

ELECTRIC BUTTER FLY VALVE

MODEL : MFB-4700

HOW TO ORDER ?

MFB4700 -		MATERIAL	SEAT	OPTION	ACTION	SIZE
		MATERIAL	SEAT	OPTION		
		1 FC20	1 EPDM	s : standard (on-off) Exa : explosion proof (Eexd iib t4) Lcu-b : internal control Lcu-c : digital display control Pcu : proportinal control unit(0 -10V dc , 4-20mA DC)		
		2 FCD	2 SILICON			
		3 ALDC	3 MTFE			
		4 SCPH2	4 METAL			
		5 SCS13		ORDER EXAMPLE ALDC /EPDM SEAT , normal open end connection flange, size 65a 4-20mA control , Explosion proof order no. MFB-4700-31PCU EXA - 0 - 65A		
		6 SCS14				
		ACTION	SIZE			
		O : normal open C : normal close	40A T0 200A			



MFB-4700 MODEL 은 **ELECTRIC MOTOR ACTUATOR** 를 이용하여 동작 하는 **BUTTERFLY VALVE** 입니다.

ELECTRIC ACTUATOR를 이용하여 **ON-OFF** 제어와 비례제어가 가능하게 설계되어 있습니다.

액체 , 기체 , 가스 , 저압의 스팀에 사용 가능 하며, **SAET** 교체를 통해 **300℃** 미만의 온도에서도 사용 가능합니다.

SPECIFICATION

TYPE : ELECTRIC MOTOR OPERATED BUTTER FLY

NOMINAL SIZE : 1 ¼", 1 ½", 2", 2 ½", 3", 4", 5", 6", 8", 10", 12", 14", 16", 20", 22", 24", 26", 28", 30", 32", 36", 38", 40", 48"

PRESSURE RATING : JIS 10K , JIS 20K , ANSI 150# , ANSI 300#

END CONNECTION : FLANGE , WAFER , LUG

MATERIAL BODY : CAST IRON , CAST STEEL , DUCTUIL IRON , STAINLESS STEEL

DISC : STAINLESS STEEL

SEAT : EPDM , SILICON , MTFE , METAL

GLAND PACKING : V-Teflon , GRAPHITE , PP

GASKET : NBR , PTFE

ACTUATOR : ELECTRIC ACTUATOR

POWER SUPPLY : AC 110,220 1PH , AC380,440 3PH 50/60HZ

CONTROL POWER SUPPLY : AC 110,220 1PH , 50/60HZ

OPTIONAL ACCESSORISES (PROVIDE UPON REQUEST)

EXPLOSION PROOF - EEXD IIB T4

WATERTIGHT ENCLOSURE ACTUATOR (IP68 10M 72HR)

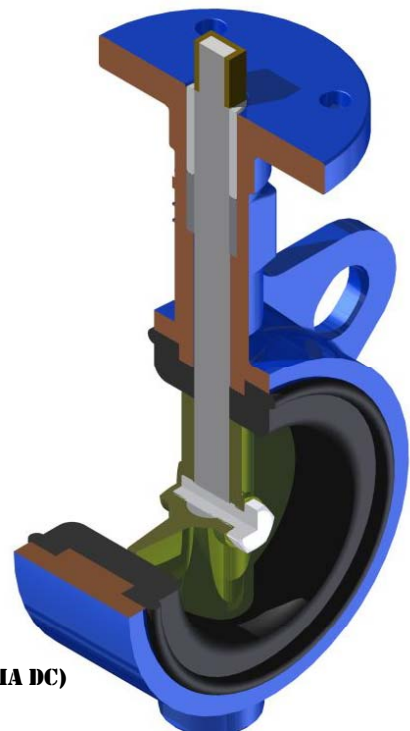
PROPORTIONAL CONTROL UNIT (INPUT,OUTPUT 0-10V DC , 4-20MA DC)

INTEGRAL CONTROL

DIGITAL DISPLAY CONTROL

CURRENT POSITION TRANSMITTER (OUTPUT 4 - 20MA)

