SNOW DETECTOR
RAILWAY SWITCH POINT HEATING – SYSTEM BLUE POINT

Rock Solid Snow Detector
Thousands of successful installations in railway environment. No maintenance year after year.

Falling and Drifting Snow
The special dual sensing house designed to secure correct detection of both drifting and falling snow.

No Bouncing Snow Flakes
The heated wind/snow catching system secure that all snow flakes will be detected. The snow flakes is not just bouncing away from the detector.

Long Life Gold Plated Sensor
The large capacitive sensing elements is gold plated to withstand exposure to atmosphere acids and pollution. The sensor detects any droplets on the surface.

Fits existing system
The Snow detector can be delivered as single or dual sensor unit. With or without air temperature sensor. Mounting feet for ballast mounting or brackets for pole mounting.

Selectable Snow Definition
Air temperature measurement separates ice-rain and snow from rain detection.

Energy efficient power control of electrical switch point heating includes a reliable detection of snow fall. Snow in the switch point is disturbing no matter if it is silently falling snow, heavy snow storm, drifting snow from by passing trains or ice rain.

A SAN Railway Systems snow detector is specially developed for Railway application and has been used in connection with switch point heating for many years. The capacitive single or dual sensor in the detector is made for long time use without maintenance and the special heated wind catch system secure correct detection of drifting snow.

SAN Railway Systems offers a model with one moisture sensor and a model with two sensors. The dual sensor model has an extra sensor dedicated vertical slow falling snow. Both sensors will normally react on the snow fall. The Dual sensor model gives the system redundancy.

The built in air temperature sensor in the model 4-850-993820 separates rain from ice-rain and snow.

Place the snow detector near the switch points in free surroundings in a height of app. 1 meter above ground in order also to capture drifting snow and snow turbulence after bypassing trains.
SNOW DETECTOR

Precipitation/Moisture detection:
The Snow Detector from SAN Railways Systems is built around a capacitive moisture sensor. This gold plated large area sensor detects any droplets that hits its surface.

The sensor and the wind/snow catch (metal plates) are heated. Immediately when the snow hits the hot snow catch arrangement, it will melt and fall as droplets on to the sensing element placed in the cup shaped housing.

As long as precipitation is detected an output relay is energized (NC or NO). After the snow fall has stopped the hot sensor will dry out and the output relay will be de-energized.

The moisture sensor can not see any difference between snow, ice rain and rain.

Snow definition:
To separate rain from snow the model 4-850-993820 has a built in air temperature sensor.

Both moisture and air temperature is measured. To define the moisture as snow or ice rain the air temperature has to be lower than the preset temperature value (set by a jumper on the PCB board). If the temperature is low and precipitation is detected the output relay will be energized. If either the air temperature rises or the moisture detection stops the output relay will be de-energized.

There are four snow definition temperature settings:
Below: +2.5°C, +2°C, +1.5°C, +1°C.

Dual snow detector: 4-850-003903 and single snow detector: 4-850-003882 can be upgraded for "Snow definition" by adding air temperature sensor: 4-850-999004

PLACING THE SNOW DETECTOR

Many railway stations have a group of points in each end. In some cases it is a good idea to install one snow detector in each end of the station.

Today's high speed switches extend the distance from the first switch in one end of the station to the last switch in the other end. 2 to 3 kilometres is not unusual. In these cases a snow shower could easily happen in only one end of the station!

ELECTRICAL SPECIFICATIONS

Supply voltage: 42 – 48V AC
Primary fuse: 1.6 AT x 20mm
Power: 55VA @ 42V supply
Snow sensor: 62 VA @ 48V supply Dual
Single sensor: 2x15 cm² capacitive
Output relay Moisture NO/NC: 1x15 cm² capacitive
0.4 A, 125VAC
2A, 30VDC
Ambient temperature: -30°C to +40°C
CE: Yes

Snow definition: Version 4-850-993820
Temperature sensor: Built in NTC
Temperature accuracy: ± 0.2°C
Temperature setting: +1, +1.5, +2, +2.5°C
MECHANICAL SPECIFICATIONS

Height H1: 214 mm
Height H2: 120 mm
Width W1: 232 mm
Width W2*: 320 mm
Depth D1: 165 mm
Depth D2: 90 mm

Cable entry: 2xPG13.5 1xPG9
Housing: IP65/DIN 40050
Mounting hole pattern: 200 x 300 mm
Weight: 1 kg

*W2 only relevant for Dual Snow Detector
### SNOW DETECTOR

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Part description</th>
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<tbody>
<tr>
<td>4-850-003903</td>
<td>Dual snow detector (Precipitation) including bracket for pole mounting</td>
</tr>
<tr>
<td>4-850-993820</td>
<td>Dual snow detector (Snow) incl. temperature sensor incl. bracket for wall/cubicle mounting incl. Transformer</td>
</tr>
<tr>
<td>4-850-003882</td>
<td>Single snow detector (Precipitation)</td>
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### SNOW DETECTOR ACCESSORIES

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<tr>
<td>4-850-202087</td>
<td>Steel pole/foot for ballast mounting. (total length 1700 mm) 1 m over ground.</td>
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<tr>
<td>2-850-203121</td>
<td>Stainless steel bracket for pole mounting (pole OD 25–40 mm)</td>
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<tr>
<td>1-801-002070</td>
<td>Stainless steel Wall mounting plate Hole for cables and 30 mm space between Snow detector and the wall.</td>
</tr>
<tr>
<td>4-052-244406</td>
<td>Transformer, IP44 (94x131x82mm) 0-230-250 V to 0-42-48 VAC, 120VA</td>
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<tr>
<td>4-850-999004</td>
<td>Air temperature sensor Mounting in bottom of snow detector.</td>
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### SYSTEM BLUE POINT – SWITCH HEATING

SAN Railway Systems offer a complete system for electrical switch point heating. Our focus is to deliver a system using minimum of energy but not compromising the traffic regularity. Save 60 to 80% energy using a Blue Point System.

- Unique long life, high efficient heating elements
- Low inrush current, ballast mounted safety transformers
- Control cubicles with intelligent energy saving control, wireless communication and self diagnostic
- Complete weather stations
- Control & Monitoring software as an Internet service or server based.
- Complete energy management package
- Advanced inexpensive weather forecast system to save further energy.

SAN - Railway Systems (Part of NIBE Railway Components)

Complete systems to secure optimal operation under any winter weather situations: Switch Point Heating, Overhead Wire de-icing and Third rail de-icing. Our focus is to deliver highly efficient systems that reduces energy consumption and reduces the total cost of ownership. From heating elements through intelligent controllers to advanced server based computer monitor program. Including all necessary fittings, power transformers, weather stations etc. Rolling stock comfort heating, door step de-icing, heating of hydraulic systems, toilet/waste water systems and Test load resistors.

Our design has proven its reliability trough thousands of installations all over Europe.