OACS® - APT Outdoor Air-Cooled Central Chilling Modules

Featuring Low GWP Refrigerants

THERMAL PRODUCTS INC.
Engineered Solutions To Industrial Applications

ADVANTAGE®
MAKING WATER WORK
since 1977

Proudly Made In The USA

Thermal Products, Inc. / Phone: (518) 877-0231 / Email: sales@thermalproducts.com / Website: www.thermalproducts.com

ADVANTAGE®
MAKING WATER WORK

Central Chilling Module

- Outdoor installed Air-Cooled design
- 5-200 ton models
- 20˚-80˚F fluid temperature range for models using R454B refrigerant *(approx. GWP 466)*
- 20˚-65˚F fluid temperature range for models using R513A refrigerant *(approx. GWP 573)*

Advantage OACS-APT Outdoor Air-cooled central chiller modules range in capacity from 5-200 tons of cooling.

The standard OACS-APT central chiller module is configured to use an external pump & reservoir system. The OACS-APT modules are designed to be installed outdoors, saving valuable indoor manufacturing space for other operations.

OACS-APT Modules combine 1 or 2 refrigeration circuits along with an external pump & reservoir system to make a powerful plant wide chilling system. Modules with 2 independent refrigeration circuits allow for system redundancy and energy efficient capacity control.

Systems can be configured for future expansion to meet your growing cooling needs.

All Advantage OACS Chillers are precisely engineered and manufactured using only the finest components the industry has to offer. Delivered fully charged with non-ozone depleting & low GWP refrigerant, tested and ready to run…just place on a pad, connect power to the unit and fill your system with water and glycol.

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

MODEL DESIGNATOR FOR OACS SERIES

OACS – 10S – MG – APT

- OACS – OACS® Series
- 10 – Nominal Tons of Capacity
- S – Circuits: S: Single Circuit, D: Dual Circuits
- MG – Control Instrument: MG: Single Zone, MZC: Dual Zone (optional on Single Zone models)
- APT – APT denotes no internal pump & reservoir system

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Control Instrumentation To Fit Your Needs

MZC III INSTRUMENT

The **MULTIZONE INSTRUMENT (MZCIII)** is the standard control instrument on units with two refrigeration circuits. It is optional on single circuit units.

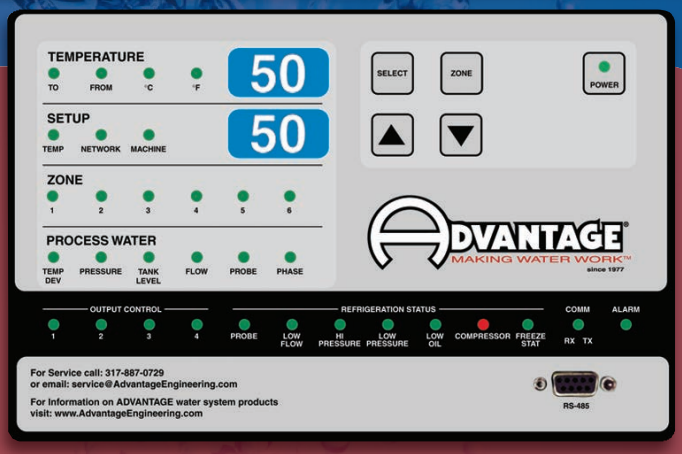
MZCIII INSTRUMENT FEATURES:

- 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**

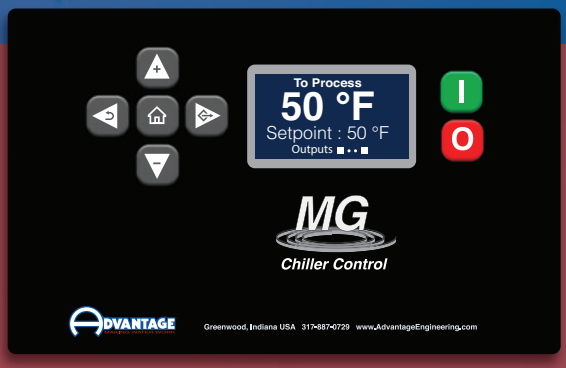
* Communicate information about refrigeration circuits to Display Board
* During the unlikely event of a display or zone board failure, the unaffected zone boards continue to run their refrigeration circuits
* Highly configurable for controlling central chillers with any combination of reciprocating, screw or scroll compressor

MG INSTRUMENT

The **MG INSTRUMENT** is the standard control instrument used on models with a single refrigeration circuit.

MG INSTRUMENT FEATURES:

- Graphic LCD display with intuitive navigation
- Accurate control of fluid temperature
- Digital refrigerant pressure display
- Digital water pressure display
- **INDUSTRY 4.0 READY** – Modbus RTU or SPI communication included
- Plain language error message reporting



- Controls hot gas bypass or digital scroll compressor for capacity control
- Alarm output with audible signal
- High water temperature shut down feature

Durably Constructed With Quality Components

RUGGED REFRIGERATION CIRCUIT(S)

- Environmentally-friendly, non-ozone depleting refrigerant
- Complete system with liquid line solenoid valve, thermostatic expansion valve, capacity control system, refrigerant receiver and filter drier
- High/low refrigerant limits and pressure indicators
- Refrigerant sight glass and moisture indicator
- Heavy-Duty Compressor
  - » Scroll, digital scroll, tandem scroll or screw compressors using rotary technology for smooth and efficient performance
- Brazed Plate Evaporators
  - » Units with 60 tons or smaller refrigeration zones
  - » 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
- Shell & Tube Evaporators
  - » Used in most systems when refridgeration zone exceeds 60 tons
  - » Refrigerant is circulated through copper tubes within the carbon steel shell to cool the process fluid

