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2017 AHR Expo Exhibitors Reflect Latest Trends in HVACR Industry

WESTPORT, Conn., September 27, 2016 – Strategically centered on creating a premier annual exhibition event for HVACR industry innovation, the International Air-Conditioning, Heating, Refrigerating Exposition (AHR Expo) will feature an array of new and upgraded products in 2017.

With approximately 80 percent of exhibitors indicating they will be displaying new or enhanced products, systems and technologies at the Show in Vegas next January, the AHR Expo floor is slated to address a myriad of interests from every facet of the industry.

Exhibitor innovations will also reflect numerous HVACR industry trends, including those associated with burgeoning growth across both the residential and commercial construction markets.

“It’s exciting to see such enthusiasm around the rebounding North American building and construction industry, and subsequent growth in demand for the latest evolution of products, technologies and services the HVACR industry has to offer,” said Clay Stevens, president of International Exposition Company. “With this resurgence, a spirit of ingenuity and creativity has flourished among HVACR manufacturers, and we’re pleased to present the venue at which the results of this will be displayed for 2017.”

At-large, innovations to be unveiled at the 2017 AHR Expo echo several major trends driven by the growing construction market, both in North America and the world over. These themes include:

- ✓ Green Building as a standard of design, reflected in new ultra-efficient equipment, monitoring and sensing tools, and building information modeling methods that help achieve notable energy savings and ensure reliable, efficient long-term mechanical system operation

- ✓ A rapidly returning residential construction market, answered via introduction of numerous heating, cooling and ventilation products specifically designed for residential applications and user-friendly homeowner operation
- ✓ Strong focus on remodeling and renovation, as seen across new product and system solutions designed specifically for installation in smaller and/or logistically challenging existing spaces
- ✓ Increasing pre-fab/offsite construction methods, reflected in modular equipment with multiple installation configurations and more compact footprints
- ✓ Skilled labor shortages, as addressed by several new tools and other resources that streamline mechanical system installations and repairs

Air-Conditioning & Refrigeration

Demand for even greater energy efficiency from air-conditioning and refrigeration equipment is a consistent trend that carries forth into 2017, especially with continued growth in the commercial construction market. Flexible, modular and ductless cooling solutions, including those with smaller footprints and ideal for retrofit and general residential applications, also remain in high demand.

The response from manufacturers to these and other market demands can be seen across numerous innovations on display at the 2017 AHR Expo, including:

- ✓ A premium fluid cooler that combines a compact, lightweight footprint with quiet, energy-efficient operation for heat exchange in either VRF, geothermal loop or economizer functions of an HVAC chiller system
- ✓ A wall-mounted mini-split ductless heat pump providing high-efficiency heating and cooling for residential and light commercial applications, with integrated off-the-shelf WiFi capabilities
- ✓ A multi-position series of AHRI-certified air handlers facilitating ease of installation and service, with a high-efficiency multi-speed ECM motor designed to provide optimally efficient operation with a range of compatible condensing units
- ✓ A temperature-initiated adaptive defrost control solution that can reduce the daily defrost cycles of commercial walk-in coolers and freezers by 40 percent or more; designed to meet pending U.S. Dept. of Energy (DOE) conservation standards, the unit uses smart sensing technology to defrost evaporator coils on demand/only when required
- ✓ A suite of air conditioning sizing and selection software modules designed for quick and simplified selection and sizing of outdoor air heat recovery and pre-conditioner systems for healthcare, hospitality, office, educational and other commercial facility HVAC applications

Building Automation & Control

As demand for data acquisition, and the crucially related controls that collect it, has remained strong as a means for most efficiently employing building automation and information system data, innovation has continued to follow. Software and control system developers have remained hard at work over the past year in further elevating the power of building automation, and will bring an impressive array of technologies to the market in 2017.

Many solutions have been engineered around BACnet® – a data communication protocol for building automation and control networks developed under the auspices of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). BACnet provides a foundation of consistency and quality that further streamlines the integration of building automation and control systems, and has also become an internationally recognized standard, including by the International Organization for Standardization (ISO).

In addition to new and more powerful building automation systems, demand has grown for BAS solutions that provide specific or niche functionality. Those designed to perform optimally in certain applications (ex. critical environments), with specific mechanical equipment or in targeted types of construction (ex. retrofit) are becoming welcome additions to the landscape of choices in building automation and controls.

