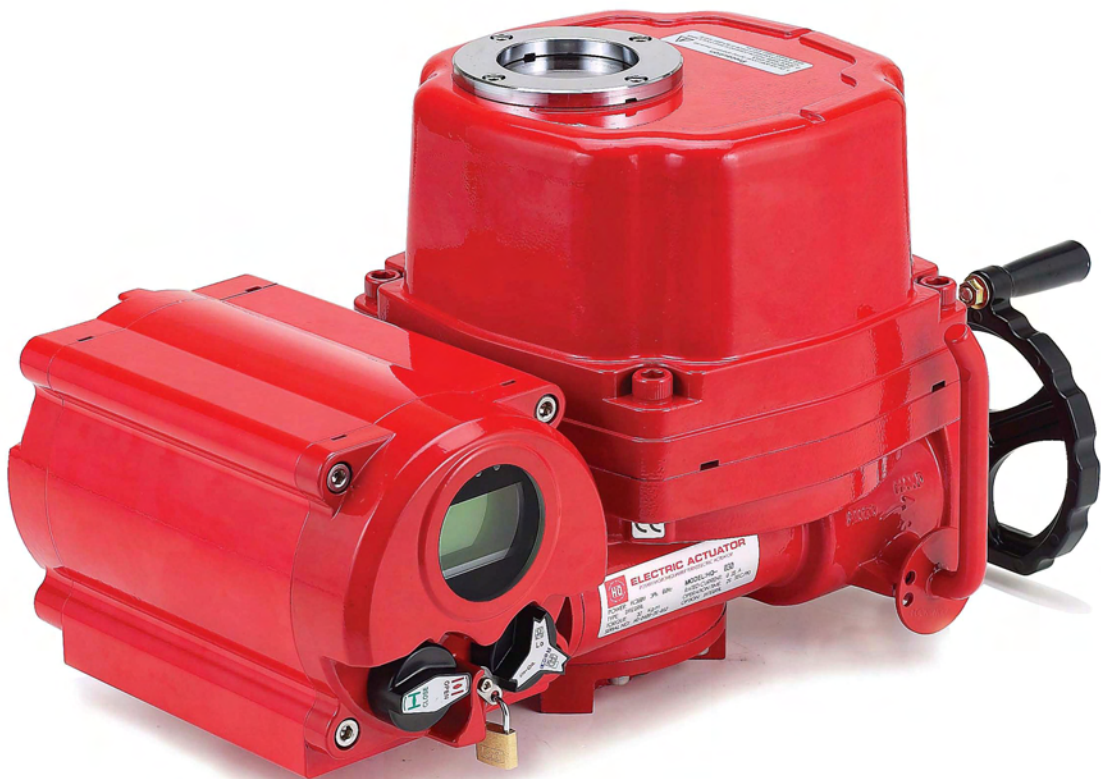




# ***ELECTRIC ACTUATOR HQ - SERIES***

**Weather proof  
Explosion proof  
Special options**



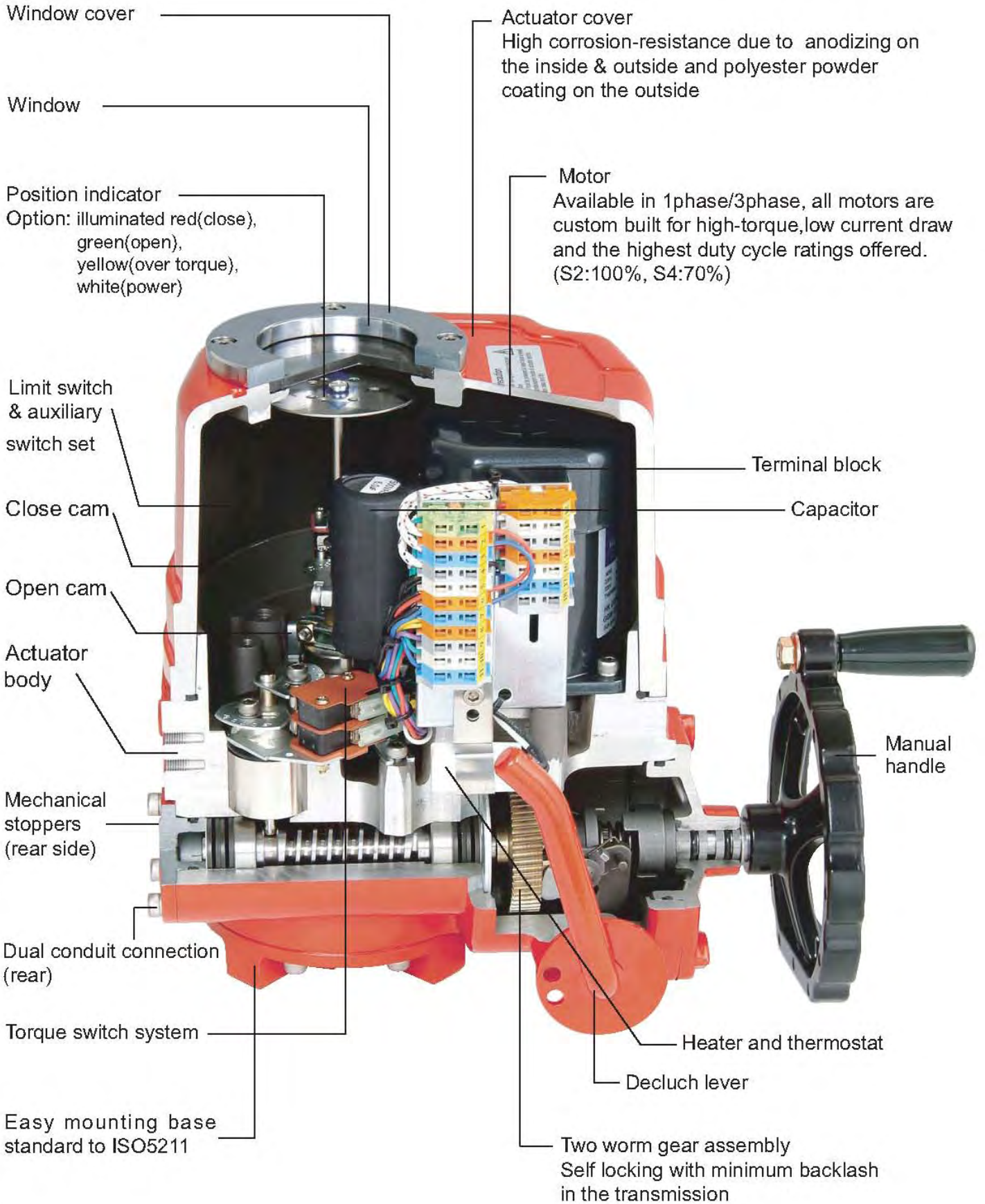
Patent No. : 0233636, 0366306, 0382861  
Design Right No. : 0303037, 0400783, 0408882



**VALVE AUTOMATION**

HT-LIT 01322E 03/08

## Construction



## ■ Standard Configuration



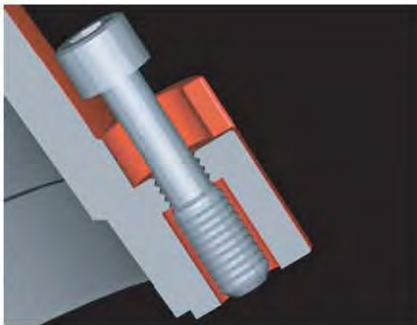
### ● Terminal block

- Enough number of terminal strips for customer's convenience
- Proven reliability and tight wiring connection.
- Stripped length: 8-9 mm / 0.33 in(2.5mm<sup>2</sup>)
- Terminal dimensions: 10 × 22 × 32mm



### ● Heater

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



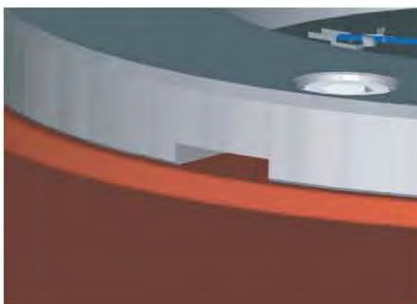
### ● Captive cover bolt

- 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 slut is useful to prevent this effect.



# Electric Actuator HQ Series



## HQ Series



24VDC Motor

Actuator	Rated Current(A)
HQ-006	0.80
HQ-008	2.60
HQ-015	8.80
HQ-020	9.80
HQ-030	10.60



## Performance

Duty cycle is S4 80%.

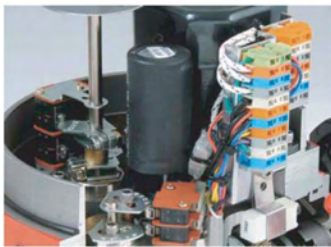
HQ (MODEL)	Maximum output torque Kg-m	Operating time(sec.) 60/50Hz 90°	Maximum bore size mm	Motor class F power(W) 60Hz/50Hz		Rated current(A) 60Hz/50Hz				Duty cycle IEC 34-1 S4(%)	Number of handle turn N	Weight Kg
						1 Phase		3 Phase				
				1 Phase	3 Phase	110V	220V	380V	440V			
HQ-008	8	13/16	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

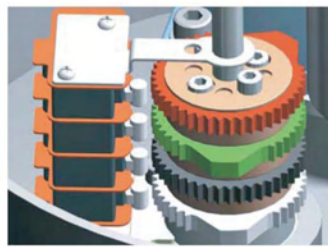
Enclosure	Weatherproof enclosure IP67, NEMA 4 and 6
Power supply	110 / 220V AC 1PH, 380 / 440V AC 3PH 50 / 60Hz, ±10%
Control power supply	110 / 220V AC 1PH, 50 / 60Hz, ±10%
Duty cycle(on-off)	S2, 100% Max 30Min
Duty cycle(modulating)	S4, 70% Max 300~1600 start/hour
Motor	Induction motor (Reversible 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°C±5°C / close 97°C±15°C
Travel angle	90° ±10° (0~110°)
Indicator	Continuous position indicator
Manual override	Decutching mechanism
Self locking	Provided by double worm gearing
Mechanical stopper	2 × 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

