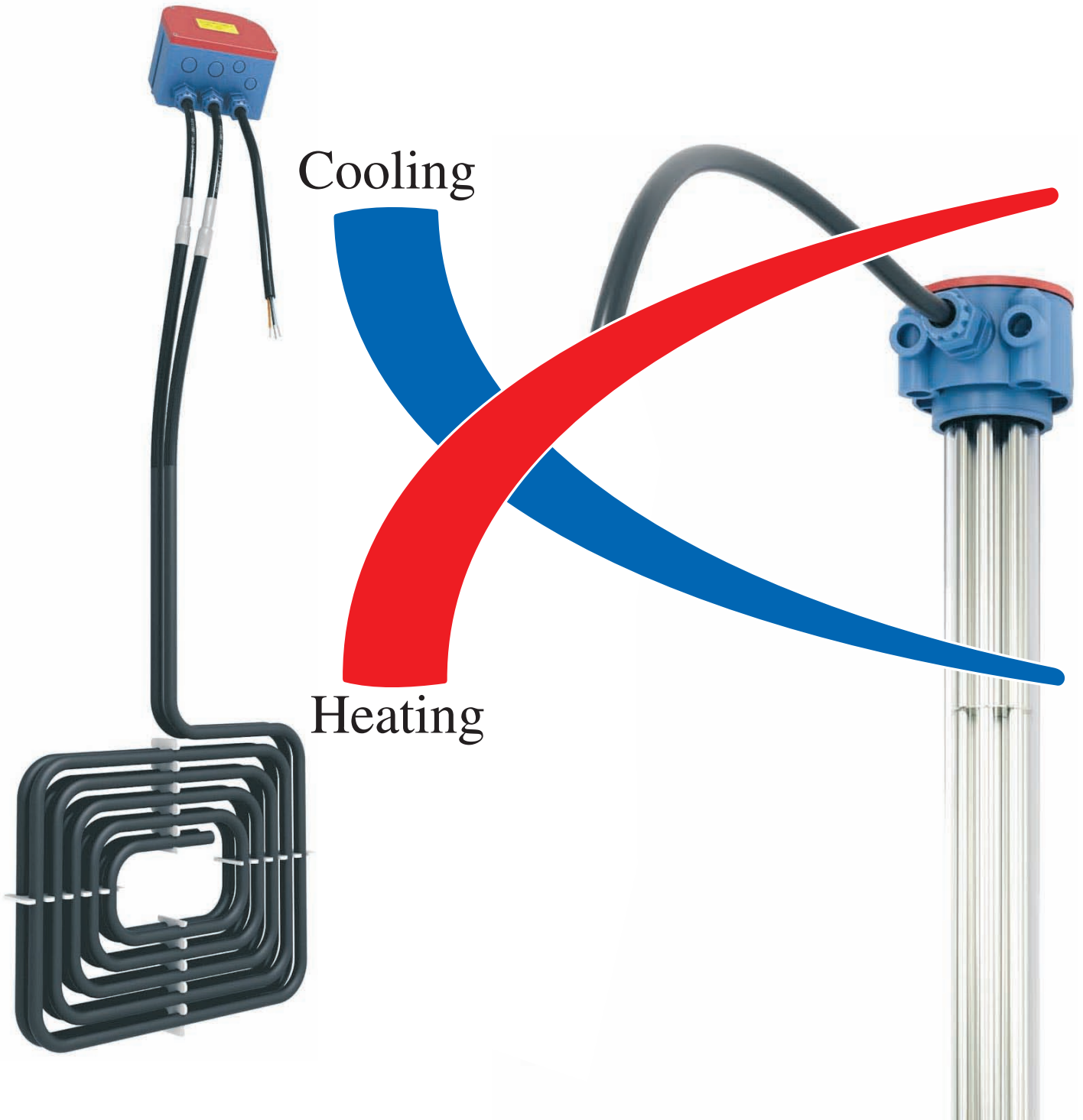




SCANDYMET



La Grand E.V.O

Uw leverancier voor elektrische verwarmingselementen en apparaten



Manufacturer of immersion heaters and heat exchangers for surface treatment

In a high velocity world, industry demands flexible designs, quality manufacturing methods constantly reliable products to improve productivity and profitability.

With regard to electrical heaters, it is extremely important that choice of material and technical execution harmonize in order to produce products as reliable and valuable as possible.

The product program is based on the following **4 corner-stones**:

- ❑ **Former product programs - reliable and costefficient.**
- ❑ **Input from users of this type of product.**
- ❑ **Self development of material adaption and production methods.**
- ❑ **Safety regulations required for this type of product.**

Our curiosity during passed years has prompted us to always try to solve industry problems. Many times we have solved problems where others would not commit themselves to the same extent. This has given us a breadth and depth that has resulted in a correspondingly smart product program.

Our 30 years of electrical heater experience gives us the confidence to know our new product program will be received just as well by our old customers, as our new ones..

Our motto is:

Scandymet will always provide customers the best value.

Intertek

Certificate

 for European Product Safety

Reference No. 900419

Immersion heater

Type designation: STFX, SCAX, STIX, SMSX, MSP, SSP, TIF, STFP

Certificate holder: **SCANDYMET AB**
Box 72
826 22 Söderhamn
SWEDEN

The product complies with the standard(s): EN 60335-1:2002+A11+A11+A12+A2+A13
EN 60335-2-73:2003+A1
EN 62233:2008

Date of expiry: 22 June 2014

EU Directive information: The product satisfies the provisions for CE marking according to the Low Voltage Directive 2006/95/EC.

Additional information in Appendix:

Certification Body: Intertek Semko AB, Product Certification Place: Kista - Stockholm

Signed:  Date: 22 June 2009 Page 1 of 6

This certificate is issued in accordance with the terms and conditions set out in the Appendix.



Intertek

Certificate

 for European Product Safety

Reference No. 900418

Immersion heater

Type designation: SQG, SRF, SGL, STI, SST, SFO

Certificate holder: **SCANDYMET AB**
Box 72
826 22 Söderhamn
SWEDEN

The product complies with the standard(s): EN 60335-1:2002+A11+A11+A12+A2+A13
EN 60335-2-73:2003+A1
EN 62233:2008

Date of expiry: 22 June 2014

EU Directive information: The product satisfies the provisions for CE marking according to the Low Voltage Directive 2006/95/EC.

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Signed:  Date: 22 June 2009 Page 1 of 6

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	Page
STFX - Flexible teflon heaters	4,5
STFX - Flexible teflon heaters Standard assortment Ratings 500 - 18000 Watts	6,7
SCAX (stainless steel), STIX (Titanium) submersible metal heater Standard assortment. Ratings 500 - 12000 Watts	8,9
VAT teflon heater. STFP.	10
Tubular heaters SFO - Tube heaters for phosphate Ratings 1000-3300 Watts	11
Tubular heaters SRF - Stainless steel (WST Nr. 1.4571 - 316TI) SST - Mild steel STI - Titanium Standard assortment. Ratings 1000 - 4500 Watts	12
Tubular heaters SQG Quartz tube heater. Standard assortment. Ratings 1000 - 4500 Watts	13
VAT heater. MSP, SSP, TIP. Mild steel, stainless steel, titanium	14
VAT heater. Stainless steel, titanium	15
HAMPUS - Metallic heat exchanger for liquids	16
INGA - Teflon tubular heat/cooling exchanger for corrosive liquids	17
GUNNAR - Rigid tubular heat exchanger for corrosive liquids	18
Example for calculation program INGA - GUNNAR - HAMPUS	19
Attachment Fastners and frames	20
ISABELLE - Thermostates KELVIN - Digital thermal regulator	21
Level control and overheat protection	22
Overheat protection wire diagram	23
Heater selection guideline list	24, 25
Maintenance instructions	26
Warranty and transports	27

Manufacturer of certified FLEXIBLE TEFLON® HEATERS - STFX with flexible risers

Model Ratings 500 - 15000 Watts

- ☐ **An all-round heater! Scandymet teflon® heaters.**
Resistant to most acids and alkalines.
Max 90° C bath temperature for standard range.
- ☐ **Safe heating! Scandymet teflon® heaters.**
Heating part deeply submersed or placed on tank bottom.
- ☐ **Efficient! Scandymet teflon® heaters.**
Increased heating-up ability compared with conventional tubular heater.
- ☐ **Space saver! Scandymet teflon® heaters.**
Compact design and flexible riser makes it easy to install these heaters with maintained safety.
- ☐ **Reliable duty! Scandymet teflon® heaters.**
We guarantee positive contact between the heating element

and the teflon layer. Heat is transferred directly to the bath without internal build-up, thus increasing element life.

- ☐ **Easy maintenance! Scandymet teflon® heaters.**
Shape of heater is simple and easy to overview and hence easy to clean.
- ☐ **Valuable! Scandymet teflon® heaters.**
Please note the unique feature of exchangeable elements, modular system.
- ☐ **Option**
 - Bimetallic overheat protection.
 - One shoot overheat protection
 - Flexible riser, length 1-10 meters (C).
 - Electric cable, length 1-15 meters. (E)
 - Bottom bended.

Standard vertical heater



Option bottom bended



* *Teflon is the DuPont™ trade name for PTFE.*

All-round heater + Reliable + Efficient + Space saving + Easy maintenance = MORE VALUE FOR YOUR MONEY!

Reliable duty!

We guarantee positive contact between the heating element and the teflon layer.

Heat is transferred directly to the bath without internal conduit build-up, thus increasing element life.

Both the conduit and stainless steel element under the teflon layer are grounded. Standard length of the conduit is 1 metre.

Heater identification

All heaters are clearly labelled with power, voltage, and serial numbers. Keep marking outside of tank.

Grounded Conduit.

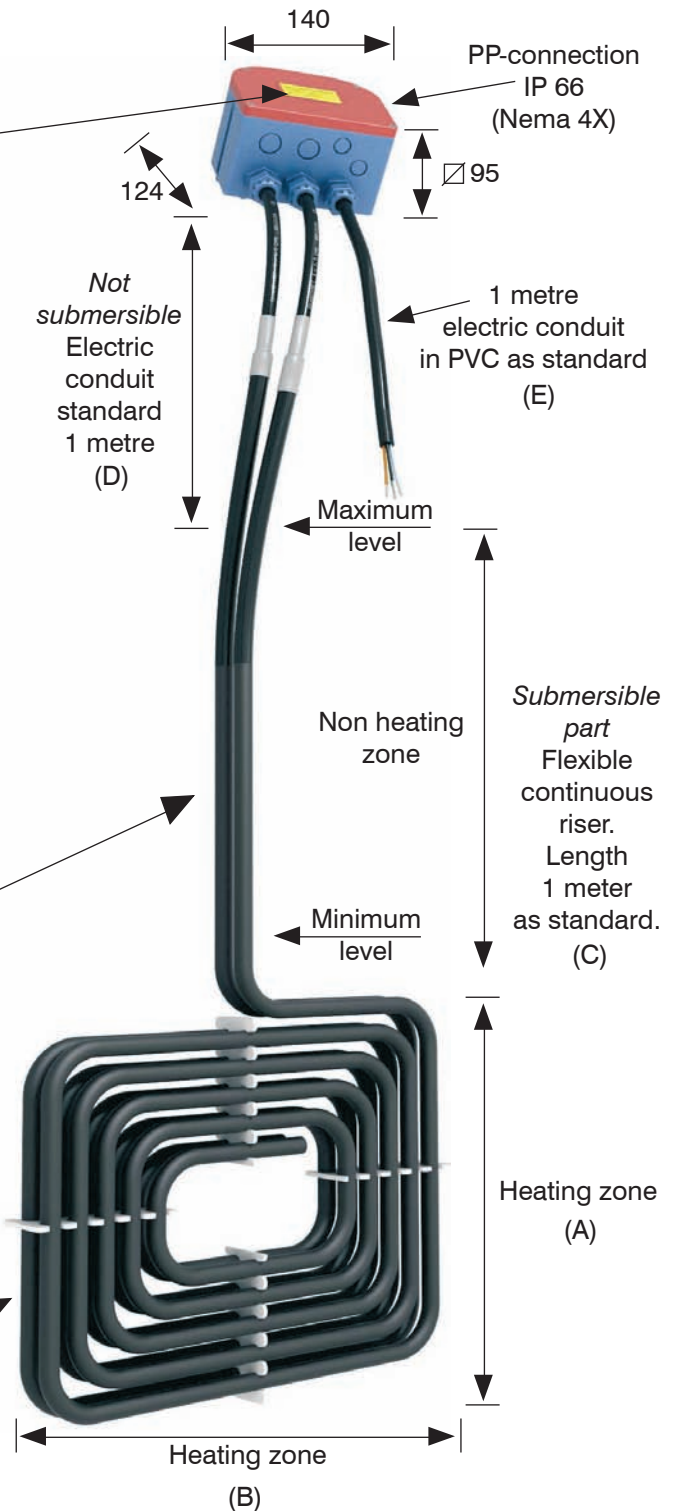
The stainless steel heating element (under the teflon layer) is grounded. Standard length of conduit is 1 meter (see figure).

