

SMARTER, SAFER, MORE SUSTAINABLE  
BUILDINGS AND CITIES.





# TAKE ADVANTAGE OF A BROADER RANGE OF CAPABILITIES.

Johnson Controls now provides a wider spectrum of innovative products, expert installation and services, and systems integration to help improve operational and energy outcomes for customers worldwide.



## HVAC EQUIPMENT

Draw on the most comprehensive HVAC portfolio for commercial and residential buildings of all types, ages and sizes to enhance sustainability, energy use and the indoor environment.

- Chillers—air-cooled; water-cooled; connected
- Condensers and condensing units
- Dedicated outdoor air systems (DOAS)
- Duct-free mini-split systems
- Indoor packaged equipment
- Rooftop units
- Variable refrigerant flow (VRF) systems

## SECURITY

Help protect and enhance working and living environments today and tomorrow with integrated, customer-specific solutions from the world's leading security company.

- 24/7 remote monitoring
- Access control
- Advanced video surveillance
- Intrusion detection
- Managed services

## CONTROLS

Equip facilities with intelligent HVAC controls to keep occupants comfortable, run equipment efficiently and optimize operating budgets.

- Actuators
- Control panels
- Control sensors
- Current sensors and transducers
- Thermostats
- Valves
- Variable speed drives

## FIRE, LIFE-SAFETY & HAZARD PROTECTION

Help keep people and assets safe with comprehensive solutions, design, installation, service and monitoring from a world leading fire and life-safety systems provider.

- Fire alarm systems
- Fire sprinkler systems
- Fire suppression systems
- Mass notification systems
- Special hazard solutions



## OPTIMIZATION & RETROFIT SERVICES

Make the most of existing building and financial assets through cost-effective upgrades, central plant strategies, and financing solutions.

- Central chiller plant optimization
- Clean energy assessments
- Energy performance contracts
- Energy retrofits
- Equipment financing
- Healthcare environment optimization
- Public/private partnerships
- Technology refresh services
- Turnkey upgrades and retrofits



## LIGHTING CONTROLS & RETROFIT

Save energy, minimize costs and meet organizational goals with a range of services, from business remodels, to new construction lighting design, to municipal street lights.

- Lighting retrofits
- Street and roadway lighting
- Turn-key lighting upgrades



## ENERGY STORAGE

Rely on our innovative distributed energy storage products to better manage energy use, cut costs and ensure electrical back-up for a building, campus or enterprise.

- In-building distributed energy storage system
- Modular distributed energy storage system



## RETAIL SOLUTIONS

Gain real-time insights into retail facilities, inventories, employees & customers to achieve maximum business performance in a digitally driven shopping world.

- Loss Prevention
- Inventory Intelligence
- Traffic Insights



## OPERATIONAL INTELLIGENCE & LOSS PREVENTION

Helps minimize costs, maximize operational performance and enhance return on investment in security programs with business intelligence solutions.

- Information management solutions
- Real-time location systems (RTLS) for asset management
- Video and traffic analytics



## BUILDING SERVICES & PARTS

Tap into resources of the industry's largest service network for HVAC, security and life-safety system installation and product support. More than 12,000 technicians working out of nearly 500 local offices can provide 24x7x365 proactive monitoring, remote and on-site service and repair, and replacement parts.

- Aftermarket parts
- Building remote monitoring
- Building system and HVAC repair
- Planned and preventive maintenance
- Predictive and diagnostic services
- Security and life-safety system repair



## BUILDING AUTOMATION SYSTEMS

Connect commercial HVAC, lighting, security and protection systems on one platform. Vital data and insights improve efficiency, productivity, and occupants' comfort and safety.

- Metasys® building automation system
- Metasys Enterprise Optimization applications



## AIR SYSTEMS

Use efficient air flow building-wide to create healthy, comfortable and visually appealing environments that increase work productivity and occupant satisfaction.

