BUTTERFLY VALVE

Wafer Type Motorized Valve

APPLICATION

The BSBFW Actuated wafer type Butterfly valves are suitable for heating and cooling applications. The BSBFW series is equipped with standard On-Off/modulting control quarter turn electric actuator.



FEATURES

- Size: DN50-DN700
- Body: Cast Iron(DN50-DN250) Ductile Iron (DN300-DN700)
- Disc: Ductile Iron/Stainless Steel (S.S.)
- Connection Type: Wafer
- Actuator: On/Off and Modulating control
- Anti-condensation space heater available In the Actuator
- Actuator comes with IP67 enclosure

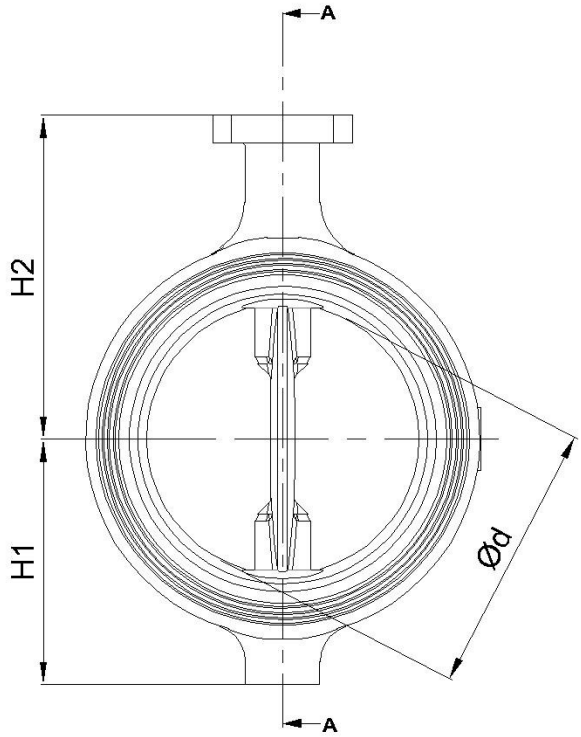
SPECIFICATIONS

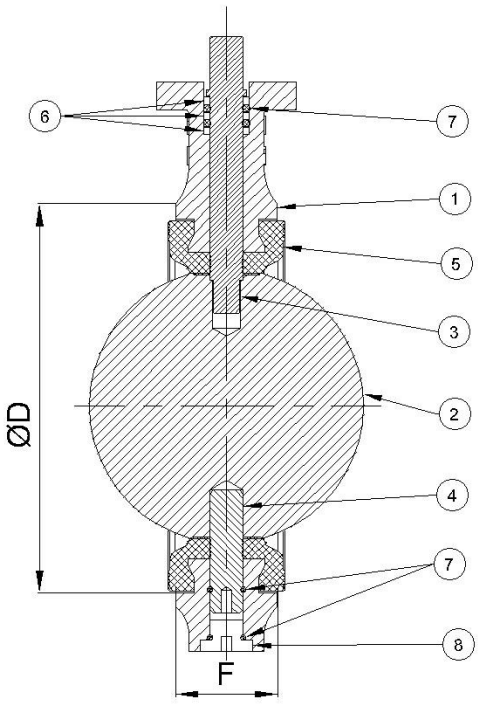
VALVE	
Medium	Water
Medium Temp.	-10°C to 110°C
Nominal Pressure	PN16/25
ACTUATOR	
Power Supply	220Vac, 50/60 Hz
Travel Angle	90° ± 5°
Feedback	2 Aux Switches
Enclosure	IP67 Waterproof
Ambient Temperature	-30°C to +65°C
Indicator	Continuous Position Indicator
Manual Override	
Worm Gear	Permanently lubricated and self-locking
Space Heater	15W 220V Anti-condensation
Material	Aluminum Alloy
External Coating	Dry Powder Coating

Honeywell

STANDARDS AND CODES	
Valve Design Std.	IS:13095
Valve Testing Std.	IS:13095
Flange Std. for valves	IS:1538/ ISO 7005-2

TEST PRESSURE	
Shell Test	24 Bar (PN16), 37.5 Bar (PN25)
Seat Test	17.6 Bar (PN16), 27.5 Bar (PN25)



