

Evap Air Cooler



INSTALLATIEVOORSCHRIFTEN (Nederlands)

INSTALLATIONANLEITUNG (Deutsch)

INSTALLATION INSTRUCTIONS (Englisch)

MANUEL D'INSTALLATION (Français)

618325-C

BRINK
Air for life

Installation instructions

Air cooler for central ventilation with heat recovery

Evap

KEEP WITH THE PRODUCT

This product may be used by children aged 12 years and over, persons with reduced mental capacity, physical limitations or lack of experience and knowledge if they are supervised or have been instructed in the use the product safely and are aware of the possible hazards. Children should not play with the product. Cleaning and maintenance by the user may not be carried out by children without supervision.



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Section 1 - Preface

This installer manual has been prepared for the installation and maintenance of the Brink Climate Systems Evap Air Cooler.

The purpose of this installer manual is:

- Optimal safety during installation and use.
- Careful maintenance.
- Reference for troubleshooting.

Although this manual has been prepared with the utmost care, no rights can be derived from it. The products are continuously being developed. Brink Climate Systems therefore reserves the right to modify this manual without prior notice.

2.1 Warranty

We hereby declare that we provide a 2-year warranty from the date of production on Brink Climate Systems products. This warranty includes the free supply of replacement parts by Brink Climate Systems.

The warranty does not cover:

Disassembly and assembly costs.

- Defects that, in the opinion of Brink Climate Systems, are the result of improper handling, negligence, or accidents.
- Defects caused by treatment or repairs carried out by third parties without permission from Brink Climate Systems.
- Consumable parts such as water filter cartridges, evaporative matrix, replacement cassette, and distributor tube. For returning defective parts, the installer must contact Brink Climate Systems.

2.2 Liability

The Brink Climate Systems Cooler is designed for adiabatic cooling in high-rise, low-rise, residential homes, and small commercial applications. Any other application without consultation with a Brink Climate Systems specialist may be considered improper use, relieving the manufacturer of any liability for resulting damages.

Brink Climate Systems is not liable for damages caused by:

- Improper use.
- Normal wear and tear
- Failure to follow the instructions in this manual regarding safety, operation, and maintenance.
- Use of components not supplied by Brink Climate Systems BV.

2.3 Safety measures taken

- The Evap Air Cooler is constructed so that, under normal use and without deliberate actions, it is not possible to come into contact with moving or live parts.
- The Evap Air Cooler complies with the legal requirements for electrical devices.

The unit must be installed in accordance with national wiring regulations.

Applied directives:

- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EU

Applied component standards:

- EN ISO 12100:2010
- EN 60335-1:2012/A12:2017
- EN 60335-2-98:2003/A2:2008
- EN 62233:2008
- EN 61000-3-2:2014
- EN 61000-3-3:2013
- EN 55014-2:2015
- EN 60204-1:2018

Safety measures to be observed:

- Always disconnect the unit from power before performing any work.
- Use appropriate tools.
- Use the device only for its intended purpose as specified in the 'Warranty and Liability' section and within the technical specifications.
- If the power cord is damaged, it may only be replaced by an authorized person.

2.4 Explanation of symbols



Electrical hazard: indicates live components under the cover. Remove the plug before opening.



Warning: risk of contact or unprotected access to components.



General warning symbol: proceed with caution.

Section 3 – Delivery

Check the packaging on receipt and before opening for visible damage. Damage must be reported to Brink Climate Systems by email service@brinkclimatesystems.nl

3.1 Part of delivery

The Evap Air Cooler consists of:

An EPP housing fitted with 2 round connections of 200 mm.

The following components have been fitted in/on the EVAP housing:

- One fibreglass (1) absorbent matrix cassette
- One (1) cord with coupling for cord with mains plug (L=1,5 meter)
- One (1) cord with connection adapter for SHC80 sensor (L=1 meter)
- One (1) water supply hose black with adapter $\frac{3}{4}$ "inside (L=1 meter)
- One (1) waterdrain white of 16 mm (L= 1,5 meter)



Supplied separately are:

- One (1) combined humidity-temperature sensor (SHC80)



- One (1) T3 outdoor sensor (activates cooler at temperature above 22°C)