- Air handling units
- Air measuring
- Chilled beams
- Dampers
- EcoAdvance™ HVAC load reduction (HLR) module
- Energy recovery ventilators
- Fan and blower
- Fans
- Filtration
- Grilles and diffusers
- Heating coils and cooling coils
- Louvers
- Under floor air distribution
- Unit ventilators
- Variable air volume (VAV) terminals
- Variable speed drives



## BUILDING WIDE SYSTEMS INTEGRATION

Construct a smarter building by converging building, business/IT and specialty systems on an intelligent infrastructure. Let us streamline the process to measurably improve initial and lifecycle costs, enhance function, ensure connectivity and create an innovative, optimized, sustainable environment.



## MEET THE WORLD LEADER IN **INTEGRATED BUILDING TECHNOLOGY AND ENERGY STORAGE.**

### **Bringing you the best of Johnson Controls.**

More comprehensive products, technologies and services.

More innovation and efficiency over the life of a facility.

More holistic, integrated solutions to help make buildings, campuses and cities increasingly safe, smart and sustainable.

# DISCOVER COMPLETE, CONNECTED SOLUTIONS

## BUILDING MANAGEMENT SYSTEMS



**METASYS® APPLICATION & DATA SERVER** Support of IT standards and technologies, web-based user interface, long-term data storage.



**NETWORK AUTOMATION ENGINE** Scalable family of engines from the smallest system to an enterprise network.



**FIELD EQUIPMENT/ ADVANCED APPLICATION CONTROLLERS** Complete family of field controllers and accessories



**WIRELESS COMPONENTS** Wireless field buses and room environment sensing systems designed with the latest wireless technology.



**TERMINAL EQUIPMENT CONTROLLERS** Complete local control of unitary equipment, plus supervisory communication. Available in BACnet®, LON® and N2 configurations.



**INTEGRATION COMPONENTS** Adapts legacy and proprietary systems to current open systems architecture.

## COMMERCIAL REFRIGERATION SYSTEM CONTROLS



**TEMPERATURE CONTROLS**  
A19 Temperature Controls, A419 Electronic Temperature Controls, ER Defrost Controls.



**PRESSURE CONTROLS**  
P735 Low and High Pressure Controls, P736 Dual Pressure Controls, P100 Pressure Switch.



**FAN SPEED CONTROLS**  
P70/P170 Pressure Controls, P266 Electronic Fan Speed Controls, VFD66 Condenser Fan Speed Controls



**MODULAR ELECTRONIC CONTROLS** C450C Temperature, Pressure and Humidity Controls, C450Y Power Module, C450S Expansion Modules



**LUBE OIL CONTROLS**  
P28/P128 Lube Oil Controls, P45/P145 Lube Oil Controls, P545 Electronic Lube Oil Controls



**WATER REGULATING VALVES** • V43/V46 Water Regulating Valves, V146 High Pressure Regulating Valves • V246/V248 Water Regulating Valves for High Pressure Refrigerants



**FLOW AND FLOAT CONTROLS** • F61 Flow Switches, F63 Float Switches, F59 Sump Pump Switches

## HVAC SYSTEM CONTROL PRODUCTS



**VARIABLE-SPEED DRIVES** Open, enclosed and bypass drives, 1-250 HP, engineered solutions available



**VALVES, ACTUATORS & DAMPERS** Global product family, broad selection, easy installation



**SENSORS & THERMOSTATS** Temperature, humidity and CO<sub>2</sub> sensors including analog, hardwire network and wireless applications



**AIRFLOW MEASURING SYSTEM** Differential pressure or thermal dispersion



**CUSTOM & STANDARD PANELS** Pre-wired and pre-assembled, standard and custom control panels

## CENTRAL PLANT OPTIMIZATION™



**CPO 10 POWERED BY METASYS** Intelligent algorithms inherent in Metasys leverage proven best practices and specific equipment efficiency characteristics to save up to 15% energy versus standard automation.



**CPO 30 POWERED BY OPTIMUM ENERGY™**  
Engineered solution uses relational control algorithms to achieve up to 60% energy savings (including plant upgrades) and real-time dashboards to help assure persistent performance.

