ELECTRICAL ACTUATOR

EVOL
Pump solutions

EVOL ELECTRICAL ACTUATOR

EVOL series electric actuator is used for controlling the rotation from 0° to 270° of the valves such as butterfly valves, ball valves, damper, flapper valves, cock valves and etc.

Under Neptune series motor driven pump, it can be installed to improve the accuracy in controlling stroke length, which makes it ideal for most of the industries to meet their requirements.

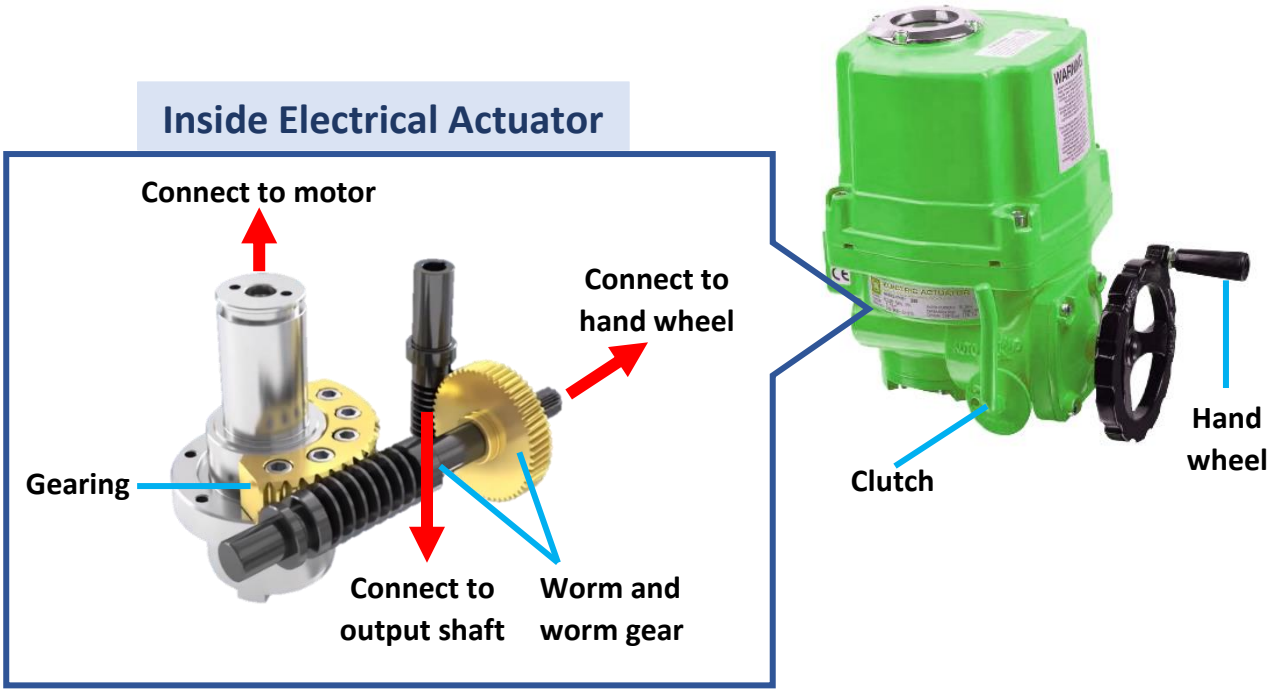
It widely applies in petroleum, chemical, water treatment, shipping, paper making, power plant, heating, and light industries and other industries.

Power supply	380 V/220 V/110 V AC or 24V/110V DC
Control signal	4-20 mA / 0-10 V DC
Max. output torque	6000 N·m
Installation size	Meets International Standard ISO 5211/ DIN3337

Features

Shell	➢ Enclosure IP65 to IP68 ➢ Aluminum alloy with strong corrosion-resistance
Motor	➢ H class insulation rating
Hand wheel	➢ Safe, reliable, labor-saving and small ➢ Declutch to operate by hand wheel if without power ➢ Reset automatically when power on
Indicator	➢ Convenient to observe
Space heater	➢ Prevent moisture condensation
Limit switch	➢ Mechanical and electronic double limit ➢ Mechanical limit is adjustable, safe and reliable ➢ Electronic limit switch is controlled by cam to set position conveniently
Torque switch	➢ Provide overload protection for valve and electric actuator (Except EV-005/008/010)
Self-locking	➢ Prevent inversion ➢ Low noise (Max 50 dB) ➢ Long life
Anti-off bolt	➢ Bolt attaches to shell, not off when remove the shell
Controlling Circuit	➢ Single-phase / three-phase power supply standard ➢ Circuit layout is reasonable & compact ➢ Terminal meets various of additional functional requirements

