



**THERMAL
PRODUCTS** INC.

Engineered Solutions To
Industrial Applications

APT-RC & WPT Central Chiller Modules

Featuring Low GWP Refrigerants



Proudly Made In The USA

ADVANTAGE[®]
MAKING WATER WORK

since 1977



A Complete Central Chilling Module



- Provides additional chiller capacity to new or existing Central Chiller systems
- Air-Cooled or Water-Cooled models
- 5-180 ton models
- 20°-80°F fluid temperature range

Advantage's APT-RC and WPT Central Chiller Modules range from 5 to 180 tons of cooling capacity providing a coolant temperature range between 20°F and 80°F.

Advantage Central Chiller Modules are specifically designed to provide added cooling capacity to new or existing Central Chillers as the need for cooling capacity increases.

Chiller Modules can be air-cooled or water-cooled. APT-RC models are air-cooled and require an outdoor remote condenser. WPT models are water-cooled and require an external water supply source such as cooling tower, city or well water to reject the heat removed from the refrigeration circuit.

Chiller Modules require the use of an independent tank and pumping system to distribute chilled water to process use points and to return process water to the chilling module. Advantage offers a wide range

of Pump Tank Stations to facilitate this function. For even greater chilling capacity, multiple APT-RC and WPT units can be connected to the system.

APT-RC and WPT Central Chiller Modules are available in single, dual and triple refrigerant circuit models. For multiple circuit models, each refrigerant circuit operates independently – providing greater capacity staging, tighter temperature control and continued operation during service.

These Chiller Modules use a non-ozone depleting & low GWP refrigerant and are equipped with hermetic scroll compressors or tandem scroll compressors that utilize rotary technology for smooth, efficient operation.

All Advantage Chiller Modules are precisely engineered and manufactured using only the finest components the industry has to offer.

Contact Advantage and let us help you find the best chiller package to fit your specific needs!

MODEL DESIGNATOR FOR APT-RC & WPT SERIES

C – 40 APT-RC

C: Single Circuit
 CC: Dual Circuit
 CCC: Triple Circuit

Nominal Tons of Capacity

Condenser
 APT-RC: Air-Cooled with remote condenser
 WPT: Water-Cooled



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Control Instrumentation To Fit Your Needs

MZC III INSTRUMENT

The **MULTIZONE INSTRUMENT (MZCIII)** is the standard control instrument on all Central Chiller Modules.

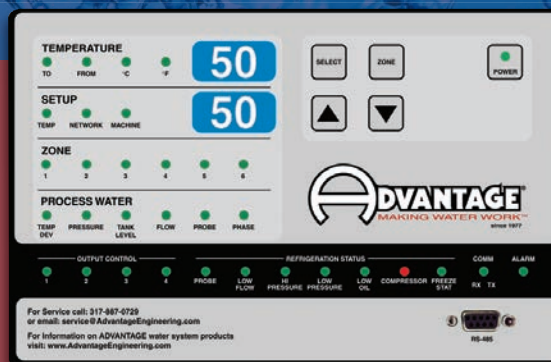
MZCIII INSTRUMENT FEATURES:

- Tailor made for Advantage chillers used in critical industrial cooling applications
- Monitors the complete system operation and provides precise control of process fluid temperature
- **INDUSTRY 4.0 READY** – Can communicate via Modbus RTU or SPI protocol
- Unique design distributes risk of system downtime due to control instrument problem

DESIGN ELEMENTS CONSIST OF:

» Operator interface **DISPLAY BOARD**

- * Intuitive design using discrete push buttons to index through circuit information and status
- * Dual display windows continuously show “to process” and setpoint temperatures
- * Green LED lights provide at a glance confirmation of proper system operation
- * Lights change to flashing red to indicate the system is out of proper operating parameters
- * Can control up to 6 refrigeration circuits



» Individual refrigeration circuit **ZONE BOARDS**[†]

- * Communicate information about refrigeration circuits to Display Board
- * During the unlikely event of a display or zone board failure, the unaffected zone boards continue to run their refrigeration circuits
- * Highly configurable for controlling central chillers with any combination of reciprocating, screw or scroll compressor
- * Functions are not tied to a single PLC or discrete control system



[†]INTELLIGENT ZONE BOARDS

One intelligent zone board is provided for each refrigeration circuit. The display board communicates with the zone boards to stage each refrigeration zone independently. The control instrument brings the process temperature in line with the set point quickly and accurately. Zone boards will also assume control of their respective refrigeration circuits in the unlikely

event of an instrument failure and the chiller system will continue to operate.

