

THE SMART CHOICE FOR PERFORMANCE AND VALUE

HVAC Products

Honeywell

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DIRECT COUPLE ACTUATOR / DAMPER ACTUATOR



Spring Return,
Low Torque



Spring Return,
Low Torque



Spring Return,
High Torque



Non-Spring Return,
Low Torque



Non-Spring Return,
High Torque

PRECISE, RELIABLE PERFORMANCE. LASTING VALUE. EASE OF INSTALLATION.

Everything you look for in indirect-coupled actuators hinges on quality. And quality engineering is what makes Honeywell's complete line of actuators the top performers in the industry. Our global engineering team designs and tests our direct-coupled actuators to exceed rigorous global standards — and to meet Honeywell's own demanding life testing.

But we don't stop there. Thanks to our continuous improvement process, Honeywell actuators are now easier than ever to install. You'll also benefit from consistent wiring regardless of signal type, common accessories and a simplified selection process.

Honeywell's complete line of building control products, including valves and actuators, are already proven in more than three million buildings worldwide. So when you need spring or non spring return actuators for your damper and valve applications, specify Honeywell. We make precision easy.

IMPROVE INSTALLATION TIME

- Self-centering shaft adapter provides mounting flexibility and greater clamping force.
- Common wiring among families for every signal saves installation time.

DECREASE MATERIAL COST

- Detachable access cover allows direct wiring without a junction box.

REDUCE INVENTORY

- Signal mode switch adapts models to two-position, floating (tri-state) or modulating (proportional) applications.

INCREASE CONTROL AND ACCURACY

- More than 200 reposition steps for modulating models provide precise control.

INCREASED FLEXIBILITY

- Select models are available with or without three foot actuator whips cable.

	MODELS	RATING N	POWER SUPPLY	TYPE
Non-Spring Return	CN4605A1001	5	220V	On/Off
	CN7505A2001	5	24VAC/DC	Modulating
	CN4610A1001	10	220V	On/Off
	CN6110A1003	10	24VAC/DC	Modulating
	CN4620A1001	20	220V	On/Off
	CN7510A2001	20	24VAC/DC	Modulating
	CN4634A1001	34	220V	On/Off
	CN7234A2008	34	24VAC/DC	Modulating
Spring Return	CS4105A1002	5	220V	On/Off
	CS7505A2008	5	24VAC/DC	Modulating
	CS4110A1002	10	220V	On/Off
	CS7510A2008	10	24VAC/DC	Modulating
	CS4120A1001	20	220V	On/Off
	CS7520A2007	20	24VAC/DC	Modulating

DIRECT COUPLE ACTUATOR / DAMPER ACTUATOR

NEW SPRING RETURN 3 NM DIAMOND

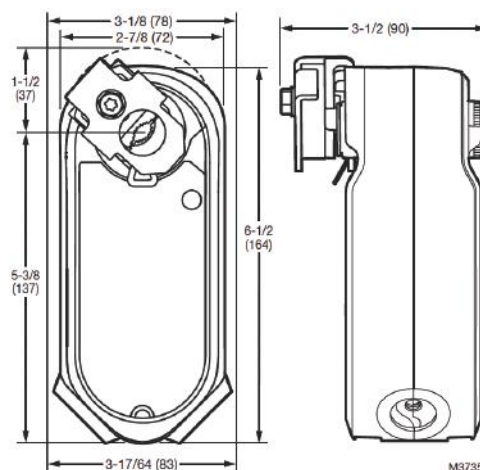
MS7103 and MS7503 Spring Return Direct Coupled Actuators (DCA) are used within heating, ventilating and air-conditioning (HVAC) systems. They can drive a variety of quarter-turn, final control elements requiring spring return fail-safe operation.



SPECIFICATIONS	
Actuator Type	Damper; Valve
Rotational Stroke	95 ±3 degrees
Fail Safe Mode	Spring Return
Torque	27 lb-in. (3 Nm)
Spring Return Torque	27 lb-in (3 Nm)
Spring Return Direction	By orientation
External Auxiliary Switches Available	No
Cable Specification	300 V, 750 C, Plenum Rated 3 ft (0.914 m) length from end of access cover, 18 AWG
Ingress Protection Rating	IP54
Environmental Rating	NEMA2
Frequency	50 Hz; 60 Hz
Mounting	Direct Coupled
Maximum Noise Rating, Driving Return (dBA @ 1m)	40
Maximum Noise Rating, Spring Return (dBA @ 1m)	65
Rotation to Open	By switch
Rotational Stroke Adjustment	Mechanically limited 5 degree increments
Compatible Damper Shafts	3/8 to 5/8 in. round or 1/4 to 1/2 in. square (9 to 16 mm round or 6 to 13 mm square)
Shaft Adapter Type	Self-centering clamping
Materials	Plenum rated plastic housing
Operating Humidity Range (% RH)	5 to 95% RH, non-condensing
Ambient Operating Temperature.	-40 F to +150F (-40 C to +65 C)
Shipping and Storage Temperature	-40 F to +150F (-40 C to +65 C)
Weight	1.7 lb (0.78 kg)
Includes	Mounting bracket, self-centering shaft adapter
APPROVALS	
CE.	EMC 2004/108/EC; Certification Low Voltage Directive 2006/95/EC; IEC 60730-1 and Part 2-14
C-Tick	N314
Underwriters Laboratories, Inc	UL 60730; UL 1097 for Double Insulation

- ### FEATURES
- Brushless DC submotor with electronic stall protection
 - Self-centering shaft adaptor (shaft coupling) for wide range of shaft sizes
 - Fast test mode
 - MS7103 models for use with 2-10 Vdc control
 - MS7503 universal models for use with floating, 0(2)-10 Vdc or 10-(2)0 Vdc control
 - Models available with two internal end switches
 - Durable plastic housing with built-in mechanical end limits
 - Spring return direction field selectable
 - Shaft position indicator and scale
 - UL (cUL) listed and CE compliant
 - Plenum rated actuator and control/power cable

DIMENSIONS DIAGRAM



FIRE & SMOKE DAMPER ACTUATOR

Honeywell's complete line of two position, fast-acting spring-return actuators meets all of your needs for fire and smoke control applications. All models are designed to meet the UL-555 and UL-555S high temperature requirements for fire dampers and combined fire and smoke dampers.