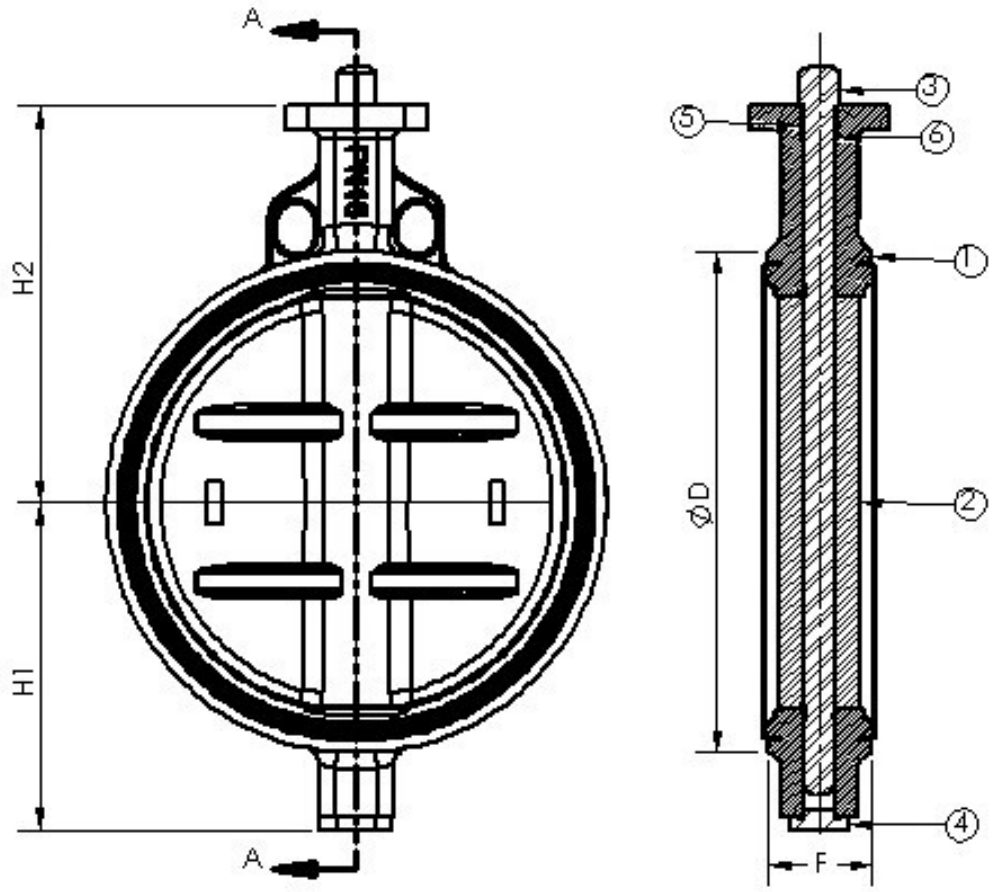


PART DESCRIPTIONS

SR. NO.	PART NAME	MATERIAL	SPECIFICATION	QTY
1	BODY	CAST IRON	IS:210 Gr. FG200	1
2	DISC	DUCTILE IRON/ S.S.	450/12; SS304	1
3	UPPER STEM	STAINLESS STEEL	ASTM A276 Gr, SS 410	1
4	LOWER STEM	STAINLESS STEEL	ASTM A276 Gr, SS 410	1
5	SEAT	RUBBER	EPDM	1
6	BODY BUSH	PTFE	NYLON	3
7	O-RINGS	RUBBER	EPDM	3
8	BOTTOM PLUG	MILD STEEL (CHROME PLATED)	-----	1

OUTSIDE DIMENSIONS (MM)

SIZE DN	A	F	ØD	ØD	H1	H2
50	110	41.5	97	55	67	110
65	118	44.5	111	65.5	74	118
80	127	44.5	128	80.5	83	127
100	145	50.5	160	100	100	145
125	161	54.5	192	122.5	119	161
150	174	54.5	213	146.5	132	174
200	238	59	271	198	162	221
250	282	66.5	325	255	216	285



PART DESCRIPTIONS

SR. NO.	PART NAME	MATERIAL	SPECIFICATION	QTY
1	BODY	DUCTILE IRON	450/12	1
2	DISC	DUCTILE IRON/S.S.	450/12; SS304	1
3	UPPER STEM	STAINLESS STEEL	ASTM A276 Gr, SS 410	1
4	BOTTOM PLUG	MILD STEEL (CHROME PLATED)	-----	1
5	O-RINGS	RUBBER	EPDM	4
6	BODY BUSH	PTFE	NYLON	3

