

## Motorized Butterfly Valve

Actuated Wafer type butterfly valves

### PRODUCT DATA



### FEATURES

- Wide size range (DN 50...DN600)
- For On-Off or Modulating Control
- 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

### SPECIFICATIONS

#### Valve

Sizes	DN50...DN600 (Wafer Type)
Nominal pressure	PN16
Tightness	Bubble tight
Medium Temperature	-10°C ~ +90°C Maximum
Body Material	GG25 (for DN50...DN150) GGG40 (for DN200...DN600)
Stem Material	SS416
Disc Material	Epoxy coated ductile iron GGG40
Liner Material	EPDM
Medium Type	Chilled and Hot water
Pipe Connection	ISO7005-2

#### Actuator

Power Supply	220Vac, 50/60 Hz
Running time	See table (1)
Travel Angle	90° ± 5°
Input (Modulating)	4~20mA, 1~5V, or 0(2)~10V select by DIP-switch
Enclosure	IP67 Waterproof
Ambient Temperature	-5°C to +65°C
Indicator	Continuous Position Indicator
Manual Override	Non-clutch design
Worm Gear	Permanently lubricated and self locking
Space Heater	15W 220V Anti-condensation
Material	Aluminum Alloy
External Coating	Dry powder coating
Stall Protection	Built-in thermal protection Cut off at 125 ± 5°C Reset at 95 ± 5°C

### GENERAL

The V4 Actuated Wafer Type Butterfly Valves are suitable for heating and cooling applications.

The V4 series is equipped with standard On-Off or modulating (4~20mA, 1~5V, or 0(2)~10V select by DIP-switch) control quarter-turn electric actuator.

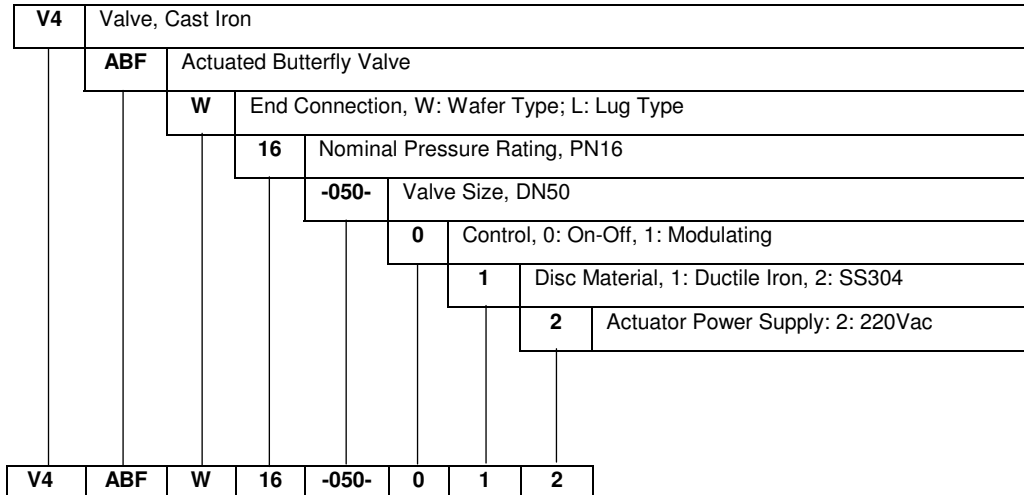
**Table (1) Control Type and Valve Size Data**

The below table is based on differential pressure of 10 bar.