Safety First

As a life safety system component Honeywell is dedicated to meeting the UL-555 and UL-555S requirements.

The elevated temperature test can be performed at the temperature ratings of 250°F or 350°F. Honeywell only offers models at 350°F to meet UL-555 and UL-555S for fire and combined fire and smoke applications to support the highest level of safety for building occupants.



Largest Torque Range in the Industry

Honeywell's fire and smoke actuators are available in 30, 80 and 175 lb-in with the 175 lb-in being the highest torque commercial fire and smoke actuator available on the market today.

Features




- Integral spring return that ensures the proper level of torque
- Patented design that eliminated limit switches, reducing power consumption
- Reliable service in smoke control systems requiring Underwriter's Laboratories Inc. UL-555 and UL-555S
- Robust die-cast aluminum housing ensures the proper level of torque
- Full life of two-position spring return fire and smoke actuators rated up to 350°F for all critical applications
- Fast acting with a maximum spring return timing of 15 seconds
- No audible noise during holding
- Reversible ("flippable") design enables one model to be used for both clockwise and counterclockwise spring return applications



FIRE AND SMOKE SPRING RETURN ACTUATORS

	TORQUE	MODEL NUMBER	VOLTAGE	SPST AUX SWITCH	LEGACY HONEYWELL	BELIMO CROSS	SIEMENS CROSS
	30 lb-in (3.4 Nm)	MS4104F1010	120 Vac	0	ML4115A1009 ML4115A1017 ML4115B1008 ML4115B1016 ML4115H1002 ML4115J1009 ML4202F1000 ML4302F1008	FSLF120 US	None
		MS4104F1210	120 Vac	2 Internal	None	FSLF120-S US	None
		MS4604F1010	230 Vac	0	ML4115C1007 ML4115C1015 ML4115D1006 ML4115D1014 ML4702F1009 ML4802F1007	FSLF230 US	None
		MS4604F1210	230 Vac	2 Internal	None	FSLF230-S US	None
		MS8104F1010	24 Vac	0	ML8115A1005 ML8115A1013 ML8115B1004 ML8115B1012 ML8115H1008 ML8115J1005 ML8202F1006 ML8302F1004	FSLF24 US	None
		MS8104F210	24 Vac	2 Internal	None	FSLF24-S US	None
	80 lb-in (9 Nm)	MS4109F1010	120 Vac	0	MS4309F1005	FSNF120 US	GND221.1U
		MS4109F1210	120 Vac	2 Internal	None	FSNF120-S US	GND226.1U
		MS4609F1010	230 Vac	0	MS4709F1014 MS4809F1012	FSNF230 US	GND321.1U
		MS4609F1210	230 Vac	2 Internal	None	FSNF230-S US	GND326.1U
		MS8109F1010	24 Vac	0	MS8209F1003 MS8309F1001	FSNF24 US	GND121.1U
		MS8109F1210	24 Vac	2 Internal	None	FSNF24-S US	GND126.1U
	175 lb-in (20 Nm)	MS4120F1006	Vac	0	None	FSAF120 US	GGD221.1U
		MS4120F1204		2 Internal		FSAF120-S US	None
		MS4620F1005	230 Vac	0		FSAF230 US	GGD321.1U
		MS4620F1203		2 Internal		FSAF230-S US	None
		MS8120F1002	24 Vac	0		FSAF24 US	GGD121.1U
		MS8120F1200		2 Internal		FSAF24-S US	None




Note: Honeywell's spring return fire and smoke actuators are designed to pass UL-555 and UL-555S 350°F requirements. They are not designed for HVAC applications. UL-555 and UL-555S requires that all new construction fire and smoke damper jobs have the actuator assembled and tested at the damper manufacturer. A like for like retrofit replacement or technically equal UL-555 and UL-555S approved device is recommended.

