

EXCEL 5000 OPEN SYSTEM ARCHITECTURE

EXCEL 5000 OPEN System Architecture: Designed for unmatched DDC control versatility and true open system flexibility

Whether you're a contractor or a facility manager, the challenge has always been finding a DDC control system that matches a wide range of building applications...

Honeywell EXCEL 5000 OPEN system answers the challenge. Featuring distributed control products that are open and easy to use...

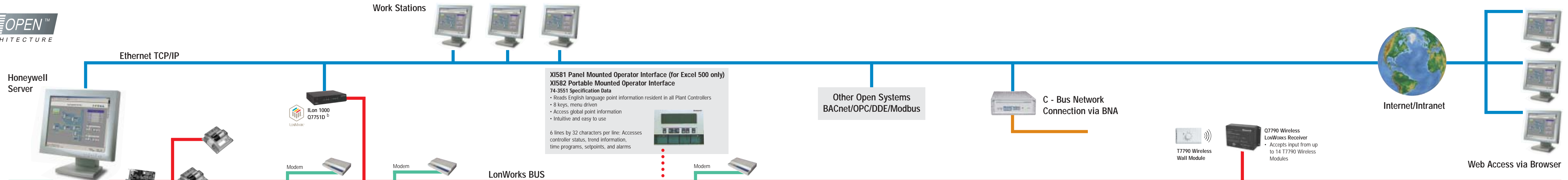
Open Communications Every control device in the EXCEL 5000 OPEN system family uses LonMark-based open communications protocol...

Easy To Use Excel CARE is the only tool to engineer, document and commission all Honeywell and LonMark-based controllers...

It's easy to see and manage the control conditions in your building with the EXCEL 5000 OPEN system, too. Application programs are easily accessed through a keypad display...

Proven Performance The advantages of integrated building control are real—and measurable. And with thousands of devices successfully installed over the past decade...

Honeywell's leadership in control technology spans more than 110 years. You can count on the EXCEL 5000 OPEN system to deliver enduring value and reliable performance throughout your building lifecycle.



Honeywell Server

RAS Remote Connection

Network Interface Q7751C PCLTA

XPC 500 Card

Honeywell C-Bus Devices

Router Q7751A

LonMark 3rd Party Lon Devices

Modem

Modem

Modem

Ethernet TCP/IP

Excel 50 Controller 74-3029 Specification Data

Excel 500 Controller 74-2036 Specification Data

Input/Output Modules

XF521A Insert Card

XF529 Insert Card

XF526 Insert Card

XF525 Insert Card

XF522 Insert Card

XF527 Insert Card

Plant Controllers

Work Stations

XLon 1000 Q7751D

LonWorks BUS

Modem

Modem

Modem

Modem

Modem

Modem

Modem

Modem

Modem

XI581 Panel Mounted Operator Interface (for Excel 500 only) XI582 Portable Mounted Operator Interface 74-3551 Specification Data

6 lines by 32 characters per line; Accesses controller status, trend information, time programs, setpoints, and alarms

Digital Input

XF523 Insert Card

Digital Output

XF524 Insert Card

XF529 Insert Card

XF526 Insert Card

XF525 Insert Card

XF522 Insert Card

XF527 Insert Card

Power Module

XP502 Power Module

XF525 Insert Card

XF522 Insert Card

XF527 Insert Card

XF527 Insert Card

Digital Input

XF523 Insert Card

Digital Output

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XF529 Insert Card

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Power Module

XP502 Power Module

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Digital Input

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Digital Output

XF524 Insert Card

XF529 Insert Card

XF526 Insert Card

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Power Module

XP502 Power Module

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# Honeywell Commercial Components

## Actuators

Note: Damper sizes are based upon 3 in-lb torque per ss. ft. of damper.

Non-Spring Return		70 in-lb Up to a 12 sq. ft. damper 63-1146 Specification Data		70 in-lb Up to a 25 sq. ft. damper 63-1146 Specification Data		150 in-lb Up to a 50 sq. ft. damper 63-1282 Specification Data		300 in-lb Up to a 100 sq. ft. damper 63-1282 Specification Data	
ML6181B2024 ML6181B2032 ML6181B2073	Modulating (24V)	ML6174A2001 ML6174A2007 ML6174B2019	Modulating (24V)	ML6184A1003 ML6184C1001	Modulating (24V)	ML7284A1018 ML7284C1008 (2-19 Vdc)	Modulating (24V)	ML6194A1002 ML6194C1000	Modulating (24V)
ML6175A1004 ML6175C1009	24V	ML7255A1008 ML7255C1006 (2-19 Vdc)	24V	ML6185A1000 ML6185C1005 (2-19 Vdc)	24V	ML8125A1007 ML8125C1005 (2-19 Vdc)	24V	ML6195A1009 ML6195C1005 (2-19 Vdc)	24V

