OXYGEN 8

TERRA

DOAS with VRV Integration

Without Energy Recovery

Who We Are

Oxygen8 is reinventing how buildings provide healthy and comfortable air in an energy efficient way. We work to enhance living and working environments with 100% fresh, filtered air using smart technology for maximum comfort and value.

[ox·y·gen·ate]

Nothing is more refreshing and essential to the human body than oxygen, which happens to be the eighth element in the periodic table. We oxygenate businesses, classrooms, senior care facilities and other buildings with 100% fresh air so people can work, live, and breathe in a safe and comfortable environment.

Why We Do What We Do

To Create Healthy Indoor Environments

People are getting sick while working in offices, learning in classrooms and convalescing in senior care facilities. Traditional centralized HVAC systems that recirculate air without proper filtration and humidity control are the root cause of poor IAQ. To prevent the transmission of bacteria and viruses, new HVAC systems must provide dedicated outdoor air, have small zoned ventilation systems, high filtration, and the ability to control humidity levels.

To Move Toward Building Electrification

To reduce greenhouse gases, many North American cities are moving toward net-zero energy buildings over the next decade, which will drive demand for all-electric HVAC systems and low energy technologies. We are here to meet that demand with our all-electric heating and cooling solutions.

For Better Building Design

Super-insulated buildings significantly reduce heating requirements, while climate change and developers' desires for large amounts of glazing will increase cooling needs. The integration of VRV helps to reduce energy consumption and meet ventilation requirements.

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Terra 100% Outside Air Solution* with VRV Integration

*Without Energy Recovery

All Electric Solution

This all-electric ventilation solution helps to reduce the carbon footprint of buildings, while bringing 100% fresh outside air into the space. Terra integrates with Daikin's VRV technology for accurate temperature or temperature and humidity control all year round. The Terra unit, Daikin controller(s), and optional electric pre-heater can all be powered from a single-point power connection.

Low-Profile Split Solution

Terra units have a 18 – 30" depth and 450 – 4,800 cfm range. The modular split configuration allows the 100% outside air solution to be installed indoors, within the ceiling plenum, freeing up valuable roof, floor, and/or mechanical room space while providing better air control to zones.

Accurate Temperature & Humidity Control

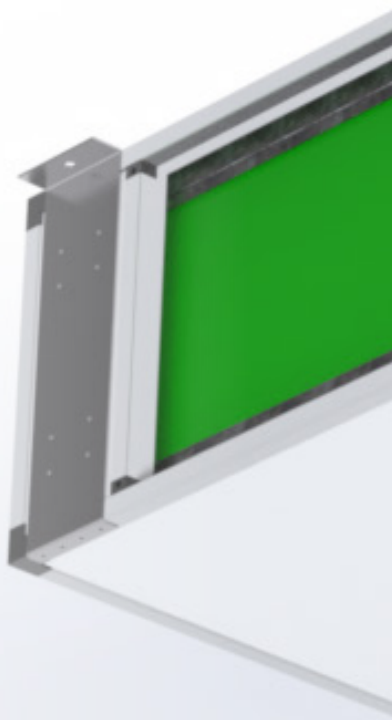
With Daikin VRV heat recovery systems both leaving air temperature and humidity can be controlled accurately.