Flexible riser 1-10 meters

The continuous and flexible riser is nonheating and suitable for bending over the tank edge. Standard length is 1 meter. Additional length customized.

Custom design

The hot (and rigid) part of the element is bent as shown. (See table for standard dimensions). We can bend the element to meet your specific requirements at **no extra cost**.



FLEXIBLE HEATERS - STFX Teflon® Heater

Flexible by design certified with flexible risers

Model STFX. Ratings 500 - 3700 watts.

Voltage: 1 phase 230V or 3 phase 400V.

3-phase 230 voltage, please consult factory.

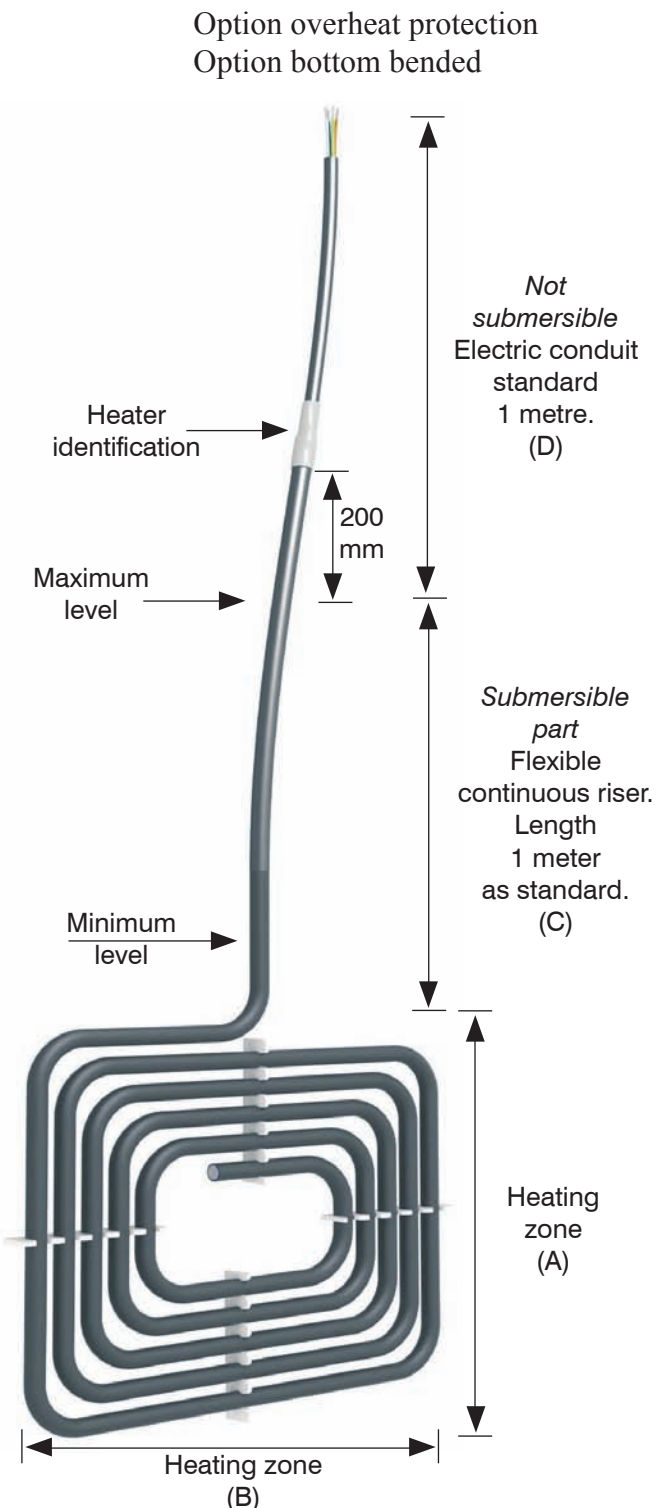
Standard sizes

1 phase 230 Volts

	A	B	Th.	Hes Watt/cm ²
0,5KW	230	180	35	1,5
1KW	230	260	35	1,5
1,5KW	260	300	35	1,5
1,5KW	320	260	35	1,5
1,5KW	350	220	35	1,5
1,5KW	420	210	35	1,5
2KW	340	280	35	1,5
2KW	540	200	35	1,5
2KW	290	370	35	1,5
2KW	245	410	35	1,5
3KW	320	420	35	1,5
3KW	410	325	35	1,5
3KW	535	270	35	1,5
3KW	640	240	35	1,5
3KW	680	225	35	1,5
3KW	880	195	35	1,5
3KW	1050	160	35	1,5
4KW	340	280	50	1,5
4KW	540	200	50	1,5
4KW	290	370	50	1,5
4KW	245	410	50	1,5

3 phase 400 Volts

	A	B	Th.	Hes Watt/cm ²
2,25KW	335	340	35	1,5
2,25KW	400	280	35	1,5
2,25KW	460	255	35	1,5
2,25KW	530	230	35	1,5
2,25KW	625	215	35	1,5
2,25KW	1030	150	35	1,5
3KW	320	420	35	1,5
3KW	410	325	35	1,5
3KW	535	270	35	1,5
3KW	640	240	35	1,5
3KW	680	225	35	1,5
3KW	880	195	35	1,5
3KW	1050	160	35	1,5
3,7KW	320	420	35	2,0
3,7KW	410	325	35	2,0
3,7KW	535	270	35	2,0
3,7KW	640	240	35	2,0
3,7KW	680	225	35	2,0
3,7KW	880	195	35	2,0
3,7KW	1050	160	35	2,0



* Teflon is the DuPont™ trade name for PTFE.

FLEXIBLE HEATERS

STFX Teflon® Heater - modular system

Flexible by design certified with flexible risers

Model **STFX**. Ratings 4500 - 15000 watts.

Voltage: 1 phase 230V or 3 phase 400V.

3-phase 230 voltage, please consult factory.

Important and valuable feature.

The heating elements are individually replaceable.

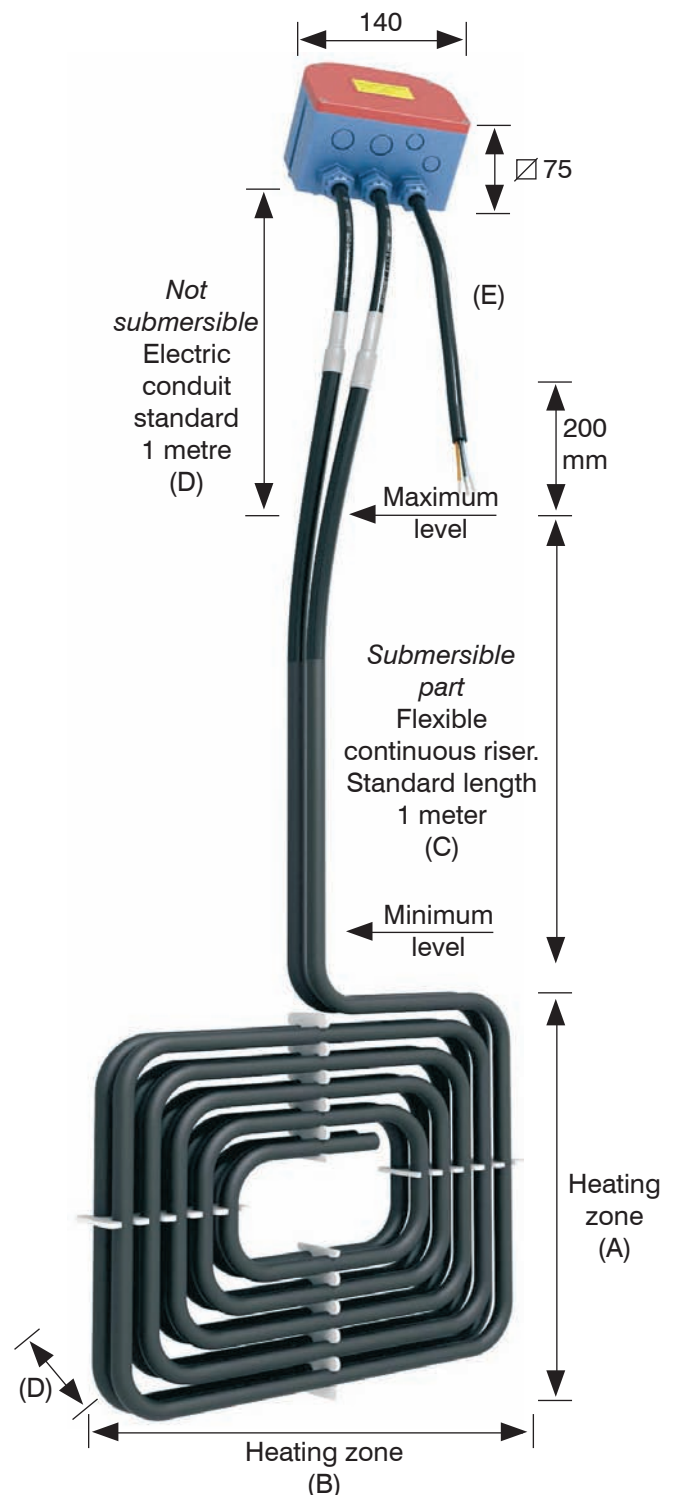
In case of failure, you only need to replace the failed heating element, not the entire heater.

Option overheat protection
Option bottom bended

Standard sizes

3 phase 400 Volts

	A	B	Th.	Hes Watt/cm ²
4,5KW	335	340	50	1,5
4,5KW	400	280	50	1,5
4,5KW	460	255	50	1,5
4,5KW	530	230	50	1,5
4,5KW	625	215	50	1,5
4,5KW	1030	150	50	1,5
6KW	320	420	50	1,5
6KW	410	325	50	1,5
6KW	535	270	50	1,5
6KW	640	240	50	1,5
6KW	680	225	50	1,5
6KW	880	195	50	1,5
6KW	1050	160	50	1,5
7,4KW	320	420	50	2,0
7,4KW	410	325	50	2,0
7,4KW	535	270	50	2,0
7,4KW	640	240	50	2,0
7,4KW	680	225	50	2,0
7,4KW	880	195	50	2,0
7,4KW	1050	160	50	2,0
9KW	320	420	75	1,5
9KW	410	325	75	1,5
9KW	535	270	75	1,5
9KW	640	240	75	1,5
9KW	680	225	75	1,5
9KW	880	195	75	1,5
9KW	1050	160	75	1,5
11KW	320	420	75	2,0
11KW	410	325	75	2,0
11KW	535	270	75	2,0
11KW	640	240	75	2,0
11KW	680	225	75	2,0
11KW	880	195	75	2,0
11KW	1050	160	75	2,0
12KW	320	810	50	1,5
12KW	420	650	50	1,5
12KW	550	530	50	1,5
12KW	640	480	50	1,5
12KW	700	430	50	1,5
12KW	860	380	50	1,5
12KW	1050	310	50	1,5
12KW	1400	280	50	1,5
15KW	320	810	50	2,0
15KW	420	650	50	2,0
15KW	550	530	50	2,0
15KW	640	480	50	2,0
15KW	700	430	50	2,0
15KW	860	380	50	2,0
15KW	1050	310	50	2,0
15KW	1400	280	50	2,0