WORKING PRINCIPLE



1. When electric supply to motor:
   - Gearing moves from 0° to 90° (or 120°, 180°, 270° based on customer's requirement), which restricts the maximum turning of motor
   - Rotates the worm and worm gear
   - Rotation of worm and worm gear further rotate the output shaft.
2. When there is no electric supply motor
   - Clutch can be declutched easily by a lever
   - Manual rotate the hand wheel to turn the worm and worm gear as well the output shaft.

MODEL SPECIFICATIONS

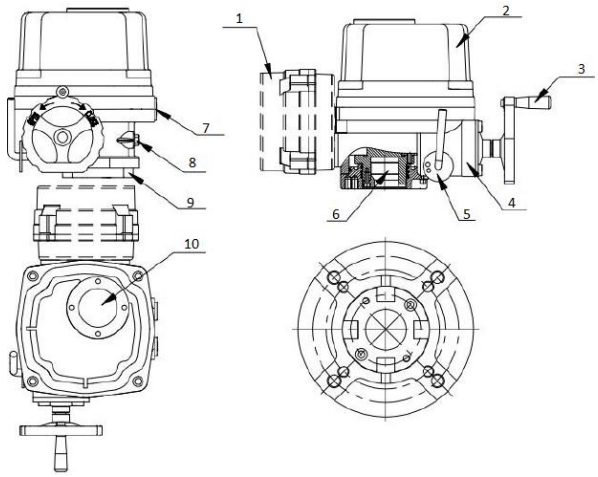
Power supply	220V AC Single Phase
Motor	Small asynchronous motor
Limit switch	Single pole double throw, 250V AC 10A (2 units)
Auxiliary limit switch	Single pole double throw, 250V AC 10A (2 units)
Torque switch	Single pole double throw, 250V AC 10A (Except EVOL-005/008/010)
Fail safe/ Operating temperature	Internal-placed thermal protection Open 120°C ± 5°C / Close 97°C ± 5°C
Travel	90° ± 10°
Space heater	30W (100 V /220 V AC)
Conduit entry	2 × PT 3/4''
Ambient temperature	-25°C to 70°C
Indicator	❖ Install in the center axis and adopt convex mirror design ❖ Continuous position indicator
Manual operate	Declutching mechanism
Self-locking device	Self-locking by worm and worm gear
Mechanical limit	External adjustable stopper (2 units)
Lubrication	Grease moly (EP type)
Ambient humidity	Max 90% RH (Non-Condensing)
Material	❖ Steel ❖ Aluminum alloy ❖ Aluminum bronze ❖ Polycarbonate
External coating	Dry powder, Epoxy polyester, High anti-corrosion

Optional Specification

Explosion-proof actuator (Exd II CT5)
Power • 110 V AC/ Single phase • 380 V/440 V/ Three phase, 50/60 Hz, ±10% • 24 V DC/110 V DC/220 V DC
Potentiometer unit (1K – 20K)
Proportion control unit (Control signal 4-20 mA DC/1-5 V/1-10 V)
Local control units (Local control open/stop/close optional switch, local/remote switch)
Travel 120°, 180°, 270°
Direct current motor (24 V DC)
Water-proof actuator (IP68, 10 M, 250 HR)
Reverse electromagnetic control and transmission integrated motor starters
Torque switch (SPDT × 2, 250 V AC 10A)
Electric current position sensor (Output 4-20 mA DC)
High temperature resistance actuator (-10°C to + 100°C)
Low temperature resistance actuator (-40°C to + 70°C)
Low speed actuator
Bus control unit

