

GQ-001, 002, 004



GQ-006, 008



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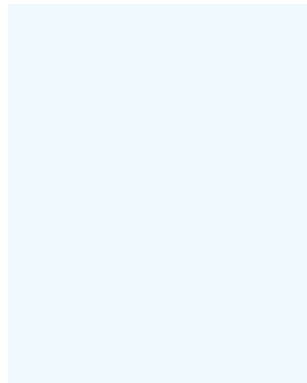
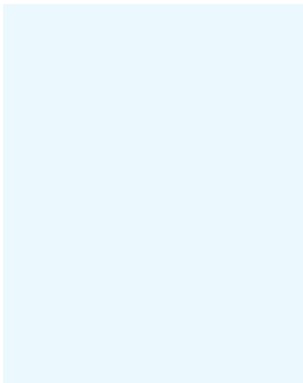
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ELECTRIC ACTUATOR

Quarter turn type GQ series

GQ-010 ~ 300



ELECTRIC ACTUATOR

QUARTER TURN TYPE

○ DESCRIPTION

GQ series electric actuator is specially designed for quarter turn operating. Applications such as Ball, Butterfly, Plug Valves, Dampers and similar usages.

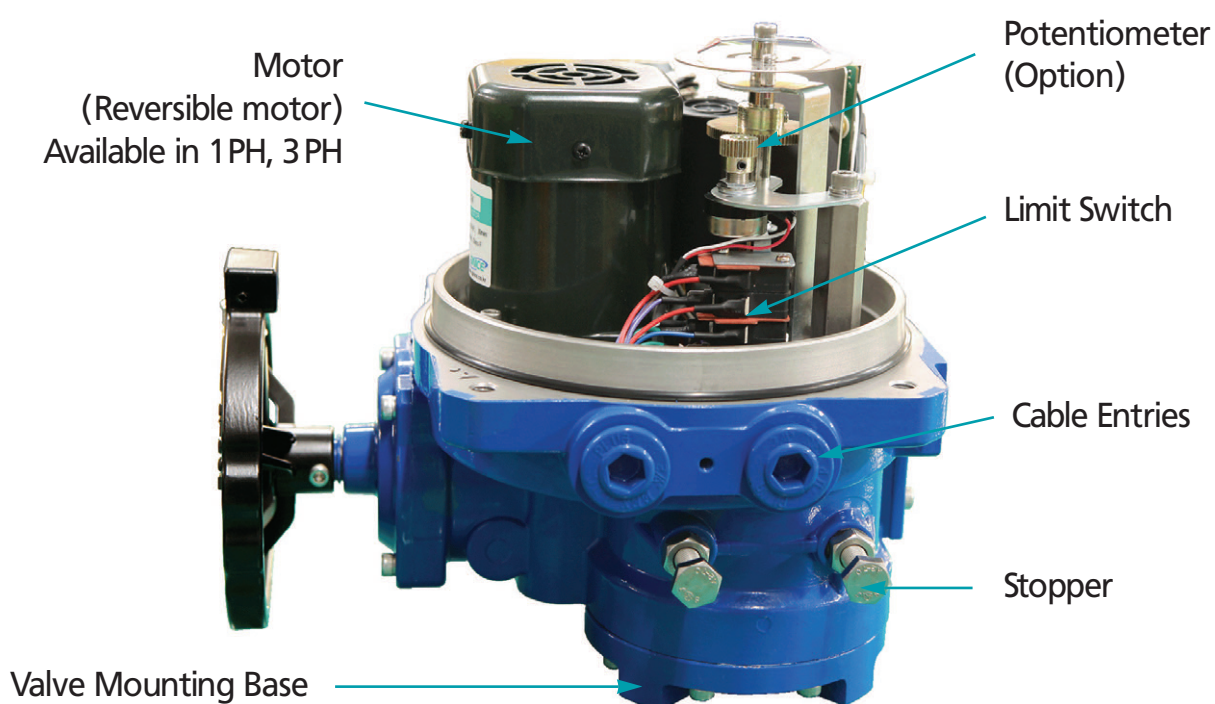
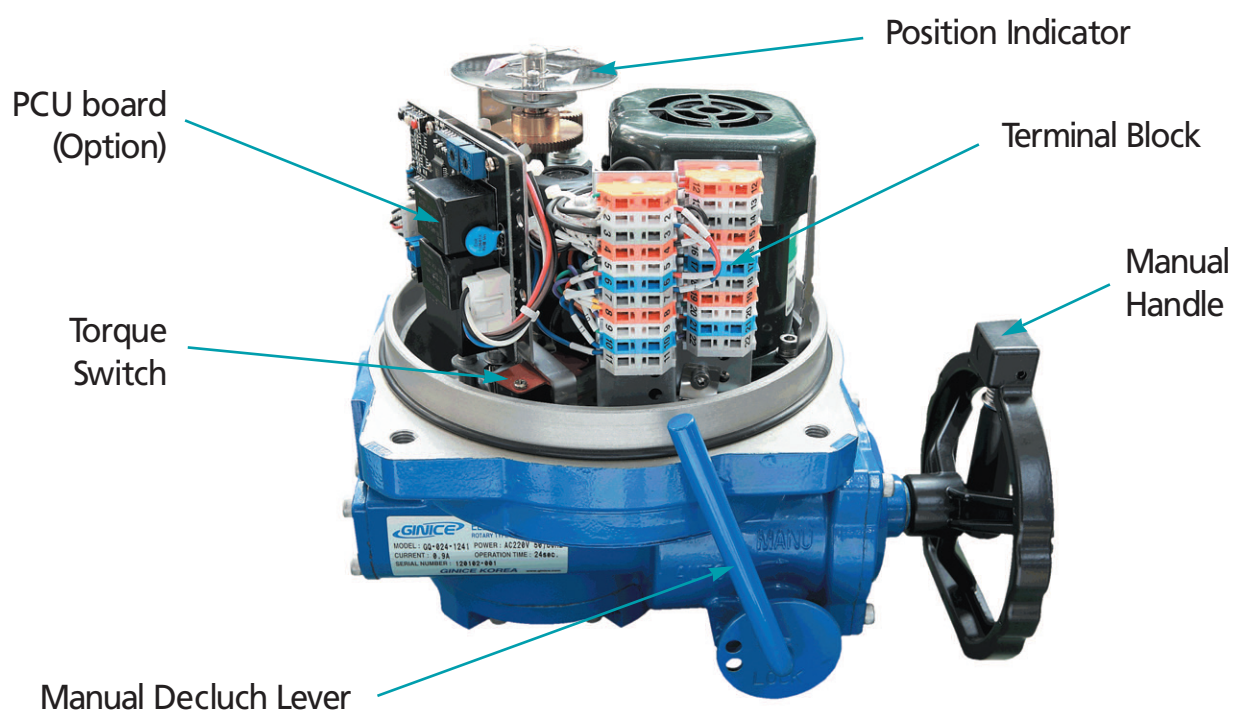
○ FEATURES