Numerous new and evolved building automation solutions will be exhibited at the upcoming 2017 AHR Expo, such as:

- ✓ A WiFi-enabled wireless thermostat, providing system-level communication via BACnet® internet protocol that facilitates easy installation and ideal application in retrofit projects; the thermostat communicates with end devices via EnOcean, and features a tri-color LED display and numerous options for key layout and design
- ✓ A full-performance IGBT technology-driven variable frequency drive (VFD) equipped with 200 steps of powerful, customizable logic and PMAC motor control, providing multi-rated specification solutions for virtually all AC drive applications, and a reliable three-year standard warranty
- ✓ A powerful BACnet® building controller (B-BC) and BACnet operator display (B-OD) that provides an array of hi-res, visually appealing and easily navigated graphical interfaces for a controlled environment
- ✓ A BACnet® enabled uninterruptible power supply (UPS) for backup power control of critical HVACR equipment operation

Energy Efficiency & Renewable Energy

With the rebounding construction industry, a matured understanding and approach to the “green building” movement has been cultivated. Now a common initiative, building products and practices offering energy efficient and sustainable benefits have become widely applied, with “above and beyond” solutions falling into new categories of ultra efficiency and disruptive technology.

Several new advancements that contribute to greater efficiency and sustainability will be found on the 2017 AHR Expo floor. These include:

- ✓ A user-friendly energy savings estimation tool for quick payback calculations and accurate/streamlined air curtain selection
- ✓ A reflective insulation and puncture-resistant vapor barrier for under-slab/concrete insulation that provides exceptional thermal value and a strong permanent barrier to prohibit infiltration of vapor and radon; composed of a single layer of reflective sheet, it is laminated between two additional layers of ultra-strong polyethylene bubble (with up to 140 psi)
- ✓ An energy-saving additive for hydronic heating systems that substantially increases heat transfer properties, employing a “nanofluid” technology that can result in up to a 20 percent energy savings in both residential and commercial applications

Heating

Since its inception, AHR Expo has served as a platform for launching the latest in heating equipment innovations, and this product category remains one of the most active for technological development yet today.

Building trends that drive need for smaller-footprint products, as well as those that can be integrated into existing spaces, have cultivated a great deal of ingenuity among heating product manufacturers in 2017. Among many new heating equipment developments to be exhibited are:

- ✓ A firetube condensing boiler with an ultra-compact footprint and a heat exchanger capable of capturing up to 99 percent of embodied energy in combustion gases while water is intelligently directed through engineered flow paths – enhancing both heat transfer and overall unit durability
- ✓ A WiFi-enabled thermostat specifically designed to support radiant floor heating applications, with precise temperature control, an optional floor sensor for enhanced protection of floor coverings and overall occupant comfort, and a seven-day, four-event programmable schedule accessed from an easy-to-use mobile app
- ✓ A stainless steel heat exchanger and finned tubes for applications in which high anti-corrosion performance and high heat level transferring efficiency are required

- ✓ An electric wall heater featuring automatic two-stage heating that uses the lowest wattage required for heating an individual space; combining a sleek, modern architectural design with fan-only and timer modes and a remote control for easy operation, the heater enables occupants to select from a range of wattage options and tailor output to specific heating requirements (up to 4500W)

Indoor Air Quality (IAQ)

The role of indoor air quality within the greater building schematic has continued to strengthen, as awareness of its importance in promoting comfortable and healthy indoor spaces has grown in parallel. The North American HVACR industry is being looked to as a leader in promoting further IAQ innovation, especially while demand for new technologies only continues to increase.

