



Product Catalog

Model #: RTAF 410E VABH XUA2 N11W 3HXN CCV2 HBPB XXXA X1XX
Serial #: U16B04097

Sintesis™ Air-Cooled Chillers Model RTAF 115 to 500 Nominal Tons

Year: 2016
Size: 410 Ton



L: 16' 2"
W: 7' 4"
H: 8' 0"

Shipping Weight: 10,858 lbs.
Operating Weight: 11,140 lbs.



Model Number Descriptions

Digits 1, 2 – Unit Model

RT = Rotary Chiller

Digit 3 – Unit Type

A = Air-cooled

Digit 4 – Development Sequence

F = Development Sequence

Digits 5-7 – Nominal Capacity

115 = 115 Nominal Tons
 130 = 130 Nominal Tons
 150 = 150 Nominal Tons
 170 = 170 Nominal Tons
 180 = 180 Nominal Tons
 200 = 200 Nominal Tons
 215 = 215 Nominal Tons
 230 = 230 Nominal Tons
 250 = 250 Nominal Tons
 280 = 280 Nominal Tons
 310 = 310 Nominal Tons
 350 = 350 Nominal Tons
410 = 410 Nominal Tons
 450 = 450 Nominal Tons
 500 = 500 Nominal Tons

Digit 8 – Unit Voltage

C = 380/60/3
D = 400/50/3
E = 460/60/3

Digit 9 – Manufacturing Location

U = Trane Commercial Systems, Pueblo, CO USA

Digits 10, 11 – Design Sequence

** = Factory assigned

Digit 12 – Unit Efficiency

H = High Efficiency

Digit 13 – Unit Sound Package

X = Standard Noise

Digit 14 – Agency Listing

U = UL/CUL Listing

Digit 15 – Pressure Vessel Code

A = ASME Pressure Vessel Code
C = CRN or Canadian Equivalent Pressure Vessel Code
D = Australia Pressure Vessel Code

Digit 16 – Factory Charge

1 = Refrigerant Charge R-513A
2 = Refrigerant Charge R-134a
3 = Nitrogen Charge (R-513A Field Supplied)
4 = Nitrogen Charge (R-134a Field Supplied)

Digit 17 – Evaporator Application

N = Standard Cooling (above 40°F/5.5°C)
P = Low Temp Process Cooling (below 40°F/5.5°C)
C = Ice Making

Digit 18 – Evaporator Configuration

1 = 1-pass Evaporator
2 = 2-pass Evaporator
R = 1-pass Evaporator with Turbulators
T = 2-pass Evaporator with Turbulators

Digit 19 – Evaporator Fluid Type

1 = Water
2 = Calcium Chloride
3 = Ethylene Glycol
4 = Propylene Glycol
5 = Methanol

Digit 20 – Water Connection

X = Grooved Pipe Connection
W = Grooved Pipe + Flange

Digit 21 – Flow Switch

1 = Factory Installed - Other Fluid 15 cm/s
2 = Factory Installed - Water 35 cm/s
3 = Factory Installed - Water 45 cm/s

Digit 22 – Insulation

N = Factory Insulation All Cold Parts 0.75"
H = Evaporator-only Insulation for High Humidity/Low Evap Temp

Note: Digit 22 selection H is special order only.

Digit 23 – Unit Application

X = Standard Ambient (14 to 115°F/-10 to 46°C)
L = Low Ambient (-4 to 115°F/-20 to 46°C)
H = High Ambient (14 to 130°F/-10 to 54.4°C)
W = Wide Ambient (-4 to 130°F/-20 to 54.4°C)

Digit 24 – Condenser Fin Options

N = Aluminum Microchannel
C = CompleteCoat™ Microchannel

Digit 25 – Fan Type

C = Variable Speed Fans

Digit 26 – Auxiliary Items

C = Oil Cooler

Digit 27 – Compressor Starter

V = Adaptive Frequency Drive

Digit 28 – Incoming Power Line Connection

1 = Single Point Unit Power Connection
2 = Dual Point Unit Power Connection

Digit 29 – Power Line Connection Type

Units with model number digit 28 = 2 OR Units with 2 compressors and model number digit 28 = 1:

