

# CLARK SOLUTIONS

## 8E Series Electric Actuated NEMA 4X Ball Valves

1/4" to 4" Brass & Stainless Steel, 2-way & 3-way configurations



**MODEL SERIES 8E064/68**

- 64: Direct mount 2-way brass full port valve
- 68: Direct Mount 2-way brass full port valve, SS ball & stem



**MODEL SERIES 8E065/66**

- 65: Direct mount 3-way brass standard "T" port valve
- 66: Direct Mount 3-way brass standard "L" port valve



**MODEL SERIES 8E067**

- 67: Direct mount 2-way SS full port valve



**MODEL SERIES 8E069/70/71/72**

- 69: Direct Mount 3-way SS standard "T" port valve
- 70: Direct Mount 3-way SS standard "L" port valve
- 71: Direct Mount 3-way SS full port "T" valve
- 72: Direct Mount 3-way SS full port "L" valve

**Actuator Features**

- NEMA 4X, IP 65, IP67 Enclosure
- 12v DC/AC, 24v DC/AC, 100-240 VAC
- Manual Over-ride
- ON/Off or optional modulating operation
- Optional fail safe battery backup
- Torque limiter built-in
- Standard heater is activated when actuator powered and temp. is below 77°F
- Standard position indicator
- Two auxiliary limit switches are standard

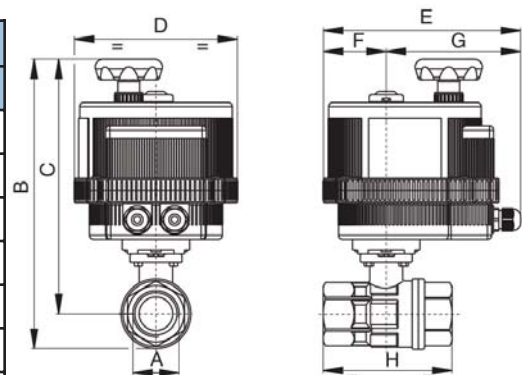
**-Low Torque Valve Stem & Valve Seat Design Means Smaller Actuators**  
**-Square Stem Valve Design With ISO 5211 Actuator Pad For Structural Strength**  
**-Complete Design Control With Integrated Components From One Manufacturer**  
**-Produced In An ISO 9001, ISO 14001, OHSAS 18001 Certified Factory**

**General Valve Specifications**

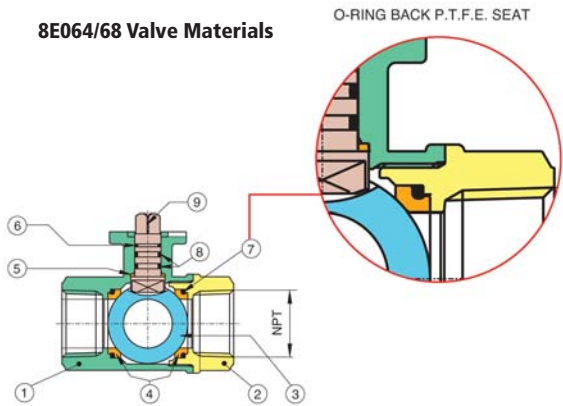
8E064/68 2-Way Brass	8E065/66 3-Way Brass	8E067 2-Way SS	8E069/70/71/72 3-Way SS
- Full Port from 1/4" to 4" -*PSI Pressure Rating 600 WOG - 150 WSP -Temperature to 366°F -Blow out proof stem, chrome plated brass ball (SS Ball Model 68) -P.T.F.E. seats w/o-ring backing for low operating torque -P.T.F.E. seats and double o-ring stem packing -100% electronically tested in the open & closed position	- "T" & "L" Ports from 1/4" to 3" -*PSI Pressure Rating 400 WOG - 100 WSP -Temperature to 344°F Four seat design for sealing between pressurized ports -Blow out proof stem, chrome plated brass ball -P.T.F.E. seats w/o-ring backing for low operating torque -P.T.F.E. seats and double o-ring stem packing -100% electronically tested in the open & closed position	- Full Port from 1/4" to 3" -2 pc stainless steel ASTM A351 - CF8M -*PSI Pressure Rating 1000 WOG - 150 WSP -Temperature to 366°F -Blow out proof stem -P.T.F.E. seats w/o-ring backing for low operating torque -P.T.F.E. seats and double o-ring stem packing -100% electronically tested in the open & closed position	- Full Port from 1/4" to 2"; Standard port from 1/2" to 2" -Stainless steel ASTM A351 - CF8M -Self adjusting stem packing -*PSI Pressure Rating 1000 WOG (1/4 to 1"), 800 WOG (1/4" to 2") -Temperature range -20°F to 450°F -Blow out proof stem -100% electronically tested in the open & closed position
* WOG-Water, Oil, Gas max. pressure capability over temp. range WSP- Working Steam Pressure, max. steam pressure at the highest temperature rating			

