BluePoint

DATA SHEET

POINTS HEATING ELEMENTS

The latest generation is developed specific to meet the rough railway standards. Focus on mechanical strength and ability to resist moisture intrusion (IP68).
Improved sealing material and no use of welding's to weaken or start a corrosion of the steel.

BluePoint

- **Long lifetime**
  Proven record of more than 30 years in operation.
  Now: IP68, Railway: Climate test IEC 60068-2
- **Unique vibration proof design**
  The design is made to resist the extreme vibration and shock conditions on a rail. EN-50125 3:2003
- **Easy to adapt to turnouts**
  The small physical dimensions of the SSV series makes it easy to get around control and stretcher bars, behind sliding chairs etc.
- **Excellent homogeneous heating**
  The multi-wire heating design eliminate cold and hot spots along the element
- **Customized design**
  Length up to 7,5 meter. Power up to 1000 W/meter. Supply 48 to 800 Volt. Pre-bended to customer's design, also small series
- **Quick adjustments – on-site**
  Special tools to bend the heating elements on-site. Adjust to pass unexpected obstructions

SAN Electro Heat

SV and SSV – HEATING ELEMENTS

Reliability is the keyword

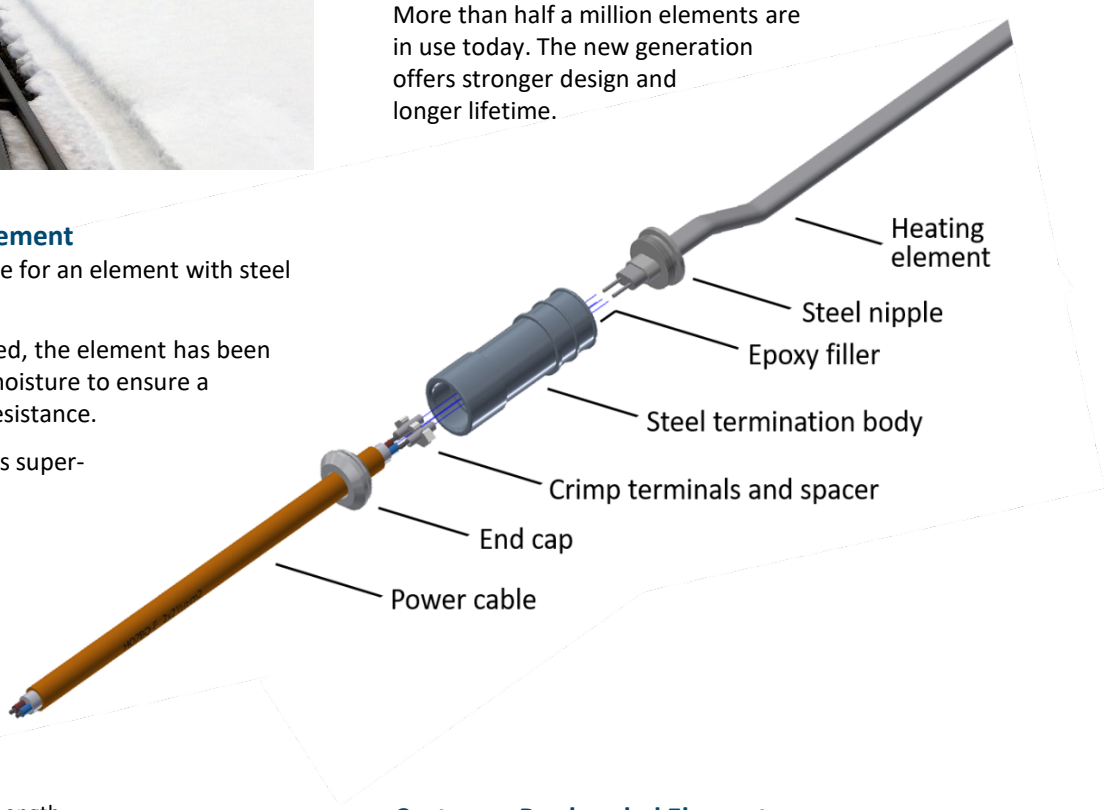
It is essential that equipment and components are designed to work 24-7 in the rough environment of the railway. It is extremely expensive and difficult to replace components in the field.
BluePoint series of heating elements has been in use for the last 30 years. It has proven its efficiency to smelt ice and snow all over Europe and Canada, USA and Japan.
More than half a million elements are in use today. The new generation offers stronger design and longer lifetime.