MODEL DESIGN & DIMENSIONS

Model Design

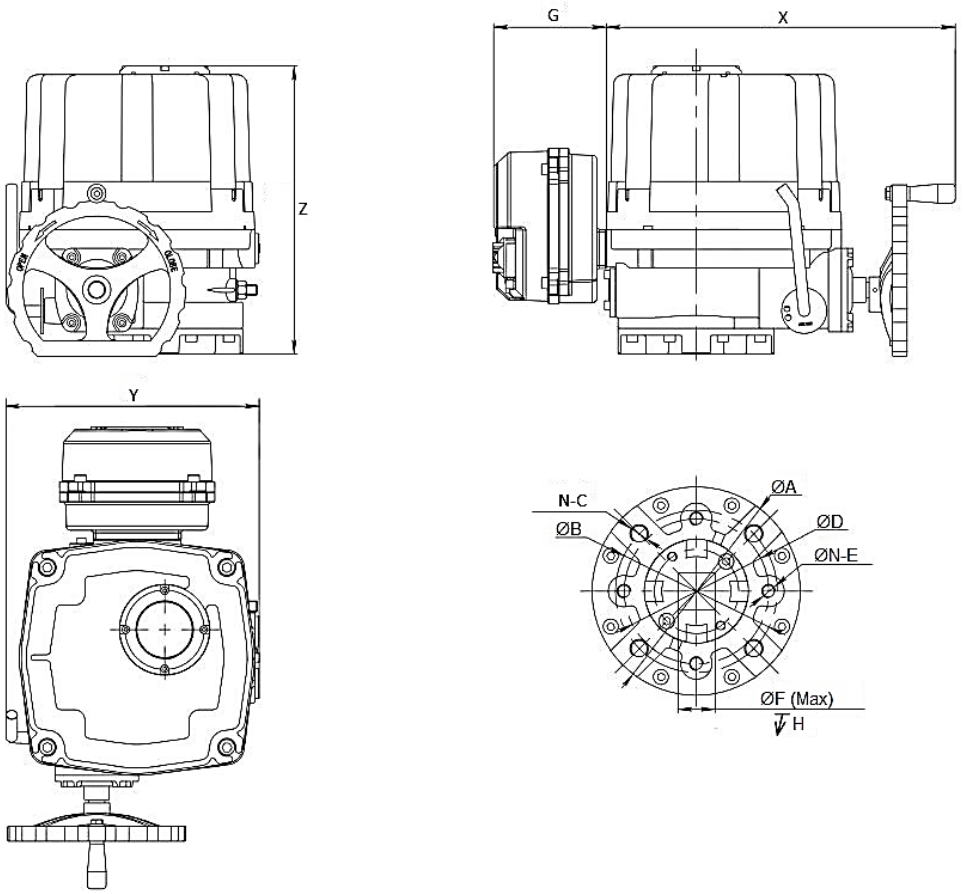


1	Control Panel
2	Cover
3	Hand wheel
4	Case
5	Handle
6	Output shaft
7	Plug
8	Mechanical limit
9	Flanges
10	Indicator

Model	Max output Torque	50 Hz Operating Time 90°	Max Drive Shaft Size	Power	50 Hz Rate Current (A)				Hand Wheel Revolution	Weight
					Single Phase		Three Phases			
	N·m	s	mm	W	110V	220V	380V	440V	N	kg
EVEA-005	50	22	Ø20	20	0.95	0.55	0.32	N/A	10.0	7.5
EVEA-008	80	22	Ø20	20	0.95	0.61	0.32	N/A	10.0	7.5
EVEA-010	100	22	Ø20	20	0.95	0.61	0.27	N/A	10.0	7.5
EVEA-015	150	25	Ø20	40	1.67	0.85	0.32	0.31	11.0	17.3
EVEA-020	200	25	Ø20	40	1.67	0.87	0.33	0.31	11.0	17.3
EVEA-030	300	31	Ø32	90	1.86	1.29	0.34	0.34	13.5	22
EVEA-050	500	31	Ø32	120	3.62	1.83	0.59	0.58	13.5	23
EVEA-060	600	31	Ø32	120	3.62	1.95	0.58	0.58	13.5	23
EVEA-080	800	37	Ø40	180	4.10	1.89	0.90	0.79	16.5	29
EVEA-120	1200	37	Ø40	180	4.10	2.31	0.87	0.81	16.5	29
EVEA-150	1500	93	max Ø60	120	3.62	1.95	0.59	0.58	40.5	77
EVEA-200	2000	112	max Ø60	180	4.10	1.71	0.85	0.79	49.5	83
EVEA-300	3000	112	max Ø60	180	4.10	2.15	0.87	0.81	49.5	83
EVEA-400	4000	185	max Ø60	180	4.10	1.80	0.87	0.81	82.5	83
EVEA-500	5000	185	max Ø60	180	4.10	2.16	0.87	0.81	82.5	83
EVEA-600	6000	185	max Ø60	180	4.10	2.31	0.87	0.81	82.5	83

