Pressure-Regulated Flow Control Valves Honeywell



Deliver High Efficiency In Less Time



PRESSURE-REGULATED FLOW CONTROL VALVES

Installing Control Valves Just Got A Lot More Dynamic

Contractors are always looking for ways to provide clients with superior comfort, energy efficiency and ease of use — while, of course, looking for ways to cut installation time. Facility managers are always looking for ways to maintain comfort and improve energy efficiency while reducing their maintenance costs.

With new Honeywell VRN and VRW Pressure-Regulated Flow Control Valves, everyone gets just what they're looking for.

More Control. Less Work.

Manual balancing of a building's hydronic systems for even flow and temperature distribution throughout the building is, thankfully, becoming a thing of the past. It's a labor-intensive process that's never perfect and never lasts.

The dynamic balancing of new Honeywell VRN and VRW Pressure-Regulated Flow Control Valves reduces labor time by integrating the flow control and temperature control functions in a single valve and then automatically controlling the flow in each hydronic system circuit to maintain temperature and comfort when pressures fluctuate.

- Industry-leading precision no more manual balancing
- Controls flow exactly at all load conditions, not just at design conditions
- Improved control and performance helps extend actuator life expectancy
- Accurate flow regulation allows for the optimum sizing of chillers, boilers and pumps
- Full range of sizes from 1/2" to 6"

Even More Time Savings

Selecting, installing and commissioning Honeywell VRN and VRW Pressure-Regulated Flow Control Valves is a quick and cost-effective process. The valves feature an integrated pressure control cartridge that delivers flow balancing and control functions in one package. And there's no Cv calculation required — just pick the valve that matches the flow requirements. Honeywell makes it that easy.

Honeywell VRN and VRW Pressure-Regulated Flow Control Valves also offer unique labor saving features in the event of future service requirements. The field serviceable stem — a Honeywell ball valve exclusive — allows the valves to be serviced in the field rather than cut from the pipe. The pressure regulating cartridge is also field serviceable.



How Dynamic Pressure-Regulated Valve Operation Works

When conventional two-way valves in multi-zone systems open or close, the pressure-flow characteristic of the pumps causes an immediate head pressure change to all other valves in the system, resulting in overflow or underflow. Dynamic pressure regulation, as shown in this illustration of a Honeywell VRN Flow Control Valve, maintains the required flow rate through the valve by regulating the pressure drop across the control valve seat.

The actuator modulates the control valve portion of the valves to the required flow based on heating or cooling load requirements, independent of supply pressure. When the room controller is in balance, actuator movement stops and the valve is now set at optimum flow. If system head pressure changes, the built-in diaphragm regulator compensates for the change, maintaining the flow required by the control system without using the actuator. Flow will not change until the control system needs to respond to an external change in thermal load or to a change in set point.

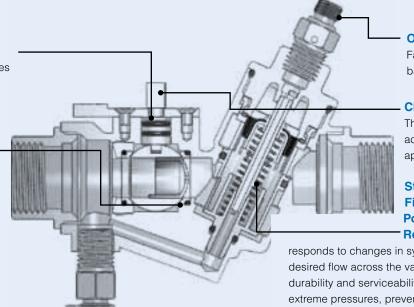
Simply put, Honeywell VRN Flow Control Valves balance the system at every point over the range of the control valve within 5% accuracy at published pressure ratings. The result is consistent comfort, increased energy efficiency and increased actuator life.

Field Serviceable Stem —

Only Honeywell makes ball valves that can be serviced in place.

High Turn-Down Ratio/ Equal Percentage Flow

— Results in linear heat transfer for optimal control. Unlike designs that use a disc that sits outside of the ball, the characterized insert is integral to the ball, resulting in longer service life and higher differential pressure capabilities.



Optional Test Ports —

Facilitates system set-up for balancing report.