OUTSIDE DIMENSIONS (MM)

SIZE DN	A	F	ØD	H1	H2
300	307	76.5	376	229	315
350	373	90.5	440	282	373
400	418	101.5	493	315	417
450	425	112.5	518	346	427
500	475	125.5	598	375	475
600	555	152.5	665.5	443	555
700	570	165	770	480	570

NOMENCLATURE OF THE VALVE

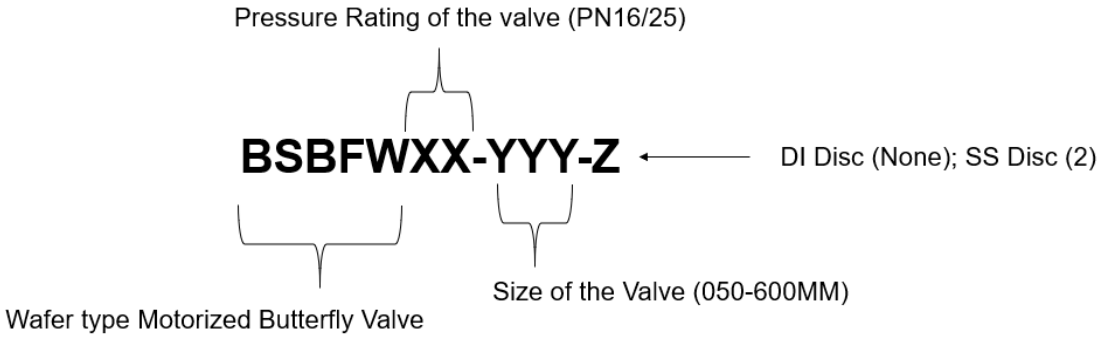


TABLE (1) VALVE-ACTUATOR COMPATIBILITY

VALVE SIZE	ACTUATOR		VALVE	MAX TORQUE (NM)		RUN TIME (SEC)		KVS (M3 /H)
	ON-OFF	MODULATING		ON-OFF	MODULATING	ON-OFF	MODULATING	
DN50	NOM16H0050	NOM16H0050P	BSBFWXX-050U-(2)	50	50	20	20	109
DN65	NOM16H0050	NOM16H0050P	BSBFWXX-065U-(2)	50	50	20	20	177
DN80	NOM16H0050	NOM16H0050P	BSBFWXX-080U-(2)	50	50	20	20	243
DN100	NOM16H0050	NOM16H0050P	BSBFWXX-100U-(2)	50	50	20	20	483
DN125	NOM16H0080	NOM16H0080P	BSBFWXX-125U-(2)	80	80	30	30	822
DN150	NOM16H0080	NOM16H0080P	BSBFWXX-150U-(2)	80	80	30	30	1,270
DN200	EM-0150	NOM16H0200P	BSBFWXX-200U-(2)	150	200	20	30	2,550
DN250	EM-0400	NOM16H0400P	BSBFWXX-250U-(2)	400	400	26	30	4,342
DN300	EM-0400	NOM16H0400P	BSBFWXX-300U-(2)	400	400	26	30	6,708
DN350	EM-1000	NOM16H1000P	BSBFWXX-350U-(2)	1000	1000	26	54	9,793
DN400	EM-1500	NOM16H2000P	BSBFWXX-400U-(2)	1500	2000	90	70	13,467
DN450	EM-2000	NOM16H2000P	BSBFWXX-450U-(2)	2000	2000	90	70	17,836
DN500	EM-2500	NOM16H4000P	BSBFWXX-500U-(2)	2500	4000	90	140	22,933
DN600	NOM16H4000	NOM16H4000P	BSBFWXX-600U-(2)	4000	4000	140	140	35,431
DN700	NOM16H4000	NOM16H4000P	BSBFWXX-700U-(2)	4000	4000	140	140	39,001

