

Pictured below is a typical example of an NW-25100 HVAC control package with the electronic system display at the top, the HVAC power switches below the display panel, and the 120/208 and 480 volt breakers below the HVAC control. The HVAC control is available as a separate unit for situations where a complete electrical package is not required. System versions have included placing the display screen on a separate control panel so it is visible and accessible from a different

area than the control switches, custom screen displays and controls for up to three zones.

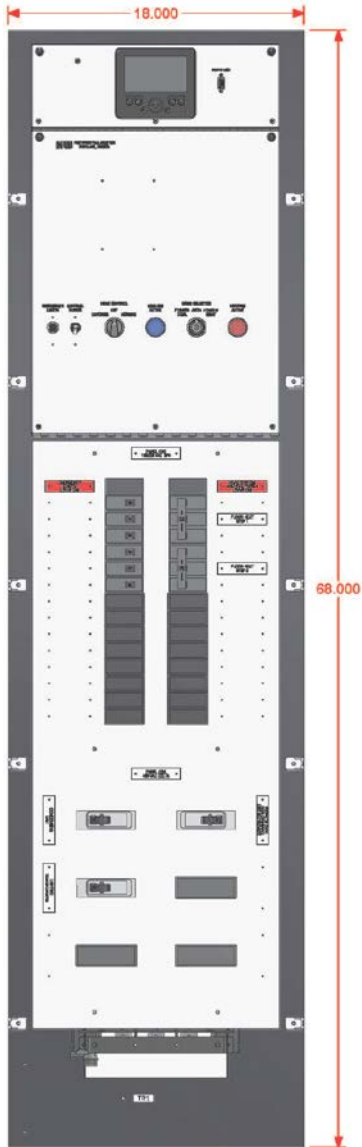
The system featured on the **left side of the front cover** has DC circuit breakers, a battery voltage meter (upper left) and generator controls (upper right) along with HVAC controls (middle right). The HVAC control system itself is shown in a detail view on the lower right of the cover, and a view of the typical main display screen is shown in the upper right, showing current temperatures, set points and current system operation.

Let Northwest Rail Electric help you with all your passenger railcar system needs. Starting with power generating, hotel services, power distributing and power management, our extensive experience in passenger car systems can solve the most difficult problems. Allow us to show you how you can accomplish more with less generating and distribution capacity, saving fuel and capital. We also excel at heating, ventilation and air conditioning systems: HVAC control systems to keep your passengers comfortable from Alaska and Canada in the winter to Arizona and Florida in the summer.

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NW-25100 Passenger Car Electrical Locker Package

**Electronic HVAC Control and Circuit Breaker
 Panels in One Package with Options for
 Generator Control and DC Circuit Control**



from **NW** Northwest
 Rail
 Electric Inc.

NW-25100 Dimensions:

Package Size: Vertical format (see back): 18" x 68" for most versions. Many additional options require additional space. Horizontal format with breaker panels beside HVAC control (left cover photo): 36" x 48", Depth (panel closed): 5", backpan to face, knobs extend to 6 ¼" in places. Minimum width of locker door opening for vertical format is 15 ½".

Electronic HVAC Control:

Also available as a stand-alone HVAC control unit with no 120/208 volt or 480 volt breaker panels. Same footprint as Version 7 HVAC control unit. Digital temperature display with detailed information about system operation and system warning displays. With optional pressure transducers, the system is also able to display air conditioning refrigerant pressures and additional information. Backlit display is visible in even darkest conditions. Dehumidification option available by adding sensor. 24v DC power supply inside HVAC control. No separately mounted transformer is required. Blower Control – up to 3 fan speeds, depending on requirements and space available. High speed is turned on at maximum AC capacity demand, but lower speed increases comfort when heating. 2 stage overhead heat control, plus option for baseboard heat or an additional zone of heat. Optional variable capacity baseboard heat to allow for exact power level to suit car seating design and the surrounding objects without overheating. Programmable offsets and differentials - pre-set to standard settings. Control switches allow for manual override.

Power Distribution

Options include larger or smaller breaker panels to suit needs and space requirements.
6 position 480 volt circuit breaker panel with:
3 phase 480 volt Breakers: Car Main, Lighting Transformer Breaker, Overhead Heat Breaker, HVAC Condenser Breaker
Space for Two Additional 3 pole breakers
30 position 208/120 volt lighting breaker panel with:
HVAC Control and Battery Charger Breakers
30A, 3 pole Baseboard Heat Breakers.
6x single pole lighting breakers included

Emergency Lighting:

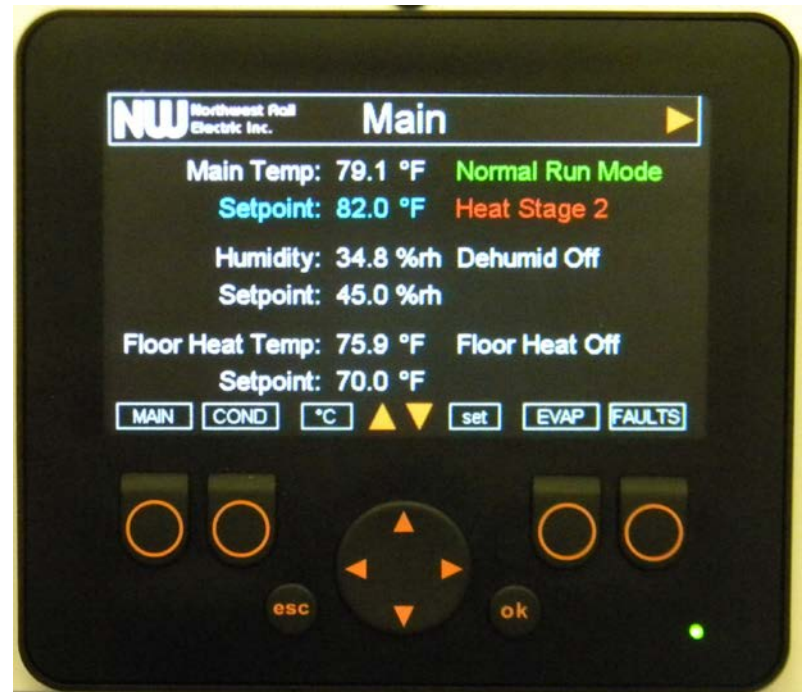
Standard system: Single zone at 20 amp
12 volt or 13 amp 28 volt

Optional Power Control:

(Requires additional space)
Optional generator control and power management system capable of automatically starting the generator and operating it if the head-end power fails.
Option for dual head-end power systems ("Canadian style HEP").
Yard power supply connector option.
Optional ability to feed the train HEP from the car generator.

Optional DC Controls:

(Requires additional space)
Battery voltage indicator, multiple circuit breakers, battery charging systems (single or multiple battery systems).



Main HVAC system display screen (above) and a small portion of the technical details and system status and fault monitoring that is available (below). System includes detail displays for condenser and evaporator status and many other items helpful for diagnosis.