Choice Of Actuators —

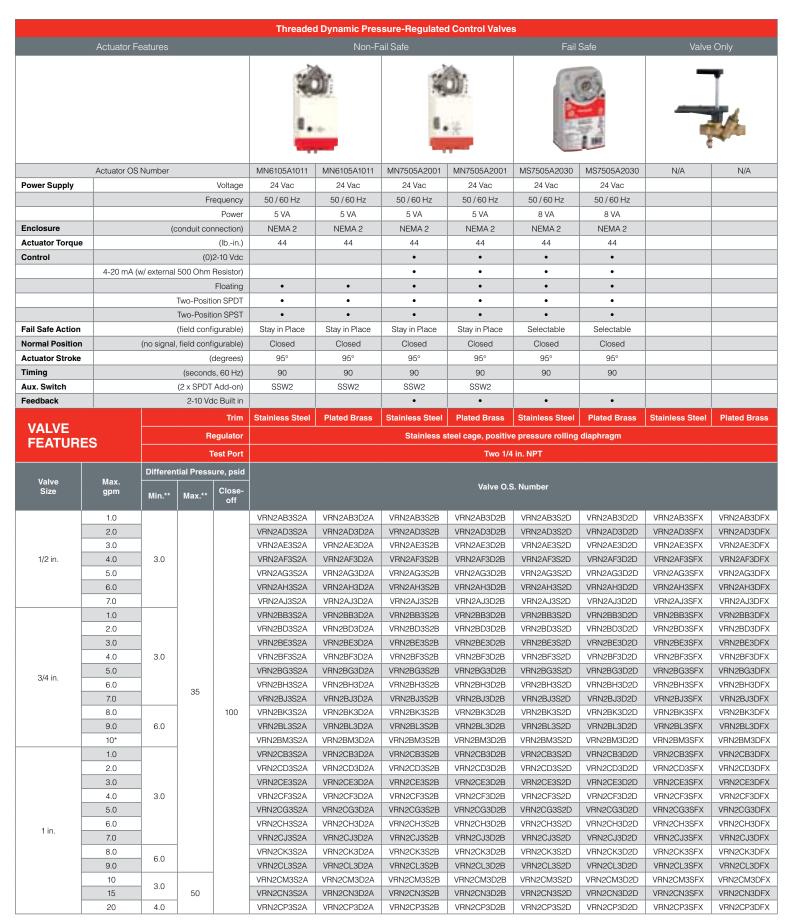
The flexibility to choose the actuator that best fits your application.

Stainless Steel Field-Replaceable, Positive-Pressure Regulator — Instantly

responds to changes in system pressure to maintain desired flow across the valve. Provides long-term durability and serviceability. Will not bottom out at extreme pressures, preventing abrupt loss of control. In addition, it is factory calibrated so there is no need for field commissioning.

Additional VRN valve features include:

- Quick product selection time by choosing the model that satisfies flow requirements
- Fits 1/2" to 3" pipes
- Manual override to control valve during installation or in the event of power failure
- Flow range of 1.0 to 95 gpm
- Eliminates reverse return piping designs, saving time and material
- 5-year actuator warranty
- Manual override for system flushing, filling and service
- Fluid temperature rating of -22° F to 250° F
- For retrofit applications, simply set precise flow required by limiting actuator stroke mechanically or with a controller
- Less torque is needed, so you can use lower-cost, low-torque actuators on larger pipe sizes
- Fail-safe models configurable for normally open or normally closed return



