



# Pure Cold Low-Charge, Ammonia Condensing Unit



Low-charge ammonia packaged solutions are ideal for sensitive refrigeration applications.

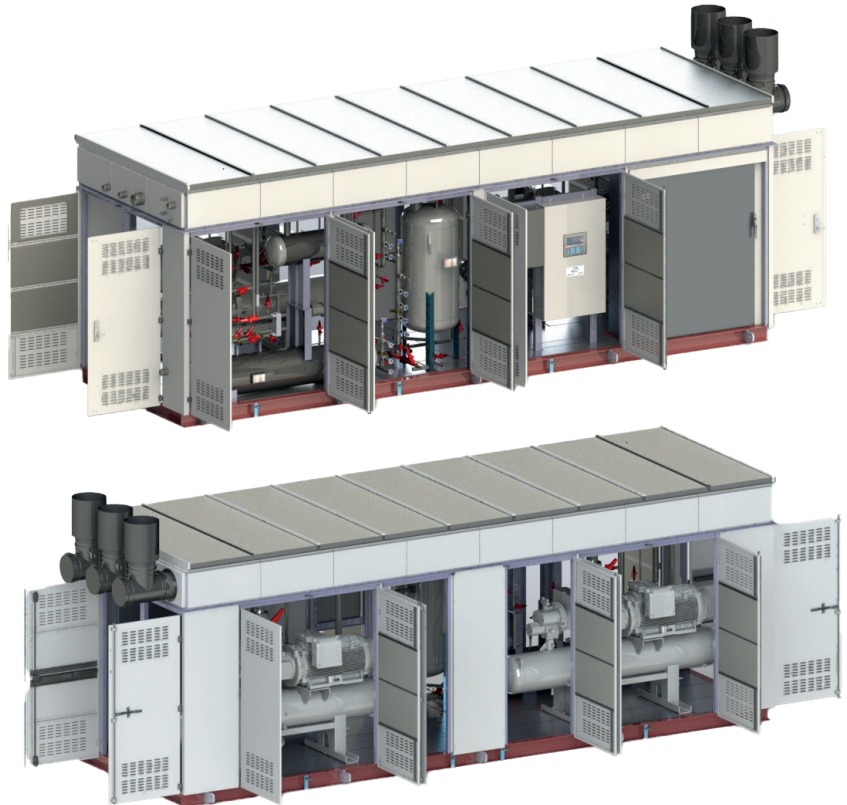
The power behind **your mission**



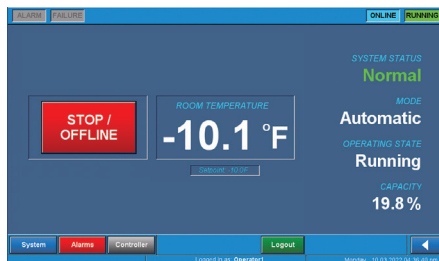
# Pure Cold

The Pure Cold low-charge ammonia condensing unit is designed for the rigors of industrial refrigeration applications. It is prefabricated and delivered assembled, meaning less on-site construction, easier and quicker installation and reduced labor costs.

The unit's low ammonia charge means lower PSM\* costs than standard systems, reduced insurance costs and a safer working environment for employees and products. Suitable for many applications, it's ideal in industrial facilities where refrigeration is a priority. The ammonia system is adopted for cooling food and other products because of its capacity and durability.



## Controls



## Features

- Industrial-grade FRICK® RXF direct-drive screw compressor packages
- Capable of accommodating air-cooled, adiabatic, evaporative, or water-cooled condensers installed external to the package
- Master control panel internal to the package to allow user friendly working conditions
- PLC-based control system with supervisory HMI and cloud-based IoT access
- Control system and sensors designed for remote performance monitoring and diagnostics
- Sound-attenuated enclosure with built in ventilation and ammonia leak detection
- Corrosion resistant aluminum enclosure panels and aluminum diamond plate floor
- Center aisle way to allow complete access to all serviceable components
- Large access doors to allow ample room for ease of service
- Direct expansion ammonia refrigerant feed with motorized control
- Cooling capacities ranging from 46 to 200 tons at -20°F to 50°F room temperatures

\*Process safety management safety rules set by the U.S. Occupational Safety and Health Administration (OSHA).

## Benefits

### Contractor

- Standard package sizes from 46 to 200 tons for freezer, dock and cooler loads
- Design flexibility
  - Place field mounted condenser at grade level or elevated above the Pure Cold Ammonia package.
  - Pipe from the Pure Cold unit installed on the dock roof to ceiling-hung evaporators
  - Pipe to penthouse evaporators installed on the freezer or dock roofs
- Package-mounted, electrical power and control panel factory wired with terminals for field wiring to the condenser (as required) and communications to evaporator control panels
- Separate emergency exhaust power panel requires separate three-phase power connection
- Enclosure equipped with full access doors for easy commissioning, maintenance and service
- Optional evaporator control valves, isolation valves, evaporator control panels and instrumentation, if provided, are shipped loose for field installation
- Individual remote evaporator control panels to be field mounted, powered, wired, with communications to master panel vis canbus.
- Factory-installed insulation of the cold piping and vessels

