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Water-Source Heat Pump Controls

Pioneer Gold

Pioneer Silver



AAON Water-Source Heat Pump Controls

AAON Pioneer Silver and Pioneer Gold controllers are designed for small packaged water-source heat pump units. The Pioneer controllers are designed, engineered, and supported by AAON. All of the energy saving features and options available on AAON WH and WV Series water-source pumps can be controlled with these systems.

The Pioneer Silver controller is the standard controller configuration for basic water-source heat pump systems with terminals for connection to a heat pump thermostat. All AAON stocked water-source heat pumps include the Pioneer Silver. An expansion board allows for control of premium options, such as hot gas reheat and waterside economizer.

The Pioneer Gold controller is the advanced controller configuration for water-source heat pump systems. The controller includes terminals for a space sensor and touchscreen interface on the Pioneer Gold can be used for standalone control and configuration. The controller also includes terminals for connection to a DDC system or heat pump thermostat. BACnet IP/MSTP and Modbus communication protocols are available directly from the Pioneer Gold.

WV Series Vertical Configuration Water-Source Heat Pumps





WH Series Horizontal Configuration Water-Source Heat Pumps



PIONEER Silver

Pioneer Silver System Applications

- Terminals to Connect to a DDC System or Heat Pump Thermostat
- Heating, Cooling, and Dehumidification Modes of Operation




 <p>Pioneer Silver Standard Terminals - G, Y, O, 24V, COM</p>	 <p>Factory or Field Provided Heat Pump Thermostat</p>
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Pioneer Silver + Thermostat Advantages

- PSC or ECM Fan Control
- Rotary or Scroll Compressor Control
- Night Setback
- High Condensate Level Sensor
- Status and Alarm LEDs
- Test Mode for Startup and Maintenance
- Emergency Shutdown Input

Pioneer Silver + Expansion Board + Thermostat Advantages

- PSC or ECM Fan Control
- Rotary or Scroll Compressor Control
- Hot Gas Reheat Dehumidification Control
- Waterside Economizer Control
- Two-Stage Fan Control
- Two-Stage Compressor Control
- Two-Stage Auxiliary Heat Control
- Night Setback
- High Condensate Level Sensor
- Motorized Water Valve Control
- Status and Alarm LEDs
- Test Mode for Startup and Maintenance
- Emergency Shutdown Input

 <p>Pioneer Silver</p>	 <p>Pioneer Silver Expansion Board</p>	 <p>Factory or Field Provided Heat Pump Thermostat</p>
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Pioneer Gold System Applications

- Standalone Control with Space Sensor and Touchscreen Configuration
- Constant Volume
- Terminals to Connect to a DDC System or Heat Pump Thermostat
- Built-in BACnet IP/MSTP & Modbus
- Compatible with Orion Control Systems and Prism 2 Configuration and Monitoring Software

Pioneer Gold + Space Sensor



Pioneer Gold with Touchscreen Interface and BACnet IP/MSTP and Modbus



Selectable 4.3" Wall Mounted Touchscreen Space Temperature and Humidity Sensor

OR



Selectable Simple Space Temperature Sensor

Pioneer Gold + Thermostat



Pioneer Gold with Touchscreen Interface and BACnet IP/MSTP and Modbus



Factory or Field Provided Heat Pump Thermostat

Pioneer Gold Advantages

- User-Friendly Touchscreen Configuration Interface on the Control Board
- PSC or ECM Fan Control
- Rotary or Scroll Compressor Control
- Hot Gas Reheat Dehumidification Control
- Waterside Economizer Control
- Two-Stage Fan Control
- Two-Stage Compressor Control
- Two-Stage Auxiliary or Emergency Heat Control
- Occupancy Scheduling
- Night Setback
- High Condensate Level Sensor
- Motorized Water Valve Control
- Status and Alarm LEDs
- Emergency Shutdown Input
- CO₂ Alarm
- CO₂ Setpoint Outside Air Damper Override

AAON Designed, Engineered, and Supported Water-Source Heat Pump Control

	AAON Pioneer Silver	AAON Pioneer Gold
Unit Capacity Control	½ to 30 ton WSHPs	½ to 30 ton WSHPs
User Interface	<ul style="list-style-type: none"> Thermostat Terminals to Heat Pump Thermostat Alarm Status LED 	<ul style="list-style-type: none"> Standalone with Selectable Space Sensor Thermostat Terminals to Heat Pump Thermostat 2.8" Touchscreen LCD Configuration Interface
Networking Capability	Thermostat Terminals to DDC System	Built-In BACnet IP/MSTP and Modbus

Service and Reliability Features	Pioneer Silver and Gold
Service Test Mode	Standard
Factory Wiring Harness Connectors	Standard
High/Low Control Voltage Lockouts (Auto Reset)	Standard
Alarm and Relay Status LEDs	Standard
Alarm Status	Silver - Alarm LED with Fault Codes Gold - LCD Interface

Basic Features	Pioneer Silver and Gold
Random Start Delay	Standard
Compressor Minimum On/Off Timers	Standard
High Condensate Level Sensor	Standard
High Refrigerant Pressure Protection	Standard
Loss of Refrigerant Charge Protection	Standard
Reversing Valve Default to Heating Mode	Standard
High/Low Control Voltage Alarms (24 VAC)	Standard
Air Coil Low Refrigerant Temperature Alarm	Standard
Water Coil Low Refrigerant Temperature Alarm	Standard
Dry Alarm Contacts	Standard
Emergency Shut Down Input	Standard
Night Setback Mode	Standard
Night Setback Override Timer	Standard
Night Setback Override Thermostat Input	Standard
Auxiliary Alarm Input	Standard
I/O Relay Status LEDs	Standard
Constant Torque EC Motor	Standard

Advanced Features	Pioneer Silver + Expansion Board	Pioneer Gold
Waterside Economizer	Standard	Standard
Two-Speed EC Fan	Standard	Standard
Hot Gas Reheat	Standard	Standard
Two-Stage Compressor	Standard	Standard
Motorized Water Valve	Standard	Standard
Externally Controlled EC Motor (0-10VDC)	Standard	Standard
Supply Air Temperature Control	Standard	Standard
Supply Air Reset Control	Standard	Standard
Two-Stage Auxiliary/ Emergency Heat	Standard	Standard
Space Sensor Alarm		Standard
Entering Hot Water Temperature Alarm		Standard
CO ₂ Alarm		Standard
CO ₂ Setpoint Outside Air Damper Override		Standard
Variable Speed Pump		Standard
2.8" Color Touchscreen LCD Configuration Interface		Standard
Space Sensor Control		Optional
4.3" Color Touchscreen Space Temperature and Humidity Sensor		Optional

Contact your local AAON Representative for information about the AAON Pioneer Controls



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