Some of the latest IAQ solutions – addressing issues from air particulate management, to emissions detection, to fresh air intake and general air exchange – will be seen for the first time at the 2017 AHR Expo, including:

- ✓ A WiFi-enabled particulate matter sensor capable of detecting 10, 2.5 and 1 micrometer air particulates that is easily installed on any web-enabled device, provides readings in real-time through a dedicated online portal, and is ideal for use in applications such as clean rooms, operation theaters, pollution control, and the monitoring of coal dust, construction dust and diesel particulate
- ✓ The industry's first self-cleaning, maintenance-free cold plasma air purifier, capable of reducing TVOCs and particulates while eliminating pathogens; with a rated capacity of 0 to 4,800 CFM, it can accept universal voltage input from 18VAC to 260VAC, and its weatherproof outer casing enables installation either inside or outdoors
- ✓ A multi-parameter environmental meter engineered for both walk-through surveys and trend logging in increments of hours, days, weeks and/or months; ideal for use in indoor air quality, industrial hygiene, facility management, HVACR and other environmental applications, the device efficiently and reliably captures data, displays measurements, documents conditions and generates a variety of reports

Instruments & Controls

Instrumentation and related controls remain key to the success of in-field mechanical systems personnel – from ensuring reliable long-term equipment operation, to monitoring and troubleshooting equipment functions.

Whether integrated within a larger product or system, or used independently, HVACR instruments and controls are now relied upon in greater and more crucial ways, particularly as mechanical equipment becomes more technically sophisticated.

A selection of new instruments and controls to be exhibited in 2017 includes:

- ✓ A compact-footprint gas ignition control for next-generation gas-fired appliances that provides internal regulated DC power supplies, high energy spark and digital communications for operating mode and fault status
- ✓ 128-channel input gas detector with flexible analog/digital/wireless transmitter combinations, data logging, touchscreen display, alarm, four SPDT relays, an extensive password-protected menu and enhanced logic control
- ✓ The industry's first data logger to record and transmit CO₂ data wirelessly to mobile devices via Bluetooth technology, setting a new standard for CO₂ monitoring by allowing easier access to hard-to-reach critical monitoring spaces
- ✓ A calorimetric flow sensor to measure and monitor flow velocities of aqueous media, operating without any moving parts and featuring a color-changing LED display (to indicate thresholds), analog or switching output, nominal pressure up to 25 bar, and simple startup with a micro USB interface and optional setup program

Plumbing

The development of plumbing products and systems, which are foundational to the built environment, has remained important as related products and systems, industry codes and standards, and general construction methods become ever more complex.

New solutions spanning the gamut from valve and pumping systems, to piping and fittings will be found throughout the 2017 Show floor, and include:

- ✓ UL-classified lead-free metal hose connectors and Canadian Registration Number (CRN)-approved rubber expansion joints, metal expansion joints and seismic connectors
- ✓ The industry's first stainless steel press fittings for Schedule 10 to Schedule 40 piping systems, providing a reliable connection with grip and separator rings, and available with either an EPDM sealing element (for chilled water and compressed air applications) or FKM sealing element (for chemical and high temperature applications up to 200 psi)
- ✓ An advanced lead-free automatic shut-off valve package, with a quarter-turn electric actuator matched to a lead-free, full-port, direct-mount ball valve for compact and reliable automatic flow control

Software

Software has become a part of nearly every facet of the HVACR landscape, enabling functions related to mechanical equipment and system design, setup, performance and troubleshooting.

As construction activity remains on the rise, software's role has become even more important in providing tools that optimize business management, and bridge the gap of sophistication between mechanical equipment and those that install and service it.

The 2017 Show provides concrete examples of the demand for new and powerful software solutions across all areas of the HVACR industry, including:

- ✓ Fleet management driver terminal software package, combining best-in-class navigation and fleet technology to deliver a fully customizable platform that accommodates job dispatching, inventory tracking, driver coaching, "arrive on time" alerts, and real-time data logging and transfer – all in-vehicle/from the road
- ✓ Both a cloud-based and offline construction management solution replacing pen and paper in the field to record activities including daily logs, punch lists, safety observations, inspections, defect management and commissioning – all from a mobile device
- ✓ Software bundle to facilitate thermal and energy analysis of buildings by integrating a 3D building model in the OPEN BIM workflow via the IFC4 standard; provides thermal load calculation of buildings according to the Radiant Time Series Method (RTSM), calculates the energy demand and consumption of air-conditioning and ventilation equipment, and enables creation of virtual mechanical system designs
- ✓ A web portal and corresponding mobile app designed to function as a "virtual back office" for coordinating the responsibilities of National Maintenance Organizations (NMO) and their service subcontractors; the online tool organizes common critical data such as real-time status updates, NTE increase requests, and quote/invoice submissions while reducing paperwork, expediting contract management, and streamlining billing

Tools & Contractor Suppliers

Facing greater demand for their labor as construction activity becomes more robust, mechanical contractors are seeking tools and supplies that can streamline functions and deliver genuine on-the-job time savings.