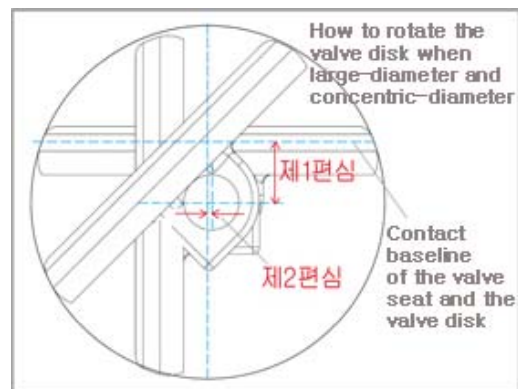
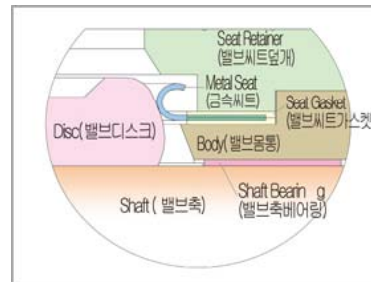
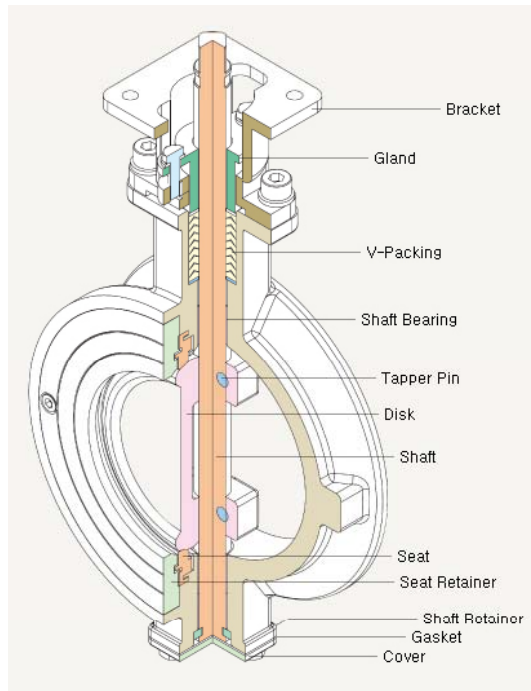
RECHARGEABLE BATTERY BACKUP



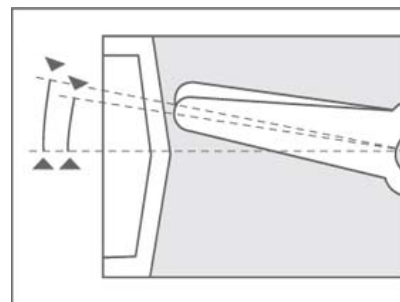
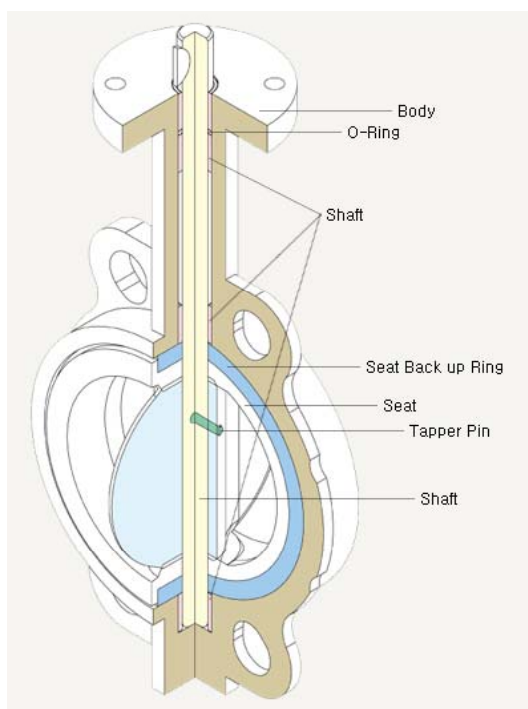
ELECTRIC BUTTERFLY VALVE