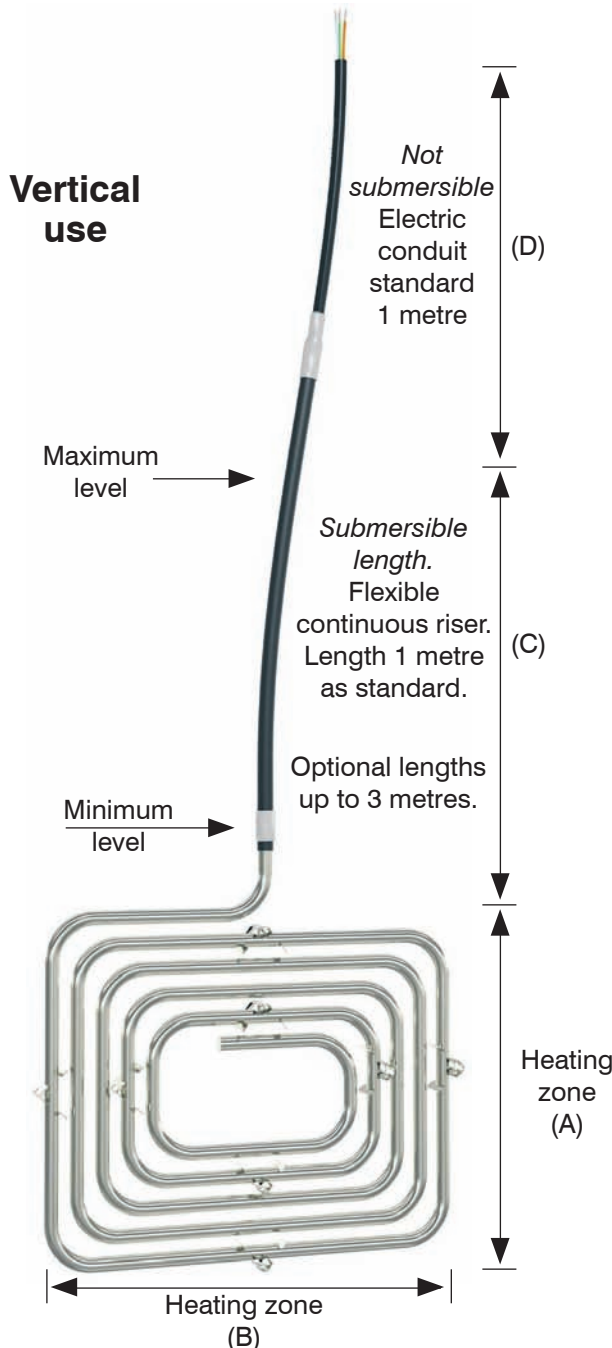
* Teflon is the DuPont™ trade name for PTFE.

Certified FLEXIBLE HEATERS

SCAX Stainless steel / STIX Titanium

Model SCAX, heat exchange. Ratings 500 - 12000 watts.

- **Use:** Oils, flux baths and alkaline solutions.
- **Efficient!** Suitable for placing on the bottom of your tank for excellent heat distribution.
- **Flexible!** Conduit and teflon riser (C) are continuous and flexible. Easy to install over the tank edge. Guards are standard.
- **Space saver.** We can bend the heater to meet your requirements if space is limited.
- **Non submersible conduit (D)** optional length 1-10 metres.
- **Option**
 - Bimetallic overheat protection.
 - Option bottom bended



SCAX (Stainless steel)
1 phase 230 Volts

	A	B	Th.	Hes
	Watt/cm ²			
0,5KW	230	180	35	1,5
1KW	230	260	35	1,5
1,5KW	260	300	35	1,5
1,5KW	320	260	35	1,5
1,5KW	350	220	35	1,5
1,5KW	420	210	35	1,5
2KW	340	280	35	1,5
2KW	540	200	35	1,5
2KW	290	370	35	1,5
2KW	245	410	35	1,5
3KW	320	420	35	2,9
3KW	410	325	35	2,9
3KW	535	270	35	2,9
3KW	640	240	35	2,9
3KW	680	225	35	2,9
3KW	880	195	35	2,9
3KW	1050	160	35	2,9

SCAX (Stainless steel)
3 phase 400 Volts

	A	B	Th.	Hes
	Watt/cm ²			
2,25KW	335	340	35	1,6
2,25KW	400	280	35	1,6
2,25KW	460	255	35	1,6
2,25KW	530	230	35	1,6
2,25KW	625	215	35	1,6
2,25KW	1030	150	35	1,6
3KW	320	420	35	1,5
3KW	410	325	35	1,5
3KW	535	270	35	1,5
3KW	640	240	35	1,5
3KW	680	225	35	1,5
3KW	880	195	35	1,5
3KW	1050	160	35	1,5
3,7KW	320	420	35	2,0
3,7KW	410	325	35	2,0
3,7KW	535	270	35	2,0
3,7KW	640	240	35	2,0
3,7KW	680	225	35	2,0
3,7KW	880	195	35	2,0
3,7KW	1050	160	35	2,0
4,5KW	320	420	35	2,5
4,5KW	410	325	35	2,5
4,5KW	535	270	35	2,5
4,5KW	640	240	35	2,5
4,5KW	680	225	35	2,5
4,5KW	880	195	35	2,5
4,5KW	1050	160	35	2,5
6KW	320	420	35	3,8
6KW	410	325	35	3,8
6KW	535	270	35	3,8
6KW	640	240	35	3,8
6KW	680	225	35	3,8
6KW	880	195	35	3,8
6KW	1050	160	35	3,8
7,5KW	320	420	35	4,1
7,5KW	410	325	35	4,1
7,5KW	535	270	35	4,1
7,5KW	640	240	35	4,1
7,5KW	680	225	35	4,1
7,5KW	880	195	35	4,1
7,5KW	1050	160	35	4,1

SCAX (Stainless steel)
3 phase 400 Volts

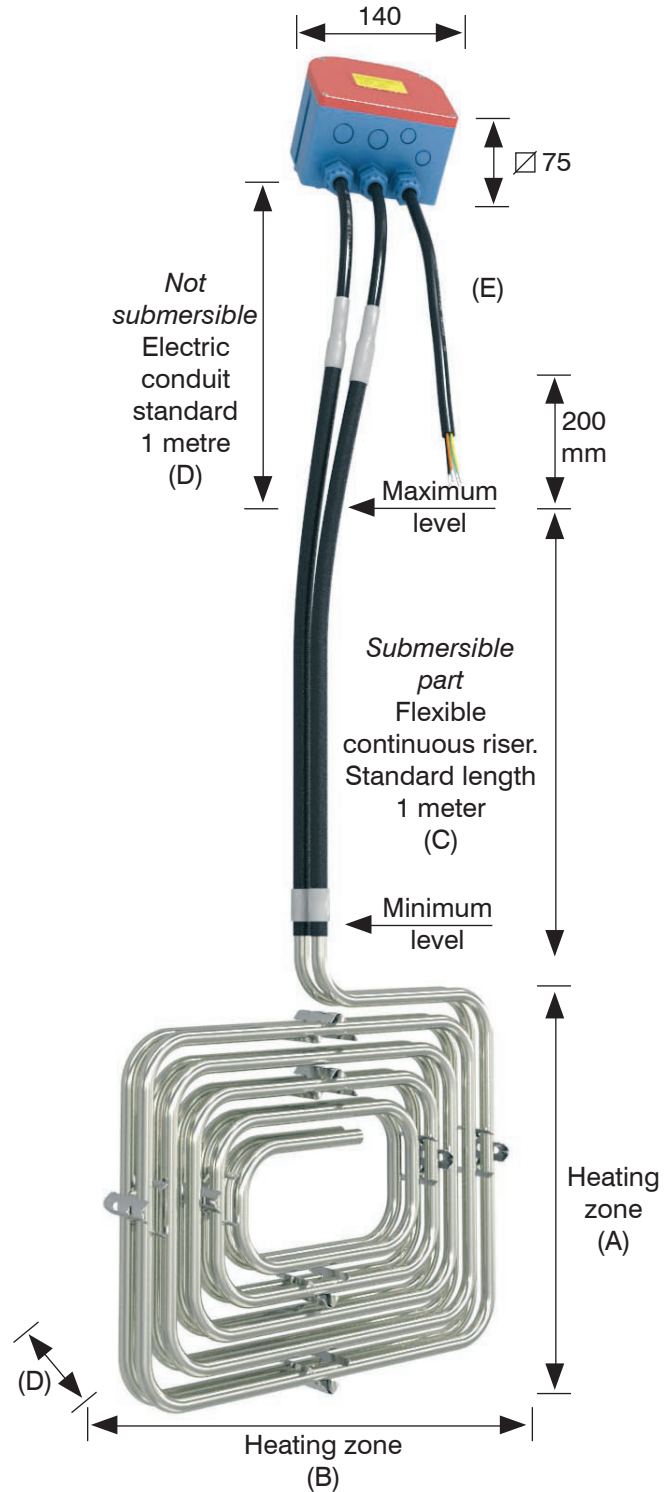
	A	B	Th.	Hes
				Watt/cm ²
9KW	320	420	35	5,6
9KW	410	325	35	5,6
9KW	535	270	35	5,6
9KW	640	240	35	5,6
9KW	680	225	35	5,6
9KW	880	195	35	5,6
9KW	1050	160	35	5,6
12KW	320	420	35	6,8
12KW	410	325	35	6,8
12KW	535	270	35	6,8
12KW	640	240	35	6,8
12KW	680	225	35	6,8
12KW	880	195	35	6,8
12KW	1050	160	35	6,8
12KW	320	420	50	3,8
12KW	410	325	50	3,8
12KW	535	270	50	3,8
12KW	640	240	50	3,8
12KW	680	225	50	3,8
12KW	880	195	50	3,8
12KW	1050	160	50	3,8

STIX (Titanium)
1 phase 230 Volts

	A	B	Th.	Hes
				Watt/cm ²
1KW	290	260	35	1,3
2KW	250	350	35	1,8
2KW	340	250	35	1,8
2KW	470	200	35	1,8
3KW	250	350	35	2,8
3KW	340	250	35	2,8
3KW	470	200	35	2,8
4KW	250	350	35	3,8
4KW	340	250	35	3,8
4KW	470	200	35	3,8

STIX (Titanium)
3 phase 400 Volts

	A	B	Th.	Hes
				Watt/cm ²
3KW	230	320	35	3,8
3KW	310	220	35	3,8
4,5KW	335	340	35	3,1
4,5KW	400	280	35	3,1
4,5KW	460	255	35	3,1
4,5KW	530	230	35	3,1
4,5KW	625	215	35	3,1
4,5KW	1030	150	35	3,1
6KW	335	340	35	4,1
6KW	400	280	35	4,1
6KW	460	255	35	4,1
6KW	530	230	35	4,1
6KW	625	215	35	4,1
6KW	1030	150	35	4,1
9KW	320	420	35	4,9
9KW	410	325	35	4,9
9KW	535	270	35	4,9
9KW	640	240	35	4,9
9KW	680	225	35	4,9
9KW	880	195	35	4,9
9KW	1050	160	35	4,9
12KW	320	420	35	6,6
12KW	410	325	35	6,6
12KW	535	270	35	6,6
12KW	640	240	35	6,6
12KW	680	225	35	6,6
12KW	880	195	35	6,6
12KW	1050	160	35	6,6



Manufacturer of certified VAT Teflon® Heater - STFP - rigid 1 and 3,7 kW

Voltage: 1 phase 230 V or 3 phase 400 V

Head

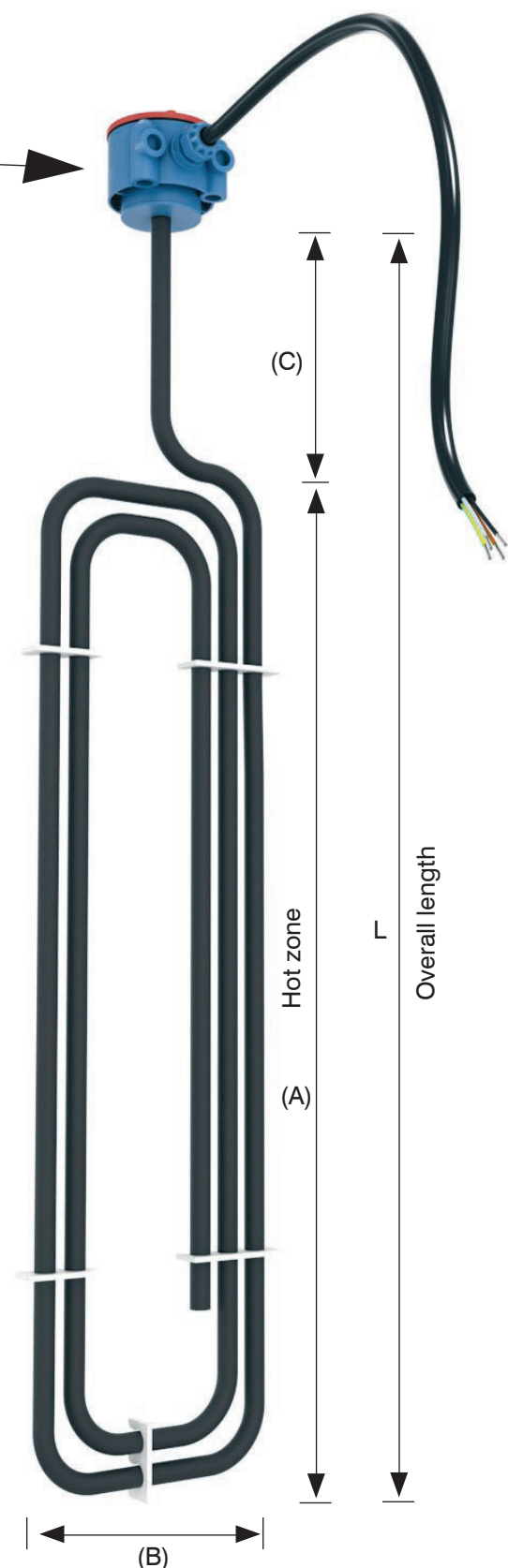
Sealing IP 66 (Nema 4X). Reinforced PP, diameter 85 mm. Threaded lid, sealed with O-rings.

