



**TRANE®**

*Cooling and Heating  
Systems and Services*

# Installation Operation Maintenance

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**Series R™ Helical Rotary Water-Cooled  
Liquid and Compressor Chillers  
Models RTWD and RTUD**



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**RLC-SVX14C-E4**

# Model number

## Unit Nameplate

The unit nameplates are applied to the exterior surface of the control panel door. A compressor nameplate is located on each compressor.

The unit nameplate provides the following information:





- Unit model and size descriptor.
- Unit serial number.
- Unit electrical requirements.
- Correct operating charges of R134a and refrigerant oil.
- Unit test pressures

## Compressor Nameplate

The compressor nameplate provides the following information:

- Compressor model number.
- Compressor serial number.
- Compressor electrical characteristics.
- Utilization range.
- Recommended refrigerant.

Figure 1 - Unit nameplate

	TYPE ①	[ ]			
		CRC	N° SERIE ②	CCYY	N° ORGANISME NOTIFIE ③
		[ ]	[ ]	[ ]	[ ]
		QTE-QTY	V / Hz / Ph	A max / FLA	kW max
		C1	[ ]	[ ]	[ ]
		C2	[ ]	[ ]	[ ]
		[ ]	[ ]	[ ]	[ ]
		[ ]	[ ]	[ ]	[ ]
		CONTROLE - CONTROL	[ ]	[ ]	VA
		INTENSITE DEMARRAGE - STARTING AMPS	[ ]	[ ]	[ ]
	FLUIDE ④	[ ]	C1/C2	[ ] kg	
		[ ]	C1/C2	[ ] l	
	PS	BP-LP	[ ] bar	HP-HP	[ ] bar
		88130 CHARMES - FRANCE			
		FOR TRANE BVBA			

① Type / Typ / Tipo / Tipo / Type / Tyyp / Type / Type / Tipo / Typ / Typ / Typ / Tipus / Τύπος  
 Serial nb / Serienummer / Numero di serie / Numero de serie / Serienummer / Sarjanumero / Serienummer  
 Serienummer / Numero di serie / Tillverkningsnummer / Sé rovié èislo / Number fabryczny / Sorozat szám  
 Αριθμός σειράς

② Notified body / Benannte Stelle / Organismo notificato / Organismo notificado / Bemyndiget organ  
 Ilmottettujen laitosten / Aangemelde Instantie / Ramme nr. / Organismo notificado / Anmält organ  
 Autorizovaná osoba / Organizacja notyfikowana / Regisztráció száma / Σώμα γνωστοποίησης

③ Fluid / Fluide / Fluido / Fluido / Fluidum / Fluidi / Stof / Kuldemedium / Fluido / Fluid / Kapalina  
 Czynnik / Közeg / ρευστό

# Model number

## Digits 01, 02, 03, 04 – Chiller Model

RTWD = Water Cooled Chiller Series R™

RTUD - Compressor Chiller Series R™

## Digit 05, 06, 07 – Unit Nominal Tonnage

060 = 60 Nominal Tons

070 = 70 Nominal Tons

080 = 80 Nominal Tons

090 = 90 Nominal Tons

100 = 100 Nominal Tons

110 = 110 Nominal Tons

120 = 120 Nominal Tons

130 = 130 Nominal Tons

140 = 140 Nominal Tons

160 = 160 Nominal Tons

170 = 170 Nominal Tons

180 = 180 Nominal Tons

190 = 190 Nominal Tons

200 = 200 Nominal Tons

220 = 220 Nominal Tons

250 = 250 Nominal Tons

## Digit 08 – Unit Voltage

E = 400/50/3

## Digit 09 – Manufacturing Plant

1 = Epinal, France

## Digit 10, 11 – Design Sequence

\*\* = First Design, etc. increment when parts are affected for service purposes

## Digits 12 – Unit Type

1 = Standard Efficiency/Performance

2 = High Efficiency/Performance

3 = Premium Efficiency/Performance (RTWD only)

## Digit 13 – Agency Listing

B = CE Listing

## Digit 14 – Pressure Vessel Code

5 = PED

## Digit 15 – Unit Application

A = Std Condenser <=95°F/35°C Entering Water Temperature (RTWD only)