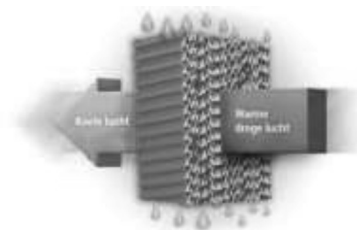


3.2 Evap Air Cooler accessories

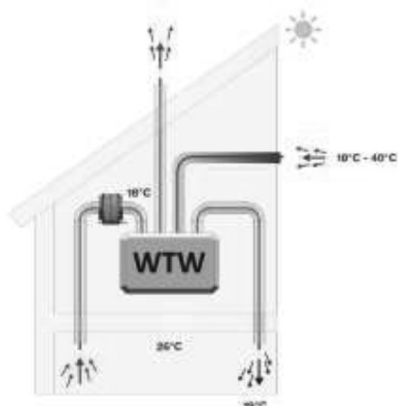
Product description	Product code
Evap Pro controller RF	351115
Evap Pro controller Wired	351113
Evap reducer-set D200 – D125	351032
Evap reducer-set D200 – D150	351033
Evap reducer-set D200 – D180	351034

4.1 General Description

The purpose of the Evap Air Cooler is to cool the air in the dwelling in an energy-efficient, quiet, and safe manner. Its indirect cooling function cools the fresh supply air during summer without increasing the humidity of the air supplied to the home. Efficiency increases as the outdoor temperature rises and sufficient outdoor air is drawn in. A high relative humidity inside the dwelling negatively affects performance because cooling occurs through the evaporation principle.



4.2 Operating Principle



The Evap Air Cooler is an adiabatic air cooler installed in the return air duct from the home. Warm indoor air flows through a moistened matrix, cooling the air to near the wet-bulb temperature. For example: 29°C/30% relative humidity can be cooled to 20°C/75% relative humidity. The cooler has an efficiency of approximately 80%.

The cooled air is stored in the heat recovery unit (HRU), transforming the heat exchanger into a cold exchanger. Warm outdoor air passes over this colder exchanger, indirectly cooling the supply air blown into the home—providing 24/7 night-cooling effect.

Note: The effect on the room temperature is limited by the available airflow volume.

Activation: The cooler activates via the T3 sensor when the temperature exceeds 22°C.

Standard configuration

Delivered without control panel, includes T3 sensor which must be installed in the outdoor air intake duct.

Optional

A wired or wireless control panel with display, internal temperature, and humidity sensor (see separate manual).

4.3 Application

The Evap Air Cooler can be used with heat recovery units where no moisture transfer occurs between supply and return air during heat exchange. Application with an enthalpy exchanger is possible but will increase humidity in the supply air.

Installation is on the return air duct from the dwelling so that the HRU heat exchanger is actively cooled, optimizing efficiency at minimal energy cost and without environmental impact—the process is natural and environmentally friendly.

The main components of the cooler are:

5.1 Housing

The housing of the Evap Air Cooler is made of EPP (expanded polypropylene) with a round 200 mm duct connection on both sides. The advantages of this material are that it is lightweight, watertight, and recyclable. It consists of an upper and lower housing that are connected using two rings. The lower side contains the compartment with the water valve and control PCB, protected by an EPP cover. The housing also includes a water drain with a diameter of 16 mm and a length of 1.5 meters.

5.2 Internal Construction

The internal construction is designed to ensure optimal airflow and safe cooling. It consists of a cassette and a water distributor that moistens the matrix. The incoming air passes through the matrix and is cooled. Excess water is drained away.



5.3 The Control System

The Evap Air Cooler can be controlled in multiple ways.

STANDARD: The unit is activated for cooling when the temperature measured by the T3 sensor exceeds 22°C. This value can only be adjusted using the optional control panel.

Option 1

A wired controller with display and internal temperature and humidity sensor (see control panel manual).

Option 2

A wireless (RF) controller with display and internal temperature and humidity sensor (see RF control panel manual).

Operation

As described above. When the room sensor in the control panel measures a temperature deviation from the setpoint, the cooler is activated. The software is designed to ensure optimal efficiency and minimal water consumption at the lowest energy cost.

Safety

The control system is equipped with an anti-stagnant water function as extra protection against legionella formation, according to guidelines Isso 55.3, LCOP, Belaqua, and VDI6022.

The supplied SHC80 sensor measures the relative humidity and temperature in the duct AFTER the cooler. If desired, the sensor can also be installed after the HRU in the supply duct to the dwelling; in that case, the Evap Air Cooler stops when the temperature drops below 14°C (likely during night ventilation bypass). The sensor also functions as a maximum humidity safety feature to prevent condensation in the ducts under normal design conditions.

