

50TC
Cooling Only/Electric Heat
Packaged Rooftop
Vertical Models
Nominal Tons 15, 17.5, 20, 25, 27.5
Model Sizes 17, 20, 24, 28, 30



Product Data



(Unit shown with economizer and power exhaust.)

C12590



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The 15 to 27.5 ton WeatherMaker Carrier rooftop unit (RTU) was designed by customers for customers. With a newly designed cabinet that integrates “no-strip” screw collars, handled access panels, and more, we’ve made your unit easy to install, easy to maintain and easy to use and reliable.

Easy to install:

These WeatherMaker units are designed for dedicated factory supplied vertical air flow duct configurations. No special field kits are required. Designed to fit on pre-installed curbs by other another manufacturer, these units also fit on past designed Carrier installed curbs with a new certified and authorized adapter curb. This cabinet design also integrates a large control box that gives you room to work and room to mount Carrier accessory controls.

Easy to maintain:

Easy access handles by Carrier provide quick and easy access to all major, normally serviced components. Our “no-strip” screw system has superior holding power and guides screws into position while preventing the screw from stripping the unit’s metal. Take accurate pressure readings by reading condenser pressure with panels in place as compressors are strategically located to eliminate any air bypass.

Easy to use:

The newly designed, central terminal board by Carrier puts all your connections and troubleshooting points in one convenient place, standard. Most low voltage connections are made to the same board and make it easy to find what you’re looking for and easy to access it. Carrier rooftops have high and low pressure switches, a filter drier, and 2-in (51mm) filters standard.

Reliable:

Each unit comes with precision sized and tested scroll compressor that is internally protected from over temperature and pressures. In addition, each refrigerant circuit is further protected with a high pressure and low pressure switch as well as containing a liquid line filter drier. Each unit is factory tested prior to shipment to help ensure units operation once properly installed.

FEATURES AND BENEFITS

- 2-stage cooling capacity with independent circuits and control.
- Round tube/plate fin (RTPF) available on all sizes or NOVATION all aluminum condenser (outdoor) coils available on 17-28 sizes only. Special coil-coating also available for coastal and industrial environments
- EER's up to 11.0.
- IEER's up to 12.2 with single speed indoor fan motor and up to 12.9 with 2-speed/VFD indoor fan motor
- Dedicated vertical air flow duct configuration models. No field kits required.
- Utility connections through the side or bottom. Bottom connections are also in an enclosed environment to help prevent water entry. Field supplied couplings are required.
- Standardized components and control box layout. Standardized components and controls make stocking parts and service easier.
- Scroll compressors on all units. This makes service, stocking parts, replacement, and trouble-shooting easier.
- Proven Acutrol refrigerant metering system.
- Easy-adjust, belt-drive motor available. Motor assembly also contains a fan belt break protection system on all models and reliable pillow block bearing system that allows lubrication thru front of the unit.
- Capable of thru-the-base electrical routing.
- Full range of electric heaters and single point electric kits – pre-engineered and approved for field installation.
- Single-point electrical connection.
- Sloped, composite drain pan sheds water; and won't rust.
- Standardized controls and control box layout. Standardized components and controls make stocking parts and service easier.
- Clean, large, easy to use control box.
- Color-coded wiring.
- Large, laminated wiring and power wiring drawings which are affixed to unit make troubleshooting easy.
- Single, central terminal board for test and wiring connections.
- Fast-access, handled, panels for easy access on normally accessed service panels.
- “No-strip” screw system guides screws into the panel and captures them tightly without stripping the screw, the panel, or the unit.
- Mechanical cooling (115°F to 30°F / 46°C to -1°C) standard on all models. Low ambient controller allows operation down to -20°F / -29°C.
- 2-in (51mm) disposable filters on all units, with 4-in (102mm) filter track - field installed.
- Refrigerant filter-drier on each circuit.
- High and low pressure switches. Added reliability with high pressure switch and low pressure switch.
- Many factory-installed options ranging from air management economizers, 2 position dampers, manual outdoor air dampers, plus convenience outlets, disconnect switch and smoke detectors.
- Factory-installed Humidi-MiZer® adaptive dehumidification system. Available on 17-28 sizes with RTPF condenser coil models only.
- Standard Parts Warranty: 10 year aluminized heat exchanger, 5 year compressor, 3 year NOVATION™ condenser coil, 1 year others.
- Optional Staged Air Volume (SAV) system utilizes a Variable Frequency Drive (VFD) to automatically adjust the indoor fan motor speed between cooling stages. Available on 2-stage cooling models 17-30 with electromechanical controls or RTU Open.

