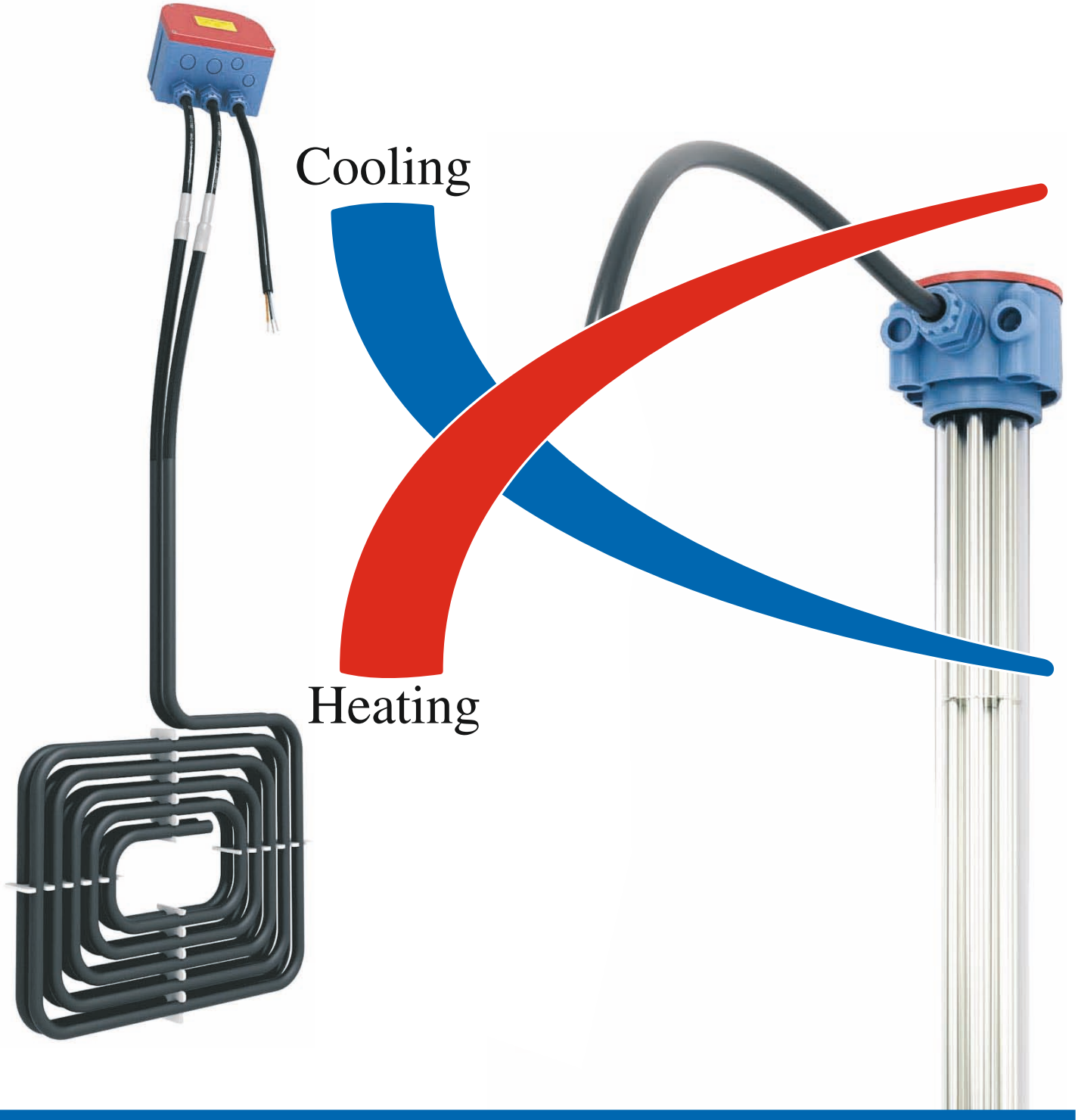
SCANDYMET



SCANDYMET, Innovative and Technically Advanced Manufacturer of Immersion Heaters and Heat Exchangers for Surface Treatment

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

With regards to electrical heaters it is extremely important that choice of material and technical execution harmonize in order to produce reliable and cost efficient products.

Our product development program is based on 4 corner stones:
Established proven products – reliable and cost efficient
Input from users – continuous innovation based on customer demand
In-house development of production methods and material adaptation
Adherence to safety regulations – all products certified

Over the years our innate curiosity and creativity has prompted us to solve industry problems, often where others would not commit themselves to the same extent. This has given us a breadth and depth of experience that has resulted in a correspondingly ingenious product program.

Our 35 years of electrical heater experience gives us confidence that our expanded product program will be well received by both old and new customers.

VDE Prüf- und Zertifizierungsinstitut

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Tauchheizgerät
Immersion heater

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DIN EN 60335-1 Ber.1 (VDE 0700-1 Ber.1):2014-04; EN 60335-1:2012/AC:2014
EN 60335-1:2012/A11:2014
DIN EN 60519-1 (VDE 0721 Teil 1):2004-05; EN 60519-1:2003
DIN EN 60519-2 (VDE 0721-2):2007-05; EN 60519-2:2006
DIN EN 62233 (VDE 0700-366):2008-11; EN 62233:2008
DIN EN 62233 Ber.1 (VDE 0700-366 Ber.1):2009-04; EN 62233 Ber.1:2008

Aktenzeichen: 5012165-2250-0001 / 213415
File ref.:
Ausweis-Nr. 40031079 Blatt 1
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EN 60335-1:2012/A11:2014
DIN EN 62233 (VDE 0700-366):2008-11; EN 62233:2008
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Page

STFX - Flexible PTFE Heaters
Ratings 500-15000 Watts **4-7**

Submersible Metal Heaters
SCAX - Stainless Steel
STIX - Titanium
Ratings 500-12000 Watts **8-9**

STFR - Rigid L-bent PTFE Heaters
Ratings 2250-15000 Watts **10**

SFO - Tube Heater for Phosphate
Ratings 1000-3300 Watts **11**

Tubular heaters
SRF - Stainless Steel
SST - Mild Steel
STI - Titanium
Ratings 1000-4500 Watts **12**

Tubular Heaters
STE - PTFE Tube Heater
SQG - Quartz Tube Heater
Ratings 1000-4500 Watts **13**

VAT Heaters
SMSP - Mild Steel
S**SSP** - Stainless Steel
S**TIP** - Titanium
Ratings 2000-4000 Watts **14-15**

VAT teflon heater. STFP. **16**

HAMPUS
Metallic Heat Exchanger for liquids **17**

INGA
PTFE Tubular Heat Exchanger
for corrosive liquids **18**

GUNNAR
Rigid Tubular Heat Exchanger
for corrosive liquids **19**

HAMPUS, INGA, GUNNAR
Heat Exchanger size calculation example **20**

Scandymet Fasteners and Frames **21**

ISABELLE - Thermostate
KELVIN - Digital Thermal Regulator **22**

PT-100 - Rigid Thermal Sensor **23**

Level Control **24**

OHP 1, OHP 2 - Overheat Protection **25-26**

Maintenance instructions **27**

Heater Selection Guideline **28-29**

Warranty and transports **30**

STFX - Flexible PTFE Heaters

Flexible Design, Certified, Flexible Risers

Model Ratings 500-15000 Watts

¤ **An all-purpose heater!**
Resistant to most acids and alkalines.
Max 90° C bath temperature for standard range.

¤ **Safe Heating!**
Heating part deeply submerged or placed horizontally on tank bottom.

¤ **Efficient!**
Superior heating capacity, compared to conventional tubular heater.

¤ **Space Saver!**
Compact design and flexible riser makes it easy to install these heaters with maintained safety.

¤ **Reliable performance! Increased service life!**
Unique manufacturing method assures tight bonding between heating element and PTFE layer. Immediate heat transfer from heating element to liquid solution prevents internal heat accumulation, thus increasing element life.

¤ **Easy Maintenance!**
Simple clear-cut design, easy to overview and clean.

¤ **Economic!**
Modular system with elements in two or more layers which are individually replaceable. Facilitates maintenance and reduces replacement cost.

¤ **Certified adherence to Safety Standards!**
Both the conduit and stainless steel element under the PTFE layer are grounded.
All elements are individually tested and certified.

¤ **Options**
- Bimetallic Overheat Protection, OHP 1
- Fused Overheat Protection, OHP 2
- Flexible Riser, Length 1 – 10 m (C)
- Electric Cable, Length 1 – 15 m (E)
- L-bent for Bottom installation

Standard Vertical Heater

Option Bottom Mount

Scandymet PTFE Heaters = More Value for you money!

All-Purpose Heater + Reliable + Efficient + Space Saving + Easy Maintenance

Heater Identification

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

Grounded Conduit

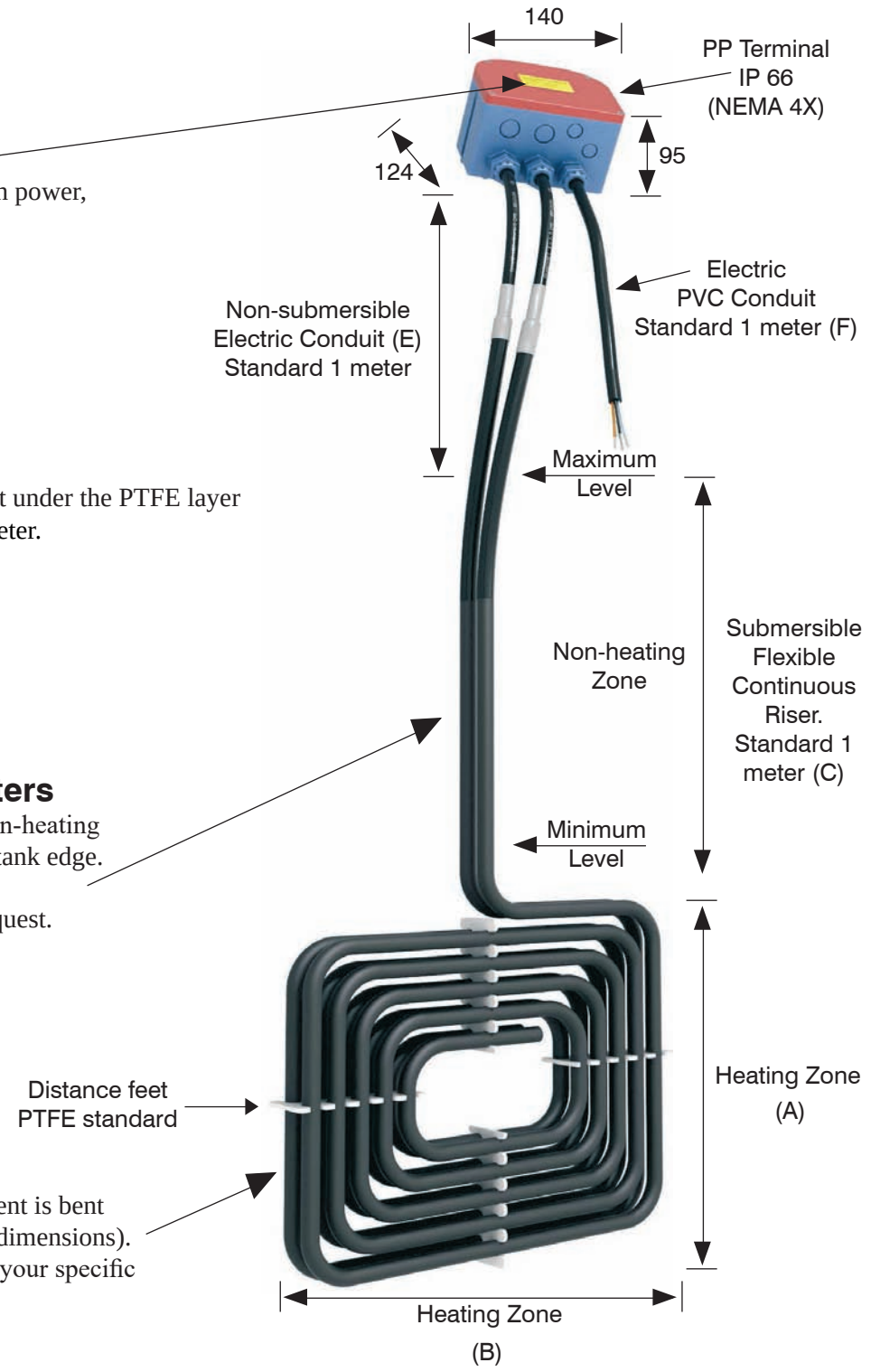
The stainless steel heating element under the PTFE layer is grounded. Standard length 1 meter.