TABLE (2) VALVE DIMENSIONS (MM) AND WEIGHTS

PN	SIZE		A	B	C	ØD	L	H	ØK	ØE	N-ØD	G		ØD2	N-Ø2		WEIGHT (KG)	
	DN	INCH										WATER	LUG		WATER	LUG	WATER	LUG
16	50	2”	110	67	43	50.5	15	11	65	50	4-7	94	159	125	4-Ø18	4-M16	2.5	3.8
	65	2.5”	118	75	46	65	15	11	65	50	4-7	110	184	145	4-Ø18	4-M16	3.2	4.2
	80	3”	130	82	46	80	15	11	65	50	4-7	127	197	160	8-Ø18	8-M16	3.6	4.7
	100	4”	145	100	52	100	15	11	65	50	4-7	150	222	180	8-Ø18	8-M16	4.9	9
	125	5”	156	114	56	123	29	14	90	70	4-10	175	254	210	8-Ø18	8-M16	7	10.9
	150	6”	176	135	56	149.5	29	14	90	70	4-10	205	292	240	8-Ø22	8-M20	7.8	14.2
	200	8”	220	161	60	197	29	17	90	70	4-10	265	349	295	12-Ø22	12-M20	13.2	18.2
	250	10”	280	220	68	250.5	39	22	125	102	4-12	325	413	355	12-Ø26	12-M24	19.2	26.8
	300	12”	305	230	78	299.5	39	22	125	140	4-12	376	483	410	12-Ø26	12-M24	32.5	40
	350	14”	370	280	92	351	45	22	175	140	4-18	445	527	470	16-Ø26	16-M24	41.3	56
	400	16”	412	315	102	403	45	27	175	165	4-18	495	584	525	16-Ø30	16-M27	61	96
	450	18”	425	348	114	453	45	27	210	165	4-22	550	635	585	20-Ø30	20-M27	79	122
	500	20”	470	380	127	503	45	36	210	165	4-22	610	705	650	20-Ø33	20-M30	128	202
	600	24”	550	445	154	603	45	36	210	70	4-22	705	832	770	20-Ø36	20-M33	188	270
	700	28”	570	480	165	702	45	36	210	165	4-22	803	915	840	24-Ø36	24-M33	255	367
25	50	2”	110	67	43	50.50	15	11	90	70	4-10	94	-	125	4-Ø18	4-M16	3.5	-
	65	2.5”	118	75	46	65	15	11	90	70	4-10	110	-	145	8-Ø18	8-M16	4.5	-
	80	3”	130	82	46	80	15	14	90	70	4-10	127	-	160	8-Ø18	8-M16	5.1	-
	100	4”	145	100	52	100	15	14	90	70	4-10	150	-	190	8-Ø23	8-M20	6.8	-
	125	5”	156	114	56	123	29	17	90	70	4-10	175	-	220	8-Ø27	8-M24	9.8	-
	150	6”	176	135	56	148.5	29	17	90	70	4-10	205	-	250	8-Ø27	8-M24	10.9	-
	200	8”	220	161	60	197	29	22	125	102	4-12	265	-	310	12-Ø27	12-M24	18.5	-
	250	10”	280	205	68	250.5	29	22	125	102	4-12	325	-	370	12-Ø30	12-M27	28.9	-
	300	12”	305	230	78	299.5	29	22	150	125	4-14	376	-	430	16-Ø30	16-M27	45.5	-