## ENERGY STORAGE



### L1000 IN-BUILDING DISTRIBUTED ENERGY STORAGE SYSTEM

The benefits of advanced battery technology and in-depth building expertise in a small, flexible footprint. Configurable storage capacity in increments of 43 and 65 kWh.



### L2000 MODULAR DISTRIBUTED ENERGY STORAGE SYSTEM

Scalable system builds on proven design and environmental controls to ensure economical, reliable performance. Storage capacity configured in 500kWh increments.

## LIGHTING



### LED RETROFIT KITS

- Utilize existing housing and lens
- Utilize existing housing with updated lens/look



### AREA AND STREET LIGHTS

- New fixtures to replace existing HID fixtures



# TO HELP YOU INCREASE COMFORT, SECURITY

## AIR-COOLED CHILLERS



### YORK YCAL

- 15 – 65 tons
- Scroll compressor



### YORK YLAA

- 70 – 180 tons
- Scroll compressor, micro channel coils



### YORK YLPA HEAT PUMP

- 97 – 150 tons
- Scroll compressor



### YORK YVAA

- 150 – 275 tons
- Variable speed screw compressor, Hybrid falling film evaporator



### YORK YSAA

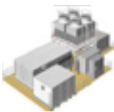
- 57 – 112 tons
- Screw compressor
- Microchannel Coils



### YORK YCAE

- 12 – 37 tons
- Combined capacity up to 296 tons
- Scroll compressor

## MODULAR PACKAGED CHILLING SOLUTIONS



### YMPCS

- Pre-designed factory assembled self-contained system shipped in modules and assembled at site.
- Range 1,000 – 20,000 tons.

## CONDENSING UNITS & CONDENSERS



### YC/YD & NC/ND SPLIT SYSTEM

- 7.5 – 50 tons, Scroll compressors



### YORK YCUL

- 40 – 80 tons – Condensing unit, Scroll compressors



### YORK YLUA

- 80 – 160 tons
- Condensing unit, Scroll compressors, HFC410A refrigerant



### YORK VDC/VDCF

- 175 – 2,280 / 65 – 2,890 MBH
- Air-cooled condenser, multiple refrigerants / Fluid cooler, water or glycol

## COOLING TOWERS & CLOSED CIRCUIT COOLERS



### AT COOLING TOWER

- Induced Draft Counter flow
- CTI certified
- Capacity range 30 – 5,750 tons.



### LSTE COOLING TOWER

- Forced Draft Counter flow.
- CTI certified
- Capacity range 150 – 1,800 tons.



### ATW / ESWA / LSW CLOSE CIRCUIT COOLERS

- Induced / forced draft counter flow
- Capacity range 30 – 2,650 tons.

## WATER-COOLED CHILLERS

### ELECTRIC



### YORK® YMC<sup>2</sup>

- 165 – 600 tons
- Magnetic bearing centrifugal chiller, oil free, very quiet



### YORK® YCWL

- 50 – 200 tons
- Scroll compressor



### YORK YK

- 250 – 3,000 tons
- Variable speed centrifugal compressor, OptiView™ control panel



### YORK YK-EP

- 2,500 – 3,500 tons
- Centrifugal compressors with economizer, VSD, OptiView™ control panel



### YORK YD

- 1,500 – 6,000 tons
- Dual centrifugal compressors, smallest footprint per cooling ton, OptiView™ control panel



### YORK CYK

- 300 – 2,500 tons
- High-head capability, compound centrifugal compressors with economizer, open drive



### YORK OM

- 3,000 – 5,500 tons
- Custom-designed, centrifugal compressor



### YORK YEWS

- 100 – 415 tons
- Water cooled Screw chiller
- AHRI certified

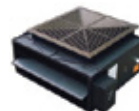
### THERMALLY DRIVEN



### YORK YST

- 700 – 2,800 tons
- Centrifugal compressor, steam-turbine driven

## UNDERFLOOR AIR DISTRIBUTION SYSTEMS



### VARIABLE AIR VOLUME

- 100 to 300 CFM
- Unique time-modulation control, variety of sizes, shapes and colors