- Compact and not heavy due to high grade Aluminum alloyed housing.
- Hard anodizing for High corrosion resistance on inside & outside.
- Various output torque from 100Nm to 3000Nm.
- Wide range of Voltage.
- Self locking function in the transmission.
- Manual operation Hand-Wheel engaged by Manual / Auto lever arranged for power drive folding Handle. (Space-Saving & Protection from Impact)
- Standard Mounting. (ISO 5211)
- Standard 4 limit switches. (2 for operation, 2 for extra (Dry contacts))
- Torque switches. (GQ-016~300)
- Space heater with thermostat for preventing overheat.
- Removable drive bushing with under hung for easy machining and tight connection.





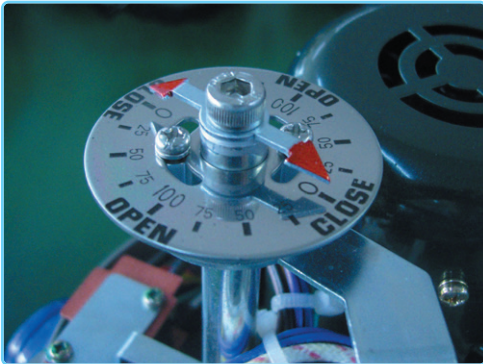
o CONSTRUCTION



ELECTRIC ACTUATOR

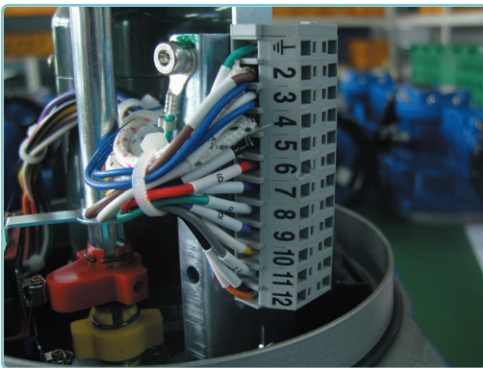
QUARTER TURN TYPE

o STANDARD CONFIGURATION



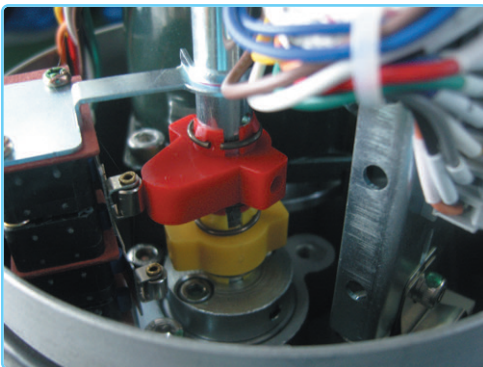
Indicator

- Easy indicator correction by adjustment of bolt on the top
- Indicate plate : $\pm 45^\circ$