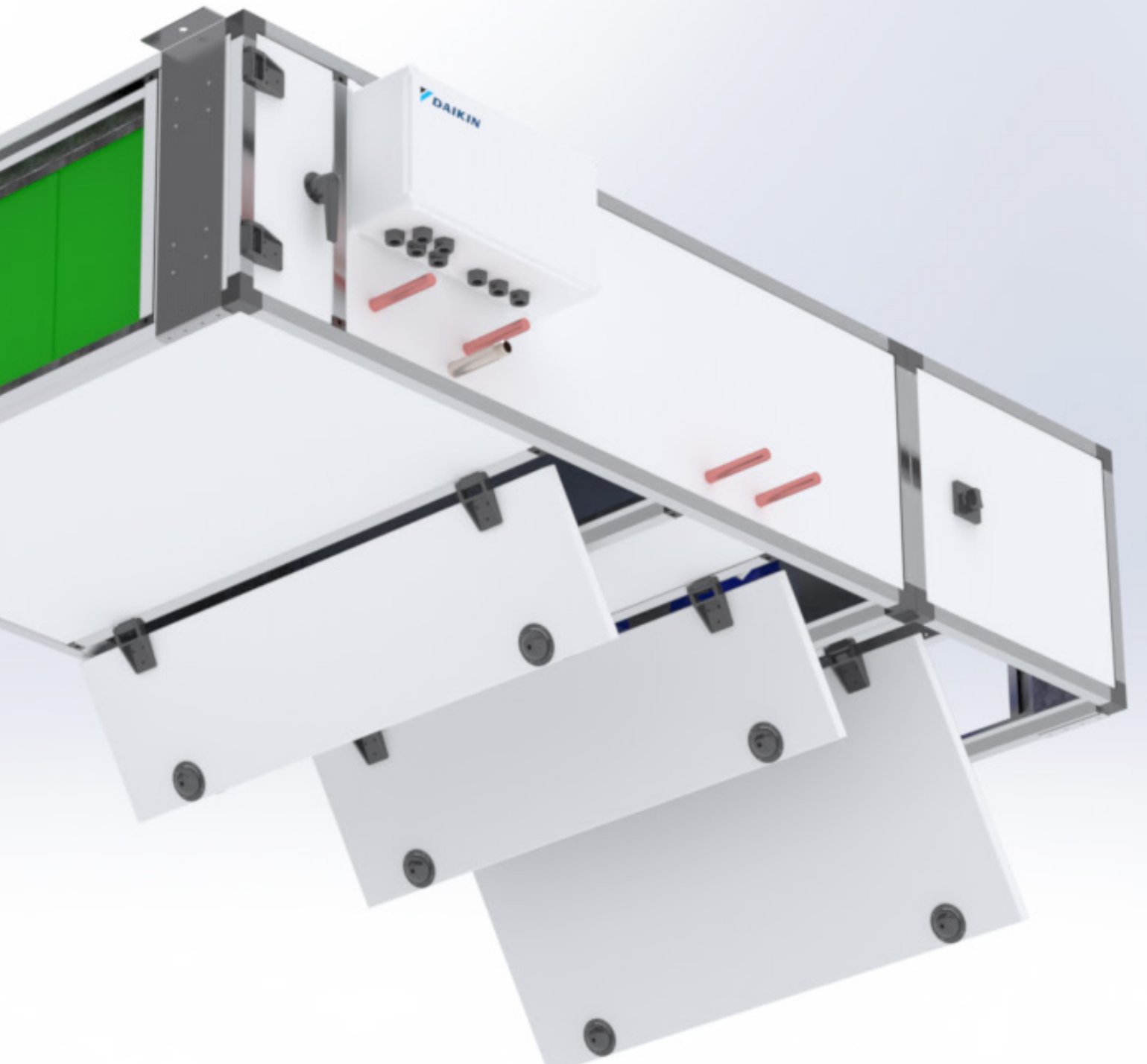
Easy to Select and Install

With Oxygen8's intuitive selection software and pre-selected standard coils, (matching Daikin's selection parameters and specifications), Terra selection is quick and easy. The low-profile design makes installation and commissioning seamless.