Flexible Riser 1-10 meters

The continuous flexible riser is non-heating and suitable for bending over the tank edge.
Standard length 1 meter.
Additional length according to request.

Custom Design

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



STFX - Flexible PTFE Heaters

Flexible Design, Certified, Flexible Risers

Ratings 500-3700 Watts.
Voltage: 1 phase 230 V or 3-phase 400 V
***** Also available in 3-phase 230 V

Options:
Overheat Protection OHP 1 or OHP 2
L-bent Bottom Mount

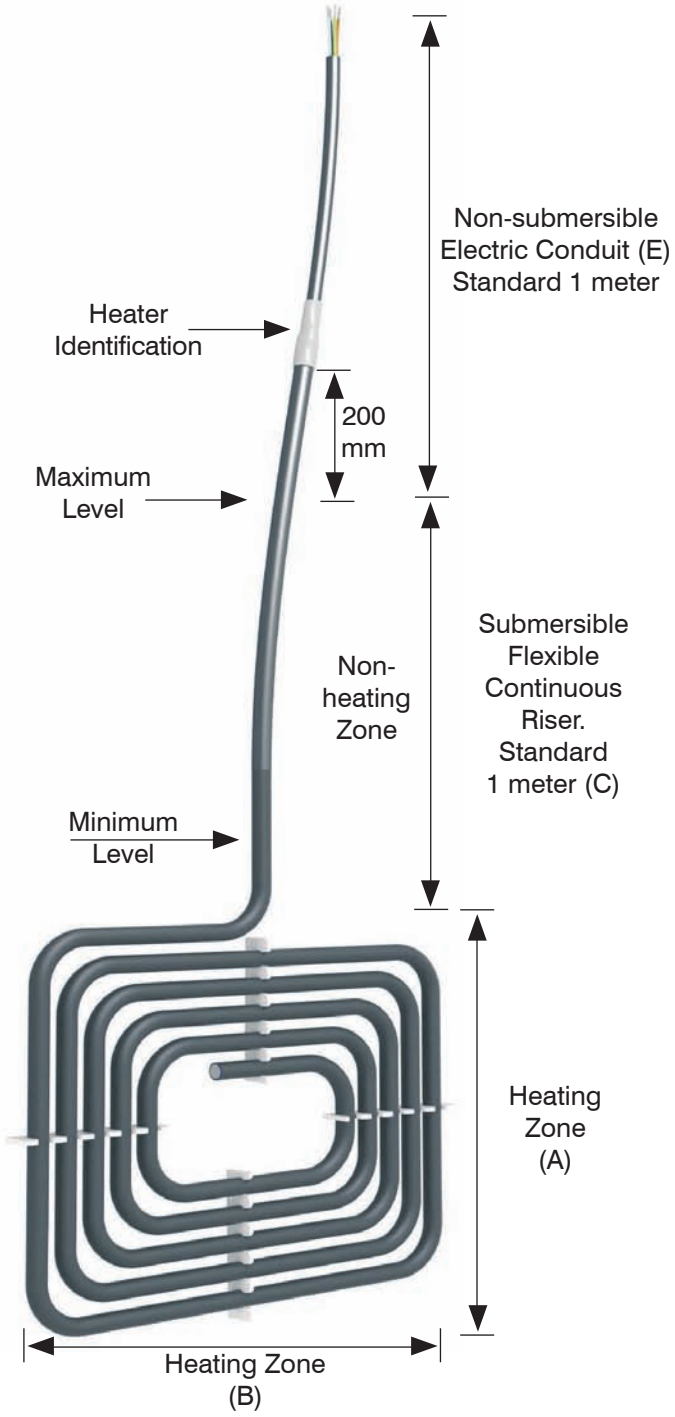
Standard sizes

1 phase 230 Volts

	A	B	Th.	W/cm²
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
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

3 phase 400 Volts

	A	B	Th.	W/cm²
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



STFX - Flexible PTFE Heaters

Flexible Design, Certified, Flexible Risers

Ratings 4500-15000 Watts
Voltage: 1 Phase 230 V, or 3-Phase 400 V
***** Also available in 3-phase 230 V

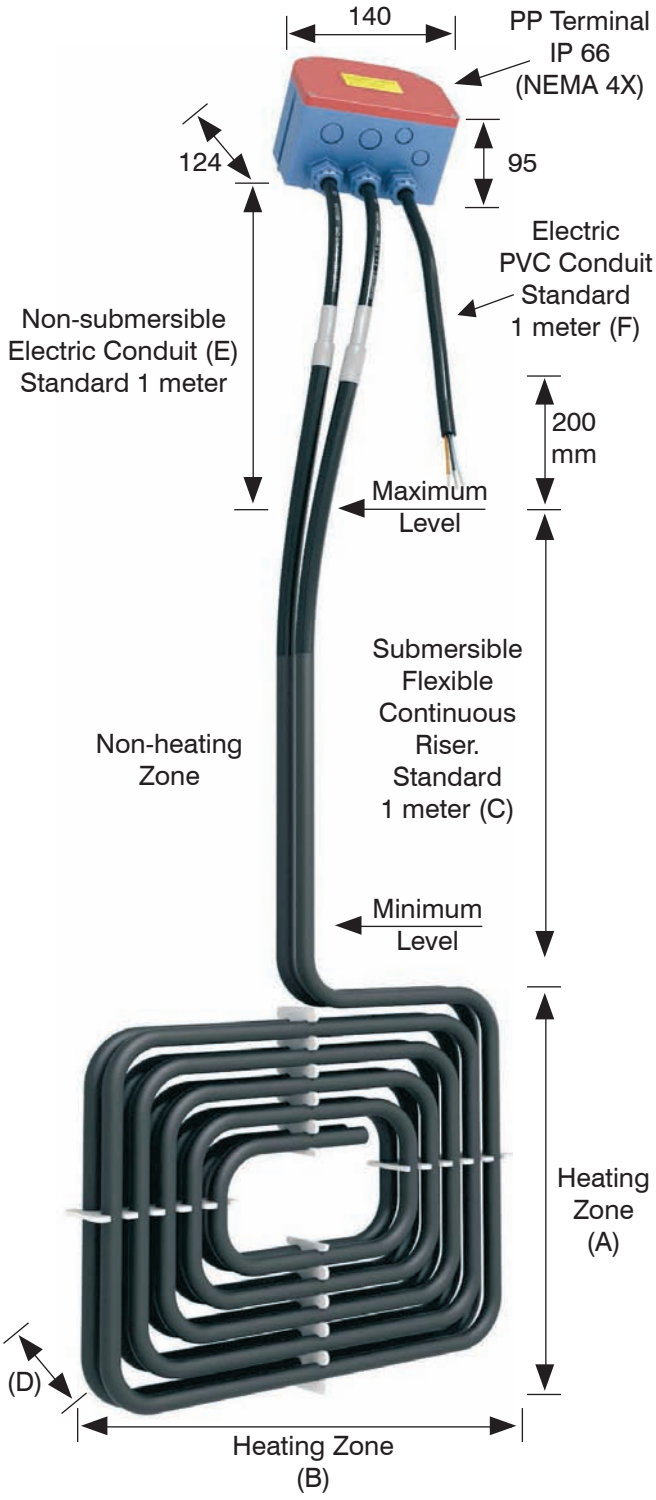
Important and valuable feature
The heating elements are individually replaceable
In case of failure you only need to replace the failed heating element, not the entire heater

Options:
Overheat Protection OHP 1 or OHP 2
L-bent Bottom Mount

Standard sizes

3 phase 400 Volts

	A	B	Th.	W/cm²
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	325	825	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	330	50	1,5 *
12kW	1400	280	50	1,5 *
15kW	325	825	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	330	50	2,0
15kW	1400	280	50	2,0



Flexible Metal Heaters
SCAX – Stainless Steel, STIX – Titanium
Flexible Design, Certified, Flexible Risers

Ratings 500-12000 Watts
Voltage: 1 Phase 230 V, or 3-Phase 400 V
***** Also available in 3-phase 230 V

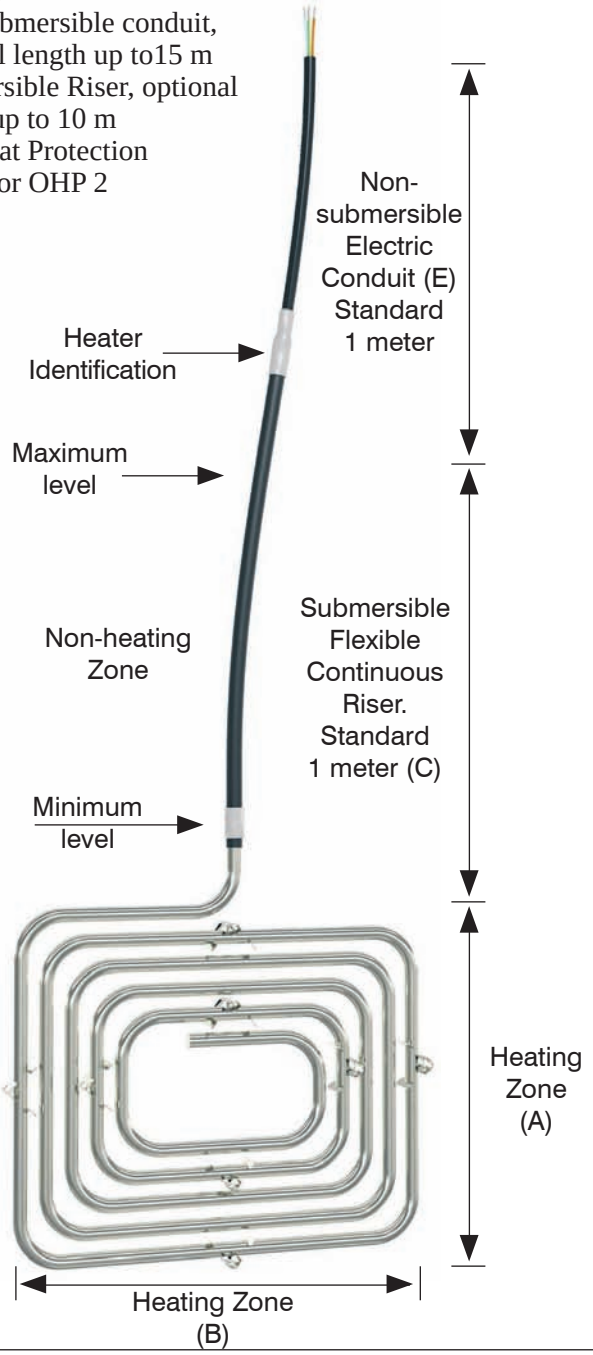
¤ **Use:** See Heater Selection Guideline, page 26-27

¤ **Efficient!** Suitable for bottom installation for excellent heat distribution.