### VALVE DIMENSIONS & MATERIALS OF CONSTRUCTION

8E064/68 2-Way Brass Dimensions (inches)											
Size/NPT Conn.	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
A	0.25	0.375	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00
B	7.51	7.51	7.51	7.72	8.33	8.63	11.30	12.0	14.20	14.90	16.90
C	6.85	6.85	6.85	6.93	7.36	7.50	9.92	10.20	11.90	12.30	13.70
D	4.84	4.84	4.84	4.84	4.84	4.84	6.18	6.18	7.28	7.28	8.31
E	6.41	6.41	6.41	6.41	6.41	6.41	7.50	7.50	8.43	8.43	9.33
F	2.64	2.64	2.64	3.00	3.35	3.66	4.15	4.80	6.10	6.89	8.03
Actuator	VB015	VB015	VB015	VB015	VB015	VB015	VB030	VB030	VB060	VB060	VB0110



**8E064/68 Valve Materials**

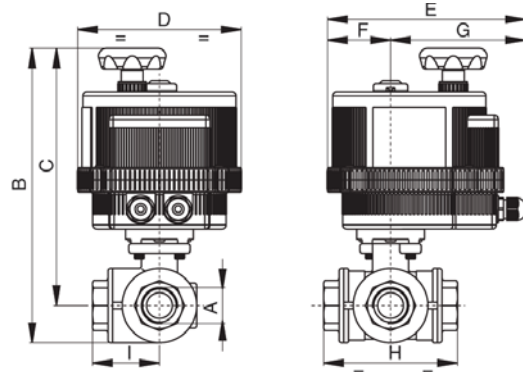


	Part Name	Material 8E064	Material 8E068	QTY
1	Body	*Brass CW617N (C37700)	*Brass CW617N (C37700)	1
2	End Connection	*Brass CW617N (C37700)	*Brass CW617N (C37700)	1
3	Ball	*Brass CW617N (C37700)	Stainless Steel STM A351 - CF8M	1
4	Ball Seat	P.T.F.E.	P.T.F.E.	2
5	Thrust Washer	P.T.F.E.	P.T.F.E.	1
6	Stem Seal	P.T.F.E.	P.T.F.E.	1
7	O-Ring Body	FKM (Viton®)	FKM (Viton®)	2
8	O-ring Stem	FKM (Viton®)	FKM (Viton®)	2
9	Stem	*Brass CW617N (C37700)	Stainless Steel ASTM A351 - CF8M	1

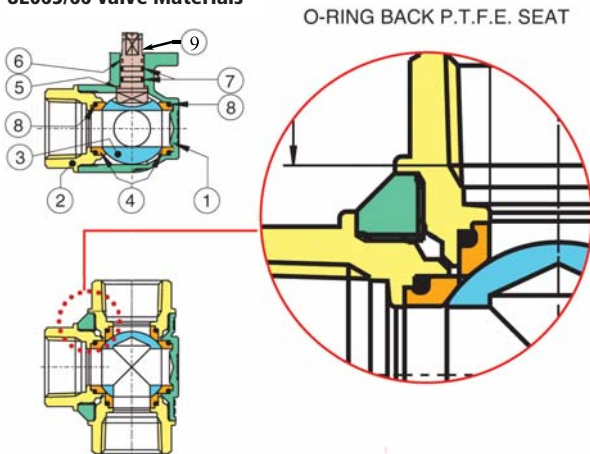
\* Order Option LF- Lead Free Brass, CW510L/ASTM C28500, NSF 61 Annex F + G approved

