EN

Accuchiller TC Series

Central Chiller

Benefits:

- **Low GWP Refrigerant:** EPA approved low GWP R-513A refrigerant or energy efficient R-134A refrigerant.
- **Variable-Speed Compressor:** Direct drive variable-speed centrifugal compressor technology continuously adjusts speed to match load to reduce operating costs.
- **Magnetic Bearing:** A magnetic field levitates the drive shaft and eliminates the friction of conventional bearings for higher efficiencies and an oil-free refrigeration system.
- **Integral Variable Speed Drive:** High efficiency brushless DC motor with built-in variable-speed drive technology is refrigerant cooled, compact, and energy efficient.
- **Soft Start:** The variable-speed drive limits soft-starts to 2 amps inrush current per compressor to reduce peak energy demand and extend compressor motor life.
- **Low Noise Operation:** The magnetic bearings keep the drive shaft in position under high-speed operation for virtually no structural vibration and noise levels as low as 72 dBA.
- **Stainless Steel Evaporator:** High efficiency stainless steel plates with copper brazing provide maximum performance, long life, and an enhanced level of protection from harsh process conditions.
- **Warranty:** 1 year entire unit parts and labor.

Thermal Care is at the forefront of process cooling technology. TC Series industrial central chillers feature revolutionary, frictionless, magnetic bearing Turbocor compressors for optimal performance and unmatched part load efficiency. The oil-free design eliminates oil management systems, reducing costs and environmental impact while enhancing reliability. This translates into the quietest, most reliable, and most energy efficient chillers ever built.

TCF Series chillers feature an intuitive PLC system with a 7" HMI high resolution LCD color touch screen for precise control and monitoring. The user-friendly interface provides real-time system data, allowing users to monitor system operating conditions, adjust parameters, and troubleshoot with ease. Clear text displays, graphics, and time stamped fault logs, simplify operation and maintenance. The PLC system can manage up to six refrigeration circuits, optimizing performance and diagnostics.

Available in capacities from 60 to 240 tons (211 to 844 kW), the TC Series offers a high-performance, low-maintenance cooling solution.

THERMAL CARE
PiovanGroup

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Benefits of the TC Series Industrial Chiller Features:

BRUSHLESS DC VARIABLE SPEED MOTOR

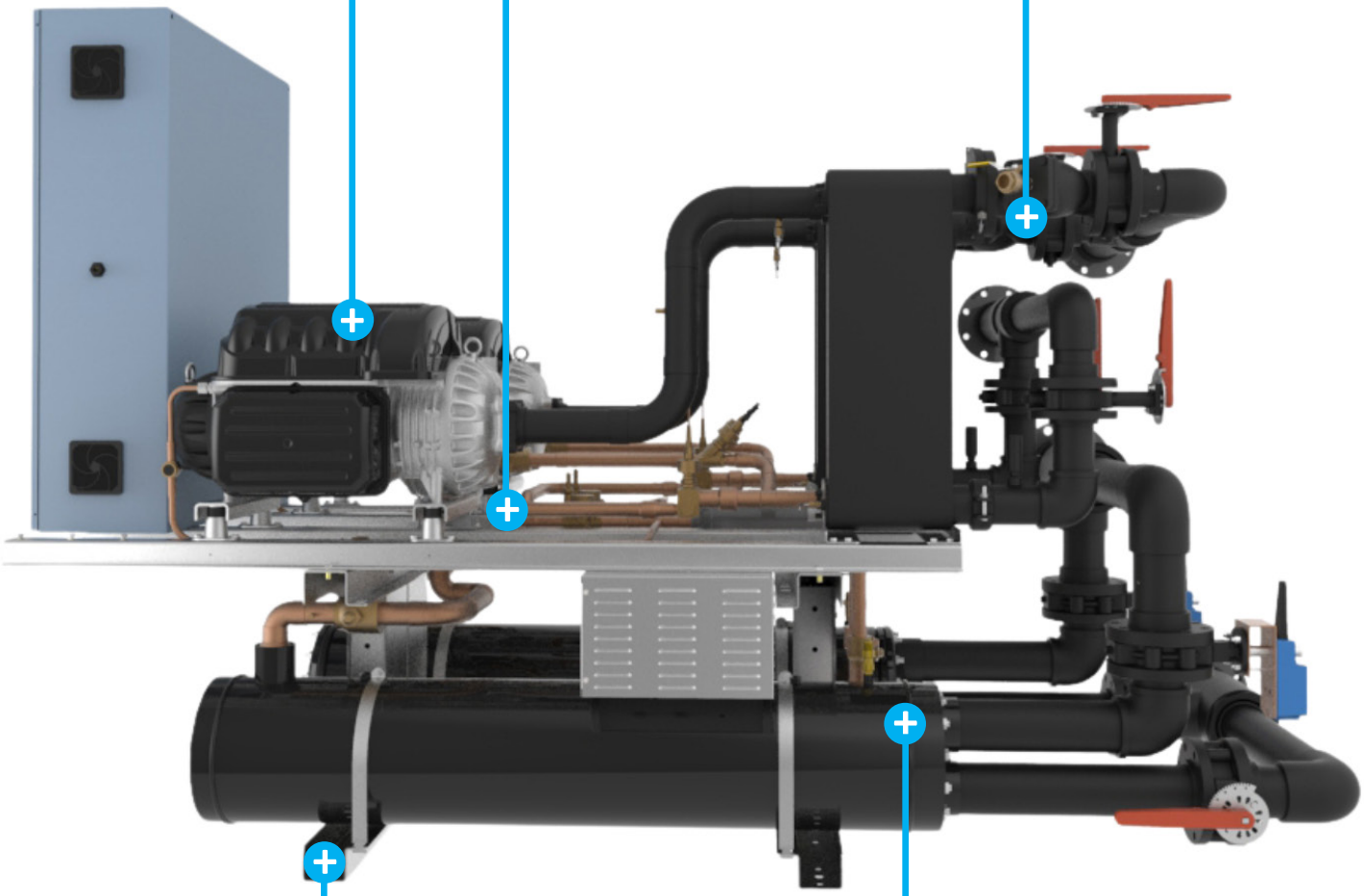
High-efficiency brushless DC motor with variable speed drive technology is refrigerant cooled, compact, and energy efficient.

MAGNETIC BEARING

Magnetic fields levitate the drive shaft and eliminate bearing wear and noise.

STAINLESS STEEL EVAPORATOR

Maximum performance and long life even in harsh process conditions.



COMPACT FOOTPRINT

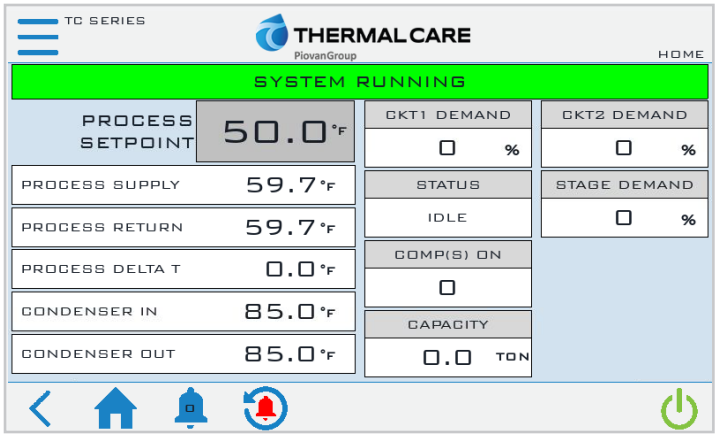
Designed to fit between doors, the single circuit chillers easily fit through standard 36-inch man doors for easy movement and small spaces.

CONFIGURABLE SINGLE OR MULTIPLE CIRCUITS

From dedicated loads, to redundancy and back-up - the TC is modular and can be built to suit your needs.