Terminal Block

- Spring loaded push type terminal for tight wiring
- Rated voltage / current : 300V / 10A
- Solid and stranded wire : 16~28 AWG
- Wire strip length : 8~10mm
- Insulating with stand voltage : 6KV



Limit Switch

- 4 SPDT switch
- Easy "Setting" by "L-Wrench" & Small screw-driver
- 8 - SPDT Switch (GQ-016~300)
- Hand Setting



Manual Handle

- Folding Handle
- Space-Saving & Protection from Impact



○ STANDARD SELECTION GUIDE OF AVAILABLE VALVES

Actuator \ Valve	Butterfly valve 10K, ANSI 150 #	2-Way ball valve 10K, ANSI 150 #	3-Way ball valve 10K, ANSI 150 #
GQ-006	40A ~ 65A (2 1/2")	40A (1 1/2")	25A (1")
GQ-008	80A (3")	40A (1 1/2"), 50A	32A (1 1/4")
GQ-010	100A (4")	50A (2")	40A (1 1/2")
GQ-016	125A, 150A (6")	50A, 65A (2 1/2")	50A (2")
GQ-024	200A (8")	80A (3")	65A (2 1/2")
GQ-035	250A (10")	100A (4")	80A (3")
GQ-050	300A (12")	125A (5")	100A (4")
GQ-080	350A (14")	150A (6")	125A (5")
GQ-110	400A (16")	200A (8")	150A (6")
GQ-200	450A (18"), 500A	250A (10")	200A (8")
GQ-300	600A (24")	300A (12")	250A, 300A (12")

참조) 밸브 제작사마다 토크가 차이가 있으므로 위의 선정표가 다를 수도 있습니다.

The above specification can be changed as difference torque per each valve manufacturer.

○ ORDER CODING SYSTEM

G Q - X X X - X X X X

(Torque)

010 : 10kg.m
016 : 16kg.m
024 : 24kg.m
035 : 35kg.m
050 : 50kg.m
080 : 80kg.m
110 : 110kg.m
200 : 200kg.m
300 : 300kg.m

1 : 90°
2 : 120°
3 : 135°
4 : 180°
5 : 270°

1 : Standard (on-off)
2 : PU (Potentiometer Unit)
3 : PTM (Position Transmitter)
4 : PCU (Proportional Control Unit)
5 : ALS (Additional Limit Switches)
6 : ATS (Additional Torque Switches)
7 : LCU (Local Control Unit)

1 : 110V AC / 1Ph
2 : 220V AC / 1Ph
3 : 220V AC / 3Ph
4 : 380V AC / 3Ph
5 : 440V AC / 3Ph
6 : 460V AC / 3Ph
7 : 24V AC / 1Ph (GQ-010 Only)

1 : Weather proof, IP 67
2 : Watertight, IP 68

ELECTRIC ACTUATOR QUARTER TURN TYPE

○ TECHNICAL DATA

Model	Maximum output torque	Operating time (sec.) 60 / 50 Hz	Maximum bore size	Rated current (A) 60/50Hz				Duty cycle IEC 34-1	Number of handle turn	Weight
				1 Phase		3 Phase				
	kg-m	90°	mm	110V	220V	380V	440V	S4 (%)	N	kg
GQ-010	10	18 / 21	∅20	1.10 / 0.98	0.58 / 0.52	-	-	70	10	7
GQ-016	16	21 / 25	∅25	1.70 / 1.60	0.90 / 0.85	0.30 / 0.35	0.32 / 0.50	70	12	15
GQ-024	24	21 / 25	∅25	1.72 / 1.62	0.90 / 0.87	0.32 / 0.37	0.35 / 0.57	70	12	15
GQ-035	35	26 / 31	∅40	1.80 / 1.72	0.95 / 0.92	0.32 / 0.37	0.32 / 0.50	70	14	20
GQ-050	50	26 / 31	∅40	3.90 / 3.60	1.60 / 1.50	0.56 / 0.52	0.58 / 0.55	70	14	20
GQ-080	80	32 / 39	∅48	4.20 / 3.90	2.20 / 2.05	0.88 / 0.82	0.88 / 0.82	70	17	25
GQ-110	110	32 / 39	∅48	4.30 / 3.90	2.30 / 2.15	0.90 / 0.84	0.88 / 0.84	70	17	25
GQ-200	200	50 / 59	∅75	-	3.15 / 2.95	1.80 / 1.50	2.20 / 2.30	70	23	70
GQ-300	300	50 / 59	∅75	-	3.85 / 3.75	2.00 / 1.60	2.40 / 2.50	70	23	70

※ GQ-010 모델은 24VAC 제작 가능함.
GQ-010 is available for 24VAC.