### MANUAL DIFFUSERS

- 80 to 300 CFM
- Variety of sizes, shapes and colors, user control, directional and omni-directional



### FAN TERMINAL UNITS

- Up to 1800 CFM
- Programmable circuit board design, electric or hot water



### LINEAR GRILLE TROUGHS

- Up to 900 CFM
- Heating/cooling
- Electric or hot water, time-modulation, VAV control option

# AND EFFICIENCY

## AIR HANDLING UNITS & COILS



### N-YSM AIR HANDLING UNIT

- 1,200 to 99,180 m<sup>3</sup>/hr
- AHRI Certified
- Thermal Break Profile



### YMA CUSTOM MADE AIR HANDLING UNITS

- Flexible construction, premium product.
- Manufactured in KSA / Turkey / Italy



### YMS AIR HANDLING UNITS

- With modular construction, standard product.
- Manufactured in UAE / KSA



### JMS MODULAR AIR HANDLING UNITS

- With self supported panels, clean concept.
- Manufactured in UAE



### JST SINGLE / DOUBLE SKIN BELT DRIVE

- Air handling units for Indoor applications.
- Manufactured in UAE / KSA



### INTEGRATED CONTROLS

- Johnson controls offers a complete solution with optimized sequence of operation and energy performance.



### SOLUTION

- Air handling units with High performance, Modular construction
- Manufactured in USA

## VRF SYSTEMS



### YORK® SERIES

- 77 to 346 MBH, Heat Pump / Heat Recovery, R410A, 50Hz & 60Hz

### HITACHI SERIES

- 77 to 520MBH, Heat Pump, R410A, 50Hz & 60Hz
- 77 to 520MBH, Cooling only, R410A, 50Hz & 60Hz
- 48 to 520MBH, Heat Recovery, R410A, 50Hz & 60Hz
- 38 to 115MBH, Heat Pump (Side Discharge), R410A, 50Hz & 60Hz
- 29 to 192MBH, Water Cooled Heat Pump, R410A, 50Hz & 60Hz

### AMAZON SERIES

- 78 to 158 MBH Standard Efficiency Heat Pump R410a 50/60Hz
- 87 to 721 MBH High Efficiency Heat Pump R410a 50/60Hz
- 82 to 460 MBH Heat Recovery R410a 50/60Hz
- 33 to 63.8 MBH Mini VRF (side Discharge) R410a 50/60Hz
- 80 to 359 MBH Water Cooled R410a 50/60Hz

### YES SERIES

- 27 to 55 MBH Mini VRF (Side Discharge) R410a 50 Hz
- 76 to 114 MBH Slim VRF (Side Discharge) R410a 50 Hz
- 86 to 512 MBH Super VRF R410a 50 Hz

## INDUSTRIAL REFRIGERATION



### RECIPROCATING COMPRESSOR UNIT

- Cooling Capacity Range – 50-1400 kW
- Low Power Consumption During Part Load



### SCREW COMPRESSOR UNIT

- Cooling Capacity Range – 121-5700 kW
- Highest COP value



### CHILLERS - PISTON COMPRESSOR - PAC

- Cooling Capacity Range – 50 – 1400 kW
- Skid mounted – factory tested



### CHILLERS - SCREW COMPRESSOR - PAC

- Cooling Capacity Range – 120 – 8000 kW
- Skid mounted – factory tested



### COMPACT CHILLER - CHILLPAC

- (Piston compressors) – comPACt (screw compressors).
- Capacity Range 100-2000 kW – Very Compact