Dimensions

EVEA-005 to EVEA-120

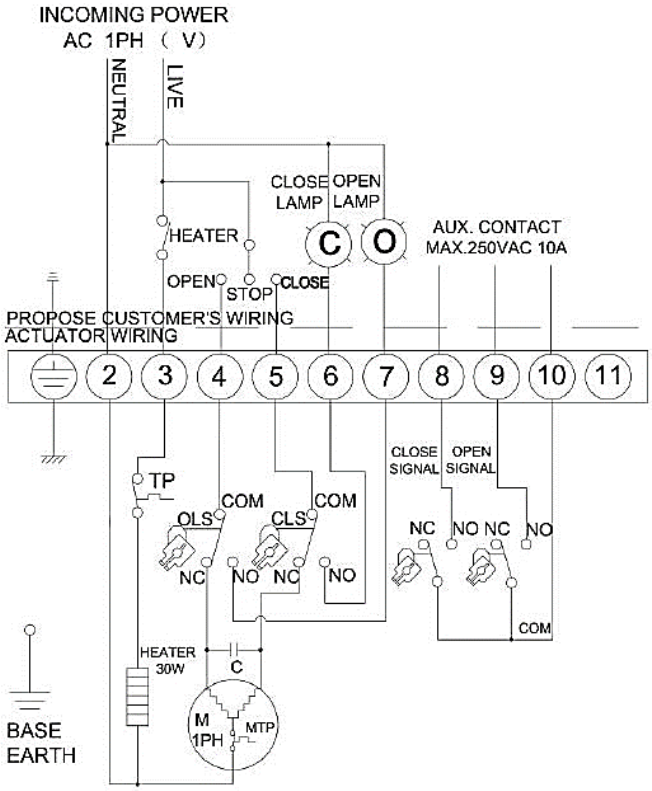


Model	X	Y	Z	ØA	ØB	N-C	ØD	N-E	ØF	G	H
EVEA-005	254	175	236	Ø90	Ø70	4-M8	-	-	Ø20	130	60
EVEA-008	254	175	236	Ø90	Ø70	4-M8	-	-	Ø20	130	60
EVEA-010	254	175	236	Ø90	Ø70	4-M8	-	-	Ø20	130	60
EVEA-015	343	245	271	Ø125	Ø102	4-M10	Ø70	4-M8	Ø20	130	50
EVEA-020	343	245	271	Ø125	Ø102	4-M10	Ø70	4-M8	Ø20	130	50
EVEA-030	358	258	292	Ø150	Ø125	4-M12	Ø102	4-M10	Ø32	130	67
EVEA-050	358	258	292	Ø150	Ø125	4-M12	Ø102	4-M10	Ø32	130	67
EVEA-060	358	258	292	Ø150	Ø125	4-M12	Ø102	4-M10	Ø32	130	67
EVEA-080	402	291	331	Ø180	Ø140	4-M16	Ø125	4-M12	Ø40	130	72
EVEA-120	402	291	331	Ø180	Ø140	4-M16	Ø125	4-M12	Ø40	130	72