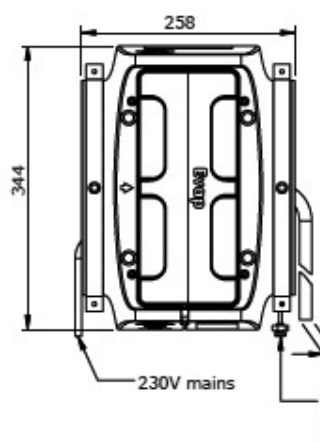
The Evap Air Cooler has LEDs on the control board located at the bottom of the cooler. These give clear indications for power, service, and alarms.

If a control panel is installed, these messages will appear as text on the control panel display.

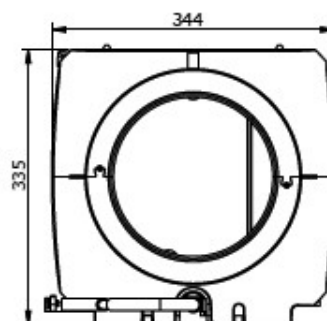
Section 6 – Technical specifications

	Evap Air Cooler
Dimensions LxBxH	258 x 335 x 335 mm
Maximum cooling-capacity	1340 watts (tested by KIWA at 600 m³/h under conditions 35°C / 40% RH). Actual cooling capacity varies depending on airflow volume and air conditions.
Electricity consumption	20 VA (2 watts)
Maximum water consumption	3 liters per hour
Water supply connection	¾" female thread with 4 mm connector, min. pressure 1.5 Bar, max. 3.5 Bar, hose length 1 meter
Water drainage connection	16 mm hose, length 1.5 meters
Maximum air volume	600 m³/h
Duct connection	D200 mm