STFP 1 phase 230 Volts

	A	B	C	Th.	L.	Hes Watt/cm ²
1KW	220	290	200	35	400	1,5
1,5KW	320	240	200	35	500	1,5
2KW	280	340	200	35	480	1,5
2KW	450	210	200	35	650	1,5
2KW	390	240	200	35	570	1,5
3KW	340	420	250	35	590	1,5
3KW	400	320	250	35	650	1,5
3KW	540	260	250	35	790	1,5
3KW	720	220	200	35	920	1,5

STFP 3 phase 400 Volts

3KW	340	420	250	35	590	1,5
3KW	400	320	250	35	650	1,5
3KW	540	260	250	35	790	1,5
3KW	720	220	200	35	920	1,5
3,7KW	340	420	250	35	590	2,0
3,7KW	400	320	250	35	650	2,0
3,7KW	540	260	250	35	790	2,0
3,7KW	720	220	200	35	920	2,0



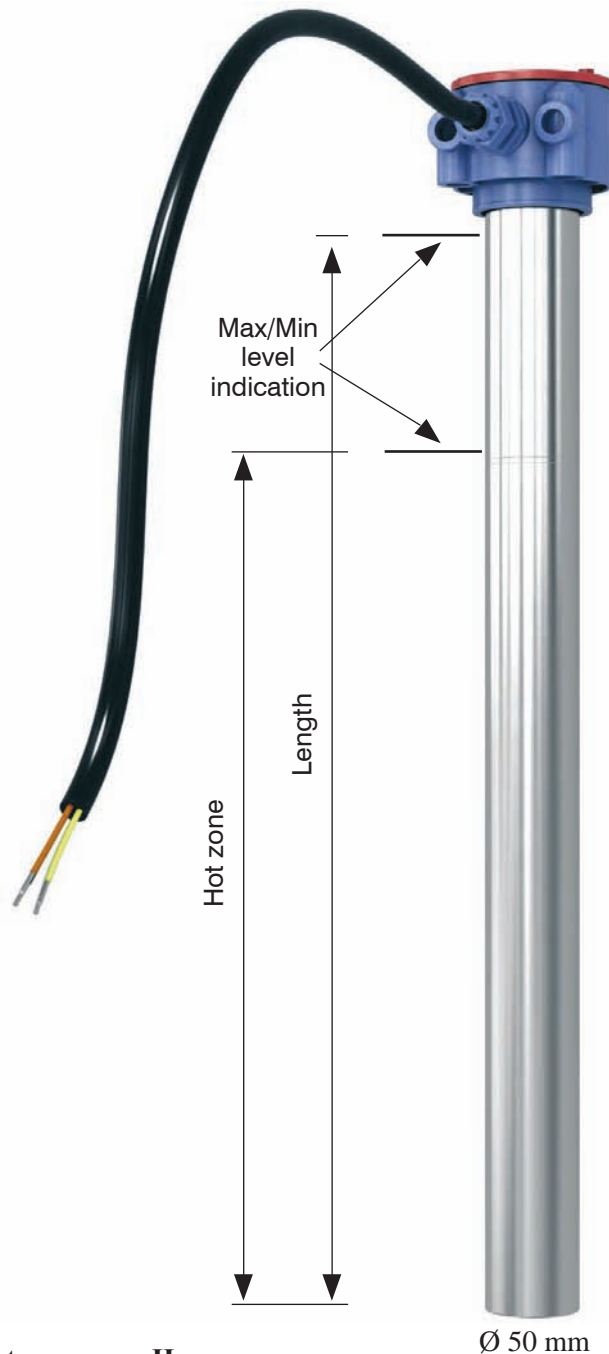
* Teflon is the DuPont™ trade name for PTFE.

Certified TUBULAR HEATER

Rigid Phosphate Heater - Model SFO for vertical use

Special heater for phosphate bath

- ☐ SFO is the answer for your heavy duty service.
- ☐ Heating element are cast in aluminium inside a tube outside diameter 54 mm.
- ☐ Tube of stainless steel 2350.
- ☐ Excellent heat transfer.
- ☐ Ratings from 1000-3300 watts.
- ☐ 1-phase 230 Volts and 3 phase 400 Volts.
- ☐ Head sealing reinforced PP, diameter 85 mm. Threaded lid, sealed with O-rings. Sealing IP 66 (NEMA 4X).
- ☐ Impact resistant.
- ☐ Can withstand mechanical cleaning.



Model	Watts	Length	Hot zone	Hes Watt/cm ²
SFO 60010 +V	1000	580 mm	450 mm	1,5
SFO 80018 +V	1800	780 mm	550 mm	2,0
SFO 10022 +V	2200	980 mm	720 mm	2,0
SFO 12528 +V	2800	1230 mm	870 mm	2,0
SFO 15033 +V	3300	1470 mm	1120 mm	2,0

Specify +V: 1 for 1 phase 230V
 2 for 3 phase 230 V
 3 for 3 phase 400V

Certified TUBULAR HEATERS 1000 - 4500 Watts

Steel, stainless steel and titanium

Head

Sealing IP 66 (Nema 4X). Reinforced PP, diameter 85 mm. Threaded lid, sealed with O-rings. Easy opening head to replace conduit or heating element.

Heat exchange surface watt/cm² = HES

EX.



Heating element

Heat resistant 304 stainless steel element. Element can easily be changed if necessary.

Conduit of PVC

Earthed to metal parts. Standard length 2 metres. Other lengths on request.

Specify +V: 1 for 1 phase 230 V
2 for 3 phase 230 V
3 for 3 phase 400 V

Titanium (STI) grade 2 commercial pure

Dia. 50 mm, thickness 0.9 mm.

Model No.	Watts	Length	Hot Zone	HES
STI50010 +V	1000	480	370	2,1
STI60020 +V	2000	570	460	3,0
STI80020 +V	2000	780	610	2,3
STI80025 +V	2500	780	610	2,9
STI10030 +V	3000	980	780	2,6
STI12535 +V	3500	1210	900	2,6
STI15045 +V	4500	1470	1150	2,6

Stainless steel tubes (SRF) EN10217-7 Stainless steel nr. 1.4571

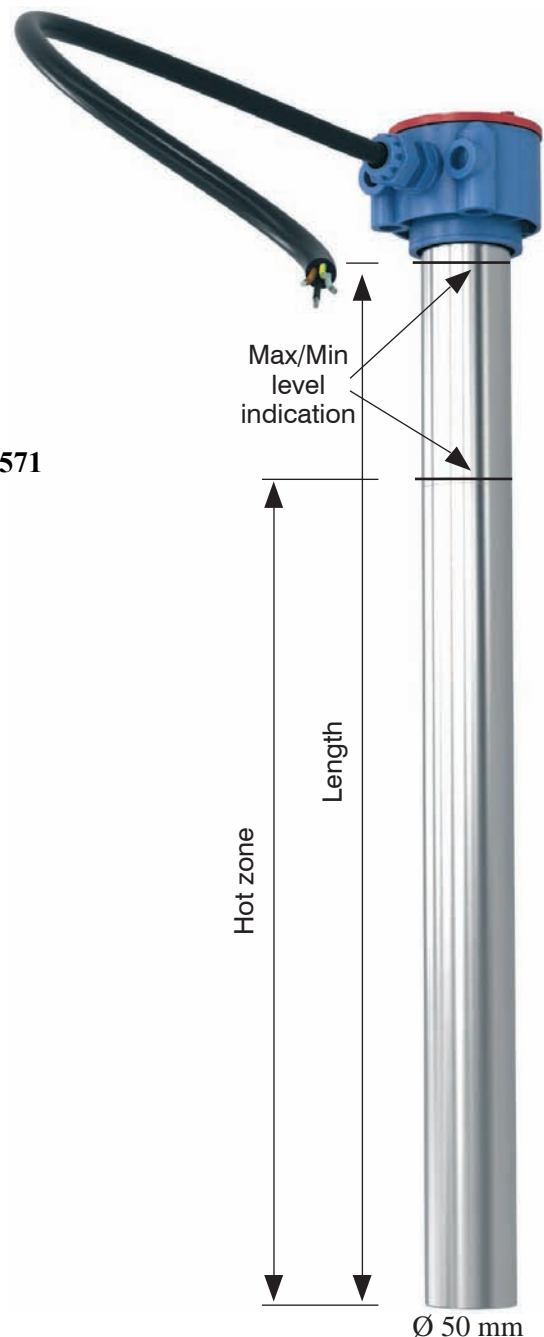
Dia. 50 mm, thickness 1.5 mm.

Model No.	Watts	Length	Hot Zone	HES
SRF50010 +V	1000	480	370	2,1
SRF60020 +V	2000	570	460	3,0
SRF80020 +V	2000	780	610	2,3
SRF80025 +V	2500	780	610	2,9
SRF10030 +V	3000	980	780	2,6
SRF12535 +V	3500	1210	900	2,6
SRF15045 +V	4500	1470	1150	2,6

Steel tubes (SST) EN10025:2004 Steel nr. S235

Dia. 50 mm, thickness 1.5 mm.

Model No.	Watts	Length	Hot Zone	HES
SST50010 +V	1000	480	370	2,1
SST60020 +V	2000	570	460	3,0
SST80020 +V	2000	780	610	2,3
SST80025 +V	2500	780	610	2,9
SST10030 +V	3000	980	780	2,6
SST12535 +V	3500	1210	900	2,6
SST15045 +V	4500	1470	1150	2,6



Certified QUARTZ TUBULAR HEATERS

1000 - 4500 Watts

Head

Sealing IP 66 (Nema 4X). Reinforced PP, diameter 85 mm. Threaded lid, sealed with O-rings. Easy opening head to replace conduit or heating element.

Heat exchange surface $\text{watt}/\text{cm}^2 = \text{HES}$

EX.



Quartz tubes

Dia. 50 mm, thickness 3,5 mm.

Model No.	Watts	Length	Hot Zone	HES
SQG50010 +V	1000	480	370	2,1
SQG60020 +V	2000	570	460	2,8
SQG80020 +V	2000	780	610	2,3
SQG80025 +V	2500	780	610	2,6
SQG10030 +V	3000	980	780	2,6
SQG12535 +V	3500	1210	900	2,6
SQG15045 +V	4500	1470	1150	2,6



Heating element

Heat resistant stainless steel element. Element can easily be changed if necessary.