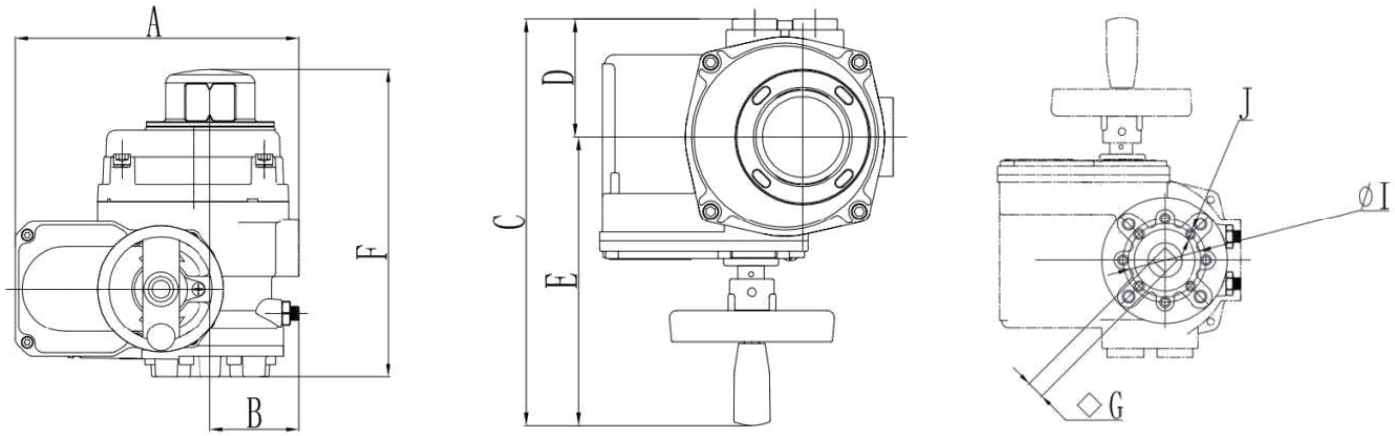
TABLE (3) HYDRAULIC CHARACTERISTICS

The below table shows the Kvs at different opening angles:

SIZE	KVS AT DISC OPENING ANGLE								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
DN50	0.08	4.0	10	19	36	51	72	101	109
DN65	0.16	6.4	16	30	52	79	116	164	177
DN80	0.24	9.7	18	31	56	93	147	221	243
DN100	0.40	14	29	63	112	185	293	439	483
DN125	0.64	23	49	107	191	315	499	748	822
DN150	1.6	36	76	165	294	487	771	1,156	1,270
DN200	2.4	72	153	332	591	977	1,547	2,321	2,550
DN250	3.3	123	260	564	1,006	1,664	2,634	3,951	4,342
DN300	4.1	190	402	872	1,554	2,571	4,070	6,104	6,708
DN350	4.7	278	588	1273	2269	3754	5941	8911	9793
DN400	6.2	381	808	1750	3120	5162	8170	12255	13467
DN450	8.6	505	1070	2319	4132	6837	10821	16231	17836
DN500	11	650	1376	2981	5313	8791	13913	20869	22933
DN600	17	1004	2126	4606	8209	13582	21495	32242	35431
DN700	30	1189	2475	4969	8945	16746	27456	36178	39001