Spring Return		25 in-lb Up to a 8 sq. ft. damper 63-1279 Specification Data		53 in-lb Up to a 18 sq. ft. damper 63-1279 Specification Data		40/100 in-lb Up to a 120/310 sq. ft. damper 63-2567 Specification Data		142 in-lb Up to a 47 sq. ft. damper 63-1279 Specification Data	
ML6175A1004 ML6175C1009	24V	ML7255A1008 ML7255C1006 (2-19 Vdc)	24V	ML6185A1000 ML6185C1005 (2-19 Vdc)	24V	ML8125A1007 ML8125C1005 (2-19 Vdc)	24V	ML6195A1009 ML6195C1005 (2-19 Vdc)	24V

## Dampers



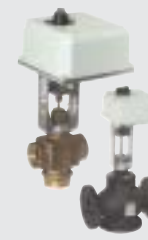
63-2598 Specification Data

- D640 / D642 Volume Control Dampers
- Hat channel frame with reinforced, overlapped corners for greater strength
- Symmetrical blade design allows for airflow in either direction
- Better free-area and performance due to symmetrical blades and low-profile designs
- Certified with the AMCA Air Performance Seal on every damper
- No top or bottom, allows for actuator mounting on either side without ordering special options
- Blade-to-blade linkage out of air stream (concealed in frame)
- Can be sized in increments of 0.01 inches up to 144" X 144"
- Internal or external mounting locations for actuators
- Parallel or opposed blade orientations

### Standard and Optional Damper Features

	Material	Frame Gauge	Blade Seals	Jamb Seals	Bearings	Axles	Linkage Material	Flange
<b>S - Standard</b>	Galvanized	16	14	12	Vinyl	Silicone	Aluminum	Aluminum
<b>O - Optional</b>	Stainless	16	14	12	Vinyl	Silicone	Aluminum	Aluminum
<b>D640 Standard Volume Control Damper</b>	S	O	O	O	n/a	n/a	n/a	n/a
<b>D642 Ultra-Low Leakage Volume Control Damper</b>	S	O	O	O	O	O	O	O

## Globe Valves



Valve Size	Cv	Flow*	Action*	Trim Material	2-way Valve Number	3-way Valve Number	Valve/Actuator Close-Off Ratings (PSI) <sup>†</sup>
1/2"	0.73	Equal %	Direct	Brass Plug	V5011N1008		230 230 230 230 230 230
1/2"	1.16	Equal %	Direct	Stainless Steel Seat	V5011N1016		230 230 230 230 230 230
1/2"	1.85	Equal %	Direct	Brass Plug	V5011N1024		230 230 230 230 230 230
1/2"	2.9	Equal %	Direct	Stainless Steel Seat	V5011N1032	V5013N1030	230 230 230 230 230 230
1/2"	4.7	Equal %	Direct	Brass Plug	V5011N1040	V5013N1048	230 230 230 230 230 230
1/2"	7.3	Equal %	Direct	Stainless Steel Seat	V5011N1057	V5013N1055	230 230 230 230 230 230
1"	11.7	Equal %	Direct	Brass Plug	V5011N1065	V5013N1063	163 163 163 163 163 163
1"	18.7	Equal %	Direct	(2-way/Stainless Steel 2-way/Brass Seat)	V5011N1073	V5013N1071	104 104 104 104 104 104
1 1/4"	29.3	Equal %	Direct	Brass Plug and Seal	V5011N1081	V5013N1089	67 67 67 67 67 67
2"	46.8	Equal %	Direct	Brass Plug and Seal	V5011N1099	V5013N1097	37 37 37 37 37 37
2 1/2"	63	Equal %	Direct	Brass Plug and Seal	V5011F1105		28 28 28 28 28 28
3"	100	Linear	Direct	Brass Plug and Seal	V5011F1113		16 16 16 16 16 16
1/2"	0.73	Linear	Direct	Stainless Steel Plug and Seat	V5011N2006		100 100 100 100 100 100
1/2"	1.16	Linear	Direct	Stainless Steel Plug and Seat	V5011N2014		100 100 100 100 100 100
1/2"	1.85	Linear	Direct	Stainless Steel Plug and Seat	V5011N2022		100 100 100 100 100 100
1/2"	2.9	Linear	Direct	Stainless Steel Plug and Seat	V5011N2030		100 100 100 100 100 100
1/2"	4.7	Linear	Direct	Stainless Steel Plug and Seat	V5011N2048		100 100 100 100 100 100
3/4"	7.3	Linear	Direct	Stainless Steel Plug and Seat	V5011N2056		100 100 100 100 100 100
1"	11.7	Linear	Direct	Stainless Steel Plug and Seat	V5011N2063		100 100 100 100 100 100
1 1/4"	18.7	Linear	Direct	Stainless Steel Plug and Seat	V5011N2071		100 100 100 100 100 100
1 1/2"	29.3	Linear	Direct	Stainless Steel Plug and Seat	V5011N2089		67 67 67 67 67 67
2"	46.8	Linear	Direct	Stainless Steel Plug and Seat	V5011N2097		37 37 37 37 37 37
2 1/2"	63	Linear	Direct	Stainless Steel Plug and Seat	V5011G1111		28 28 28 28 28 28
3"	100	Linear	Direct	Stainless Steel Plug and Seat	V5011G1129		16 16 16 16 16 16
1/2"	2.9	Equal %	Reverse	Brass Plug	V5011N3004		230 230 230 230 230 230
1/2"	4.7	Equal %	Reverse	Stainless Steel Seat	V5011N3012		230 230 230 230 230 230
3/4"	7.3	Equal %	Reverse	Stainless Steel Seat	V5011N3020		230 230 230 230 230 230
1"	11.7	Equal %	Reverse	Brass Plug	V5011N3038		163 163 163 163 163 163
1 1/4"	18.7	Equal %	Reverse	Integral Brass Seat	V5011N3046		104 104 104 104 104 104