¤ **Flexible!** Conduit and PTFE Riser (C) are continuous and flexible. Easy to install over the tank edge. Guards are standard.

¤ **Space saver!** The elements can be bent to meet your specific requirements at no extra cost!

¤ **Options:**
- Non-submersible conduit, optional length up to15 m
- Submersible Riser, optional length up to 10 m
- Overheat Protection OHP 1 or OHP 2



SCAX Stainless steel, EN 1.4404
1 phase 230 Volts

	A	B	Th.	W/cm²
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, EN 1.4404
3 phase 400 Volts

	A	B	Th.	W/cm²
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, EN 1.4404
3 phase 400 Volts

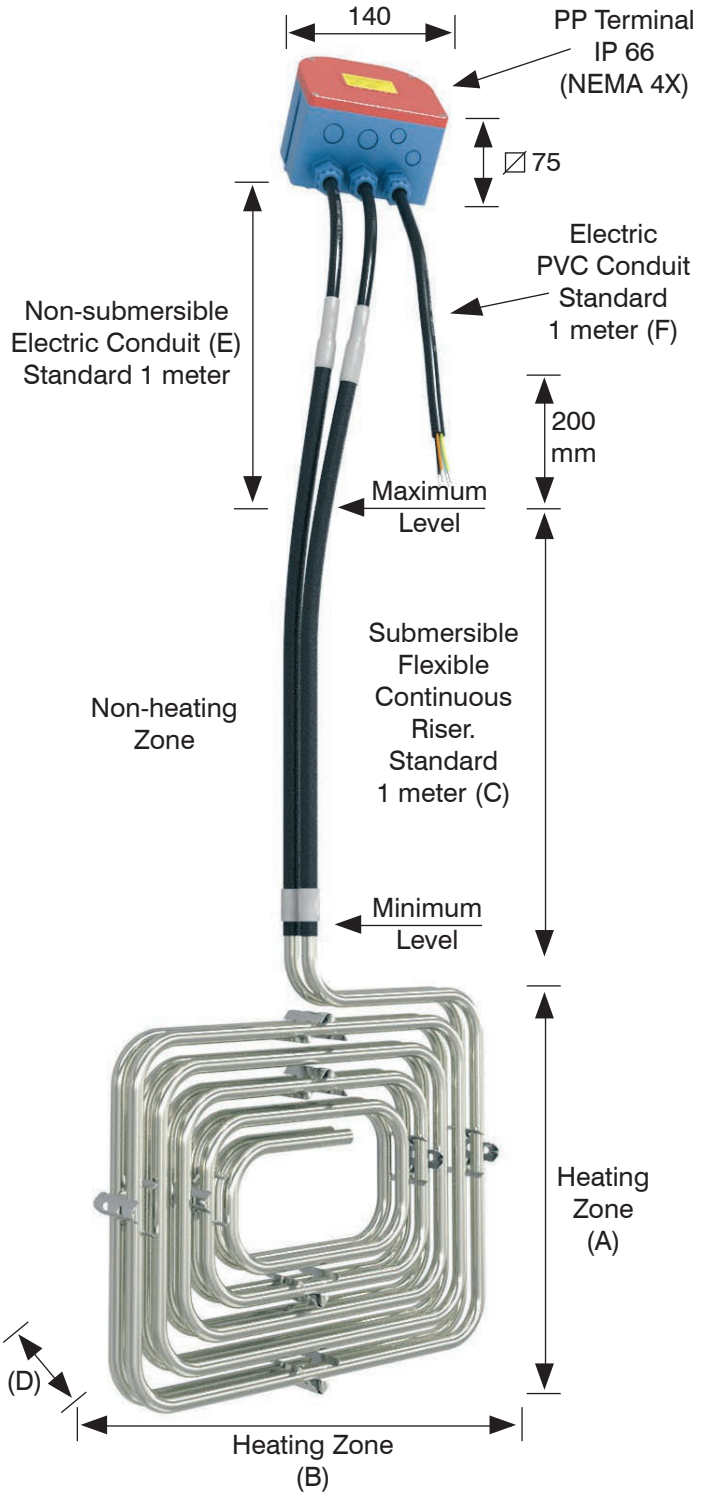
	A	B	Th.	W/cm²
9kW	320	420	35	5,6
9kW	410	325	35	5,6
9kW	535	270	35	5,6
9kW	640	240	35	5,6
9kW	680	225	35	5,6
9kW	880	195	35	5,6
9kW	1050	160	35	5,6
12kW	320	420	35	6,8
12kW	410	325	35	6,8
12kW	535	270	35	6,8
12kW	640	240	35	6,8
12kW	680	225	35	6,8
12kW	880	195	35	6,8
12kW	1050	160	35	6,8
12kW	320	420	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, Grade 2 commercial pure
1 phase 230 Volts

	A	B	Th.	W/cm²
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, Grade 2 commercial pure
3 phase 400 Volts

	A	B	Th.	W/cm²
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



Model STFR rigid L-bent fluoropolymer (PTFE) electrical heaters

Ratings from 2250 - 15000 watts, voltage 3 phase 400 V

An all-round heater: Resistant to most acids and alkaline, max 90° C bath temperature.

L-bended design: For varying liquid levels and even heating.

Reliable duty: Excellent heat transfer , due to positive contact between heating element and PTFE coating. Heat is transferred directly to bath without internal build-up, thus increasing element life.

Heating element: Stainless steel 316L element grounded.

Connection box: Polypropylene material for good chemical resistance and vapor tight construction.

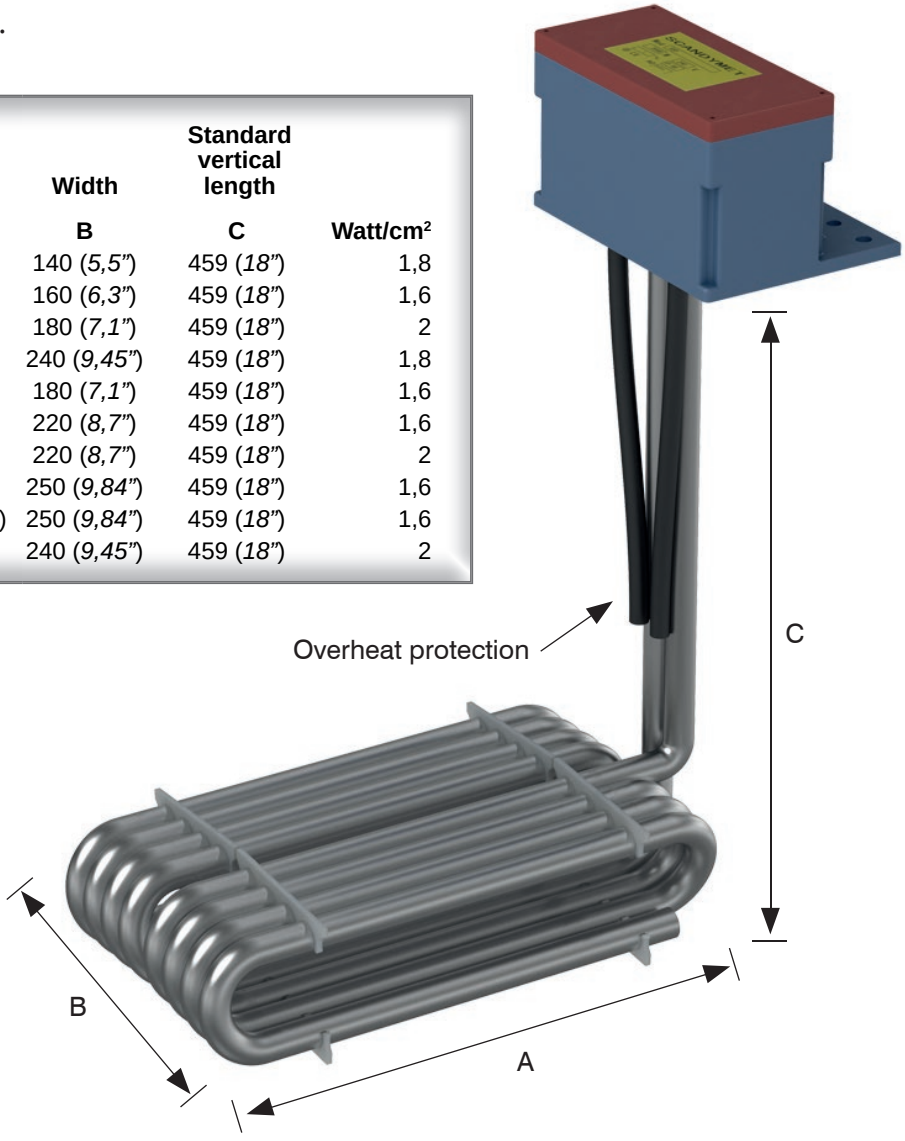
Electrical cabling: Standard electric cabling 4 meters.

Overheat protection: 2 exchangeable bimetallic sensors are standard.

Distance feet: Standard material is pure PTFE.

CE-marked product.

