

GURU PC® Case Study

Chicago Area Rail Operator Upgrades Its Passenger Car Freeze Protection

A Chicago area commuter regional rail operator has an operating range that stretches from the Chicago collar counties up into Kenosha, Wisconsin. With more than 780 passenger cars in its fleet, the company's passenger rail cars provide daily transportation for thousands of commuters.

Given their operating range, the rail operator is no stranger to freezing temperatures and is mindful of the need to protect their passenger cars' potable water-bearing systems from freezing during the cold winter months. Typically supplying onboard toilets and galleys, these water-bearing systems can quickly freeze when the car heat is turned off, bursting pipes and storage tanks. This freeze damage can lead to expensive, lengthy repairs and significant downtime.

A project manager at the company commented that while they had used freeze protection devices on their rail cars in the past, the devices performed poorly. Due to this, they decided to switch to the GURU PC® thermostatic freeze protection valve in 2018.

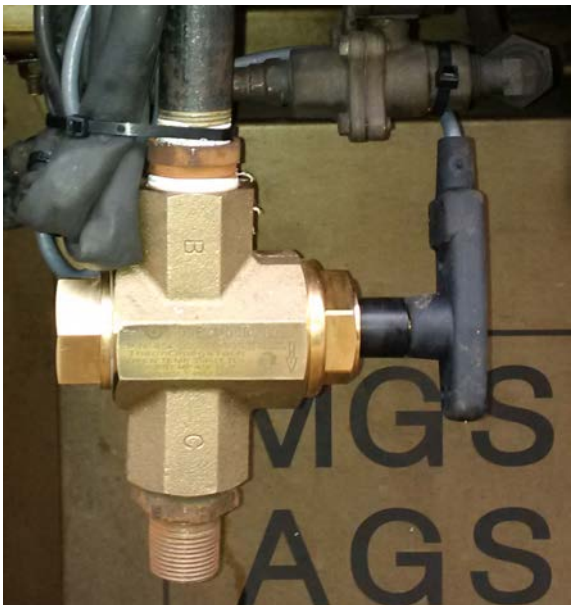


During normal operation, a passenger rail car's heating keeps the water in the system warm. When the car heat is turned off during a layover or when the rail car is put in storage, the temperature inside of the cabin can quickly fall towards freezing. If the water in the system is not heated or drained, it will eventually freeze and potentially cause significant damage.

"The GURU PC® is installed at the lowest point in the car's water-bearing system inside of the cabin," Dana Logue, ThermOmegaTech's Railroad Product Manager, explained. "Its internal thermostatic element continuously senses the ambient temperature. When the temperature falls to the valve's set-point of 35°F, it will automatically open and rapidly drain the system before the water freezes, effectively preventing thousands of dollars in damage."

Once power and heat are restored to the rail car, the valve will warm up and modulate closed, allowing the water tanks to be refilled before returning the rail car to service. Once the passenger car's heating is restored, the valve's electronic heater assembly quickly reheats the valve, allowing it to modulate closed so that the storage tank may be refilled with cold water and the car promptly returned to service.

Utilizing the same thermostatic temperature control technology as the GURU® Plug for locomotives, the GURU PC® operates 100% mechanically and does not require a source of electricity to drain the system.
The GURU PC® is offered in ¾" and 1" NPT sizes, both of which have a high flow design for rapid draining.



We recommend implementing our electric heater assemblies with the valves to shorten refill and startup times after a valve activation. The heater, available as 120VAC/74VDC or 230 VAC, attaches to the valve's thermal actuator to quickly warm it up once power is restored to the car.

After testing a preliminary unit for more than a year, the regional rail operator installed 186 1" GURU PC's with heater assemblies in mid-2019. The days of unreliable freeze protection are behind the company now, and the project manager commented that there had been no freeze-ups since the installation.

The company plans on implementing another 186 GURU PC® valves in 2020, and when asked if they would recommend the valve to other commuter train operators, they commented, "yes!"

NSF 61 Certified and shock and vibration tested, the GURU PC® is compact, reliable, and in-line serviceable for ease of maintenance. This winter and every other, trust the thermostatic GURU PC® freeze valve to protect your investments from freezing temperatures.

The GURU PC® is available for sale direct from ThermOmegaTech. For more information, visit our website at www.ThermOmegaTech.com, or call (877) 379-8258.