## Option Specification

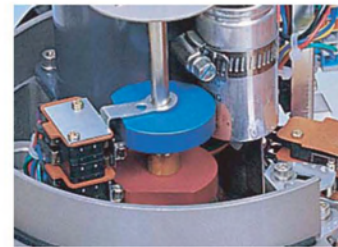
EXA	Explosionproof enclosure actuator (Eexd II B T4)	HQ-series
WTA	Watertight enclosure actuator (IP68 10M 72HR)	HQ-series
PIU	Potentiometer unit (0~1k $\Omega$ )	HQ-series
PCU	Proportional control unit (input, output 0~10V DC, 4~20mA DC)	HQ-series
ATS	Additional torque switches (SPDT x 2EA 250V AC 10A 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)

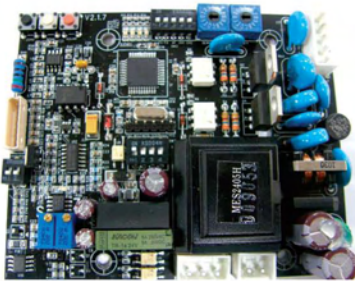


(Cam block)



(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 :  $\pm 0.5\sim 1.5\%$ (depends on installation)



Potentiometer Kit (PIU)

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



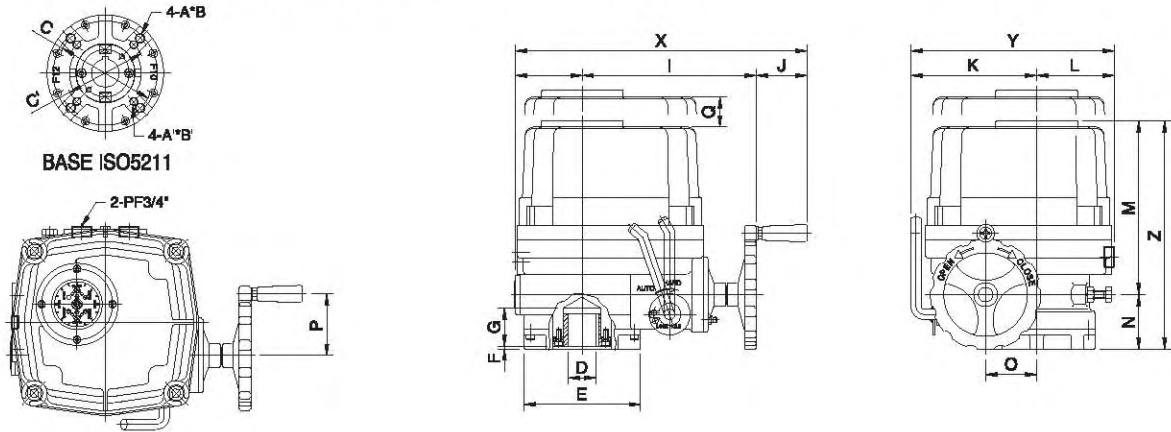
Fire Proofing Actuator (FPA)



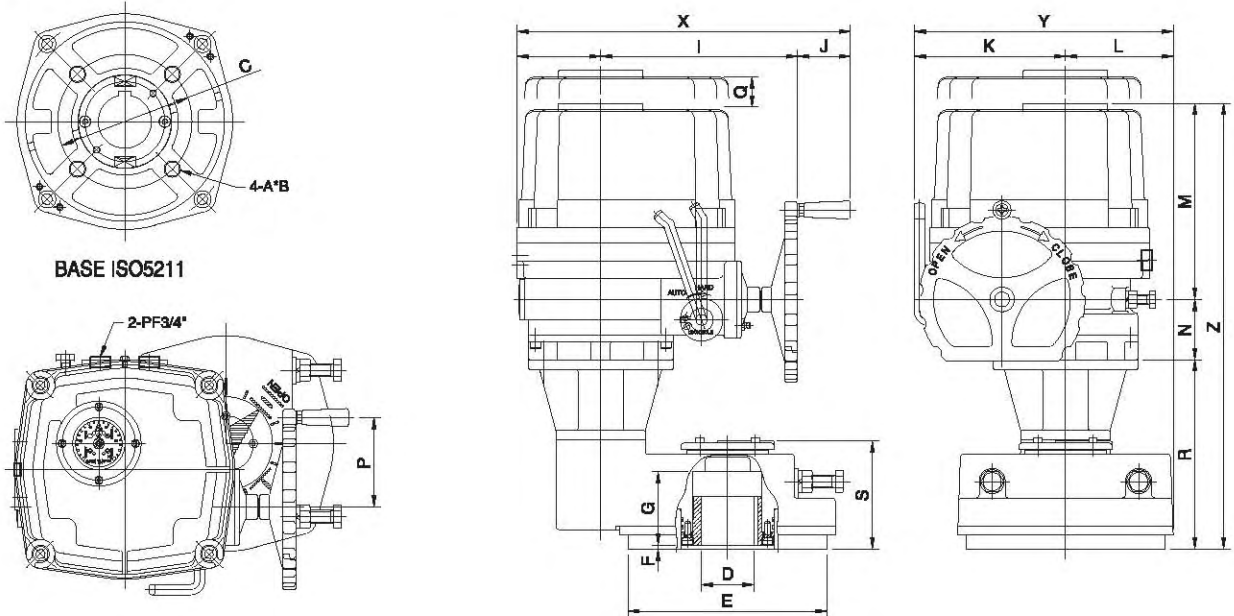
Rechargeable Battery Backup

# Dimensional Drawing

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



HQ200, HQ300



# Dimension

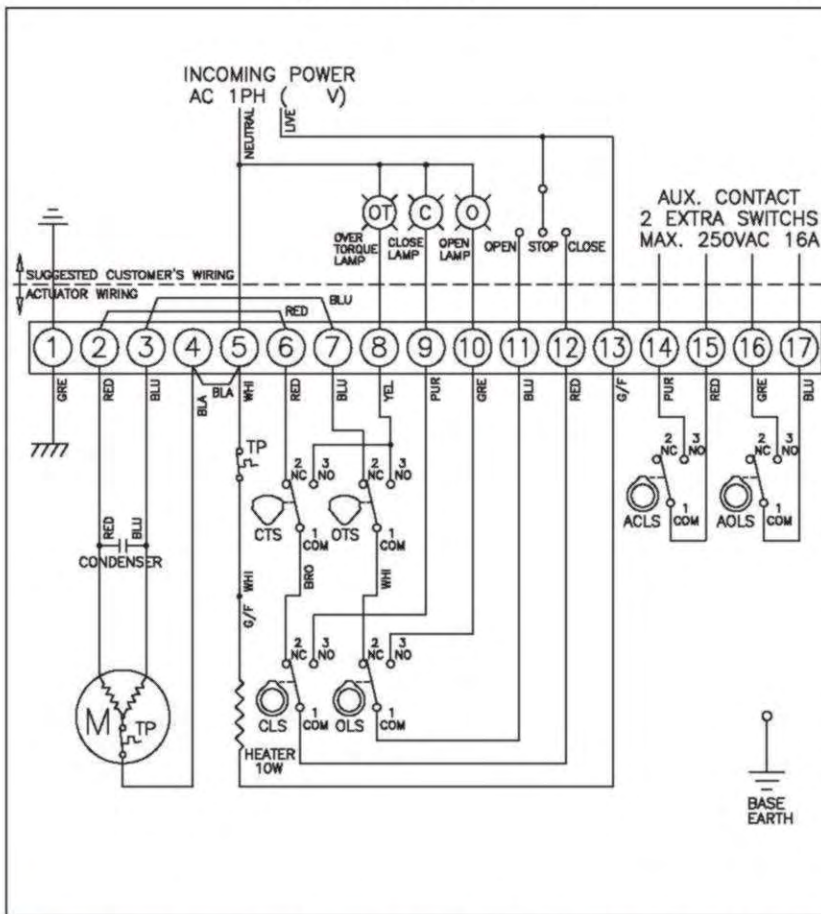
unit(mm)

Model	BaseISO5211		D (max)	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	X	Y	Z
	A	B																			
HQ008	F07	M8	20	88	3	32	50	157	51	100	70	182	53	40	60	120	-	-	258	170	235
	$\phi$ 70	12																			
HQ010	F07	M8	20	88	3	32	50	157	51	100	70	182	53	40	60	120	-	-	258	170	235
	$\phi$ 70	12																			
HQ015	F07/F10	M8/M10	22	125	3	42	73	200	65	142	87	200	68	54	78	160	-	-	338	229	268
	$\phi$ 70/ $\phi$ 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
	$\phi$ 70/ $\phi$ 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
	$\phi$ 102/ $\phi$ 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
	$\phi$ 102/ $\phi$ 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
	$\phi$ 102/ $\phi$ 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
	$\phi$ 125/ $\phi$ 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
	$\phi$ 125/ $\phi$ 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
	$\phi$ 140*/ $\phi$ 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
	$\phi$ 140*/ $\phi$ 165	24*/30																			

※ F14" is drilled by request.