	Length	Width	Standard vertical length	
kW	**A**	**B**	**C**	**Watt/cm²**
2,25	270 (*10,6"*)	140 (*5,5"*)	459 (*18"*)	1,8
3	270 (*10,6"*)	160 (*6,3"*)	459 (*18"*)	1,6
3,7	270 (*10,6"*)	180 (*7,1"*)	459 (*18"*)	2
4,5	270 (*10,6"*)	240 (*9,45"*)	459 (*18"*)	1,8
6	530 (*20,7"*)	180 (*7,1"*)	459 (*18"*)	1,6
6	450 (*17,7"*)	220 (*8,7"*)	459 (*18"*)	1,6
7,4	450 (*17,7"*)	220 (*8,7"*)	459 (*18"*)	2
9	530 (*20,7"*)	250 (*9,84"*)	459 (*18"*)	1,6
12	730 (*28,74"*)	250 (*9,84"*)	459 (*18"*)	1,6
15	780 (*30,7"*)	240 (*9,45"*)	459 (*18"*)	2



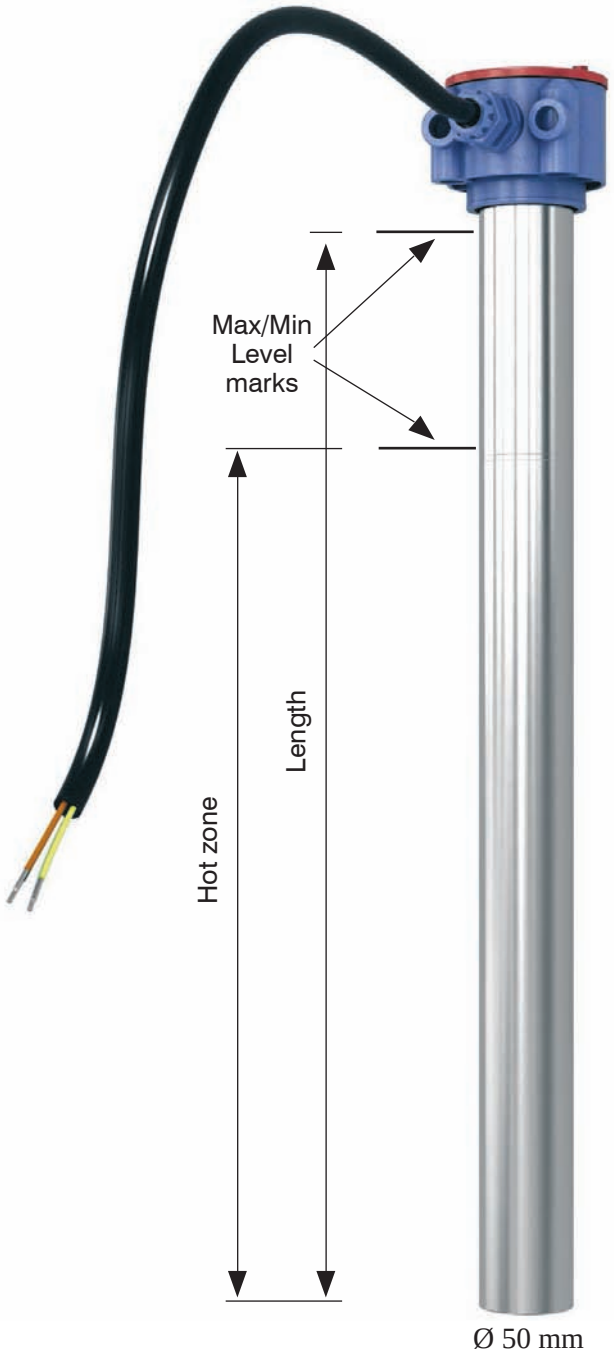
SFO - Tubular Heater for Phosphate

Ratings 1000-3300 Watts
Voltage: 1 phase 230 V or 3 phase 400 V

Head

Reinforced PP, Ø 85mm
Sealing IP66 (NEMA 4X)
Threaded O-ring sealed lid

¤ **SFO** is the answer for your heavy duty service
¤ Heating element cast in aluminum inside tube Ø 50mm
¤ Tube Ø50mm of Stainless Steel, EN 1.4404
¤ Excellent heat transfer
¤ Impact resistant
¤ Withstands mechanical cleaning
¤ Head from Reinforced PP, Ø 85mm
¤ Threaded O-ring sealed lid
¤ Standard cable length 2m.
Additional length on request
Cable fixed inside head, not replaceable



EXAMPLE

SFO 600 10 3

Length / 1 KW / Phase

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

Model	Watts	Length	Hot Zone	W/cm²
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

Tubular Heaters

STI – Titanium, **SRF –** Stainless Steel, **SST –** Mild Steel

Ratings 1000-4500 Watts
Voltage: 1 Phase 230 V or 3-Phase 400 V
For 3-Phase 230 V, please consult factory

Head

Reinforced PP, Ø 85mm
Sealing IP66 (NEMA 4X)
Threaded O-ring sealed lid
Easy access to replace conduit or heating element

Heating element

Heat resistant Stainless Steel
Element can easily be changed if necessary

PVC Conduit

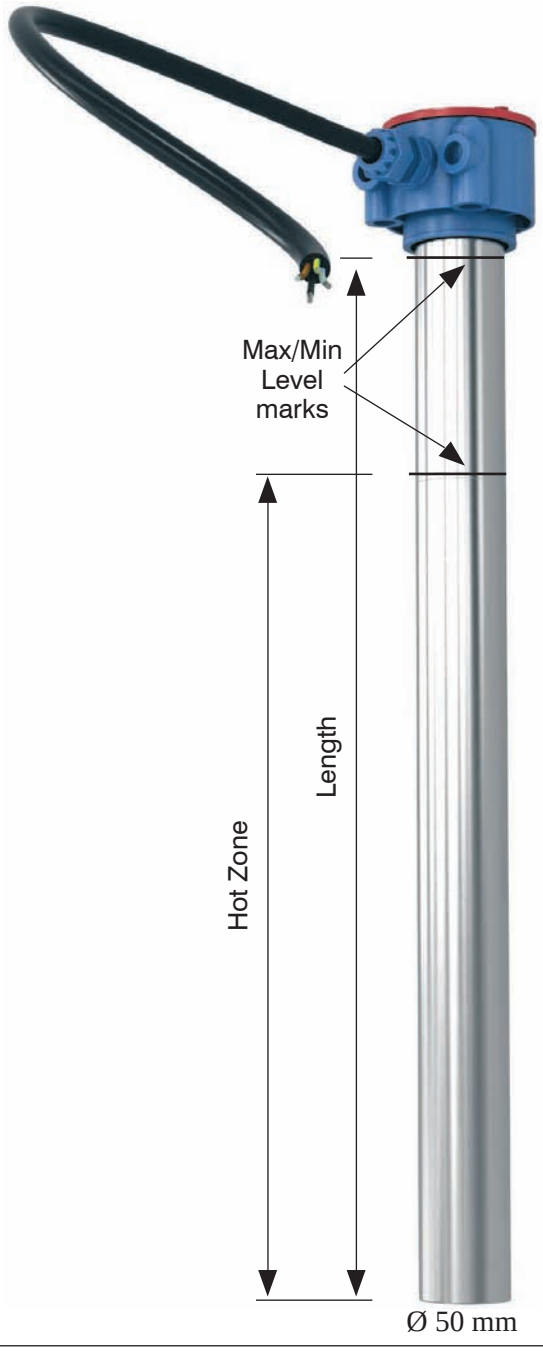
Grounded to metal parts
Standard length 2 m.
Additional length on request

EXAMPLE

STI 600 20 3

Length / 2 KW / Phase

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



STI Titanium, grade 2 commercial pure
Dia. 50 mm, thickness 0.9 mm.

Model No.	Watts	Length	Hot Zone	W/cm²
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

SRF Stainless steel tubes, EN 1.4404
Dia. 50 mm, thickness 1.5 mm.

Model No.	Watts	Length	Hot Zone	W/cm²
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

SST Steel tubes, EN 1.0037
Dia. 50 mm, thickness 1.5 mm.

Model No.	Watts	Length	Hot Zone	W/cm²
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

Tubular Heaters

STE – PTFE-coated Tubular Heater, **SQG –** Transparent Quartz Heater

Ratings 1000-4500 Watts
Voltage: 1 Phase 230 V or 3-Phase 400 V
For 3-Phase 230 V, please consult factory

Head

Reinforced PP, Ø 85mm
Sealing IP66 (NEMA 4X)
Threaded O-ring sealed lid
Easy access to replace conduit or heating element

PVC Conduit

Grounded to metal parts
Standard length 2 m.
Additional length on request

Heating Element

Heat resistant Stainless Steel
Element can easily be changed if necessary

Quartz tubes
Dia. 50 mm, thickness 3,5 mm.

Model No.	Watts	Length	Hot Zone	W/cm²
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

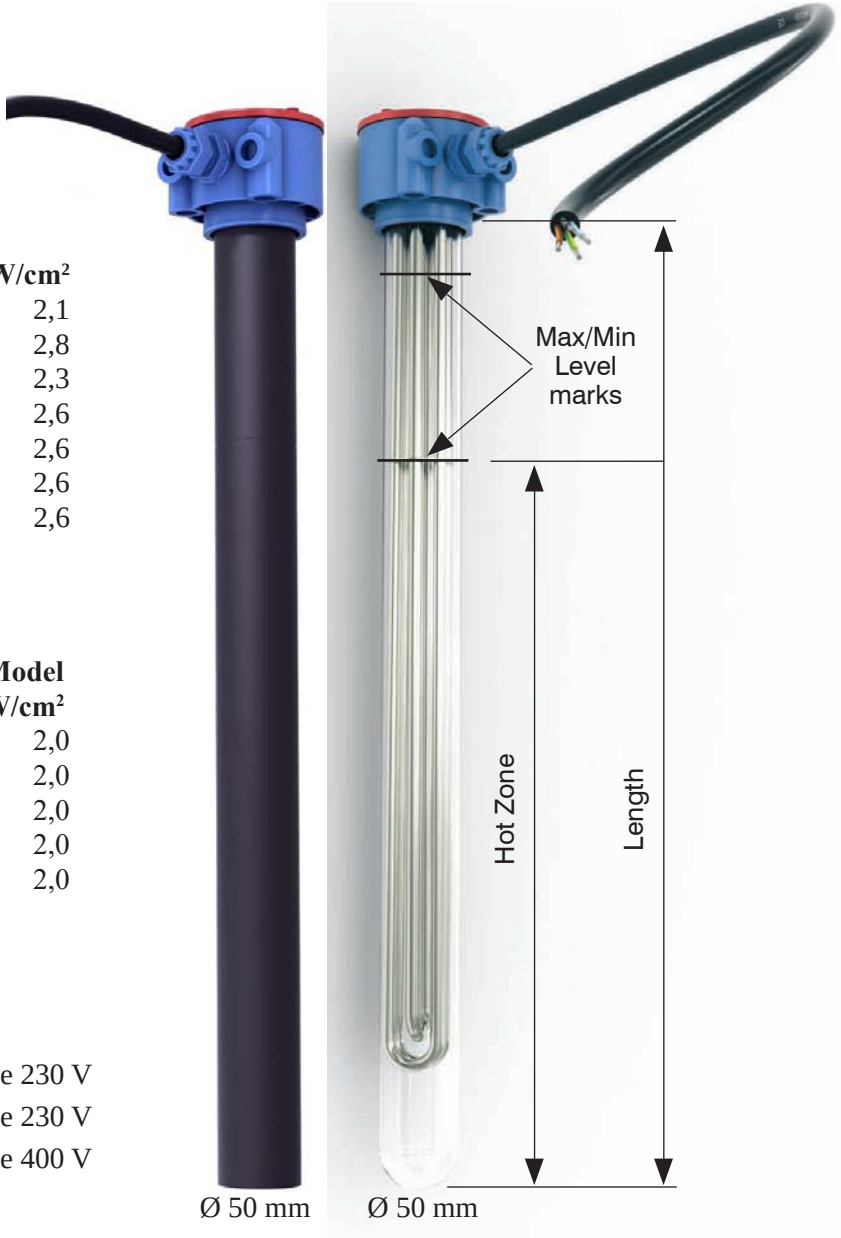
Teflon tubes
Dia. 50 mm, thickness 2,5 mm.