Additional Benefits:

- **Evaporator Inlet Strainer:** Removes any debris present in the process fluid to prevent costly downtime and repair due to a clogged chiller evaporator.
- **Fits Through Doors:** Single circuit chillers up to 90 tons (317 kW) are compact and easily fit through standard 36-inch (914 mm) wide doors for easy maneuvering into tight installation spaces.
- **Dual Circuit Manifolds:** Dual circuit chillers include evaporator manifolds and water-cooled condenser units include condenser water manifolds for quick and easy installation.
- **Modular Expandable System:** Allows for system expansion to over 1,400 tons (4,924 kW) using up to six chillers and twelve refrigeration circuits.
- **Single or Multiple Circuit Configurations:** Dual-circuit chillers for redundancy and back up for critical processes or systems and single-circuit chillers for dedicated loads.
- **Color Touch Screen Display:** A high-resolution, high-speed, 7-inch color touch screen with English text clearly shows chiller operation for quick and easy monitoring and control of the system.

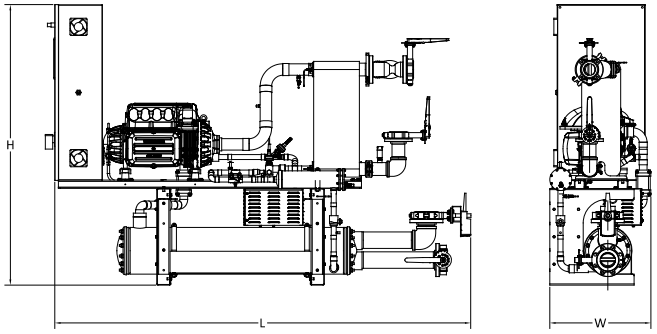


- **CONNEX4.0 Ready Controls:** Equipped with an Ethernet port and fully compatible with the CONNEX4.0 plant-wide equipment control and monitoring system.
- **Compressor Rotary Circuit Breaker:** A through-the-door rotary circuit breaker for each compressor allows easy maintenance of a compressor without the need to shut down power to the chiller.
- **UL 508A Industrial Control Panel:** Every chiller has a UL label certifying the panel design and components comply with UL 508A standards ensuring the panels are safe and consistent for reliable operation.

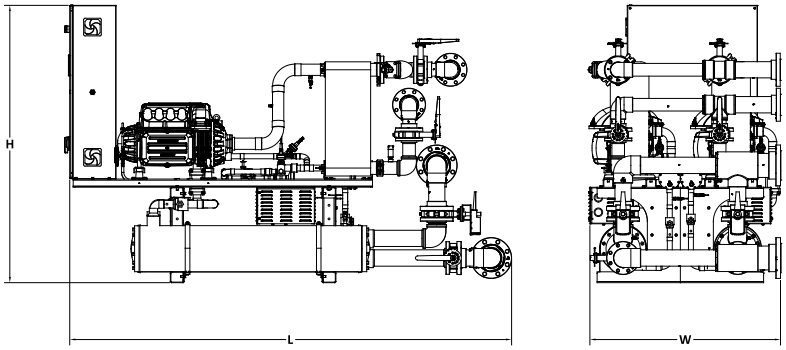
Available Options:

- **12-inch HMI:** Replaces the standard 7-inch screen with a 12-inch, high resolution, color touch screen with a built-in industrial computer to allow for remote monitoring and control using TeamViewer software installed on any remote Windows based PC or smart phone.
- **12-inch HMI and CONNEX4.0 Master Controller:** Replaces the standard 7-inch screen with a 12-inch, high resolution, color touch screen with a built-in industrial computer to allow for remote monitoring and control using TeamViewer software installed on any remote Windows based PC or smart phone. This package also adds a second PLC to allow for connection of up to 15 total Thermal Care CONNEX4.0 ready devices for many ways to interact with the connected equipment such as smart phone/tablet control, configurable email and text alerts for alarms, warnings, event alerts, and data collection.
- **BACnet Communications Port:** Adds a Modbus to BACnet gateway wired to a RS-485 connector on the chiller control panel.