# Electric Actuator HQ-Series

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

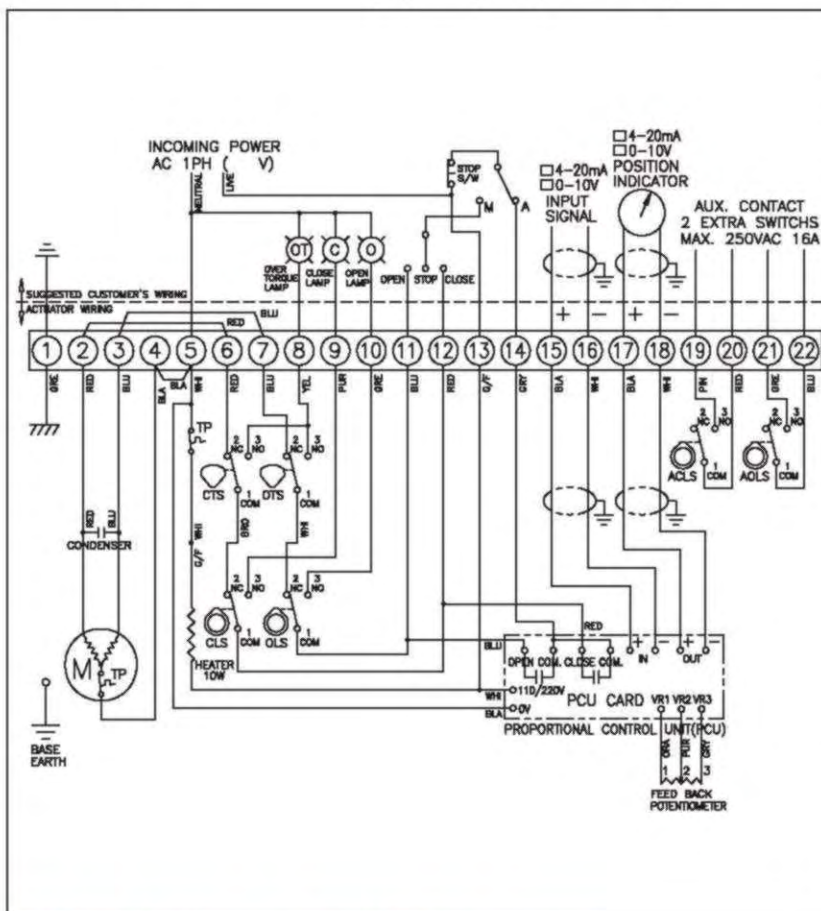


TORQUE AND LIMIT SWITCH OPERATION			
SWITCH	CLOSE ←	INTERMEDIATE	→ OPEN
CLS 1-2			
CLS 1-3			
OLS 1-2			
OLS 1-3			
CLS1-2			
CLS1-3			
AOLS1-2			
AOLS1-3			
CTS 1-3	* CLOSING TORQUE SWITCH INTERRUPTS CONTROL IF MECHANICAL OVERLOAD OCCURS DURING CLOSING CYCLE		
OTS 1-3	* OPENING TORQUE SWITCH INTERRUPTS CONTROL IF MECHANICAL OVERLOAD OCCURS DURING OPENING CYCLE		
SYMBOL	DESCRIPTION	RATING	
CLS	CLOSE LIMIT SWITCH	250VAC 10A	
OLS	OPEN LIMIT SWITCH	250VAC 10A	
CTS	CLOSE TORQUE SWITCH	250VAC 10A	
OTS	OPEN TORQUE SWITCH	250VAC 10A	
ACLS	AUX. CLOSE LIMIT SWITCH	250VAC 16A	
AOLS	AUX. OPEN LIMIT SWITCH	250VAC 16A	
TP	THERMAL PROTECTOR	250VAC 15A	

DRAW	CHECK
DESIGN	APPR.
PART NAME 1PH WIRING DIAGRAM STANDARD	
DWG. NO HQ-11000-A	
HQ-200	ISSU. DEPT. HADR
HQ-080	DATE 2001.05.10
HQ-030	
HQ-015	
APPLICATION	www.Pilla2000.hu

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



TORQUE AND LIMIT SWITCH OPERATION			
SWITCH	CLOSE ←	INTERMEDIATE	→ OPEN
CLS 1-2			
CLS 1-3			
OLS 1-2			
OLS 1-3			
CLS1-2			
CLS1-3			
AOLS1-2			
AOLS1-3			
CTS 1-3	* CLOSING TORQUE SWITCH INTERRUPTS CONTROL IF MECHANICAL OVERLOAD OCCURS DURING CLOSING CYCLE		
OTS 1-3	* OPENING TORQUE SWITCH INTERRUPTS CONTROL IF MECHANICAL OVERLOAD OCCURS DURING OPENING CYCLE		
SYMBOL	DESCRIPTION	RATING	
CLS	CLOSE LIMIT SWITCH	250VAC 10A	
OLS	OPEN LIMIT SWITCH	250VAC 10A	
CTS	CLOSE TORQUE SWITCH	250VAC 10A	
OTS	OPEN TORQUE SWITCH	250VAC 10A	
ACLS	AUX. CLOSE LIMIT SWITCH	250VAC 16A	
AOLS	AUX. OPEN LIMIT SWITCH	250VAC 16A	
TP	THERMAL PROTECTOR	250VAC 15A	

DRAW	CHECK
DESIGN	APPR.
PART NAME 1PH WIRING DIAGRAM PCU	
DWG. NO HQ-15000-A	
HQ-300	ISSU. DEPT. HADR
HQ-200	DATE 2001.05.10
HQ-080	
HQ-030	
HQ-015	
APPLICATION	www.Pilla2000.hu

\* Wiring drawings are provided upon request.

## LCU-B : Integral Control

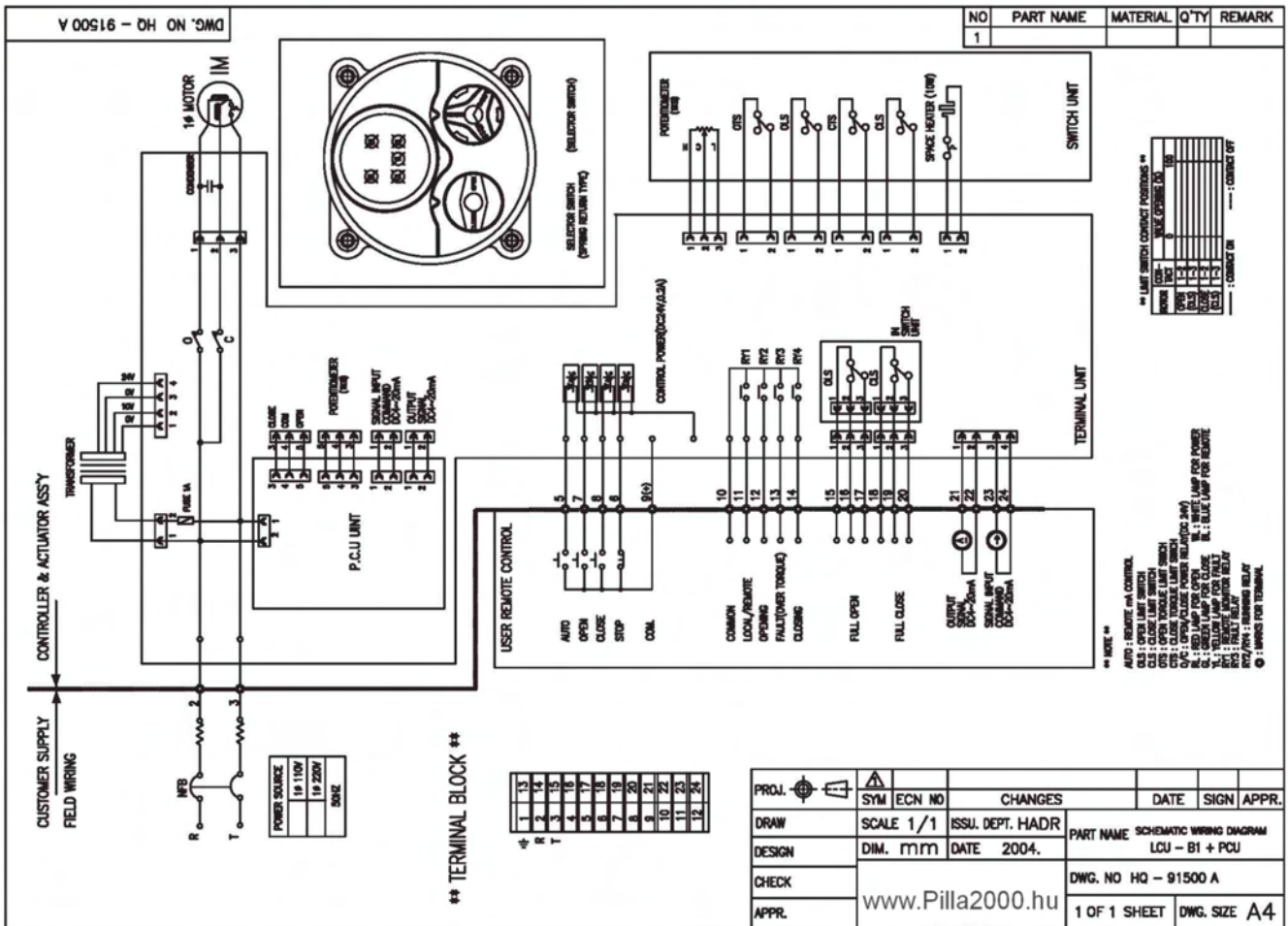
- Light, compact & Integrated design (IMS, Local/Remote control)
- Wide range of electric power application
- 1  $\phi$  AC 110~220V 50/60HZ
- 3  $\phi$  AC 220V~460V 50/60HZ
- Phase protect monitoring by LED in case of wrong wiring
- Easy application for HQ-series actuators
- Various option available (Duty cycle:70%)



LED lamp signal	
White ○	: Power
Blue ●	: Remote
Yellow ●	: Fault
Red ●	: Open/ Opening
Green ●	: Close/ Closing



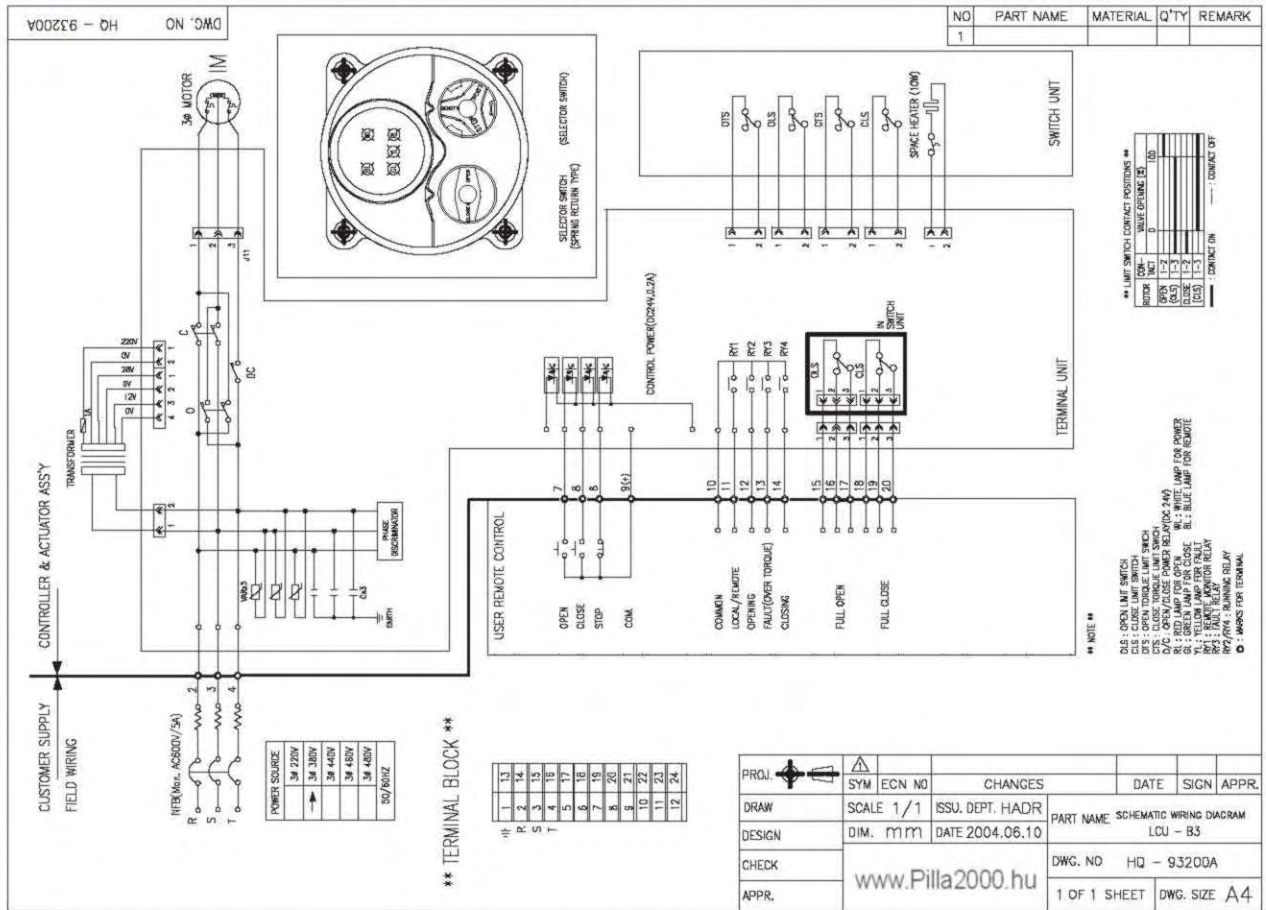
## LCU-B Wiring (1-phase, 50/60Hz, proportional type)



