

Advanced & Proven

AIM-CIR® is a plug and play control system for commercial and industrial refrigeration systems. It improves system safety and reliability, and reduces O&M and energy cost by up to 40%. The energy cost savings can offset the project cost in less than three years.

Highest Energy Performance

- Reduce evaporator fan power by 50% to 90%
- Reduce compressor power by 20% to 60%
- Recover cooling energy from frost/ice
- Reduce entire system energy consumption by 25% to 40%
- Simple payback less than 3 years

Reduced O&M Cost

- Automatic smart control and system optimization
- Less wear and tear of control valves, motors, compressors and cooling towers
- Cloud based remote control and monitoring for expert assistance

Increased System Reliability and Safety:

- Automatic capacity ramp up in case of equipment failure
- Power based equipment safety protection and alarming
- FDD on major mechanical and electrical parts for scheduled O&M
- Remote monitoring and control action
- Extended equipment life span

Easy Installation, Set-Up and Use

- Expandable modular controller
- Plug and Play for installation and replacement
- Update equipment table for set up

For More Information

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FAQ's

1. What is AIM-CIR®?

AIM-CIR® is a plug and play control system for commercial and industrial refrigeration systems. It includes Digi-CPR for compressors; Digi-CFC for cooling tower or condenser; Digi-CLR for evaporators or coolers; and Digi-ECO for defrosting economizer.

2. What are the benefits to owners that installed AIM-CIR®?

It improves the system safety and reliability, and reduces O&M and energy cost by up to 40%. The energy cost savings can offset the project cost in less than three years.

3. Why do facility service companies/providers recommend AIM-CIR® to their clients?

Installing AIM-CIR® will ensure satisfaction of annual energy reduction requirement. Moreover, installing AIM-CIR® will significantly reduce O&M efforts and cost, which translates to huge benefits for facility service companies.

4. What ESCOs and Energy Consultants should know about AIM-CIR®?

Commercial and Industrial refrigeration systems operate 24/7. AIM-CIR provides the unique energy conservation opportunities never discovered before. There is a significant market for performance contracting and energy retrofits using AIM-CIR®.

5. Why should MEP and BAS contractors install AIM-CIR®?

Offering AIM-CIR® to their clients can provide consistent reliability and energy efficiency improvement for the project and facilities while creating substantial revenue increases. It will also increase the chances for renewing or gaining new service contracts.

6. How to Integrate AIM-CIR® and BAS/SCADA systems?

The AIM-CIR® can be integrated with any BAS/SCADA system through native Modbus and/or other communication protocols, such as BACnet.

7. How to install AIM-CIR controllers?

Plug and play control system for commercial and industrial refrigeration systems. No programming is required for installation.

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AIM-CIR®

Advanced Technology for the Refrigeration Industry

AIM-CIR® is plug and play control technology for commercial and industrial refrigeration systems. The system provides energy conservation opportunities never discovered before.

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PROUD MEMBER OF



Applications

RETROFITS

- > Digi controllers work together with existing controllers or replace the existing controllers
- > AIM-CIR works as a slave controller of the existing BAS/SCADA or replaces the existing BAS/SCADA

NEW SYSTEMS

- > Digi controllers as the unitary controllers of compressors, evaporators, and coolers
- > AIM-CIR works as the supervisory controller of refrigeration systems

REFRIGERATION LEVEL

- > Single level: LT; MT, or HT
- > Two levels: LT/MT; LT/HT; or MT/HT
- > Three level: LT/MT/HT
- > Four levels: LT/MT/HT/CT (Customized)

REFRIGERANTS

- > Ammonia
- > R507
- > Others

COMPRESSORS (UP TO 10)

- > Screw, Scroll, and Reciprocating
- > Constant speed, variable speed, and digital

CONDENSERS (UP TO 10)

- > Air-cooled condensers
- > Water evaporative cooling towers

EVAPORATORS (UP TO 60)

- > DX coils or flooded coils
- > Three (3) phase AC or EC motors
- > Electrical or hot gas defrosting

Control

AIM-CIR

- > Identify optimal suction pressure setpoint
- > Identify optimal condensing pressure setpoint
- > Identify optimal compressor stage
- > Identify optimal condenser stage
- > Initiate optimal defrosting of each cooler

DIGI-CLR

- > Monitor/measure supply and return air temperature, evaporating temperature, and fan power and speed
- > Identify the space load ratio
- > Identify and report frost/ice accumulation
- > Control cooler fan on/off and speed
- > Defrosting control
- > FDD: VFD, fan, valves, and coils

DIGI-CFC

- > Monitor fan status, fan speed, fan power, pump status, ambient air condition, and condensing pressure
- > Control condenser fan on/off and speed
- > Control circulation pump on/off
- > FDD: VFD, fan, pump, and cooling tower

DIGI-CPR

- > Monitor compressor power, load ratio, suction and discharge pressures, and others
- > Control compressor on/off, load limit, and speed
- > Control switch valve
- > FDD: VFD, compressor, and switch valve

DIGI-ECO AND DCT

- > Defrosting by condensing liquid

Innovations

DIGI-ECO

- > Feed the condensing liquid to evaporators during de-frosting
- > Economizer effect: condensing liquid is further cooled prior to entering low pressure section during defrost-ing
- > Zero excessive hot gas energy entering low pressure section

DCT: DUAL COIL TECHNOLOGY

- > Two coils work as a pair during defrosting: hot liquid passes through the first coil (defrosting) prior to entering the second coil (refrigerating)
- > Economizer effect: condensing liquid is further cooled prior to entering low pressure section during defrost-ing
- > Zero defrosting electrical energy consumption

TWO-LEVEL SUCTION PRESSURE OPTIMIZATION

- > Level 1: identify the optimal suction pressure setpoint based on the system load ratio
- > Level 2: refine level 1 setpoint based on fans' maximum and average speeds, and on/off time ratios.

FOUR-LEVEL CONDENSING PRESSURE OPTIMIZATION

- > Level 1: setup different minimum condensing pressure setpoints for refrigeration and defrosting modes
- > Level 2: identify the optimal condensing pressure setpoint based on ambient wet bulb or dry bulb
- > Level 3: refine the setpoint based on the system load ratio
- > Level 4: finalize the setpoint based on the system power consumption and/or the ratio of fan and compressor power

SWARM OPTIMIZATION

- > Identify the optimal stage and load limit based on system load ratio and system performance information
- > Maintain the same fan speed for all coolers in each common space