○ STANDARD SPECIFICATION

Enclosure	Weatherproof enclosure IP67 (IP68 OPTIONAL)
Power supply	110/220V AC 1 Phase 50/60Hz, 380/440V AC 3 Phase 50/60Hz, ±10%
Control power supply	110/220V AC 1 Phase 50/60Hz, ±10%
Duty cycle (on-off)	S2, 100% Max 30Min
Duty cycle (modulating)	S4, 70% Max 300~1,600 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 for GQ-010)
Torque switches	Open / close, SPDT, 250V AC 16A rating (Except for GQ-010)
Stall protection/operating temp.	Built-on thermal protection, open 150°C ± 5°C / close 97°C ± 15°C
Travel angle	90° ± 5° (0 ~ 100°)
Indicator	Continuous mechanical indicator with arrow
Manual override	Declutching mechanism
Self locking	Provided by double worm gearing
Mechanical stopper	2 each external adjustable screws
Space heater	10W (110/220V AC) anti-condensation
Cable entries	Three PF 3/4" tap
Lubrication	Grease Moly (EP type)
Terminal block	Spring loaded lever push type
Materials	Aluminum alloy, Steel, 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 9g, 0.2~34Hz, 30min.



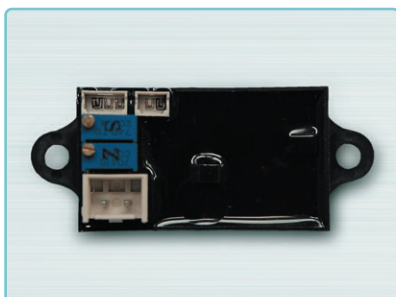
○ OPTION SPECIFICATION

WE	Watertight enclose actuator. (IP 68, 10m 100hour)
PU	Potentiometer unit. (1K Ω)
PTM	Position transmitter. (Output 4~20mA)
PCU	Proportional control unit. (Input / Output 4-20mA or 0-10VDC or 1-5VDC)
ALS	Additional limit switches. (SPDT X 2EA 250V AC 10A Rating)
ATS	Additional torque switches.
LCU	Local Control Unit. (Remote / Local, Open / Stop / Close Selector Switch with Lamps)
EX	Extension 120°, 135°, 180°, 270° turn.



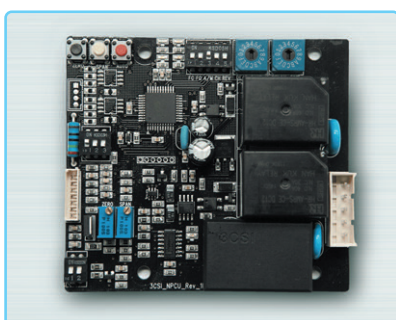
Potentiometer Unit

- Small size
- Range : 0~1K Ω
- Metal gear



Position Transmitter

- Small and high performance
- Input : AC 24V, AC 110/220V
- Output : 4~20mA
- Zero, span setting



Proportional Control Unit

- Power : 85 ~ 280VAC \pm 10%, 50/60Hz \pm 2%,
4VA Max - Changeable by DIP switch
- Input signal : 4~20mA DC, 1~5V DC, 2~10V DC, 0~5V DC, 0~10V DC
- Output signal : 4~20mA DC, 1~5V DC, 2~10V DC, 0~5V DC, 0~10V DC
- Auto setting, dead band, delay time setting etc.



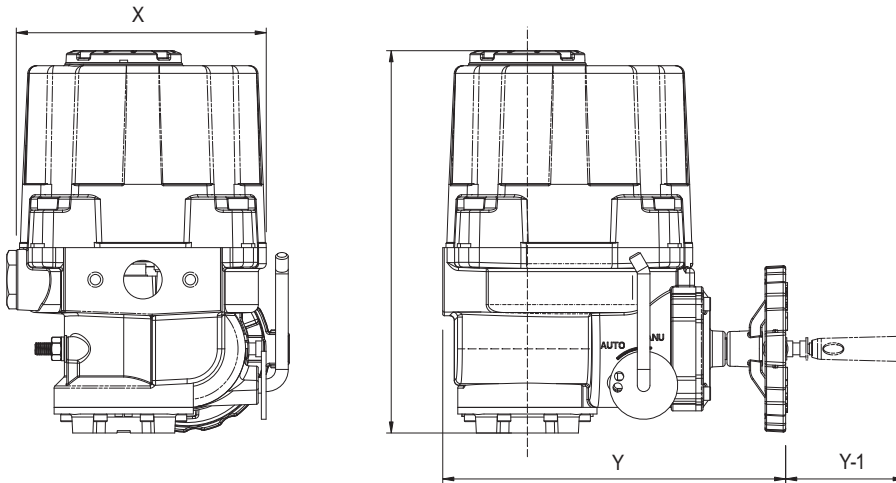
LCU (Local Control Unit)

- A small unit that is mounted to the actuator to operate the valve's position in local.
- Local / Remote switch
- Open / Stop / Close selector switches with lamps