**3-Way Brass Dimensions (inches)**

Size/NPT Conn.	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
<b>A</b>	0.39	0.43	0.43	0.59	0.79	0.98	1.26	1.57	1.95	1.95
<b>B</b>	7.44	7.44	7.44	7.63	9.98	10.40	11.10	13.00	13.30	13.30
<b>C</b>	6.77	6.77	6.77	6.86	9.03	9.25	9.74	11.30	11.90	11.90
<b>D</b>	4.84	4.84	4.84	4.84	6.18	6.18	6.18	7.28	7.28	7.28
<b>E</b>	6.41	6.41	6.41	6.41	7.50	7.50	7.50	8.43	8.43	8.43
<b>F</b>	2.64	2.64	2.87	3.19	3.74	4.39	4.86	5.73	6.93	7.08
<b>G</b>	1.32	1.32	1.44	1.60	1.87	2.20	2.43	2.87	3.47	3.54
<b>Actuator</b>	VB015	VB015	VB015	VB015	VB030	VB030	VB030	VB060	VB060	VB060



**8E065/66 Valve Materials**

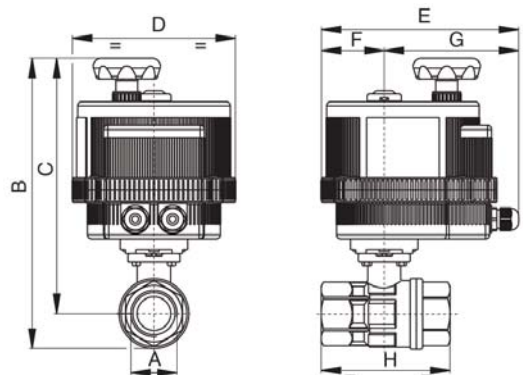


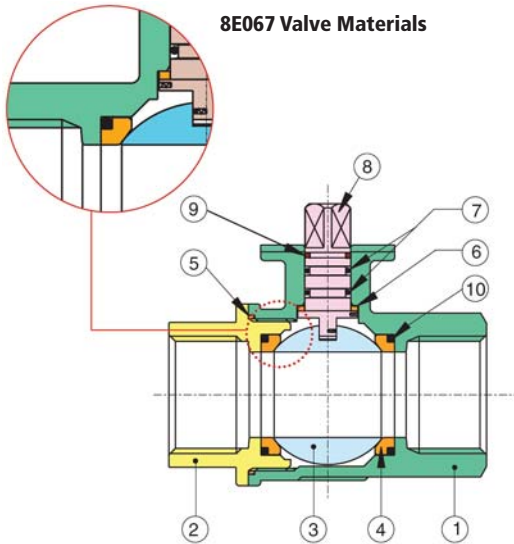
	Part Name	Material 8E065/66	QTY
1	Body	*Brass CW617N (C37700)	1
2	End Connection	*Brass CW617N (C37700)	3
3	Ball	*Brass CW617N (C37700)	1
4	Ball Seat	P.T.F.E.	4
5	Thrust Washer	P.T.F.E.	1
6	Stem Seal	P.T.F.E.	1
7	O-Ring Stem	FKM (Viton®)	2
8	O-ring Body	FKM (Viton®)	2
9	Stem	*Brass CW617N (C37700)	1

\*\* Order Option LF- Lead Free Brass, CW510L/ASTM C28500, NSF 61 Annex F + G approved

**8E067 2-Way Stainless Steel Dimensions (inches)**

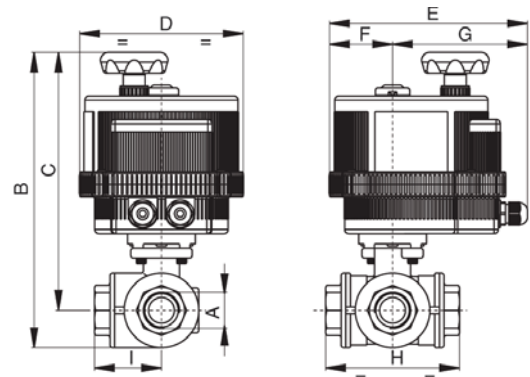
Size/NPT Conn.	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
<b>A</b>	0.25	0.375	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
<b>B</b>	7.77	7.70	7.53	7.76	8.33	8.73	11.40	12.10	15.00	15.80
<b>C</b>	7.00	7.00	6.85	6.93	7.32	7.46	9.88	10.20	13.00	13.30
<b>D</b>	4.84	4.84	4.84	4.84	4.84	4.84	6.18	6.18	7.28	8.19
<b>E</b>	6.41	6.41	6.41	6.41	6.41	6.41	7.50	7.50	8.43	8.43
<b>F</b>	2.60	2.60	2.63	3.02	3.54	3.93	4.40	5.81	6.40	7.00
<b>Actuator</b>	VB015	VB015	VB015	VB015	VB015	VB015	VB030	VB030	VB060	VB110