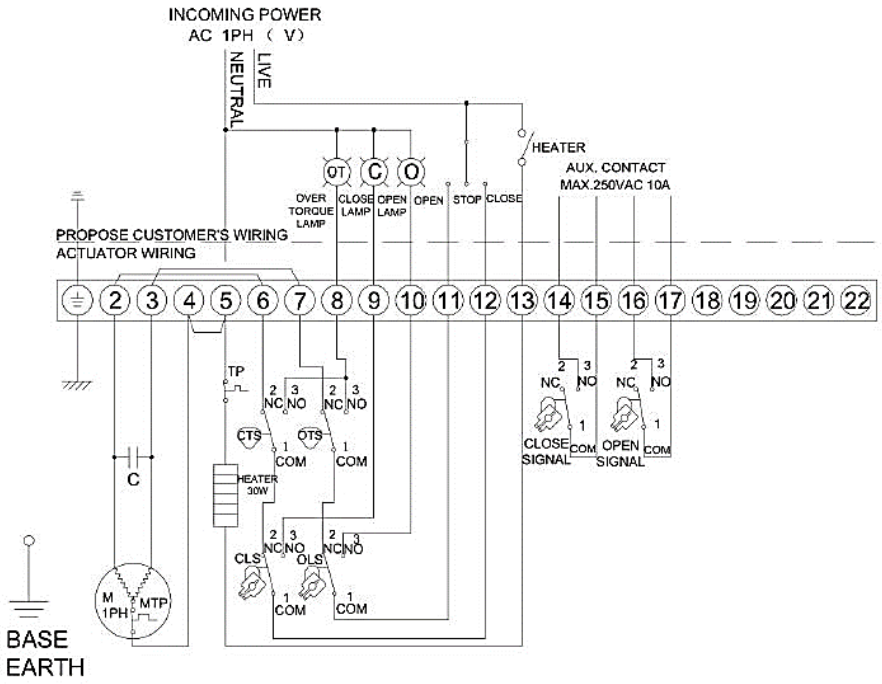
WIRING DIAGRAM

110/220 V AC at 50/60 Hz, Single Phase (On/Off model)