### STANDARD HEATPUMP PACKAGE - HEATPAC

- Heating Capacity Range – 240 – 1150 kW,
- Outgoing Temperature – Up To 70°C



### HIGH TEMPERATURE HEATPUMP PACKAGE

- Heating Capacity Range – Up To 1600 kW
- Outgoing Temperature – Up To 90°C



### CASCADE REFRIGERATION PACKAGE - CAFP

- Cooling Capacity Range – 80-800 kW
- Low Operating Cost And Compact Design



### AIR COOLED CHILLER - SABLIGHT

- Cooling Capacity Range – 120 – 338 kW
- Green" Refrigerant – R290



### MULTISTAGE CENTRIFUGAL COMPRESSOR UNIT

- Cooling Capacity – Up To 11 500 kW
- Designed For Heavy Industrial Use



### OTHER REFRIGERATION PRODUCTS

- AcuAir Hygienic Air Handler
- Plate and Frame Heat Exchangers
- Refrigerants Vessels

## RESIDENTIAL & LIGHT COMMERCIAL



### R22, R407C, R410 REFRIGERANT, 50HZ AND 60HZ

#### AIR COOLED PACKAGE UNITS

- 36 – 1500 MBH

#### DUCTLESS SPLIT UNITS

- 09 – 100 MBH

#### DUCTED SPLIT UNITS

- 12 – 1500 MBH

#### WINDOW ROOM AIR CONDITIONERS

- 18 – 24 MBH

# INTEGRATED SECURITY & FIRE, LIFE-SAFETY PROTECTION

## FIRE HAZARD PROTECTION



### FIRE DETECTION AND ALARM

Flexible, reliable, cost-effective and highly scalable systems that can grow and expand as buildings change.



### WATER FIRE SUPPRESSION

High-performance sprinkler, deluge & water mist systems.



### SPECIAL HAZARD FIRE SUPPRESSION

Foam, clean agent and inert gas systems provide unique answers to unique challenges.



### MASS NOTIFICATION SYSTEMS

Customizable, multi-tiered technology helps improve situational awareness and response time.



### MECHANICAL PRODUCTS

Cost-effective grooved piping solutions for a full range of fire, mechanical, HVAC and industrial applications.



### GAS AND FLAME DETECTION

Advanced sensor technology for multiple flame and toxic gas detection.

## LIFE-SAFETY AND PERSONAL PROTECTION



### RESPIRATORY PROTECTION SYSTEMS

Supplied air respirators, cylinders, air purifying respirators (APR), and many more solutions that address broad hazardous and industrial applications.



### THERMAL IMAGING PRODUCTS

NFPA compliant technology offers comprehensive capabilities to maximize situational awareness.



### PERSONAL PROTECTIVE EQUIPMENT

Innovative, industry specific equipment for first responders, firefighters, law enforcement, military and industrial personnel.



### COMPRESSORS

Vertical and horizontal units are designed as free standing modules.



### COMMUNICATION SYSTEMS

Robust person-to-person communications, advanced audio and wireless technologies, and two-way radio interoperability.

## INTEGRATED SECURITY



### SECURITY, FIRE & LIFE-SAFETY INTEGRATION

We are a security integrator with a vast product ecosystem specializing in the design, installation and service of security and life-safety solutions for the most complex, mission critical environments.



### SECURITY MANAGEMENT SYSTEM (P2000)

Open security management platform with integrated access control, embedded video management and industry-wide third-party integrations.



### ACCESS CONTROL / BIOMETRICS

Access control readers, doors, gates and devices help control, track and manage access to any facility.



## INTRUSION DETECTION

Solutions customized for each customer leveraging contact devices, motion and glass break detection, panic buttons, photo beam and much more.



## PERIMETER PROTECTION

Help achieve a more secure perimeter with ground based radar systems, video surveillance and monitored alarm systems.



## VIDEO SURVEILLANCE, VIDEO MANAGEMENT & STORAGE

Robust surveillance systems with video cameras, monitors, CCTV and remote management tools. Scalable, integrated solutions and advanced video analytics.



## SECURITY MONITORING

Fully redundant, UL®-listed Customer Care Centers provide 24/7/365 security monitoring.



## COMMAND & CONTROL

Physical security information management (PSIM) helps manage all integrated physical security from one streamlined interface.



