BLUE RAIL

BLUE RAIL - 3rd RAIL HEATING CONTROLLER

BLUE RAIL is a heating cable and control solution, powered by the third rail system voltage. This solution will reduce the cost of running trains in inclement weather and eliminates snow removal labor. The system will operate with third rail systems from 600 to 750 VDC.

BLUE RAIL - INSTALLATION

NIBE Element Rail Control Technology offers a complete solution for heating the third rail to prevent ice and snow from building up. The system consists of:

- Heating cable and mounting clips
- Blue Rail Controllers
- Weather Station
- Galvanically Isolated 3rd Rail Temperature Sensor
- Internal Controller SCADA Software
- External Monitoring & Configuration SCADA software for monitoring the installation. By wire or wireless.
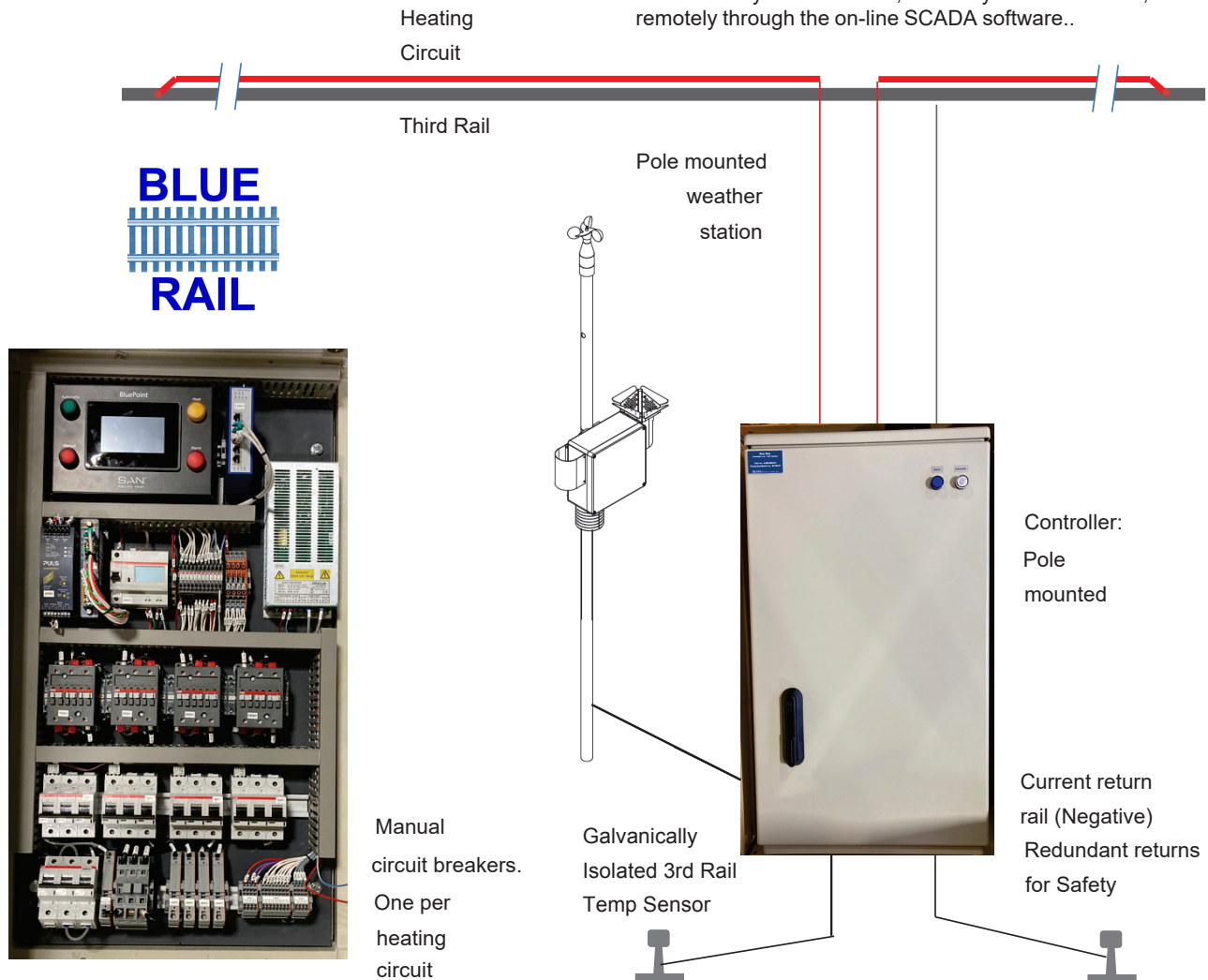
BLUE RAIL - CONTROL BASICS