Model No.		Watts	Length	Hot Zone	W/cm²
STE60010	+V	1000	570	460	2,0
STE80018	+V	1800	780	550	2,0
STE10022	+V	2200	980	720	2,0
STE12528	+V	2800	1210	900	2,0
STE15033	+V	3300	1470	1150	2,0

EXAMPLE

SQG 600 20 3
Length / 2 KW / Phase

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



VAT Heaters

SMSP – Mild steel, **SSSP –** Stainless Steel, **STIP –** Titanium

Ratings 2-4 kW
Voltage: 1 Phase 230 V

Head

Reinforced PP, Ø 85mm
Sealing IP66 (NEMA 4X)
Threaded O-ring sealed lid

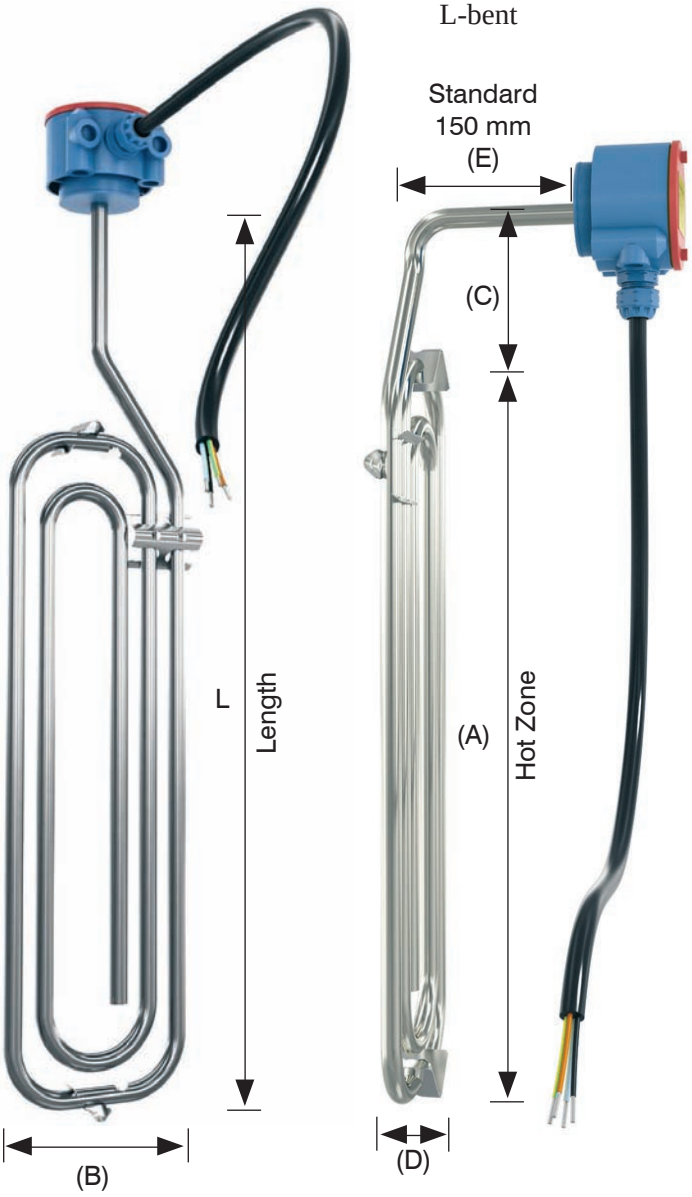
PVC Conduit

Grounded to metal parts
Standard length 2 m.
Additional length on request
Cable fixed inside head, not replaceable

Option

L-bent

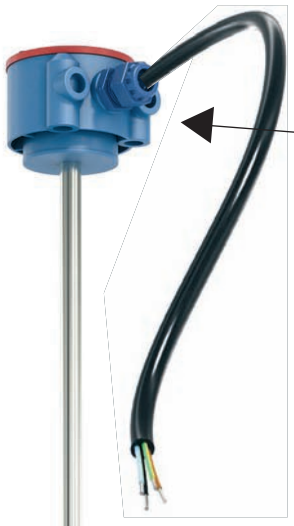
kW	A	B	C	D	E	L	W/cm²
1-230V Heater with 2 m cable.							
SMSP Mild steel, EN 1.0037							
2 kW	495	180	200	35	150	685	2,2
3 kW	495	180	200	35	150	685	3,3
4 kW	495	180	200	35	150	685	4,4
SSSP Stainless steel, EN 1.4404							
2 kW	495	180	200	35	150	685	2,2
3 kW	495	180	200	35	150	685	3,3
4 kW	495	180	200	35	150	685	4,4
STIP Titanium, Grade 2 commercial pure							
2 kW	495	180	200	35	150	685	2,2
3 kW	495	180	200	35	150	685	3,3
4 kW	495	180	200	35	150	685	4,4



AUGUST, VAT Heater

August 1-14 – Stainless Steel, **EN 1.4404 Ratings 3-9 kW, 3-Phase 400 V**

August 7-14 – Titanium, **Grade 2 commercial pure Ratings 6-9 kW, 3-Phase 400 V**

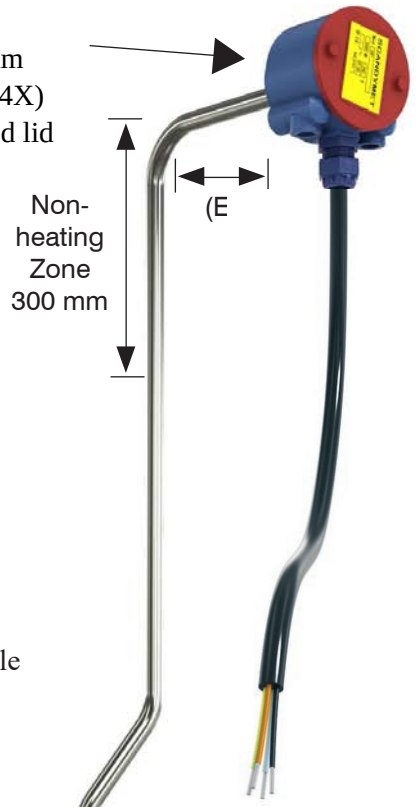


Head

Reinforced PP, Ø 85mm
Sealing IP66 (NEMA 4X)
Threaded O-ring sealed lid

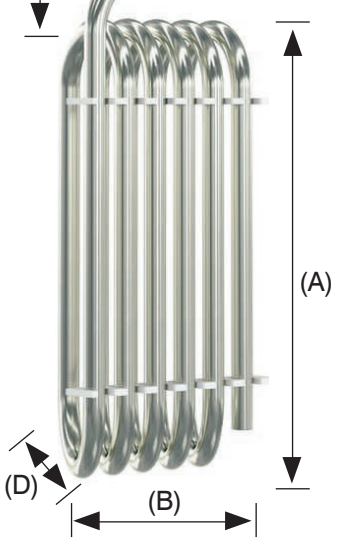
Option

L-bent



PVC Conduit

Grounded to metal parts
Standard length 2 m.
Additional length on request
Cable fixed inside head, not replaceable



3x400 V heater with 2 m cable.

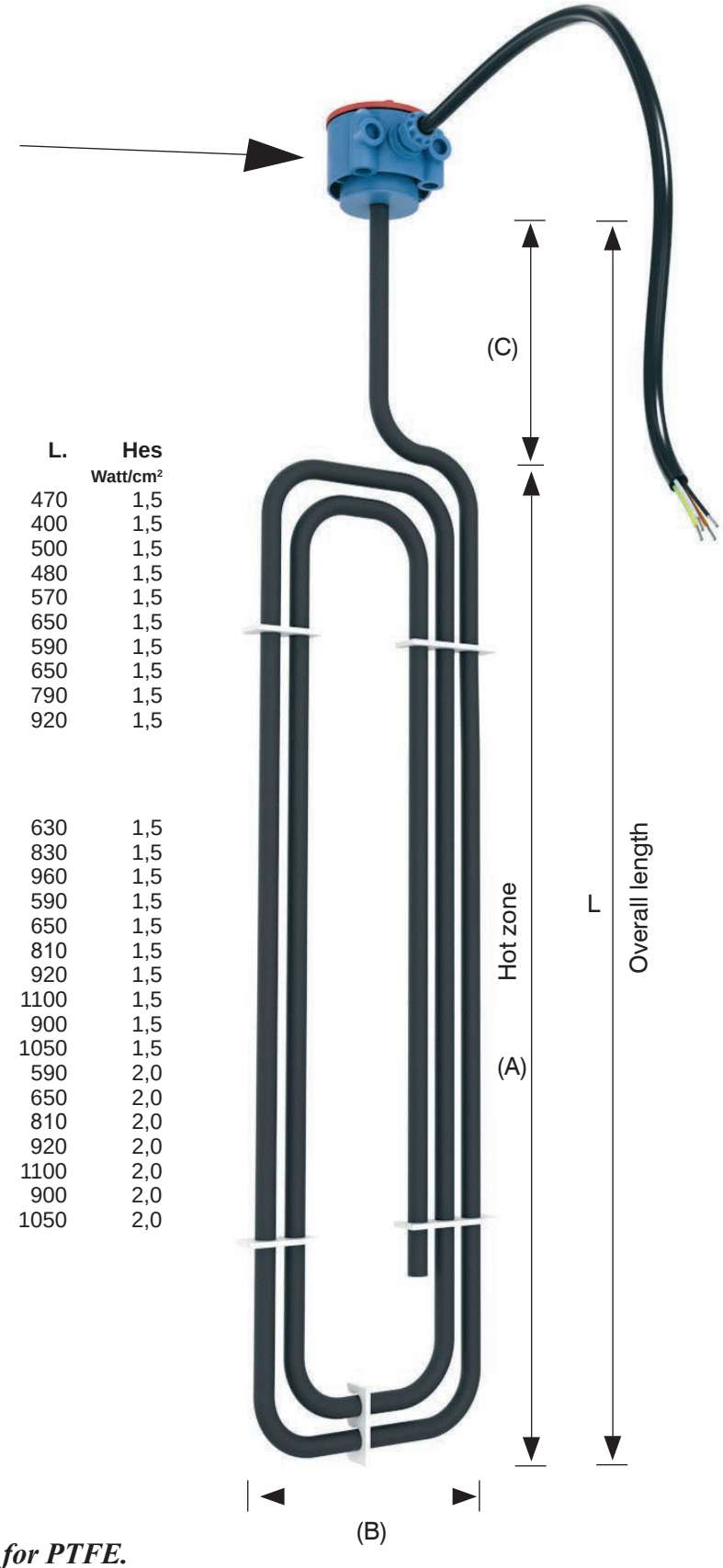
	A	B	C	D	E	L	W/cm²	Model nr
3 kW	300	180	300	65	150	600	1,5	August 1
	300	180	400	65	150	700	1,5	August 2
	300	180	600	65	150	900	1,5	August 3
4,5 kW	300	180	300	65	150	600	2,5	August 4
	300	180	400	65	150	700	2,5	August 5
	300	180	600	65	150	900	2,5	August 6
6 kW	300	180	300	65	150	600	3,8	August 7
	300	180	400	65	150	700	3,8	August 8
	300	180	600	65	150	900	3,8	August 9
	300	180	900	65	150	1200	3,8	August 10
9 kW	300	180	300	65	150	600	5,6	August 11
	300	180	400	65	150	700	5,6	August 12
	300	180	600	65	150	900	5,6	August 13
	300	180	900	65	150	1200	5,6	August 14