Having forecasted this demand, several 2017 AHR Expo exhibitors have developed tools and supplies to answer the charge, including:

- ✓ 7-in-1 hand tool featuring a unique, patented tip that switches from 1/4-in. to 5/16-in. magnetic hex sizes, and includes a Schrader/Core extractor, a No. 2 Phillips and 1/4-in. Slotted driver tips, as well as a non-magnetic 3/8-in. nut driver
- ✓ Intelligent roll grooving tool for 4- to 60-in. (100 to 1500mm) Schedule 10 to 40 carbon steel pipe that references groove and pipe spec material test reports and measures four critical dimensions to ensure grooves are within spec

- ✓ A balancing instrument that measures volumetric air flow from HVACR system diffusers, grills and registers, and provides the industry's first air flow balancing function method of projecting the optimal flow set-point for each diffuser while balancing the overall mechanical system
- ✓ The industry's first brushless press tool, with a small, lightweight, in-line design delivering exceptional access to tight spaces, and intelligent auto-cycle and pre-press battery check functions that promote notable accuracy and reliability

Ventilation Equipment

Ventilation remains a popular focus among HVACR manufacturers, particularly in respect to the IAQ movement and widespread efforts to improve indoor comfort and health. With IAQ mandates now part of evolving building codes and standards, innovative ventilation products and systems that meet these parameters are being developed at a rapid pace.

Products that provide ease of installation, particularly in retrofit and limited-space applications, as well as those that offer elevated levels of energy efficiency, are being seen as cutting-edge ventilation developments for 2017. Examples of these include:

- ✓ Replacement modular hi-rise fan coil unit designed for fast, minimally invasive installation in retrofit applications where space is at a premium, and allowing for replacement of smaller aging hi-rise fan coils without requiring a whole-room renovation budget in hospitality, multi-family and other commercial applications
- ✓ An energy recovery ventilator (ERV) designed specifically for smaller spaces within larger multi-unit buildings such as condominium towers, apartment buildings, senior living facilities and student residences, and delivering high heat-recovery performance and an economizer mode for efficient operation
- ✓ A radial fan system for electronics cooling and controlled domestic ventilation, providing up to 10 percent more efficiency than comparable existing products

Other

Innovation and creativity among 2017 AHR Expo exhibitors extends into numerous additional categories, with products, technologies, services and other resources including:

- ✓ A fully heat shrinkable, EN 489-certified joint casing designed to provide water-tight sealing and protection against failed field joints in pre-insulated piping system installations
- ✓ The new ANSI-approved "AABC National Standards for Total System Balance, 7th Edition" manual, which provides minimum standards for total system balance while assisting design professionals in achieving design intent, supplying a better understanding of a TAB agency's required scope of work, and ensuring the execution of proper methods and procedures in the test and balance process

- ✓ A portable, easy to use collaring machine for stainless steel tube and pipe applications

For additional information or to register for the 2017 AHR Expo, January 30 to February 1 in Las Vegas, visit **ahrexpo.com**.

About AHR Expo

The International Air-Conditioning, Heating, Refrigerating Exposition (AHR Expo), which began more than 85 years ago as a heating and ventilation show, has now grown into one of the world's largest HVACR events. The Exposition is held annually in key markets and major cities across the U.S., hosting close to 2,000 exhibitors and bringing in crowds of 60,000 industry professionals. The Show provides a unique forum for the HVACR community to come together and share new products, technologies, and ideas. The event is co-sponsored by ASHRAE and AHRI, and is held concurrently with ASHRAE's Winter Conference.

About International Exposition Company, Inc. (IEC)

International Exposition Company (IEC) is a Westport, Conn.-based trade show management company. For more than 100 years, the company has built its reputation on a track record of honesty, respect and fairness for exhibiting companies and show attendees. IEC owns and manages three major trade show events; the annual AHR Expo (International Air-Conditioning, Heating, Refrigerating Exposition), the biennial AHR Expo-Mexico, and the biennial Chem Show. Attendance across these three events totals in excess of 70,000.

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