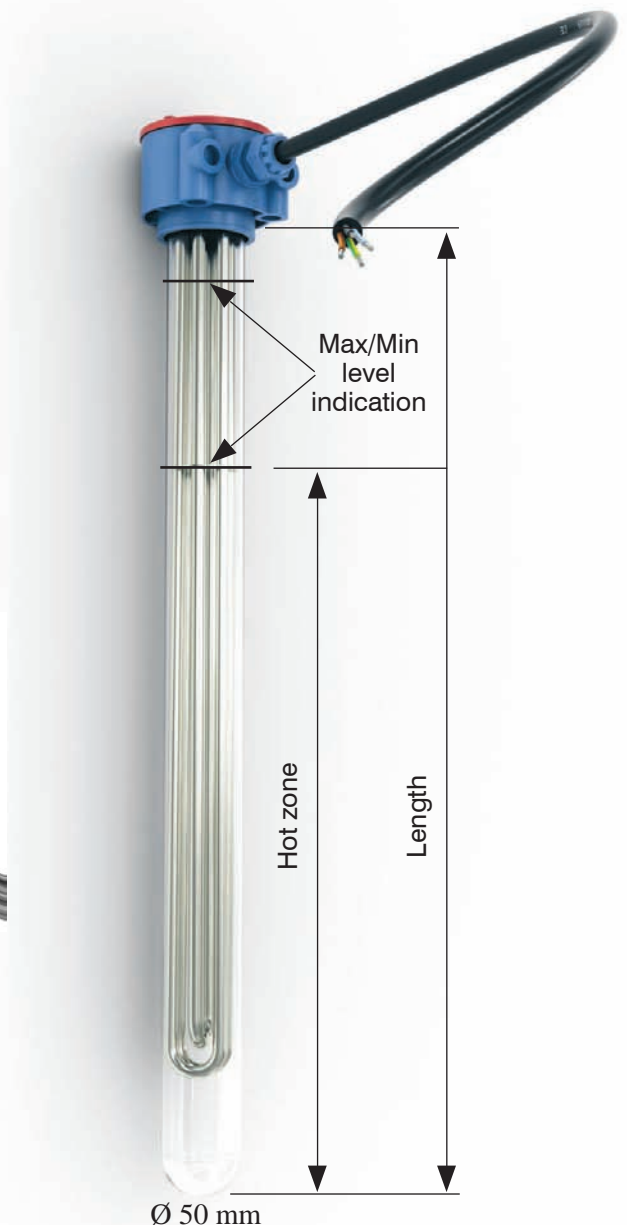
Heating element

Heat resistant stainless steel element. Element can easily be changed if necessary.

Conduit of PVC

Earthed to metal parts. Standard length 2 metres. Other lengths on request.

Specify +V: 1 for 1 phase 230 V
 2 for 3 phase 230 V
 3 for 3 phase 400 V

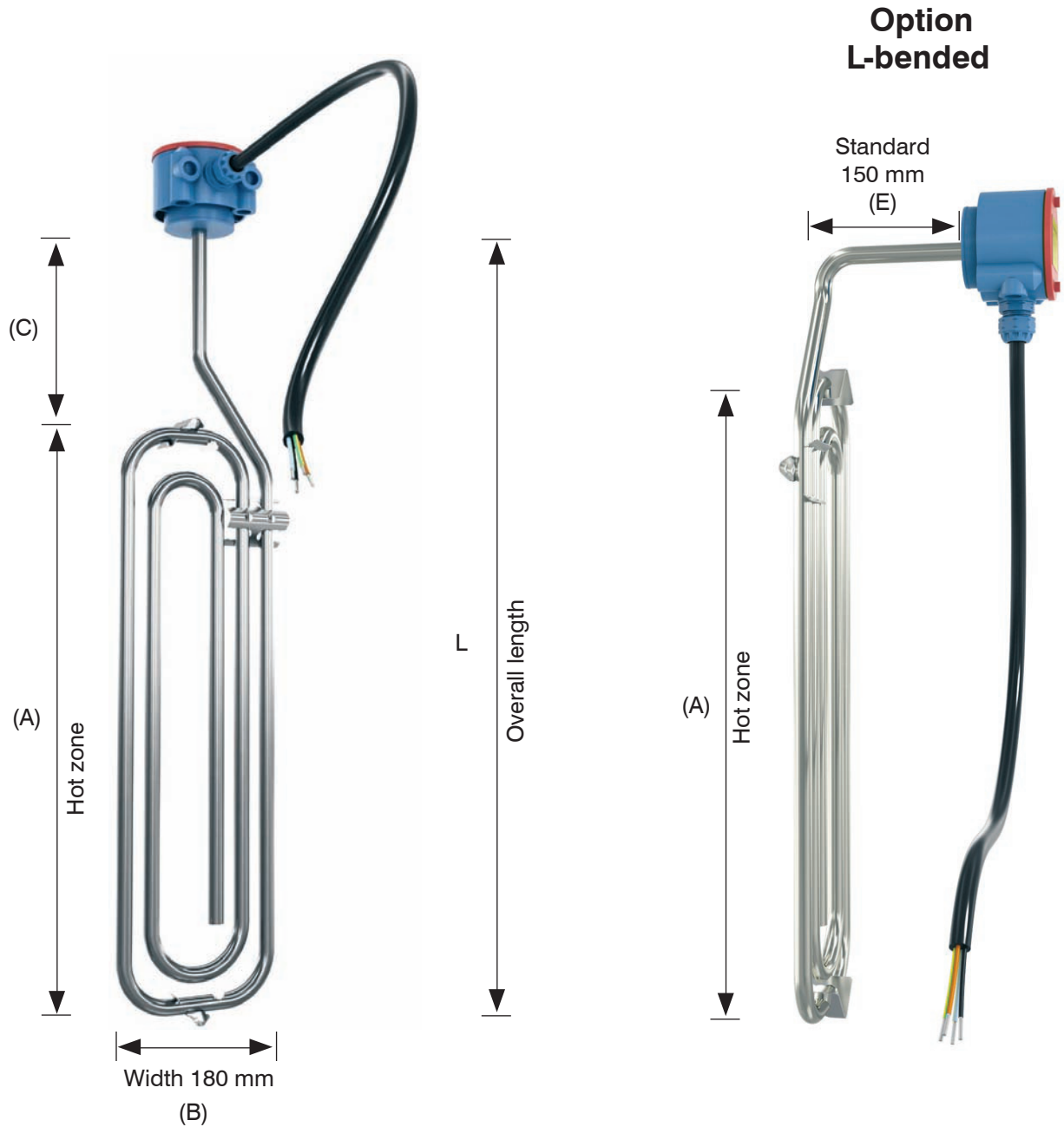


Manufacturer of VAT HEATER

Vat heater in **mild steel (MSP)**, **stainless steel (SSP)** and **titanium (TIP)** in single phase 240 Voltage.

Head of reinforced PP, sealing IP 66 (Nema 4X).

Cable length standard 2 meters. Not exchangeable.

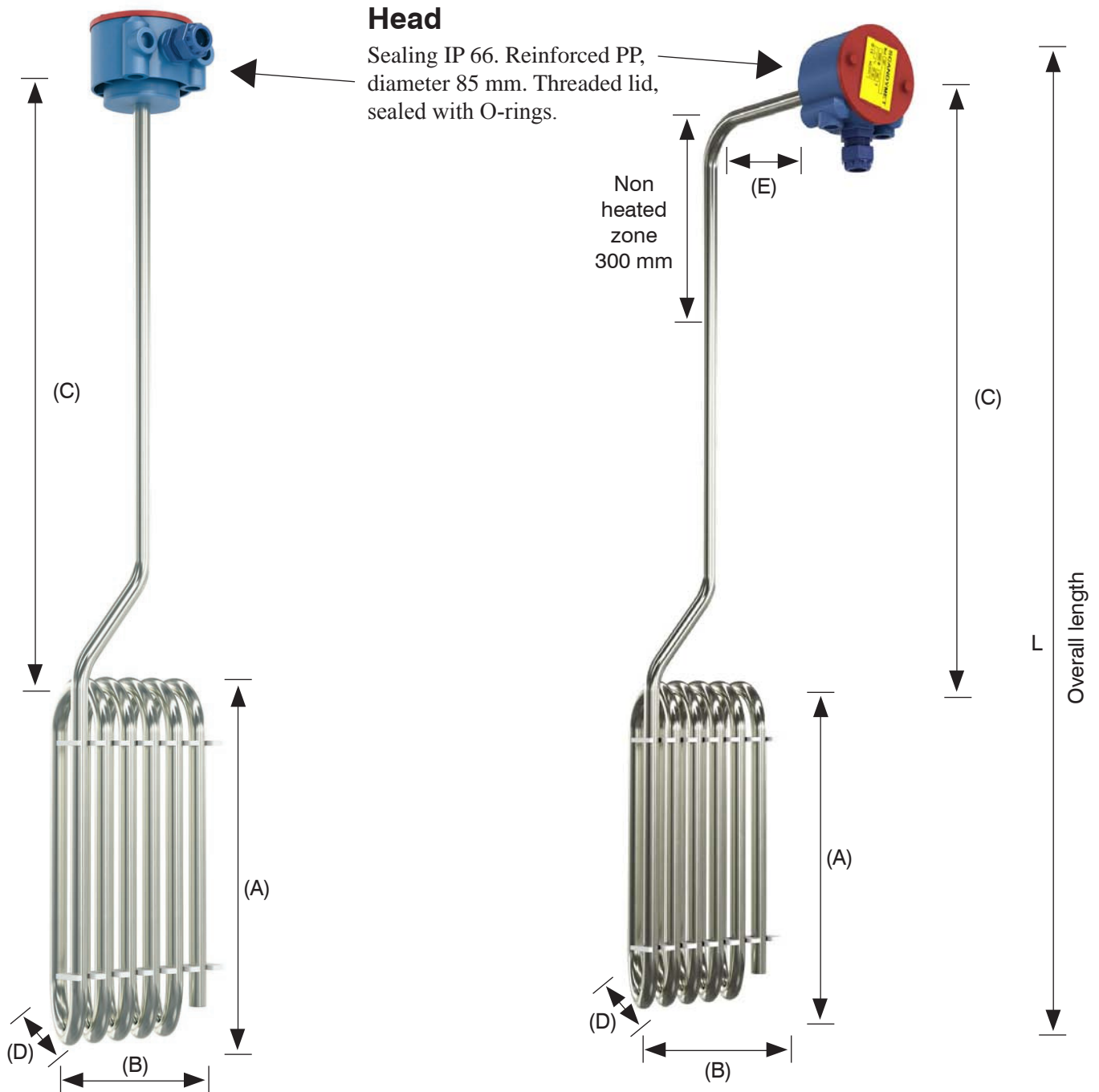


SSP MSP TIP 1 phase 240 Volts

	A	B	C	Th.	L.	Hes
2KW	495	180	200	35	685	2,2
3KW	495	180	200	35	685	3,3
4KW	495	180	200	35	685	4,4
6KW	495	180	200	35	685	6,6