Valve Size	OS# (On-Off)	Actuator OS#	OS# (Modulating)	Actuator OS#	Max Torque (Nm)	Run Time at 60Hz (sec)	Power (Watts)	Manual Override	Kvs (m <sup>3</sup> /h)
DN50	V4ABFW16-050-012	OM-1	V4ABFW16-050-112	OM-P1	35	12	10		109
DN65	V4ABFW16-065-012	OM-1	V4ABFW16-065-112	OM-P1	35	12	10		177
DN80	V4ABFW16-080-012	OM-1	V4ABFW16-080-112	OM-P1	35	12	10		243
DN100	V4ABFW16-100-012	OM-1	V4ABFW16-100-112	OM-P1	35	12	10		483
DN125	V4ABFW16-125-012	OM-2	V4ABFW16-125-112	OM-P2	90	15	40	Hand-wheel	822
DN150	V4ABFW16-150-012	OM-2	V4ABFW16-150-112	OM-P2	90	15	40	Hand-wheel	1,270
DN200	V4ABFW16-200-012	OM-3	V4ABFW16-200-112	OM-P3	150	22	40	Hand-wheel	2,550
DN250	V4ABFW16-250-012	OM-4	V4ABFW16-250-112	OM-P4	400	16	120	Hand-wheel	4,342
DN300	V4ABFW16-300-012	OM-4	V4ABFW16-300-112	OM-P4	400	16	120	Hand-wheel	6,708
DN350	V4ABFW16-350-012	OM-7	V4ABFW16-350-112	OM-P7	1,000	46	180	Hand-wheel	9,793
DN400	V4ABFW16-400-012	OM-8	V4ABFW16-400-112	OM-P8	1,500	46	220	Hand-wheel	13,467
DN450	V4ABFW16-450-012	OM-9	V4ABFW16-450-112	OM-P9	2,000	58	180	Hand-wheel	17,836
DN500	V4ABFW16-500-012	OM-10	V4ABFW16-500-112	OM-P10	2,500	58	220	Hand-wheel	22,933
DN600	V4ABFW16-600-012	OM-12	V4ABFW16-600-112	OM-P12	3,500	58	300	Hand-wheel	35,431

**Figure (1) Product Identification System**

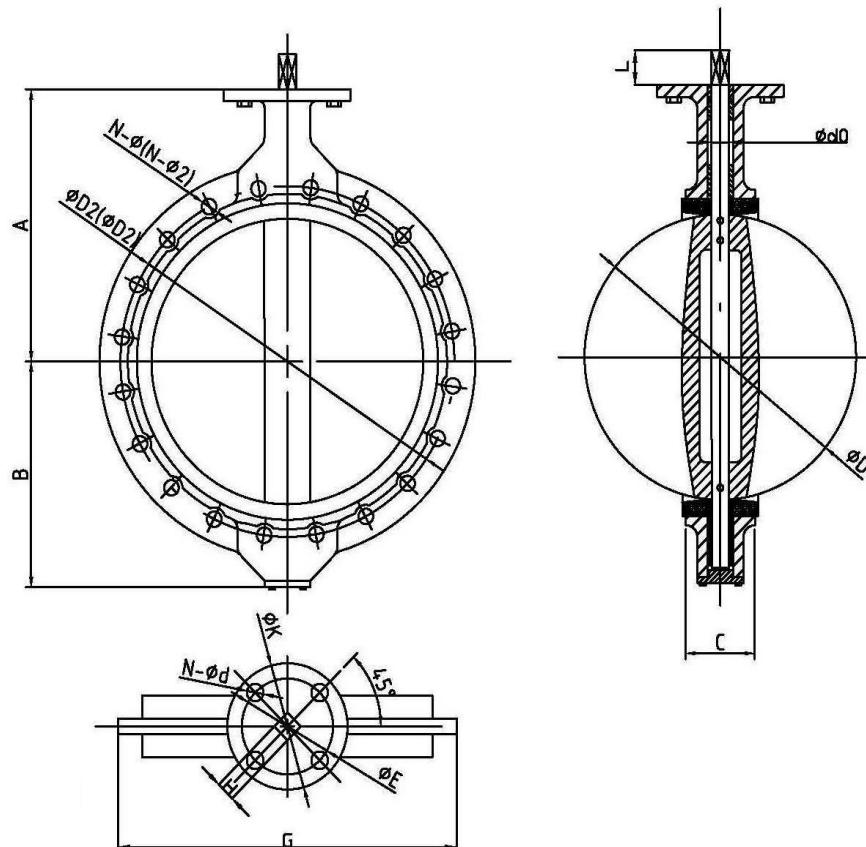
The labeling system for Honeywell butterfly valves is as follows:



e.g.: Butterfly Valve, Cast Iron Valve Body, Wafer End Connection, PN16 Nominal Pressure, DN50 Size, On-Off Control, Ductile Iron Disc, 220Vac Actuator.