MODEL : MFB-4700

high performance butterfly valve 구조



rubber-seated butterfly valve 구조

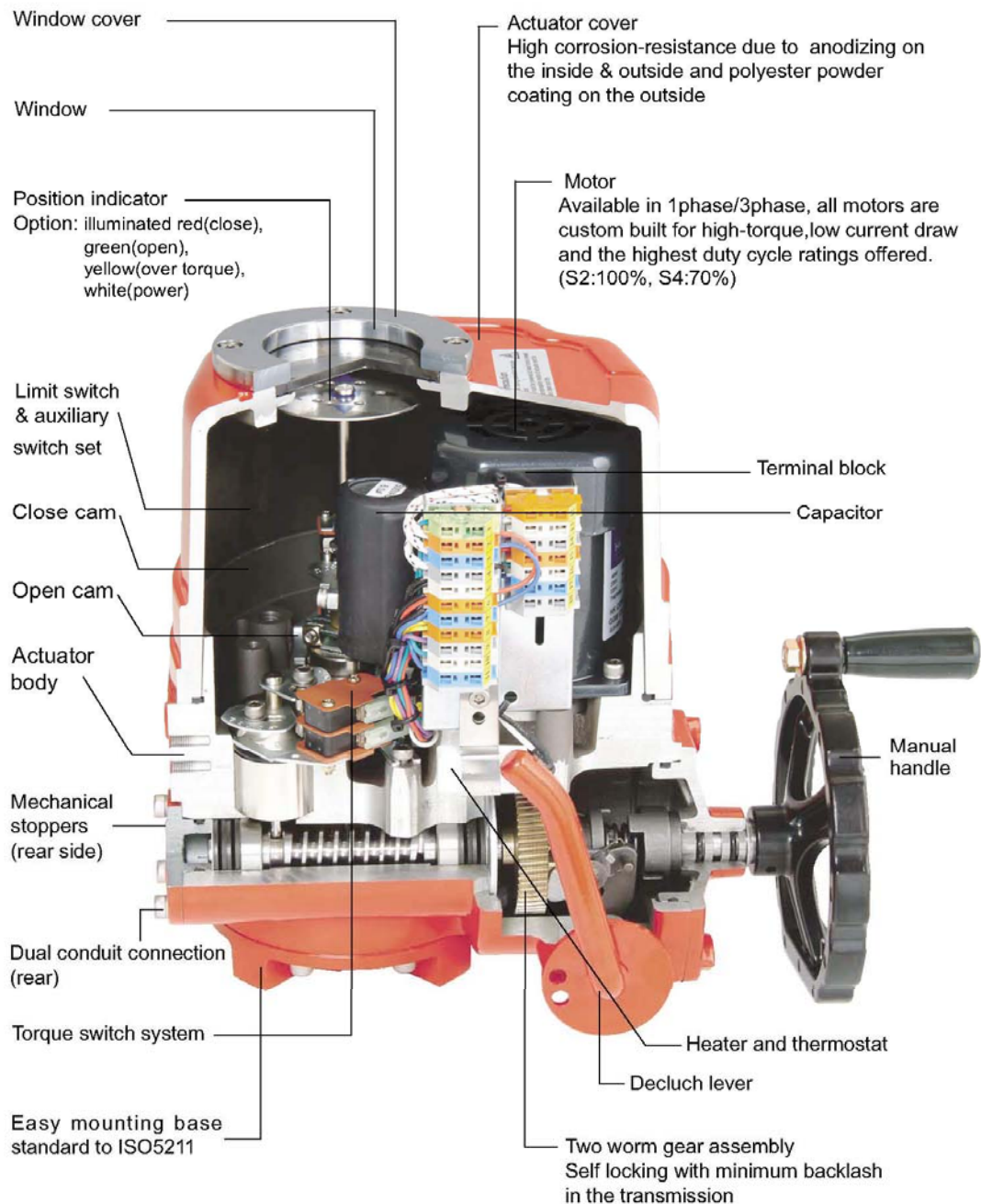


ELECTRIC BUTTERFLY VALVE

MODEL : MFB-4700

ELECTRIC ACTUATOR

■ Construction



ELECTRIC BUTTERFLY VALVE

MODEL : MFB-4700

ELECTRIC ACTUATOR

■ Standard Configuration



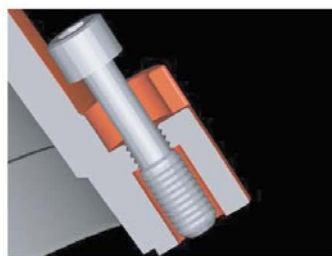
● Terminal block

- Enough number of terminal strips for customer's convenience
- Proven reliability and tight wiring connection.
- Stripped length: 8-9 mm / 0.33 in (2.5mm²)
- Terminal dimensions: 10 × 22 × 32mm



● Heater

- Ceramic housing with thermostat to prevent over heat comparing with set temperature.
- No risk of electricity leakage.