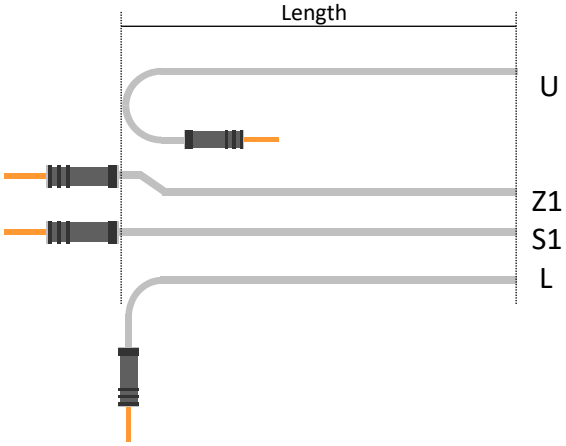
Principle assembly of the element

This drawing shows the principle for an element with steel termination head.

Before the element is terminated, the element has been thermal cycled to dry out any moisture to ensure a very high and stable isolation resistance.

The final sealing filling process is super-vised by a computer controlled dispenser that monitors temperature, blend and trapped air bubbles.





Customer Pre-bended Elements

SAN Electro Heat offer customer pre-bended elements to replace elements of existing heating designs. Even small series of elements can be customer bended. A series of standard design elements are also available for any length, power and supply voltage.

All elements are produced with a cold zone between the heating zone and the termination head to avoid heat damaged termination.

The illustration shows 4 standard heating element designs. Straight - S, offset - Z1, 90° - L shape or 180° - U shape.

Easy identification

2x color code rings for easy visual identification of a heater in the field. Visible from a distance. Customer specified color combination.

SAN Electro Heat
SAN Electro Heat A/S
Gillelejevej 30b
3230 Graested, Denmark
san@san-as.com
www.san-as.com

SV and SSV – SPECIFICATIONS

SSV – ELEMENT TECHNIC (Slim and flexible)

SSV type is the most installed Point Heating Element.

A flat oval stainless steel element of only 5,5 x 11 mm. Outer shield to withstand corrosion and an inner construction extremely resistant to heavy vibrations and mechanical shocks.

The flexible design of the heating element makes it possible to bend the element for best fit also on location.

Outer shield Stainless steel

Magnesium oxide for electrical isolation, mechanical stabilisation and heat transfer media

Fiberglas thread. Chock absorber and electrical isolation

Multi-wire heating part

SV – ELEMENT TECHNIC (High Power)

SV type is the High Power Element. It is designed for Point Heating using typical from 300 W/meter and up to 1000 W/meter.

The flat oval element size is 5,5 x 13 mm.

The heating wire is a solid wire wounded in a spiral. The spiral is completely encapsulated in highly compressed magnesium oxide.

The element is annealed so it can be pre-bended to customer designs, or it can even be bended on-site.

