Fenix
RAIL SYSTEMS

FenLock Point Heating Systems

Turnout Point Heating for Train Facility Switches

Principle of point heating solution for depots

Principles of this solution:

- With temperatures around or below zero plus high humidity or precipitation, points can quickly freeze over and become difficult to set. Point heaters must be switched on in good time to avoid problems and to heat the points in the most energy-saving manner.

- Temperature controlled, simple to operate; also equipped with a possibility for manual switching-on of the heating

- Temperature control will provide only heating when it is needed. Therefore No unnecessary heating, providing energy cost savings. But in case of winter weather conditions it will ensure that the switch **will never** ice over hindering movement.

- In contrary to large systems providing heating for >20 switches, the investment to be done in cabling is low because the systems can be installed close to the turnouts, reducing cabling

- Cost effective heating relatively low investment for maximum results

- All our systems are easy to install and maintain

The End of the Ice Age

When the ice comes ...

With temperatures around or below zero plus high humidity or precipitation, points can quickly freeze over and become difficult to set. Point heaters must be switched on in good time to avoid problems and to heat the points in energy-saving manner.

... your points are safe.

Our Systems offer a reliable solution: the HCP control panel as an autark system for point heater controllers. Continuously analysing temperature and air humidity in the area of the point, the HCP switches point heaters on automatically when parameters become critical, and off again as soon as temperatures rise. HCP point heater controllers comply with VDV guideline 560 and fulfil the following standards: - DIN EN 50121-4 (EMC) - DIN EN 50122-1 (Protective measures) - DIN EN 50125-3 (Environmental conditions) - DIN EN 50163 (Feeding voltages)

Innovative technology keeps trains on track

The HCP is a self-contained monitoring and control unit for 1-6 heating groups, whereby each heating group can consist of any number of heating rods. The system can be extended in line with requirements. Through its network capability it offers particular convenience and superior technical potential. The system can be remotely controlled and monitored via an external network. Together with the digital temperature and humidity sensors, the temperature detection system offers decisive advantages and fulfils all the demands of an energy-saving point heater system.

The End of the Ice Age

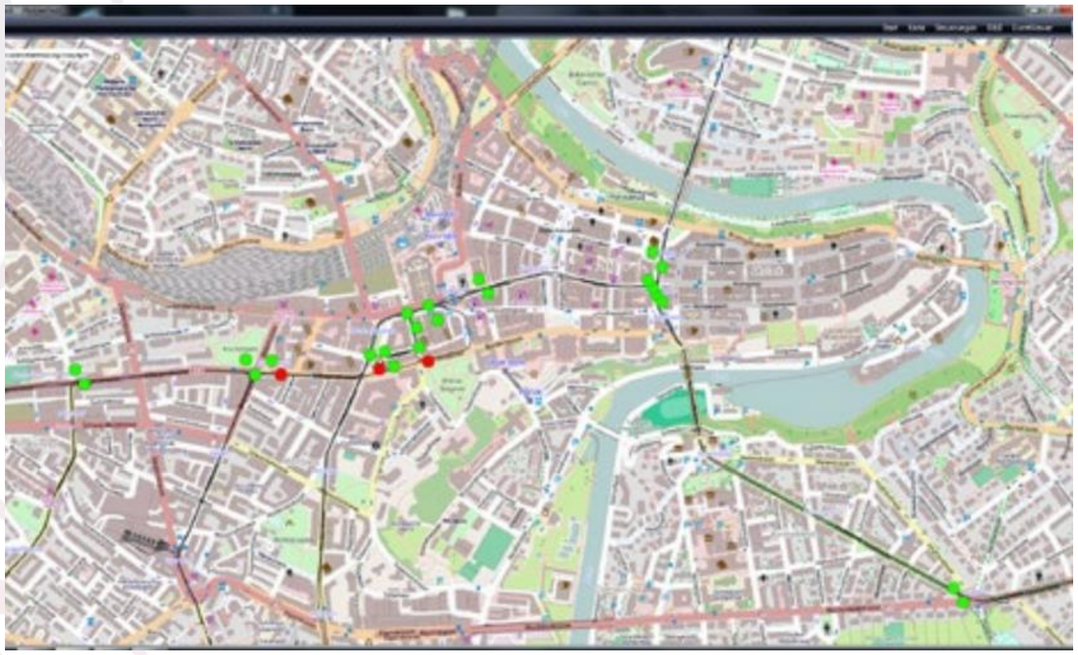
Telecontrol

This system enables networking of 250 individual point heaters which can be monitored and activated at one central location. The main functions of telecontrol are: - Transmission of switching commands to different groups of installations which can be freely configured by the user, and monitoring of switch-on acknowledgement - Display of installation status in tabular or graphic overviews: for example green for “In operation“ or red for “Malfunction“ - Specification of switching times and automatic switch-on and switch-off - Automatic forwarding of malfunction reports to competent staff per email, text message or similar. - Logging of measured values, reports when malfunctions occur and when faults are cleared, reports when switching commands are transmitted, and acknowledgement - Processing of different malfunction reports and display in an overview

Energy-saving and intelligent

With the HCP, important processes can be controlled individually and intelligently. You can determine precisely when point heaters are switched on – as early as necessary, as late as possible. When extreme situations, such as black ice, occur, the control inputs enable central switchon of all heaters in „special operation“. “Special operation” can be exited by mouse click or after a time interval. Regulation with just one temperature sensor on the rail saves over 50% of the energy consumption compared with uncontrolled heating in the same time period. Savings of 70% to 80% are possible with further sensors and intelligent networking.