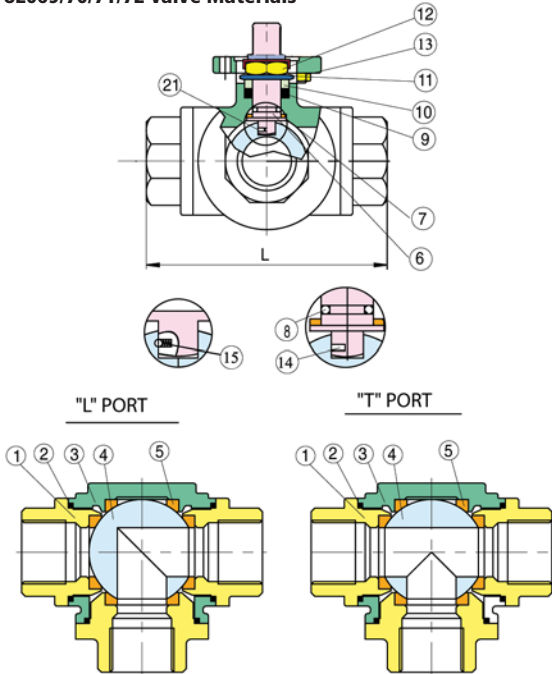


	Part Name	Material 8E067	QTY
1	Body	ASTM A351 CF8M	1
2	End Connection	ASTM A351 CF8M	1
3	Ball	ASTM A351 CF8M	1
4	Ball Seat	P.T.F.E.	2
5	Seat	P.T.F.E.	1
6	Stem Seal	P.T.F.E.	1
7	O-Ring	FKM (Viton®)	2
8	Stem	ASTM A351 CF8M	1
9	Stem Seat	P.T.F.E.	1
10	O-Ring	FKM (Viton®)	2

<b>8E069/70/71/72 3-Way Stainless Steel Dimensions (inches)</b>								
Size/NPT Conn.	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
<b>A-Full Port</b>	0.25	0.470	0.59	0.78	0.98	1.25	1.50	2.00
<b>A-Std Port</b>	-	-	0.47	0.59	0.78	0.98	1.25	-
<b>B</b>	8.40	8.40	10.30	10.30	11.80	12.40	13.90	15.10
<b>C</b>	7.70	7.70	9.10	9.10	10.70	11.00	12.10	12.90
<b>D</b>	4.84	4.84	3.18	6.18	7.28	7.28	8.19	8.19
<b>E</b>	6.41	6.41	7.50	7.50	8.43	8.43	9.33	9.33
<b>F</b>	2.83	2.83	3.26	3.89	4.40	4.92	5.86	6.85
<b>G</b>	1.41	1.41	1.63	1.94	2.20	2.46	2.93	3.42
<b>Actuator</b>	VB015	VB015	VB030	VB030	VB060	VB060	VB110	VB190



**8E069/70/71/72 Valve Materials**



	Part Name	Material 8E069/70/71/72	QTY
1	End Cap	ASTM A351 CF8M	3
2	Gaslet	P.T.F.E.	3
3	Body	ASTM A351 CF8M	1
4	Ball	ASTM A351 CF8M	1
5	Seats	R.T.F.E.	4
6	Stem	P.T.F.E.	1
7	Stem Seal	R.P.T.F.E.	1
8	O-Ring	FKM (Viton®)	1
9	Stem Packing	FKM (Viton®)	1
10	Gland	304 SS	1
11	Disk Washer	301 SS	2
12	Stem Nut	304 SS	1
13	Pin Nut	304 SS	1
14	Insert Pin	316 SS	1
15	Antistatic Device	316 SS	1

## VALVE ACTUATOR

Series VB actuators are designed for the automation of ball and butterfly valves for the industrial, commercial and OEM markets. A result of years of intensive R & D, advanced high-tech electrical components design and precise gearing, VB electric actuators offer the best in performance and long term reliability.