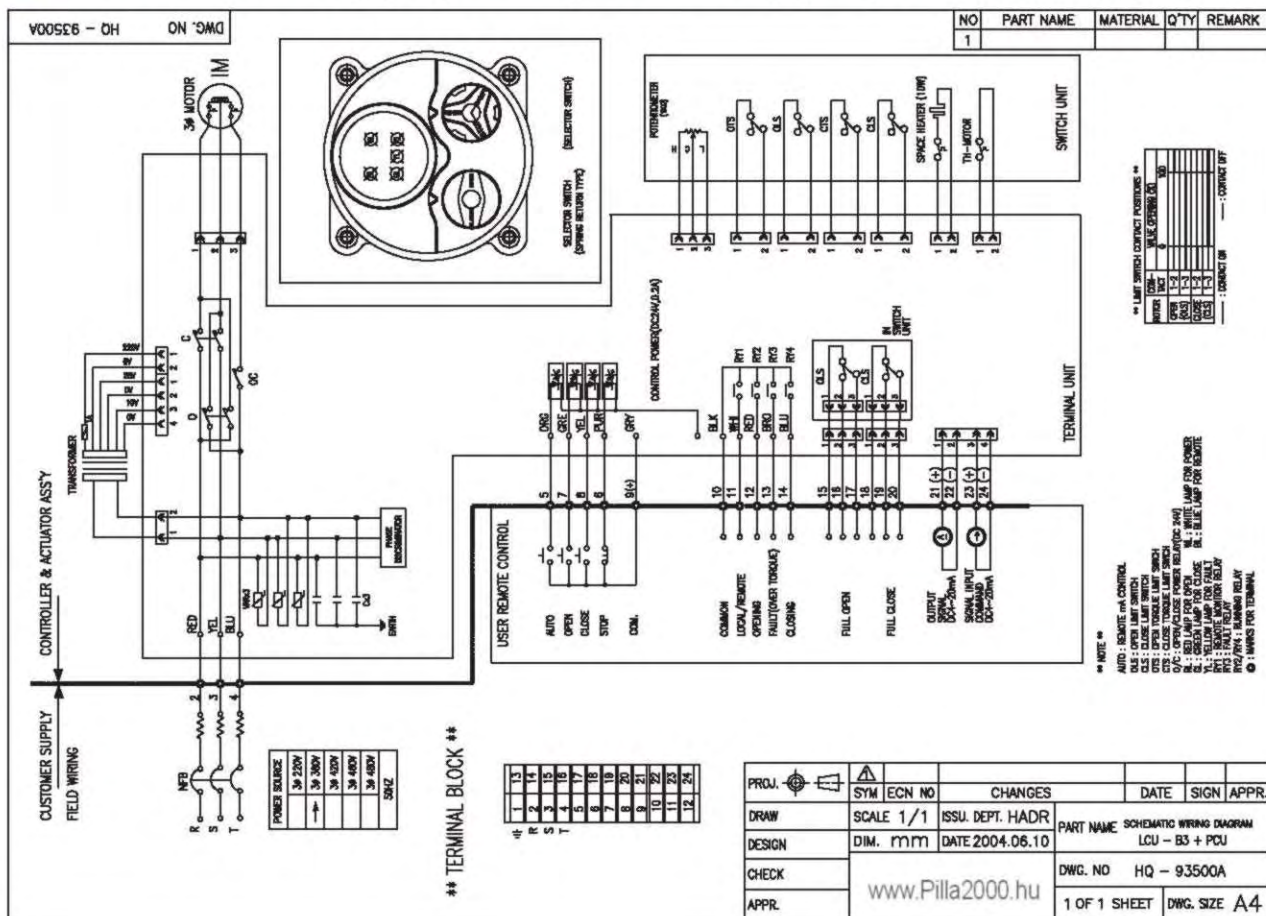


# Electric Actuator HQ-Series

## LCU-B Wiring (3-phase, 50/60Hz, on-off type)

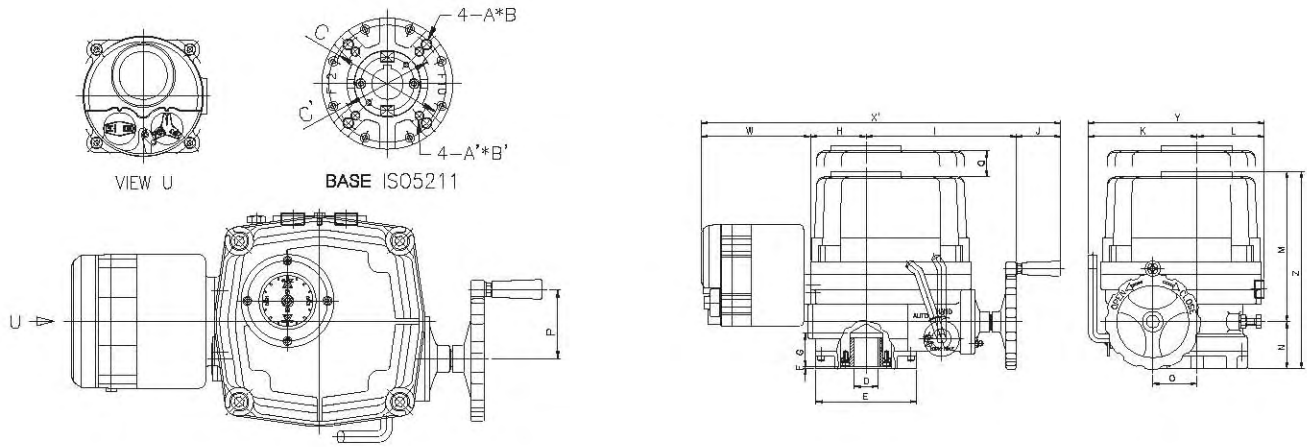


## LCU-B Wiring (3-phase, 50/60Hz, proportional type)

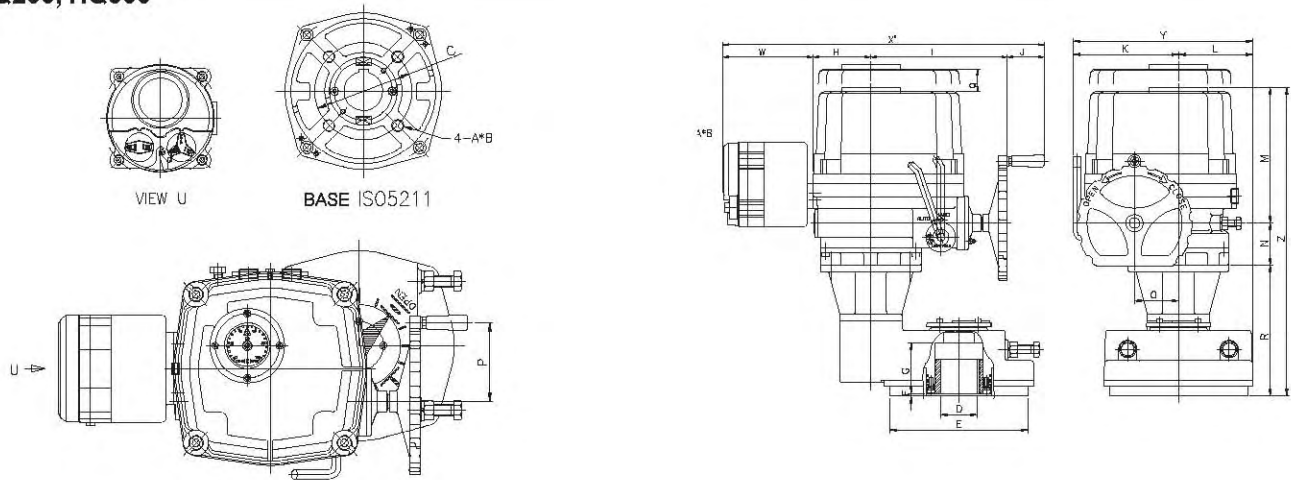


## Dimensional Drawing (with LCU-B)

HQ015, HQ020, HQ030, HQ050, HQ080, HQ120



HQ200, HQ300



## Dimension (with LCU-B)

unit(mm)

Model	BaseISO5211	A	D (max)	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	W	X	Y	Z
	ØC	B																				
HQ015	F07/F10	M8/M10	22	125	3	42	73	200	65	142	87	200	68	54	78	160	-	-	160	498	229	268
	Ø70/Ø102	12/15																				
HQ020	F07/F10	M8/M10	22	125	3	42	73	200	65	142	87	200	68	54	78	160	-	-	160	498	229	268
	Ø70/Ø102	12/15																				
HQ030	F10/F12	M10/M12	35	148	3	49	82	221	65	160	99	221	69	65	78	180	-	-	160	528	259	290
	Ø102/Ø125	15/18																				
HQ050	F10/F12	M10/M12	35	148	3	49	82	221	65	160	99	235	69	65	78	180	-	-	160	528	259	304
	Ø102/Ø125	15/18																				
HQ060	F10/F12	M10/M12	35	148	3	49	82	221	65	160	99	235	69	65	78	180	-	-	160	528	259	304
	Ø102/Ø125	15/18																				
HQ080	F12/F14	M12/M16	45	178	3	57	103	242	65	186	111	256	74	78	110	210	-	-	160	570	297	330
	Ø125/Ø140	18/24																				
HQ120	F12/F14	M12/M16	45	178	3	57	103	242	65	186	111	256	74	78	110	210	-	-	160	570	297	330
	Ø125/Ø140	18/24																				
HQ200	F14*/F16	M16*/M20	65	245	5	90	103	242	65	186	133	256	74	78	110	210	233	133	160	570	319	563
	Ø140*/Ø165	24*/30																				
HQ300	F14*/F16	M16*/M20	65	245	5	90	103	242	65	186	133	256	74	78	110	210	233	133	160	570	319	563
	Ø140*/Ø165	24*/30																				

※Wiring drawings are provided upon request.

