



Guide Specifications

Voyager I Rooftop Units
TSD/TSH 060-072-090-102-120
WSD/WSH 060-072-090
YSD/YSH 060-072-090-102-120



General

Units shall be dedicated downflow or horizontal airflow. Operating range shall be between 46°C and -18°C cooling as standard from the factory for all units. All units shall be factory assembled, internally wired, fully charged with refrigerant, and 100% run-tested before leaving the factory. Wiring internal to the unit shall be colored and numbered for simplified identification.

Casing

Unit casing shall be constructed of heavy gauge galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished weather resistant RAL 7032 baked enamel finish. Unit's surface shall be tested 1000 hours in a salt spray test in compliance with NFX 41.002. Cabinet construction shall allow for all maintenance on one side of the unit. Service panels shall have lifting handles and be removed and reinstalled by removing not more than 1 fastener while providing a water and air tight seal. All exposed vertical panels, top covers and the base in the indoor air section shall be insulated with cleanable foil faced, fire-retardant permanent, odorless glass fiber material. The aluminium foil shall be 0.030 mm thick. The downflow unit's base pan shall have no penetrations within the perimeter of the curb other than the raised 29 mm high supply/ return openings to provide an added water integrity precaution, if the condensate drain backs up. The base of the unit shall have provisions for forklift and crane lifting. The horizontal flow units should not require any extra plenum or roofcurb to comply with an « horizontal return and discharge » requirement.

Unit Top

The top cover shall be one piece or where seams exist, it shall be double hemmed and gasket sealed to prevent water leakage. The ribbed top adds extra strength and prevents water from pooling on unit top.

Filters

Fifty mm filters shall be factory supplied.

Compressors

All units shall have direct-drive, hermetic, scroll type compressors with self-lubrication. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or

minus 10 percent of unit nameplate voltage. All scroll compressors shall be provided with internal overloads.

Refrigerant Circuits

Each refrigerant circuit shall have independent fixed orifice expansion devices, service pressure ports, and refrigerant line filter driers factory installed as standard. On the reverse cycle of the heat pump unit, each circuit shall have an independent fixed thermal expansion valve.

Evaporator And Condenser Coils

Internally finned 8 mm (5/16 inch, in diameter) copper tubes mechanically bonded to configured aluminum plate fin shall be standard. Coils shall be leak tested at the factory to ensure pressure integrity. The evaporator coil and condenser coil shall be pressure tested to 3.1 mPa and leak tested to 1.4 mPa. Unit condensate drain pan shall be constructed of a non-corrosive material. Drain pan shall be reversible for side opposite service connections. Drain pan shall be removable to gain access for cleaning. Drain pan shall be double sloped to ensure proper draining of condensate.

Outdoor Fans

The outdoor fans shall be direct drive, statically and dynamically balanced, draw-through in the vertical discharge position. The fan motors shall be permanently lubricated and shall have built-in thermal overload protection.

Indoor Fan

All units shall have belt driven, with forward-curved blades and adjustable motor sheaves. All units shall have an adjustable idler-arm assembly for quick-adjustment to fan belts and motor sheaves. All motors shall be thermally protected. Oversized motors shall be available for high static operations.

Controls

Unit shall be completely factory wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Units shall provide an external location for mounting a fused disconnect device. Microprocessor controls shall be available. Microprocessor controls provide for all 24 volt control functions. With the microprocessor controls, the resident control algorithms shall make all heating,

cooling, and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control, minimizes drift from set point, and provides better building comfort. A centralized microprocessor shall provide anti short cycle timing and time delay between compressors to provide a higher level of machine protection. 24-volt electromechanical control circuit shall include control transformer and contactor pressure lugs for power wiring. Unit shall have single point power entry as standard.

Options and Accessories

Roof Curb - Downflow -The roof curb shall be designed to mate with the downflow unit and provide support and watertight installation when installed properly. The roof curb design shall allow field-fabricated rectangular supply/return ductwork to be connected directly to the curb. Curb shall be shipped knocked down for field assembly and shall include wood nailer strips.

