



SERIES EBVF / TEBVF MULTI-VOLTAGE ACTUATOR WITH FAIL-SAFE AND 4-20mA DIGITAL POSITIONER OPTIONS



STANDARD FEATURES

- Multi-voltage with auto-voltage sensing
 - 12V AC or DC
 - 24-240V AC or DC
- LED status light to indicate operational status of actuator
- Electronic over-torque protection against valve jam
- Thermostatic anti-condensation heater
- Easy-to-turn hand wheel for selectable manual override
- Large, dome style visual position indicator
- Remote position indicator
- Weatherproof anti-corrosive and UV protected glass filled polypro housing
- Easy mounting with double-D drive
- All external electrical connections via DIN plugs
- CE marked, IP67 ingress protection
- ISO 9000 manufacturer
- Fail-safe and 4-20mA or 0-10V DC digital positioner options
- Brushless, thermally protected motor

The EBVF/TEBVF features a rugged weatherproof and anti-corrosive polypro housing. A multi-color LED shows whether the actuator is operating correctly, or has tripped out either by its electronic torque limiter, or has been left in 'manual' mode. Site operators are no longer left with the 'valve or actuator' question when an actuator does not respond to a signal.

The EBVF/TEBVF is quick and easy to install, with a double-D drive, allowing fast mounting to True-Blue valves. There is no need to remove the cover to connect the EBVF/TEBVF electrically, saving installation time. Using the external DIN plugs and external wiring diagrams supplied with the actuator, installation can be pre-wired.

Protection against valve jams is provided by an electronic torque limiter, which auto-relaxes the gearbox when activated, allowing the manual override to be selected to assist in clearing the jam. The effect of condensation is eliminated by an internal thermostatic anti-condensation heater that does not require a separate independent power supply.

Standard function for the EBVF/TEBVF is power open (TEBVF left), power close (TEBVF right), stays put on power failure.

Units are available with factory installed Fail-safe (open or close) and modulating options. The modulating digital positioner offers auto-calibrating and self-resetting functions.

SPECIFICATIONS				
Sizes	3/8" - 2" Valves		3" and 4"	
Actuator	EBVF2 / TEBVF6	EBVF1 / TEBVF5	EBVF4/TEBVF8	EBVF3/TEBVF7
Voltage AC (1ph) or DC	12	24 - 240	12	24 - 240
Working Time - Sec. 0-90° (No Load) ±10%	5.5 / 11++	5.5 / 11++	16 / 16**	14 / 14**
Maximum Run Torque Nm / in./lbs.	20 / 177	20 / 177	55 / 487	55 / 487
Maximum Break Torque Nm / in./lbs.	25 / 221	25 / 221	60 / 531	60 / 531
On/Off Duty Rating %	75	75	75	75
*Modulating Duty Rating %	100	100	100	100
IP Rating - IEC 60529	IP67	IP67	IP67	IP67
Working Angle Standard	90/180	90/180	90	90
Temperature Range (F)	-4° to +158°	-4° to +158°	-4° to +158°	-4° to +158°
Motor Switch	2 x V3	2 x V3	2 x V3	2 x V3
Volt Free End of Travel Confirmation	2 x V3	2 x V3	2 x V3	2 x V3
Anti-Condensation Heater (W)	4	4	4	4
Current Full Load 12VDC	2.05A		3.23A	
24VDC		1.05A		1.44A
24V/1ph		0.85A		1.07A
110V/1ph		0.17A		0.23A
240V/1ph		0.09A		0.12A
Weight (kg) / lbs	1.8 / 4	1.8 / 4	2.0 / 4.4	2.0 / 4.4
Drive	Double-D	Double-D	Double-D	Double-D

* Option 3 and 4 only. ** Based on 3-hole ball. ++11 seconds @ 180°



EBVF OPTIONAL FEATURES

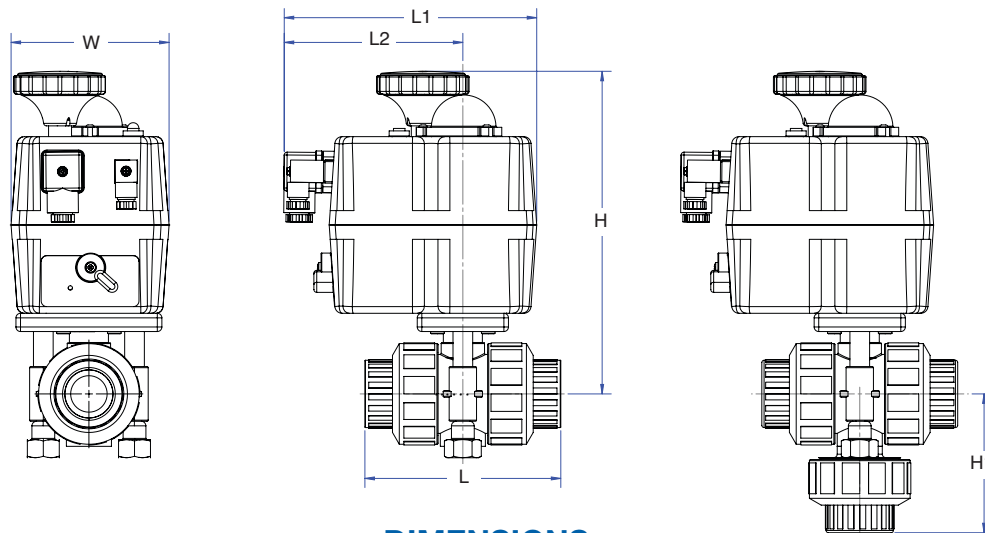
MODULATING ACTUATOR (Option 3, 4, 5 & 6)