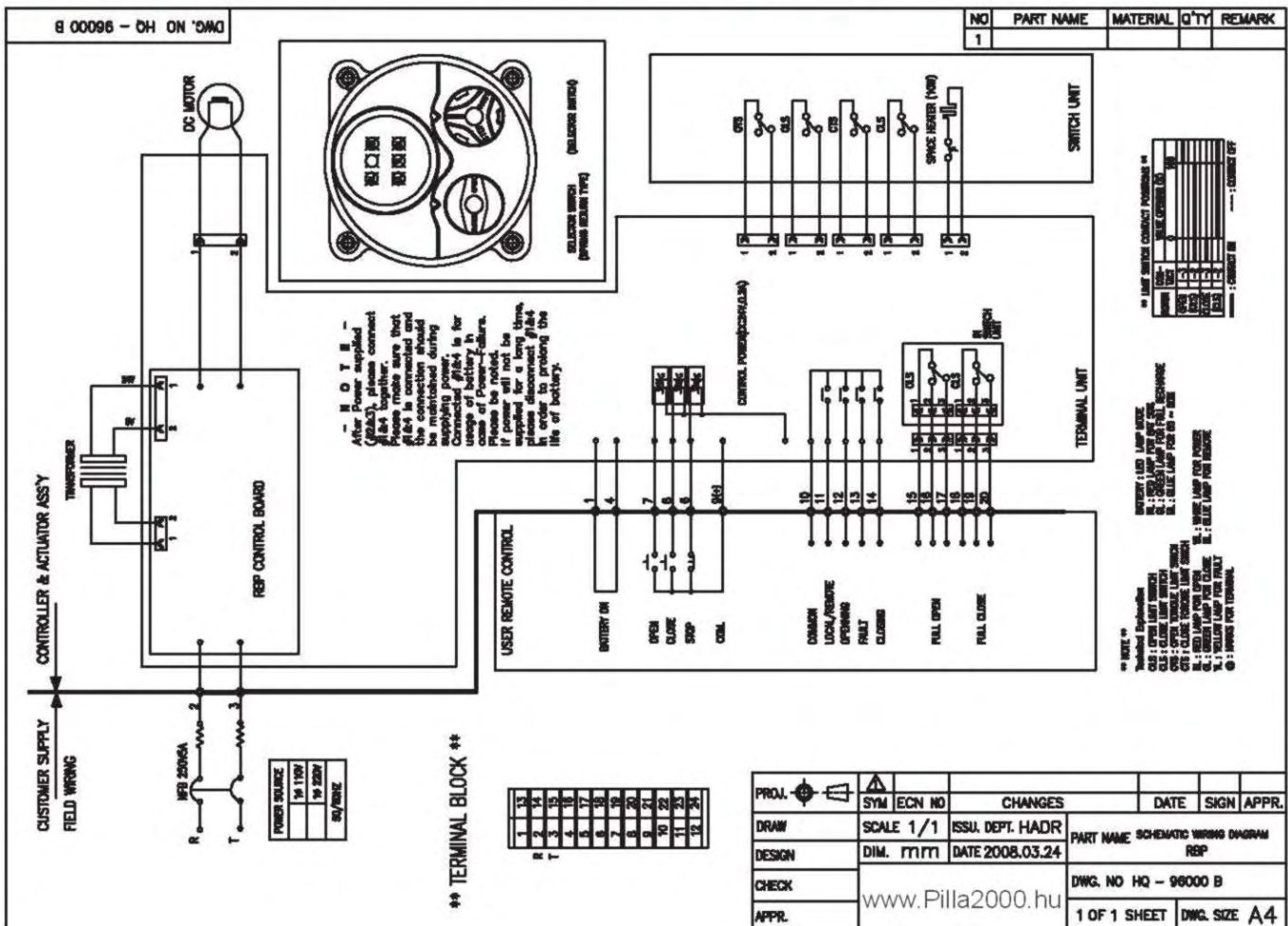
## RBP : Rechargeable Battery Backup

- Emergency application when power failed at site
- 1 phase power
- Litium Battery
- Indication of battery level
- Automatic recharge
- 5 times operation per hour



LED lamp signal	
White ○	: Power
GBR ●	: Battery level
Blue ●	: Remote
Yellow ●	: Fault
Red ●	: Open/ Opening
Green ●	: Close/ Closing