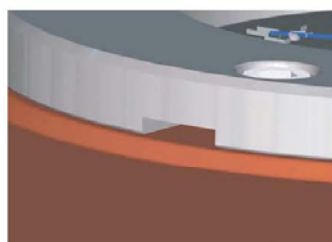
● Captive cover bolt

- Cover bolts are specially designed to prevent losing it during maintenance or installation.
- All external bolts are stainless steel for rust prevention.



● Indicator sustained by spring

- Direction of visual indicator is set by factory.
- In case of changing it's direction, just grip the indicator plate and change the position.
- Spring beneath indicator plate sustains the set position unchanged.
- No need to loose screw and tight it again at all !



● Slot on window cover for draining rainwater

- Rainwater inside of window cover may affect the sealing of window.
- To prevent this, drain slot is useful to prevent this effect.

ELECTRIC BUTTERFLY VALVE

MODEL : MFB-4700

ELECTRIC ACTUATOR



HQ Series



Performance

HQ (MODEL)	Maximum output torque	Operating time(sec.) 60/50Hz	Maximum bore size	Motor class F power(W) 60Hz/50Hz		Rated current(A) 60Hz/50Hz				Duty cycle IEC 34-1	Number of handle turn	Weight
						1 Phase		3 Phase				
				Kg-m	90	mm	1 Phase	3 Phase	110V			
HQ-008	8	13/16	φ 20	106/103	N/A	1.00/0.97	0.45/0.45	N/A	N/A	70	10	7.4
HQ-010	10	16/20	φ 20	106/103	N/A	1.00/0.97	0.47/0.45	N/A	N/A	70	10	7.4
HQ-015	15	21/25	φ 22	185/166	112/216	1.70/1.50	0.84/0.73	0.28/0.37	0.36/0.59	70	11	16.6
HQ-020	20	21/25	φ 22	185/166	112/216	1.70/1.50	0.84/0.73	0.28/0.37	0.36/0.59	70	11	16.6
HQ-030	30	26/31	φ 35	177/148	130/171	1.67/1.37	0.81/0.68	0.27/0.33	0.34/0.55	70	13.5	22
HQ-050	50	26/31	φ 35	390/410	184/236	3.56/4.27	1.30/1.40	0.42/0.51	0.47/0.66	70	13.5	23
HQ-060	60	26/31	φ 35	390/410	184/236	3.56/4.27	1.30/1.40	0.42/0.51	0.47/0.66	70	13.5	23
HQ-080	80	31/37	φ 45	483/389	312/427	4.93/3.59	2.20/1.80	0.61/0.83	0.67/1.10	70	16.5	29
HQ-120	120	31/37	φ 45	483/389	312/427	4.93/3.59	2.20/1.80	0.61/0.83	0.67/1.10	70	16.5	29
HQ-200	200	93/112	φ 65	483/389	312/427	4.93/3.59	2.20/1.80	0.61/0.83	0.67/1.10	70	49.5	75
HQ-300	300	93/112	φ 65	483/389	312/427	4.93/3.59	2.20/1.80	0.61/0.83	0.67/1.10	70	49.5	75