Manufacturer of certified VAT Teflon® Heater - STFP - rigid 0,5 - 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/cm²
0,5KW	250	140	220	35	470	1,5
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	570	1,5
2KW	390	240	200	35	650	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

2,25KW	430	250	200	35	630	1,5
2,25KW	630	200	200	35	830	1,5
2,25KW	760	175	200	35	960	1,5
3KW	340	420	250	35	590	1,5
3KW	400	320	250	35	650	1,5
3KW	560	260	250	35	810	1,5
3KW	720	220	200	35	920	1,5
3KW	880	195	200	35	1100	1,5
3KW	680	175	220	50	900	1,5
3KW	850	175	200	50	1050	1,5
3,7KW	340	420	250	35	590	2,0
3,7KW	400	320	250	35	650	2,0
3,7KW	560	260	250	35	810	2,0
3,7KW	720	220	200	35	920	2,0
3,7KW	880	195	200	35	1100	2,0
3,7KW	680	175	220	50	900	2,0
3,7KW	850	175	200	50	1050	2,0

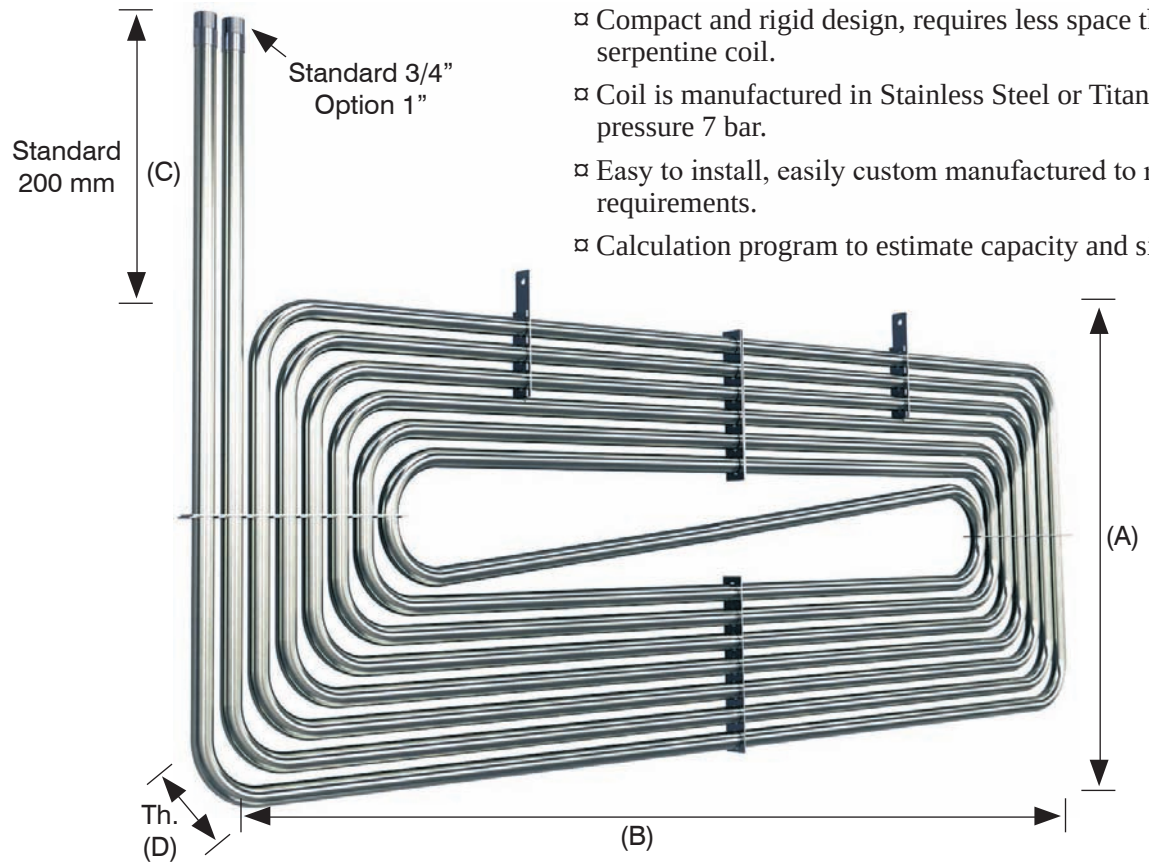
** Teflon is the DuPont™ trade name for PTFE.*

HAMPUS - Metallic Heat Exchanger for liquids

Stainless steel AISI 904L can be used in H2SO4 anodizing processes at operating temperatures up to 33°C.

Stainless Steel, EN 1.4404

Titanium, Grade 2 commercial pure



- For both heating and cooling applications
- Compact and rigid design, requires less space than a serpentine coil.
- Coil is manufactured in Stainless Steel or Titanium. Max pressure 7 bar.
- Easy to install, easily custom manufactured to meet specific requirements.
- Calculation program to estimate capacity and size of coil

One layer

A	B	D	Surface area
435	920	35	0,5 m²
920	435	35	0,5 m²
600	800	35	0,8 m²
800	600	35	0,8 m²
1080	580	35	1,0 m²
580	1080	35	1,0 m²
600	1400	35	1,2 m²
700	1100	35	1,2 m²
870	900	35	1,2 m²
1000	1180	35	1,4 m²
1180	1000	35	1,4 m²
1000	1050	35	1,7 m²
1620	600	35	1,7 m²
600	1620	35	1,9 m²
1860	735	35	2,2 m²
735	1860	35	2,5 m²
1500	900	35	2,5 m²
900	1500	35	2,7 m²

Two layers

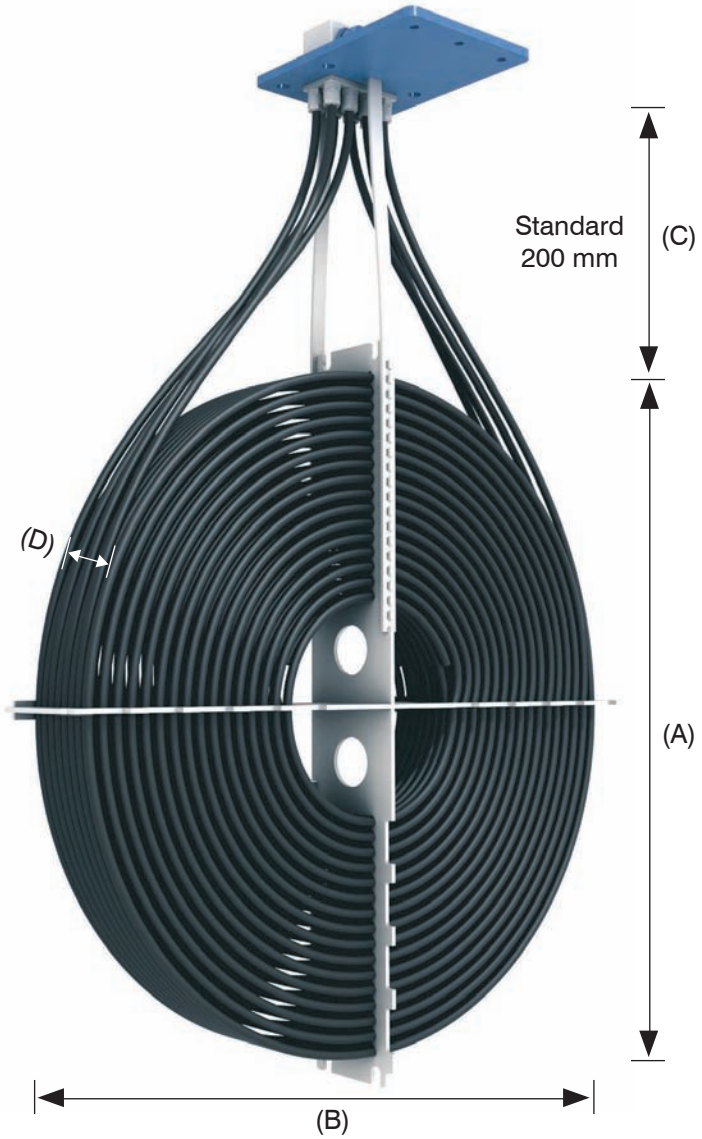
A	B	D	Surface area
390	810	70	0,7 m²
810	390	70	0,6 m²
890	580	70	1,6 m²
580	890	70	1,8 m²
1000	705	70	2,4 m²
705	1000	70	2,5 m²
1050	840	70	3,2 m²
840	1050	70	3,3 m²

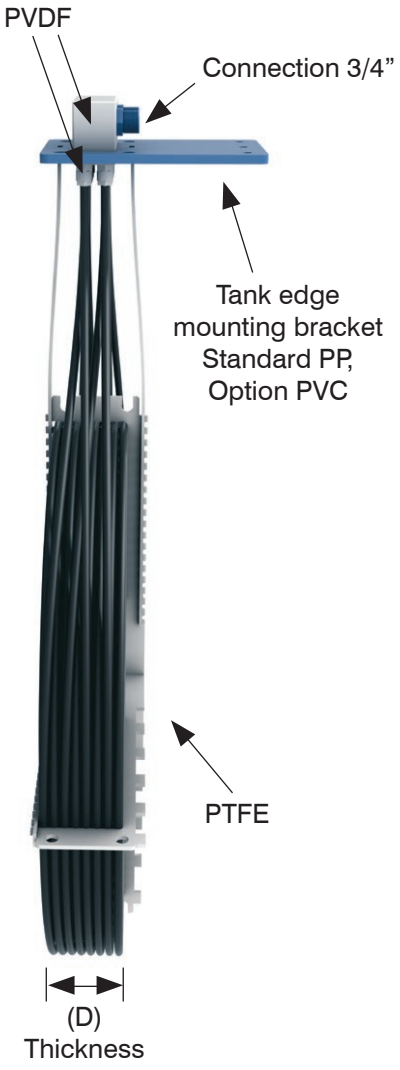
Other dimensions on request.