The actuator housing is made from a VO self-extinguish class techno-polymer material. The gear drive is made of two steel and techno-polymer gear wheels, sustained by hardened steel pinions, mounted on self-lubricating bushings (excluding model VB015), and inserted in a rugged die-cast aluminum structure.

The direct connection of the actuators to the valves is made via a painted die-cast aluminum plate with a dual drilled ISO 5211 interface. All actuators are provided with an electronic system and torque limiter. A heater is built-in and is activated once the actuator is powered and when the temperature inside the housing drops below 77°F to prevent condensation.

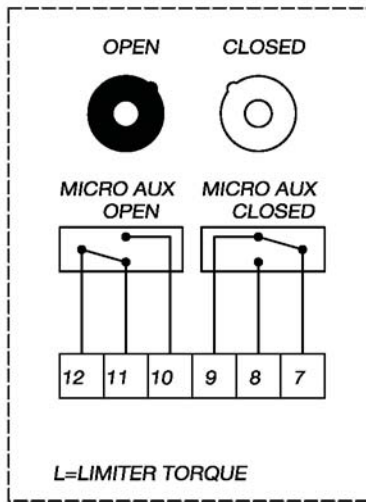
Two auxiliary limit switches are standard and optional 4-20 mA/0-10V modulating boards and battery backup protection are available.



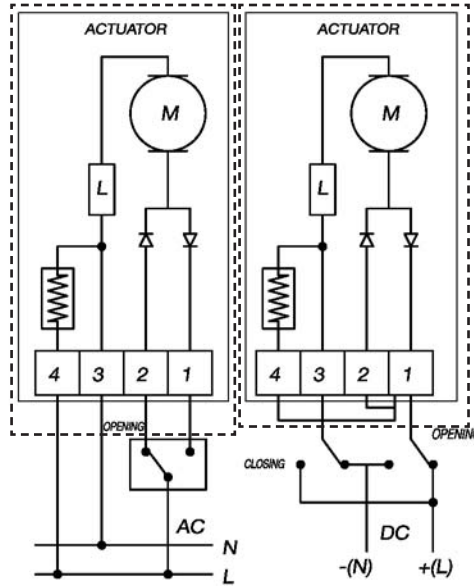
Model	VB015	VB030	VB060	VB110	VB190	VB270	VB350
<b>Max Working Torque (in-lbs)</b>	133	266	530	975	1680	2390	3100
<b>Working Time (sec)</b>	10	8	9	27	27	50	50
<b>Operating Temperature</b>	-4 to 131°F						
<b>Torque Limiter</b>	STD	STD	STD	STD	STD	STD	STD
<b>Duty Rating</b>	50%	75%	75%	75%	75%	75%	75%
<b>Protection</b>	NEMA 4 X IP65	NEMA 4 X IP65-67	NEMA 4 X IP65-67	NEMA 4 X IP65-67	NEMA 4 X IP65-67	NEMA 4 X IP65-67	NEMA 4 X IP65-67
<b>Rotation</b>	90°	90°	90°	90°	90°	90°	90°
<b>Optional Rotation</b>	180°	180° or 270°	180° or 270°	180° or 270°	180° or 270°	180° or 270°	180° or 270°
<b>Manual Override</b>	STD	STD	STD	STD	STD	STD	STD
<b>Position Indicator</b>	STD	STD	STD	STD	STD	STD	STD
<b>Heater</b>	STD	STD	STD	STD	STD	STD	STD
<b>Additional Limit Switches</b>	2 supplied, VMax 250 VAC, 30 VDC, imax 1A						
<b>Positioner PCB 4-20 mA &amp; 0-10 V</b>	Not Available	Available Option (except 12V models)	Available Option (except 12V models)	Available Option (except 12V models)	Available Option (except 12V models)	Available Option (except 12V models)	Available Option (except 12V models)
<b>Linear Potentiometer 5K Ohms, 1 Watt</b>	Not Available	Available Option	Available Option	Available Option	Available Option	Available Option	Available Option
<b>Enclosure Electrical Conn.</b>	2 x PG11 Cable Gland	2 x PG11 Cable Gland	2 x PG11 Cable Gland	2 x PG11 Cable Gland	2 x PG11 Cable Gland	2 x PG11 Cable Gland	2 x PG11 Cable Gland
<b>Version H Nominal Voltage</b>	110VAC or 230 VAC	100-240 VAC					
<b>Version H Current Consumption</b>	110 VAC- 75mA 230 VAC-25mA	0.3-0.2A	0.6-0.3A				
<b>Version H Power Consumption</b>	110 VAC- 6.6 VA 230 VAC-6.0 VA	30-48 VA	60-72 VA				
<b>Version L Nominal Voltage</b>	12V or 24V AC/DC	12 VDC or 24V AC/DC	12 VDC or 24V AC/DC	12 VDC or 24V AC/DC	12 VDC or 24V AC/DC	12 VDC or 24V AC/DC	12 VDC or 24V AC/DC
<b>Version L Current Consumption</b>	12V- 1.2A 24V- 0.6A	12V- 2.0A 24V- 1.0A	12V- 3.6A 24V- 1.8A	12V- 2.0A 24V- 1.0A	12V- 3.6A 24V- 1.8A	12V- 3.6A 24V- 1.8A	12V- 3.6A 24V- 1.8A
<b>Version L Power Consumption</b>	15 VA	24 VA	44 VA	24 VA	44 VA	44 VA	44 VA
<b>Frequency</b>	50/60 Hz						
<b>Weight</b>	3.09	5.07	7.28	10.80	10.80	13.23	13.23