Provided via factory installed, self-calibrating digital positioner with 4-20mA or 0-10V.

FAIL-SAFE ACTUATOR (Option 2, 4, or 6)

Fail-safe achieved with the use of an industrial re-chargeable battery which is supplied with the actuator. Specify fail closed or fail open.

APPROXIMATE FLOW RATES AT 1.0 PSI (0,07 Bar) PRESSURE DROP								
Valve Sizes	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"
2-Way Cv Factor	10	20	40	80	100	120	490	770
3-Way Cv Factor	4	8	13	38	38	39	132	200



DIMENSIONS

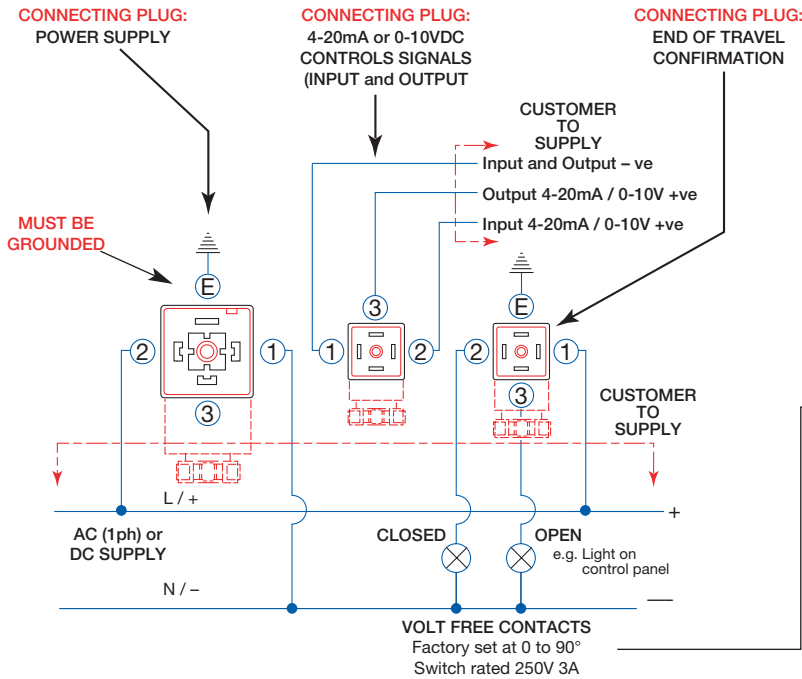
MODEL	SIZE		L		L1		L2		H		H1		W	
	IN.	DN	IN.	MM.	IN.	MM.	IN.	MM.	IN.	MM.	IN.	MM.	IN.	MM.
EBVF/TEBVF-037	3/8"	16	4.13	104.8	6.97	177.0	4.89	124.2	8.16	207.3	2.75	1.2	4.34	2.0
EBVF/TEBVF-050	1/2"	20	4.13	104.8	6.97	177.0	4.89	124.2	8.16	207.3	2.75	69.9	4.34	2.0
EBVF/TEBVF-075	3/4"	25	4.75	120.7	6.97	177.0	4.89	124.2	8.59	218.2	3.25	82.6	4.34	2.0
EBVF/TEBVF-100	1"	32	5.38	136.5	6.97	177.0	4.89	124.2	8.84	224.5	3.81	96.8	4.34	2.0
EBVF-125	1-1/4"	40	6.70	170.2	6.97	177.0	4.89	124.2	9.32	236.7	5.00	127.0	4.34	2.0
EBVF/TEBVF-150	1-1/2"	50	6.75	171.5	6.97	177.0	4.89	124.2	8.84	236.7	5.00	127.0	4.34	2.0
EBVF/TEBVF-200	2"	63	7.90	200.7	6.97	177.0	4.89	124.2	8.84	236.7	5.56	141.2	4.34	2.0
EBVF/TEBVF-300	3"	90	10.80	274.3	6.97	177.0	4.93	125.2	14.20	360.7	8.30	210.8	4.34	2.0
EBVF/TEBVF-400	4"	110	11.50	292.1	6.97	177.0	4.93	125.2	15.00	381.0	9.90	251.5	4.34	2.0

ORDERING INFORMATION

Order by part number and specify exact chemicals, temperatures and pressures. To arrive at the proper part number, please consult diagram below. The letters and numbers used in this part number are for example only!