INGA - PTFE Tubular Heat Exchanger for corrosive liquids

¤ For both heating and cooling applications
¤ Compact design, standard range – much value for money!
¤ Max pressure 3 bar, Max temp 95° C
¤ Easy to install – ready for use
¤ Calculation program to estimate capacity and size of coil

¤ Options:
• C-measurement can be modified to meet requirements
• Mounting bracket: standard PP, option PVC
• Pipe connection: standard ¾”





A	B	C	D	Surface area m^2
530	530	200	60	0,8
580	580	200	60	1,2
630	630	200	80	1,8
705	705	200	80	2,0
760	760	200	80	2,5
805	805	200	80	2,8
710	710	200	130	2,8
650	650	200	150	3,5

A	B	C	D	Surface area m^2
680	680	200	130	3,5
680	680	200	150	4,0
805	805	200	105	4,2
710	710	200	150	4,5
805	805	200	130	5,7
710	710	200	180	6,2
805	805	200	150	7,0
805	805	200	180	8,0

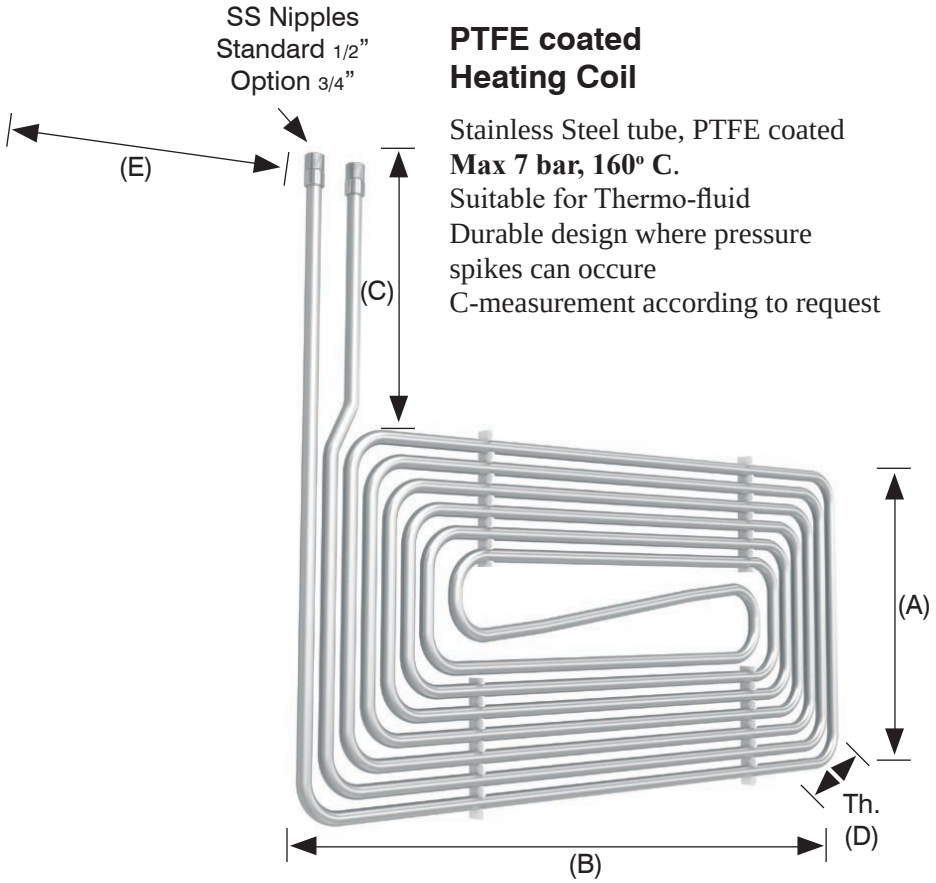
GUNNAR - Rigid Tubular Heat Exchanger for corrosive liquids

¤ Standard range, compact, rigid design.

¤ Open design, easy to inspect and clean.

¤ Can be custom manufactured to meet specific requirements.

¤ Calculation program to estimate capacity and size of coil.



PTFE coated Heating Coil

Stainless Steel tube, PTFE coated
Max 7 bar, 160° C.
Suitable for Thermo-fluid
Durable design where pressure spikes can occure
C-measurement according to request

Max 160° C. Max pressure 7 bar.

A	B	C	E	D	Surface area m^2
650	425	200	200	35	0,4
650	425	200	200	50	0,8
650	425	200	200	75	1,2
650	425	200	200	100	1,6
700	475	200	200	35	0,5
700	475	200	200	50	1,0
700	475	200	200	75	1,5
700	475	200	200	100	2,0
870	525	200	200	35	0,7
870	525	200	200	50	1,4
870	525	200	200	75	2,1
870	525	200	200	100	2,8

INGA – GUNNAR – HAMPUS

Metallic and Fluoropolymer Heat Exchangers

Capacity and Size Calculation Example

Heating Coil (Double coils in one plane) Page 1(1)

Summary of Calculations for Heating Coils

Customer:
Project:
Tank no: *1A*
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
Logarithmic mean temperature:		25,60	°C	
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	$W/m^2.°C$	
Minimum flow		1,29	m^3/h	
no of parallel coils		1	pcs	
flow speed		0,86	m/s	
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
Recommended diameter of feeding pipe		*#MISSING!*	mm	
flow speed in feeding pipe		*#MISSING!*	m/s	
#MISSING!				

Example of valuable information for your installation

Minimum flow required

Size of coil

Pressure drop per coil

The dimensions of the coil are shown in drawing no Offen

Width	810	mm
Height	738	mm

Recommendation 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	Needed pump power
Pump efficiency	65	%	

Attachments for SCANDYMET Products

Fasteners

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

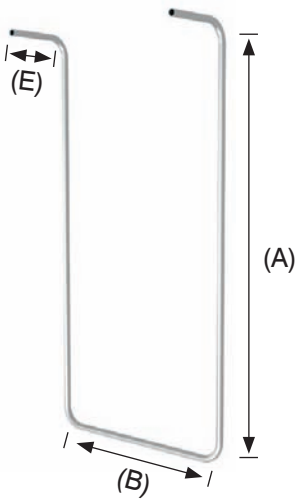
PP-Fastener for Flexible Heater
2-holes **Product Code 15279**
4-holes **Product Code 15280**

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

PP-Fastener for Tubular Heater
Product code 15198

Frames for heaters

Rigid frames for flexible heaters
Frame builds 60 mm on (B) heater measurement
and 30 mm on (A) heater measurement



Frames manufactured in:

Stainless steel

Titanium

Aluminium/ PVDF

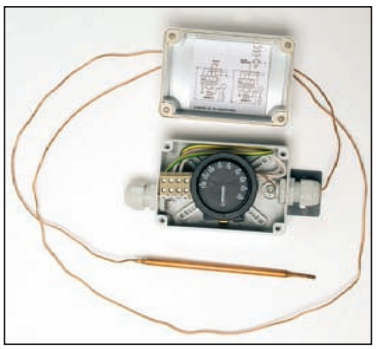
Stainless steel/ Teflon

Stainless steel/ PVDF

Mounts for heaters in frame

SCANDYMET Thermostat ISABELLE

Non indicating thermostat with plastic junction box.
Temperature sensor PTFE coated for resistance in chemical solutions.

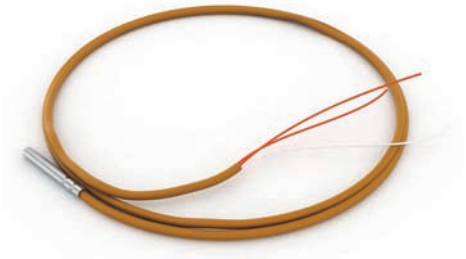


Product code	Power	Max. wattage	Max.amps.	Temp. Range	Sensor length	Accuracy
Isabelle 1	230V	3100	16	30-90° C	1,5 mtr.	+/- 1,5° C
Isabelle 2	3x400V	9000	16	30-90° C	1,5 mtr.	+/- 1,5° C

SCANDYMET Digital Thermal Regulator KELVIN

IP 20

Dual LED display to set range.
Provides precise control in most aqueous processes
Use with PT-100 sensor
Temperature range with PT-100 sensor
-50° C to +180° C. Accuracy +/- 0,6° C.
Power 230V, 50/ 60 Hz
Additional features: Type J,K,T thermocouples

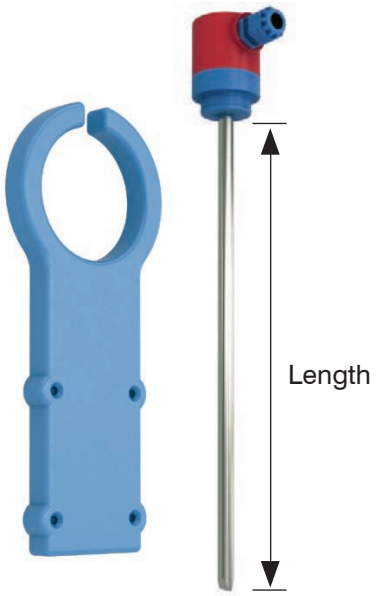


Product code	
PT-100	Only the PT-100
PT-100 Flex	PT-100 with PTFE coated sleeve

PT-100 Flex sensor

- PTFE coated standard length 1,5 m + 1,5 m cable.
- Optional length consult factory.
- Temperature range -50° C to +180° C.

PT-100 sensors for different liquids



PT-100 Rigid sensor

- PTFE coated Stainless Steel (SS) probe.
- Standard lengths 200-1000 mm.
- Optional length consult factory.
- Temperature range -50° C to + 180° C.

Rigid PTFE coated Stainless Steel (SS) probe

Product code	Length
PT100S200	200 mm
PT100S300	300 mm
PT100S400	400 mm
PT100S500	500 mm
PT100S600	600 mm
PT100S700	700 mm
PT100S800	800 mm
PT100S900	900 mm
PT100S1000	1000 mm

Rigid Stainless Steel (SS) probe

Product code	Length
PT100S200SS	200 mm
PT100S300SS	300 mm
PT100S400SS	400 mm
PT100S500SS	500 mm
PT100S600SS	600 mm
PT100S700SS	700 mm
PT100S800SS	800 mm
PT100S900SS	900 mm
PT100S1000SS	1000 mm

SCANDYMET Level Control

Level sensor with PP head and fastener

- Operates in most electrically conductive solutions
- PTFE coated probe in Stainless Steel (SS) or Titanium (TI)
- Standard lengths 200 – 1000mm. Max 5 probes per unit.
- For other lengths or materials please consult factory

Place orders according to Product code example below

EXAMPLE

Product code	Base material	Coating	No of probes	Lenght of probes
SS/PTFE3-500	Stainless steel	PTFE	3	500

Stainless Steel Ø 4 mm.
PTFE coated

Material	Length
SS/PTFE 2-300	300 mm
SS/PTFE 2-400	400 mm
SS/PTFE 2-500	500 mm
SS/PTFE 2-800	800 mm
SS/PTFE 3-300	300 mm
SS/PTFE 3-400	400 mm
SS/PTFE 3-500	500 mm
SS/PTFE 3-800	800 mm
SS/PTFE 4-300	300 mm
SS/PTFE 4-400	400 mm
SS/PTFE 4-500	500 mm
SS/PTFE 4-800	800 mm
SS/PTFE 5-300	300 mm
SS/PTFE 5-400	400 mm
SS/PTFE 5-500	500 mm
SS/PTFE 5-800	800 mm

Titanium Ø 4 mm.
PTFE coated

Material	Length
Ti/PTFE 2-300	300 mm
Ti/PTFE 2-400	400 mm
Ti/PTFE 2-500	500 mm
Ti/PTFE 2-800	800 mm
Ti/PTFE 3-300	300 mm
Ti/PTFE 3-400	400 mm
Ti/PTFE 3-500	500 mm
Ti/PTFE 3-800	800 mm
Ti/PTFE 4-300	300 mm
Ti/PTFE 4-400	400 mm
Ti/PTFE 4-500	500 mm
Ti/PTFE 4-800	800 mm
Ti/PTFE 5-300	300 mm
Ti/PTFE 5-400	400 mm
Ti/PTFE 5-500	500 mm
Ti/PTFE 5-800	800 mm