FCU CONTROL VALVES

MODEL	APPLICATION
<p>VC 4013 SERIES & VN8 SERIES Balanced Hydronic Valves 2-way and 3-way</p> 	<p>VN8 series electric control valves can be used at home and in commercial buildings to control the flow of hot or cold liquid. Each set includes electric actuator and valve body.</p> <p>The VN8 series offer a wide range of options in voltages and thread standards according to the usage of different regions and provides two-way and three-way valve bodies to meet most of the requirements in buildings control. The VC series balanced hydronic valves allow greater control of hot and/or cold water flow.</p> <p>The VC series balanced hydronic valves are designed for both domestic boiler heating and domestic cooling applications.</p>
<p>VC4043 & VS8 SERIES Spring Return Valves</p> 	<p>The VC4043 & VS8 series Spring Return Valves are used in Heating and air conditioning systems to control the flow of the heat transfer fluid. The fluid is typically hot or cold water, however treated water (Max.50% Glycol Solutions) applications are also permissible.</p> <p>Spring return valve is one type of control valve that can do precise control refer to customer's demands. Different to normal actuator, spring return actuator has the special function that if the power is off, the valve will return to original position by spring. This is a safe and energy saving function to customers.</p> <p>In addition, this valve is capable of handling greater differential pressures without water-hammer.</p>
<p>VC7900 SERIES Modulating Control Valves</p> 	<p>The VC7900 Series Modulating Control Valves provide optimum control of hot and/or chilled water flow in various heating and cooling applications.</p> <p>The VC hydronic valve consists of a valve body and replaceable characterized cartridge assembly. When used with a Honeywell VC7900 actuator, the valve provides proportional flow in either diverting or mixing applications. They are designed to provide sinusoidal valve actuator travel, and therefore operate silently and resist water hammer. The VC7900 series valve actuator is used with any 0-10 Vdc controller.</p>


MODEL	FEATURES	APPLICATION
<p>V2CF SERIES 2-Way,Wafer ,Constant Flow Balancing Valve</p> 	<ul style="list-style-type: none"> • In this balanced valve design, the constant flow cartridge moves up and down with system pressure fluctuating to keep the flow constant. • No power need in the constant flow modulating. • Every loop automatically limited to design flow • Robusting design save the installation space. • Simplified pipe design and calculation • Quick and easy setup • No balancing debug work required • Stainless steel valve stem resists corrosion & long service life 	<p>Honeywell "ConF V5" series constant flowrate balancing valves are new type of balancing valve for flow control in HVAC hydronic system, It can keep the flow constant in working differential pressure range when system pressure fluctuates.</p> <p>"ConF V5" series constant flowrate balancing valve can also be used in other applications when it has the same function demand.</p> <p>"ConF V5" series constant flowrate balancing valve is a self-balanced flow control valve, used in 2-way controls, of Size from DN50-DN500. It consists of a ductile iron valve body and some constant flow cartridges in the valve body.</p>
<p>"CONF V5" (V5CF) SERIES 2-Way,Wafer ,Constant Flow Balancing Valve</p> 		


KOMBI & VPIC BALANCING VALVES

MODEL	FEATURES	APPLICATION
<p>KOMBI-QB Pressure Independent Balancing and Control Valve (DN15 to DN25)</p> 	<ul style="list-style-type: none"> • Automatic pressure independent balancing and control: <ul style="list-style-type: none"> - Precise pressure independent flow performance - Highest energy saving potential due to efficient energy transfer and minimized pump speed - Integrated measuring possibility to find the optimal setpoint for the pump - Reduced movements of actuators as pressure fluctuations do not influence the required temperature - No complex calculation needed for selection - No balancing method needed for commissioning 	<p>The Kombi-QB, Kombi QM, Kombi-FCU, VPIC is a Pressure Independent Control Valve (PICV). It combines a flow controller and a full stroke, full authority temperature controller in one valve.</p> <p>Equipped with an actuator it provides a full stroke ON/OFF and modulating temperature control.</p>
<p>V5004T KOMBI-QM V5005T KOMBI-FCU Pressure Independent Balancing and Control Valve (DN32 to DN250)</p> 	<ul style="list-style-type: none"> • Wide range of application: <ul style="list-style-type: none"> - Sizes DN15 up to DN250 - Various versions to support standard flow rates as well as low flow and high flow needs - Covers functions in one valve which reduces mounting costs • Easy commissioning: <ul style="list-style-type: none"> - Pre-setting with visual flow scale at the valve - Pre-setting by hand without the need of tools - Pre-setting possible even when the system is running and an actuator is already mounted - Can balance a system even if only parts of a building are in operation 	<p>It is suitable for use in variable and constant Flow systems. QB and QM may be used as constant flow limiter in constant flow systems (without an actuator) or as a Pressure Independent Control Valve in variable flow systems.</p>
<p>VPIC Pressure Independent Balancing and Control Valve (DN32 to DN250)</p> 	<ul style="list-style-type: none"> • Maintenance friendly: <ul style="list-style-type: none"> - Emergency shut off function with plastic cap - Not for permanent use (DN15 to DN25) - Measuring possibility for problematic applications 	<p>Kombi-QB, QM, VPIC is typically used for balancing and temperature control of fan coil units, air handling units, chilled ceilings and one-pipe heating systems.</p>





KOMBI & VPIC BALANCING VALVES



MODEL	FEATURES	APPLICATION
<p>KOMBI-9 SERIES Pressure Independent Integrated Balancing Control Valve</p> 	<ul style="list-style-type: none"> • Integrated functions as linear temperature control, pressure independent and electric regulating into one valve • Output the valve position signal to BAS for system variable differential pressure control of variable ow water system, ensure HVAC water system can always operate in the most energy-saving mode • High control accuracy, strong antiinterference capacity • Allow wide range of pressure uctuation difference for the system • Simple calculation in designing the pipeline system • Easy installation • Convenient for commissioning at site 	<p>Honeywell Kombi-9 is designed for precise temperature control of terminal air-conditioning equipment in the HVAC system. It can maintain the flow regardless of variations in system differential pressure. With the valve position feed-back, the Building Automation System can always operate in the most energy-saving mode.</p>