Standard Specification

Enclosure	Weatherproof enclosure IP67, NEMA 4 and 6
Power supply	110 / 220V AC 1PH, 380 / 440V AC 3PH 50 / 60Hz, ±10%
Control power supply	110 / 220V AC 1PH, 50 / 60Hz, ±10%
Duty cycle(on-off)	S2, 100% Max 30Min
Duty cycle(modulating)	S4, 70% Max 300~1600 start/hour
Motor	Induction motor (Reversible motor)
Limit switches	Open / close, SPDT, 250V AC 16A rating
Additional limit switches	Open / close, SPDT, 250V AC 16A rating (except HQ-008/010)
Torque switches	Open / close, SPDT, 250V AC 16A rating (except HQ-008/010)
Stall protection/operating temp	Built-in thermal protection, open 150 ± 5 / close 97 ± 15
Travel angle	90° ± 10° (0~110°)
Indicator	Continuous position indicator
Manual override	Decutching mechanism
Self locking	Provided by double worm gearing
Mechanical stopper	2x external adjustable screws
Space heater	10W(110/220V AC) Anti-condensation
Cable entries	Three PF3/4" tap (standard type only)
Lubrication	Grease moly (EP type)
Terminal block	Spring loaded lever push type
Materials	Steel, Aluminium alloy, Al bronze, Polycarbonate
Ambient temperature	-20°C ~ +70°C (except option electronic board)
Ambient humidity	90% RH Max. (non-condensing)
Anti vibration	X Y Z 10g, 0.2~34Hz, 30minute
External coating	Anodizing treatment before dry powder, Polyester

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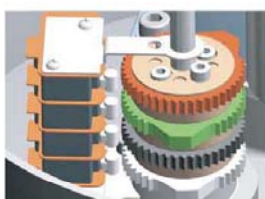
ELECTRIC ACTUATOR

Option Specification

EXA	Explosionproof enclosure actuator (Eexd II BT4)	HQ-series
WTA	Watertight enclosure actuator (IP68 10M 72HR)	HQ-series
PIU	Potentiometer unit (0~1k Ω)	HQ-series
PCU	Proportional control unit (input, output 0~10V DC, 4~20mA DC)	HQ-series
ATS	Additional torque switches (SPDT x 2EA 250V AC 10A Rating)	except HQ-008/010
LCU-B	Integral control (LCU + IMS + phase protect indicator)	except HQ-008/010
LCU-C	Digital display control (LCU + IMS + auto phase discriminator)	except HQ-008/010
CPT	Current position transmitter (output 4~20mA DC)	HQ-series
EXT	Extension 120°, 180°, 270° turn	except HQ-200, 300
RBP	Rechargeable battery backup	HQ-008/010, 015, 020, 030
DCM	DC motor (24V DC)	HQ-008/010, 015, 020, 030
ADCM	Multi AC/DC 24V(integral)	HQ-008/010, 015, 020, 030
LPA	Lever plate actuator	except HQ-008/010
SLU	Signal lamp unit (white-power on, red-open, green-close, yellow-over torque)	except HQ-008/010
FPA1	Fire Proofing Actuator 1050 $\pm$ 5°C / 50min	Engineering consult in advance
FPA2	Fire Proofing Actuator 250 $\pm$ 5°C / 150min	Engineering consult in advance



(Standard cam)



(Cam block)



(D-Type cam)

- 2 travel limit switches for operation
- 2 auxiliary limit switches as dry contact for customer usage
- Easy setting from upside by two screws for tight lockup
- Each cam be set independently



Proportional Control Unit (PCU)

- Input signal range : 0~10VDC, 1~5VDC, 4~20mA, 20~4mA
- Output signal range : 4~20mA, 0~10VDC
- Adjustable range : Zero 8mA, Open 16mA
- Position conversion accuracy : $\pm$ 0.5~1.5%(depends on installation)



Potentiometer Kit (PIU)

- 0~1K ohm($\pm$ 0.5%), high resolution



Fire Proofing Actuator (FPA)



