



**SAN Japanese Railway Company (JRC)
Takayama Blue Point Results - 2018**

SAN JRC Takayama Blue Point Test Description

This test was contracted by Japanese Rail Company at a set of turnouts in Takayama, Gifu Japan. These turnouts are in close proximity to each other. The concept is to provide a test of exactly the same turnout configuration in construct and location for two side by side turnouts with one variance – the control of the heat.

Turnout 1: was outfitted with SAN heaters , 20 foot switch point heaters at ~ 200 w/ft. This turnout is controlled by a Shin Yosha Dispatch controlled heating controller. Several rail heating sensors were placed on the rail points to measure heat. The system on/off time was measured through the dispatch system. This is a dispatch controlled heating system. This Turnout is the “Control Group”.

Turnout 2: was outfitted with SAN heaters , 20 foot switch point heaters at ~ 200 w/ft. This Turnout is controlled by a SAN automated Blue Point controller. Several rail heating sensors were placed on the rail points to measure heat. The system on/off time was measured directly at the controller by the Blue Point system. This is an automated Blue Point controlled heating system.

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Turnout 1 = Shin Yosha Controlled Heat – Dispatch Controlled Heating

- Total Heating Time 1,355 hours total
- Hourly Heating Potential = 8 kilowatts/per hour

Turnout 2 = SAN Electro Heat – Blue Point Automated Controlled Heating

- Total Heating Time 265 hours total (including preheat mode)
- Hourly Heating Potential = 8 kilowatts/per hour

Results

- Total Season Energy Savings = 8,720 kilowatts per turnout
- **Total Energy Savings ~ 80%**
- At an Electric Rate of ten cents p/kwh ~ \$872 per turnout per season

Mode SAN

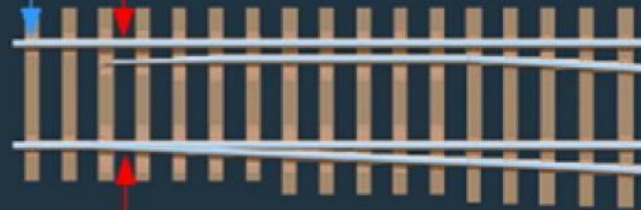
Auto. High Airtemp.



AIR temp. 6,7 °C
Windspeed 1,6 m/s
Main hours 2540,2 h
Snow hours 297,6 h
Battery 13,6 V

High AIR temp. 250,5 h
Min Heating 0,0 h
PreHeat Mode 1963,0 h
PreHeat Heating 127,0 h
SnowHeat Mode 296,8 h
SnowHeat Heating 140,2 h
BoostHeat Mode 0,1 h
BoostHeat Heating 0,1 h
Blizzard Heating 0,3 h
Manual Heating 0,0 h
Reset Date 12-12-2017

RS3 Cold RS1 Hot
6,7 6,4

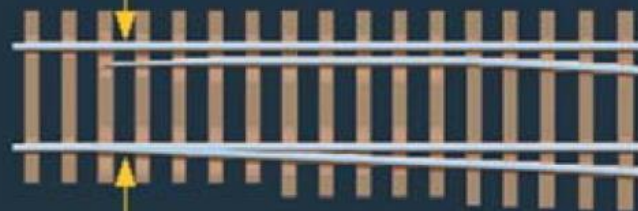


SAN

6,4
RS2 Hot

ON temp. 1,5 °C
RSmin Hot 6,4 °C
OFF temp. 2,5 °C
Heating
Inrush On 347
Heating hours 267,7 h

RS4 Aux
7,3



Shin -Yosha

7,2
RSS Aux

Heating
Inrush On 8
Heating hours 1378,3 h

SAN JRC Takayama Blue Point Results

DateTime
◇ 29-12-2017 00:30:10
◇ 29-12-2017 00:15:08
◆ 29-12-2017 00:14:32
◇ 29-12-2017 00:00:11
◇ 28-12-2017 23:45:09
◇ 28-12-2017 23:30:09
◇ 28-12-2017 23:15:08
◇ 28-12-2017 23:00:10
◇ 28-12-2017 22:45:08
◇ 28-12-2017 22:30:09
◇ 28-12-2017 22:15:08
◇ 28-12-2017 22:00:09
◇ 28-12-2017 21:45:08
◇ 28-12-2017 21:30:09
◇ 28-12-2017 21:15:08
◇ 28-12-2017 21:00:09
◇ 28-12-2017 20:45:08
◇ 28-12-2017 20:30:08
◇ 28-12-2017 20:15:09
◇ 28-12-2017 20:00:09
◇ 28-12-2017 19:45:08
◇ 28-12-2017 19:30:08
◇ 28-12-2017 19:15:08
◇ 28-12-2017 19:00:09
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◇ 28-12-2017 18:15:09
◇ 28-12-2017 18:00:09
◇ 28-12-2017 17:45:08
◇ 28-12-2017 17:30:09
◇ 28-12-2017 17:15:08
◇ 28-12-2017 17:00:08
◇ 28-12-2017 16:45:10

Record Refresh Wait

Datetime : 29-12-2017 00:30:10

Heat SAN Air temp. -1,4 °C Rail temp.1 8,9 °C Rail temp. 4 49,4 °C

Log Snow Boost Manual Heat Aux Rail cold -0,7 °C Rail temp.2 14,6 °C Rail temp. 5 39,0 °C