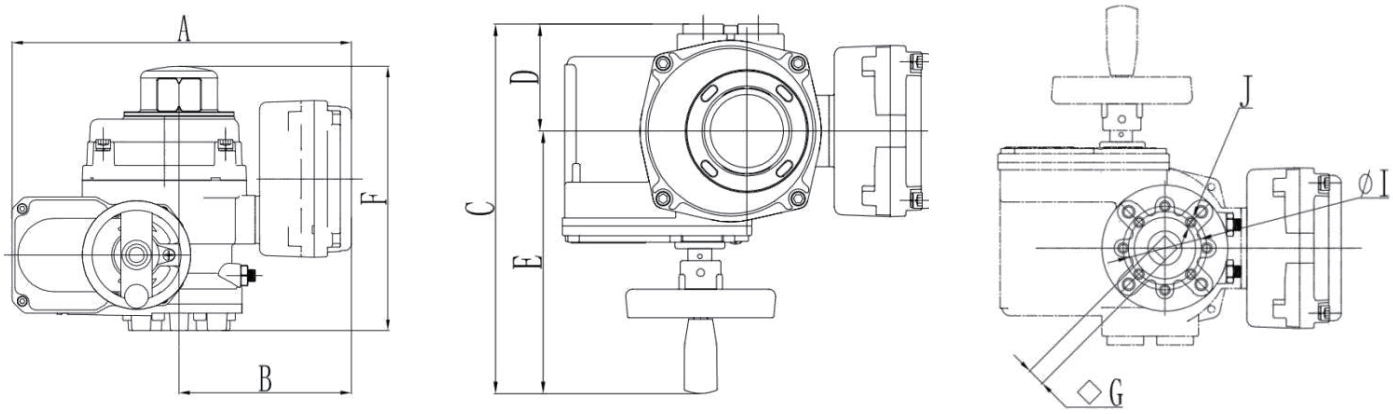
TABLE (4) ACTUATOR DIMENSIONS

ON-OFF Type

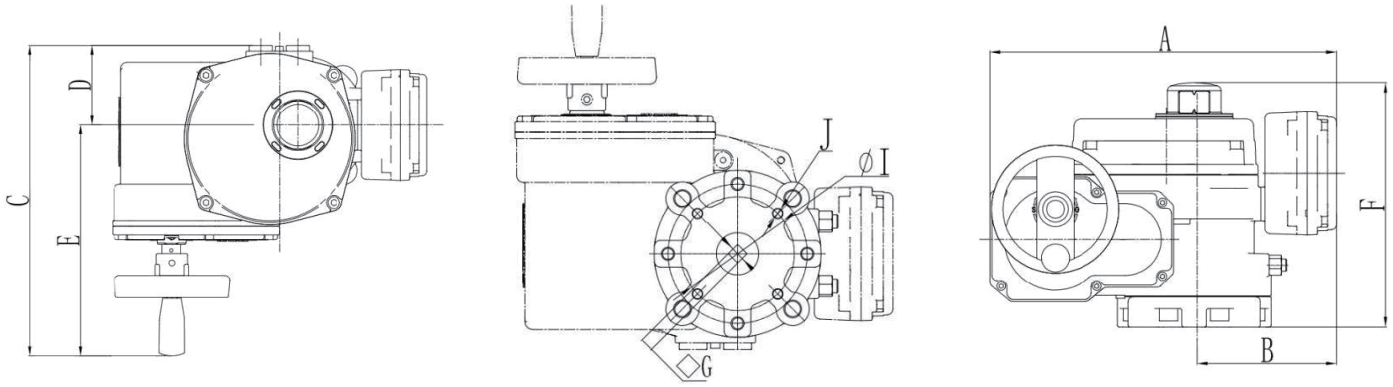


NOM16H0050/NOM16H0080

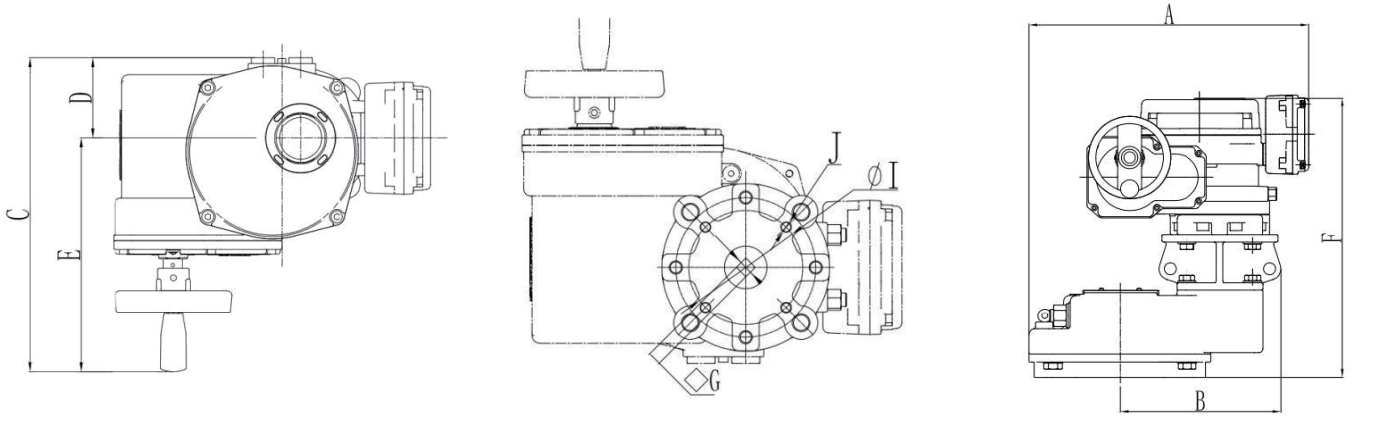
Modulating Type



NOM16H0050P/NOM16H0080P

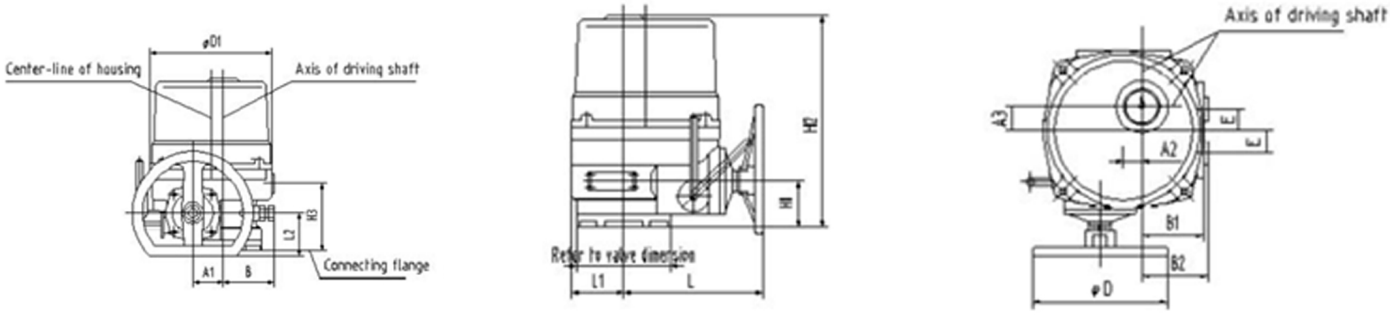


NOM16H0200P/NOM16H0400P/NOM16H0600P/NOM16H0800P/NOM16H1000P



NOM16H2000P(B)/NOM16H4000P/NOM16H5000P

SIZE	DIMENSION (MM)						
	A	B	C	D	E	F	WEIGHT (KG)
NOM16H0050	166	52	236	66	170	180	3.3
NOM16H0080	166	52	236	66	170	180	3.3
NOM16H0050P	234	121	236	66	170	180	4.5
NOM16H0080P	234	121	236	66	170	180	4.7
NOM16H0200P	303	132	342	82	260	214	11.2
NOM16H0400P	303	132	342	82	260	214	11.7