The instrument provides control of up to 6 refrigeration circuits. Future expansion of cooling capacity can be accomplished by adding an APT or WPT Chiller Module with Intelligent Zone Boards that will connect to the primary chiller display board for a seamless integration.

Durably Constructed With Quality Components

RUGGED REFRIGERATION CIRCUIT(S)

- Chiller Modules utilize R454B non-ozone depleting & low GWP refrigerant.
- Heavy-Duty Compressor
 - » Hermetic scroll, digital scroll or tandem scroll compressors using rotary technology for smooth and efficient performance
- Brazed Plate Evaporators
 - » Constructed of corrosion resistant stainless steel plates brazed together with copper brazing material
 - » The compact plate spacing and alternating refrigerant and water flow through the plates makes them highly efficient
- Complete system with liquid line solenoid valve, thermostatic expansion valve, capacity control system, sight glass and moisture indicator as well as a filter drier
- APT-RC models include a refrigerant receiver and oil separator
- Digital high & low refrigerant pressure limits and indicators



CONDENSER TYPES

Water-Cooled Condenser (*WPT models*)

- High efficiency cleanable condenser(s)
- Water regulating valve to maintain proper refrigerant pressure
- Single point condenser water connection with isolation valves

Air-Cooled Remote Condenser (*APT-RC models*)

- Air-cooled condensers are industrial grade using copper tubing with aluminum fins with direct drive fan motors housed in a sheet metal enclosure
- The standard condenser uses high efficiency EC variable speed drive motors on the header end with pressure staged fans on all other fans providing low refrigerant pressure control when ambient conditions are as low as negative 20°F
- Full rated capacity is achieved at ambient temperatures up to 95°F



Typical remote condenser for APT-RC models.
Remote Condenser configuration is determined by the Chiller Module model.

COOLANT CIRCUIT

- Single point process water connection
- Basket strainers are provided to protect the evaporators from debris

ELECTRICAL

- Electrical components are UL Listed and housed in a UL508A enclosed electrical panel designed for industrial environments
- All electrical panels include branch circuit protection of components
- Electrical circuit has a standard SSCR rating of 5 kA
- Audible & visual alarm beacon

REFRIGERANT INFORMATION

Many of our chillers use R-454B refrigerant, a next generation, low GWP option classified as an A2L refrigerant (mildly flammable). As with any refrigerant choice, it is important that installation and use follow all applicable building codes and safety standards. We encourage purchasers to confirm compliance with local requirements prior to purchase and when planning their installation.

DOMESTIC USA WARRANTY

1st Year: Covering parts and labor

2nd Year: FREE preventative maintenance visit

(Please visit the Advantage web site and reference our Product Warranty forms W-700 & W-700E for details)

Chiller Options

- Oversized condensers for higher efficiency and full rated performance in higher ambient conditions and high altitude installations (*APT-RC models*)
- Condensers utilizing all EC motors for higher energy efficiency (*APT-RC models*)
- Flooded head pressure control for operation in extremely low ambient temperatures (*APT-RC models*)
- Remote control instrument display
- Modbus TCP Communication capability
- A main power disconnect
- External filters
- 4 year extended compressor warranty