## VEHICLE & GATE MANAGEMENT

K-rated fences and gates, pop-up vehicle barriers, traffic barricades and more to help protect against unauthorized people, vehicles, explosives and other threats.



## DURESS & NOTIFICATION SYSTEMS

Broadcast critical messages quickly, all from a simplified web-based interface.



## MANAGED SERVICES

Managed video, access control, mobile management, video guard and cloud-based video connected across a variety of platforms to help maintain secured environments in real-time.

## RETAIL SOLUTIONS



## LOSS PREVENTION

Integrated solutions to help reduce theft and fraud. Key components include store front detection systems (EAS, RFID), tags and labels for products, and camera systems. Software and analytic solutions help efficiency and provide insight.



## INVENTORY INTELLIGENCE

TrueVue leverages item-level RFID-enabled technology enabling real-time item-level inventory visibility through the supply chain and into stores.



## TRAFFIC INSIGHTS

ShopperTrak provides insights into more than 40B shopper visits per year, including store perimeter traffic counts, interior shopper analytics, labor analytics and market intelligence dashboards to help retailers increase traffic, conversion rates and transaction size.

## OPERATIONAL INTELLIGENCE & ASSET PROTECTION



## VIDEO BASED ANALYTICS

Video analytics software, web-based video analytics, servers, video audits and more help to analyze the data that matters across many industries.



## REAL-TIME LOCATION SYSTEMS (RTLS)

Help keep staff and equipment safe with an RTLS that monitors equipment, medications, temperature sensitive products and staff



## INFORMATION MANAGEMENT SOLUTIONS

Integrate multiple systems from multiple vendors, across multiple locations to more effectively manage overall security.



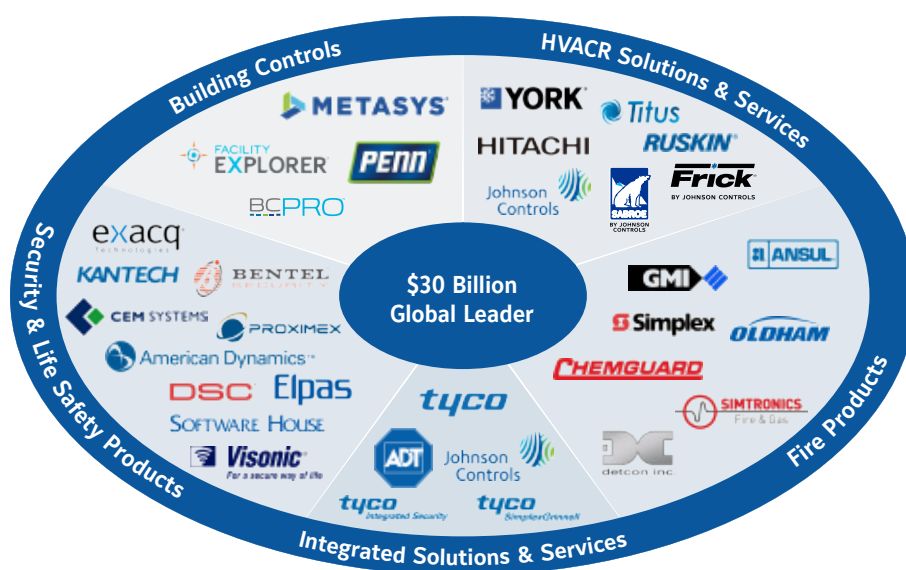
## MAKING PROGRESS TOGETHER

Johnson Controls Building Technologies & Solutions partners with customers all over the world, in all market segments: education, healthcare, retail and commercial buildings, institutional and government facilities. We're thinking about your future, and the world's future, to create smarter, safer, more sustainable buildings for today and tomorrow.

Our team delivers the technology and expertise that helps the world progress.

Let's talk about the connected building systems,  
services and solutions we offer to help you achieve your goals.

Some of the renowned brands from Johnson Controls include:



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