Rechargeable Battery Backup

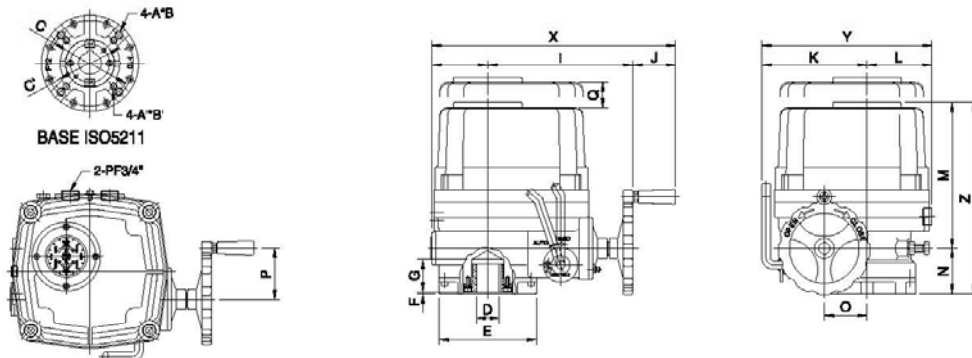
ELECTRIC BUTTER FLY VALVE

MODEL : MFB-4700

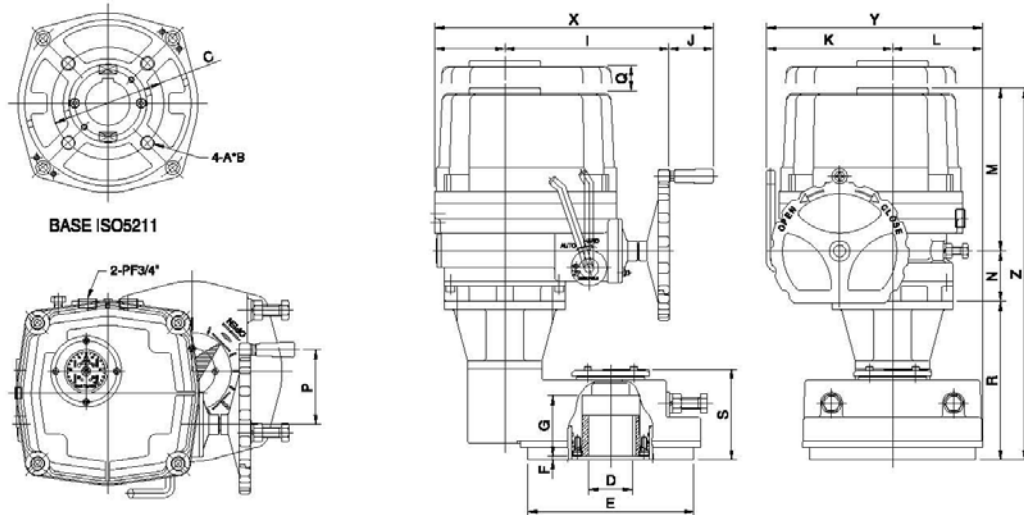
ELECTRIC ACTUATOR

■ Dimensional Drawing

HQ008, HQ010, HQ015, HQ020, HQ030, HQ050, HQ060, HQ080, HQ120



HQ200, HQ300



■ Dimension

unit(mm)

Model	Base ISO 5211	A	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	X	Y	Z
	ϕ C	B	(max)																		
HQ008	F07	M8	20	88	3	32	50	157	51	100	70	182	53	40	60	120	-	-	258	170	235
	ϕ 70	12																			
HQ010	F07	M8	20	88	3	32	50	157	51	100	70	182	53	40	60	120	-	-	258	170	235
	ϕ 70	12																			
HQ015	F07/F10	M8/M10	22	125	3	42	73	200	65	142	87	200	68	54	78	160	-	-	338	229	268
	ϕ 70 ϕ 102	12/15																			
HQ020	F07/F10	M8/M10	22	125	3	42	73	200	65	142	87	200	68	54	78	160	-	-	338	229	268
	ϕ 70 ϕ 102	12/15																			
HQ030	F10/F12	M10/M12	35	148	3	49	82	221	65	160	99	221	69	65	78	180	-	-	368	259	290
	ϕ 102 ϕ 125	15/18																			
HQ050	F10/F12	M10/M12	35	148	3	49	82	221	65	160	99	235	69	65	78	180	-	-	368	259	304
	ϕ 102 ϕ 125	15/18																			
HQ060	F10/F12	M10/M12	35	148	3	49	82	221	65	160	99	235	69	65	78	180	-	-	368	259	304
	ϕ 102 ϕ 125	15/18																			
HQ080	F12/F14	M12/M16	45	178	3	57	103	242	65	186	111	256	74	78	110	210	-	-	410	297	330
	ϕ 125 ϕ 140	18/24																			
HQ120	F12/F14	M12/M16	45	178	3	57	103	242	65	186	111	256	74	78	110	210	-	-	410	297	330
	ϕ 125 ϕ 140	18/24																			
HQ200	F14*/F16	M16*/M20	65	245	5	90	103	242	65	186	133	256	74	78	110	210	233	133	410	319	563
	ϕ 140* ϕ 165	24*/30																			
HQ300	F14*/F16	M16*/M20	65	245	5	90	103	242	65	186	133	256	74	78	110	210	233	133	410	319	563
	ϕ 140* ϕ 165	24*/30																			