Single Circuit APT-RC Specifications

Unit	Model	C-5APT-RC	C-7.5APT-RC	C-10APT-RC	C-15APT-RC	C-20APT-RC	C-25APT-RC	C-30APT-RC	C-40APT-RC	C-50APT-RC	C-60APT-RC
Cooling Capacity ¹ (Leaving Fluid Temperature)	Tons @ 25°F	3.27	4.88	5.82	8.58	11.83	14.71	17.42	24.25	26.92	35.75
	Tons @ 50°F	5.51	8.13	10.46	14.38	19.42	25.00	29.67	39.58	44.00	57.33
	Tons @ 55°F	5.87	8.58	11.13	15.29	20.67	26.58	31.42	42.08	46.75	61.08
Independent Refrigeration Circuits	Number Of	1	1	1	1	1	1	1	1	1	1
Compressor ²	Type	DSC	DSC	DSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC
Unit Dimensions	Height	52	52	52	52	57	57	57	57	57	57
	Width	24	24	24	24	29	29	29	36	36	36
	Length	62	62	62	70	70	70	70	84	84	84
Process Flow	Rate (gpm)	12	18	24	36	48	60	72	96	120	144
Process Connections	Size (inches)	1¼	1¼	1¼	2	2	2½	2½	2½	3	3
Full Load Amperage ^{3, 5}	230/3/60	27	37	55	88	80	118	142	189	222	231
	460/3/60	12	17	25	39	43	54	66	87	102	117
	575/3/60	10	13	19	28	34	43	51	66	70	92
Unit Weight (pounds)	Shipping ⁴	450	525	545	845	885	1040	1100	1200	1300	1400
	Operating ⁵	616	691	711	1011	1051	1206	1266	1366	1466	1566
Remote Condenser (APT-RC models only)											
Condenser	Quantity	1	1	1	1	1	1	1	1	1	1
Condenser Air Flow	Fan Quantity	1	1	1	2	2	3	3	3	4	5
Condenser Refrigerant Connections	Gas	1½/8	1½/8	1½/8	2½/8	2½/8	2½/8	2½/8	2½/8	2½/8	2½/8
	Liquid	7/8	1¼/8	1¼/8	1½/8	1½/8	2¼/8	2¼/8	2¼/8	2¼/8	2¼/8
Condenser Dimensions	Height	39	54	54	54	54	54	54	54	54	54
	Width	48	45	45	45	45	45	45	45	45	45
	Length	42	58	58	113	113	168	168	168	223	278
Condenser Full Load Amperage ^{3, 5}	230/3/60	3	4.6	4.6	10.8	10.8	17	17	17	23.2	29.4
	460/3/60	1.5	2.3	2.3	5.4	5.4	8.5	8.5	8.5	11.6	14.7
Condenser Weight (pounds)	Shipping ⁴	42	58	58	113	113	168	168	168	223	278
Condenser Factory ID	Code	KCS-008	KCL-14	KCL-17	KCL-25	KCL-32	KCL-41	KCL-50	KCL-56	KCL-79	KCL-31

1. Tons capacity at 12,000 Btu/hr/ton with 95°F ambient air and 115°F condensing temperature. Minimum recommended operating temperature when no glycol is used is 48°F.
2. DSC = Copeland Digital Scroll™. TSC = Tandem Scroll.
3. Full load amps are higher than run load amps and must be used for sizing disconnects and supply wiring. Amps shown are approximate for standard units. Custom configurations or options may change power requirement. Consult factory before installing.

4. Approximate unit dimensions and weight crated for shipment. Not for construction purposes.
5. Selection of certain options may change dimensions, weight and amps required. Confirm with factory before starting construction.

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Multiple Circuit APT-RC Specifications