Adjustable Roof Curb -This factory assembled accessory is adjustable on site and allows correction of the slope of the roof up to 5%.

Hot Water Coil -This option shall be factory mounted and placed in the discharge section. It shall be shipped with one 3-way valve and a field adjustable 2-step control and frostat protection.

Electric Heater - Electric heater elements shall be constructed of heavy duty nickel chromium elements internally wire connected. Each heater package shall have automatically reset high limit operating through heating element contactors. Electric heaters shall be protected with fuses. Power supply shall come from the main unit power supply. All electric heaters shall be supplied with overheat thermostat protection.

Economizer - Downflow -This assembly includes fully modulating 0-100% motor and dampers, barometric relief, minimum position setting, preset linkage, wiring harness and differential enthalpy control.

Economizer - Horizontal -This accessory shall be factory-installed only. The horizontal economizer shall contain the same features as the downflow economizer with the exception of barometric relief.

Remote Potentiometer –Field installed, the minimum position setting of economizer shall be adjusted with this accessory.

Motorized Outside Air Dampers - Factory or field-installed manually set outdoor air dampers shall provide up to 50 percent outside air. Once set, outdoor air dampers shall open to set position when indoor fan starts. The damper shall close to the full closed position when indoor fan shuts down.

Manual Outside Air Damper – Factory or field-installed rain hood and screen shall provide up to 50 percent outside air.

Oversized Motors -Factory or field installed direct drive oversized motors shall be available for high static applications.

Control Options

TCI-R Comm-3/4 Trane Communication Interface -This factory or field-installed option shall be provided to interface microprocessor controlled units with the Trane Integrated Comfort™ systems.

LCI-R Comm-5 LonTalk® Communication Interface -This factory or field-installed option shall be provided to allow the unit to communicate as a Trane Comm-5 device or directly with generic LonTalk Network Building Automation System Controls.

Zone Sensor -Field-installed, this accessory shall be provided to interface with the Micro equipped units and shall be available in either manual, automatic programmable with night setback, with system malfunction lights or remote sensor options.

Thermostats - Two stage heating and cooling operation or one stage heating and cooling shall be available, for field installation, in either manual or automatic changeover. Automatic

programmable electronic with night set back shall also be available.

Comparative Enthalpy - Replaces the standard dry bulb control with two enthalpy sensors that compare total heat content of the indoor air and outdoor air to determine the most efficient air source. This control option offers the highest level of comfort control, plus energy efficiency, available. This option shall be available for microprocessor controlled units. It can be field installed or factory-installed with the factory-installed economizer.

Discharge Air Sensing - This factory or field option provides true discharge air sensing in heating models. This sensor is a status indicator readable through Tracer™ or Tracker™. This option is available for microprocessor controlled units.

Through the Base Electrical with Fuse Disconnect Switch – Factory installed
3-pole, molded case disconnect switch with provisions for through the base electrical connections are available. The disconnect switch will be installed in the unit in a watertight enclosure with access through a swinging door. Factory wiring will be provided from the switch to the unit high voltage terminal block. The switch will be CE recognized.

Fan Failure/Clogged Filter Switches -

These factory or field-installed options allow for individual fan failure and dirty filter indication in microprocessor controlled units. The fan failure switch will disable all unit functions and "flash" the Service LED on the zone sensor. The dirty filter switch will light the Service LED on the zone sensor and will allow continued unit operation.

High Pressure Cutout – This factoryinstalled option is offered for units that do not have High Pressure cutout as standard. All 3-phase models with scroll compressors include High Pressure Cutout as standard.

Supply and/or Return Air Smoke Detector – With this option installed, if smoke is detected, all unit operation will be shut down. Reset will be manual at the unit. Return Air Smoke Detectors require minimum allowable airflow when used with

certain models. This option is available for micro controlled units.



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Literature Order Number	RT-PRG002-E4
Date	0606
Supersedes	RT-PRG002-E4_0303
Stocking Location	Europe

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