The End of the Ice Age



Representation possibilities

Display of equipment condition

HCP in Operation on Point Heater Controllers

Features of the HCP:

- Digital inputs and outputs
- Load outputs
- Connections for multiple temperature sensors
- Interfaces for data communication on the front
- Matrix display with background illumination
- Adjustable switch-on/switch-off temperature
- Adjustable switch-over temperature
- Integrated clock
- Error memory
- Multilingualism and remote maintenance possible

Advantages of the Point Heater Controller with HCP:

- Simple retrofitting of existing systems
- Automatic regulation saves energy
- Ideal for set-up of automatic heating systems
- Compact design

– low space requirement - Innovative menu- controlled user guidance

- Large illuminated clear-text display
- Network-compatible, can be centrally controlled
- Wear-free - Economically efficient
- Compliance with relevant rail norms
- Protection of the rail body by temperature limitation (parametrizable)

Stand-alone or Integral

Point heater controllers with the HCP are available as stand-alone units and as integral parts of FenLock point controllers. As a system from a single source, the HCP is ideally tuned to the point controller. The system can be adapted to almost any infrastructure.

HCP in Operation on Point Heater Controllers

Trend-Setting Integrated Solutions:

Fenix provide individual, logically-consistent turnkey solutions.

Our Partners HANNING & KAHL is an established system supplier to transport authorities all over the world with a proven track record – also as a one-stop solution for point heater systems:

- HCP Point heater controllers
- Point heating rods incl. attachment material - Point heater boxes
- Sensors for rail temperature, air temperature and humidity - Control cabinet
- Cabling

From initial consultation to commissioning, Fenix Provide valuable expertise and tried-and-tested solutions. Benefit from our experience for future-proof and cost-effective design engineering and implementation.

Questions? Let us know how we can help.