EBVF/TEBVF BASIC MODEL VALVE EBVF 2-Way <hr/> TEBVF 3-Way	1 VALVE TYPE SIZE/VOLTAGE 1 - 2-Way, 3/8"-2", 24-240 Volts, A/C or D/C 2 - 2-Way, 3/8"-2", 12 Volts, A/C or D/C 3 - 2-Way, 2 1/2"-4", 24-240 Volts, A/C or D/C 4 - 2-Way, 2 1/2"-4", 12 Volts, A/C or D/C <hr/> 5 - 3-Way, 3/8"-2", 24-240 Volts, A/C or D/C 6 - 3-Way, 3/8"-2", 12 Volts, A/C or D/C 7 - 3-Way, 3" & 4" 24-240 Volts, A/C or D/C 8 - 3-Way, 3" & 4" 12 Volts, A/C or D/C	1 OPTIONS 1 - Standard Actuator 2 - Actuator, Fail-Safe 3 - Actuator, 4-20 mA 4 - Actuator, 4-20 mA Fail-Safe 5 - Actuator, 0-10 VDC 6 - Actuator, 0-10 VDC Fail-Safe	050 VALVE SIZE 037 - 3/8" 050 - 1/2" 075 - 3/4" 100 - 1" 125 - 1 1/4" 150 - 1 1/2" 200 - 2" 300 - 3" 400 - 4" <hr/> 20 - 20mm 25 - 25mm 32 - 32mm 40 - 40mm 50 - 50mm 63 - 63mm 90 - 90mm 110 - 110mm	V SEAL MATERIAL V FKM EP EPDM	T CONNECTIONS S Socket T NPT Threads FL Flanges SC Sanitary BSP BSP Threads	PV BODY MATERIAL -PV PVC -CP CPVC -PP Natural Polypro -PF PVDF	A BALL OPTIONS A - 3-Hole Ball (3-Way Only) C - Characterized Vent Vent - Vented Ball
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AC (1ph) or DC SUPPLY – WIRING FOR MODULATING ACTUATORS



Function: MODULATING VERSION

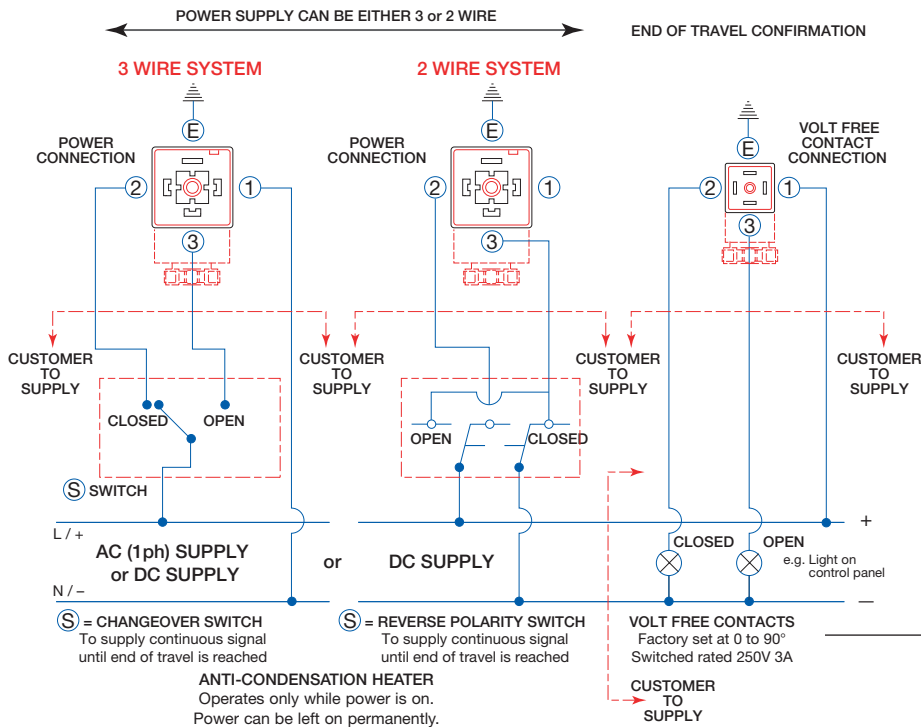
- Power open, power close – Actuator movement controlled by input signal (4-20mA or 0-10VDC)
- Standard Operation:
4mA or 0V = Actuator Closed, 20mA or 10V = Actuator Open (can be reversed)
- Standard Operation:
Actuator close on loss of control signal, stays put if loss on main power.
- Output signal provided as standard (in same format as supply signal)

NOTE: Wiring showing same supply as motor is only a suggestion, Read *“Installation, Operation and Maintenance Instructions”* before connecting.