NOM16H0600P	303	132	342	82	260	214	12.2
NOM16H0800P	343	143	355	86	269	239	16.7
NOM16H1000PB	343	143	355	86	269	239	17.2
NOM16H2000PB	420	241	406	137	269	425	53.2
NOM16H4000PB	420	241	406	137	269	425	56.2
NOM16H5000P	420	241	406	137	269	425	58.2

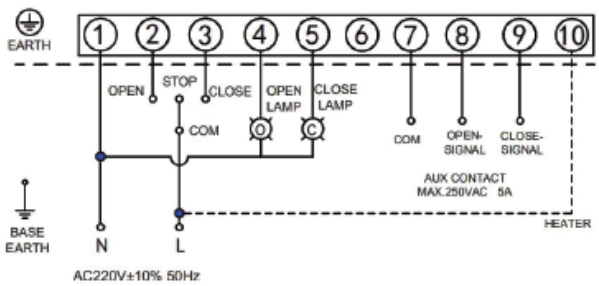


MODEL	A1	A2	A3	B	B1	B2	D	D1	E	H1	H2	L	L1	L2
EM-0150	49.5	22.5	30	85	77.5	0	200	200	27.5	64	263	190	85	76
EM-0400	60	33	35	100	77	0	200	220	27.5	70	304	205	88	76
EM-1000	70	43	38	115	92	0	250	260	27.5	78	342	228	106	110
EM1500	70	43	38	165	92	0	250	260	27.5	185	450	228	106	110
EM2000	70	43	38	165	92	0	250	260	27.5	185	450	228	106	110
EM2500	70	43	38	165	92	0	250	260	27.5	185	450	228	106	110