Unit	Model	CC-20APT-RC	CC-30APT-RC	CC-40APT-RC	CC-50APT-RC	CC-60APT-RC	CC-80APT-RC	CC-100APT-RC	CC-120APT-RC	CCC-90APT-RC	CCC-120APT-RC	CCC-150APT-RC	CCC-180APT-RC
Cooling Capacity ¹ (Leaving Fluid Temperature)	Tons @ 25°F	11.6	17.1	23.6	29.4	34.8	48.5	53.8	71.5	52.5	72.7	80.7	107.2
	Tons @ 50°F	20.9	28.7	38.8	50.0	59.3	79.1	88.0	114.6	88.9	118.6	132.0	171.9
	Tons @ 55°F	22.2	31.5	41.3	53.1	62.8	84.1	93.5	122.1	94.2	126.1	140.2	183.1
Independent Refrigeration Circuits	Number Of	2	2	2	2	2	2	2	2	3	3	3	3
Compressor ²	Type	DSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC
Unit Dimensions	Height	57	57	57	57	57	75	70	70	85	85	85	85
	Width	48	48	48	52	52	50	90	90	73	73	73	73
	Length	76	76	76	79	79	135	115	115	130	130	130	130
Process Flow	Rate (gpm)	48	72	96	120	144	192	240	288	216	288	360	432
Process Connections	Size (inches)	2	2½	2½	3	3	4	4	4	4	4	6	6
Full Load Amperage ^{3,5}	230/3/60	110	176	160	236	284	377	444	461	426	567	667	692
	460/3/60	49	60	85	108	132	173	204	233	198	259	306	349
	575/3/60	38	52	67	86	101	131	140	184	151	197	210	274
Unit Weight (pounds)	Shipping ⁴	1200	1800	1900	2200	2230	2600	3450	3700	3300	3600	3900	4200
	Operating ⁵	1366	2008	2149	2491	2562	3015	3948	4240	3881	4223	4564	4864
Remote Condenser (APT-RC models only)													
Condenser	Quantity	2	1	1	1	1	1	1	1	3	3	3	3
Condenser Air Flow	Fan Quantity	1	4	4	4	6	6	8	10	3	3	4	5
Refrigerant Connections	Gas	1½/8	2¼/8	2¼/8	2¼/8	2½/8	2½/8	2½/8	3¼/8	2½/8	2½/8	2½/8	2½/8
	Liquid	1¼/8	1¾/8	1½/8	1½/8	1½/8	1½/8	2¼/8	2½/8	2¼/8	2¼/8	2¼/8	2¼/8
Condenser Dimensions	Height	54	54	54	54	54	54	54	54	54	54	54	54
	Width	45	87	87	87	87	87	87	87	45	45	45	45
	Length	58	113	113	113	168	223	223	278	168	168	223	278
Full Load Amperage ^{3,5}	230/3/60	4.6	21.6	21.6	21.6	34	46.4	46.4	58.8	17	17	23.2	29.4
	460/3/60	2.3	10.8	10.8	10.8	17	23.2	23.2	29.4	8.5	8.5	11.6	14.7
Unit Weight (pounds)	Shipping ⁴	380	1275	1400	1525	2100	2725	3025	3700	1150	1200	1600	1950
Factory ID	Code	KCL-17	KCL-47	KCL-63	KCL-63	KCL-96	KCL-128	KCL-157	KCL-190	KCL-50	KCL-56	KCL-63	KCL-95

1. Tons capacity at 12,000 Btu/hr/ton with 95°F ambient air and 115°F condensing temperature. Minimum recommended operating temperature when no glycol is used is 48°F.

2. DSC = Copeland Digital Scroll™. TSC = Tandem Scroll.

3. Full load amps are higher than run load amps and must be used for sizing disconnects and supply wiring. Amps shown are approximate for standard units. Custom configurations or options may change power requirement. Consult factory before installing.

4. Approximate unit dimensions and weight crated for shipment. Not for construction purposes.

5. Selection of certain options may change dimensions, weight and amps required. Confirm with factory before starting construction.

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Single Circuit WPT Specifications