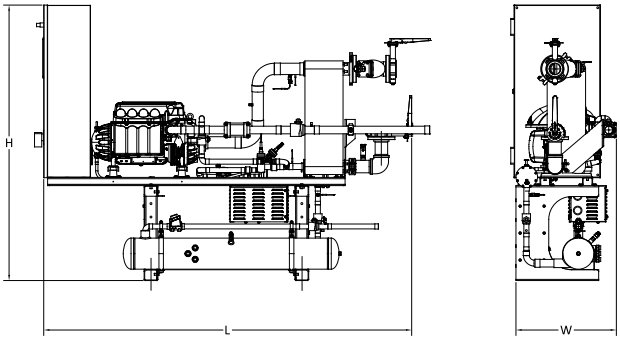
TCW Series Single Circuit



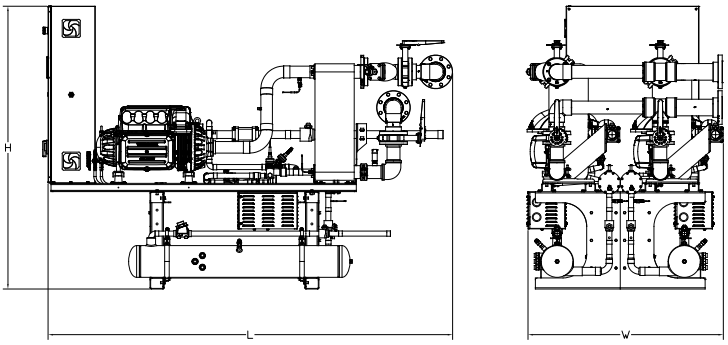
TCW Series Dual Circuit



TCR Series Single Circuit



TCR Series Dual Circuit



Technical Data

Water Cooled Condenser Single Circuit Chillers	TCW300C	TCW300E	TCW300J	TCW300M	TCW350Q	TCW350S
Cooling Capacity Range[1]	30 to 90 tons 106 to 317 kW	30 to 90 tons 106 to 317 kW	30 to 90 tons 106 to 317 kW	30 to 90 tons 106 to 317 kW	40 to 120 tons 142 to 425 kW	40 to 120 tons 142 to 425 kW
Set Point Range	40 to 75°F 4 to 24°C	40 to 75°F 4 to 24°C	40 to 75°F 4 to 24°C	40 to 75°F 4 to 24°C	40 to 75°F 4 to 24°C	40 to 75°F 4 to 24°C
Compressor (qty)	1	1	1	1	1	1
Condenser Water Inlet & Outlet Flange (in) Process Fluid Inlet & Outlet Flange (in)	4 3	4 3	4 4	4 4	4 4	4 4
Dimensions L x W x H inch (mm)	118 x 29 x 77 (2,997 x 737 x 1,956)	118 x 29 x 77 (2,997 x 737 x 1,956)	120 x 29 x 77 (3,277 x 737 x 1,956)	120 x 29 x 77 (3,277 x 737 x 1,956)	141 x 37 x 75 (3,581 x 940 x 1,905)	145 x 37 x 75 (3,683 x 940 x 1,905)
Shipping Weight	1,800 lbs (817 kg)	1,900 lbs 862 kg	2,100 lbs 953 kg	2,400 lbs 1,089 kg	2,774 lbs 1,258 kg	2,825 lbs 1,281 kg
Operating Weight	2,000 lbs 907 kg	2,100 lbs 953 kg	2,300 lbs 1,043 kg	2,600 lbs 1,179 kg	3,071 lbs 1,393 kg	3,208 lbs 1,455 kg