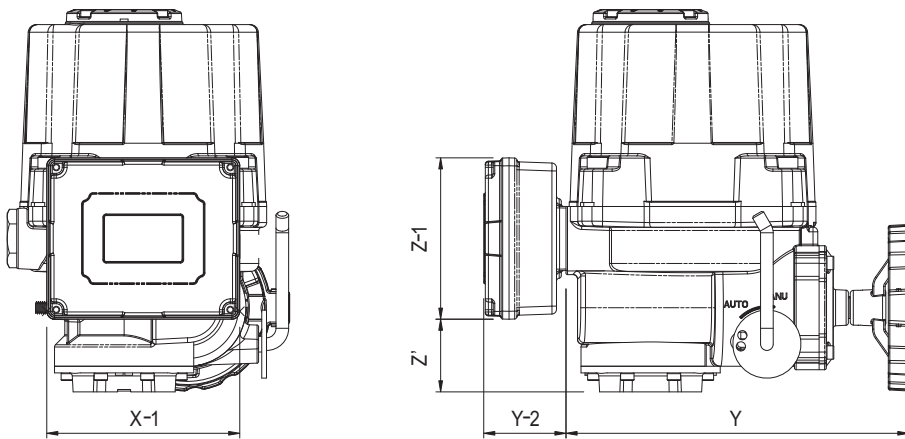
ELECTRIC ACTUATOR QUARTER TURN TYPE

o BASIC DIMENSIONS (GQ-010)

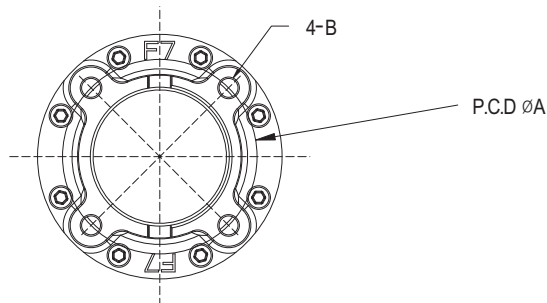
On/Off



Modulating (with PCU)



Valve Mounting (Base ISO 5211)

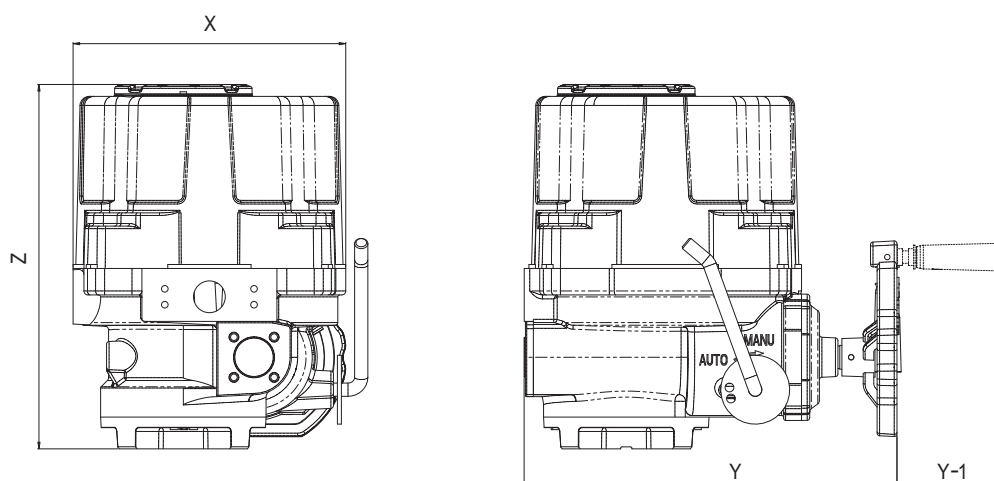


Model	ØA	B	X	X-1	Y	Y-1	Y-2	Z	Z'	Z-1
GQ-010	70	M8 / 15	158	122	217	75	52	242	46	102



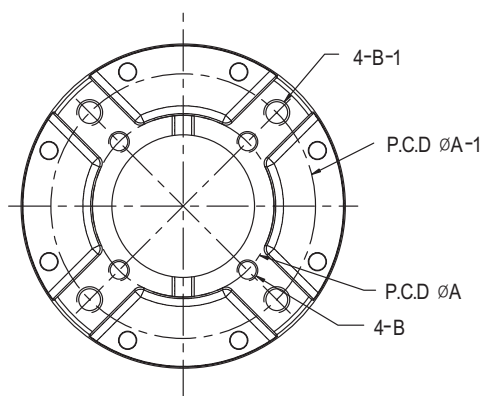
o BASIC DIMENSIONS (GQ-016~300)

On/Off, Modulating (with PCU)