^{*} Full port ball

^{**} Differential pressure regulator operating range, ±5%

Honeywell

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Actuator Features					Threaded Dynamic Pressure-Regulated Control Valves Non-Fail Safe Fail Safe Valve Only							
	Actuator Features					Non-Fall Safe				Fall Sale		Offig
						***		1				
	Actuator OS	Number			MN6105A1011	MN6105A1011	MN7505A2001	MN7505A2001	MS7505A2030	MS7505A2030	N/A	N/A
				Trim	Stainless Steel	Plated Brass	Stainless Steel	Plated Brass				
VALVE			R	egulator	Stainless steel cage, positive pressure rolling diaphragm							
FEATUR			Test Port		Two 1/4 in. NPT							
		Differential Pressure, psid		Valve O.S. Number								
Valve Size	Max. gpm	Min.** Max.** Close-										
	10	2.0			VRN2DM3S2A	VRN2DM3D2A	VRN2DM3S2B	VRN2DM3D2B	VRN2DM3S2D	VRN2DM3D2D	VRN2DM3SFX	VRN2DM3DFX
	15	3.0			VRN2DN3S2A	VRN2DN3D2A	VRN2DN3S2B	VRN2DN3D2B	VRN2DN3S2D	VRN2DN3D2D	VRN2DN3SFX	VRN2DN3DFX
1-1/4 in.	20	4.0	50		VRN2DP3S2A VRN2DQ3S2A	VRN2DP3D2A VRN2DQ3D2A	VRN2DP3S2B VRN2DQ3S2B	VRN2DP3D2B VRN2DQ3D2B	VRN2DP3S2D VRN2DQ3S2D	VRN2DP3D2D VRN2DQ3D2D	VRN2DP3SFX VRN2DQ3SFX	VRN2DP3DFX VRN2DQ3DFX
	30	5.0			VRN2DR3S2A	VRN2DR3D2A	VRN2DR3S2B	VRN2DR3D2B	VRN2DR3S2D	VRN2DR3D2D	VRN2DR3SFX	VRN2DR3DFX
	35*	6.5	58	-	VRN2DS3S2A	VRN2DS3D2A VRN2EM3D2A	VRN2DS3S2B	VRN2DS3D2B VRN2EM3D2B	VRN2DS3S2D VRN2EM3S2D	VRN2DS3D2D	VRN2DS3SFX VRN2EM3SFX	VRN2DS3DFX
	10	3.0			VRN2EM3S2A VRN2EN3S2A	VRN2EN3D2A VRN2EN3D2A	VRN2EM3S2B VRN2EN3S2B	VRN2EN3D2B	VRN2EN3S2D	VRN2EM3D2D VRN2EN3D2D	VRN2EN3SFX	VRN2EM3DFX VRN2EN3DFX
	20	4.0	50		VRN2EP3S2A	VRN2EP3D2A	VRN2EP3S2B	VRN2EP3D2B	VRN2EP3S2D	VRN2EP3D2D	VRN2EP3SFX	VRN2EP3DFX
4.4/0:-	25	5.0			VRN2EQ3S2A VRN2ER3S2A	VRN2EQ3D2A	VRN2EQ3S2B	VRN2EQ3D2B	VRN2EQ3S2D	VRN2EQ3D2D	VRN2EQ3SFX VRN2ER3SFX	VRN2EQ3DFX
1-1/2 in.	30	4.0		-	VRN2ES3S2A	VRN2ER3D2A VRN2ES3D2A	VRN2ER3S2B VRN2ES3S2B	VRN2ER3D2B VRN2ES3D2B	VRN2ER3S2D VRN2ES3S2D	VRN2ER3D2D VRN2ES3D2D	VRN2ES3SFX	VRN2ER3DFX VRN2ES3DFX
	40				VRN2ET3S2A	VRN2ET3D2A	VRN2ET3S2B	VRN2ET3D2B	VRN2ET3S2D	VRN2ET3D2D	VRN2ET3SFX	VRN2ET3DFX