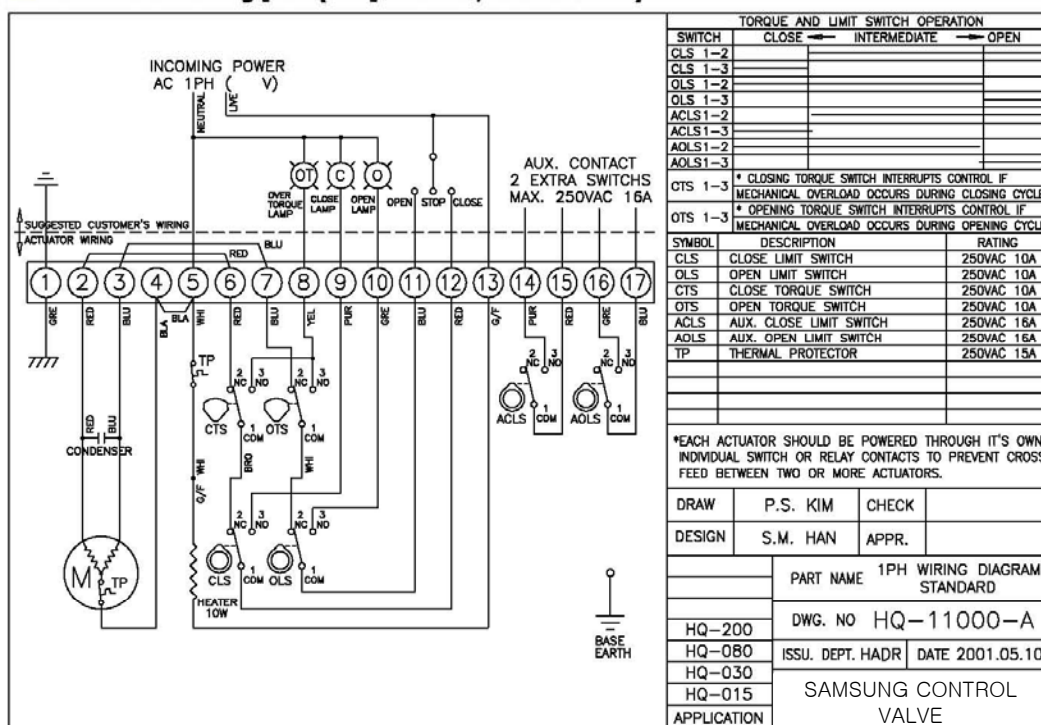
※ F14* is drilled by request.