For EVEA-005 to EVEA-010

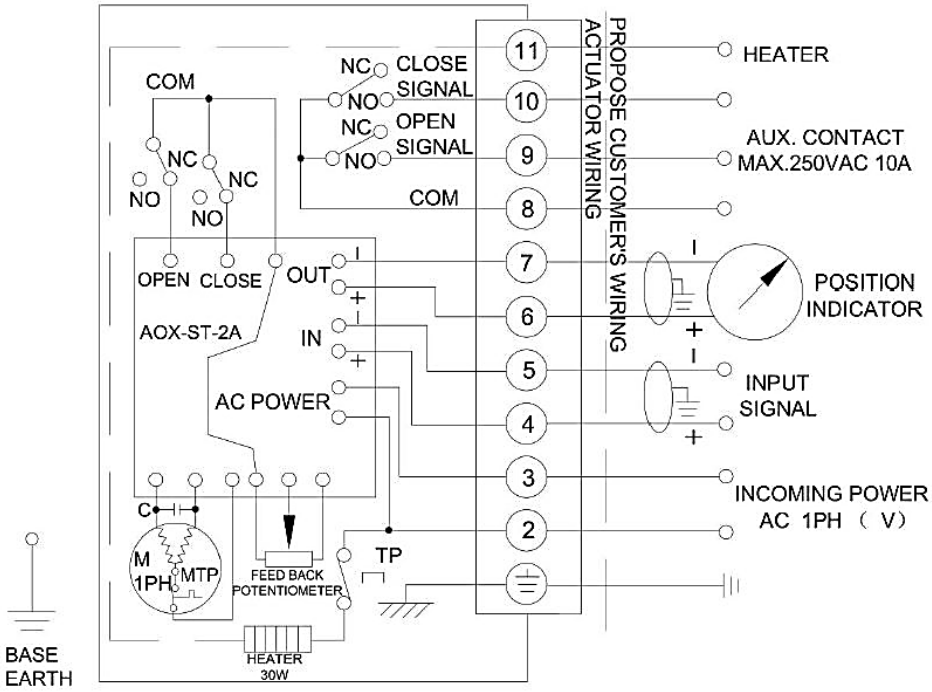


For EVEA-015 to EVEA-600

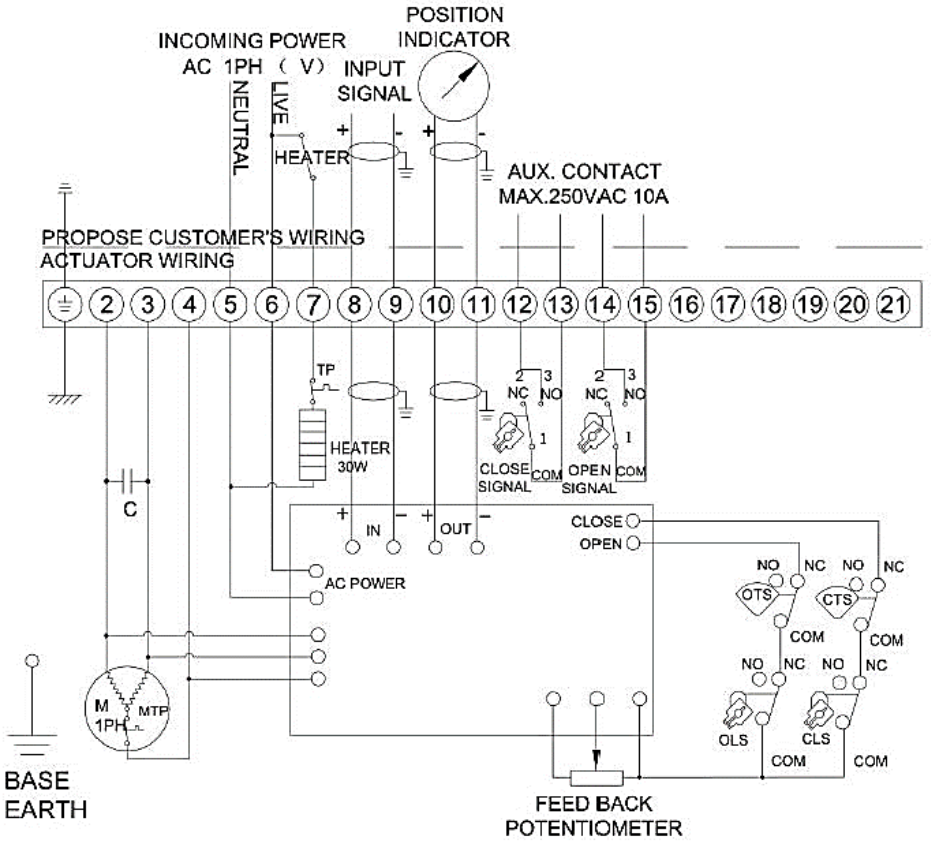


110/220 V AC at 50/60 Hz, Single Phase (Modulating type)