CONDENSER

- Air-cooled condensers are industrial grade using copper tubing with aluminum fins with direct drive fan motors housed in a sheet metal enclosure
- EC variable speed drive motors on the header end and pressure staged fans provide 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 or an optional alternate condenser can be selected for higher ambient conditions and high altitude installations
- For operation in extremely low ambient temperatures, flooded head pressure control is available as an option

COOLANT CIRCUIT

- Requires an external reservoir and pumping system

ELECTRICAL

- Electrical components are UL Listed and housed in a UL508A enclosed electrical panel designed for industrial environments
- OACS models use weather resistant outdoor rated cabinets. The cabinet that houses the control instrument includes a viewing window for easy access to system information
- All electrical panels include branch circuit protection of components
- Electrical circuit has a standard SSCR rating of 5 kA

REFRIGERANT INFORMATION

Many of our chillers use R-454B refrigerant, a next generation, low GWP option classified as an A2L refrigerant (mildy flamable). 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 purhcase and when planning their installation.

DOMESTIC USA WARRANTY

1st Year: Covering parts and labor

(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
- Condensers utilizing all EC fan motors for higher energy efficiency
- Remote control instrument display (MZCIII only)
- Modbus TCP Communication capability
- Supply & return isolation valves
- External filters
- A main power disconnect
- 4 year extended compressor warranty

OACS®-APT Specifications

Single Circuit Units	Model	OACS-5S-APT	OACS-7.5S-APT	OACS-10S-APT	OACS-15S-APT	OACS-20S-APT	OACS-25S-APT	OACS-30S-APT	OACS-40S-APT	OACS-50S-APT	OACS-60S-APT
Cooling Capacity[1] (Leaving Fluid Temperature)	Tons@25˚F	3.2	4.8	5.8	8.6	11.8	14.7	17.4	24.2	26.9	35.7
	Tons@50˚F	5.5	8.1	10.5	14.3	19.4	25.0	29.6	39.5	44.0	57.3
	Tons@55˚F	5.8	8.5	11.1	15.2	20.6	26.5	31.4	42.0	46.7	61.0
Compressor[2]	Type	DSC	DSC	DSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC
Refrigerant	Type	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B
Control	Model	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
Unit Dimensions	Height	81	81	81	81	81	85	85	85	101	101
	Width	55	55	55	55	55	55	55	55	88	88
	Length	64	64	64	117	125	198	198	198	126	180
Process Flow	Rate (gpm)	13	19	24	35	45	58	69	92	102	132
Full Load Amperage[3, 5]	230/3/60	30	44	62	101	93	137	161	208	247	268
	460/3/60	14	21	28	45	49	64	64	96	115	135
	575/3/60	11	16	22	31	39	51	51	74	81	108
Unit Weight (pounds)	Shipping[4]	980	1103	1230	1755	1940	2375	3300	3800	4650	5250
	Operating[5]	1544	1667	1794	2319	2504	3205	4130	4630	5895	7740

Dual Circuit Units	Model	OACS-10D-APT	OACS-15D-APT	OACS-20D-APT	OACS-25D-APT	OACS-30D-APT	OACS-40D-APT	OACS-50D-APT	OACS-60D-APT	OACS-80D-APT	OACS-100D-APT	OACS-120D-APT	OACS-150D-APT	OACS-180D-APT	OACS-200D-APT
Cooling Capacity[1] (Leaving Fluid Temperature)	Tons@25˚F	6.2	9.6	11.6	14.6	17.2	23.6	29.4	48.4	48.4	53.8	71.4	82.6	98.0	108.0
	Tons@50˚F	11.0	16.2	21.0	24.2	28.6	38.8	50.0	79.0	79.0	88.0	114.6	150.5	177.0	195.0
	Tons@55˚F	11.6	17.0	22.2	25.9	30.4	41.2	53.0	84.0	84.0	93.4	122.0	161.5	188.8	208.5
Compressor[2]	Type	DSC	DSC	DSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC	TSC	SR	SR	SR
Refrigerant	Type	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R513A	R513A	R513A
Control	Model	MZCIII	MZCIII	MZCIII	MZCIII	MZCIII	MZCIII	MZCIII	MZCIII	MZCIII	MZCIII	MZCIII	MZCIII	MZCIII	MZCIII
Unit Dimensions	Height	101	101	101	101	101	101	101	101	101	101	101	101	101	101
	Width	85	85	85	88	88	88	88	88	88	92	92	101	101	101
	Length	106	106	110	125	125	125	180	180	180	240	300	350	404	404
Process Flow	Rate (gpm)	25	37	48	58	69	89	115	137	182	202	264	350	408	451
Full Load Amperage[3, 5]	230/3/60	39	87	123	140	149	185	261	322	415	494	523	–	–	–
	460/3/60	27	41	56	71	73	97	121	151	191	299	264	348	408	436
	575/3/60	22	32	43	55	57	78	97	116	147	161	210	292	327	363
Unit Weight (pounds)	Shipping[4]	1830	2005	2180	3175	3425	4000	4575	5400	6625	7325	8300	9300	11350	13500
	Operating[5]	2660	2835	3010	4835	5085	5660	7065	8720	9945	10645	11620	18300	20350	22500

1. Tons capacity at 12,000 BTU/hr/ton @ 95˚F ambient, 115˚F condensing.
2. DSC = Copeland Digital Scroll™. TSC = Tandem Scroll. SR = Screw.
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.

Since product innovation and improvement is our constant goal, all features and specifications are subject to change without notice or liability.

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ADVANTAGE ENGINEERING, INC.
525 East Stop 18 Road
Greenwood, IN 46142
Phone: 317.887.0729
www.AdvantageEngineering.com

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