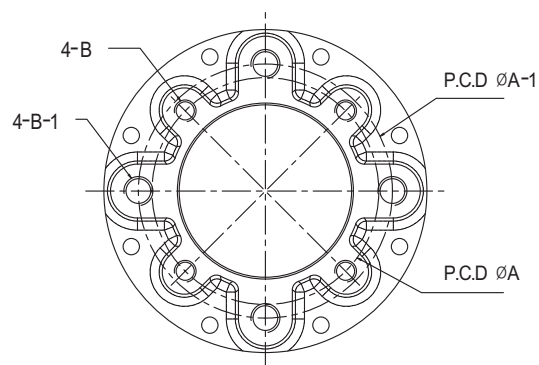


Valve Mounting (Base ISO 5211)

GQ - 016 ~ 050



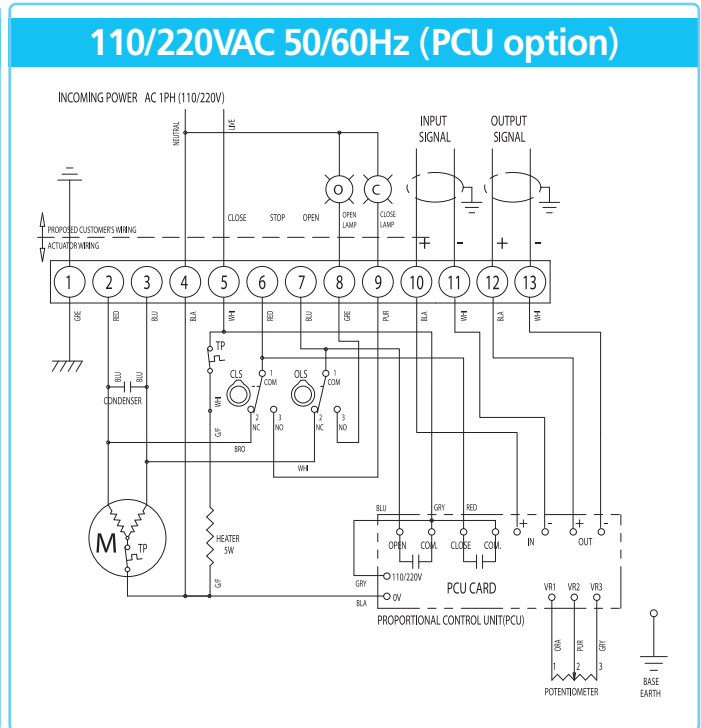
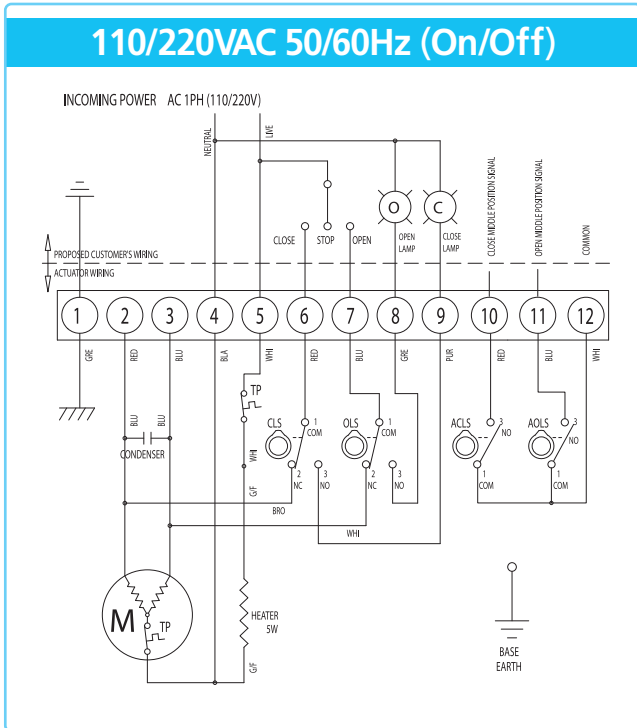
GQ - 080 ~ 300



Model	ØA	ØA-1	B	B-1	X	Y	Y-1	Z
GQ-016	70	102	M8/12	M10/15	206	282	80	276
GQ-024	70	102	M8/12	M10/15	206	282	80	276
GQ-035	102	125	M10/15	M12/18	222	295.5	80	294
GQ-050	102	125	M10/15	M12/18	222	295.5	80	294
GQ-080	125	140	M12/18	M16/24	239	310	80	326
GQ-110	125	140	M12/18	M16/24	239	310	80	326
GQ-200	-	165	-	M20/30	307	401	100	394
GQ-300	-	165	-	M20/30	307	401	100	394