MODEL	FEATURES	APPLICATION
<p>V5032Y KOMBI-2-PLUS Double-regulating Balancing Valve with Safecon™ Measuring Connections</p> 	<ul style="list-style-type: none"> • Quick and easy measuring with SafeCon™ measuring connections • Dimensions DN15 to DN40 can be retrofitted with a Kombi-Diaphragm Unit • High accuracy of pre-setting because of individual adjustment • Robust valve body made of corrosion resistant red bronze • Available in sizes up to DN80 • Visible pre-setting dial with concealed pre-setting wheel • Maintenance free spindle with double O-ring sealings • PTFE-seat sealing 	<p>The hydronic balance is a significant requirement for the efficient operation of a hydronic heating or cooling installation. In an unbalanced system under or over provision of hot water to individual radiators or circuits can occur. Apart from the correct selection of radiator valves, regulation of individual circuits is also necessary and in some cases, such as in DIN 18 380, VOB part C, required by national standards. This requirement is met with V5032Y Kombi-2-plus double regulating balancing valves.</p> <p>The V5032Y Kombi-2-plus is a variable orifice double-regulating balancing valve for the return with additional functions shutoff, draining and filling.</p> <p>Together with a V5012 Kombi-DP diaphragm unit the V5032Y Kombi-2-Plus can be upgraded to an automatic balancing valve - even after the system has been taken into commission and under system pressure.</p>





LINEAR ACTUATOR

MODEL	FEATURES	APPLICATION
<p>ML6420A, B Electric Linear Valve Actuators</p> 	<ul style="list-style-type: none"> • Quick and easy installation • No separate linkage required • No adjustments • Low power consumption • Force-limiting end switches • Manual operator • Models for low and line voltage • Synchronous motor • Corrosion-resistant design • Maintenance-free • Actuator-valve combinations approved according to DIN 14597 available 	<p>The ML6420A / ML6425A,B actuators enable floating control, and are suitable for use in conjunction with ON/OFF or floating single-pole, double-throw (SPDT) control outputs. They can operate Honeywell's standard valves in heating, ventilation, and air conditioning (HVAC) applications.</p>
<p>ML6425A, B Electric Linear Valve Actuators</p> 	<ul style="list-style-type: none"> • Quick and easy installation • No separate linkage required • No adjustments • Low power consumption • Force-limiting end switches • Spring-return models • Manual operator • Models for low and line voltage • Synchronous motor • Corrosion-resistant design • Maintenance-free • Actuator-valve combinations approved according to DIN 14597 available 	<p>The ML6420A / ML6425A,B actuators enable floating control, and are suitable for use in conjunction with ON/OFF or floating single-pole, double-throw (SPDT) control outputs. They can operate Honeywell's standard valves in heating, ventilation, and air conditioning (HVAC) applications.</p>
<p>ML7420A8088-E Electric Linear Valve Actuator</p> 	<ul style="list-style-type: none"> • Easy and quick installation • No separate linkage and adjustments required • Low power consumption and maintenance-free • Self-adaption function • Force-limiting end stops • Manual operation knob • 0(2)~10 Vdc input and 2~10 Vdc position feedback signal • Direct/ Reverse action adjustable • Stroke position on signal failure selectable • Corrosion-resistant design 	<p>The ML7420A actuators are designed for modulating control with controllers providing an analog output of 2~10 Vdc. They operate Honeywell's standard valves in heating, ventilation, and air conditioning (HVAC) applications.</p>



LINEAR ACTUATOR

MODEL	FEATURES	APPLICATION
<p>ML7421A/ML7421B Electric Linear Valve Actuator</p> 	<ul style="list-style-type: none"> • Easy and quick installation required • No separate linkage and adjustments • Low power consumption • Force-limiting end stops • Manual operation knob • 0(2)~10 Vdc or 0(4)~20mA input signal selectable • Position feedback signal • Direct/ Reverse action adjustable • Stroke position on signal failure selectable • Corrosion-resistant design • Maintenance-free 	<p>The ML7421A / ML7421B actuators are designed for modulating control with controllers providing an analog output of 2~0 Vdc. They operate Honeywell's standard valves in heating, ventilation, and air conditioning (HVAC) applications.</p>
<p>ML7425A8018-E Electric Linear Valve Actuator</p> 	<ul style="list-style-type: none"> • Easy and quick installation • No separate linkage and adjustments required • Low power consumption and maintenance-free • Self-adaption function • Force-limiting end stops • Manual operation knob • 0(2)~10 Vdc input and 2~10 Vdc position feedback signal • Direct/ Reverse action adjustable • Stroke position on signal failure selectable • Corrosion-resistant design 	<p>The ML7425A actuators are designed for modulating control with controllers providing an analog output of 2~0 Vdc. They operate Honeywell's standard valves in heating, ventilation, and air conditioning (HVAC) applications. The spring-return function provide a safety position at power failure.</p>
<p>VM58/VN58 SERIES Motorized Control Valve</p> 	<ul style="list-style-type: none"> • Cast iron/steel or stainless steel body with flanged end connection • Available in variety of sizes, 2-way: 1/2" ~ 12" 3-way: 1/2"~ 6" • Easy to install and maintain. • Large capacity, Kvs from 4 to 998 • On-line interchangeable trim units. • High dynamic stability. • Self-alignment of cage and valve plug . • Noise-Attenuating Trim to help reduce aerodynamic noise. • IP 67 Enclosure 	<p>Model VM58/59/68 series electric control valves are designed for general-purpose services. The compact valve body, having an S-shaped flow passage that features low pressure loss, allows a large flow capacity, rangeability, and high accuracy flow characteristics.</p> <p>The actuator section performs two-position operation or proportional operation by directly receiving the signal of 4~20 mA DC from the electronic-type controller.</p> <p>The VP58/59 valves are widely applicable for modulating control of hot/chilled water, glycol or steam in HVAC and process lines.</p>