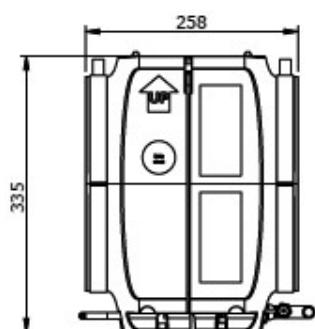
Top



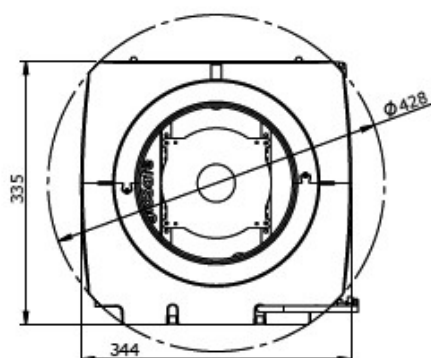
Front



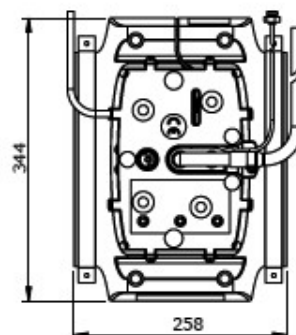
Site



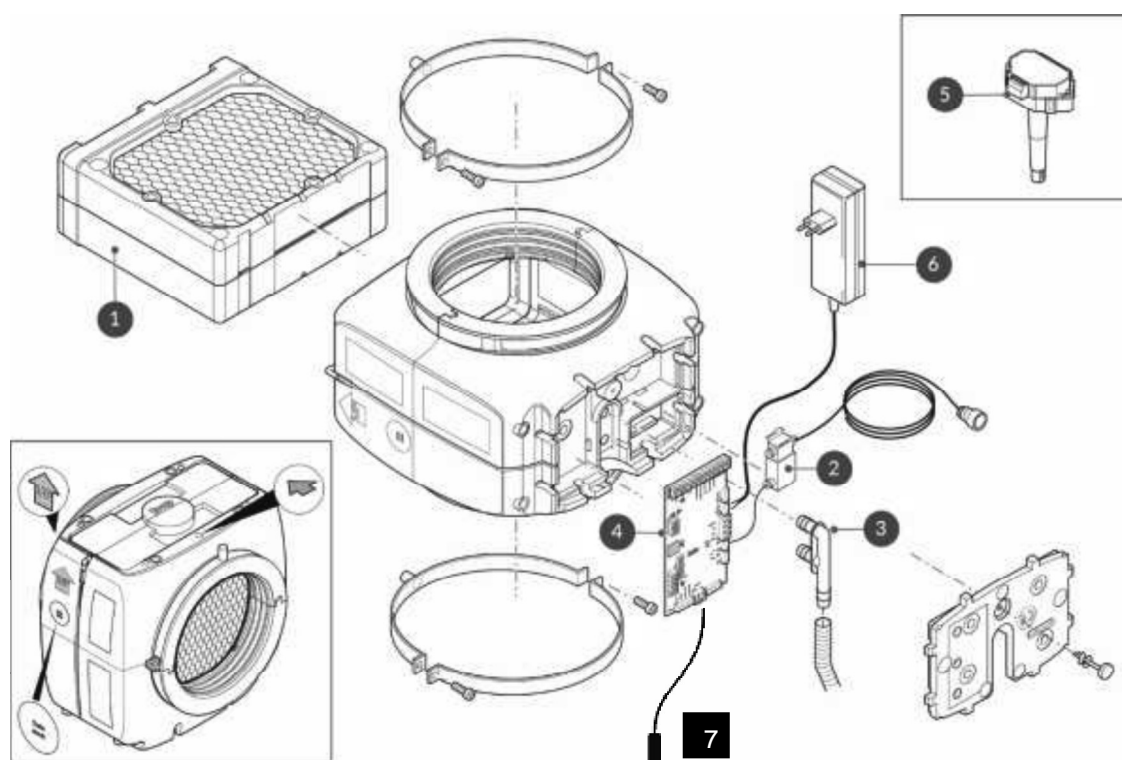
Back



Bottom



6.1 Exploded view



Description	Articlecode
1 Cassette	351161
2 Valve	351028
3 Drain	351038
4 PCB	351039
5 Duct sensor	351035
6 Adapter 230 VAC – 24 VDC	351162
7 T3 sensor	351036

Section 7 – Installation Manual Evap Air Cooler

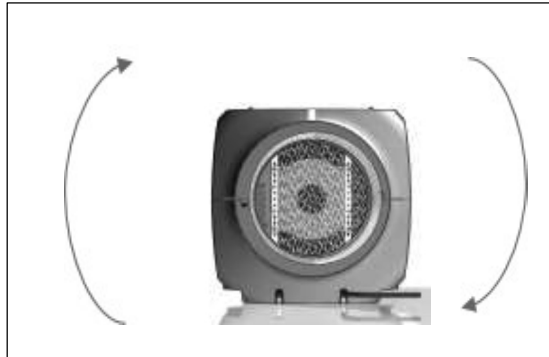
Before opening the unit, check the packaging for visible damage. Report any damage within 48 hours after delivery in writing to info@BrinkClimateSystems.nl for warranty purposes.

The cooler must be connected to a water tapping point equipped according to NEN6526. The Evap Air Cooler consists of two modules:

- 1) Housing – The EPP unit with two round 200 mm duct connections containing the matrix. At the bottom are the power cord, two sensors, and the water supply and drain hoses.
- 2) Control panel – The controller equipped with a digital thermostat/hygrostat.
It includes:
 - 1 combined humidity/temperature sensor T1,
 - 1 meter cable and connector, preinstalled on the main PCB;
 - 1 adapter 230 VAC – 24 VDC, cable length 1.2 meters connected to the main PCB.

Sequence of actions

1. Determine the installation location of the cooler in the return air duct as close as possible to the HRU (WTW).
2. Ensure sufficient space is available to rotate the humidifier during installation, this prevents the need for removal or remounting.
3. MINIMUM REQUIRED FREE SPACE ABOVE THE UNIT: 110 MM



PLEASE NOTE: The unit must be level! Leave at least 100 mm free at the bottom.

4. Mount the cooler between the ducts using the brackets with M8 threaded connections.
5. Connect the black 4 mm hose to the 3/4" adapter on the water supply from the mains via a washing machine tap with 3/4" male thread and check valve. Keep the hose free from the air ducts to avoid water noise.
6. Ensure water pressure is between 1.5 bar and 5 bar.
7. The Evap Air Cooler is supplied with a 16 mm drain hose, length 1.5 meters.



The hose must be installed with downward slope and connected to the sewer without pressure.

8. Max. water consumption is 1 L/min in case of leakage or faulty water valve, normal use max. 2 L/h. Minimum drainpipe diameter: 25 mm.
9. Mount the SHC80 sensor as close as possible AFTER the cooler in the air duct (galvanized steel or flexible aluminum), BEFORE the HRU.