X = Terminal Block
C = Circuit Breaker
H = Circuit Breaker with High Fault Rated Control Panel

Unit with 3 or 4 compressors and model number digit 28 = 1:

X = Terminal Block with Individual System Circuit Breakers

Digit 30 – Short Circuit Current Rating

A = Default Short Circuit Rating
B = High Fault Short Circuit Rating

Digit 31 – Electrical Accessories

X = No Convenience Outlet
P = 15A 115V Convenience Outlet

Digit 32 – Remote Communication Options

X = None
B = BACnet® Interface
M = Modbus™ Interface
L = LonTalk® Interface

Digit 33 – Hard Wire Communication

X = None
A = Hard Wired Bundle - All Remote Leaving Water Temp Setpoint
B = Remote Leaving Water Temp Setpoint
C = Remote Leaving Temp and Demand Limit Setpoints
D = Programmable Relay
E = Programmable Relay and Leaving Water and Demand Limit Setpoint
F = Percent Capacity
G = Percent Capacity and Leaving Water and Demand Limit Setpoint
H = Percent Capacity and Programmable Relay

Digit 34 – Energy Meter

X = None

Digit 35 – Smart Flow Control

X = None

Digit 36 – Structural Options

A = Standard Unit Structure

Model Number Descriptions

Digit 37 – Appearance Options

- X = No Appearance Options
- A = Architectural Louvered Panels

Digit 38 – Unit Isolation

- X = None
- I = Elastomeric Isolators

Digit 39 – Shipping Package

- X = No Shipping Package
- A = Containerization Package
- T = Shipped with Tarp Covering Full Unit

Digits 40-41

- XX = Reserved for future use

Digit 42 – Free-Cooling

- X = None
- H = Total Free-Cooling – Glycol

Digit 43 – Special Requirement

- 0 = None
- F = Ship to Final Finisher
- S = Special Requirement

Table 2. General data table

Unit Size (tons)		230	250	280	310	350	410	450	500
Compressor Model (ckt 1/ckt 2) ^(a)		120/100	120/120	100-100/ 70	100-100/ 100	100-120/ 120	100-100/ 100-100	100-120/ 100-120	120-120/ 120-120
Quantity	#	2	2	3	3	3	4	4	4
Evaporator									
Water Connection Size	in	6	6	8	8	8	8	8	8
Passes	#	2	2	1	1	1	1	1	1
Water Storage	gal	28.5	30.6	31.2	32.6	35.8	41.8	44.8	46.1
	L	107.7	115.9	118.1	123.3	135.4	158.1	169.5	174.7
Minimum Flow	gpm	261	288	304	323	367	446	487	506
	l/s	16.5	18.2	19.2	20.4	23.1	28.1	30.7	31.9
Maximum Flow	gpm	957	1055	1113	1183	1345	1635	1786	1855
	l/s	60.4	66.6	70.2	74.6	84.9	103.2	112.7	117.1
Condenser									
Qty of Coils (ckt 1/ckt 2)		7/7	7/7	12/6	14/6	14/6	12/12	14/14	14/14
Coil Length	in	77.4	77.4	77.4	77.4	77.4	77.4	77.4	77.4
	mm	1967	1967	1967	1967	1967	1967	1967	1967
Coil Height	in	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8
	mm	1214	1214	1214	1214	1214	1214	1214	1214
Free-Cooling Coils									
Qty of Coils (ckt 1/ckt 2)		7/6	7/6	11/5	13/5	13/5	11/11	13/13	13/13
Coil Length	in	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8
	mm	1925	1925	1925	1925	1925	1925	1925	1925
Coil Height	in	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
	mm	941	941	941	941	941	941	941	941
Condenser Fans									
Quantity (ckt 1/ckt 2)	#	7/7	7/7	12/6	14/6	14/6	12/12	14/14	14/14
Diameter	in	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
	mm	800	800	800	800	800	800	800	800
Nominal Speed	rpm	909	909	909	909	909	909	909	909
Airflow	cfm	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Airflow w/ Free-Cooling Coil	cfm	9567	9567	9567	9567	9567	9567	9567	9567
	m ³ /sec	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
Tip Speed	ft/min	7500	7500	7500	7500	7500	7500	7500	7500
	m/s	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1
Ambient Temperature Range									
Standard Ambient	°F (°C)				14 to 115 (-10 to 46)				
Low Ambient	°F (°C)				-4 to 115 (-20 to 46)				
High Ambient	°F (°C)				14 to 130 (-10 to 54.4)				
Wide Ambient	°F (°C)				-4 to 130 (-20 to 54.4)				
General Unit									
Refrigerant									
Refrigerant Ckts	#	2	2	2	2	2	2	2	2
Minimum Load	%	15	15	15	15	15	15	15	15
Refrigerant Charge	(lbs)	155.4/ 154.8	155.4/ 154.8	263.1/ 118.4	272.5/ 120.0	276.0/ 121.2	253.0/ 259.7	266.9/ 278.8	275.1/ 287.8
	(kg)	70.7/70.4	70.7/70.4	119.6/53.8	123.8/54.5	125.4/55.1	115.0/118.0	121.3/126.7	125.0/130.8
Oil				Trane Oil 00311 (bulk)/OIL00315			(1 gal)/OIL00317	(5 gal)	
Oil Charge (ckt 1/ckt 2)	(gal)	2.35/2.35	2.35/2.35	4.24/2.17	4.26/2.17	4.27/2.17	4.26/4.29	4.30/4.33	4.33/4.37
	(L)	8.9/8.9	8.9/8.9	16.1/8.2	16.1/8.2	16.2/8.2	16.1/16.2	16.3/16.4	16.4/16.5