GLOBE VALVES

MODEL	FEATURES	APPLICATION
<p>V5011P Two-Way Threaded Globe Valve</p> 	<ul style="list-style-type: none"> • Bronze body with BSPT-threaded end connections. • Low seat leakage rate (0.05 percent of Kvs). • Spring-loaded, self-adjusting packing. • Accurate positioning to ensure state of the art temperature control. • Sizes rang from 1 in. to 2 in. • Valve designs provide equal percentage flow • characteristic for water and linear flow • characteristic for steam. • Stainless steel stem and metal-to metal seats. 	<ul style="list-style-type: none"> • Single seated control or shutoff valve for: <ul style="list-style-type: none"> - hot water - saturated steam - chilled water - superheated steam - domestic hot water • To be operated by electric linear actuators as <ul style="list-style-type: none"> - ML 6420 / 25 - ML 7420 / 25 - ML 6421 - ML 7421
<p>V5013P Three-Way Threaded Globe Valve</p> 	<ul style="list-style-type: none"> • Bronze body with BSPT-threaded connections. • Stainless steel stem and brass plug. • Low seat leakage rate (≤ 0.05 percent of Kvs). • Spring-loaded, self-adjusting packing. • Accurate positioning to ensure state of the art temperature control. • Sizes range from 1-1/4 in. to 2 in. 	<ul style="list-style-type: none"> • Three port mixing control valves for: <ul style="list-style-type: none"> - hot water - chilled water - domestic hot water • To be operated by electric linear actuators as <ul style="list-style-type: none"> - ML 6420 / 25 - ML 7420 / 25 - ML 6421 - ML 7421
<p>V5050A 3-Way Flanged Linear Valve PN16</p> 	<ul style="list-style-type: none"> • Cast iron body with flanged end connections • Low seat leakage rate • Metal to metal seating for long life span • Self adjusting packing • Accurate positioning to ensure state of the art temperature control • Easy mounting of direct coupled electric and pneumatic actuators • Constant total flow throughout full plug travel 	<p>These single seated valves are used for modulating control of hot / chilled water or steam in heating, ventilating and air conditioning systems. The valves can be operated by linear actuators ML6421B and M7L421B.</p>
<p>V5088A Flanged Linear Valve PN16 High Close-off Pressure Rating</p> 	<ul style="list-style-type: none"> • Cast iron body with flanged end connections • High Close-off Pressure Rating & Low seat leakage rate • Metal to metal seating for long life span • Self adjusting packing • Accurate positioning to ensure state of the art temperature control • Directly coupled with electric actuators for easy mounting • Approved according to DIN 32730 	<p>These single seated valves are used for modulating control of hot or chilled water or steam in heating, ventilating and air conditioning systems and can be operated by electric linear actuators as ML6421, ML7421.</p>

BUTTERFLY VALVES AND ACTUATORS

MODEL	FEATURES	APPLICATION
<p>V4ABFW16/VFABFL16/ V4ABFW-EPN16 (OM SERIES) Actuated Wafer type butterfly valves</p> 	<ul style="list-style-type: none"> • Ductile Iron (V4) or SUS304 (V7) Wafer Body • Centric butterfly valve with elastomer liner • Wide DN-range (DN 50~DN600) • For On/Off or Modulating Control • Robust actuators in epoxy coated aluminum • Manual override non-clutch design. Manual operation can be operated without any lever, clutch or brake upon power voltage. • Irreversible worm gear • Visual mechanical position indicator for accurate visual reference of valve position • Anti-condensation heater and 2 aux. limit switches on standard model • Enclosure IP67 	<p>The V4 Actuated Wafer Type Butterfly Valves are suitable for heating and cooling applications. They can also be employed for industrial applications, general services and water treatment.</p> <p>The V4 series is equipped with standard On/Off or modulating (4~20mA, 1~5V, or 0(2)~10V select by DIPswitch) control quarter-turn electric actuator.</p>
<p>V4-ABFW-EPN16 (CM SERIES) Actuated Wafer type butterfly valves</p> 	<ul style="list-style-type: none"> • Cast Iron (V4) Wafer Body • Centric butterfly valve with elastomer liner • Wide DN-range (DN50~DN300) • For On/Off or Modulating Control • Robust actuators in ABS cover and dry powder coating aluminum alloy base • Manual override • Manual power-off device • Visual mechanical position indicator for accurate visual reference of valve position • Anti-condensation heater and 2 aux. limit switches on standard model • Enclosure IP67 	<p>The V4 Actuated Wafer Type Butterfly Valves are suitable for heating and cooling applications. They can also be employed for industrial applications, general services and water treatment.</p> <p>The V4 series is equipped with standard On/Off or modulating (4~20mA, 1~5V, or 0(2)~10V select by DIPswitch) control quarter-turn electric actuator.</p>



BALL VALVES

MODEL	FEATURES	APPLICATION
<p>VBA16F P SERIES Two-Way Flanged Control Ball Valve</p> 	<ul style="list-style-type: none"> • Equal percentage flow characteristic • Low leakage rate • Low driving torque • Threaded connection (DN20 to DN80) • Flange connection (DN65 to DN150) • Stainless-steel ball and stem • Casting iron valve body (Flange Connection) • Brass valve body (Threaded connection) Fast installation with MVN actuators (ON/OFF & Modulating) 	<p>The VBA16F series two-way flanged control ball valves are used for modulating or on/off control in heating, ventilating and air conditioning water systems.</p> <p>The VBA16P series two-way threaded control ball valves are used for modulating control or on/off control in heating, ventilating and air conditioning water systems.</p>