Manufacturer of VAT HEATERS

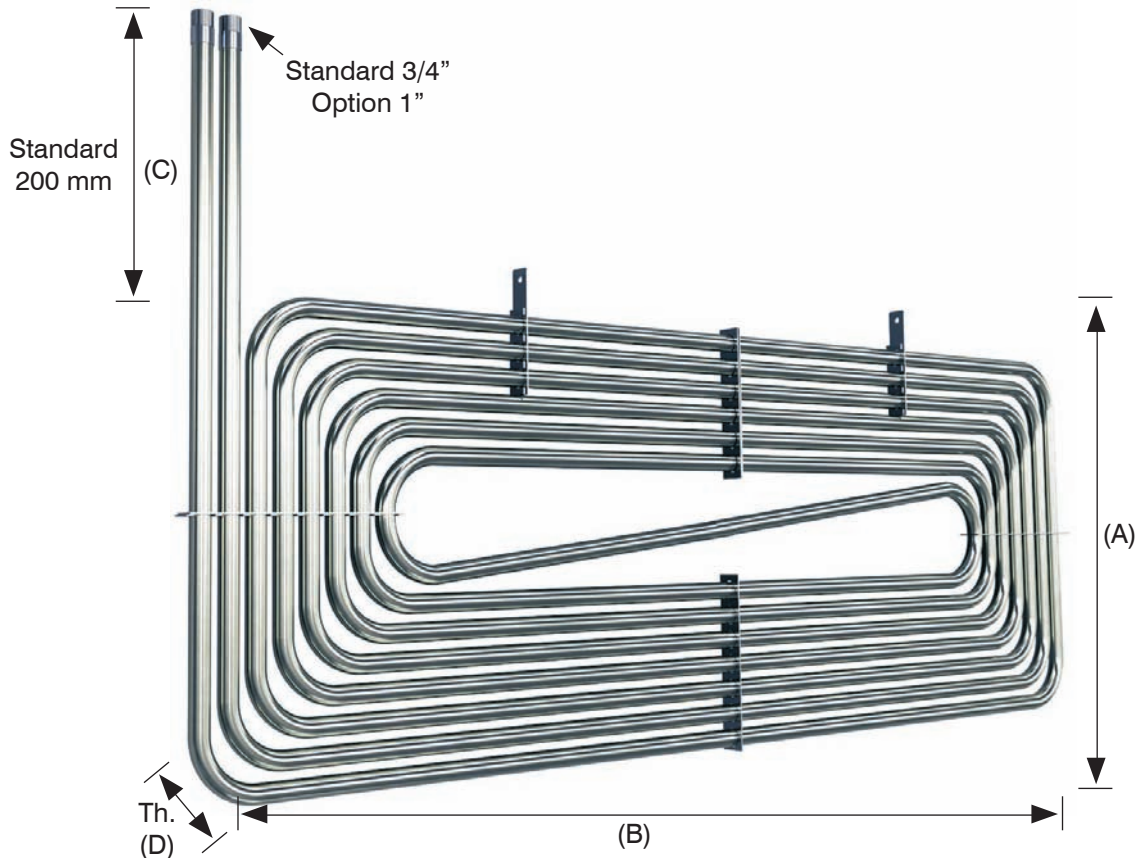
Stainless steel 3-4,5-6-9 Kw 3-ph-400 V Titanium 6-9 Kw 3-ph-400 V



	A	B	C	D	E	HES	Model nr
3 KW	300	140	300	90	150	1,5	August 1
	300	140	400	90	150	1,5	August 2
4,5 KW	300	140	600	90	150	1,5	August 3
	300	160	300	90	150	2,5	August 4
	300	160	400	90	150	2,5	August 5
6 KW	300	160	600	90	150	2,5	August 6
	300	180	300	90	150	3,8	August 7
	300	180	400	90	150	3,8	August 8
9 KW	300	180	600	90	150	3,8	August 9
	300	180	900	90	150	3,8	August 10
	300	180	300	90	150	5,6	August 11
	300	180	400	90	150	5,6	August 12
	300	180	600	90	150	5,6	August 13
	300	180	900	90	150	5,6	August 14

METALLIC HEAT EXCHANGER FOR LIQUIDS HAMPUS

- ☐ Compact and rigid design standard range take less space than a serpentine coil
- ☐ Coil is manufactured in Stainless steel or titanium
- ☐ Easy to install, can easily be custom manufactured according to special requirements
- ☐ Calculation program for sizing and option of coil



One layer

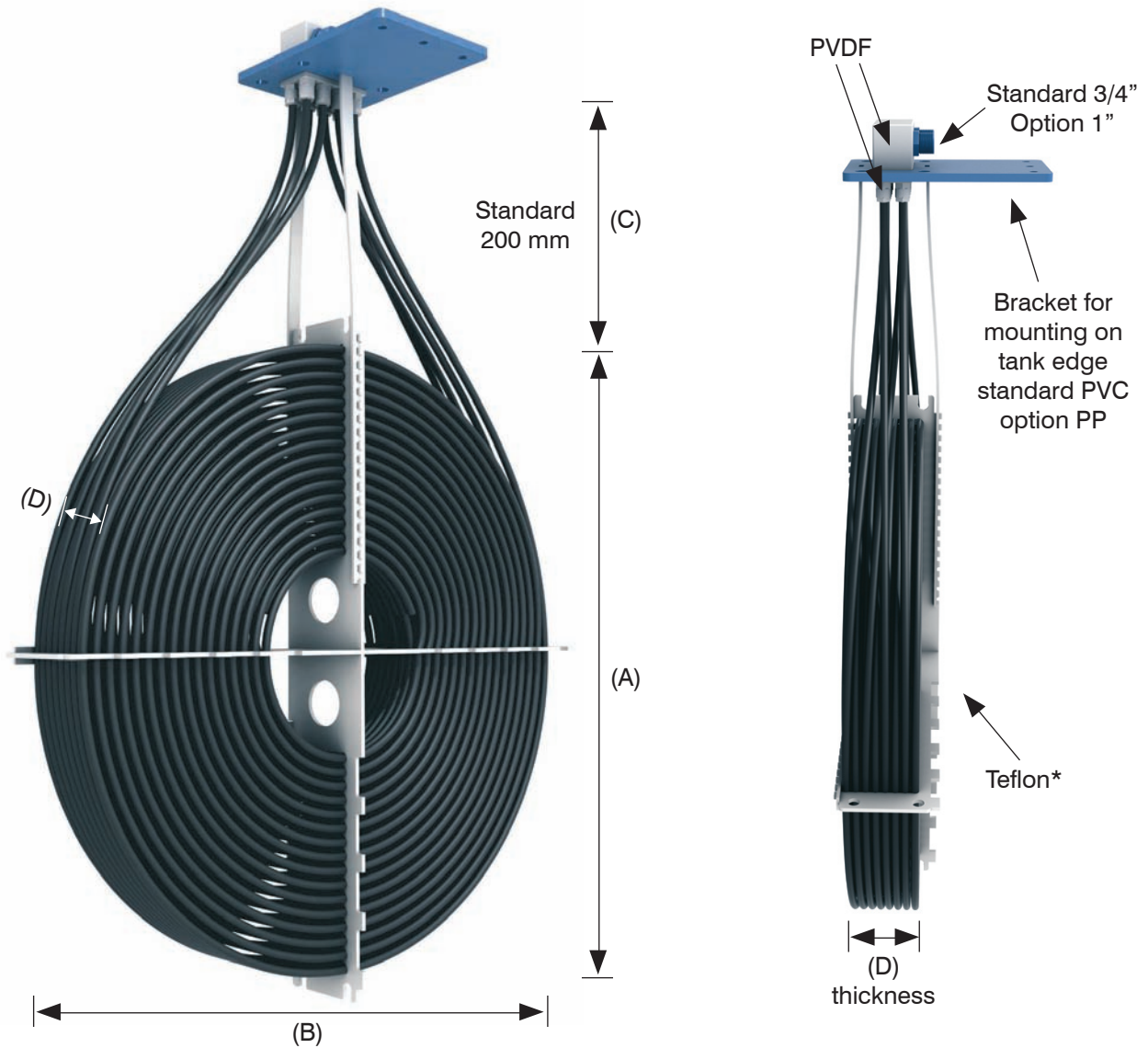
A	B	Thickness	Surface area
435 x 920		35	0,5 m ²
920 x 435		35	0,5 m ²
600 x 800		35	0,8 m ²
800 x 600		35	0,8 m ²
1080 x 580		35	0,98 m ²
580 x 1080		35	1,0 m ²
870 x 900		35	1,2 m ²
1000 x 1180		35	1,4 m ²
1180 x 1000		35	1,4 m ²
1000 x 1050		35	1,7 m ²
1620 x 600		35	1,7 m ²
600 x 1620		35	1,9 m ²
1860 x 735		35	2,2 m ²
735 x 1860		35	2,5 m ²
1500 x 900		35	2,5 m ²
900 x 1500		35	2,7 m ²

Two layer

A	B	Thickness	Surface area
390 x 810		60	0,7 m ²
810 x 390		60	0,6 m ²
890 x 580		60	1,6 m ²
580 x 890		60	1,8 m ²
1000 x 705		60	2,4 m ²
705 x 1000		60	2,5 m ²
1050 x 840		60	3,2 m ²
840 x 1050		60	3,3 m ²

TEFLON® TUBULAR HEAT/COOLING EXCHANGER FOR CORROSIVE LIQUIDS INGA

- ☐ Compact design with standard range – much value for money
- ☐ Standard maximum pressure 3,5 bar., 100 C.
- ☐ Easy to install- ready for use.
- ☐ Calculation program for sizing and option of coil- consult factory
- ☐ C-measurement can be modified- please contact factory

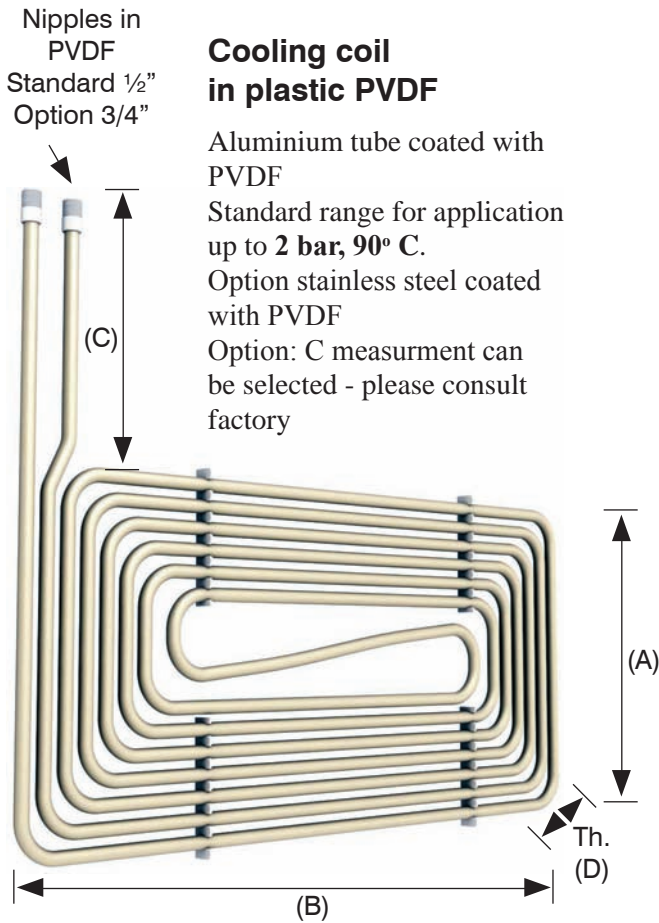


A	B	C	D	Surface area m ²	A	B	C	D	Surface area m ²
580	580	200	60	0,8	680	680	200	130	3,5
530	530	200	60	1,2	680	680	200	150	4,0
630	630	200	80	1,8	805	805	200	105	4,2
705	705	200	80	2,0	710	710	200	150	4,5
760	760	200	80	2,5	805	805	200	130	5,7
805	805	200	80	2,8	710	710	200	180	6,2
710	710	200	130	2,8	805	805	200	150	7,0
650	650	200	150	3,5	805	805	200	180	8,0

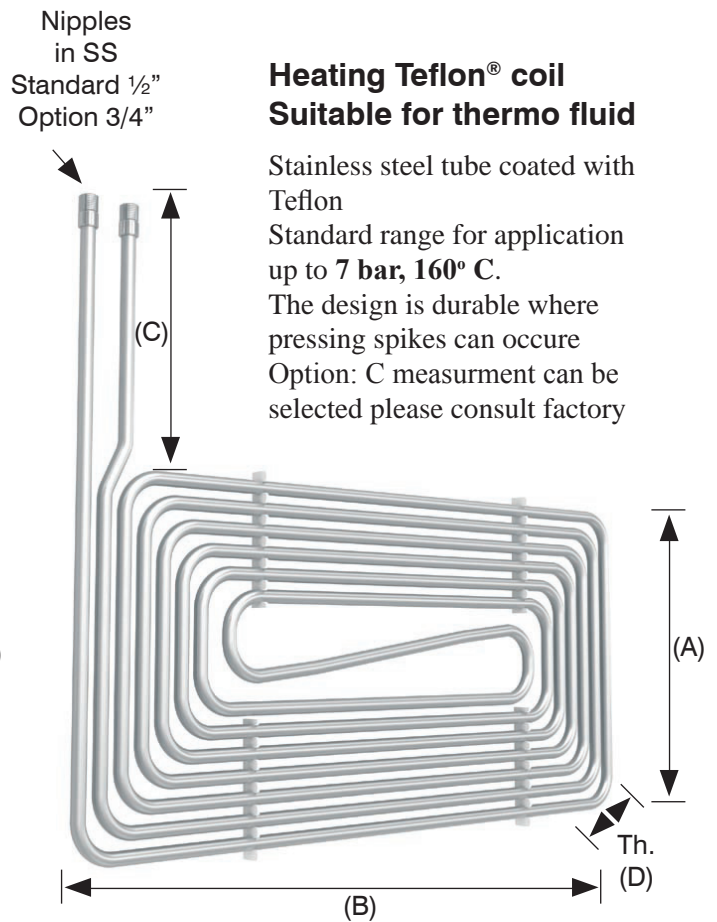
* Teflon is the DuPont™ trade name for PTFE.