## RBP wiring (1-phase, 50/60Hz, on-off type)

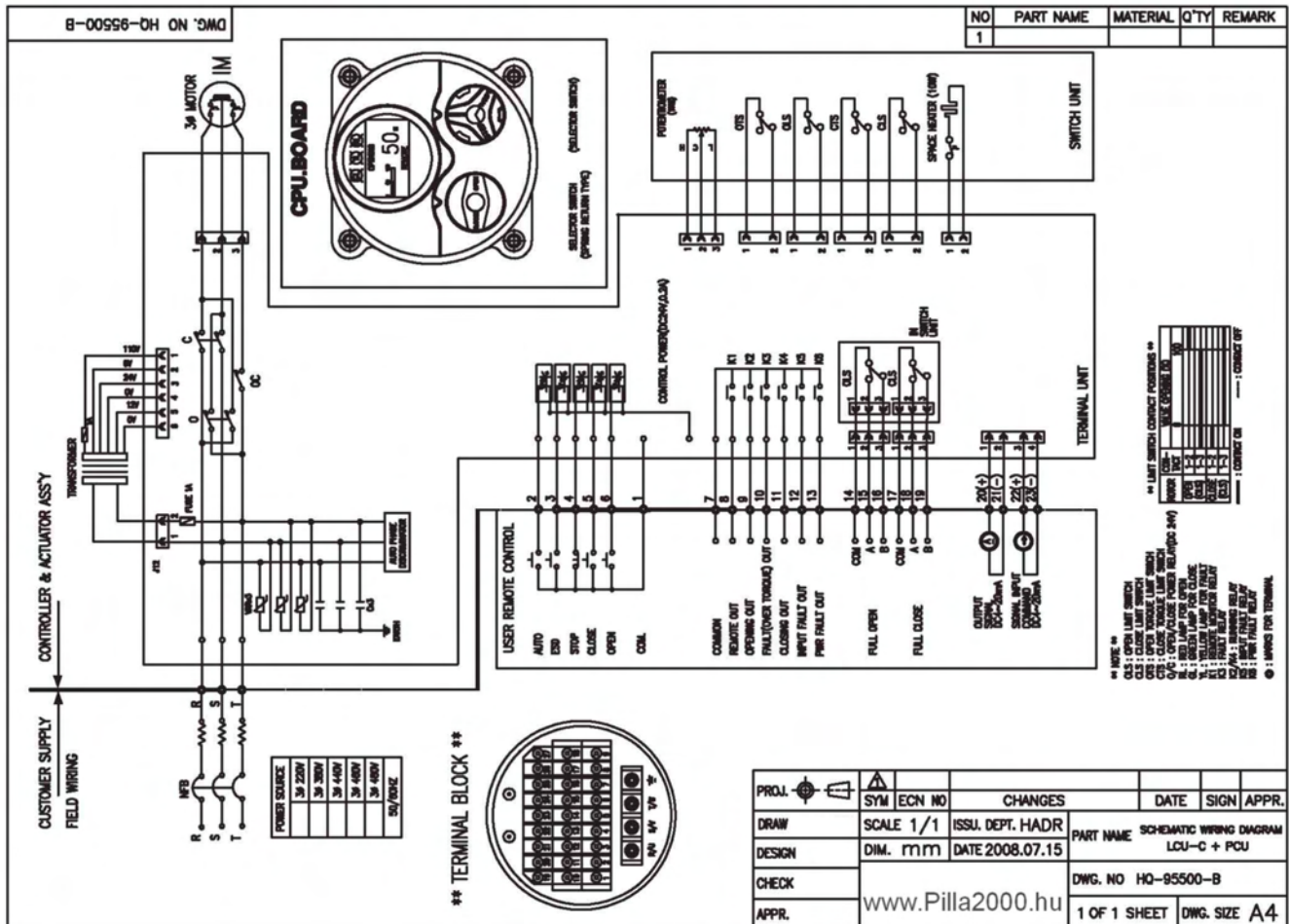


## LCU-C : Digital Display Control

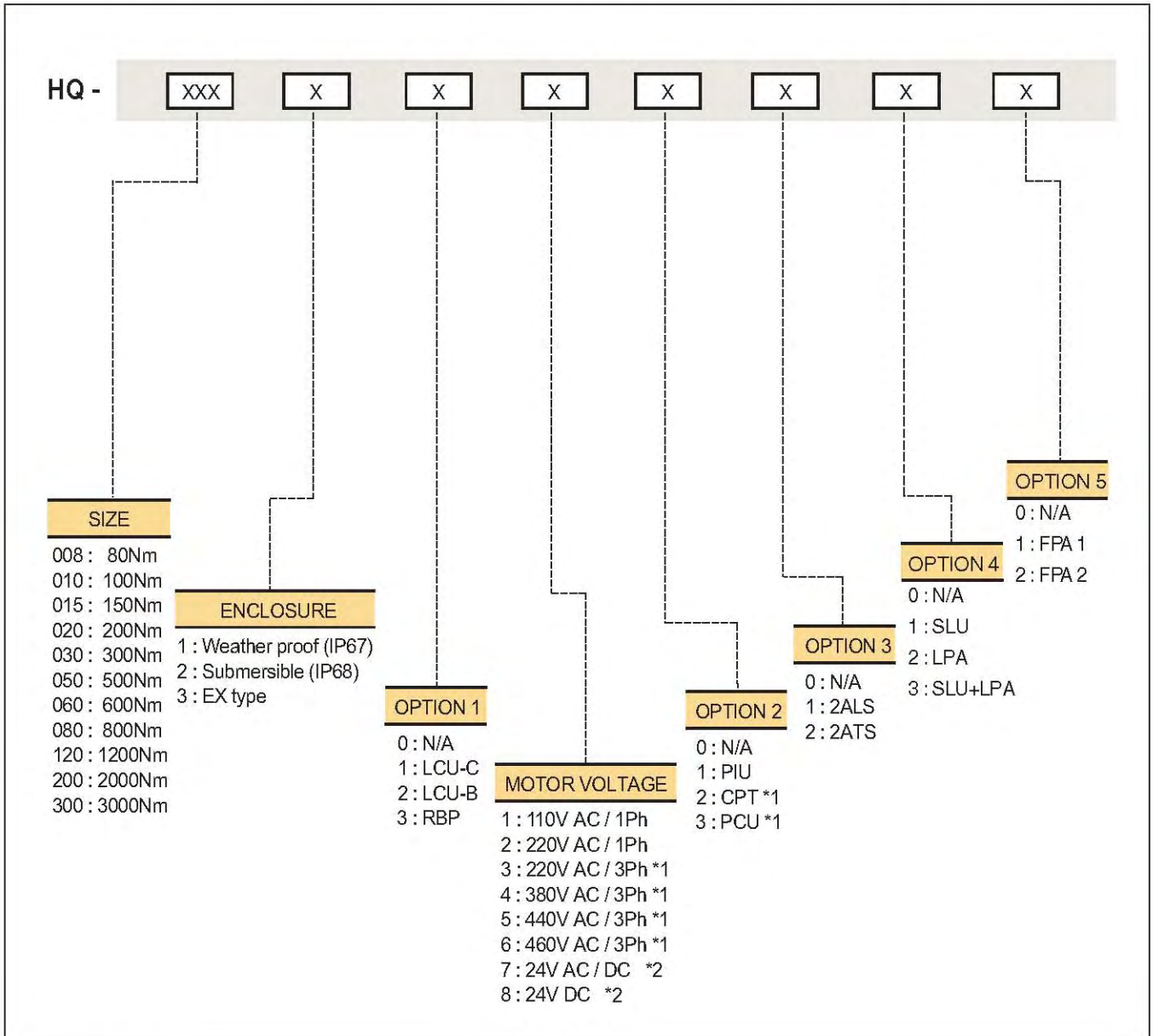
- Light, Compact & Integrated design
- Wide range of electric power application  
(AC 220V~AC460V/3-phase, No Fuse Break Max.AC600V/5A)
- Built-in auto phase discriminator (Easy & convenient wiring)
- Digital indicator with number, bar graph & literature
- Seperate terminal chamber
- (Reliable against water, vibration, temp, etc)
- Easy application for HQ-series actuators
- Various option available



## LCU-C Wiring (3-phase, 50/60Hz, proportional type)



## Electric Actuator Order Coding System (EXA : EEx d || B T4)



### Remarks)

- Asterisk\*1 : HQ-008 through 010 actuators shall not be applied to the above condition.
- Asterisk\*2 : HQ-050 through 300 actuators shall not be applied to the above condition.
- 2ATS/2ALS shall not be available for HQ-008 and for HQ-015 through 020 actuators with PCU.
- When LCU-B option applied, HQ-015 through 300 actuators shall be available on the full condition of motor voltages except DC 24v.
- When LCU-C option applied, HQ-015 through 300 actuators shall be available on the condition of 220V through 460V 3 phase of voltages and shall not be available with PIU/CPT.
- Option RBP is available only for HQ-008/010, 015, 020, 030.
- More details should be advised to the manufacturer.



## Electric Actuator HQ-006 Series

### HQ-006 Series

- HQ-006 Actuator is newly designed and invented for small size valve automation like ball, butterfly, plug and even dampers.
- Small, light and compact design, high torque and various control options will meet your specific requirements.
- HQ provides high technical service & quality products for your automation system.

### Features

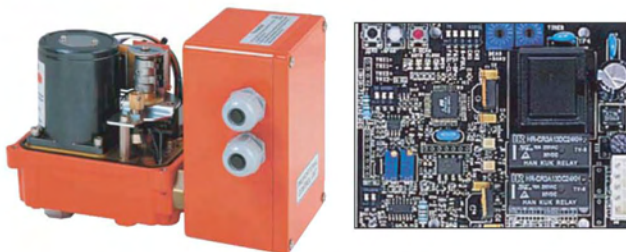
- Compact and light due to high grade aluminum alloy housing.
- High resistance for corrosion due to hard anodizing on inside & outside and polyester powder coating on external surface
- Output torque : 60Nm(6kg.m)
- The actuator motor is reversible, high torque and low current design.
- Solid with O-ring system giving weatherproof (IP67)

### Standard Configuration

- Manual handwheel
- Wide, easy mounting base standard to ISO5211(F03/F05/F07)
- Standard 4 limit switches. 2 for operation, 2 for extra(dry contacts)
- Captive cover bolt.
- Space heater.
- Limit switches for easy and tight setting.
- Terminal block. (11P)
- Standard color : Red or Blue

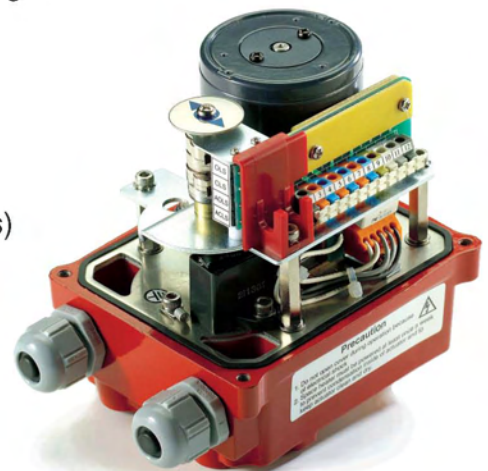
### Option Configuration

- Proportional Control Unit (PCU)



- HQ PCU is a combination of electronic positioner.
- Input signal range : 4~20mA, or 0~10VDC
- Output signal range : 4~20mA, or 0~10VDC
- Adjustable range : zero 8mA, open 16mA
- Position conversion accuracy : 0.5~1.5% (depends on installation)

- Position Indication Unit (Potentiometer kit, PIU) High resolution potentiometer with precisely machined gearing directly engaged with driving shaft provides continuous monitoring of position of valve and actuator



- AC-DC 24V Control Unit



- AC or DC power input (2-wire) only by user
- Control function built inside

# Electric Actuator HQ-Series

## Performance

HQ (MODEL)	Maximum output torque	Operating time(sec.) 60/50Hz	Mounting 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		1 Phase				
	Kg.m	90°	ISO 5211	110V	220V	110V	220V	S4(%)	N	Kg
HQ-006	6	12 / 14	F03 / F05 / F07	54.5/46.8	40.9/38.0	0.39/0.35	0.18/0.17	35	8	3

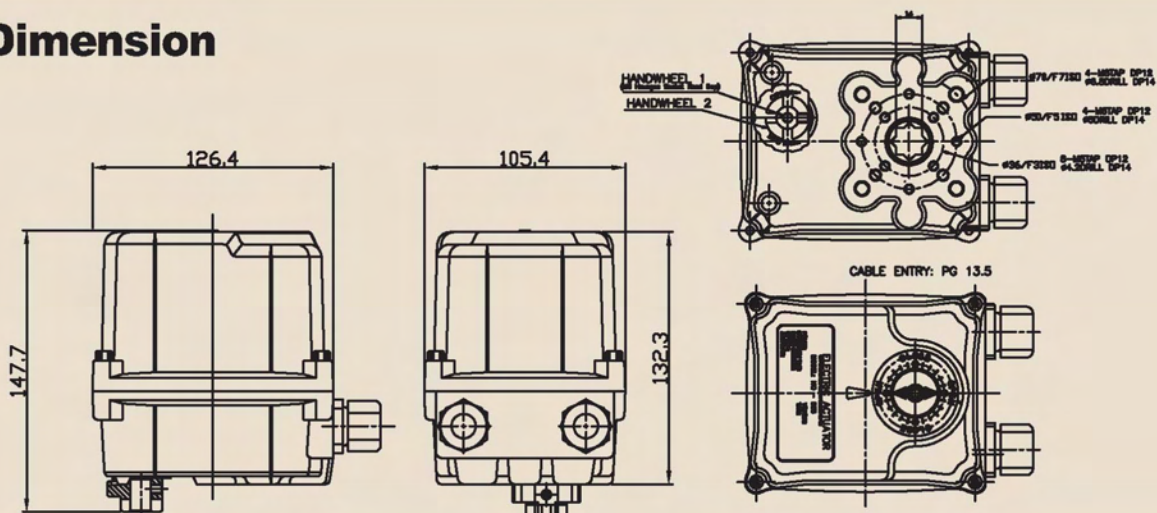
## Standard Specification

Enclosure	Weatherproof enclosure IP67
Power supply	110/220V AC 1PH, 50/60Hz, $\pm 10\%$
Duty cycle(on-off duty)	S2 35%
Motor	Reversible motor
Limit switches	Open/close, SPDT, 250V AC 10A rating
Additional limit switches	Open/ close, SPDT, 250V AC 10A rating
Space heater	2W (110/220V AC)Anti-condensation
Manual override	Handwheel (hexagon design)
Cable entries	Two PG 13.5 Tap(Option : NPT1/2", PT1/2", PF 1/2")
Movement angle	$320^\circ \pm 10^\circ$ ( $0^\circ \sim 330^\circ$ )
Ambient temperature	$-20^\circ\text{C} \sim 70^\circ\text{C}$
External coating	Polyester powder coating

## Option Specification

PIU	Potentiometer unit( $0 \sim 1\text{k}\Omega$ )
PCU	Proportional control unit (In/out: $0 \sim 10\text{V}$ , $4 \sim 20\text{mA DC}$ )
CPT	Current position transmitter (Output $4 \sim 20\text{mA DC}$ )
ADCM	Multi( $24\text{VAC/DC}$ )
DCM	DC motor ( $24\text{VDC}$ )
LCU	Local control unit -remote/local -open/stop/close

## Dimension



## Application



Butterfly Valves  
Ball Valves  
Damper Valves  
Plug Valves

Valve Automation (Rotary Motion Valves)

## DESCRIPTION

- HQ 004 electric actuator is specially designed for small size quarter turn valve operation such as Ball, Butterfly, Plug valves/Dampers and similar usages.