	45	6.0			VRN2EU3S2A	VRN2EU3D2A	VRN2EU3S2B	VRN2EU3D2B	VRN2EU3S2D	VRN2EU3D2D	VRN2EU3SFX	VRN2EU3DFX
	50 25				VRN2E13S2A VRN2FQ3S2A	VRN2E13D2A VRN2FQ3D2A	VRN2E13S2B VRN2FQ3S2B	VRN2E13D2B VRN2FQ3D2B	VRN2E13S2D VRN2FQ3S2D	VRN2E13D2D VRN2FQ3D2D	VRN2E13SFX VRN2FQ3SFX	VRN2E13DFX VRN2FQ3DFX
	30	4.0			VRN2FR3S2A	VRN2FR3D2A	VRN2FR3S2B	VRN2FR3D2B	VRN2FR3S2D	VRN2FR3D2D	VRN2FR3SFX	VRN2FR3DFX
	35				VRN2FS3S2A	VRN2FS3D2A	VRN2FS3S2B	VRN2FS3D2B	VRN2FS3S2D	VRN2FS3D2D	VRN2FS3SFX	VRN2FS3DFX
	40	6.0			VRN2FT3S2A VRN2FU3S2A	VRN2FT3D2A VRN2FU3D2A	VRN2FT3S2B VRN2FU3S2B	VRN2FT3D2B VRN2FU3D2B	VRN2FT3S2D VRN2FU3S2D	VRN2FT3D2D VRN2FU3D2D	VRN2FT3SFX VRN2FU3SFX	VRN2FT3DFX VRN2FU3DFX
2 in.	50				VRN2F13S2A	VRN2F13D2A	VRN2F13S2B	VRN2F13D2B	VRN2F13S2D	VRN2F13D2D	VRN2F13SFX	VRN2F13DFX
	55				VRN2F23S2A	VRN2F23D2A	VRN2F23S2B	VRN2F23D2B	VRN2F23S2D	VRN2F23D2D	VRN2F23SFX	VRN2F23DFX
	60	7.0			VRN2F33S2A VRN2F43S2A	VRN2F33D2A VRN2F43D2A	VRN2F33S2B VRN2F43S2B	VRN2F33D2B VRN2F43D2B	VRN2F33S2D VRN2F43S2D	VRN2F33D2D VRN2F43D2D	VRN2F33SFX VRN2F43SFX	VRN2F33DFX VRN2F43DFX
	70				VRN2F53S2A	VRN2F53D2A	VRN2F53S2B	VRN2F53D2B	VRN2F53S2D	VRN2F53D2D	VRN2F53SFX	VRN2F53DFX
	75				VRN2F63S2A	VRN2F63D2A	VRN2F63S2B	VRN2F63D2B	VRN2F63S2D	VRN2F63D2D	VRN2F63SFX	VRN2F63DFX
	25 30	4.0		100	VRN2GQ3S2A VRN2GR3S2A	VRN2GQ3D2A VRN2GR3D2A	VRN2GQ3S2B VRN2GR3S2B	VRN2GQ3D2B VRN2GR3D2B	VRN2GQ3S2D VRN2GR3S2D	VRN2GQ3D2D VRN2GR3D2D	VRN2GQ3SFX VRN2GR3SFX	VRN2GQ3DFX VRN2GR3DFX
	35				VRN2GS3S2A	VRN2GS3D2A	VRN2GS3S2B	VRN2GS3D2B	VRN2GS3S2D	VRN2GS3D2D	VRN2GS3SFX	VRN2GS3DFX
	40				VRN2GT3S2A	VRN2GT3D2A	VRN2GT3S2B	VRN2GT3D2B	VRN2GT3S2D	VRN2GT3D2D	VRN2GT3SFX	VRN2GT3DFX
2-1/2 in.	45 50	6.0			VRN2GU3S2A VRN2G13S2A	VRN2GU3D2A VRN2G13D2A	VRN2GU3S2B VRN2G13S2B	VRN2GU3D2B VRN2G13D2B	VRN2GU3S2D VRN2G13S2D	VRN2GU3D2D VRN2G13D2D	VRN2GU3SFX VRN2G13SFX	VRN2GU3DFX VRN2G13DFX
	55		58		VRN2G23S2A	VRN2G23D2A	VRN2G23S2B	VRN2G23D2B	VRN2G23S2D	VRN2G23D2D	VRN2G23SFX	VRN2G23DFX
	60 65	7.0			VRN2G33S2A VRN2G43S2A	VRN2G33D2A VRN2G43D2A	VRN2G33S2B VRN2G43S2B	VRN2G33D2B VRN2G43D2B	VRN2G33S2D VRN2G43S2D	VRN2G33D2D VRN2G43D2D	VRN2G33SFX VRN2G43SFX	VRN2G33DFX VRN2G43DFX