Integrated Controls

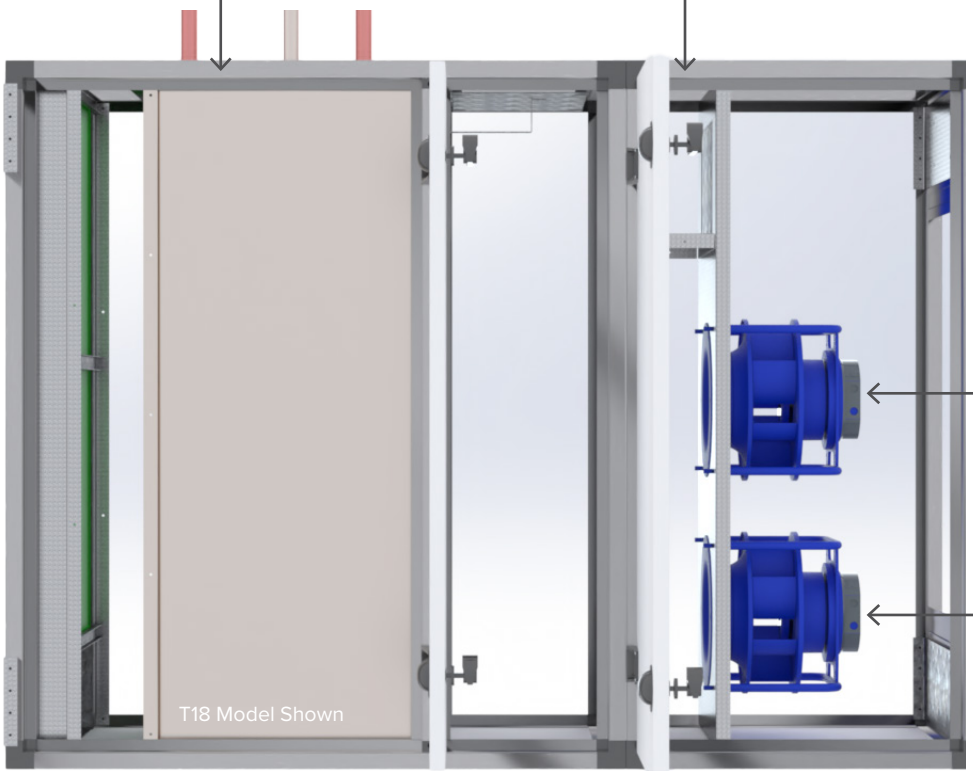
Factory-mounted controls integrate seamlessly with BMS or operate independently, with over 75 built-in control functions including discharge air temperature and humidity control, weekly schedules, and dirty filter alarms.




DAIKIN

Terra System Overview

For Indoor Applications

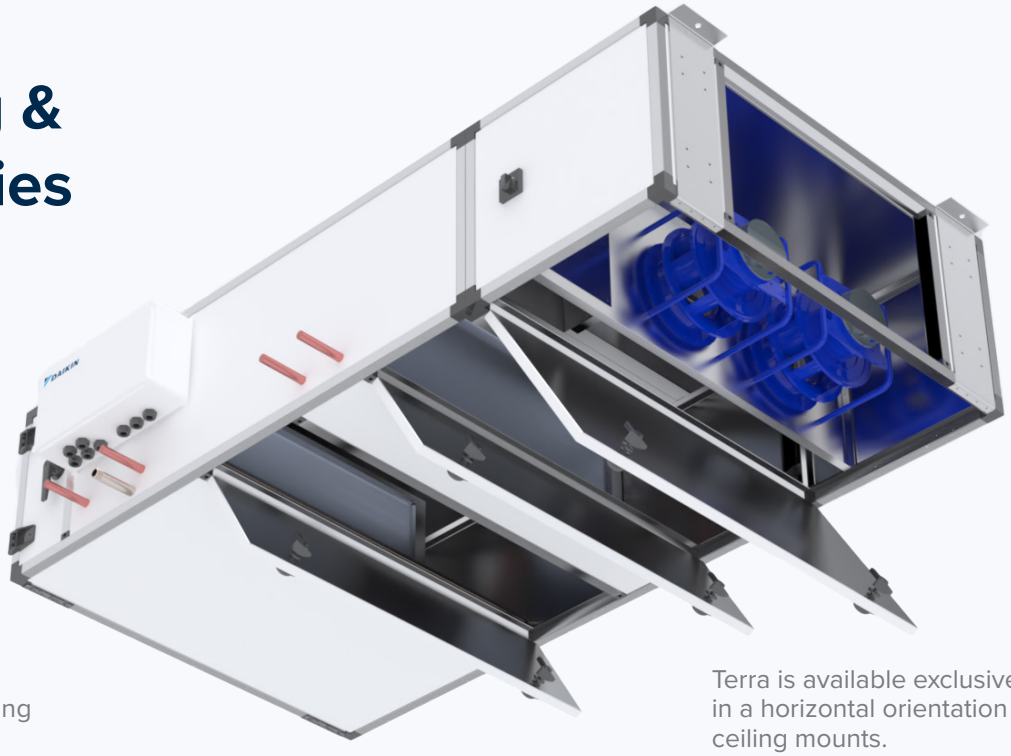


Bottom View

Side View

Mounting & Accessories

Units ship with mounting brackets.