(a) Nominal tonnage at 60 Hz. Where there are 2 compressors on a circuit, they are indicated 1A-1B/2A-2B.



Weights

Table 8. Unit weights – units without free-cooling option

Unit Size (tons)	Shipping Weight		Operating Weight		Louver Option - add	
	lb	kg	lb	kg	lb	kg
115	7974	3617	8091	3670	428	194
130	8071	3661	8203	3721	428	194
150	9467	4294	9628	4367	489	222
170	9497	4308	9669	4386	489	222
180	9821	4455	10002	4537	489	222
200	10829	4912	11012	4995	550	249
215	11155	5060	11355	5151	550	249
230	12549	5692	12829	5819	550	249
250	12962	5880	13242	6007	550	249
280	16705	7578	16838	7638	600	272
310	17228	7815	17367	7878	661	300
350	18177	8245	18375	8335	661	300
410	21199	9616	21411	9712	783	355
450	23569	10691	23794	10793	905	410
500	23669	10736	23907	10844	905	410

Table 9. Unit weights, units with free-cooling option

Unit Size (tons)	Shipping Weight		Operating Weight	
	lb	kg	lb	kg
115	9284	4211	9893	4487
130	9381	4255	10005	4538
150	11074	5023	11861	5380
170	11105	5037	11902	5399
180	11429	5184	12235	5550
200	12713	5767	13642	6188
215	13039	5915	13986	6344
230	14457	6558	15483	7023
250	14870	6745	15897	7211
280	19509	8849	21313	9668
310	20294	9205	22192	10066
350	21243	9636	23201	10524
410	24496	11111	26758	12137
450	27283	12375	29850	13540
500	27382	12420	29963	13591

410T

INLET/OUTLET CONNECTION = 8" (200mm)