Table (2) Valve Dimensions (mm) and Weight

Size		A	B	C	D	L	H	ØK	ØE	n-Ød	Ød0	G		ØD2	N-Ø2		Weight (Kg)	
DN	Inch											Wafer	Lug		Wafer	Lug	Wafer	Lug
50	2"	130.5	67	43	52.7	15	11	65	50	4-7	14.3	118	159	125	4-Ø18	4-M16	2.5	3.8
65	2.5"	140	71	46	64.3	15	11	65	50	4-7	14.3	137	184	145	4-Ø18	4-M16	3.2	4.2
80	3"	150	83	46	78.6	15	11	65	50	4-7	14.3	143	197	160	8-Ø18	8-M16	3.6	4.7
100	4"	183	95	52	104	15	11	65	50	4-7	15.8	156	222	180	8-Ø18	8-M16	4.9	9
125	5"	178	110	56	123	29	14	90	70	4-10	18.9	190	254	210	8-Ø18	8-M16	7	10.9
150	6"	191	124	56	155	29	14	90	70	4-10	18.9	212	292	240	8-Ø22	8-M20	7.8	14.2
200	8"	239	163	60	202	29	17	90	70	4-10	22.1	268	349	295	12-Ø22	12-M20	13.2	18.2
250	10"	285	227	68	250	39	22	125	102	4-12	28.5	325	413	355	12-Ø26	12-M24	19.2	26.8
300	12"	315	252	78	301	39	22	125	102	4-12	31.6	403	483	410	12-Ø26	12-M24	32.5	40
350	14"	368	267	78	333	45	22	175	140	4-18	31.6	436	527	470	16-Ø26	16-M24	41.3	56
400	16"	400	309	102	356	45	27	175	140	4-18	33.2	488	584	525	16-Ø30	16-M27	61	96
450	18"	422	328	114	440	45	27	210	165	4-22	38	539	635	585	20-Ø30	20-M27	79	122
500	20"	450	361	127	491	45	36	210	165	4-22	41.2	591	705	650	20-Ø33	20-M30	128	202
600	24"	562	459	154	592	45	36	210	165	4-22	50.7	816	832	770	20-Ø36	20-M33	188	270



**Table (3) Hydraulic Characteristics**

The below table shows the Kvs at different opening angles:

Size	Kvs at Disk Opening Angle								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
50	0.08	4.0	10	19	36	51	72	101	109
65	0.16	6.4	16	30	52	79	116	164	177
80	0.24	9.7	18	31	56	93	147	221	243
100	0.40	14	29	63	112	185	293	439	483
125	0.64	23	49	107	191	315	499	748	822
150	1.6	36	76	165	294	487	771	1,156	1,270
200	2.4	72	153	332	591	977	1,547	2,321	2,550
250	3.3	123	260	564	1,006	1,664	2,634	3,951	4,342
300	4.1	190	402	872	1,554	2,571	4,070	6,104	6,708
350	4.7	278	588	1,273	2,269	3,754	5,941	8,911	9,793
400	6.2	381	808	1,750	3,120	5,162	8,170	12,255	13,467
450	8.6	505	1,070	2,319	4,132	6,837	10,821	16,231	17,836
500	11	650	1,376	2,981	5,313	8,791	13,913	20,869	22,933
600	17	1,004	2,126	4,606	8,209	13,582	21,495	32,242	35,431

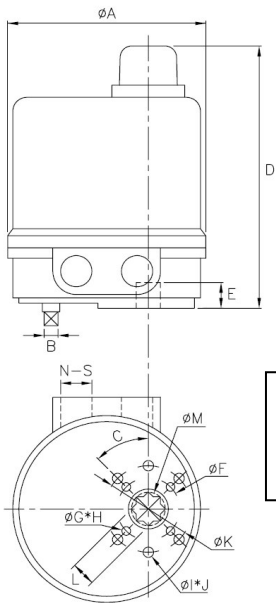
**Table (4) Actuator Data**

OS# On-Off	OS# Modulating	Max Torque (Nm)	Run Time at 60Hz (sec)	Power Consumption (Watts)	Manual Override	Weight (Kg)
OM-1	OM-P1	35	12	10		2
OM-2	OM-P2	90	15	40	Hand-wheel	11
OM-3	OM-P3	150	22	40	Hand-wheel	11
OM-4	OM-P4	400	16	120	Hand-wheel	22
OM-5	OM-P5	500	22	120	Hand-wheel	22
OM-6	OM-P6	650	28	120	Hand-wheel	22
OM-7	OM-P7	1000	46	180	Hand-wheel	36
OM-8	OM-P8	1500	46	220	Hand-wheel	36
OM-9	OM-P9	2000	58	180	Hand-wheel	56
OM-10	OM-P10	2500	58	220	Hand-wheel	56
OM-11	OM-P11	3000	58	250	Hand-wheel	56
OM-12	OM-P12	3500	58	300	Hand-wheel	56

Table (5a) Actuator Dimensions (mm)