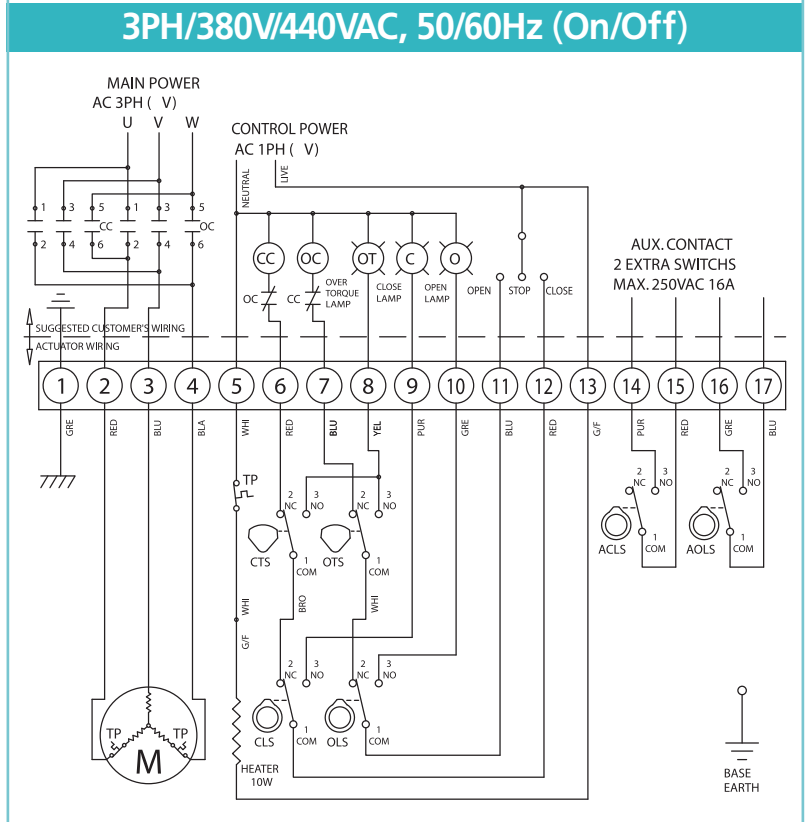
ELECTRIC ACTUATOR QUARTER TURN TYPE

o TYPICAL WIRING (GQ-010)



Torque and Limit Switches Operation

SWITCH	CLOSE ← INTERMEDIATE → OPEN
CLS 1-2	
CLS 1-3	
OLS 1-2	
OLS 1-3	
ACLS 1-2	
ACLS 1-3	
AOLS 1-2	
AOLS 1-3	
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 CLOSING CYCLE

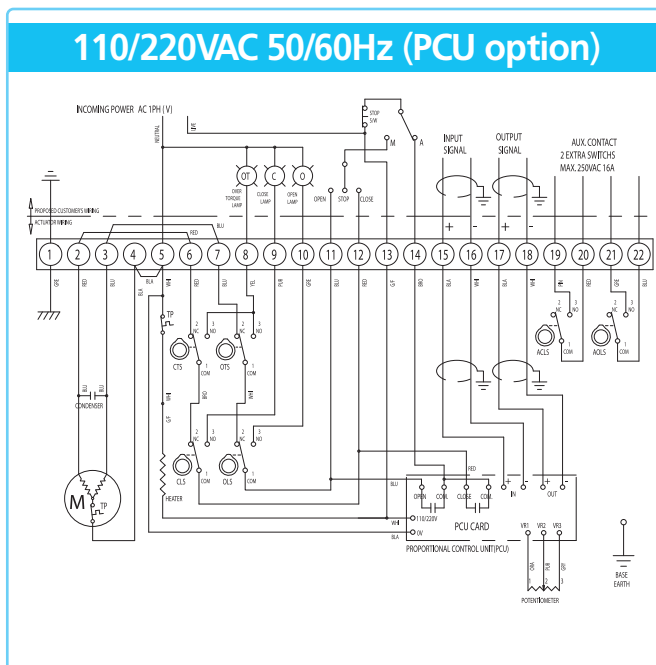
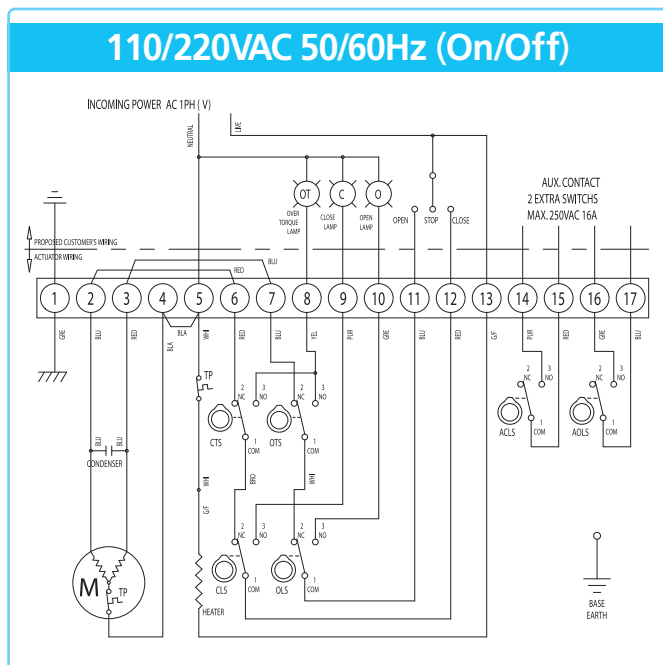