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
5	0	T	C	-	D	2	4	A	1	G	6	-	0	A	0	A	0

Product Type

50 = Elect Heat Pkg. Rooftop

Model Series

TC = Standard Efficiency

Heat Size

- = No heat

Refrigerant System Options

D = 2 stage Cooling

E = 2 stg cooling w/Al/Cu cond. coil and with Humidi-MiZer (17-28 sizes w/RTPF)

Cooling Tons (vertical air flow models only)

17 = 15 ton

20 = 17.5 ton

24 = 20 ton

28 = 25 ton

30 = 27.5 ton

Sensor Options

A = None

B = RA Smoke Detector

C = SA Smoke Detector

D = RA + SA Smoke Detector

E = CO₂ Sensor

F = RA Smoke Detector + CO₂

G = SA Smoke Detector + CO₂

H = RA + SA Smoke Detector + CO₂

Indoor Fan Options (vertical air flow models only)

1 = Standard Static Option

2 = Medium Static Option

3 = High Static Option

B = Medium Static High Eff Motor/Vertical Supply, Return, Airflow

C = High Static ; High Eff Motor/Vertical Supply, Return, Airflow

Coil Options

Round Tube Plate Fin (RTPF) (Outdoor-Indoor-Hail Guard)

A = Al/Cu - Al/Cu

B = Pre-coat Al/Cu - Al/Cu

C = E-coat Al/Cu - Al/Cu

D = E-coat AL/Cu - E-coat AL/Cu

E = Cu/Cu - Al/Cu

F = Cu/Cu - Cu/Cu

M = Al/Cu - Al/Cu - Louvered Hail Guard

N = Pre-Coat Al/Cu - Al/Cu - Louvered Hail Guard

P = E-coat Al/Cu - Al/Cu - Louvered

Q = E-coat Al/Cu - E-Coat Al/Cu - Louvered

R = Cu/Cu - Al/Cu - Louvered

S = Cu/Cu - Cu/Cu - Louvered

Novation Coils Only (Outdoor-Indoor-Hail Guard)

G = Al/Al - Al/Cu

H = Al/Al - Cu/Cu

J = Al/Al - E-coat Al/Cu

K = Al/Al E-coat - Al/Cu

L = Al/Al E-coat - E-coat Al/Cu

T = Al/Al - Al/Cu, Louvered Hail Guard

U = Al/Al - Cu/Cu, Louvered Hail Guard

V = Al/Al - E-coat Al/Cu, Louvered Hail Guard

W = Al/Al E-coat - Al/Cu, Louvered

X = Al/Al E-coat - Al/Cu E-coat, Louvered

Packaging

0 = Standard

3 = CA Seismic Compliant

Electrical Options

A = None

C = Non-fused disconnect

G = 2-speed indoor fan (VFD) controller

J = 2-spd contr (VFD) & non-fused disc.

Service Options

0 = None

1 = Un-powered Convenience Outlet

2 = Powered Convenience Outlet

3 = Hinged Panels

4 = Hinged Panels, un-powered C.O.

5 = Hinged Panels, powered C.O.