# WIRING

## VB015 12-24V AC/DC

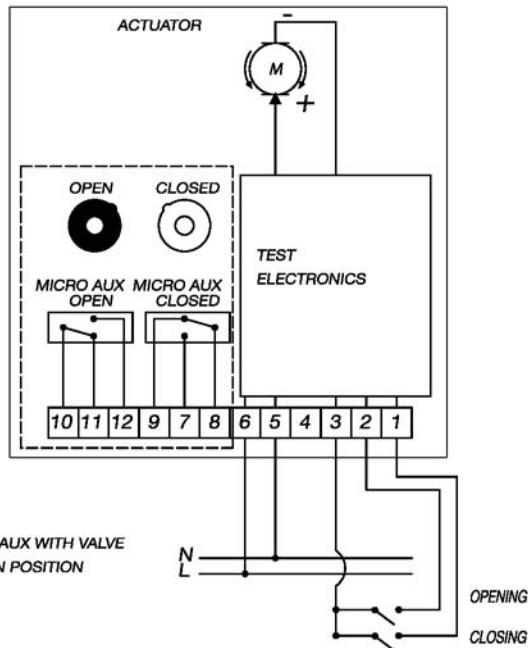


MICRO AUX WITH VALVE  
IN OPEN POSITION



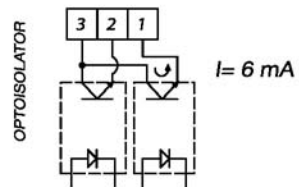
**DC Power**  
To open: Line to 2  
Neutral to 3  
To Close: Line to 3  
Neutral to 1