## FEATURES

- Compact and light weight
- High corrosion resistance
- Multi-voltage : (AC85~265V/1PH, 24V DC)
- Standard space heater (0.5W)
- Weather proof (IP67)
- Push button and Manual lever
- Mounting base : standard ISO5211(F03/F04/F05)
- Standard 4 limit switches
- Captive cover bolt
- Mechanical position indicator & LED lamp indicators(Open/Close)
- Lead type cable wires



## OPTION

- PIU : Potentiometer unit(1K~10K)
- PCU : Proportional control unit(in/out:0-10V, 4-20mA)
- CPT : Current position transmitter(output 4-20mA DC)

## CONSTRUCTION

### Auto,manual push button

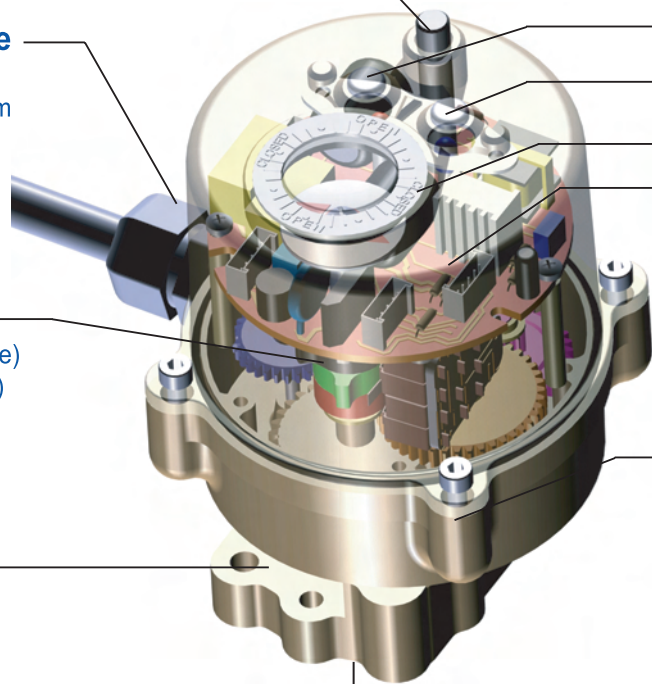
### Cable entry and wire

Long Wire type(10p)  
Standard Wire length: 1.2m  
PG11 CABLE PLUG

### 4Limit switches

Add CLOSE L/M S/W(White)  
Add OPEN L/M S/W(Black)  
Close L/M S/W(Green)  
OPEN L/M S/W(Red)

### Manual lever connecting hole



### Full close lamp (blue)

### Full open lamp (red)

### Indicator

### Main board

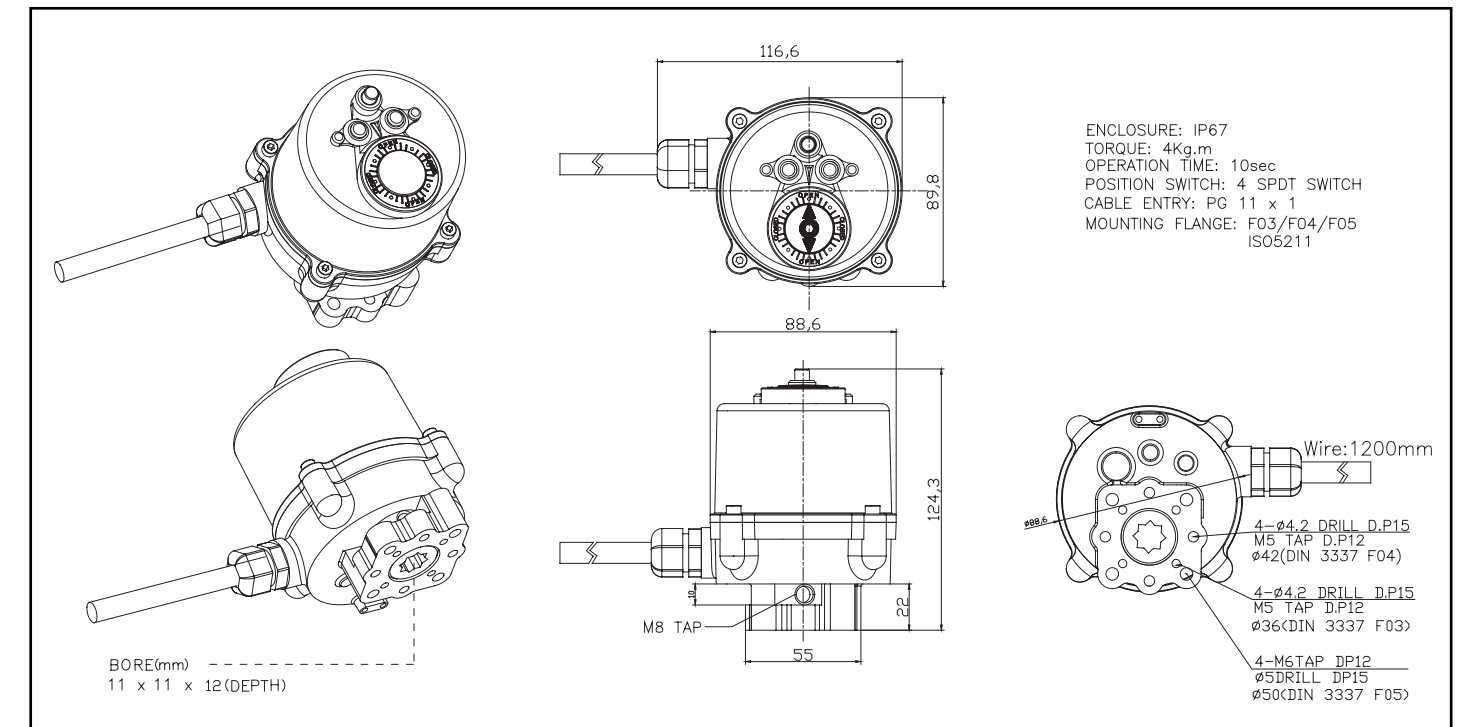
### 4Captive bolt

### Mounting base(ISO5211) F03,F04,F05

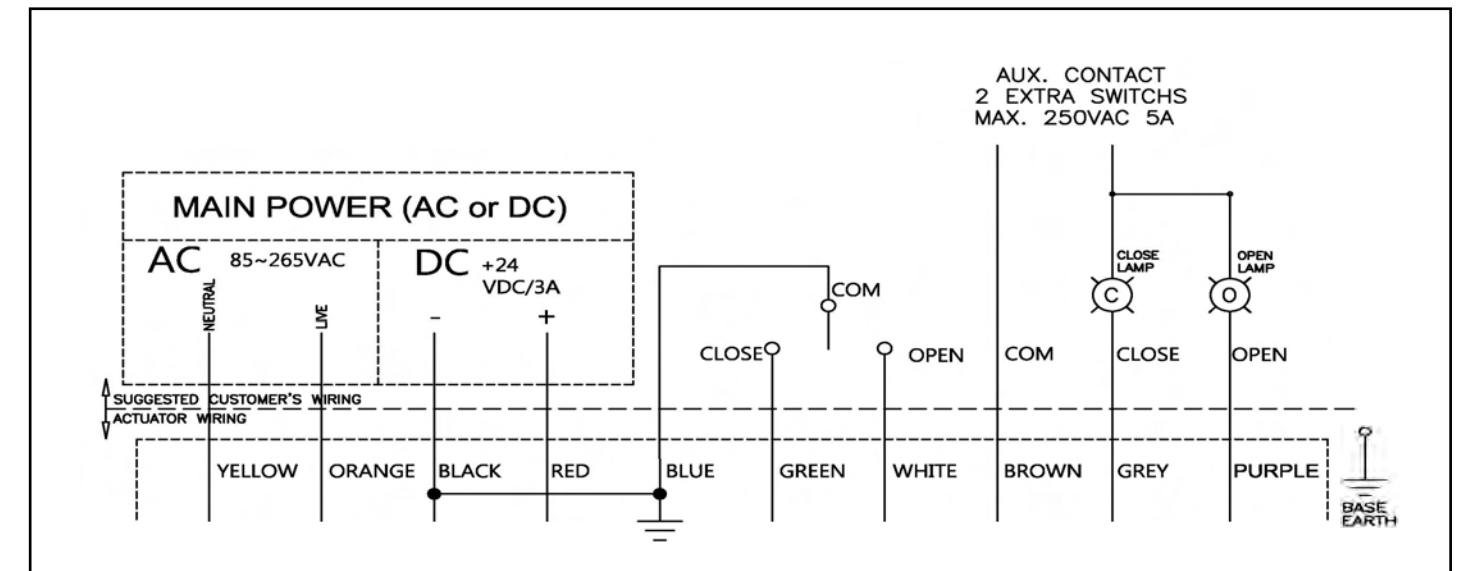
## PERFORMANCE

TYPE (MODEL)	MAXIMUM OUTPUT TORQUE		OPERATING TIME 60/50Hz	MOUNTING SIZE	ELECTRIC MOTOR STOP	SUPPLYING POWER & RATED CURRENT(A) 60/50Hz, 1 Phase			DUTY CYCLE IEC34-1	MANUAL LEVER ANGLE	WEIGHT
	Kg.m	N.m				90°	ISO5211	A			
HQ-004	4	40	11 Sec	F03,F04,F05	2A	0.1A	0.06A	1A	50	90°± 5	1.2