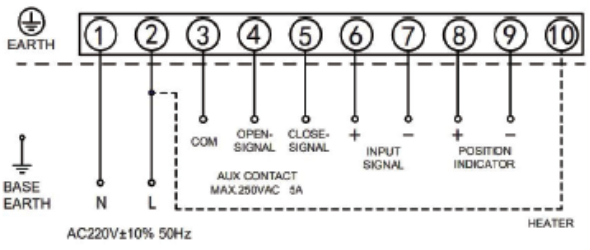
TABLE (5) WIRING DIAGRAMS

NOM Actuators

ON-OFF Type



Modulating Type

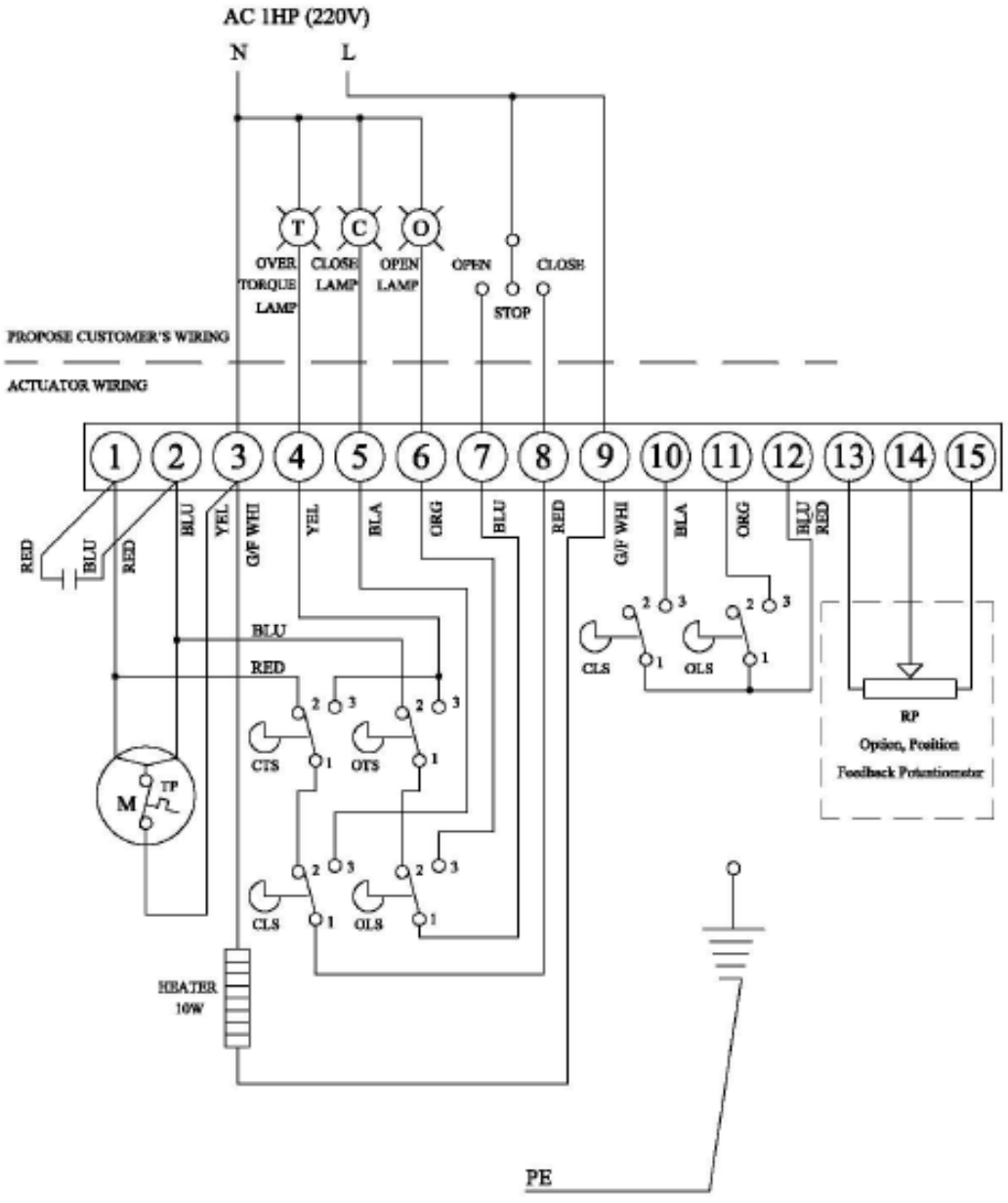


EM Actuators

Wiring - EM-0150 -EM2500

CLS:CLOSE LIMIT SWITCH (250VAC 6A)
OLS:OPEN LIMIT SWITCH (250 VAC 6A)
CTS:CLOSE TORQUE SWITCH(250VAC 6A)
OTS:OPEN TORQUE SWITCH:(250VAC 6A)
TP :THERMAL PROTECTOR (250VAC)

CLS 1-2	
CLS 1-3	
CLS 1-2	
CLS 1-3	
CTS 1-3	CLOSING TORQUE SWITCH INTERRUPTS CONTROL IF MECHANICAL OVERLOAD OCCURS DURING CLOSING CY
OTS 1-3	OPENING TORQUE SWITCH INTERRUPTS CONTROL IF MECHANICAL OVERLOAD OCCURS DURING OPENING CY



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THE FUTURE IS WHAT WE MAKE IT

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