Unit	Model	C-5WPT	C-7.5WPT	C-10WPT	C-15WPT	C-20WPT	C-25WPT	C-30WPT	C-40WPT	C-50WPT	C-60WPT
Cooling Capacity ¹ (Leaving Fluid Temperature)	Tons @ 25°F	3.50	5.20	6.40	9.21	12.58	15.96	18.92	25.75	28.67	37.83
	Tons @ 50°F	5.87	8.70	11.30	15.29	20.75	26.75	31.58	42.08	46.83	61.00
	Tons @ 55°F	6.47	9.50	12.30	16.83	22.83	29.33	34.75	46.25	51.33	67.42
Independent Refrigeration Circuits	Number Of	1	1	1	1	1	1	1	1	1	1
Compressor ²	Type	DSC	DSC	DSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC
Unit Dimensions	Height	52	52	52	52	57	57	57	57	57	57
	Width	24	24	24	24	29	29	29	36	36	36
	Length	62	62	62	70	70	70	70	84	84	84
Process Flow	Rate (gpm)	12	18	24	36	48	60	72	96	120	144
Process Connections	Size (inches)	1¼	1¼	1¼	2	2	2½	2½	2½	3	3
Condenser Water ⁶ (WPT models only)	Tower gpm	15	22.5	30	45	60	75	90	120	150	180
Full Load Amperage ^{3,5}	230/3/60	27	37	55	88	80	118	142	189	222	231
	460/3/60	12	17	25	39	43	54	66	87	102	117
	575/3/60	10	13	19	28	34	43	51	66	70	92
Unit Weight (pounds)	Shipping ⁴	450	525	545	845	885	1040	1100	1200	1300	1400
	Operating ⁵	616	691	711	1011	1051	1206	1266	1366	1466	1566

1. Tons capacity at 12,000 Btu/hr/ton with 85°F condensing water and 105°F condensing temperature. Minimum recommended operating temperature when no glycol is used is 48°F.

2. DSC = Copeland Digital Scroll™. TSC = Tandem Scroll.

3. Full load amps are higher than run load amps and must be used for sizing disconnects and supply wiring. Amps shown are approximate for standard units. Custom configurations or options may change power requirement. Consult factory before installing.

4. Approximate unit dimensions and weight crated for shipment. Not for construction purposes.

5. Selection of certain options may change dimensions, weight and amps required. Confirm with factory before starting construction.

6. Tower water requirements gallons per minute (GPM) based on 85°F water supply at 20 PSI differential with a clean condenser.

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Multiple Circuit WPT Specifications

Unit	Model	CC-20WPT	CC-30WPT	CC-40WPT	CC-50WPT	CC-60WPT	CC-80WPT	CC-100WPT	CC-120WPT	CCC-90WPT	CCC-120WPT	CCC-150WPT	CCC-180WPT
Cooling Capacity ¹ (Leaving Fluid Temperature)	Tons @ 25°F	12.8	18.4	25.1	31.9	37.8	51.5	57.3	75.6	56.7	77.2	85.9	113.4
	Tons @ 50°F	22.5	30.5	41.5	53.5	63.1	84.1	93.6	122.0	94.6	126.1	140.4	183.0
	Tons @ 55°F	24.6	33.6	45.6	58.8	69.5	92.5	102.6	134.0	104.2	138.7	153.9	202.2
Independent Refrigeration Circuits	Number Of	2	2	2	2	2	2	2	2	3	3	3	3
Compressor ²	Type	DSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC
Unit Dimensions	Height	57	57	57	57	57	75	70	70	85	85	85	85
	Width	48	48	48	52	52	50	90	90	73	73	73	73
	Length	76	76	76	79	79	135	115	115	130	130	130	130
Process Flow	Rate (gpm)	48	72	96	120	144	192	240	288	216	288	360	432
Process Connections	Size (inches)	2	2½	2½	3	3	4	4	4	4	4	6	6
Condenser Water ⁶ (WPT models only)	Tower gpm	60	90	120	150	180	240	300	360	270	360	450	540
Full Load Amperage ^{3, 5}	230/3/60	110	176	160	236	284	377	444	461	426	567	667	692
	460/3/60	49	60	85	108	132	173	204	233	198	259	306	349
	575/3/60	38	52	67	86	101	131	140	184	151	197	210	274
Unit Weight (pounds)	Shipping ⁴	1200	1800	1900	2200	2230	2600	3450	3700	3300	3600	3900	4200
	Operating ⁵	1366	2008	2149	2491	2562	3015	3948	4240	3881	4223	4564	4864

1. Tons capacity at 12,000 Btu/hr/ton with 85°F condensing water and 105°F condensing temperature. Minimum recommended operating temperature when no glycol is used is 48°F.

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5. Selection of certain options may change dimensions, weight and amps required. Confirm with factory before starting construction.

6. Tower water requirements gallons per minute (GPM) based on 85°F water supply at 20 PSI differential with a clean condenser.

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