THERMOSTAT

MODEL	FEATURES	APPLICATION
<p>T6360/T4360, T6372/ T6373 Fan-coil Thermostats 2-pipe Fan-coil Control</p> 	<ul style="list-style-type: none"> • Dual diaphragm sensing element ensures close temperature control for all loads and applications • Attractive modern styling makes this thermostat ideal for locating in the occupied space, particularly in offices or hotels • All versions have heat anticipator, which improves temperature control in both heating and cooling operation • Thermostat mounts directly onto a wall or conduit box • Slide switches allow manual control of system operation and fan speed • Auto heat/cool changeover possible (on some versions) by using pipe thermostat • Optional extras: <ul style="list-style-type: none"> - range stops F42006646-001 (20 per pack, enough for 10 thermostats) 	<p>The T6372 and T6373 are designed to control the valve, or the valve and the fan in 2-pipe fan-coil applications.</p> <p>The thermostat operates an on/off valve to provide control at the desired setpoint temperature.</p> <p>The fan can also be controlled from the thermostat. In some cases it is wired to run continuously, and can be switched off with the system ON/OFF switch, while with other models there is a choice of running the fan continuously, or cycling it with the thermostat.</p> <p>Versions are available with a manual 3-speed fan switch, and with a system on-off switch.</p> <p>Heat/cool changeover operation is also possible on some versions. This function can be accomplished either by a manually operated heat/cool switch on the front of the thermostat or in some versions automatically by the use of a pipe thermostat on the supply water pipe of the fan-coil.</p>
<p>WS8 & TF228WN DIGITAL THERMOSTAT 220 VAC, Fan Coil Control</p> 	<ul style="list-style-type: none"> • Memorized time off • Cycle Per Hour (CPH) • Random startup • LCD display with simple user interface • Room temperature or setpoint temperature display selectable • Manual or automatic fan speed selectable • Temperature units in either °C or °F • User setting can be stored with power loss • Freeze protection available • Four keypad lock options • Heating and cooling setpoint limitation • Flush mount on standard 86 wall mounting box 	<p>This digital thermostat is designed for 3-speed fan and valve control in a fan coil system, including:</p> <ul style="list-style-type: none"> • 2-pipe cool only/heat only/manual changeover • Ventilation mode • Manual or automatic 3-speed fan control • Water valve control <p>Besides the basic controls, TF228WN featuring CPH (Cycle Per Hour) better maintains the room temperature to the set-point and memorized time off function can automatically turn off the thermostat to save energy.</p> <p>In addition, Honeywell Random start-up function would help to maintain power grid stability.</p>
<p>TF228WNM/U Communicating Fan Coil Thermostat</p> 	<ul style="list-style-type: none"> • RS485 interface in Modbus RTU slave mode • Memorized time off • Cycle Per Hour (CPH) • Random startup • Room temperature or setpoint temperature display selectable • Manual or automatic fan speed selectable • Temperature units in either °C or °F • User setting can be stored with power loss • Freeze protection available • Keypad lock options • Heating and cooling setpoint limitation 	<p>The TF228WNM/U communicating thermostat is de-signed for a 3-speed fan and a motorized valve control in fan coil system. The typical application including:</p> <ul style="list-style-type: none"> • 2-pipe cool only/heat only/manual changeover • Ventilation mode • Manual or automatic 3-speed fan control • Water valve on/off control <p>The TF228WNM/U is available in Modbus RTU protocol and can be easily integrated into building automation system.</p>





THERMOSTAT


MODEL	FEATURES	APPLICATION
<p>TF428/ 243 SERIES DIGITAL THERMOSTAT Fan Coil Unit Control</p> 	<ul style="list-style-type: none"> • Memorized time off • Cycle Per Hour (CPH) • Random startup • Remote temperature sensor optional • Energy saving mode optional • LCD display with simple user interface • Room temperature or setpoint temperature display selectable • Manual or automatic fan speed selectable • Temperature units in either °C or °F • User setting can be stored with power loss • Freeze protection available • Four keypad lock options • Heating and cooling setpoint limitation 	<p>The TF428/TF243 series digital thermostat is designed for 3-speed fan and valve control in a fan coil system, including:</p> <ul style="list-style-type: none"> • 2-pipe cool only/heat only/manual changeover • 4-pipe cool/heat manual /automatic changeover • Ventilation mode • Manual or automatic 3-speed fan control • Water valve control <p>Besides the basic controls, TF428/TF243 series featuring CPH (Cycle Per Hour) better maintains the room temperature to the setpoint and Random Start-up Function would help to maintain power grid stability.</p> <p>In addition, Honeywell Memorized Time Off Function can automatically turn off the thermostat to save energy.</p>
<p>TFM SERIES DIGITAL THERMOSTAT Fan Coil Unit Control</p> 	<ul style="list-style-type: none"> • Memorized time off • Random startup • Elegant dual tone display Higher voltage tolerance range -230Vac with 10% tolerance • Higher ampere rating for dry contact relay-5A • Remote temperature sensor optional • Energy saving mode optional • LCD display with simple user interface • Room temperature or setpoint temperature display select-able • Manual or automatic fan speed selectable • Temperature units in either °C or °F • User setting can be stored when power loss • Freeze protection function available • Keypad lock options • Heating and cooling setpoint limitation 	<p>The TFM series digital thermostat is designed for 3-speed fan and modulating valve control in a fan coil system, includ-ing:</p> <ul style="list-style-type: none"> • 2-pipe cooling only/heating only/manual changeover • Ventilation mode • Manual or automatic 3-speed fan control • Modulating water valve control <p>Besides the basic controls, TFM series provide Random Start-up Function to maintain power grid stability.</p> <p>In addition, Honeywell Memorized Time Off Function can automatically turn off the thermostat to save energy.</p>