Water Cooled Condenser Dual Circuit Chillers	TCW600C	TCW600E	TCW600J	TCW600M	TCW700Q	TCW700S
Cooling Capacity Range[1]	30 to 180 tons 106 to 633 kW	30 to 180 tons 106 to 633 kW	30 to 180 tons 106 to 633 kW	30 to 180 tons 106 to 633 kW	40 to 240 tons 141 to 844 kW	40 to 240 tons 141 to 844 kW
Set Point Range	40 to 75°F 4 to 24°C	40 to 75°F 4 to 24°C	40 to 75°F 4 to 24°C	40 to 75°F 4 to 24°C	40 to 75°F 4 to 24°C	40 to 75°F 4 to 24°C
Compressor (qty)	2	2	2	2	2	2
Condenser Water Inlet & Outlet Flange (in) Process Fluid Inlet & Outlet Flange (in)	6 4	6 4	6 6	6 6	6 6	6 6
Dimensions L x W x H inch (mm)	124 x 54 x 77 (3,150 x 1,372 x 1,956)	124 x 54 x 77 (3,150 x 1,372 x 1,956)	124 x 54 x 77 (3,150 x 1,372 x 1,956)	126 x 54 x 77 (3,200 x 1,372 x 1,956)	139 x 73 x 63 (3,531 x 1,854 x 1,600)	164 x 73 x 63 (4,166 x 1,854 x 1,600)
Shipping Weight	3,700 lbs 1,678 kg	3,800 lbs 1,724 kg	4,100 lbs 1,860 kg	4,700 lbs 2,132 kg	5,548 lbs 2,517 kg	5,650 lbs 2,563 kg
Operating Weight	4,000 lbs 1,814 kg	4,200 lbs 1,905 kg	4,600 lbs 2,087 kg	5,200 lbs 2,359 kg	6,588 lbs 2,988 kg	6,863 lbs 3,113 kg

Remote Air Cooled Condenser Single Circuit Chillers	TCR300C	TCR300D	TCR300H	TCR350K	TCR350Q	TCR350S
Cooling Capacity Range[1]	30 to 80 tons 106 to 281 kW	30 to 80 tons 106 to 281 kW	30 to 80 tons 106 to 281 kW	40 to 120 tons 141 to 422 kW	40 to 120 tons 141 to 422 kW	40 to 120 tons 141 to 422 kW
Set Point Range	45 to 75°F 7 to 24°C	45 to 75°F 7 to 24°C	45 to 75°F 7 to 24°C	45 to 75°F 7 to 24°C	45 to 75°F 7 to 24°C	45 to 75°F 7 to 24°C
Compressor (qty)	1	1	1	1	1	1
Refrigerant Liquid Line (in) Refrigerant Discharge Line (in) Process Fluid Inlet & Outlet Flange (in)	1⅜ 2⅛ 3	1⅜ 2⅛ 3	1⅜ 2⅝ 4	1⅜ 2⅝ 4	2⅛ 3⅛ 4	2⅛ 3⅛ 4
Dimensions L x W x H inch (mm)	105 x 29 x 77 (2,667 x 737 x 1,956)	105 x 29 x 77 (2,667 x 737 x 1,956)	109 x 29 x 77 (2,769 x 737 x 1,956)	109 x 29 x 77 (2,769 x 737 x 1,956)	129 x 37 x 75 (3,277 x 940 x 1,905)	129 x 37 x 75 (3,277 x 940 x 1,905)
Shipping Weight	1,800 lbs 817 kg	1,900 lbs 862 kg	2,100 lbs 953 kg	2,400 lbs 1,089 kg	2,067 lbs 938 kg	2,129 lbs 966 kg
Operating Weight	2,000 lbs 907 kg	2,100 lbs 953 kg	2,300 lbs 1,043 kg	2,600 lbs 1,179 kg	2,176 lbs 987 kg	2,286 lbs 1,037 kg