ELECTRIC BUTTER FLY VALVE

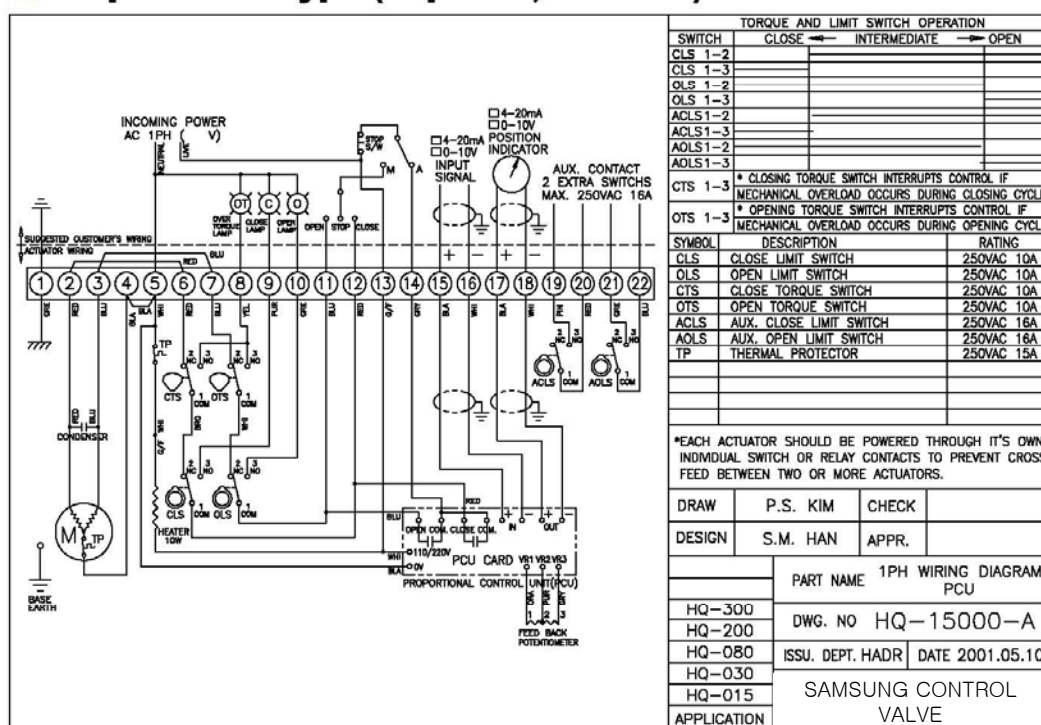
MODEL : MB-4700

ELECTRIC ACTUATOR

Standard Type (1- phase, 50/60Hz)

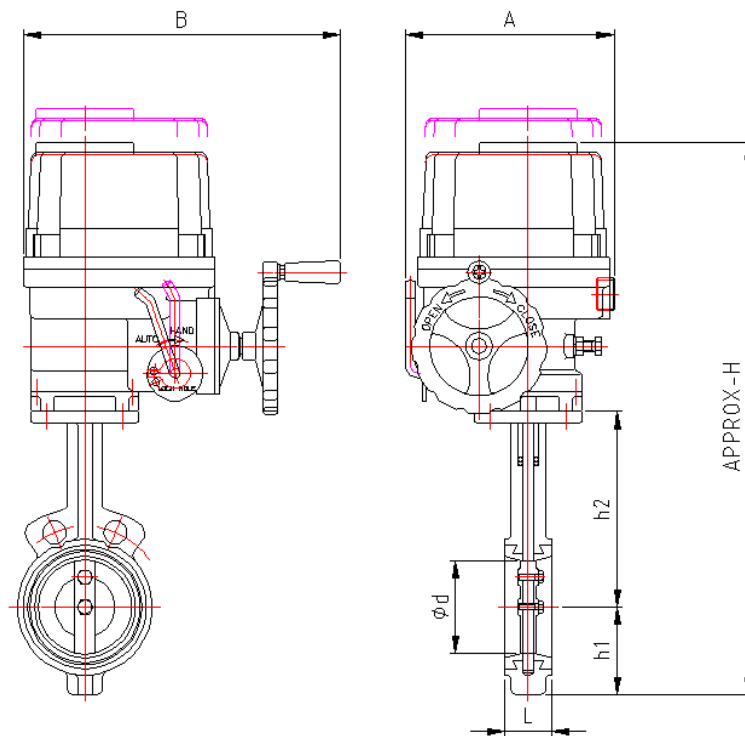


Proportional Type (1- phase, 50/60Hz)



* Wiring drawings are provided upon request.

MFB -4700 SRIES DIMENSION



JIS 10K WAFER

size	A	B	h1	h2	H	d	L	ACTUATOR
40A	105	126	58	124	314	40	41	HQ-006
50A	105	126	66.5	130.5	329	50	43	HQ-006
65A	170	258	71	140	446	65	46	HQ-008
80A	170	258	83	150	468	80	46	HQ-008
100A	170	258	95	163	493	100	52	HQ-010
125A	229	338	110	178	556	125	56	HQ-015
150A	229	338	124	191	583	150	56	HQ-020
200A	259	368	163	238	691	198	60	HQ-030
250A	259	368	227	285	820	248	68	HQ-050
300A	259	368	252	315	870	298	78	HQ-060
350A	297	410	271	324	925	327	78	HQ-080
400A	297	410	343	369	1042	387	102	HQ-120
450A	319	410	366	406	1335	438	114	HQ-200
500A	319	410	421	485	1469	477	127	HQ-200
600A	319	410	493	570	1626	560	154	HQ-300