Outer shield Stainless steel

Magnesium oxide for insulation and stabilisation

Solid robust heating wire spiral

SSV and SV SPECIFICATIONS:

Output Power:	SSV	Up to 350 W/m
	SV	Up to 1000 W/m
Voltage:	SSV	40 to 230 V
	SV	40 to 750 V
Cold zone:	Typical 150 mm	
Physical size:		
Element:	SSV	11 x 5,5 mm
	SV:	13 x 5,5 mm
Connection head:	OD 26,5 mm x Length 80 mm	
Heating element length:	Up to 7500 mm	
Cable length:	To be specified	
Cable connection:	Permanent molded	
Cable type:	PUR H07BQ-F or Rubber	
Protection class:	IP68 (steel termination)	
Electrical isolation:	> 200 M Ohm (internal Quality Pass)	
Sheath material:	SSV:	Steel AISI 321
	SV:	Steel AISI 316
Termination Material:	Steel AISI 304	
On-site bending:	Yes, Down to OD 30mm	

RAILWAY STANDARDS:

Vibrations: EN 50125-3:2003, Section 4.13.1 – On rail (test method according to IEC 60068-2-64)

Shock: EN 50125-3:2003, Section 4.13.2 – On rail (test method according to IEC 60068-2-27)

IP68: (protection against ingress of dust and water)
EN/IEC 60529:2013

Dielectric strength: (high voltage test)
EN 60335-1:2012, Section 13.3 and Section 16.3

Leak current: EN 60335-1:2012, Section 16.2

Icing/freezing rain: IEC 60068-2-1, Test Ad: Cold test for heat-dissipating specimens with gradual change of temperature that are powered after initial temperature stabilization.

Composite temperature / humidity cyclic test
IEC 60068-2-38, Test Z/AD (test method according to ISO 16750-4, Section 5.6.2.3)

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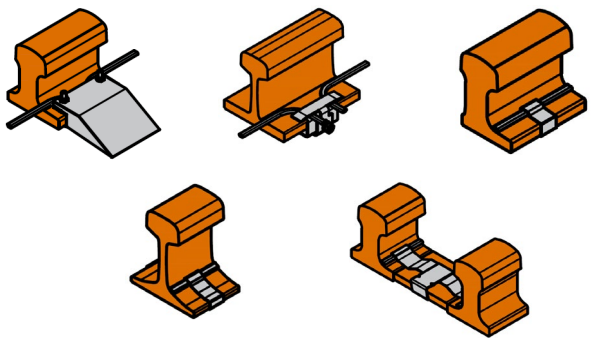
ORDER CONFIGURATION

SV and SSV – ORDER CONFIGURATION

SSV -	Type of heating element SSV….(5,5x11 mm Extra flexible and mechanical shock absorbent) SV……(5,5x13 mm High power) SL ……(5,5x13 mm Monel-400 for Tramline embedded turnouts)
-L1 -	Shape of the element L1, L2, L3…..L shape as per drawing U1, U2, U3…U shape as per drawing S1, S2, S3….straight element as per drawing
-4000 -	Length in mm
-1200W -	Power output in Watt
-230 - - - - - - - - - - - - - - - - - -	Supply voltage
-C6 - - - - - - - - - - - - - - -	Cable length in meters
-S - - - - - - - - - - - - -	S Steel termination head (new generation)
-Y - - - - - - - - - - -	Y….. Yes, something special to add about this heating element e.g. rubber cable, color code rings etc.
SSV-L1-4000-300W-230-C6-S - - - - - - - - - - - - - - - - -	**SAMPLE: SSV type heating element, L shaped as per drawing L1, 4000mm length, power output of 1200 Watt, 230 V, 6 meter of cable, Steel termination**

FIXATION BRACKETS & CLIPS



SAN Electro Heat offers a wide range of fixation brackets and wrap-around clips or knock-on clips.
They are all made of corrosion-resistant steel. Each bracket or clips are designed for a specific rail and placement. This secure the optimum pressure on the element. All clips shall allow the unavoidable linear extraction of the heating elements when it gets hot.
All designs are made to avoid problems when the tamper or brush machine is working through the switch.

Please ask for our offering for your specific rail/turnout.

ON-SITE BENDING TOOLS

Special tool to make adjustments of the element shape on-site. Practical if the installers meet unexpected weldings or obstructions in the switch section.

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