Remote Air Cooled Condenser Dual Circuit Chillers	TCR600C	TCR600D	TCR600H	TCR700K	TCR700Q	TCR700S
Cooling Capacity Range[1]	30 to 160 tons 106 to 563 kW	30 to 160 tons 106 to 563 kW	30 to 160 tons 106 to 563 kW	40 to 240 tons 141 to 844 kW	40 to 240 tons 141 to 844 kW	40 to 240 tons 141 to 844 kW
Set Point Range	45 to 75°F 7 to 24°C	45 to 75°F 7 to 24°C	45 to 75°F 7 to 24°C	45 to 75°F 7 to 24°C	45 to 75°F 7 to 24°C	45 to 75°F 7 to 24°C
Compressor (qty)	2	2	2	2	2	2
Refrigerant Liquid Line (in) Refrigerant Discharge Line (in) Process Fluid Inlet & Outlet Flange (in)	1⅜ 2⅛ 4	1⅜ 2⅛ 4	1⅝ 2⅝ 6	1⅝ 2⅝ 6	2⅛ 3⅛ 6	2⅛ 3⅛ 6
Dimensions L x W x H inch (mm)	112 x 56 x 77 (2,845 x 1,422 x 1,956)	112 x 56 x 77 (2,845 x 1,422 x 1,956)	120 x 56 x 77 (3,048 x 1,422 x 1,956)	120 x 56 x 77 (3,048 x 1,422 x 1,956)	139 x 73 x 63 (3,531 x 1,854 x 1,600)	145 x 73 x 63 (3,683 x 1,854 x 1,600)
Shipping Weight	3,700 lbs 1,678 kg	3,800 lbs 1,724 kg	4,100 lbs 1,860 kg	4,700 lbs 2,132 kg	4,134 lbs 1,875 kg	4,258 lbs 1,931 kg
Operating Weight	4,000 lbs 1,814 kg	4,200 lbs 1,905 kg	4,600 lbs 2,087 kg	5,200 lbs 2,359 kg	4,526 lbs 2,053 kg	4,746 lbs 2,153 kg

[1]Cooling capacity when cooling water with 50°F (10°C) set point, 60°F (16°C) return, 85°F (29°C) condenser water or 95°F (35°C) condenser air, R134A or R513A refrigerant.

Remote Condensers	LEVF-16410	LAVF-24310	LAVF-24410	LAVF-25312	LAVF-25412	LEVF-26410
Quantity Required	1 for TCR300C 1 for TCR300D	1 for TCR300H 2 for TCR600H	1 for TCR350K 2 for TCR700K	1 for TCR350Q 2 for TCR700Q	1 for TCR350S 2 for TCR700S	1 for TCR600C 1 for TCR600D
Number of Fans Inlet Line Per Circuit (in) Outlet Line Per Circuit (in)	6 3⅛ 3⅛	8 3⅛ 3⅛	8 3⅛ 3⅛	10 3⅛ 3⅛	10 3⅛ 3⅛	12 3⅛ 3⅛
Dimensions L x W x H inch (mm)	342 x 45 x 61 (8,687 x 1,143 x 1,549)	234 x 91 x 61 (5,944 x 2,311 x 1,549)	234 x 91 x 61 (5,944 x 2,311 x 1,549)	290 x 91 x 61 (7,366 x 2,311 x 1,549)	290 x 91 x 61 (7,366 x 2,311 x 1,549)	342 x 91 x 61 (8,687 x 2,311 x 1,549)
Shipping Weight	2,800 lbs 1,270 kg	2,700 lbs 1,225 kg	2,900 lbs 1,315 kg	4,100 lbs 1,860 kg	4,100 lbs 1,860 kg	5,300 lbs 2,404 kg
Operating Weight	Varies based on refrigerant piping design, refrigerant charge and operating conditions					

Electrical Data (60 Hz)

Water Cooled Chillers	Control Circuit FLA	Rated Voltage 3-phase[1] @ 208		Rated Voltage 3-phase[1] @ 230		Rated Voltage 3-phase[1] @ 460				Rated Voltage 3-phase[1] @ 575			
		MCA[2]	MOPD[3]	MCA[2]	MOPD[3]	MCA[2]	MOPD[3]	Comp #1 FLA	Comp #2 FLA	MCA[2]	MOPD[3]	Comp #1 FLA	Comp #2 FLA
TCW300C	4	N/A	N/A	N/A	N/A	104	175	80	N/A	94	150	72	N/A
TCW300E	4	N/A	N/A	N/A	N/A	104	175	80	N/A	94	150	72	N/A
TCW300J	4	N/A	N/A	N/A	N/A	129	225	100	N/A	104	175	80	N/A
TCW300M	4	N/A	N/A	N/A	N/A	154	250	120	N/A	129	225	100	N/A
TCW350Q	4	N/A	N/A	N/A	N/A	229	400	180	N/A	184	300	144	N/A
TCW350S	4	N/A	N/A	N/A	N/A	229	400	180	N/A	184	300	144	N/A
TCW600C	4	N/A	N/A	N/A	N/A	184	250	80	80	166	225	72	72
TCW600E	4	N/A	N/A	N/A	N/A	184	250	80	80	166	225	72	72
TCW600J	4	N/A	N/A	N/A	N/A	229	300	100	100	184	250	80	80
TCW600M	4	N/A	N/A	N/A	N/A	274	350	120	120	229	300	100	100
TCW700Q	4	N/A	N/A	N/A	N/A	409	500	180	180	328	450	144	144
TCW700S	4	N/A	N/A	N/A	N/A	409	500	180	180	328	450	144	144