### End user

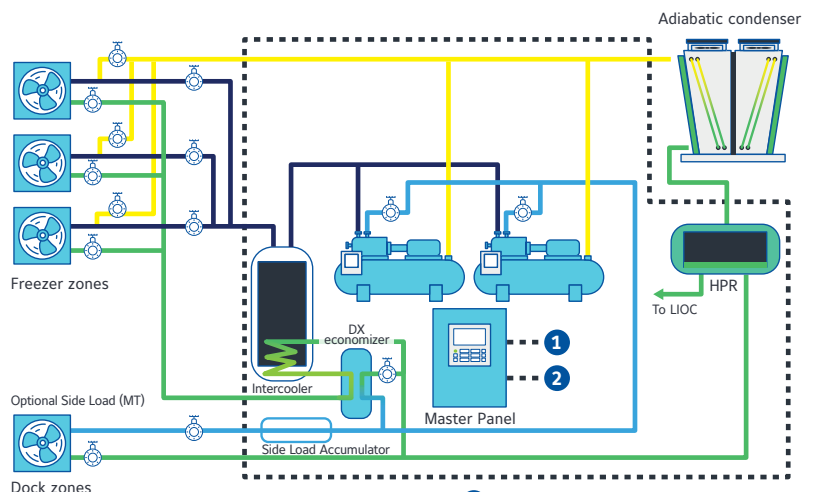
- Reduced regulatory burden with low-charge ammonia solution
- Lower operating cost
  - Optional VFD on lead compressor, economized system to compressor side ports
  - EC modulating fan capacity on evaporators and condensers
  - Potential to eliminate condenser water treatment and sewer costs
- Low installation cost
  - Plug-and-play design
  - Package mounted and wired electrical power and control panels
- Maintenance friendly
  - Fully serviceable industrial compressors and components
  - Package design layout for easy service access
  - Control system and sensors designed for remote performance monitoring and diagnostics
- Increase revenue-generating square footage by eliminating engine room
- Environmentally friendly, future-proof, natural refrigerant
- Compliant with:
  - 2022 Building Energy Efficiency Standards (Energy Code) Title 24
  - IIAR Ammonia Refrigeration Management – Low Charge (ARM-LC)

## Standard package includes

- Parallel screw compressor packages with direct driven ODP motors
- Liquid injection oil cooling
- Flexible design suitable for either ground level or elevated, field-mounted condenser
- Sound-attenuated enclosure
- High-pressure receiver
- Direct expansion economizer for liquid subcooling
- High-efficiency oil management system
- Optional evaporator valve stations
  - Components shipped loose for field mounting
- NEMA 4 solid state starters for compressor motors in 460V or 575V
  - Optional VFD on the lead compressor
- Ammonia detection horn and strobe
- Emergency/temperature-controlled exhaust fan
- PLC-based control system with PC enterprise HMI

## System diagram

Low-temperature direct expansion package design represented with DX economizer and side load



- 1 Communicate with other Pure Cold Systems
- 2 Communicate with enterprise PC monitor

## Technical data: medium temperature

Pure Cold Model	Refrigerant Feed Type	Pure Cold Total Capacity* (TR)	Total Compressor BHP	Number of Active Compressors	Motor HP per Compressor	Refrigerant Charge** (lb)	Overall Dims (in.) (L x W x H)	Dry Weight (lb)
PCO-48-MT-DX	DX	102.2	136	2	50-125	< 500 lbs	353"x120"x130"	30,450
PCO-60-MT-DX	DX	135.8	158.6	2	75-125	< 500 lbs	353"x120"x130"	30,660
PCO-78-MT-DX	DX	172.6	197.4	2	75-150	< 500 lbs	353"x120"x130"	30,975
PCO-100-MT-DX	DX	231	267.4	2	100-200	< 500 lbs	353"x120"x130"	32,815

\* Capacity based on 23°F SST and 95°F SCT.

\*\* Subject to condenser operating charge and piping distance to the remote evaporators.

## Technical data: low temperature

Pure Cold Model	Refrigerant Feed Type	Pure Cold Total Capacity (TR)	Total Compressor BHP	Number of Active Compressors	Motor HP per Compressor	Refrigerant Charge** (lb)	Overall Dims (in.) (L x W x H)	Dry Weight (lb)
PCO-60-LT-DX	DX	45.4	123.4	2	50-100	< 500 lbs	353"x120"x130"	30,135
PCO-78-LT-DX	DX	57.6	153.6	2	75-125	< 500 lbs	353"x120"x130"	30,450
PCO-100-LT-DX	DX	77.2	204.6	2	100-200	< 500 lbs	353"x120"x130"	31,395
PCO-116-LT-DX	DX	85.6	225	2	100-200	< 500 lbs	353"x120"x130"	31,815
PCO-136-LT-DX	DX	102.8	267	2	100-250	< 500 lbs	353"x120"x130"	32,760
PCO-170-LT-DX	DX	129.6	334.8	2	125-300	< 500 lbs	353"x120"x130"	35,490
PCO-202-LT-DX	DX	156.4	411	2	150-350	< 500 lbs	353"x120"x130"	37,380

\* Capacity based on: -22°F SST and 95°F SCT with DX liquid subcooling.

\*\* Subject to condenser operating charge and piping distance to the remote evaporators.

## About Johnson Controls

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