OM-1

OS#	A	B	C	D	E	F	G	H	I	J	K	L <sub>max</sub>	M	N	S	Flange Type
OM-1	114	8	45°	155	15	36	m5	4	m6	6	50	14	19	2	1/2 PS	F03/ F05



- ◆ Option: (1) L=11, M=15  
(2) L=9, M=12
- ◆ With Modulating Card D=185
- ◆ No mechanical stops

Table (5b) Actuator Dimensions (mm)

OM-2 to OM-6

OS#	A	B	C	D	E	F	G <sub>Max</sub>	H	I	M	N	S	Flange Type
OM-2&3	203	326	180	255	30	123	22	70	m8	4	2	1/2 PS	F07
OM-4,5,6	290	394	217	317	40	194	35	102	m10	4	2	1/2 PS	F10

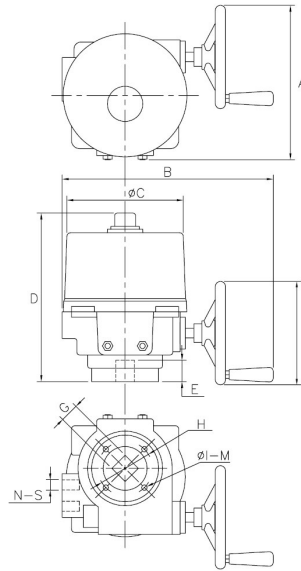


Table (5c) Actuator Dimensions (mm)

OM-7 to OM-8

OS#	A	B	C	D	E	F	G	H	I	J	K	L*2	M <sub>max</sub>	N	S	Flange Type
OM-7 OM-8	385	340	217	420	60	295	140	45°	m16	4	180	10	35	2	1/2 PS	F14

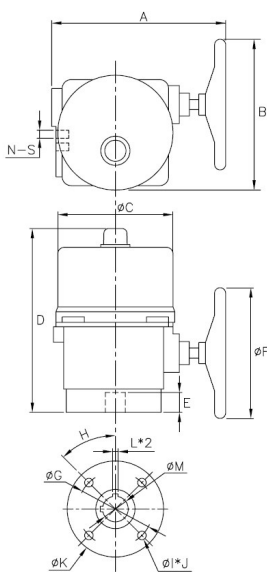
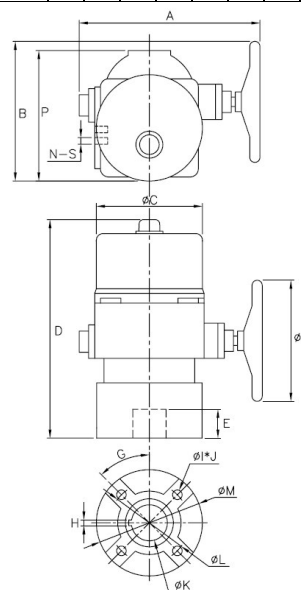


Table (5d) Actuator Dimensions (mm)

OM-9 to OM-12

OS#	A	B	C	D	E	F	G	H	I	J	K	L	M	P	N	S	Flange Type
OM-9 to OM-12	470	350	260	590	100	395	45°	12	m20	4	75	165	221	360	2	1/2 PS	F16



## INSTALLATION

### WARNING!

**Remove power before the cover is dismantled!**  
**The actuator must be handled with the utmost care when the cover is removed and the power connected!**

### MOUNTING ON VALVE

Operate the valve manually to fully opened or fully closed position before the actuator is mounted.

Operate the actuator and valve stem to fully opened or fully closed position.

Check that the actuator and valve stem are in correct position. Please note, valve and actuator must be in the same mode (fully opened/fully closed) prior to the assembly.

Mount the actuator on the valve and check that the actuator and valve stem are centered and aligned.

Operate the valve manually with the aid of the actuator hand-wheel and check that the valve moves with normal resistance.

Check that all screws are correctly tightened.

## ELECTRIC WIRING

**Note:**

**Electric wiring must be carried out by qualified personnel only!**

**Wiring diagram is also shown on the label of top cover.**

Loosen the screws on the cover and lift it off.

Check the voltage marked on the actuator label.

Connect according to the enclosed wiring diagram or if the actuator is of standard design, according to the wiring diagram below. The wiring diagram is drawn in unaffected position (the valve in the intermediate position).

Test run the actuator from intermediate position checking that the actuator turns in the correct direction.

Test run the actuator and check that the limit switches work correctly.

Check that the cable entries and possible blind plug are sealed.

Mount the cover.

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