BTU/FLOWMETER/WATER METER




MODEL	APPLICATION
<p>BTU/FLOWMETER/WATER METER For energy & flow measurement</p> 	<p>Multical® 602/403/603/62 are all-purpose energy calculator for heat and cooling together with almost any kind of pulsed flow sensor and with 2 or 4 wired temperature sensor pairs. Used together with Kamstrup ultrasonic flow sensor ULTRAFLOW®, even more advanced functions are available. On account of its pinpoint accuracy, the meter registers precise consumption throughout the whole lifetime of the meter. The meter is maintenance- free and has a long lifetime which guarantees minimum yearly operating costs. MULTICAL® 602 is used for heat, cooling and combined heat/cooling measurement in all water-based systems with temperature from 2°C to 180 °C for heat, and 2 °C to 50 °C for cooling.</p>

SENSOR


MODEL	FEATURES	APPLICATION
<p>CO GAS DETECTOR</p> 	<ul style="list-style-type: none"> • High sensitivity and selectivity to carbon monoxide • Low sensitivity to alcohol vapor • Solid state sensor • Linear 2 to 10 Vdc or 4 to 20mA output • Compact size (70mm×122mm×32mm) 	<p>GD250W4NB/HCMD is IAQ (Indoor Air Quality) sensor, which is designed to detect carbon monoxide gas in the air. This model has high accuracy at low concentration, so it is optimum for parking lot, tunnel and under ground places. Also, the advantage of this model is compact size and easy installation.</p>
<p>CO² GAS DETECTOR</p> 	<ul style="list-style-type: none"> • High sensitivity and good resolution • High technology adopted by NDIR method • LCD display model available • Two types analog signal (DCV and DCA) output • On/off relay output for CO² limit monitoring • Easy installation • Compact size (70mm×122mm×32mm) Contents 	<p>CDS2000/HCDD is IAQ (Indoor Air Quality) sensor, which is designed to detect carbon dioxide gas in the air. This model has good resolution by NDIR method, so it is a optimum device for ventilation of building, house, etc. Also, the advantage of this model is compact size and easy installation.</p> <p>Note: Do not apply this product for use where a building is continuously occupied 24 hours per day</p>
<p>DIFFERENTIAL PRESSURE SWITCHES DPS SERIES For Air Conditioning / Ventilation, User-adjustable</p> 	<ul style="list-style-type: none"> • Switching-point easily adjustable with scale • in Pascal; • Direction of M20x1.5 conduit entry can be rotated in steps of 120°; • Only one screw needed for housing cover. 	<p>Differential pressure switches e.g. for monitoring filter, fan, fire damper, or air flow status of air handling systems.</p>
<p>HTSAP, HTE High-Accuracy Immersion, Duct, Room, and Surface Temperature Sensors</p> 	<ul style="list-style-type: none"> • Cost-effective universal temperature sensors. • High accuracy due to Class A restrictions. • High protection class. • Duct and immersion sensors including immersion well and/or mounting flange. • Easy installation. • Universal solution for industry and HVAC. 	<p>The temperature sensors are designed for universal use in HVAC, as well as for environmental and agricultural applications. Cost-effective and highly accurate sensor technology allows use in a wide field of applications where PT100 and PT1000 sensor technology is available.</p>

MODEL	APPLICATION
<p>WFS-1001-H WATER FLOW SWITCH</p> 	<p>The paddle type SPDT WFS series are designed to provide excellent performance where accuracy, reliability, and rugged construction are required used in liquid flow lines carrying water or any fluid neither harmful to brass and phosphor bronze nor classified as a hazardous fluids.</p> <p>They can be wired to close one circuit and open a second circuit when liquid flow either exceeds or drops below the adjusted flow rate. The WFS series are recommended for liquid pressure and temperature as mentioned below and must not be used on lines carrying liquids below 0 C degree.</p> <p>These series may be used on liquids with high salt or chlorine content but is not for use in hazardous atmospheres. They may be also used outdoors but must be protected from weather or splashing water. All series WFS flow switches are designed for use only as operating controls.</p> <p>Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of user to add safety devices that protect against, or supervisory systems that warn of control failure.</p>