Terra is available exclusively in a horizontal orientation for ceiling mounts.

1. **DX Coil**

   The Daikin-approved DX coil with factory-mounted W-Controller (EKEQ) and factory-brazed Daikin expansion valve (EKEXV) has an interlaced circuit to match the Daikin Outdoor Unit temperatures. Coils come shipped with nitrogen holding charge.

2. **DX + HGRH Coil**

   The Daikin-approved DX coil with factory-mounted D-Controller (EKEQ) and factory-brazed Daikin expansion valves (EKEXV) has an interlaced circuit to match the Daikin Outdoor Unit temperatures. Coils come shipped with nitrogen holding charge.

3. **Electric Pre-Heater**

   SCR controlled electric coils are available for pre-heating entering air when outdoor temperatures are below 16°F for DX + HGRH applications and 32°F for DX-only applications. Option for single-point power supply to unit from pre-heater.

4. **Optional: Temperature, Humidity, and CO2 Room Thermostat**

5. **Optional: Pressure Sensor**

   Measures the pressure differential in the ductwork.

Sizing and Performance

DX and Hot Gas Reheat Coil

Model	Dimensions			Max Airflow cfm	DX Coil Tonnage Sizes	HGRH Coil Tonnage Sizes
	Length in.	**Width** in.	**Height** in.			
T06	87	30	18	600	3T, 4T, 5T, 6T	1.5T
T09	87	36	18	900	5T, 6T, 8T	1.5T, 2T
T12	87	42	18	1200	6T, 8T, 12T	1.5T, 2T, 2.5T, 3T
T15	87	48	18	1500	8T, 10T, 12T, 16T	2T, 2.5T, 3T
T18	90	48	21	1800	10T, 12T, 16T	2.5T, 3T, 4T
T24	90	60	21	2400	10T, 12T, 16T, 24T	3T, 4T, 4.5T, 5T, 6T
T32	114	48	30	3000	16T, 18T, 24T, 32T	5T, 6T
T40	114	60	30	3900	16T, 18T, 24T, 32T	6T
T48	108	72	30	4800	18T, 24T, 32T	7.5T, 8T

DX coil (cooling) selections are based on 91 F/82 F (db/wb) on-coil temperature and within the Daikin's selection parameters and HGRH coil (dehumidification) selections are based on 48 F on-coil temperature and within the Daikin's selection parameters.

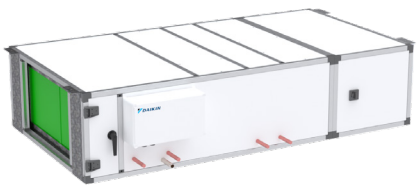
DX Coil

Model	Dimensions			Max Airflow cfm	DX Coil Tonnage Sizes
	Length in.	**Width** in.	**Height** in.		
T06	63	30	18	600	5T
T09	63	36	18	900	8T
T12	63	42	18	1200	12T
T15	63	48	18	1500	12T
T18	66	48	21	1800	16T
T24	72	60	24	2400	24T

DX coil (cooling) selections are based on 91 F/82 F (db/wb) on-coil temperature and within the Daikin's selection parameters.

Configurations

Terra with Factory-Brazed DX Coil



Terra with Factory-Brazed DX and HGRH Coil

Terra with Electric Pre-Heat
Shown with DX only.

Integrated Controls

Terra features an integral control box, all control components come factory-installed.