B = High Temperature Condenser >95°F/35°C Entering Water Temperature (RTWD only)

C = Water-to-Water Heat Pump (RTWD only)

D = Remote Condenser by Trane (RTUD only)

E = Remote Condenser by Others (RTUD only)

## Digit 16 – Pressure Relief Valve

1 = Single Relief Valve

2 = Dual Relief Valve with 3-Way Isolation Valve

## Digit 17 – Water Connection Type

A = Grooved Pipe Connection

## Digit 18 – Evaporator Tubes

A = Internal and External Enhanced Evap Tube

## Digit 19 – Number of Evap Passes

1 = 2 Pass Evaporator

2 = 3 Pass Evaporator

## Digit 20 – Evaporator Water Side Pressure

A = 150 psi/10.5 bar Evaporator Water Pressure

## Digit 21 – Evaporator Application

1 = Standard Cooling

2 = Low Temperature

3 = Ice Making

## Digit 22 – Condenser Tubes

A = Enhanced Fin - Copper (RTWD only)

B = Without Condenser (RTUD only)

## Digit 23 – Condenser Water Side Pressure

1 = 150 psi/10.5 Bar Condenser Water Pressure

## Digit 24 – Compressor Starter Type

Y = Wye-Delta Closed Transition Starter

## Digit 25 – Incoming Power Line Connection

1 = Single Point Power Connection

## Digit 26 – Power Line Connection Type

A = Terminal Block Connection for Incoming Lines

C = Disconnect Switch Wired to Fuses

D = Circuit Breaker

## Digit 27 – Under/Over Voltage Protection

0 = No Under/Over Voltage Protection

1 = Under/Over Voltage Protection

## Digit 28 – Unit Operator Interface

A = Dyna-View/English

B = Dyna-View/Spanish

C = Dyna-View/Spanish-Mexico

D = Dyna-View/French

E = Dyna-View/German

F = Dyna-View/Dutch

G = Dyna-View/Italian

H = Dyna-View/Japanese

J = Dyna-View/Portuguese-Portugal

K = Dyna-View/Portuguese-Brazil

L = Dyna-View/Korean

M = Dyna-View/Thai

N = Dyna-View/Simplified Chinese

P = Dyna-View/Traditional Chinese

R = Dyna-View/Russian

T = Dyna-View/Polish

U = Dyna-View/Czech

V = Dyna-View/Hungarian

W = Dyna-View/Greek

X = Dyna-View/Romanian

Y = Dyna-View/Swedish

# Model number

## Digit 29 – Remote Interface (Digital Comm)

- 1 = LonTalk/Tracer Summit Interface
- 2 = Time of Day Scheduling
- 4 = Unit Level BACnet
- 5 = Modbus interface

## Digit 30 – External Water & Current-Limit Setpoint

- 0 = No External Water & Current-Limit Setpoint
- A = External Water & Current-Limit Setpoint - 4–20 mA
- B = External Water & Current-Limit Setpoint - 2–10 Vdc

## Digit 31 – Ice Making

- 0 = No Ice Making
- A = Ice Making with Relay
- B = Ice Making without Relay

## Digit 32 – Programmable Relays

- 0 = No Programmable Relays
- A = Programmable Relays

## Digit 33 – Condenser Refrigerant Pressure Output Option

- 0 = No Condenser Refrigerant Pressure Output
- 1 = Condenser Water Control Output
- 2 = Condenser Pressure (%HPC) Output
- 3 = Differential Pressure Output

## Digits 34 – Outdoor Air Temp Sensor

- 0 = No Outdoor Air Temp Sensor (RTWD only)
- A = Outdoor Air Temp Sensor-CWR/Low Ambient

## Digit 35 – Condenser Leaving Hot Water Temp Control

- 0 = No Condenser Leaving Hot Water Temp Control
- 1 = Condenser Leaving Hot Water Temp Control