Valve Size	Cv	Flow*	Action*	Trim/Packing Material	ANSI 125, 2-way	ANSI 250, 2-way	ANSI 125, 3-way	ANSI 250, 3-way	Valve/Actuator Close-Off Ratings (PSI)
63	Linear	Direct	Stainless Steel / EPDM	V3350A2017	V3450A2016			21 21 21 21 21 21	21 63 63
63	Linear	Direct	Stainless Steel / Teflon	V3350B2007	V3450B2006			21 21 21 21 21 21	21 63 63
63	Linear	Reverse	Stainless Steel / EPDM	V3350C2013	V3450C2012			21 21 21 21 21 21	21 63 63
63	Linear	Reverse	Stainless Steel / Teflon	V3350D2003	V3450D2002			21 21 21 21 21 21	21 63 63
63	Equal %	Direct	Stainless Steel / EPDM	V3350A2009	V3450A2008	V3360E2008	V3460E2007	21 21 21 21 21 21	21 63 63
63	Equal %	Direct	Bronze / EPDM	V3351A2008	V3451A2007	V3361E2007	V3461E2006	21 21 21 21 21 21	21 63 63
63	Equal %	Reverse	Stainless Steel / EPDM	V3350C2006	V3450C2004			21 21 21 21 21 21	21 63 63
63	Equal %	Reverse	Bronze / EPDM	V3351C2004	V3451C2003			21 21 21 21 21 21	21 63 63
100	Linear	Direct	Stainless Steel / EPDM	V3350A3015	V3450A3008			14 14 14 14 14 14	14 45 45
100	Linear	Direct	Stainless Steel / Teflon	V3350B3005	V3450B3004			14 14 14 14 14 14	14 45 45
100	Linear	Reverse	Stainless Steel / EPDM	V3350C3011	V3450C3010			14 14 14 14 14 14	14 45 45
100	Linear	Reverse	Stainless Steel / Teflon	V3350D3001	V3450D3000			14 14 14 14 14 14	14 45 45
100	Equal %	Direct	Stainless Steel / EPDM	V3350A3007	V3450A3014	V3360E3006	V3460E3005	14 14 14 14 14 14	14 45 45
100	Equal %	Direct	Bronze / EPDM	V3351A3006	V3451A3005	V3361E3005	V3461E3004	14 14 14 14 14 14	14 45 45
100	Equal %	Reverse	Stainless Steel / EPDM	V3350C3003	V3450C3002			14 14 14 14 14 14	14 45 45
100	Equal %	Reverse	Bronze / EPDM	V3351C3002	V3451C3001			14 14 14 14 14 14	14 45 45
160	Linear	Direct	Stainless Steel / EPDM	V3350A4013	V3450A4012				25 25
160	Linear	Direct	Stainless Steel / Teflon	V3350B4003	V3450B4002				25 25
160	Linear	Reverse	Stainless Steel / EPDM	V3350C4019	V3450C4018				25 25
160	Linear	Reverse	Stainless Steel / Teflon	V3350D4009	V3450D4008				25 25
160	Equal %	Direct	Stainless Steel / EPDM	V3350A4005	V3450A4004	V3360E4004	V3460E4003		25 25
160	Equal %	Direct	Bronze / EPDM	V3351A4004	V3451A4003	V3361E4003	V3461E4002		25 25
160	Equal %	Reverse	Stainless Steel / EPDM	V3350C4001	V3450C4000				25 25
160	Equal %	Reverse	Bronze / EPDM	V3351C4000	V3451C4000				25 25
250	Linear	Direct	Stainless Steel / EPDM	V3350A5010	V3450A5010				16 16
250	Linear	Direct	Stainless Steel / Teflon	V3350B5000	V3450B5000				16 16
250	Linear	Reverse	Stainless Steel / EPDM	V3350C5016	V3450C5015				16 16
250	Linear	Reverse	Stainless Steel / Teflon	V3350D5006	V3450D5005				16 16
250	Equal %	Direct	Stainless Steel / EPDM	V3350A5002	V3450A5001	V3360E5001	V3460E5000		16 16
250	Equal %	Direct	Bronze / EPDM	V3351A5001	V3451A5000	V3361E5000	V3461E5000		16 16
250	Equal %	Reverse	Stainless Steel / EPDM	V3350C5008	V3450C5007				16 16
250	Equal %	Reverse	Bronze / EPDM	V3351C5007	V3451C5006				16 16
400	Linear	Direct	Stainless Steel / EPDM	V3350A6018	V3450A6017				11 11
400	Linear	Direct	Stainless Steel / Teflon	V3350B6008	V3450B6007				11 11
400	Linear	Reverse	Stainless Steel / EPDM	V3350C6014	V3450C6013				11 11
400	Linear	Reverse	Stainless Steel / Teflon	V3350D6004	V3450D6003				11 11
400	Equal %	Direct	Stainless Steel / EPDM	V3350A6000	V3450A6000	V3360E6000	V3460E6000		11 11
400	Equal %	Direct	Bronze / EPDM	V3351A6000	V3451A6000	V3361E6000	V3461E6000		11 11
400	Equal %	Reverse	Stainless Steel / EPDM	V3350C6006	V3450C6005				11 11
400	Equal %	Reverse	Bronze / EPDM	V3351C6005	V3451C6004				11 11