Standard Control Algorithms

1. Airflow Control

Constant Flow
Constant Pressure
Outside Air Compensation based on Temperature
Demand Control Ventilation based on CO2/VOC

2. Temperature Control

Discharge Air Temperature Control

3. Humidity Control

Humidification
Dehumidification

4. Pre-Heater Control

Electric Pre-Heater

5. Remote Access

Internet Connection
BACnet

Fan Data

Model	Fan Qty.	Voltage	Max. ESP* (@ 1" SP filter) in. W.C.	Fuse Size Unit Only
T06	1	208-240/1	1.1	15A
T09	1	208-240/1	1.5	15A
T12	1	208-240/1	1.0	15A
T15	2	208-240/1	1.5	15A
T18	2	208-240/1	1.25	15A
	1	208-3	3.6	15A
	1	460-3	4.8	15A
T24	2	208-240/1	1.0	15A
	1	208-3	2.0	15A
	1	460-3	3.3	15A
T32	1	208-3	2.5	15A
	1	460-3	4.4	15A
T40	1	208-3	2.3	20A
	1	460-3	2.7	15A
T48	2	208-3	2.7	15A
	2	460-3	4.0	15A

*ESP measured at 1" SP dirty filter conditions.

FAQ

What are the ideal applications for Terra?
Terra is best suited for applications where energy recovery is not required by code, or it is not possible to get the return air to the air handling unit.

Is an electric pre-heat coil required?
Yes. An electric pre-heat coil is required when below:

EAT of 16F with D-Controller (DX + HGRH)
EAT of 32F with W-Controller (DX Only)

What material is the Oxygen8 casing made of?
Painted exterior with galvanized interior.

Can you provide 18-gauge casing as a special?
Our standard casing is 20Ga, painted with a 22Ga galvanized internal panel.

Do you offer non-fused disconnect?
Yes, it is standard. We use a switch disconnect with internal breakers.

Is a filter sensor provided with the unit?
Yes. Dirty filter sensors are standard - an alert will be sent when filters need to be changed.

Is your controller standard on all units, and native BACnet IP, or do we need to add a card?
Yes, integrated, programmable controls come standard with every unit. They are BTL-Certified for BACnet IP. The card is native BACnet IP.

Are your controls MSTP compatible?
Yes, but a gateway would be required by the controls contractor.

How is the Daikin VRV controlled?
The preferred operation is through the D-Controller with a 0-10v signal. Oxygen8 provides a DAT sensor downstream of the coils to control leaving air temperature. Alternatively, the Daikin VRV can be controlled with the new reheat controller to control the temperature and humidity of the outside air.

What sensors come integral to the unit?
There are 2 internal temperature sensors for the unit and 1 for the electric pre-heat that are included.

Do you provide mounting brackets?
Yes, all Terra units come standard with angle brackets for ceiling installation.

Specifications

System Overview

Oxygen8's Terra series is a modular design fan coil unit with optional coil modules for heating, cooling and Daikin VRV integration.

1 Standard Features

- ☐ High Efficiency Variable Speed EC Direct-Drive Motor
- ☐ Backward Inclined Fan(s)
- ☐ Standard Temperature Sensor (SA)
- ☐ Integrated Controls with BACnet IP and BTL-Certification
- ☐ Non-Fused Disconnect Switch
- ☐ 1" Foam Filled Double-Wall Panels (R6.5)
- ☐ Pre-Painted White Exterior Casing
- ☐ 22-Gauge Galvanized Steel Exterior/Interior Panel
- ☐ Filter Alarms: Signaled by factory mounted pressure sensors to measure filter pressure drop across filter
- ☐ 2" MERV 13 Supply Air Filter
- ☐ Removable Hinge Pins for Limited Access
- ☐ Sensors for Dehumidification Control

2 Electric Coil Specifications

- ☐ SCR Controlled
- ☐ Non-Fused Disconnect Switch
- ☐ Optional single-point power supply from coil to unit

3 Installation Options

- ☐ Horizontal (Ceiling Mount) – Brackets included
- ☐ Orientation: Right Hand or Left Hand
- ☐ Access Options: Bottom Doors

4 Warranty

- ☐ 24 Months from start-up

5 VRV Integration

- ☐ Factory Mounted DX Coils and Factory-Brazed Expansion Valve kit to the Coil
- ☐ Factory Mounted Reheat Coils and Factory-Brazed Expansion Valve kit to the Coil
- ☐ Factory Mounted and Wired W- or D-Controller

6 Options

- ☐ 3- or 5-Year Warranty Add-On
- ☐ Optional Sensors: Humidity, Pressure, CO2

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