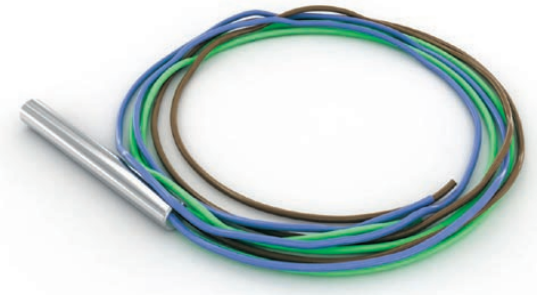
SCANDYMET Overheat Protection

OHP 1

Resettable bimetallic overheat protection for heater type STFX, STIX and SCAX

PTFE coated. Standard length 2m.
Submersible flexible riser

Maximum process temperature +90° C



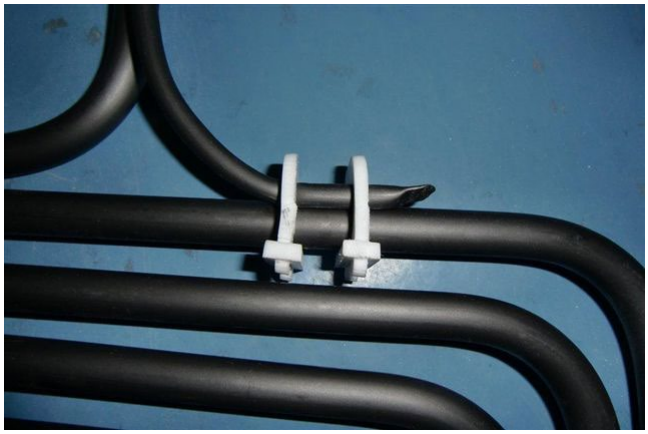
OHP 2

Fused one-shot overheat protection for heater type STFX, STIX and SCAX

PTFE coated. Standard length 2m.
Submersible flexible riser

Maximum process temperature +90° C

Overheat protection sensor fixed to heating element

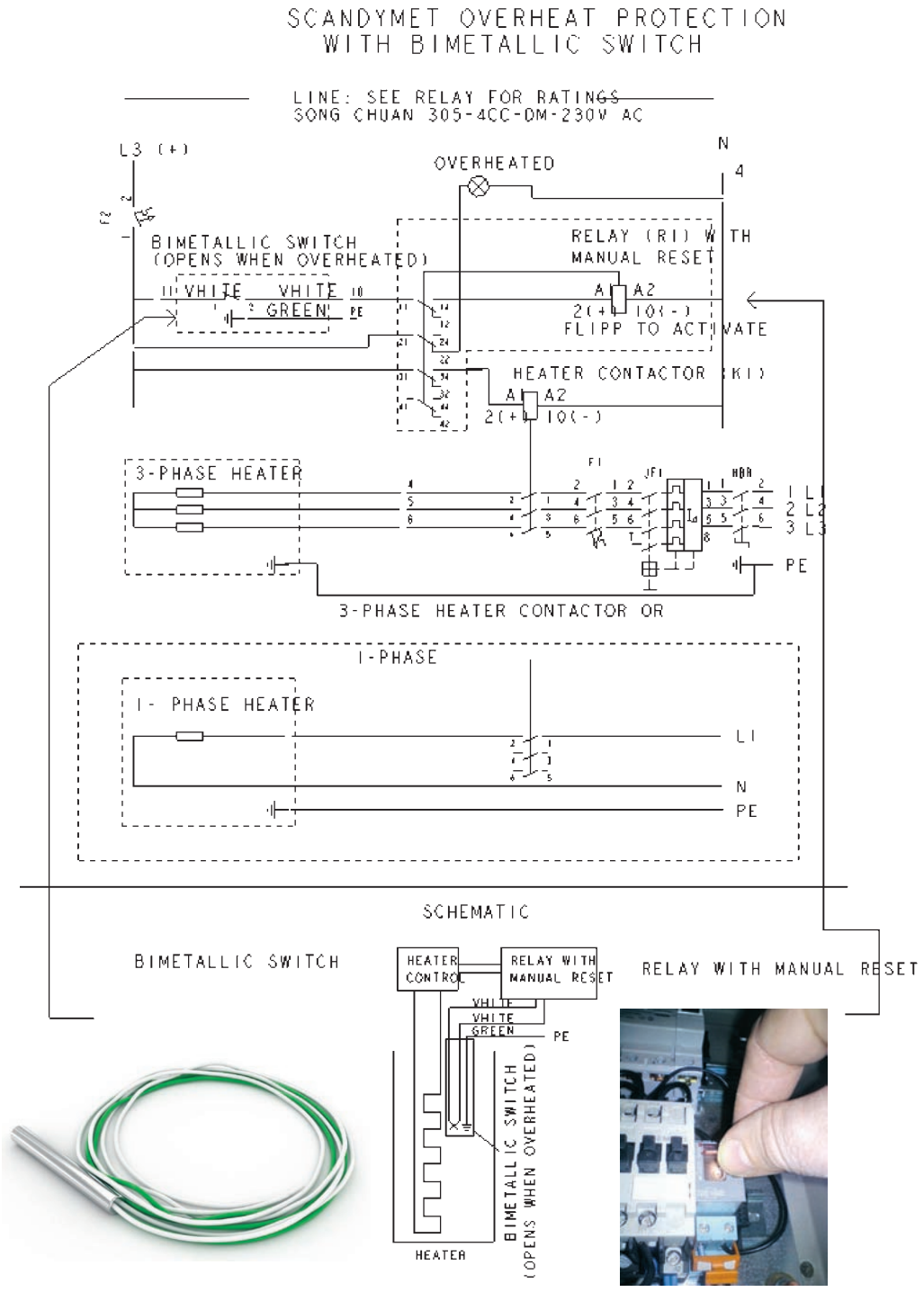


Overheat protection why and when?

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 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.

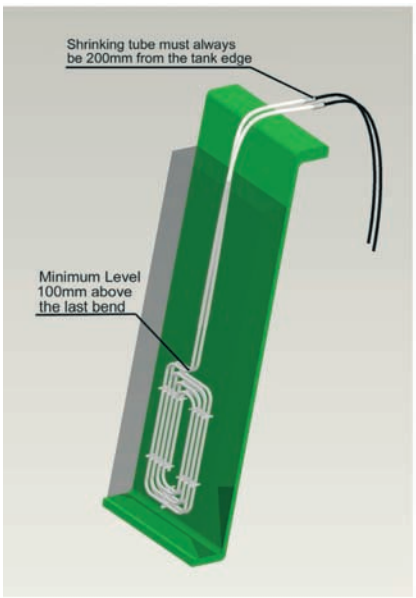
¤ The supply cord cannot be replaced. If the cord is damaged yhe appliance should be scrapped (flexible heaters).

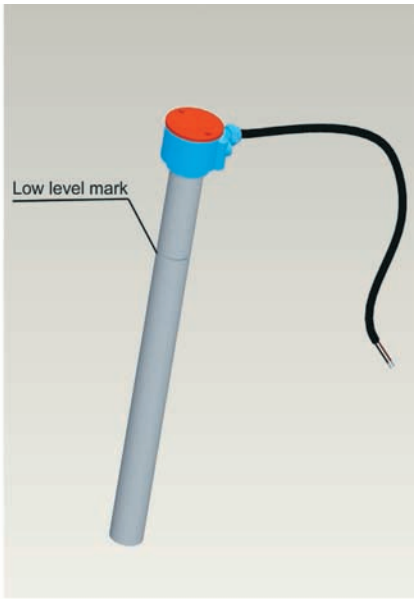
¤ If the supply cord is damaged, it must be replaced by manufacturer, its service agent or similary qualified person in order to avoid a hazard (tubular heaters).

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.





Heater Selection Guideline

			STFX STFP STE	SFO SRF SCAX SSP	SQG	STI STIX	SST MSP
Acetic acid	H3COOH	Quarts 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 sulphate	AL2SO4	Stainless steel		X			
Ammonium fluoride	NH4F	Quartz or teflon	X				
Ammonium chloride	NH4CL	Titan				X	
Ammonium persulphate	(NH4)2S208	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				
Elecroless nickel		Teflon	X				
Electroless tin		Teflon	X				
Electro cleaner		Stainless steel		X			
Electro Polishing		Teflon or quartz	X		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

			STFX STFP STE	SFO SRF SCAX SSP	SQG	STI STIX	SST 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		SFO			
Manganese Phosphate	MnPO4	Stainless steel		SFO			
Nickel plating (watts)		Titanium, quartz or teflon	X		X	X	
Nickel acetate		Stainless steel		X			
Nickel Chloride	NiCL2	Titanium				X	
Nickel sulphate	NiiSO4	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 bisulphate	NaHSO4	Teflon	X				
Sodium carbonate	Na2CO3	Titanium				X	
Sodium Chlorate	NaCLO3	Titanium				X	
Sodium chloride	NaCL	Titanium				X	
Sodium persulphate	Na2S2O8	Teflon	X				
Sulphuric 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			

This list is provided as a help and guide only and SCANDYMET assumes no responsibility for damages resulting from faulty material choice. Due to the complexities of solutions and applications it is the user's responsibility to check with the supplier of chemicals, regarding immersion heater and heat exchanger material compatibility and recommendations.

Warranty

All Scandymet equipment, heaters and controls have been carefully inspected before shipping and are warrented 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.

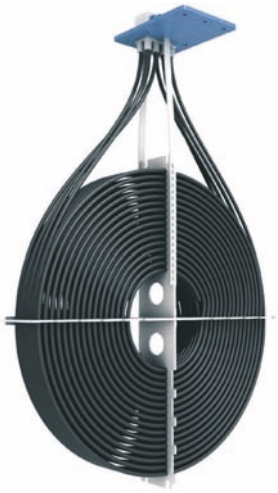
Transports

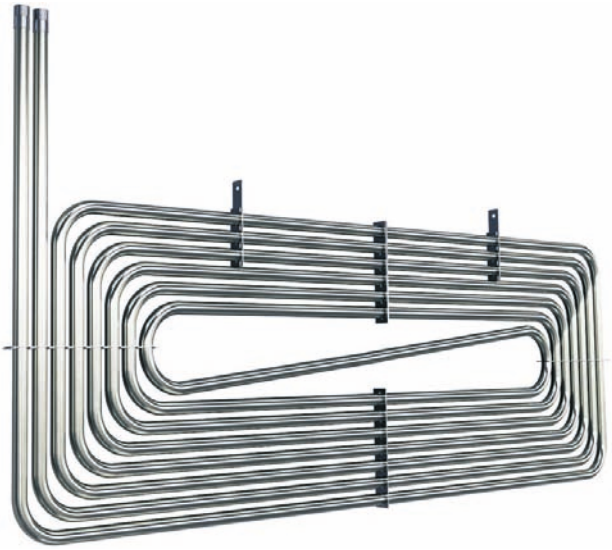
If no other agreements have been made, claims against freight carriers for damage in transit must be filed by the buyer and freight must be prepaid for returned products.

Kindly inform us immediately if you have recieved damaged products.

Specifications of products in catalog 2010 are subject to change without notice.

40 years of continuous development!





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