\* Use linear flow characteristics for steam service applications.  
 † Blank spaces indicate combinations not recommended, because lower force actuators meet maximum close-off ratings specified by the valve body.  
 ‡ The action corresponds with 2-way valves only. 3-way valves are mixing valves.

63-1276 V5011 Specification Data  
 63-1277 V5013 Specification Data  
 63-2519 V335X Specification Data  
 63-2520 V336X Specification Data

## Ball Valves



Valve Size	Cv	Flow*	Action*	Trim/Packing Material	Actuator Number		Valve/Actuator Close-Off Ratings (PSI)
					2-way	3-way	
1/2 RP	1	VB30A1005	1049	1122	1163		
1/2 RP	2	VB30A1170	1056	1112	1171		
1/2 RP	4	VB30A1021	1064	1148	1189		
1/2 RP	15	VB30A1039	1072	1155	1197		
3/4 RP	30	VB30A1047				1304 1429	1486
3/4 FP	51	VB30A1054				1312 1437	1494
1" RP	43	VB30A1162				1510 1791	1814
1" FP	68	VB30A1247*				1528 1809	
1 1/4 RP	68	VB30A1068				2093 1998	1749 1822
1 1/2 RP	94	VB30A1202*				2408 2382	2325 2341
2" RP	108	VB30A1120				2112	2351

## Butterfly Valves



63-1287 Specification Data

### Resilient Seat (VF) and High Performance (VH) Butterfly Valve Assemblies

- VF/VH provide control for HVAC system applications including:
  - Chilled water/hot water/steam
  - Cooling tower water
  - Thermal storage systems

### VF, VH Valve Assembly Common Features

- 2 in. to 18 in. sizes
- 2-way and 3-way assemblies - all sizes
- Electric and pneumatic actuation - all sizes
- 2-position and modulating control - all sizes
- Lug body (standard) or wafer body
- Each valve assembly fully tested before shipping
- All products manufactured in compliance with ISO 9001

### VF52, VF53 Resilient Seat Butterfly Valves (Water Service)

- Assemblies incorporate Figure Z22 and AR2 resilient seat butterfly valves
- Bubble tight shutoff up to 250 psid, 150 psid
- Each valve factory tested to 110% of specified pressure rating.
- Cast iron body, EPDM seat
- Aluminum bronze disc, 316 SS stem
- System temperature rating: 32 F to 212 F
- System pressure rating: 125 psi to 250 psi max

### VH52, VH53 High Performance Butterfly Valves (Water or Steam Service)

- Assemblies incorporate K-Lok® seats
- ANSI Class 150 and 300
- Metal seat ANSI Class VI shutoff (0.01% leakage)
- Lug body (standard) or wafer body
- Carbon steel body, RTFE seat
- Stainless steel disc, 17-4 PH stem
- System temperature rating: 32 F to 450 F
- System pressure rating:
  - ANSI 150: 285 psig at 100 F
  - ANSI 300: 740 psig at 100 F

63-1270 VB30A Specification Data  
 63-1271 VB30C Specification Data