Important Notice

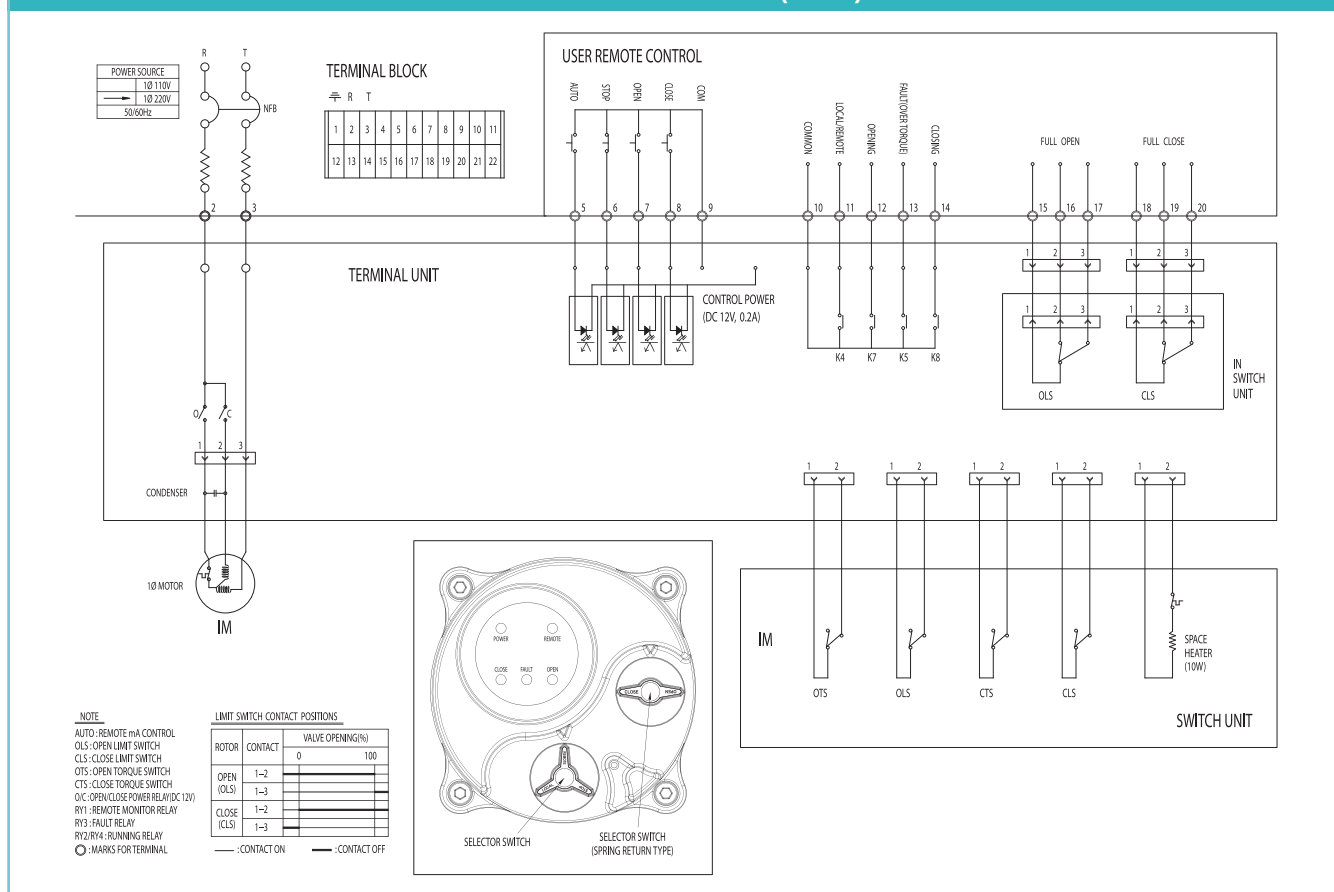
※ Please only refer to the Wiring Diagram Sticker or separate Wiring Diagram inside of each actuator. If there is any confusion please contact your distributor.



o TYPICAL WIRING (GQ-016~300)



Local Control Unit (LCU)



- AOLS : Auxiliary Open Limit Switch (Dry contact)
- ACLS : Auxiliary Close Limit Switch (Dry contact)
- CLS : Close Limit Switch (250VAC 10A)

- OLS : Open Limit Switch (250VAC 10A)
- CTS : Close Torque Switch (250VAC 10A)
- OTS : Open Torque Switch (250VAC 10A)