## Digit 36 – Power Meter

- 0 = No Power Meter
- P = Power Meter

## Digit 37 – Motor Current Analog Output (%RLA)

- 0 = No Motor Current Analog Output
- 1 = Motor Current Analog Output

## Digit 38 – A/C Fan Control

- 0 = No Fan control (RTWD only)
- A = Fan Control by others (RTUD only)
- B = Integral Fan Control (RTUD only)

## Digit 39 – Low Ambient Fan Control Type

- 0 = No Low Ambient Fan Control Type (RTWD only)
- 1 = Two-speed fans (RTUD only)
- 2 = Variable Speed Fan with Analog Interface (RTUD only)

## Digit 40 – Installation Accessories

- 0 = No Installation Accessories
- A = Elastomeric Isolators
- B = Flanged Water Connection Kit
- C = Isolators & Flanged Water Connection Kit

## Digit 41 – Flow Switch

- 0 = No Flow Switch
- 5 = 10 bar IP-67; Flow Switch x 1
- 6 = 10 bar IP-67; Flow Switch x 2
- 7 = Factory Installed Proof of Water Flow

## Digit 42 – 2-Way Water Regulating Valve

- 0 = No 2-Way Water Regulating Valve

## Digit 43 – Sound Reduction Package

- 0 = No Sound Reduction Package
- A = Sound Reduction – Factory Installed

## Digit 44 – Insulation

- 0 = No Insulation
- 1 = Factory Insulation - All Cold Parts
- 2 = Insulation for High Humidity

## Digit 45 – Factory Charge

- 0 = Full Factory Refrigerant Charge (R134a) (RTWD only)
- 1 = Nitrogen Charge (RTUD only)

## Digit 46 – Base Rail Forklifting

- B = Base Rail Forklifting

## Digit 47 – Label and Literature Language

- A = Bulgarian
- B = Spanish
- C = German
- D = English
- E = French
- H = Dutch SI (Hollandais)
- J = Italian
- K = Finnish
- L = Danish
- M = Swedish
- N = Norwegian
- P = Polish
- R = Russian
- T = Czech
- U = Greek
- V = Portuguese
- W = Slovene
- X = Romanian
- Y = Turkish
- Z = Slovak

## Digit 48 – Special

- 0 = None
- S = Special

## Digit 49 – 55

- 0 = None

## Digit 56 – Shipping Package

- 2 = Shrink Wrap
- 4 = Container 1 Unit

## Digit 57 – Control Panel IP 20 Protection

- 0 = No IP 20 Protection of Control Panel
- 1 = IP 20 Protection of Control Panel

## Digit 58 – Pressure Gages

- 0 = Without Pressure Gages
- 1 = With Pressure Gages

## Digit 59 – Performance Test Options

- A = Standard Test TRANE Specifications (SES) (RTWD only)
- 0 = No Performance Test (RTUD only)

## Unit description

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The RTWD units are helical-rotary type, water-cooled, liquid chillers, designed for installation indoors. The units have 2 independent refrigerant circuits, with one compressor per circuit. The RTWD units are packaged with an evaporator and condenser.

Note: Each RTWD unit is a completely assembled, hermetic package that is factory-piped, wired, leak-tested, dehydrated, charged and tested for proper control operations prior to shipment. The chilled water inlet and outlet openings are covered for shipment.

The RTWD series features Trane's exclusive Adaptive Control logic with CH530 controls. It monitors the control variables that govern the operation of the chiller unit. Adaptive Control logic can correct these variables, when necessary, to optimize operational efficiencies, avoid chiller shutdown, and keep producing chilled water. Compressor unloaders are solenoid actuated. Each refrigerant circuit is provided with filter, sight glass, electronic expansion valve, and charging valves on the RTWD.

The evaporator and condenser are manufactured in accordance with Pressure Equipment Directive standards. The evaporator is insulated according to the option ordered. Both evaporator and condenser are equipped with water drain and vent connections.

The RTUD units are helical-rotary type compressor chillers. The RTUD unit consists of an evaporator, two helical rotary compressors (one per circuit), oil separators, oil coolers, liquid line service valves, sightglasses, electronic expansion valves and filter. The discharge line leaving the oil separator and liquid line entering the filters are capped and brazed. The unit ships with a full charge of oil and a nitrogen holding charge.