## VB015 115V-230V AC



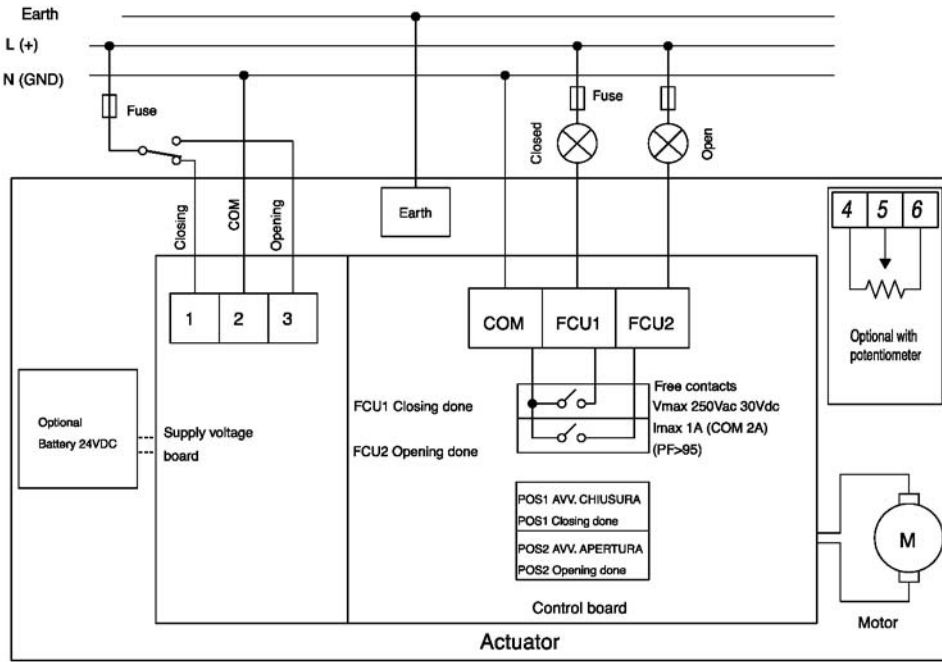
MICRO AUX WITH VALVE  
IN OPEN POSITION

STATIC IMPULSE DRIVE OPTOISOLATED BY PLC

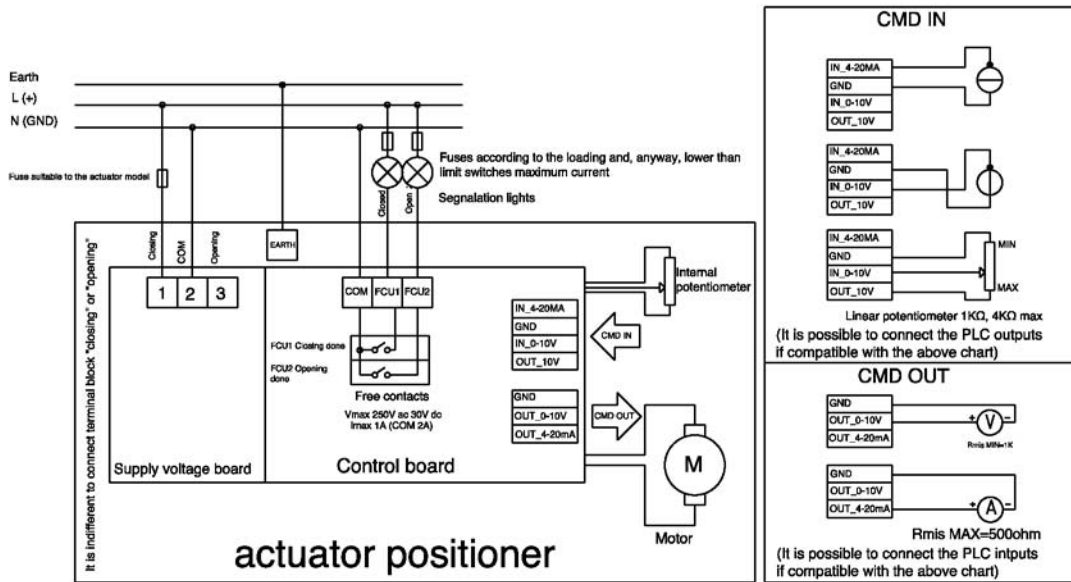




**VB30 TO VB350 12 V DC, 24V AC/DC, 110-240 VAC**



**4-20 M/0-10V ACTUATOR POSITIONER WIRING VB30 TO VB350 12 V DC, 24V AC/DC, 110-240 VAC**



**ORDERING INFORMATION**

**A-BC-D**

**EXAMPLE: 8E068-002-1/2"**

A Model	B Actuator Circuit	C Voltage	D Size/NPT Conn.
8E064(LF)= Brass 2-way (Lead Free Option)	00= Standard Electric Actuator	1= L1, 12 VDC 2= L2, 24V AC/DC 3= H1, 100-240 VAC	1/4" = 1/4"
8E068(LF)= Brass 2-way, SS Ball & Stem (Lead Free Option)	00P= Standard Electric Actuator with optional 5K Potentiometer		3/8" = 3/8"
8E065(LF)= Brass 3-way, "T" port (Lead Free Option)	*01= Standard Electric Actuator with Fail-safe battery back-up (12VDC not available)		1/2" = 1/2"
8E066(LF)= Brass 3-way, "L" port (Lead Free Option)	02V= Actuator with 0-10V & 4-20 mA positioner circuit		3/4" = 3/4"
8E067= SS 2-way	*Specify required valve position upon power failure		1" = 1"
8E069= SS 3-way, standard "T" port			1-1/4" = 1-1/4"
8E070= SS 3-way, standard "L" port			1-1/2" = 1-1/2"
8E071= SS 3-way, Full "T" port			2" = 2"
8E072= SS 3-way, Full "L" port			2.5" = 2-1/2"
			4" = 4"