NOTE: Fail-safe option is also available for modulating version.

! Actuator power supply must be on a dedicated circuit and must be grounded.

AC (1ph) or DC SUPPLY – WIRING ON/OFF OR FAIL SAFE ACTUATORS



Function: ON/OFF VERSION

- Power open. power close
- Stays in place during power failure

Function: FAIL-SAFE VERSION

- Power open, power close –
Trickle charges battery in either open or closed position
- Actuator sent by battery power to preset fail safe position on power failure
- Actuator returns to pre-failure position on power resumption
- Fail-safe can be either NC (normally-closed) or NO (normally-open)

NOTE: Wiring showing same supply as motor is only a suggestion, Read *“Installation, Operation and Maintenance Instructions”* before connecting.

! Volt free switches are set approximately 5° ahead of the final motor stop position. Do not use the signal from the volt free switches to cut the power to the motor, otherwise the actuator will not reach the full open or full closed position. The actuator is designed to have continuously energized power.

! Actuator power supply must be on a dedicated circuit and must be grounded.

Series EBVF Status Light Functions

ON/OFF ACTUATOR	ACTUATOR OPERATIONAL STATUS (200 msec/block)											
No power detected	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
In position open	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
In position close	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Opening	Yellow	Green	Yellow	Green	Yellow	Green	Yellow	Green	Yellow	Green	Yellow	Green
Closing	Yellow	Red	Yellow	Red	Yellow	Red	Yellow	Red	Yellow	Red	Yellow	Red
Torque limiter engaged, moving from close to open	Green	Green	Green	Grey	Grey	Grey	Green	Green	Green	Grey	Grey	Grey
Torque limiter engaged, moving from open to close	Red	Red	Red	Grey	Grey	Grey	Red	Red	Red	Grey	Grey	Grey
Actuator in MANUAL mode	Yellow	Yellow	Yellow	Grey	Grey	Grey	Yellow	Yellow	Yellow	Grey	Grey	Grey
Multiple concurrent signals	Purple	Purple	Purple	Purple	Purple	Purple	Purple	Purple	Purple	Purple	Purple	Purple
FAIL SAFE ACTUATOR	ACTUATOR OPERATIONAL STATUS											
No power detected	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
In position open	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
In position close	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Opening	Yellow	Green	Yellow	Green	Yellow	Green	Yellow	Green	Yellow	Green	Yellow	Green
Closing	Yellow	Red	Yellow	Red	Yellow	Red	Yellow	Red	Yellow	Red	Yellow	Red
Torque limiter engaged, moving from close to open	Green	Green	Green	Grey	Grey	Grey	Green	Green	Green	Grey	Grey	Grey
Torque limiter engaged, moving from open to close	Red	Red	Red	Grey	Grey	Grey	Red	Red	Red	Grey	Grey	Grey
Actuator in MANUAL mode	Yellow	Yellow	Yellow	Grey	Grey	Grey	Yellow	Yellow	Yellow	Grey	Grey	Grey
Multiple concurrent signals	Purple	Purple	Purple	Purple	Purple	Purple	Purple	Purple	Purple	Purple	Purple	Purple
Actuator without power, working with the NO system. Max.3 min., led off	Green	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
Actuator without power, working with the NC system. Max.3 min., led off	Red	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
Battery protection. Danger, the battery needs recharging. Fail Safe blocked	Yellow	Grey	Yellow	Grey	Yellow	Grey	Yellow	Grey	Yellow	Grey	Yellow	Grey
MODULATING ACTUATOR	ACTUATOR OPERATIONAL STATUS											
No power detected	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
Actuation feedback complete	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Opening	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Closing	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Auto adjusting configuration / reset	Red	Red	Blue	Green	Green	Blue	Red	Red	Blue	Green	Green	Blue
Torque limiter engaged, moving from close to open	Green	Green	Green	Grey	Grey	Grey	Green	Green	Green	Grey	Grey	Grey
Torque limiter engaged, moving from open to close	Red	Red	Red	Grey	Grey	Grey	Red	Red	Red	Grey	Grey	Grey
Unrecognized modulation signal. Actuator stopped.	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Actuator in MANUAL mode	Yellow	Yellow	Yellow	Grey	Grey	Grey	Yellow	Yellow	Yellow	Grey	Grey	Grey
Waiting for modulation signal	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue