15-380
	45-kW	15-kW 500mm Tank 415V	SP-TA-CP-500-15-415
	54-kW	18-kW 500mm Tank 400V	SP-TA-CP-500-18
	54-kW	18-kW 500mm Tank 380V	SP-TA-CP-500-18-380
	54-kW	18-kW 500mm Tank 415V	SP-TA-CP-500-18-415
	60-kW	20-kW 500mm Tank 400V	SP-TA-CP-500-20
	60-kW	20-kW 500mm Tank 380V	SP-TA-CP-500-20-380
	60-kW	20-kW 500mm Tank 415V	SP-TA-CP-500-20-415
	72-kW	24-kW 500mm Tank 400V	SP-TA-CP-500-24
	72-kW	24-kW 500mm Tank 380V	SP-TA-CP-500-24-380
	72-kW	24-kW 500mm Tank 415V	SP-TA-CP-500-24-415
	96-kW	32-kW 843mm Tank 400V	SP-TA-CP-843-32
	96-kW	32-kW 843mm Tank 380V	SP-TA-CP-843-32-380
	96-kW	32-kW 843mm Tank 415V	SP-TA-CP-843-32-415
	120-kW	40-kW 843mm Tank 400V	SP-TA-CP-843-40
	120-kW	40-kW 843mm Tank 380V	SP-TA-CP-843-40-380
	120-kW	40-kW 843mm Tank 415V	SP-TA-CP-843-40-415
220~240V 3-Phase	18-kW	6-kW 500mm Tank	SP-TA-CP-500-6
	24-kW	8-kW 500mm Tank	SP-TA-CP-500-8
	30-kW	10-kW 500mm Tank	SP-TA-CP-500-10
	36-kW	12-kW 500mm Tank	SP-TA-CP-500-12
	45-kW	15-kW 500mm Tank	SP-TA-CP-500-15
	54-kW	18-kW 500mm Tank	SP-TA-CP-500-18
	60-kW	20-kW 843mm Tank	SP-TA-CP-843-20
	72-kW	24-kW 843mm Tank	SP-TA-CP-843-24
	90-kW	32-kW 843mm Tank	SP-TA-CP-843-32

CONTROLLER

POOLSMART PLUS

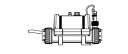
A highly convenient, remotely accessible, touchscreen heat controller for residential and commercial pools. Includes a flow switch and temperature sensor for accurate monitoring and a management system that gives complete control over the swimming pool heating.

FEATURES

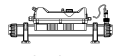
- Smart touchscreen display
- BMS (Building Management System) Integration Ready
- Multi-lingual interface
- Programmable 24-hour time clock (4 time zones)
- Flow and temperature sensor ports
- Accurate control to 0.5°C
- Diagnostic display



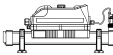
COMPATIBLE WITH:



All Nano Models



Flowline 2



Evolution 2



Optima Compact



SFS Joey



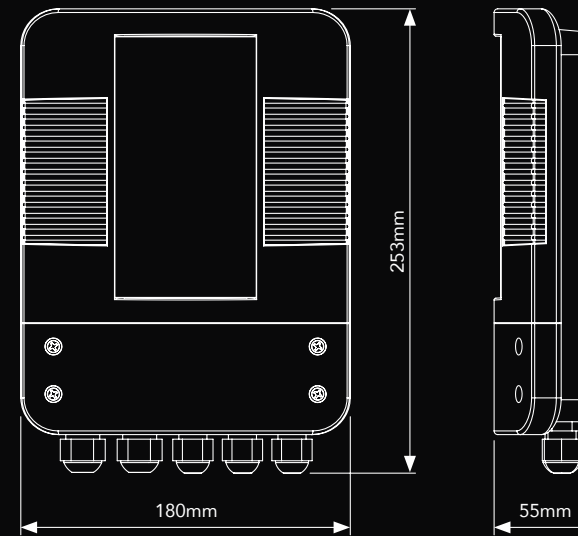
Titan Optima

SIMPLIFY YOUR LIFE WITH THE ELECR0 APP

Connection via Bluetooth, Wi-Fi and 4G enables you to take full control of your swimming pool heating from anywhere in your home or office with a simple app on your smartphone.



TECHNICAL DRAWINGS



ACCESSORIES (Included)



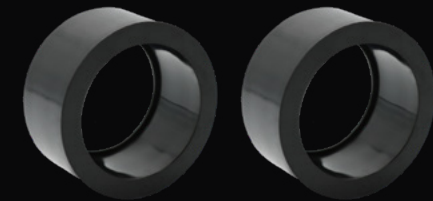
3 metre Flow Switch



3 metre Temperature Sensor



T-Piece



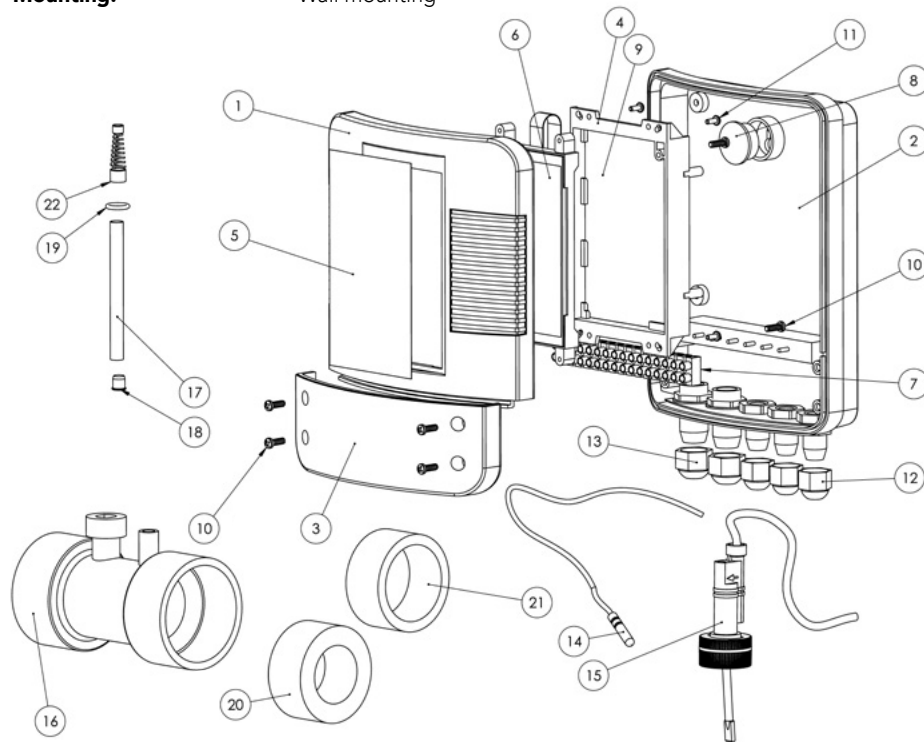
50mm & 1.5" Reducers

MODEL

MODEL	DESCRIPTION	POWER OUTPUT	ACCESSORIES (INCLUDED)	NET WEIGHT (kg)	GROSS WEIGHT (kg)	VOLUME (m ³)	PRODUCT CODE
Controller	Pool heating controller	Volt free heating output and volt free filtration pump output	3m long flow switch, 3m long temperature sensor, T-piece and 50mm & 1.5" Reducers	0.8200	1.4500	0.0206	PSPC-POOL

SPECIFICATIONS

Power supply:	100~240V Single phase
Available Models:	Heating only
Control thermostat:	Digital: 0 > 45°C (0.5°C differential)
Temperature Sensor:	3 metre long (thermistor 103AT-2, R25=10K B=3435K)
Flow switch:	3 metre long with gold tipped reed switch with titanium fulcrum pin
Ingress protection rating:	IP44
Frequency:	50/60 Hz
Mounting:	Wall mounting



Poolsmart Plus (Component Diagram)

SPARE PARTS LIST

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
1	Poolsmart Plus T/S Front Cover (Blue)	1	Z-IM-SR-C-FC-PS
2	Controller Enclosure	1	Z-IM-SR-C-ENC
3	Poolsmart Plus Access Cover (Blue)	1	Z-IM-SR-C-AC-PS
4	Digital Controller Mounting Bracket	1	Z-IM-OC-DIG-MB
5	Poolsmart Plus Touchscreen Controller Overlay	1	Z-LAB-PS-PLUS
6	Touchscreen for BMS Digital Thermostat	1	Z-MIS-BMS-TS
7	12-Way 1.5mm ² Ensto Terminal Block	1	Z-MIS-TB1.5MM2
8	Controller Enclosure Blanking Disc	1	Z-IM-SR-C-BD
9	PCB for BMS Digital Thermostat	1	Z-PCB-BMS
10	M4 x 25mm Zinc Coated Pozi Pan Screw	8	Z-FIX-M4X25
11	M3 x 12mm FLG Pozi Zinc Coated	4	Z-FIX-M3X12-FLG
12	Black PG9 Cable Entry Gland (Inc Back Nut)	3	Z-CON-PG9BK
13	Black PG11 Cable Entry Gland (Inc Back Nut)	2	Z-CON-PG11BK + Z-CON-PG11NUT
14	3m NTC Temperature Sensor	1	Z-MIS-NTC-3000
15	Flow Switch	1	U-FS-PS
16	ABS Pool/Pond Smart T-Piece	1	Z-IM-TP & U-IM-TP
17	7mm Ø/6.2mm ID Titanium Tube	1	Z-TUB-TI7-60 + U-IM-TP
18	EPDM Stat Pocket Bung 7mm Ø	1	Z-IM-GSK-BUNG-7MM + U-IM-TP
19	7mm ID x 2mm T-Piece 'O' Ring	1	Z-ORS-TP + U-IM-TP
20	1.5" ABS T-Piece Insert Reducer	1	Z-IM-TP-1.5
21	50mm ABS T-Piece Insert Reducer	1	Z-IM-TP-50MM
22	M12 Spiral Locknut	1	Z-FIX-M12SLN

ALL TITANIUM

CYGNET AQUATIC NANO

Designed for ponds and aquariums, this simple to use 'plug & play'* aquatic heater is safe, reliable and highly efficient. For peace of mind, a thermostat dial gives full control over the desired water temperature, whilst a thermal cut-out protects against over-heating.

FEATURES

- 7 models available, ranging from 1-kW to 4-kW
- Easy installation, fully equipped and pre-wired
- Robust, durable construction and compact design
- Ultra-reliable flow switch for safe operation
- Fitted with temperature thermostat and overheating sensor
- Analogue control with 1.2°C differential
- Titanium flow tube and titanium heating element
- Vortex, long life, stay clean heating element technology
- 100% efficiency throughout the product life
- Fresh and salt water compatible
- Can be floor or vertically wall mounted
- Silent operation

SUITABLE FOR:



Aquatics

'Plug & Play'^{*}

*1-kW to 3-kW models only



US Plug



UK Plug



Euro Plug





CODE
SERIAL No. _____
kW _____
VOLT _____ 50/60Hz PHASE _____
AMP _____
ELECR0 ENGINEERING LTD
www.elecr0.co.uk
Made in Hertfordshire, England

SPECIFICATIONS

Power supply:	Single phase
Min. flow rate:	1m ³ /h
Max. flow rate:	17m ³ /h
Heating element:	Grade 1 titanium
Flow tube:	Grade 1 titanium
Control thermostat:	Analogue: 0 > 45°C (1.2°C differential)
Safety thermal cut out:	60°C (manual reset)
Flow switch:	Gold tipped reed switch with titanium fulcrum pin
Relay:	Surface mount DPDT finder 66.82.8.230.0000
Seals:	High temperature special formula EPDM ferrules. TPE end fitting gaskets
Water connections:	1½" BSP female thread supplied with 1½"/50mm stepped ABS unions for rigid pipe and 1½"/1¼" stepped hose tails for flexible pipe
Ingress protection rating:	IP44
Frequency:	50/60 Hz
Working pressure:	4 bar maximum
Mounting:	Floor or wall mounting



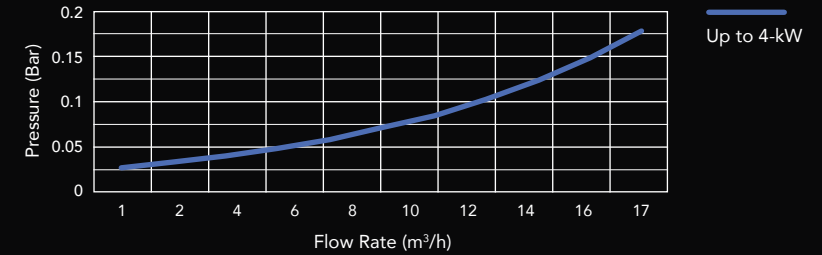
MODELS

MODEL	POWER OUTPUT	LOAD (amp)	NET WEIGHT (kg)	GROSS WEIGHT (kg)	VOLUME (m ³)	PRODUCT CODE		
						UK PLUG	EURO PLUG	USA PLUG
220~240V 1-Phase	1-kW	4.5	2.8300	3.5400	0.0195	KC-1-UK-T	KC-1-EU-T	-
	2-kW	8.5	2.8300	3.5400	0.0195	KC-2-UK-T	KC-2-EU-T	-
	3-kW	12	2.8300	3.5400	0.0195	KC-3-UK-T	KC-3-EU-T	-
	4-kW	18	2.8300	3.5400	0.0195	KC-4-T*	KC-4-T*	-
120V 1-Phase	1-kW	8.5	2.8300	3.5400	0.0195	-	-	KC-1-USA-T
	1.5-kW	12.5	2.8300	3.5400	0.0195	-	-	KC-1.5-USA-T
	2-kW	17	2.8300	3.5400	0.0195	-	-	KC-2-USA-T

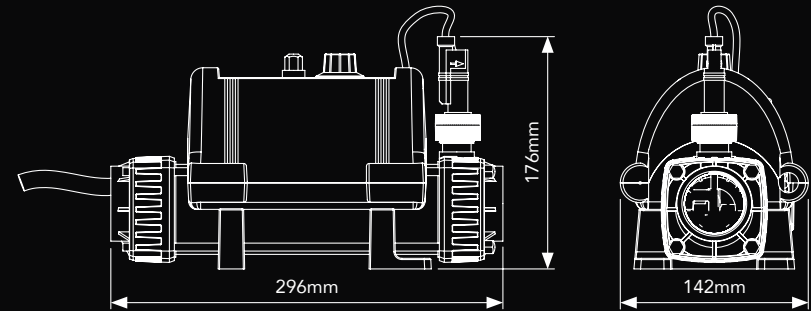
* Does not include a plug and must be installed by a qualified electrician.

Electric Heaters / Cygnet Aquatic Nano

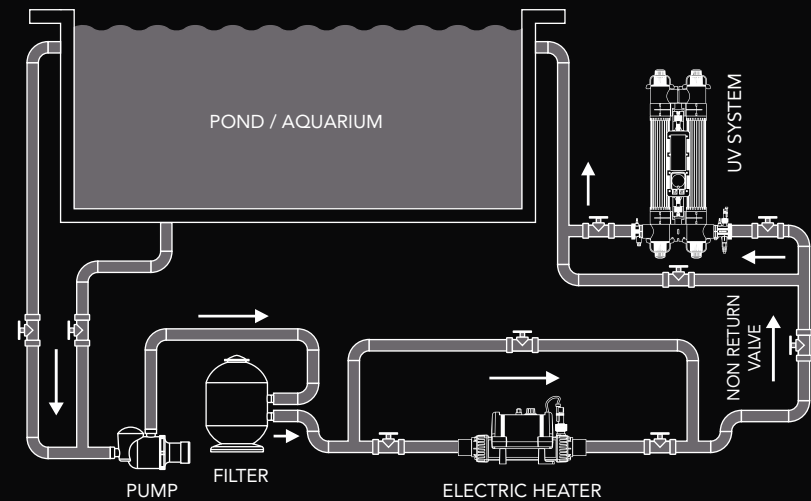
PRESSURE DROP

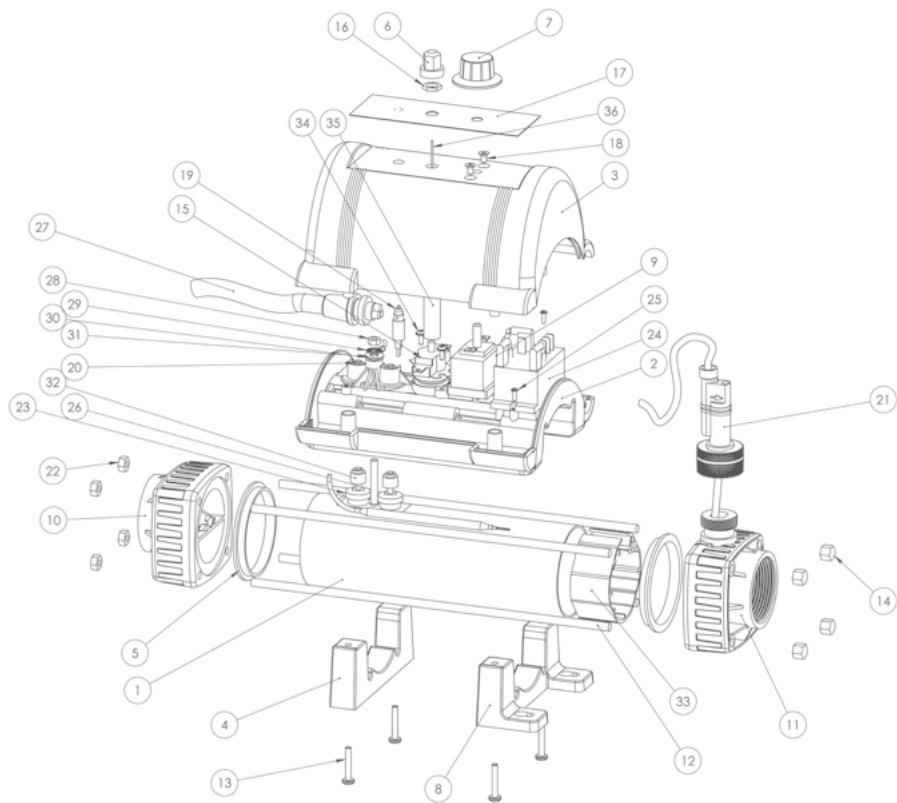


TECHNICAL DRAWINGS



SYSTEM SETUP

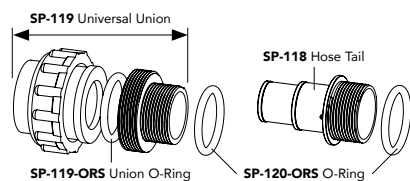




Cygnet Aquatic Nano (Component Diagram)

Water Connections

See page 55 for full description and pcs/unit.



SPARE PARTS LIST

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
1	Titanium Flow Tube	1	X-TUB-Ti200-1E
2	Electrical Bottom Cover/Bridge	1	Z-IM-NO-BC
3	Electrical Top Cover	1	Z-IM-NO-TC-BLU
4	Lower Foot (Without Key Hole Hooks)	1	Z-IM-NO-FL
5	TPE End Fitting Gasket	2	SP-117-GSK

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
6	Thermal Safety Cut-Out Cover	1	Z-MIS-HLS-CVR
7	Control Thermostat Dial	1	Z-MIS-CS-DIAL
8	Upper Foot (With Key Hole Hooks)	1	Z-IM-NO-FU
9	Control Thermostat	1	SP-MIS-CS
10	Left End Fitting (Non Flow Switch)	1	SP-117
11	Right End Fitting (Flow Switch)	1	SP-117B
12	273mm M6 Tie Bar	4	Z-STU-273
13	M4 x 25mm Zinc Coated Pozi Pan Screw	4	Z-FIX-M4X25
14	M6 Cap Nut	4	Z-FIX-M6CAP
15	Thermal Safety Cut Out (Manual Reset)	1	Z-MIS-BS-60-50
16	M8 Hex Nut (For Thermal Cut Out)	1	Supplied with #15
17	Nano Ops Panel Overlay	1	Z-LAB-N-KC
18	M4 x 6mm S/S CSK	2	Z-FIX-M4X6CS
19	Neon Indicator Lamp	1	Z-MIS-NEON
20	M4 Hex Nut	2	Z-FIX-M4HEX
21	Nano Flow Switch	1	SP-107-N-S
22	M6 S/S Hex Nut	4	Z-FIX-M6HEX
23	EPDM Element Ferrule	2	Z-IM-EL-FER
24	Surface Mount Relay	1	SP-109
25	M3 x 14mm FLG Pozi Zinc Coated	2	Z-FIX-M3X12-FLG
26	Titanium Heating Element 1-kW	1	KC-1-UK / KC-1-EU
	Titanium Heating Element 2-kW	1	KC-2-UK / KC-2-EU
	Titanium Heating Element 3-kW	1	KC-3-UK / KC-3-EU
	Titanium Heating Element 4-kW	1	KC-4 / -
27	Power Supply Lead (UK)	1	X-CAB-NANO-UK
	Power Supply Lead (Euro)	1	X-CAB-NANO-EU
28	M5 S/S Full Hex Nut	1	Z-FIX-M5HEX
29	M5 S/S Locking Washer	1	Z-FIX-M5LW
30	Earth Ring Terminal	1	Z-CON-YR53
31	M5 S/S Half Hex Nut	1	Z-FIX-M5HEX-N
32	Stepped Element Washer	2	Z-IM-EL-SW
33	Element Support	1	Z-IM-EL-SUP
34	M3 x 8mm FLG Pozi Zinc Coated	2	Z-FIX-M3X8FLG
35	Button Stat Holder	1	Z-MIS-N-BSH
36	Resetting pin	1	Z-MIS-N-RS
-	Nano Element Fixing Kit (Comprising of: 2x20, 2x23, 1x28, 1x29, 1x31, 2x32 & 1x33)	1	SP-EL-FIX-NANO

ALL TITANIUM

CYGNET AQUATIC EVO 2

A low wattage, corrosion resistant, water heater, providing high performance, safe, silent operation and complete reliability to effortlessly heat any pond or aquarium to the required temperature. Operates with all fresh or salt water environments.

FEATURES

- 11 models available, ranging from 1-kW to 8.4-kW
- Easy installation, fully equipped and pre-wired
- Robust, durable construction and compact design
- Ultra-reliable flow switch for safe operation
- Fitted with temperature thermostat and overheating sensor
- Analogue control with 1.2°C differential or digital control with 0.5°C differential and selectable multi-lingual display
- Titanium flow tube and titanium heating element
- Vortex, long life, stay clean heating element technology
- 100% efficiency throughout the product life
- Fresh and salt water compatible
- Can be floor or vertically wall mounted
- Silent operation

SUITABLE FOR:

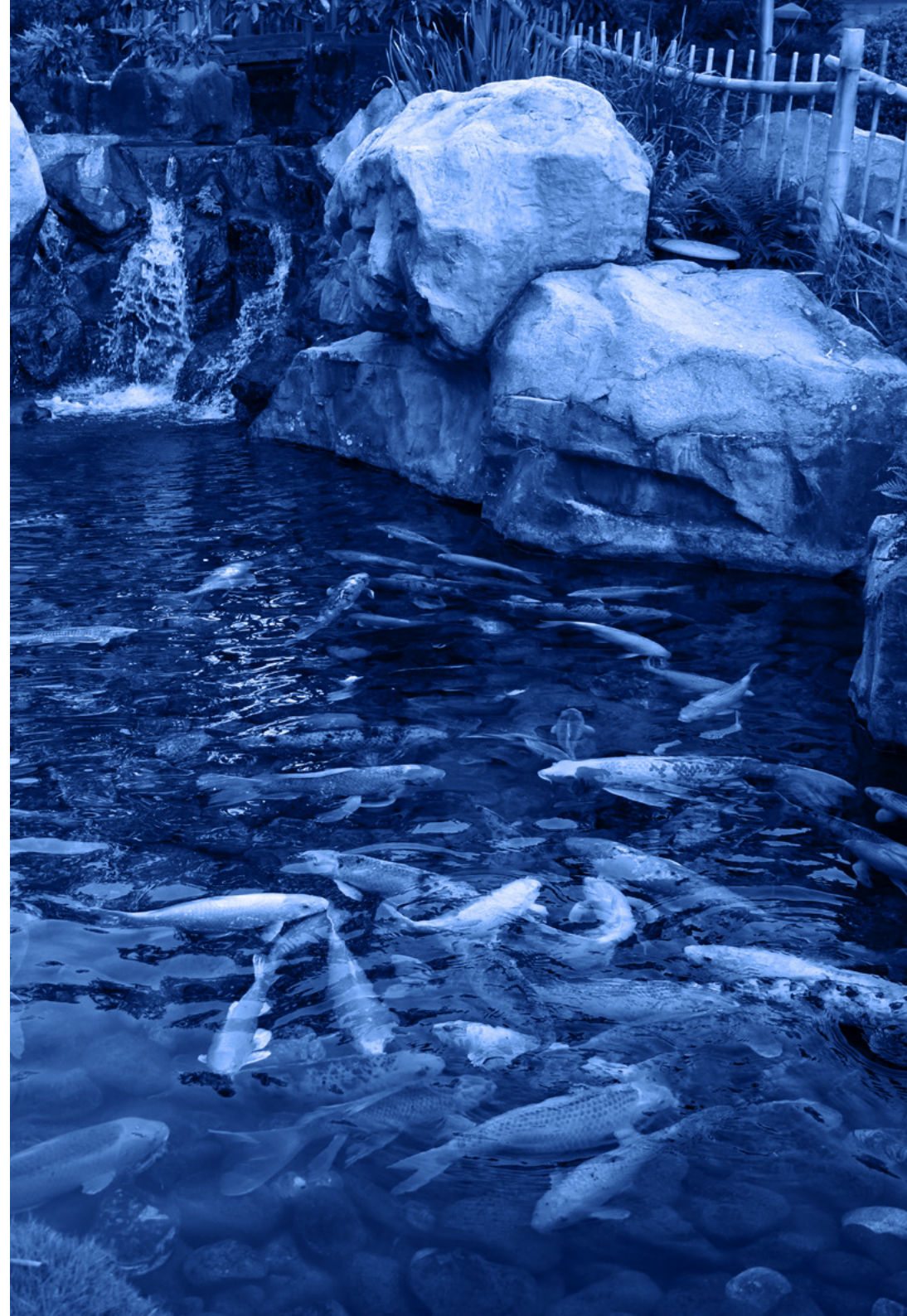


Aquatics



Cygnet Aquatic Evo 2
(Analogue)

Cygnet Aquatic Evo 2
(Digital)



SPECIFICATIONS

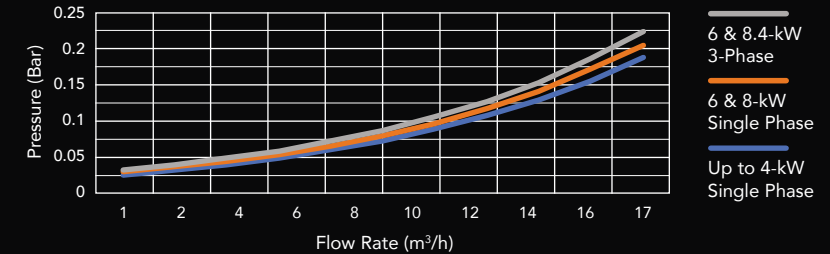
Power supply:	Single phase or 3-Phase
Min. flow rate:	Up to 3-kW: 1m ³ /hr, 4-kW to 6-kW: 1.5m ³ /hr, 8.4-kW & greater: 4m ³ /hr
Max. flow rate:	17m ³ /h
Heating element:	Grade 1 titanium
Flow tube:	Grade 1 titanium
Control thermostat:	Analogue: 0 > 45°C (1.2°C differential) Digital: 0 > 45°C (0.5°C differential)
Safety thermal cut out:	60°C (manual reset)
Flow switch:	Gold tipped reed switch with titanium fulcrum pin
Contactors:	Siemens 3RT2023 or 3RT2027
Seals:	High temperature special formula EPDM ferrules. TPE end fitting gaskets
Water connections:	1½" BSP female thread supplied with 1½"/50mm stepped ABS unions for rigid pipe and 1½"/1¼" stepped hose tails for flexible pipe
Ingress protection rating:	IP44
Frequency:	50/60 Hz
Working pressure:	4 bar maximum
Mounting:	Floor or wall mounting

MODELS

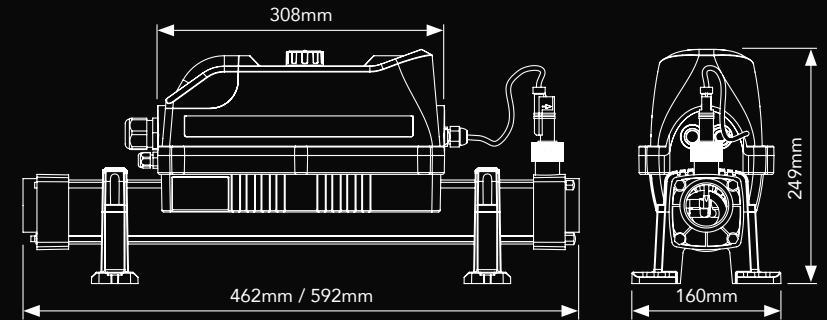
MODEL	POWER OUTPUT	LOAD (amp)	LENGTH (mm)	NET WEIGHT (kg)	GROSS WEIGHT (kg)	VOLUME (m ³)	PRODUCT CODE	
							ANALOGUE	DIGITAL
220~240V 1-Phase	1-kW	4.5	462	3.8700	5.0100	0.0571	AQ-E2-1-1	AQ-E2D-1-1
	2-kW	8.5	462	3.8700	5.0100	0.0571	AQ-E2-1-2	AQ-E2D-1-2
	3-kW	12	462	3.8700	5.0100	0.0571	AQ-E2-1-3	AQ-E2D-1-3
	4-kW	18	462	3.8700	5.0100	0.0571	AQ-E2-1-4	AQ-E2D-1-4
	6-kW	26	462	4.1700	5.3100	0.0571	AQ-E2-1-6	AQ-E2D-1-6
	8-kW	35	592	4.1700	5.3100	0.0571	AQ-E2-1-8	AQ-E2D-1-8
400V 3-Phase*	6-kW	9	592	4.4700	3.6100	0.0571	AQ-E2-3-6	AQ-E2D-3-6
	8.4-kW	13	592	4.4700	3.6100	0.0571	AQ-E2-3-8	AQ-E2D-3-8
120V 1-Phase	1-kW	8.5	462	3.8700	5.0100	0.0571	AQ-E2-1-1-120	AQ-E2D-1-1-120
	1.5-kW	12.5	462	3.8700	5.0100	0.0571	AQ-E2-1-1.5-120	AQ-E2D-1-1.5-120
	2-kW	17	462	3.8700	5.0100	0.0571	AQ-E2-1-2-120	AQ-E2D-1-2-120

* For voltages other than 400V please add: -380, -415 or -480 at the end of a product code e.g: AQ-E2-3-6-380. Weights stated above are for analogue models only. #Please add 0.26kg for digital models.

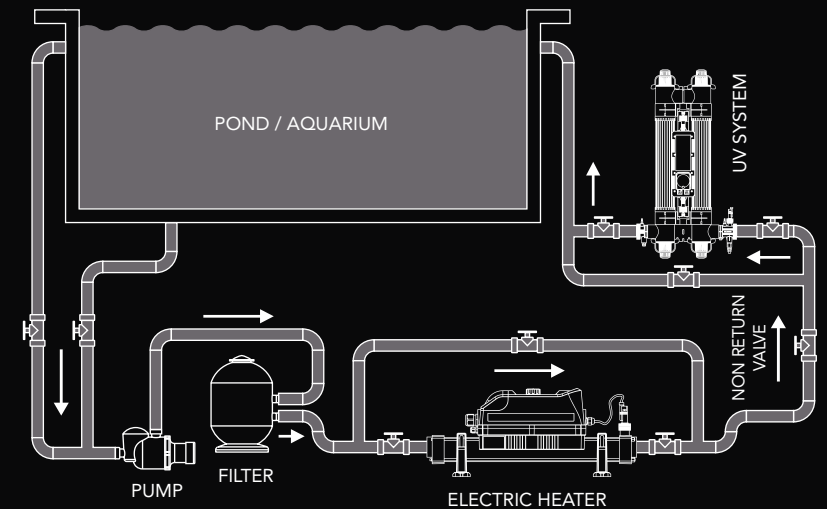
PRESSURE DROP

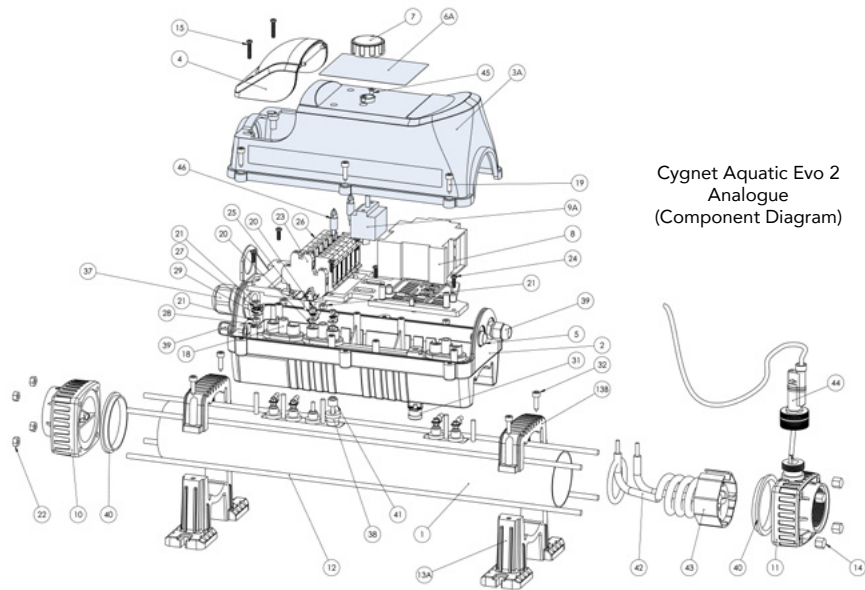


TECHNICAL DRAWINGS

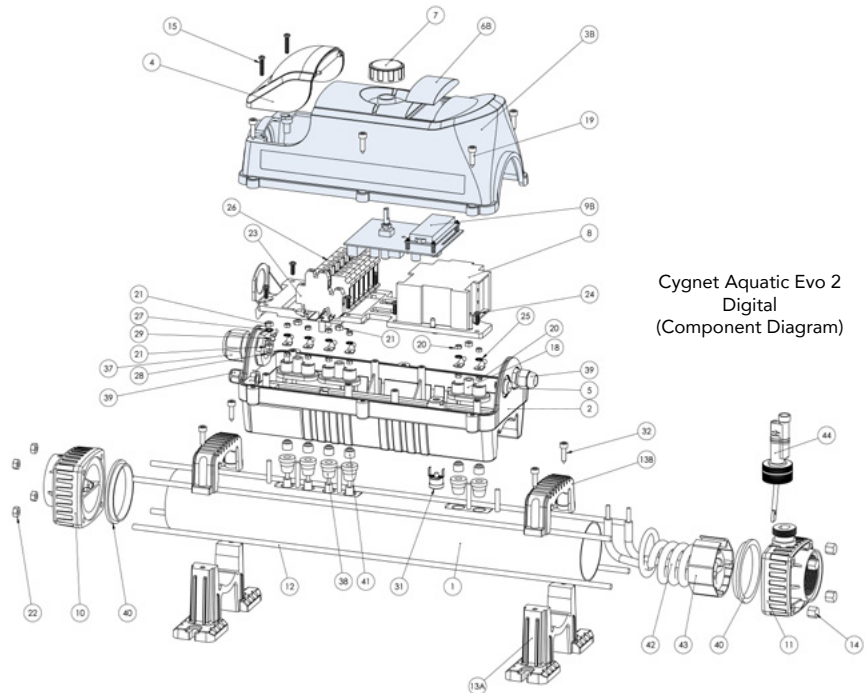


SYSTEM SETUP





Cygnet Aquatic Evo 2
Analogue
(Component Diagram)



Cygnet Aquatic Evo 2
Digital
(Component Diagram)

SPARE PARTS LIST

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
1	Flow Tube Up to 4-kW Single Phase	1	X-TUB-TI370-1E
	Flow Tube 6-kW & 8-kW Single Phase	1	X-TUB-TI370-2E
	Flow Tube All 3-Phase	1	X-TUB-TI500-3E
2	Electrical Enclosure Base	1	Z-IM-E2-BC
3A	Front Cover (Analogue model only)	1	Z-IM-E2-ANA-TC
3B	Front Cover (Digital model only)	1	Z-IM-E2-DIG-TC
4	Electrical Access Cover	1	Z-IM-E2-AC
5	Test Button	1	Z-MIS-PBS
6A	Ops Panel Overlay (Analogue model only)	1	Z-LAB-EVO2
6B	Window (Digital model only)	1	Z-IM-E2-W
7	Control Thermostat Dial	1	Z-IM-OC-ANA
8	Contactor	1	SP-SIE-2023-40A
9A	Analogue Control Thermostat	1	SP-MIS-CS
9B	PCB Digital Thermostat Board	1	Z-PCB-BUD
10	Left End Fitting (Non Flow Switch)	1	SP-117
11	Right End Fitting (Flow Switch)	1	SP-117B
12	M6 Tie Bar Up to 6-kW Single Phase 230V	4	Z-STU-443
	M6 Tie Bar 8-kW Single Phase	4	Z-STU-573
	M6 Tie Bar All 3-Phase	4	Z-STU-573
13A	Foot Lower	2	Z-IM-E2-FL
13B	Foot Upper	2	Z-IM-E2-FU
14	M6 Dome / Cap Nut	4	Z-FIX-M6CAP
15	M4 x 25mm Pozi Pan Screw	2	Z-FIX-M4x25
18	Element Bridge Up to 4-kW Single Phase	1	Z-IM-EL-BRI
	Element Bridge 6-kW & 8-kW Single Phase	2	Z-IM-EL-BRI
	Element Bridge 6-kW & 8.4-kW 3-Phase	3	Z-IM-EL-BRI
19	Enclosure Screws	7	Z-FIX-M4.8x19STS-SC
20	M4 Hex Nut Up to 4-kW Single Phase	2	Z-FIX-M4HEX
	M4 Hex Nut 6-kW & 8-kW Single Phase	4	Z-FIX-M4HEX
	M4 Hex Nut 6-kW & 8.4-kW 3-Phase	6	Z-FIX-M4HEX
21	M5 Hex Nut Up to 4-kW Single Phase	1	Z-FIX-M5HEX
	M5 Hex Nut 6-kW & 8-kW Single Phase	2	Z-FIX-M5HEX
	M5 Hex Nut 6-kW & 8.4-kW 3-Phase	3	Z-FIX-M5HEX
22	M6 Hex Nut	4	Z-FIX-M6HEX
23	RCD Terminal Block With Resistor	1	Z-MIS-TB-RCD