Intake / Exhaust Options

A = None

B = Temperature Economizer w/Barometric Relief

F = Enthalpy Economizer w/Barometric Relief

K = 2 position Damper

U = Temp Ultra Low Leak Economizer w/Baro Relief

V = Temp Ultra Low Leak Econo w/PE (vertical)

W = Enthalpy Ultra Low Leak Econo w/Baro Relief

X = Enthalpy Ultra Low Leak Econo w/PE (vertical)

Base Unit Controls

0 = Base Electromechanical Controls

1 = PremierLink Controller

2 = RTU Open Multi-Protocol Controller

6 = Electromechanical with 2 speed fan and W7220 Econo controller

Design Revision

- = Factory Design Revision

Voltage

1 = 575/3/60

5 = 208-230/3/60

6 = 460/3/60

Not all possible options can be displayed above - see price pages or contact your Carrier Expert for more details.

Table 1 – FACTORY-INSTALLED OPTIONS AND FIELD-INSTALLED ACCESSORIES

CATEGORY	ITEM	FACTORY INSTALLED OPTION	FIELD INSTALLED ACCESSORY
Cabinet	Hinged Access Panels	X	
	California Seismic Compliant Labeling (17–28 sizes only)	X	
Coil Options	Cu/Cu (indoor) coils	X	
	E–coated indoor & outdoor coils	X	
Humidity Control	Humidi–MiZer Adapt. Dehumidification System (17–28 RTPF)	X	
Condenser Protection	Condenser coil hail guard (louvered design)	X	X
Controls	Thermostats, temperature sensors, and subbases		X
	PremierLink™ DDC communicating controller	X	X
	RTU Open protocol controller	X	
	Smoke detector (supply and/or return air)	X	X
	Time Guard II compressor delay control circuit		X
	Phase Monitor		X
	Carrier Energy Demand System (EDS)		X
Economizers & Outdoor Air Dampers	EconoMi\$er IV (for electro–mechanical controlled RTUs)	X	X
	EconoMi\$er2 (for DDC controlled RTUs)	X	X
	Motorized 2 position outdoor–air damper	X	X
	Manual outdoor–air damper (25%)	X	X
	Barometric relief ¹	X	X
	Power exhaust–centrifugal blower	X	X
	Ultra Low Leak EconoMi\$er X (for 2–speed SAV system only, 17 to 30 sizes with 2 stages of cooling), vertical supply and return air only.	X	X
Economizer Sensors & IAQ Devices	Single dry bulb temperature sensors ²	X	X
	Differential dry bulb temperature sensors ²		X
	Single enthalpy sensors ²	X	X
	Differential enthalpy sensors ²		X
	CO ₂ sensor (wall, duct, or unit mounted) ³	X	X
Electric Heat	Electric Resistance Heaters		X
	Single Point Kit		X
Indoor Motor & Drive	Multiple motor and drive packages	X	
	Staged Air Vol (SAV) system w/VFD controller (2–stage cool only with electrical mechanical and RTU Open controls)	X	
	Display Kit for SAV system with VFD		X
Low Ambient Control	Winter start kit ³		X
	Motormaster head pressure controller ³		X
Power Options	Convenience outlet (powered)	X	
	Convenience outlet (unpowered)	X	
	Non–fused disconnect ⁴	X	
Roof Curbs	Roof curb 14–in (356mm)		X
	Roof curb 24–in (610mm)		X
	Adapter Curb (Adapts to Models – DP/DR/HJ/TM/TJ) ⁵ (17–24)		X

NOTES:

1. Included with economizer.
2. Sensors for optimizing economizer.
3. See application data for assistance.
4. Non–fused disconnect switch cannot be used when unit FLA rating exceeds 200 amps on 208/230 volt and 100 amps on 460/575 volt units. Carrier Packaged RTUBuilder selects this automatically.
5. Not for 48TJE028–028 models using 48DP900041, 48DP900051 or 48DP900061 roofcurbs.