The heating cable is powered from the third rail. To control the power and operate the system, a number of controllers may be needed.

Each controller is capable of controlling 1 to 4 heating circuits. Heating circuit lengths up to 460' (140 meter) long (from 600 to 750VDC)

The controller includes manual circuit breakers to disconnect the heating circuits. There is also a circuit breaker that disconnects the main controller power.

The controller switches the heating power ON when the automated system warrants, manually at the controller, or remotely through the on-line SCADA software..

Heating Circuit

Third Rail

BLUE RAIL

Pole mounted weather station

Controller: Pole mounted

Current return rail (Negative) Redundant returns for Safety

Manual circuit breakers. One per heating circuit

Galvanically Isolated 3rd Rail Temp Sensor

SAN
Electro Heat

NIBE ELEMENT
RAILWAY SOLUTIONS

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OMNI
Control Technology, Inc.

CONTROLLER FAMILY

BLUE RAIL controllers run autonomously and require no human interaction. The system can be viewed, overridden, or configured through the remote interface or locally at the controller.

Autonomous control of the heat is made available through the use of a weather station, weather forecast and rail temperature sensors. The operation of the system can be viewed, overidden or configured through the cloud based SCADA monitoring software.

Although the system has monitoring/configuration capability through the remote cloud interface the unit operates autonomously and should it loose all communication it will run as a stand alone unit based on the local sensors

CONTROLLER BASICS

Configurable:

Power (controller):	Power up to 750V DC
Heating circuits:	1, 2 or 4 circuits
	One circuit breaker
	per circuit
Operator switch:	OFF - AUTOMATIC – ON
Heating Control by:	Weather Forecast Weather Station
	Ambient Thermostat & Humidity
	Snow Detection
	Rail Temp Sensor
Heating circuit alarm:	Manual or Automatic
	PContact-less current sensing.
Communication:	one per circuit RS-485 Modbus
	Ethernet Modbus Wireless
	GSM 4G/3G WiFi
LED indicator on door:	White: AUTO/OFF
	Blue: ERROR
	Input: Demand Heat
	Output: OK, Heating, Fault
	Air-Thermostat

BLUE RAIL – SCADA SOFTWARE

User Access: 128 bit secure Web base interface.

BLUE RAIL Remote SCADA is the scalable software package that extends the reliability and efficiency of the third rail heating.

On-line management and control software can bond all controllers on a traffic line or in a territory together.

Valuable information at the fingertip for:

• **Traffic Control Department.**
• **Maintenance Department.**
• **Technical Department.**

Operational status:

• Manual or Auto operation
• Control mode
• Locale weather conditions
• Heating circuits ON or OFF
• Energy counters
• Total heating hours
• Heating circuit power
• Current measurement for each heating circuit

Remote settings:
• Turn individual circuits ON/OFF
• Temperature & Humidity levels for every control mode
• Diagnostic tool

Instant message on errors:
• Communication error
• Main supply failure
• Low/Zero current heating circuit
• Over-current heating circuit
• Temperature sensor failure
• Humidity sensor failure

Errors and operational status is reported immediately to the right person, both at the user interface, in an SMS and/or in an e-mail. Call for repair could be done with no delays.

The SCADA software can be customized in multiple ways e.g. language, graphical presentation and error handling.

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