### Accessory/Options Information

Check all the accessories and loose parts which are shipped with the unit against the original order. Included in these items will be water vessel drain plugs, rigging diagrams, electrical diagrams, and service literature, which are placed inside the control panel and/or starter panel for shipment. Also check for optional components, such as flow switches and isolators.

## General data

**Table 3 - General Data – RTWD premium efficiency**

Size		160	180	200
<b>Eurovent Performance (1)</b>				
Net Capacity	(kW)	600.53	661.71	711.29
Total Power Input	(kW)	107.1	118.7	130.4
EER		5.61	5.57	5.45
Main Power Supply		400-3-50	400-3-50	400-3-50
<b>Compressor</b>				
Quantity		2	2	2
<b>Evaporator</b>				
Water Storage	(L)	72.6	77.0	84.5
<b>2 Pass Arrangement</b>				
Water Conn. Size	(in)	DN150 - 6" (168.3 mm)	DN150 - 6" (168.3 mm)	DN150 - 6" (168.3 mm)
Minimum Flow (3)	(L/s)	8.9	9.5	10.7
Maximum Flow (3)	(L/s)	32.5	35.0	39.2
<b>3 Pass Arrangement</b>				
Water Conn. Size	(in)	DN100 - 4" (114.3 mm)	DN100 - 4" (114.3 mm)	DN100 - 4" (114.3 mm)
Minimum Flow (3)	(L/s)	5.9	6.4	7.1
Maximum Flow (3)	(L/s)	21.7	23.3	26.2
<b>Condenser</b>				
Water Storage	(L)	113.4	130.6	148.2
Water Conn. Size	(in)	DN150 - 6" (168.3 mm)	DN150 - 6" (168.3 mm)	DN150 - 6" (168.3 mm)
Minimum Flow (3)	(L/s)	10.0	10.9	11.9
Maximum Flow (3)	(L/s)	36.8	40.0	43.8
<b>General Unit</b>				
Refrigerant Type		R-134a	R-134a	R-134a
# Refrig Circuits		2	2	2
Refrigerant Charge (2)	(kg)	80/80	79/81	80/79
Oil Charge (2)	(L)	9.9/9.9	9.9/9.9	9.9/9.9

(1) Eurovent Conditions: Evaporator 7°C/12°C - Condenser 30°C/35°C

(2) Data containing information on two circuits is shown as circuit 1/circuit 2.

(3) Flow limits are for water only.

# Unit Dimensions/Weights

**Table 7 - RTWD/RTUD weights**

Model	Operating Weight (Kg)	Shipping Weight (Kg)
RTWD 060 HE	2588	2506
RTWD 070 HE	2596	2510
RTWD 080 HE	2673	2576
RTWD 090 HE	2866	2750
RTWD 100 HE	2908	2787
RTWD 110 HE	2946	2821
RTWD 120 HE	3136	3002
RTWD 130 HE	3709	3555
RTWD 140 HE	3740	3576
RTWD 160 SE	3812	3655
RTWD 160 PE	4110	3885
RTWD 170 SE	3987	3817
<b>RTWD 180 PE</b>	<b>4346</b>	<b>4097</b>
RTWD 190 SE	4024	3837
RTWD 200 SE	4063	3862
RTWD 200 PE	4563	4294
RTWD 220 HE	4442	4211
RTWD 250 HE	4517	4263
RTUD 060 HE	2198	2161
RTUD 070 HE	2207	2167
RTUD 080 HE	2267	2221
RTUD 090 HE	2378	2320
RTUD 100 HE	2406	2348
RTUD 110 HE	2445	2383
RTUD 120 HE	2621	2556
RTUD 130 HE	3089	3016
RTUD 140 HE	3102	3025
RTUD 160 SE	3194	3125
RTUD 170 SE	3359	3283
RTUD 190 SE	3367	3283
RTUD 220 HE	3561	3448
RTUD 250 HE	3583	3462

Note: all weights +/- 3% - add 62 Kg for units with sound acoustic package