MANUAL VALVES

MODEL	FEATURES	APPLICATION																																				
<p>V2-CHS-A125 Check Valve - Horizontal Swing</p> 	<ul style="list-style-type: none"> • Brass body • Brass disc • NPT / BSP threading 	<p>Specifications</p> <p>Valve sizes: ½" to 2" (Threaded ends) Nominal pressure: PN16 from -20 C to 150°C (Water)</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Description</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Body</td> <td>Brass</td> </tr> <tr> <td>2</td> <td>Seal Washer</td> <td>Teflon</td> </tr> <tr> <td>3</td> <td>Cap</td> <td>Brass</td> </tr> <tr> <td>4</td> <td>Disc</td> <td>Brass</td> </tr> <tr> <td>5</td> <td>Pin</td> <td>Stainless Steel</td> </tr> <tr> <td>6</td> <td>Seal Ring</td> <td>Teflon</td> </tr> <tr> <td>7</td> <td>Bolt</td> <td>Brass</td> </tr> </tbody> </table>	No.	Description	Material	1	Body	Brass	2	Seal Washer	Teflon	3	Cap	Brass	4	Disc	Brass	5	Pin	Stainless Steel	6	Seal Ring	Teflon	7	Bolt	Brass												
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<p>V2-GAN-A125 Gate Valve, Non Rising Stem</p> 	<ul style="list-style-type: none"> • Brass body • Non Rising Stem • Forged brass stem • NPT / BSP threading 	<p>Specifications</p> <p>Valve sizes: ½" to 2" (Threaded ends) Nominal pressure: PN16 from 0°C to 100°C (Water or non-corrosive liquid)</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Description</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Wheel Nut</td> <td>Stainless Steel</td> </tr> <tr> <td>2</td> <td>Name Plate</td> <td>Aluminum Plate</td> </tr> <tr> <td>3</td> <td>Handwheel</td> <td>Cast Iron</td> </tr> <tr> <td>4</td> <td>Stem</td> <td>Brass</td> </tr> <tr> <td>5</td> <td>Packing Nut</td> <td>Brass</td> </tr> <tr> <td>6</td> <td>Gland</td> <td>Brass</td> </tr> <tr> <td>7</td> <td>Packing</td> <td>Teflon</td> </tr> <tr> <td>8</td> <td>Lock Nut</td> <td>Brass</td> </tr> <tr> <td>9</td> <td>Bonnet</td> <td>Brass</td> </tr> <tr> <td>10</td> <td>Disc</td> <td>Brass</td> </tr> <tr> <td>11</td> <td>Body</td> <td>Brass</td> </tr> </tbody> </table>	No.	Description	Material	1	Wheel Nut	Stainless Steel	2	Name Plate	Aluminum Plate	3	Handwheel	Cast Iron	4	Stem	Brass	5	Packing Nut	Brass	6	Gland	Brass	7	Packing	Teflon	8	Lock Nut	Brass	9	Bonnet	Brass	10	Disc	Brass	11	Body	Brass
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<p>V2-YST-A150 Y-Strainer</p> 	<ul style="list-style-type: none"> • Forged brass body • Bolted Bonnet Cover • Stainless Steel 304 Perforated Screen • NPT / BSP threading 	<p>Specifications</p> <p>Valve sizes: ½" to 2" (Threaded ends) Nominal pressure: PN16 from 0°C to 100°C (Water, Non-corrosive liquid)</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Description</th> <th>Material</th> <th>Astm Standard</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Body</td> <td>Forged Brass</td> <td>ASTM B124, C37700</td> </tr> <tr> <td>2</td> <td>Bonnet</td> <td>Forged Brass</td> <td>ASTM B124, C37700</td> </tr> <tr> <td>3</td> <td>Filter</td> <td>Stainless Steel</td> <td>AISI 304</td> </tr> <tr> <td>4</td> <td>Sealing Washer</td> <td>Teflon</td> <td>PTFE</td> </tr> </tbody> </table>	No.	Description	Material	Astm Standard	1	Body	Forged Brass	ASTM B124, C37700	2	Bonnet	Forged Brass	ASTM B124, C37700	3	Filter	Stainless Steel	AISI 304	4	Sealing Washer	Teflon	PTFE																
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MANUAL VALVES

MODEL	APPLICATION
<p>V4/V5-BFL-GP16/GP25 SERIES Lug Type Butterfly Valves – with Hand Level/ Gear Operated Handwheel</p> 	<ul style="list-style-type: none"> • Cast/ Ductile Iron body • 90 closing or opening operation (10 position) • Lock level handle (steel material) • Elastomer liner • Memory lock mechanism • Ductile disc with nickel plated
<p>V4/V5-BFW-GP16/GP25 SERIES Wafer Type Butterfly Valves – with Hand Level/ Gear Operated Handwheel</p> 	<ul style="list-style-type: none"> • Cast / Ductile Iron body • 90 closing or opening operation (10 position) • Lock level handle (steel material) • Elastomer liner • Memory lock mechanism • Ductile disc with nickel plated
<p>V4-CGV-GP16 Silent Check Valve – Globe Type Product</p> 	<ul style="list-style-type: none"> • Cast Iron body • Silent Check Function • Complies with the requirement of EN12334 • Spring automatically closes disc at zero flow before flow reversal occurs. This prevent surge and water hammer • Perfect tightness soft sealed even at low differential pressure • Completely guided disc both top and bottom • Liquid epoxy painted or fusion bonded epoxy powder coated (FBE)
<p>V4/V5-CWD-GP16/GP25 SERIES Wafer Butterfly Check Valves Product</p> 	<ul style="list-style-type: none"> • Cast/ Ductile iron body • Stainless steel disc • Compact size • Quick close, preventing water hammer • Easy installation, either vertical or horizontal • Reliable and safe
<p>V5-GAN-GP16 SERIES Resilient Seated Gate Valve, Non Rising Stem (Hand Wheel)</p> 	<ul style="list-style-type: none"> • Ductile iron body • Stainless steel stem • Full port type, lowest pressure lost • O-ring packing in up seal, no leakage • Complies with the requirement of EN1171- 2002 • Resilient sealing • High strength thrust collar
<p>V5-YST-GP16 SERIES Y-Strainer</p> 	<ul style="list-style-type: none"> • Ductile iron body • Stainless steel filter stem • Recessed seat in body assures accurate screen alignment • BSPT blow off outlet on cover. Blow off outlets are finished with plugs • Screens are perforated 304 stainless steel with spot welded seam

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