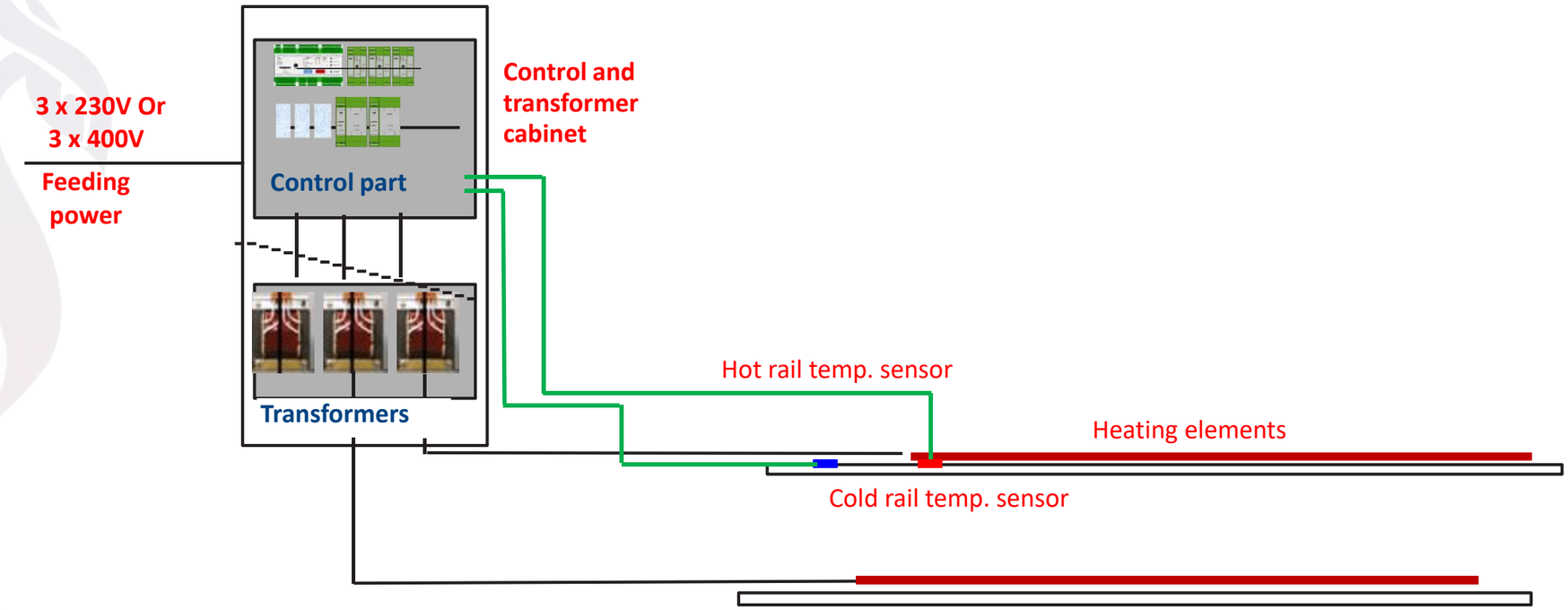
HANNING & KAHL Control Panel

HCP in Operation on Point Heater Controllers

Point Heater Technical Data	
Operating voltage	DC 600 (750) V, AC 230/400 V, DC 24 V
Permissible temperature range	-25 ... +70 °C
Can be supplied	on a mounting plate integrated into a cont-roller or in a separate control cabinet
Control	Temperature and/or humidity-dependent via remote switch-on
Heating-rod operating voltage	AC 240 V (with or without upstream isola-ting transformers) or DC 600 (750) V
Heating-rod heating capacity	900 to 1200 W
Number of heating rods	2 plus (depending on possible size of the control cabinet)
Monitoring	current sensors per heating rod
Diagnosis	via cable, fibre optics or radio data trans-mission

Rail temperature sensor

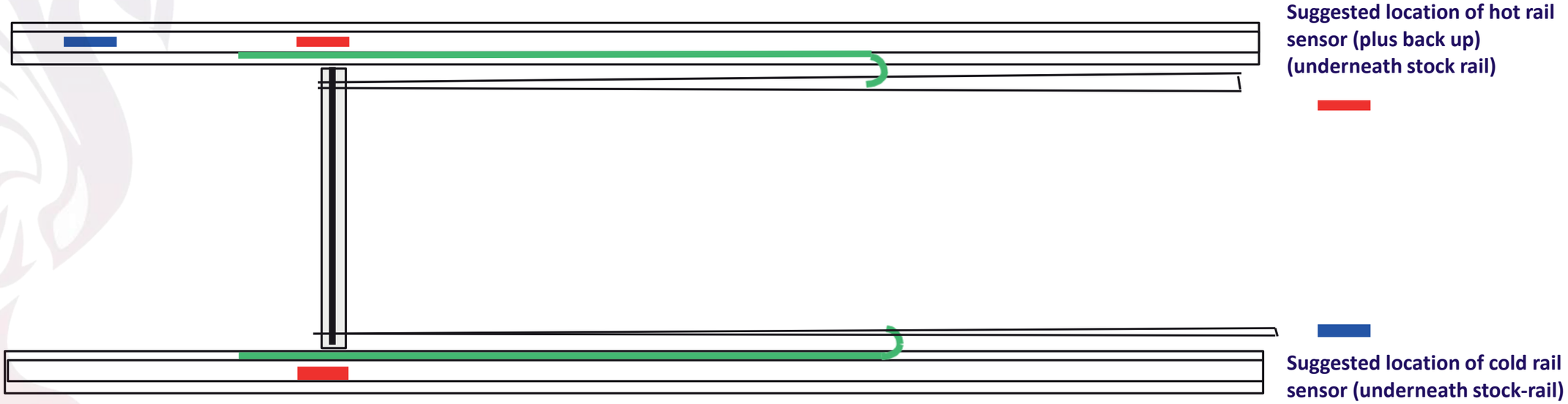
Principle of point heating solution for Train Facilities



Solution is based on:

- Heating element mounted on the stock-rail The temperature of the rail is controlled by temperature control only.
- The outdoor temperature is measured on the rail with a cold temperature sensor. If a low temperature is reached, the heating will start and will heat the rail until the rail has reached a preset value, usually +7 degrees Celsius.
- This temperature is measured with a hot rail temperature sensor that is mounted on the stock rail of the turnout. The
- hot rail temperature sensor is duplicated.

Proposed heating configuration for facility turnouts in moderate climates



Solution:

- Heating with 300Watt/meter with 2 x heating elements of 5000 mm. Total heating per turnout is 2 x1500 W = 3000 Watt. It should be checked if this heating element will fit on the stockrail.
- No heating of the tongue required.

Quality in point heating solutions for All Train Facilities

Fenix Rail Systems provide signalling system consultancy and turnkey delivery (design, procurement, installation, testing, commissioning, handover and O&M) in the UK and worldwide for both greenfield projects and brownfield projects requiring complicated Stageworks. Project delivery in the UK is aligned with Network Rail Delivery stages 2-8.

Contact Fenix Rail Systems for all your points heating requirements
Our offices are open from 08.30 to 17.30 each day. Key management can be contacted via the office landline 03300 580180 and mobile numbers are provided for convenience outside office hours.

craig.purcell@fenixrailsystems.com

HQ 3, The Quadrant,
Warwick Road,
Coventry, CV1 2DY

www.fenixrailsystems.com