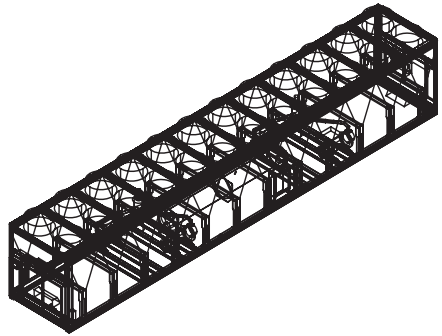
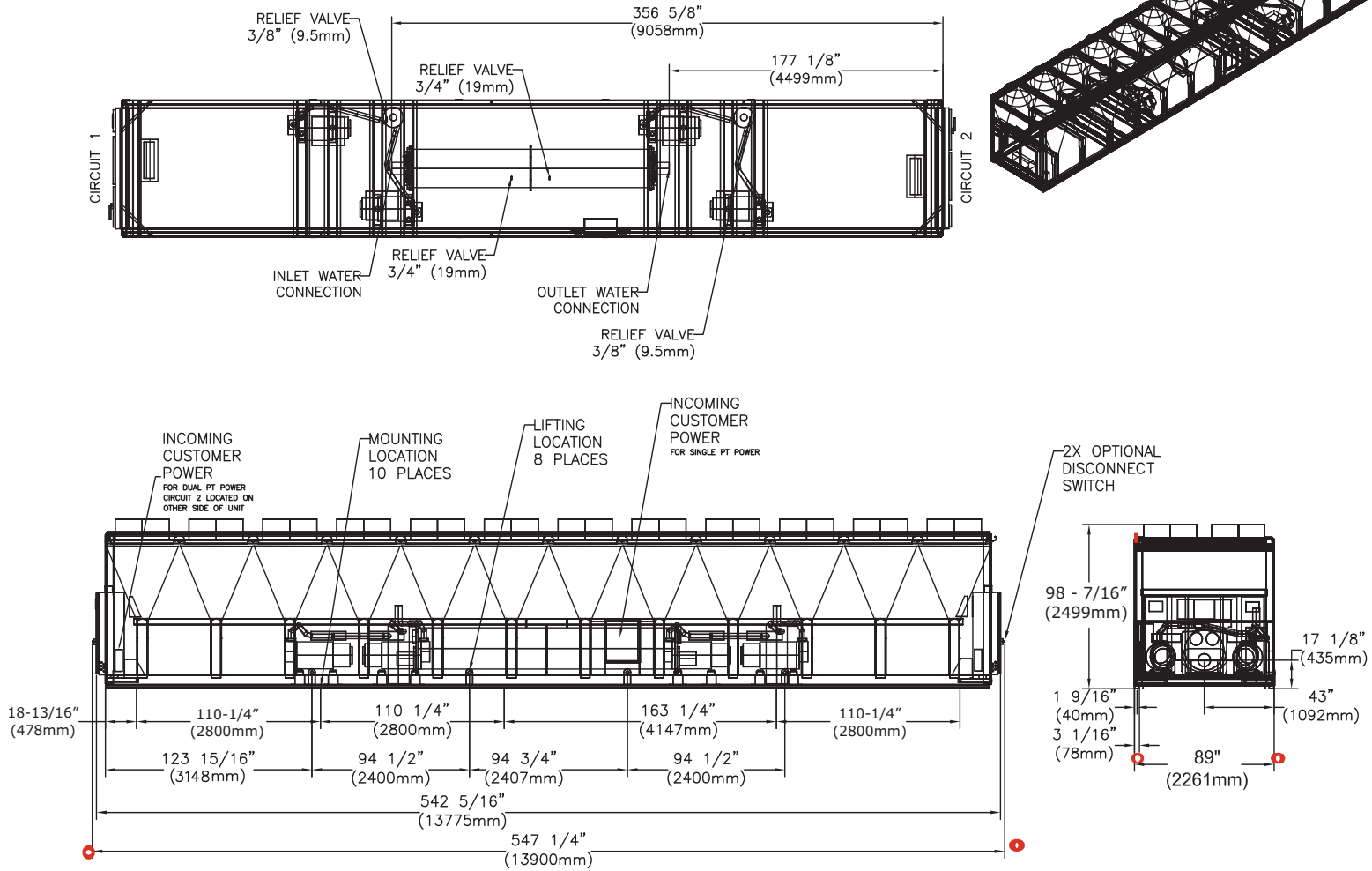


Figure 25. RTAF unit dimensions — 410 ton