	70	1.0			VRN2G53S2A	VRN2G53D2A	VRN2G53S2B	VRN2G53D2B	VRN2G53S2D	VRN2G53D2D	VRN2G53SFX	VRN2G53DFX
	75		-		VRN2G63S2A	VRN2G63D2A	VRN2G63S2B	VRN2G63D2B	VRN2G63S2D	VRN2G63D2D	VRN2G63SFX	VRN2G63DFX
	80 85	10			VRN2G73S2A VRN2G83S2A	VRN2G73D2A VRN2G83D2A	VRN2G73S2B VRN2G83S2B	VRN2G73D2B VRN2G83D2B	VRN2G73S2D VRN2G83S2D	VRN2G73D2D VRN2G83D2D	VRN2G73SFX VRN2G83SFX	VRN2G73DFX VRN2G83DFX
	95*	12			VRN2G83S2A VRN2G93S2A	VRN2G83D2A VRN2G93D2A	VRN2G83S2B VRN2G93S2B	VRN2G83D2B VRN2G93D2B	VRN2G83S2D VRN2G93S2D	VRN2G83D2D VRN2G93D2D	VRN2G83SFX VRN2G93SFX	VRN2G83DFX VRN2G93DFX
3 in.	25				VRN2HQ3S2A	VRN2HQ3D2A	VRN2HQ3S2B	VRN2HQ3D2B	VRN2HQ3S2D	VRN2HQ3D2D	VRN2HQ3SFX	VRN2HQ3DFX
	30 35	4.0			VRN2HR3S2A VRN2HS3S2A	VRN2HR3D2A VRN2HS3D2A	VRN2HR3S2B VRN2HS3S2B	VRN2HR3D2B VRN2HS3D2B	VRN2HR3S2D VRN2HS3S2D	VRN2HR3D2D VRN2HS3D2D	VRN2HR3SFX VRN2HS3SFX	VRN2HR3DFX VRN2HS3DFX
	40		1		VRN2HT3S2A	VRN2HT3D2A	VRN2HT3S2B	VRN2HT3D2B	VRN2HT3S2D	VRN2HT3D2D	VRN2HT3SFX	VRN2HT3DFX
	45	6.0			VRN2HU3S2A	VRN2HU3D2A	VRN2HU3S2B	VRN2HU3D2B	VRN2HU3S2D	VRN2HU3D2D	VRN2HU3SFX	VRN2HU3DFX
	50 55		+		VRN2H13S2A VRN2H23S2A	VRN2H13D2A VRN2H23D2A	VRN2H13S2B VRN2H23S2B	VRN2H13D2B VRN2H23D2B	VRN2H13S2D VRN2H23S2D	VRN2H13D2D VRN2H23D2D	VRN2H13SFX VRN2H23SFX	VRN2H13DFX VRN2H23DFX
	60				VRN2H23S2A VRN2H33S2A	VRN2H23D2A VRN2H33D2A	VRN2H23S2B VRN2H33S2B	VRN2H23D2B VRN2H33D2B	VRN2H23S2D VRN2H33S2D	VRN2H23D2D VRN2H33D2D	VRN2H23SFX VRN2H33SFX	VRN2H23DFX VRN2H33DFX
	65	7.0			VRN2H43S2A	VRN2H43D2A	VRN2H43S2B	VRN2H43D2B	VRN2H43S2D	VRN2H43D2D	VRN2H43SFX	VRN2H43DFX
	70 75	-			VRN2H53S2A VRN2H63S2A	VRN2H53D2A VRN2H63D2A	VRN2H53S2B VRN2H63S2B	VRN2H53D2B VRN2H63D2B	VRN2H53S2D VRN2H63S2D	VRN2H53D2D VRN2H63D2D	VRN2H53SFX VRN2H63SFX	VRN2H53DFX VRN2H63DFX
	80		1		VRN2H63S2A VRN2H73S2A	VRN2H63D2A VRN2H73D2A	VRN2H63S2B VRN2H73S2B	VRN2H63D2B VRN2H73D2B	VRN2H63S2D VRN2H73S2D	VRN2H63D2D VRN2H73D2D	VRN2H63SFX VRN2H73SFX	VRN2H63DFX VRN2H73DFX
	85	10	_		VRN2H83S2A	VRN2H83D2A	VRN2H83S2B	VRN2H83D2B	VRN2H83S2D	VRN2H83D2D	VRN2H83SFX	VRN2H83DFX
	95*	12			VRN2H93S2A	VRN2H93D2A	VRN2H93S2B	VRN2H93D2B	VRN2H93S2D	VRN2H93D2D	VRN2H93SFX	VRN2H93DFX