Ensure the sensor is not damaged or becomes wet

7.1 Commissioning Protocol

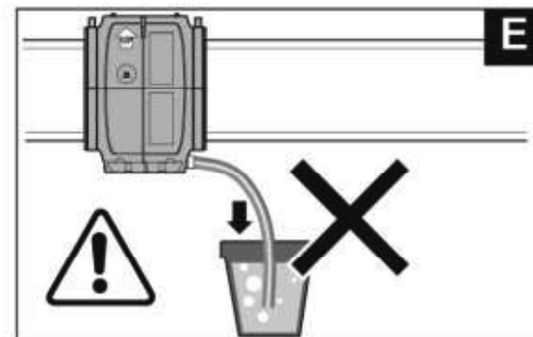
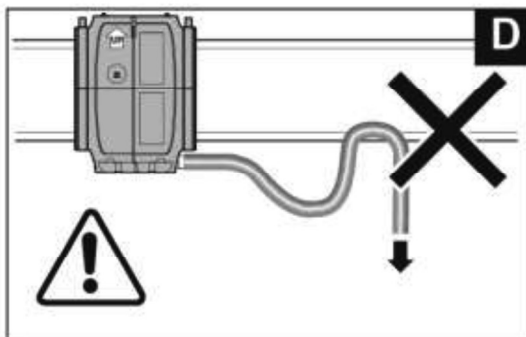
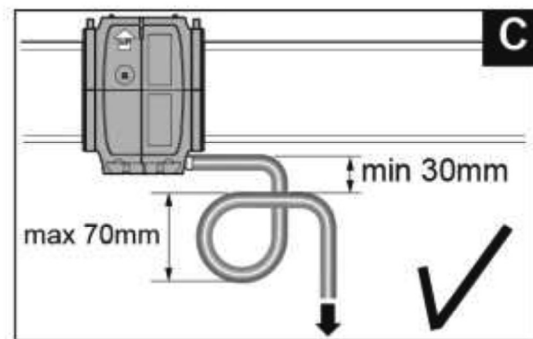
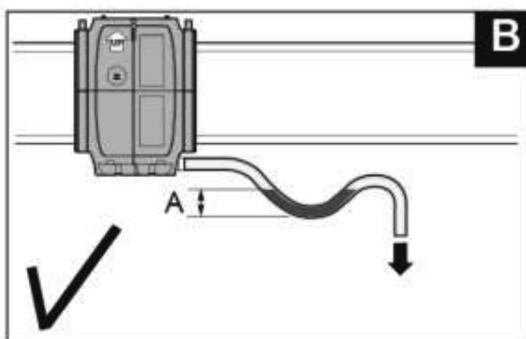
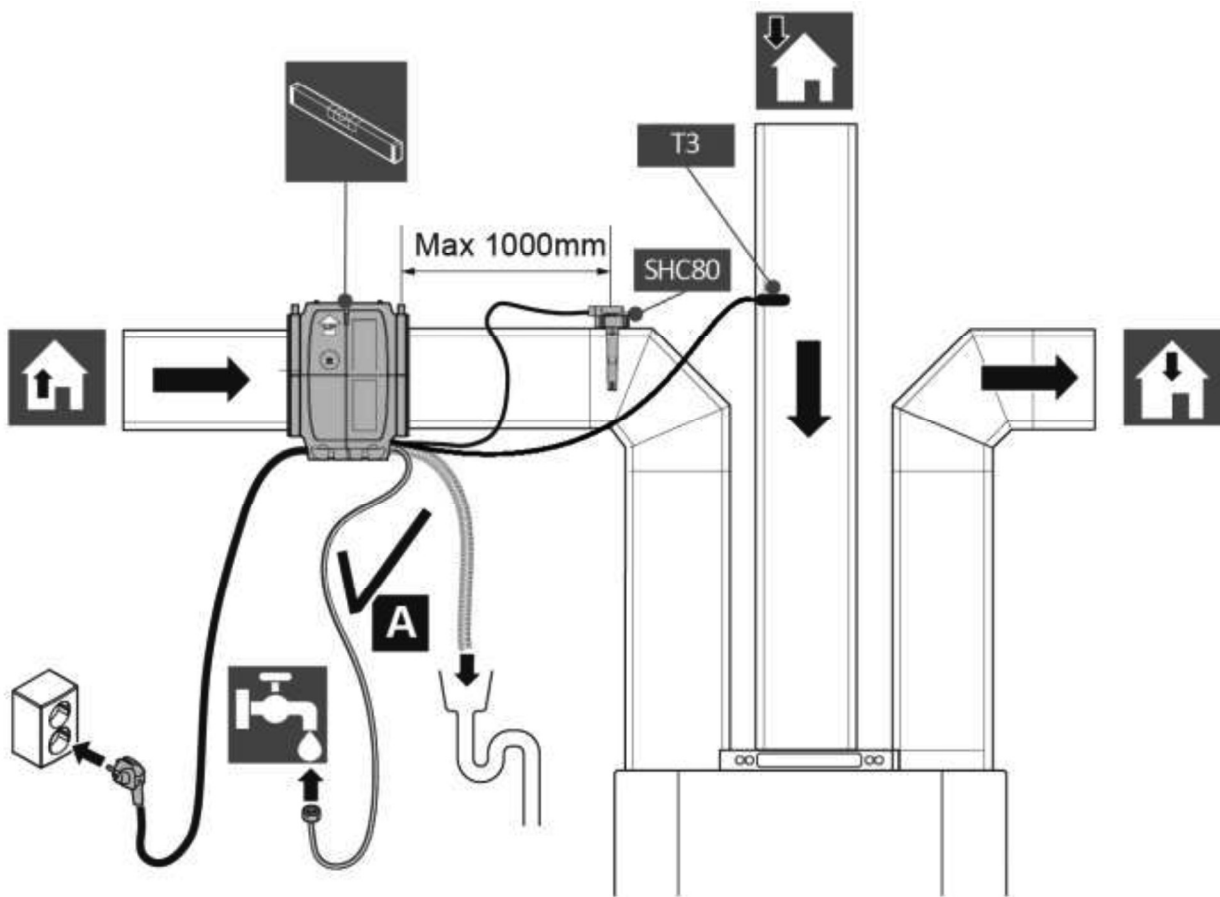
After completing the installation steps above, follow this protocol for correct startup:

1. Open the water supply tap a half or quarter turn.
Check for leaks.
2. Plug the power cord into the socket.
 - The LEDs at the bottom of the unit will light up:
 - GREEN POWER LED starts blinking.
 - ORANGE SERVICE LED blinks every 5 seconds.
 - This indicates that a TEST CYCLE is active (duration approx. 3 minutes). First, the water valve opens for 90 seconds (audible). Check if excess water drains freely.

If no water exits the drain hose, repeat the TEST CYCLE by unplugging and reconnecting the unit. After two attempts, check the water supply (tap open, hose kinked, water valve powered?).

3. When the ORANGE LED turns off, the Evap Air Cooler is ready for operation.
4. Optional: To adjust settings, follow the manual of the control panel (if supplied).

7.2 Schematic Overview of the Cooler



- **0–10 Volt Control**

Connection: TB2 (see wiring diagram).

Operating ranges:

1–3 V: 30% output

4–7 V: 60% output

8–10 V: 100% output

Dip switch configuration: DS1 — 1 ON, 2 ON, 3 ON, 4 OFF.

- **Modbus / BACnet via RS485**

Connection: TB1.

Dip switch: DS2, switch 8 ON. When multiple units are used, unique addresses can be assigned by adjusting dip switches according to the BACnet/Modbus control manual.

- **T8 Return Duct Sensor – RH% / Temperature (Only with Control Panel)**

Connection: TB9. Installation: in the return air duct BEFORE the HRU (WTW).

Operation: The duct sensor measures humidity in the return air duct. If RH drops below the standard setpoint, the unit will activate. The control panel can display values and alarms, but the unit does not respond directly to those display readings. This control mode is used when the RF control panel cannot establish reliable communication with the EVAP unit.

- **Standard T3 Outdoor Temperature Sensor – T1 Sensor Limiter**

Connection: TB12. Installation: in the outdoor air intake duct. Operation: The unit activates when the sensor measures a temperature above 22°C. The unit will cool until the duct sensor (SHC80) reaches its maximum RH setpoint of 78%. When this threshold is reached, cooling will stop until RH drops below 78%.

Dip switch configuration: DS1 — 1 ON, 2 ON, 3 ON, 4 ON.

Use case: when no control panel is installed or desired.