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
24	M4 x 12mm Pozi Pan Screw	9	Z-FIX-M4x25
25	M4 Locking Washer Up to 4-kW Single Phase	2	Z-FIX-M4LW
	M4 Locking Washer 6-kW & 8-kW Single Phase	4	Z-FIX-M4LW
	M4 Locking Washer 6-kW & 8.4-kW 3-Phase	6	Z-FIX-M4LW
26	Terminal Block All Single Phase	3	Z-MIS-TB-130A
	Terminal Block All 3-Phase	5	Z-MIS-TB-130A
27	M5 Locking Washer	2	Z-FIX-M5LW
28	M6 Flat Washer	2	Z-FIX-M6FW
29	Earth Terminal	2	Z-CON-YR53
31	Auto Button Stat	1	Z-MIS-BS-60-40-NO
32	Foot Screws	4	Z-FIX-M4.8x19STS-SC
37	PG-21 Cable Entry Gland (Inc Back Nut)	1	Z-CON-PG21BK + Z-CON-PG21NUT
38	Element Ferrule (2pcs per Kit/Element):		
	Up to 4-kW Single Phase	2	Z-IM-EL-FER
	6-kW & 8-kW Single Phase	4	Z-IM-EL-FER
	6-kW & 8.4-kW 3-Phase	6	Z-IM-EL-FER
39	PG-7 Cable Entry Gland (Inc Back Nut)	1	Z-CON-PG7BK
40	End Fitting Gasket (Pack of 2pcs)	2	SP-117-GSK
41	Element Stepped Washer (2pcs per Kit):		
	Up to 4-kW Single Phase	2	Z-IM-EL-SW
	6-kW & 8-kW Single Phase	4	Z-IM-EL-SW
	6-kW & 8.4-kW 3-Phase	6	Z-IM-EL-SW
42	Titanium Heating Element 1-kW Single Phase	1	SP-EL-Ti1KW7T
	Titanium Heating Element 2-kW Single Phase	1	SP-EL-Ti2KW7T
	Titanium Heating Element 3-kW Single Phase	1	SP-EL-Ti2.9KW7T
	Titanium Heating Element 4-kW Single Phase	1	SP-EL-Ti4KW9T
	Titanium Heating Element 6-kW Single Phase	2	SP-EL-Ti2.9KW7T
	Titanium Heating Element 8-kW Single Phase	2	SP-EL-Ti4KW9T
	Titanium Heating Element 6-kW 3-Phase*	3	SP-EL-Ti2KW7T
	Titanium Heating Element 8-kW 3-Phase*	3	SP-EL-Ti2.8KW7T
43	Element Support (1pc per kit):		
	Up to 4-kW Single Phase	2	Z-IM-EL-SUP
	6-kW & 8-kW Single Phase	4	Z-IM-EL-SUP
	6-kW & 8.4-kW 3-Phase	6	Z-IM-EL-SUP
44	Flow Switch	1	SP-107-A

ITEM No.	DESCRIPTION	PCS/UNIT	PART CODE
45	M4 x 6mm Screw	2	Z-FIX-M4X6CS
46	Neon Indicator Lamp	1	Z-MIS-NEON

*For all 3-Phase titanium heating elements, please specify the required voltage.

REPLACEMENT TANK ASSEMBLY

MODEL	OUTPUT	DESCRIPTION	PART CODE
1-Phase	1-kW	2-kW 370mm Tank	SP-TA-1-Ti-A
	2-kW	3-kW 370mm Tank	SP-TA-2-Ti-A
	3-kW	4.5-kW 370mm Tank	SP-TA-3-Ti-A
	4-kW	6-kW 370mm Tank	SP-TA-4-Ti-A
	6-kW	9-kW 370mm Tank	SP-TA-6-Ti-A
	8-kW	12-kW 370mm Tank	SP-TA-8-Ti-A
3-Phase	6-kW	6-kW 500mm Tank	SP-TA-6-Ti-3P
	8-kW	9-kW 500mm Tank	SP-TA-8-Ti-A-3P

WATER CONNECTION PARTS

DESCRIPTION	PCS/UNIT	PART CODE
1½" BSP Hose Tail 1½"/1¼" Flexible Pipe	2	SP-118
1½" BSP Universal Union for 1½"/50mm Pipe	2	SP-119
'O' Ring (Pack of 2pcs)	2	SP-120-ORS
44mm x 6mm Union 'O' Ring (Pack of 2pcs)	2	SP-119-ORS

Water Connections

See above for full description and pcs/unit.