PLASTIC RIGID TUBULAR HEAT EXCHANGER FOR CORROSIVE LIQUIDS GUNNAR

- Coil in rigid design with standard range
- Calculation program for sizing and option of coil
- The design is open and easy to inspect and clean if necessary
- Option: Exchanger can be bended according to fit your tank.



Max 90° C. Max pressure 2 bar.



Max 160° C. Max pressure 7 bar.

A	B	C	Thickness	Surface area
400	815	200	50	1,2
400	815	200	100	2,3
1150	330	200	35	0,6
1150	330	200	50	1,2
1150	330	200	100	2,4
800	430	200	35	0,7
800	430	200	50	1,4
800	430	200	100	2,4
800	860	200	50	2,8
1150	660	200	50	2,4

* Teflon is the DuPont™ trade name for PTFE.

EXAMPLE FOR CALCULATION PROGRAM OF METALLIC AND PLASTIC EXCHANGER FOR LIQUIDS INGA - GUNNAR - HAMPUS

Heating Coil (Double coils in one plane)
Summary of Calculations for Heating Coils

Page
1(1)

2008-06-10

Customer:
Project:
Tank no: 2,3m2 65C
Calculation no: 1.

Volume to heat:	2,3	m ³	
Liquid: water	4175	J/kg*oC	
Total power for heating:	432113	kJ	
Heating time:	8	h	
Starting temp.:	20	°C	
Operating temp.:	65	°C	

Heat supply water	80	°C	input
	70	°C	output

Logaritmic mean temperature: 25,60 °C

Example of valuable information for your installation

Coil pipe: dia.out.	25	mm	
dia. in.	23	mm	
thickness 1	1	mm	SS
thickness2	0	mm	SS

Total heat transfer coefficient 708,73 W/m².°C

Minimum flow required

Minimum flow	1,29	m ³ /h
no of parallell coils	1	pcs
flow speed	0,86	m/s

Size of coil

Length of one coil	11,0	m
Area of one coil	0,830	m ²
Area of 1 coils	0,830	m ²
pressure drop of one coil	0,82	m wc

0,08 bar

Pressure drop per coil

Recommended diameter of feeding pipe	#SAKNAS!	mm
flow speed in feeding pipe	#SAKNAS!	m/s
#SAKNAS!		

The dimensions of the coil are shown in drawing no	Offen
Width	810 mm
Height	738 mm

Recomendation for the choice of the feeding pump

Pressure loss for one coil	0,82	m wc
Geodetic difference	2,00	
Extra	5,00	
Total	7,82	m wc

0,78 bar

Calculated pump power	0,042	kW
Pump efficiency	65	%

Needed pump power

ATTACHMENT SCANDYMET PRODUCTS

Fasteners



- Fastener in reinforced PP
- For mounting of flexible heaters on tank edge
- Fits all STFX/STIX and SCAX

Fastner for flexible heater



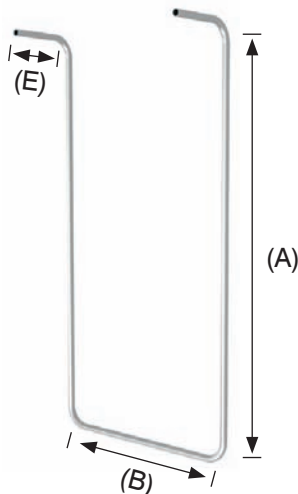
- Fastener in reinforced PP
- For mounting of tubular and all straight rigid heaters on tank edge
- Fits STI, SRF, SST, SQG, STFP, MSP, SSP, TIP and August

Fastner for tubular heater

Frames for heaters

Rigid frames for flexible heaters

Frame builds 60 mm on (B) heater measurement and 30 mm on (A) heater measurement

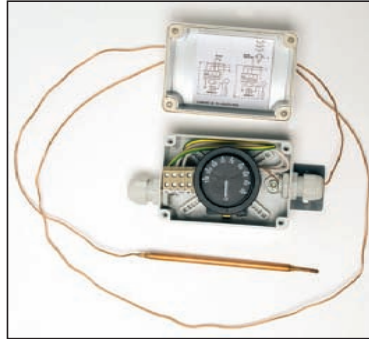


Mounts for heaters in frame



SCANDYMET THERMOSTATES ISABELLE

Non indicating thermostat with plastic junction box.
Temperature sensor covered with teflon for resistance in chemical solutions.



Product code	Power	Max. wattage	Max.amps.	Temp. Range	Sensor length	Accuracy
Isabelle 1	230V	3100	16	30-90° C	1,5 mtr.	+ - 1,5° C
Isabelle 2	3x400V	9000	16	30-90° C	1,5 mtr.	+ - 1,5° C

SCANDYMET DIGITAL THERMAL REGULATOR KELVIN



Dual led display to set points.

Provides precise control in most aqueous processes

Use with PT-100 sensor

Temperature range with pt-100 sensor

-50C° to +180° C. Accuracy +- 0,6° C.

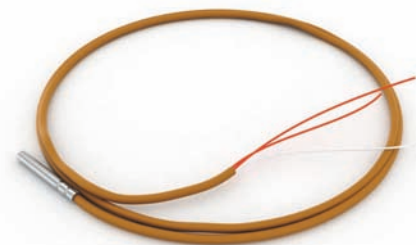
Power 230V, 50/ 60 Hz

Additional features Type J,K,T thermocouples



PT-100 sensor rigid

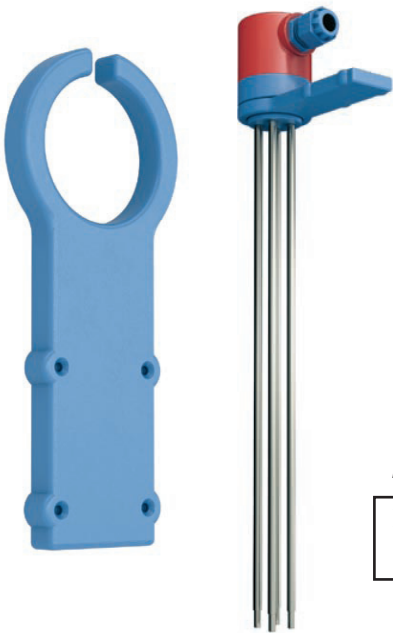
- Probe in stainless steel (SS) covered with teflon (PTFE).
- Standard lengths 300, 400, 500 and 800 mm.
- Optional length consult factory.
- Temperature range -50 - + 180° C.



PT-100 sensor flexible

- Teflon coated standard length 1,5 metre.
- Optional length consult factory.
- Temperature range -50 - + 180 C.

SCANDYMET LEVEL CONTROL



Conductivity style devices operate in most electrically conductive solutions

Probes in stainless steel (SS) or titanium (TI) covered with teflon (PTFE).

Standard lengths 300, 400 and 500 mm.

Maximum 5 probes / unit

Other lengths and materials please consult factory.

When ordering please specify as below as an example

EX.

Product code	Base material	Covering	Amount of probes	Length of probes
SS/PTFE3-500	Stainless steel	PTFE	3	500

SCANDYMET OVERHEAT PROTECTION



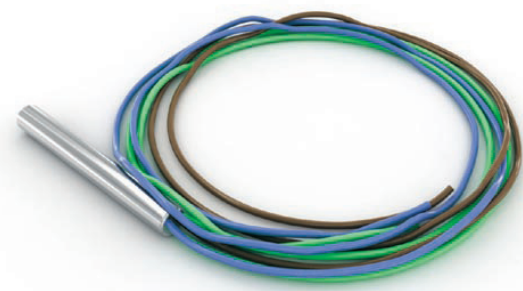
Resetable over heat protection for heater type STFX, SCAX and STIX.

Teflon coated with a standard length up to 2 mtr.
Submersible flexible riser.

Maximum process temperature + 90° C.

Product code

OHP 1



Replacable over heat protection for heater type STFX, STIX and SCAX.

Teflon coated with a standard length up to 2 mtr.
Submersible flexible riser.

For process temperatures up to + 90° C.

Product code

OHP 2

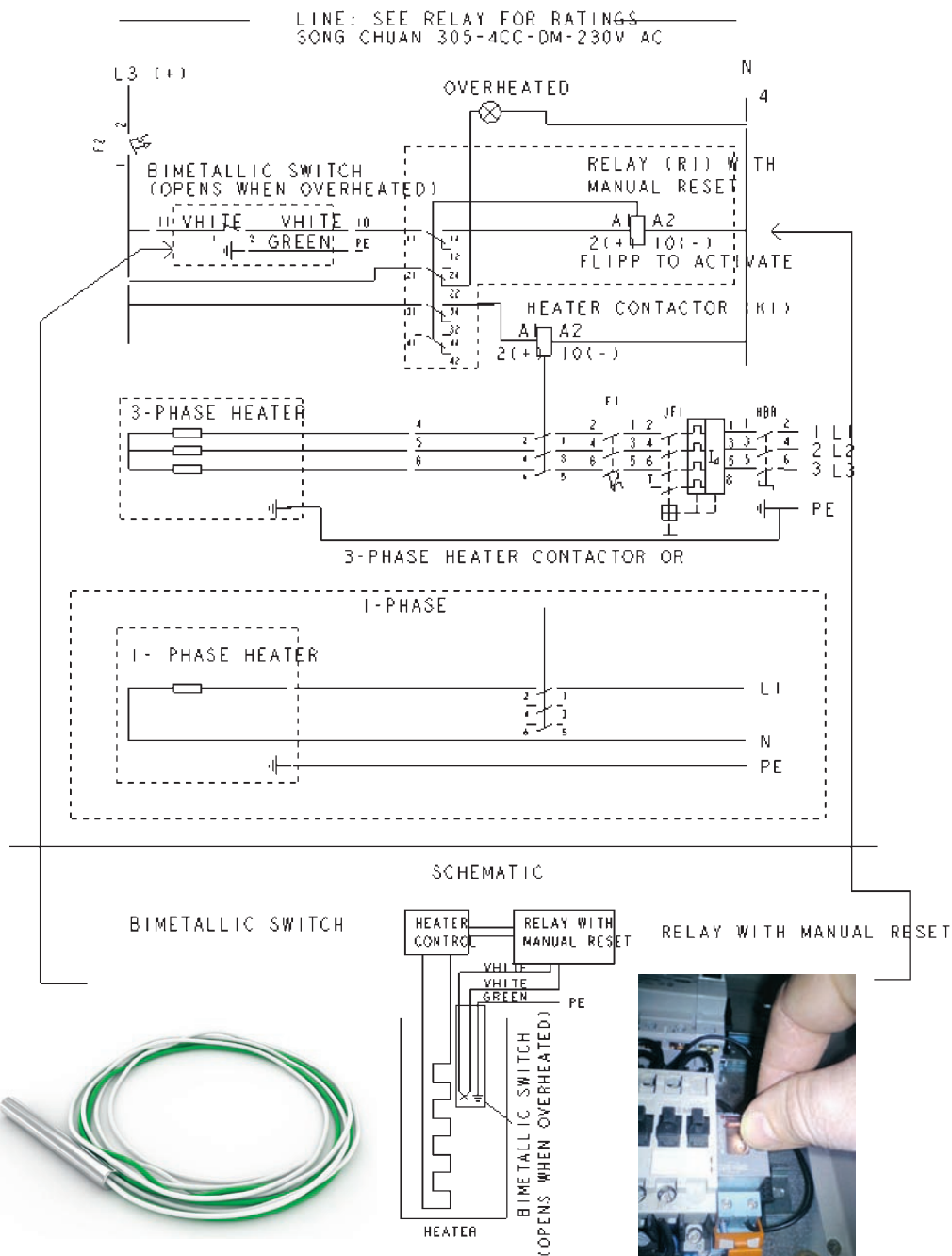
Overheat protection why and when?