^{*} Full port ball
** Differential pressure regulator operating range, ±5%



VRW Series

While the VRN Series is threaded, the VRW Series is used for flanged connections and larger capacity applications. The main differences between the Honeywell VRN and VRW control valves are the installation style and the capacity.

- Fits 2-1/2" to 6" pipes
- Flow range of 39 to 469 gpm
- Unique, combination wafer-style flange design meets both ANSI/ASME 150 and ANSI/ASME 300 pressure classes for typical and high-rise buildings
- Maximum static operating pressure of 580 psig
- Each valve body fits **two** pipe sizes, such as fitting both 5" and 6" pipes
- Six-turn actuator provides precise control of globe-style plug
- Flow position display
- 50 flow settings in equal gpm increments
- Analog position feedback signal
- Available with open or closed electronic fail-safe action
- Integral pressure/temperature test ports
- 1-year warranty from commissioning/put-in-service date

Flanged Dynamic Pressure-Regulated Control Valves								
Actuator Features		Non-Fail Safe	Fail Safe					
Power Supply					Voltage	24 Vac/30 Vdc	24 Vac/30 Vdc	
		50 / 60 Hz	50 / 60 Hz					
		Power	20 VA	20 VA				
Enclosure (ingress protection)						IP44	IP44	
Control 2-10 Vdc						•	•	
		Ohm Resistor)	•	•				
		•	•					
		•	•					
		Position SPDT	•	•				
Fail Safe Action (field configurable*)						Stay in Place	Open/Closed*	
Normal Position (no	signal)	configurable)	Open/Closed	Open/Closed				
Actuator Stroke		(degrees)	6 x 360°	6 x 360°				
Timing		conds, 60 Hz)	150	150				
Feedback				4-20 mA (2-1	0 Vdc) Built in	•	•	
			Trim	Stainless Steel				
		Body	Cast Iron					
			Pressure Ratings	ANSI 150/300				
Valve Features			Test Ports	Two - 1/4" ISO				
Valve Size	Flow	, gpm*	Differential Pressure (psid)			Valve O.S. Number		
	Min.	Max.	Min.**	Max.**	Close-off	valve 0.5	5. Number	
2-1/2 and 3 in.	39	112	5.1		100	VRW2JV4SMB	VRW2JV4SMD	
[DN65-DN80]	56	155	11.6			VRW2JW4SMB	VRW2JW4SMD	
3 and 4 in. [DN80-DN100]	55	147	5.1	50		VRW2KV4SMB	VRW2KV4SMD	
	73	222	8.6	58		VRW2KW4SMB	VRW2KW4SMD	
5 and 6 in.	103	370	5.1			VRW2LV4SMB	VRW2LV4SMD	
[DN125-DN150]	118	469	8.6			VRW2LW4SMB	VRW2LW4SMD	

^{*} Field adjustable

^{**} Differential pressure regulator operating range, ±5%



Think Dynamic

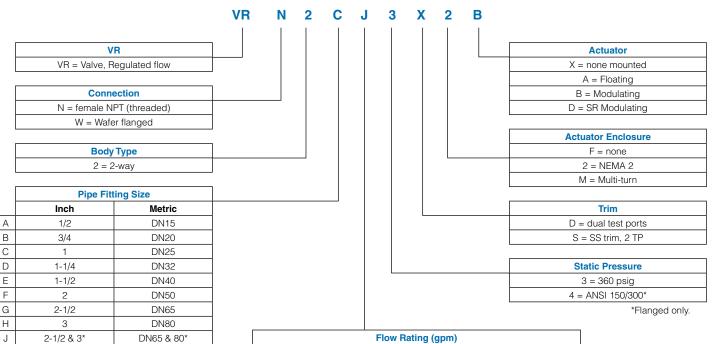
Dynamic pressure-regulated flow control isn't just the future of flow control — it's here now. Use Honeywell VRN and VRW Pressure-Regulated Flow Control Valves to cut your installation and commissioning time while helping your customers enjoy increased comfort and energy efficiency. Use the chart below to select the right model for your next application, and put the power of dynamic control to work for you and your customers.

Model Selection

Κ

3 & 4* 5 & 6*

Follow this Model Number Selection reference to ensure that you're choosing the right VRN and VRW Pressure-Regulated Flow Control Valve for the job.



DN125 & 150*

* Flanged only

DN80 & 100*

Flow Rating (gpm)							
Code	Up to	Code	Up to				
В	1.0	S	35				
D	2.0	Т	40				
Е	3.0	U	45				
F	4.0	1	50				
G	5.0	2	55				
Н	6.0	3	60				
J	7.0	4	65				
K	8.0	5	70				
L	9.0	6	75				
М	10	7	80				
N	15	8	85				
Р	20	9	95				
Q	25	V*	Adjustable, low range				
R	30	W*	Adjustable, high range				

^{*} Flanged only

Learn More

For more information on Honeywell VRN and VRW Pressure-Regulated Flow Control Valves, call

1-800-466-3993 or visit specifyhoneywell.com.

Automation and Control Solutions

In the U.S.:

Honeywell

1985 Douglas Drive North

Golden Valley, MN 55422-3992

In Canada:

Honeywell Limited

35 Dynamic Drive

Toronto, Ontario M1V 4Z9

In Latin America:

Honeywell

9315 N.W. 112th Avenue

Miami, FL 33178

www.honeywell.com

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