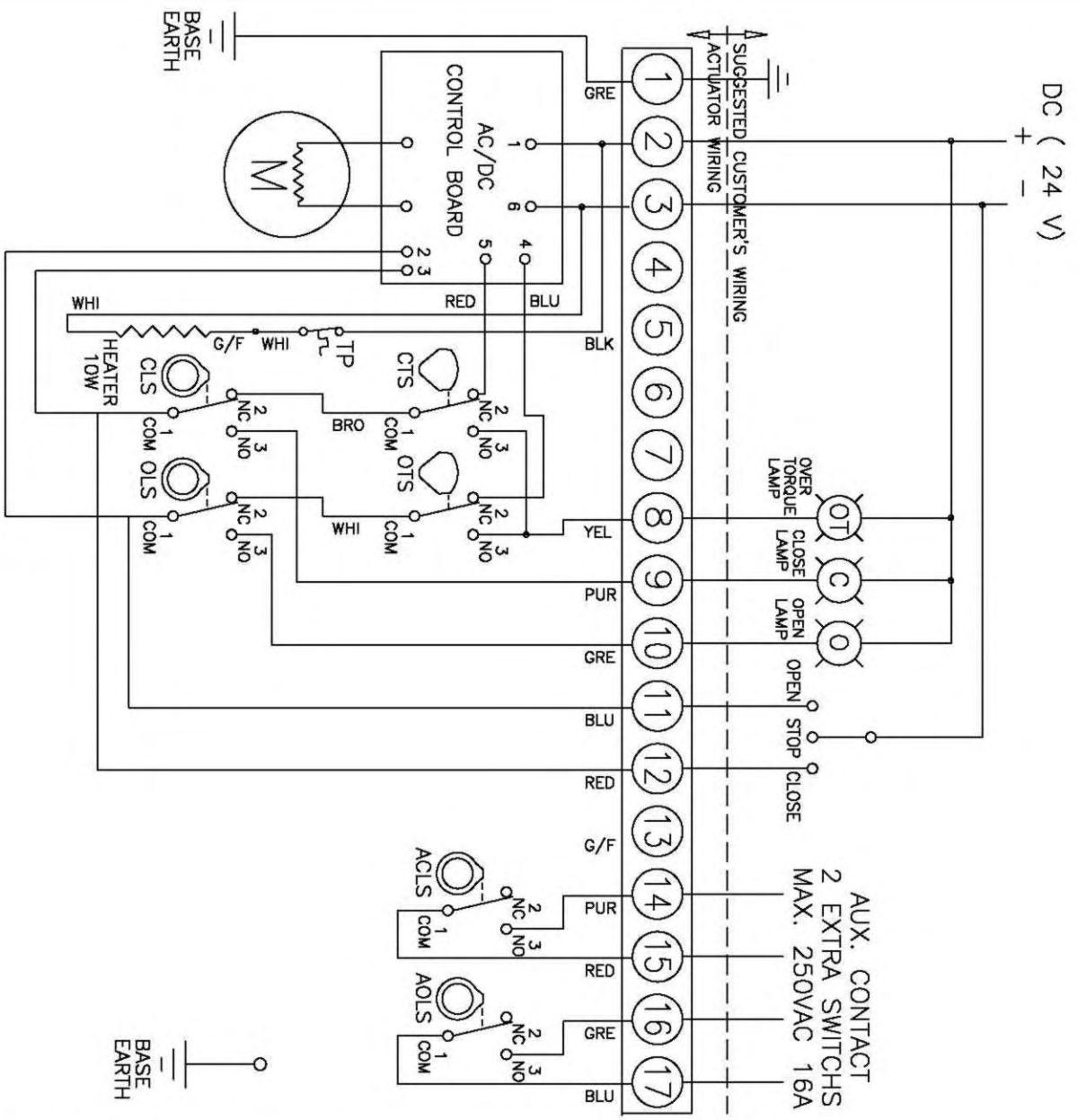
## DIMENSION



## APPLICATION



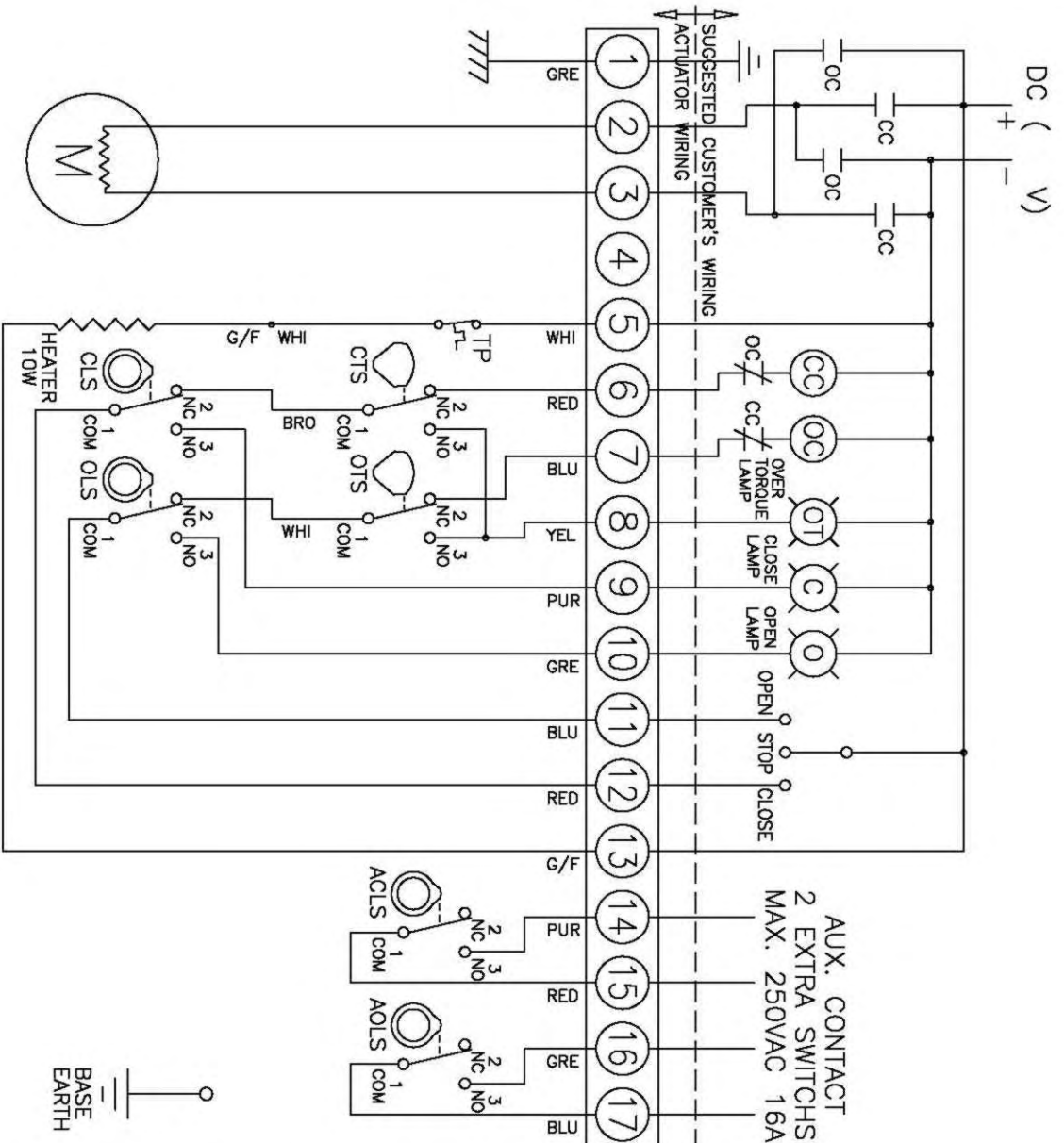




TORQUE AND LIMIT SWITCH OPERATION		
SWITCH	CLOSE ← INTERMEDIATE → OPEN	
CLS 1-2		
CLS 1-3		
OLS 1-2		
OLS 1-3		
CLS1-2		
CLS1-3		
AOLS1-2		
AOLS1-3		
CTS 1-3	* CLOSING TORQUE SWITCH INTERRUPTS CONTROL IF MECHANICAL OVERLOAD OCCURS DURING CLOSING CYCLE	
OTS 1-3	* OPENING TORQUE SWITCH INTERRUPTS CONTROL IF MECHANICAL OVERLOAD OCCURS DURING OPENING CYCLE	
SYMBOL	DESCRIPTION	RATING
CLS	CLOSE LIMIT SWITCH	250VAC 10A
OLS	OPEN LIMIT SWITCH	250VAC 10A
CLS	CLOSE TORQUE SWITCH	250VAC 10A
OTS	OPEN TORQUE SWITCH	250VAC 10A
ACLS	AUX. CLOSE LIMIT SWITCH	250VAC 16A
AOLS	AUX. OPEN LIMIT SWITCH	250VAC 16A
TP	THERMAL PROTECTOR	250VAC 15A

\*EACH ACTUATOR SHOULD BE POWERED THROUGH IT'S OWN INDIVIDUAL SWITCH OR RELAY CONTACTS TO PREVENT CROSS FEED BETWEEN TWO OR MORE ACTUATORS.

DRAW	CHECK
DESIGN	APPR.
PART NAME DC WIRING DIAGRAM STANDARD	
DWG. NO HQ-84000-A	
HQ-030	ISSU. DEPT. HADR
HQ-020	DATE 2005.05.30
HQ-015	
APPLICATION	



AUX. CONTACT  
2 EXTRA SWITCHES  
MAX. 250VAC 16A

TORQUE AND LIMIT SWITCH OPERATION  
SWITCH CLOSE ← INTERMEDIATE → OPEN

SYMBOL	DESCRIPTION	RATING
CLS 1-2	CLOSE LIMIT SWITCH	250VAC 10A
CLS 1-3	OPEN LIMIT SWITCH	250VAC 10A
OLS 1-2	CLOSE TORQUE SWITCH	250VAC 10A
OLS 1-3	OPEN TORQUE SWITCH	250VAC 10A
ACLS 1-2	AUX. CLOSE LIMIT SWITCH	250VAC 16A
ACLS 1-3	AUX. OPEN LIMIT SWITCH	250VAC 16A
AOLS 1-2	CLOSE MAGNETIC COIL	250VAC 15A
AOLS 1-3	OPEN MAGNETIC COIL	250VAC 15A
TP	THERMAL PROTECTOR	250VAC 15A

\*EACH ACTUATOR SHOULD BE POWERED THROUGH IT'S OWN INDIVIDUAL SWITCH OR RELAY CONTACTS TO PREVENT CROSS FEED BETWEEN TWO OR MORE ACTUATORS.

DESIGN	CHECK	APPR.
DRAW		
PART NAME DC WIRING DIAGRAM STANDARD		
DWG. NO HQ-81000-A		
HQ-030	ISSU. DEPT. HADR	DATE 2001.05.10
HQ-020		
HQ-015		
APPLICATION		