Every electric immersion heater can suddenly be exposed to air e.g. by low fluid level or by being removed from the vat by mistake. Without OP it's a matter of minutes before the temperature of the heater is high enough to destroy it and cause damage to the vat or plant.

We particularly recommend OP when heaters are installed in vats of flammable materials such as plastic or steel vats lined with rubber.

The wiring diagram shows a fully reliable and low cost method to achieve the securest and highest level of overheat protection.

SCANDYMET OVERHEAT PROTECTION WITH BIMETALLIC SWITCH



Heater selection guideline list

			SFO		SRF		STI		SST	
			STFP	SCAX			STI	SST		
			STFX	SSP	SQG	STIX	MSP			
Acetic acid	H3COOH	Quartz or teflon	X		X					
Alkaline cleaner		Stainless steel, steel	X						X	
Alkaline soaking cleaners		Stainless steel, steel		X					X	
Aluminum bright		Quartz or teflon	X		X					
Aluminium chloride	ALCL3	Quartz or teflon	X		X					
Aluminum sulfate	AL2SO4	Stainless steel		X						
Ammonium fluoride	NH4F	Quartz or teflon	X		X					
Ammonium chloride	NH4CL	Titan					X			
Ammonium persulfate	(NH4)2S2O8	Stainless steel		X						
Bonderizing	NA2B4O7 10 H2O	Stainless steel		X						
Black oxide		Stainless steel		X						
Boric Acid	H3BO3	Titanium					X			
Bright nickel	Ni3CO3(OH)4 4H2O	Quartz, PTFE or Titanium	X		X	X				
Bright copper cyanide		Stainless ,steel or steel		X					X	
Bronze		Stainless steel		X						
Brown oxide		Titanium					X			
Butyric acid	CH3CH2CH2-COOH	Titanium					X			
Calcium chloride	CaCL2	Titanium					X			
Carbonic acid	H2CO3	Titanium					X			
Caustics		Steel							X	
Chromic acid no fluorides	H2CRO4	Quartz or teflon	X		X					
Chlorosulphuric acid	HSO 3 CL	Titanium					X			
Chromic baths		Quartz or teflon	X		X					
Chromate baths		Teflon	X							
Copper acid		Teflon	X							
Copper fluoborate		Teflon	X							
Copper strike		Stainless steel		X						
Deionized water		Titanium					X			
Deoxidizer etching		Quartz or teflon	X		X					
Electroless copper		Teflon	X							
Electroless nickel		Teflon	X							
Electroless tin		Teflon	X							
Electro cleaner		Stainless steel		X						
Electro Polishing		Teflon	X							
Ferric Chloride	FeCL3	Quartz or teflon	X		X					
Ferric nitrate	FE(NO3)3	Teflon	X							
Fluoborate baths		Teflon	X							
Formic acid	HCOOH	Stainless steel		X						

Heater selection guideline list

			SFO				
			SRF				
			STFP	SCAX		STI	SST
			STFX	SSP	SQG	STIX	MSP
Gold acid		Titanium, quartz or teflon	X		X	X	
Hydrochloric acid	HCL	Teflon or quartz	X		X		
Hydrofluoric acid	HF	Teflon	X				
Hydrogen peroxide	H2O2	Quartz or teflon	X		X		
Iron Phosphate	FePO4	Stainless steel		X			
Manganese Phosphate	MnPO4	Stainless steel		X			
Nickel plating (watts)		Titanium, quartz or teflon	X		X	X	
Nickel acetate		Stainless steel		X			
Nickel Chloride	NiCL2	Titanium				X	
Nickel sulfate	NiSO4	Titanium, quartz or teflon	X		X	X	
Nitric acid	HNO3	Quartz or teflon	X		X		
Oil		Steel, stainless steel		X			
Oxalic acid	C2O2(OH)2	Quartz or teflon	X		X		
Paint stripper (alkaline)		Stainless steel		X			
Phosphoric acid	H3PO4	Teflon	X				
Phosphate		Stainless steel		X			
Potassium acid		Teflon	X				
Potassium hydroxide	KOH	Stainless steel		X			
Potassium permanganate	KMnO4	Stainless steel		X			
Ruthenium	Ru	Teflon	X				
Sea water		Titanium				X	
Silver baths		Stainless steel		X			
Sodium bisulfate	NaHSO4	Teflon	X				
Sodium carbonate	Na2CO3	Titanium				X	
Sodium Chlorate	NaCLO3	Titanium				X	
Sodium chloride	NaCL	Titanium				X	
Sodium persulfate	Na2S2O8	Teflon	X				
Sulfuric acid		Quartz or teflon	X		X		
Tin acid baths		Teflon	X				
Tin alkaline baths		Stainless steel		X			
Zinc acetate	Zn(O2CCH3)2	Titanium or teflon	X			X	
Zink ammonium chloride		Titanium				X	
Zink phosphate		Stainless steel		X			
Zincate		Stainless steel		X			

The list is provided as a help and guide only. Due to the complexities of solutions and applications it is user's responsibility to check with the supplier of the chemical for heater material compatibility and recommendations.

Scandymet electrical immersion heaters

Installation manual and maintenance instructions

Before installing:

- ❑ Inspect the heater. Verify it is undamaged after transport, and that there is no damage to the glass, teflon, or electric cable.
- ❑ Check the sheath material to be sure it is compatible with the intended bath solution. If you are even slightly uncertain, contact us!
- ❑ Confirm the line and heater voltage agree and the cubicle is locked for heating capacity.

During installation

- ❑ Installation must be done by a qualified electrician. In a stationary electrical installation an omnipole contact breaker must precede the heater.
- ❑ Confirm all power is disconnected and fuses have been removed at the actual switching point.
- ❑ Heaters without supports have to be installed vertically. The active part should be at least 20 mm from the tank wall, bottom, or sludge accumulation. Otherwise, overheating and/or heater damage can be the consequence.
- ❑ Heaters should be installed for stationary service (anchored) in a bath solution of 95° C max. Min. level and max. level for bath solutions are marked on the heaters. While in service the solution level must be maintained between these markings.
- ❑ For electrical heating, a level control must always be installed. If not, overheating can occur at min. level, which may be a fire hazard.
- ❑ In service, heaters should be protected from contact with moving parts, anodes, cathodes, or any other source of current.

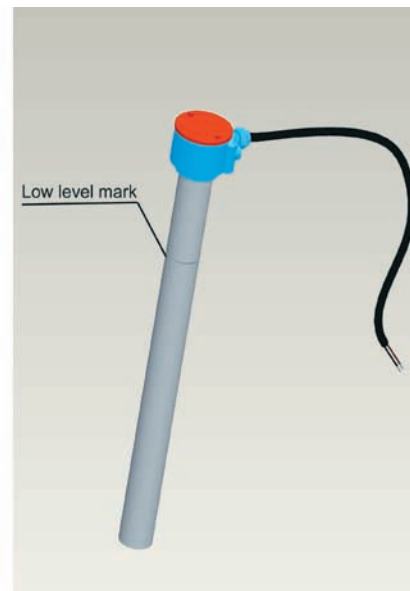
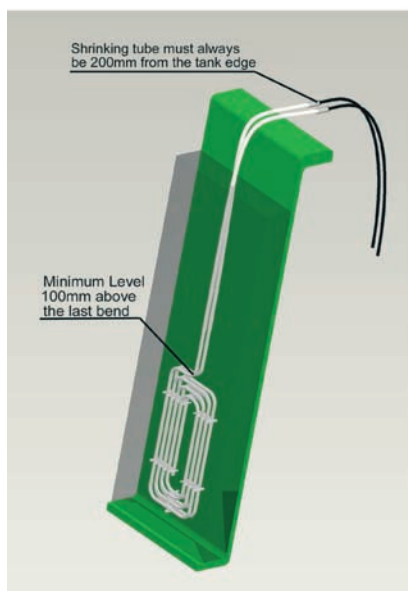
- ❑ When installing heaters with a collecting box, the box must always be located where it will not be subjected to direct flushing, drips, or vapors from bath solution. The collecting box should never be located on the tank edge.

Maintenance and control of immersion heater in service

- ❑ Maintain the solution level between the two level marks.
- ❑ Clean heaters regularly and check function of level control.
- ❑ Check heaters regularly for any sign of potential failure, such as cracks (glass or teflon) or corrosion (metal heater).
- ❑ When checking the element, the electricity supply to the heater must be turned off at least 20 minutes prior to exposing the element to air.
- ❑ The supply cord cannot be replaced. If the cord is damaged the appliance should be scrapped (flexible heaters).
- ❑ If the supply cord is damaged, it must be replaced by manufacturer, its service agent or similiary qualified person in order to avoid a hazard (tubular heaters).

Cleaning of heaters

- ❑ Turn off the heat electric supply for at least 20 min. prior to exposing the element to air.
- ❑ A soft brush or gloved hands are recommended to remove build-up from the element. Be cautious while cleaning to avoid damage.



Warranty

All Scandymet equipment, heaters and controls have been carefully inspected before shipping and are warranted to be free from defects in workmanship and material for a period of one year from date of purchase on a prorated basis. At its option, Scandymet will repair or replace any defects which are exhibited under proper and normal use. Scandymet disclaims any responsibility for misuse, misapplication, negligence or improper installation of equipment. Scandymet makes no warranty or representation regarding the fitness for use or the application of its products by the purchaser.

Please ensure applicability of heater before installation since we cannot guarantee heaters against premature failure due to corrosion caused by unusual conditions over which we have no control, such as:

- Excessive sludge buildup
- Stagnant or turbulent flow of the solution
- Aeration
- Erosion

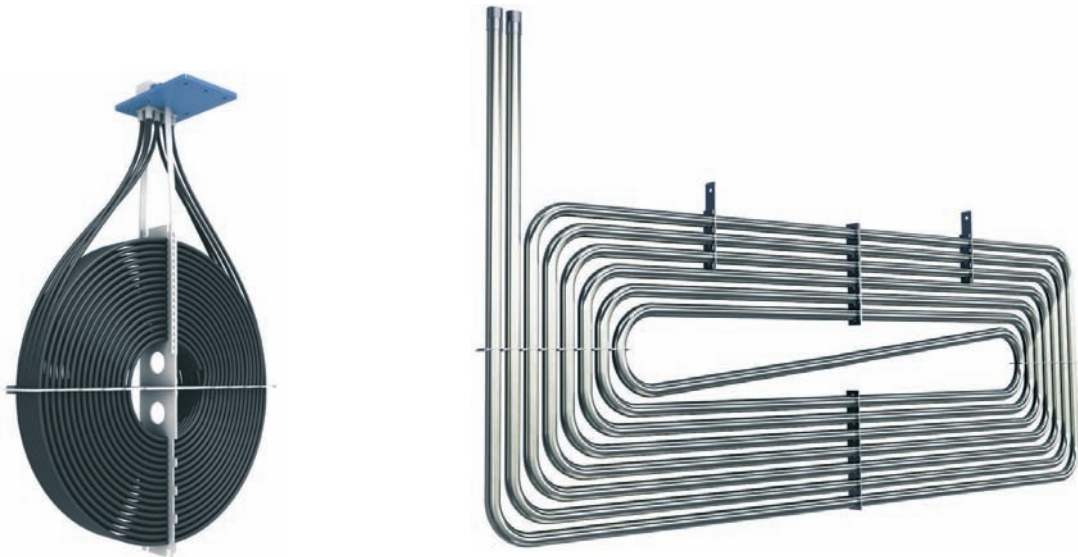
Scandymet is not liable for costs incurred in removal, reinstallation, or unauthorized repair of the product, or for damage of any type whatsoever including incidental or consequential damage.

Transports

If no other agreements have been made, claims against freight carriers for damage in transit must be filed by the buyer and freight must be prepaid for returned products.

Kindly inform us immediately if you have received damaged products. Specifications of products in catalog 2010 are subject to change without notice.

*– 30 years of
continuous development!*



 **SCANDYMET**
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