For EVEA-005 to EVEA-010

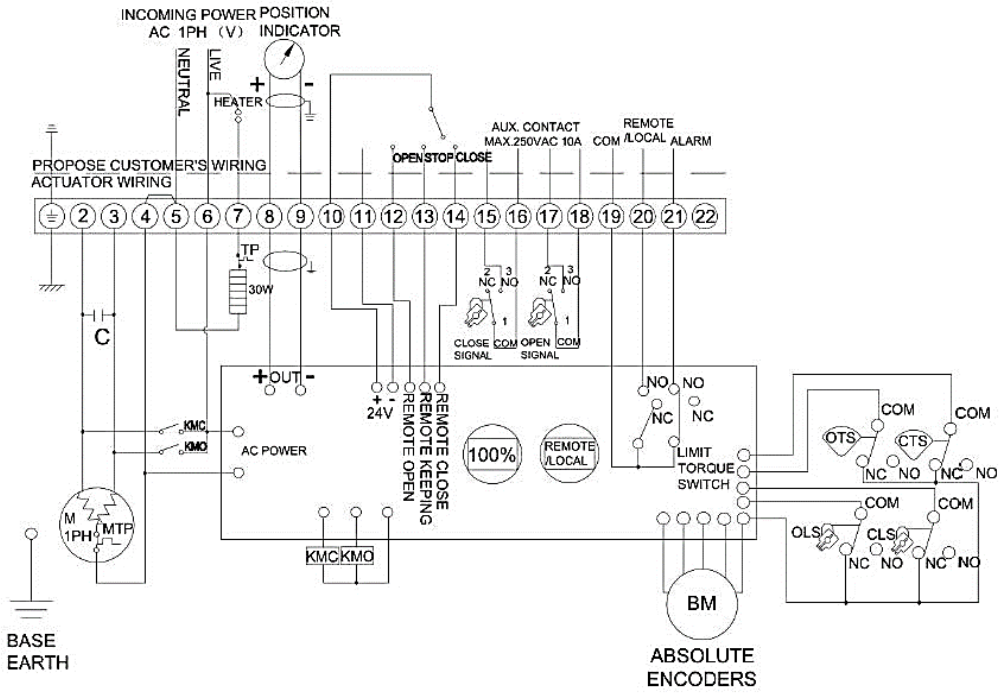


For EVEA-015 to EVEA-600



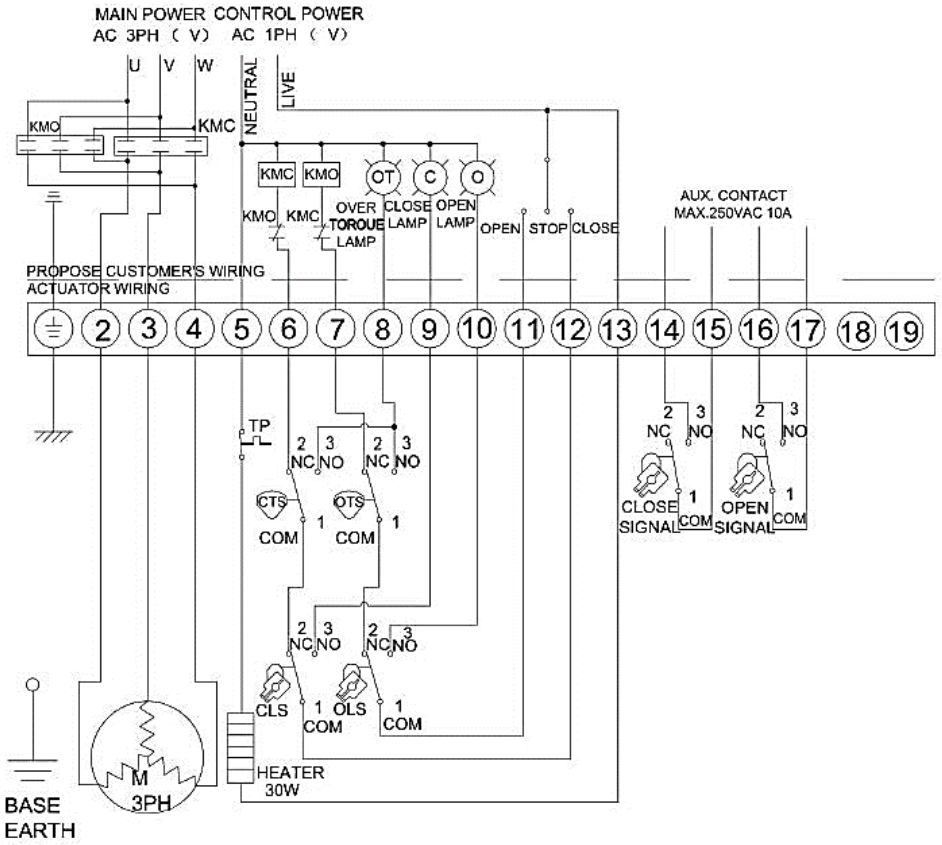
110/220 V AC at 50/60Hz, Single Phase (Intelligent switch type)

For EVEA-015 to EVEA-600

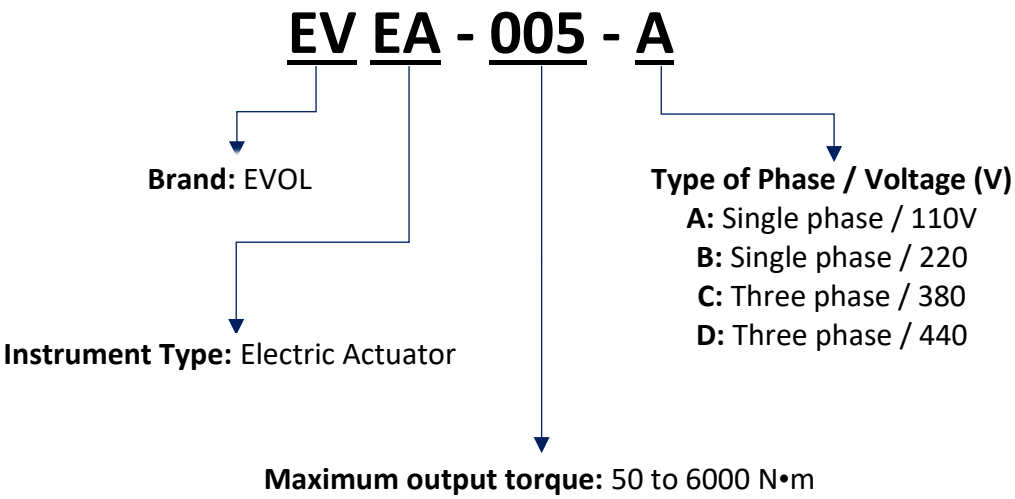


110/220V AC at 50/60Hz, Single Phase (Intelligent modulating type)

For EVEA-015 to EVEA-600



MODEL NUMBER



EVOL Technologies

www.evol-technologies.com

Lot 2075, Jalan Disa Krokop, 98000 Miri, Sarawak

+6085 416320 / 433101

enquiry@evol-technologies.com

Revision: EV-IB-EA-20-00