Remote Air Cooled Condenser Chillers	Control Circuit FLA	Rated Voltage 3-phase[1] @ 208		Rated Voltage 3-phase[1] @ 230		Rated Voltage 3-phase[1] @ 460				Rated Voltage 3-phase[1] @ 575			
		MCA[2]	MOPD[3]	MCA[2]	MOPD[3]	MCA[2]	MOPD[3]	Comp #1 FLA	Comp #2 FLA	MCA[2]	MOPD[3]	Comp #1 FLA	Comp #2 FLA
TCR300C	4	N/A	N/A	N/A	N/A	173	300	135	N/A	142	250	110	N/A
TCR300D	4	N/A	N/A	N/A	N/A	173	300	135	N/A	142	250	110	N/A
TCR300H	4	N/A	N/A	N/A	N/A	173	300	135	N/A	142	250	110	N/A
TCR350K	4	N/A	N/A	N/A	N/A	192	300	150	N/A	154	250	120	N/A
TCR350Q	4	N/A	N/A	N/A	N/A	229	400	180	N/A	184	300	144	N/A
TCR350S	4	N/A	N/A	N/A	N/A	229	400	180	N/A	184	300	144	N/A
TCR600C	4	N/A	N/A	N/A	N/A	308	400	135	135	252	350	110	110
TCR600D	4	N/A	N/A	N/A	N/A	308	400	135	135	252	350	110	110
TCR600H	4	N/A	N/A	N/A	N/A	308	400	135	135	252	350	110	110
TCR700K	4	N/A	N/A	N/A	N/A	342	450	150	150	274	350	120	120
TCR700Q	4	N/A	N/A	N/A	N/A	409	500	180	180	328	450	144	144
TCR700S	4	N/A	N/A	N/A	N/A	409	500	180	180	328	450	144	144

Remote Condensers	Rated Voltage 3-phase[1] @ 208		Rated Voltage 3-phase[1] @ 230		Rated Voltage 3-phase[1] @ 460		Rated Voltage 3-phase[1] @ 575	
	MCA[2]	MOPD[3]	MCA[2]	MOPD[3]	MCA[2]	MOPD[3]	MCA[2]	MOPD[3]
LEVF-16410	N/A	N/A	N/A	N/A	22	30	N/A	N/A
LAVF-24310	N/A	N/A	N/A	N/A	29	35	N/A	N/A
LAVF-24410	N/A	N/A	N/A	N/A	29	35	N/A	N/A
LAVF-25312	N/A	N/A	N/A	N/A	36	45	N/A	N/A
LAVF-25412	N/A	N/A	N/A	N/A	36	45	N/A	N/A
LEVF-26410	N/A	N/A	N/A	N/A	43[4]	55[4]	N/A	N/A

[1]Allowable voltage is ± 10% from rated voltage.
[2]MCA is Minimum Circuit Amps, used for minimum wire size requirement.
[3]MOP is Maximum Overcurrent Protection, used for sizing main power protection device.
[4]This is a dual-circuit condenser with two panels, one per circuit; each requires a power feed for 50% of the MCA and MOP shown.
[5]Allowable voltage is ± 10% from rated voltage. 575/3/60 remote condensers require special selection, consult factory for details.