



3-WAY VALVE

Maplef MFUR3

Actuated Control Valves

Mixing or Diverting

DN15-80 / 1/2"-3"



SPECIFICATIONS

Valve:

Static pressure:

2500 kPa / 360 psi

Ambient temperature:

-20°C to +50°C / -4°F to +122°F

Media temperature:

-20°C to +120°C / -4°F to +248°F

Material:

- Housing:

Forged brass ASTM C37700

- Flow Unit:

Glass-filled polymer

- Stem:

Brass

- Ball valve:

Nickel-plated brass

- Seals, stem:

Dual teflon seals and EPDM O-rings (field repairable)

- Seals, ball:

Teflon seals with EPDM O-rings

- End connections:

Brass

Rotation:

0°-90°

Maximum close-off pressure:

DN15 to DN25: 350 kPa / 50 psi

DN32 to DN65: 300 kPa / 40 psi

DN80 (only NPT): 500 kPa / 70 psi

ANSI / FCI 70-2 2006, Class III / IEC 60534-4, Class III

Shut-off leakage:

Fixed female ISO or NPT

End connections¹:

Note 1: NPT only available ex. US-factory.

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SPECIFICATIONS (...continued)

Maplef Actuator ²	MBM000S		MBM020S		MBT000S		MBT020S		MBT200		MBT220	
Supply voltage	24V AC / 30V DC				24V AC / 30V DC				230V AC			
Type	Electrical, bi-directional motor											
Power consumption	6VA				6VA				7W			
Control signal	Analog 2-10V DC or 4-20mA				Digital 2-position / 3-point floating				Digital 2-position / 3-point floating			
Feedback	No				No				No			
Failsafe function	Fail in place				Fail in place				Fail in place			
Auxiliary switches	No		Yes		No		Yes		No		Yes	
Operation time	90-110 sec				90-110 sec				20-30 sec			
Ambient temperature	-30°C to +50°C / -22°F to +122°F											
Humidity rating	5..95% rH, no condensation											
Protection	IP22 / NEMA2, indoor use only - upgradable to IP54 / NEMA3R											
Cable (supply)	Not included, recommended 0.82 mm2/ AWG18				Not included, recommended 0.82 mm2/ AWG18				Not included, recommended 0.82 mm2/ AWG18			
Cable (aux.)	-		Fixed 6 x 0.82 mm2, 1 m / 6 x AWG18, 3.3 ft		-		Not included, recommen- ed 0.82 mm2/ AWG18		No		Not included, recommen- ed 0.82 mm2/ AWG18	
Weight	1.2 kg / 2.7 lb				1.2 kg / 2.7 lb				1.2 kg / 2.7 lb			

Note 2: Maplef recommends actuators supplied by Maplef



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DIMENSIONS AND WEIGHTS (NOMINAL)

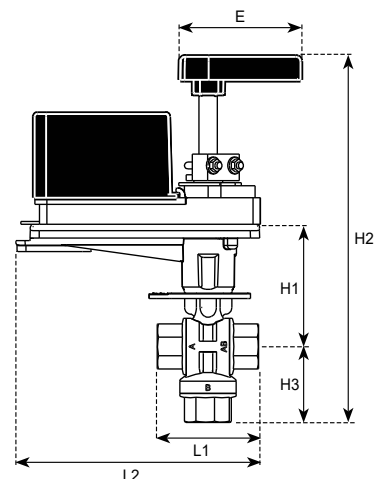
Model no.	Valve size mm (in)	L1 mm (in)	L2 mm (in)	H1 mm (in)	H2 mm (in)	H3 mm (in)	D (depth, not shown) mm (in)	E mm (in)	Weight ³ kg (lb)	Kv ⁴ m3/hr
MFUR3.A.x	15 (1/2)	69 (2.7)	178 (7.0)	86 (3.4)	241 (9.5)	51 (2.0)	76 (3.0)	51 (2.0)	0.73 (1.6)	0.29 0.51 0.87 2.1 3.7 6.9
MFUR2.B.x	20 (3/4)	71 (2.8)	165 (6.5)	86 (3.4)	226 (8.9)	51 (2.0)	76 (3.0)	51 (2.0)	0.73 (1.6)	0.35 0.57 1.1 2.1 3.3 6.1 9.5
MFUR3.C.x	25 (1)	71 (2.8)	185 (7.3)	86 (3.4)	244 (9.6)	53 (2.1)	76 (3.0)	51 (2.0)	0.73 (1.6)	0.35 0.56 1.1 2.0 3.0 8.7
		76 (3.0)	173 (6.8)	99 (3.9)	251 (9.9)	61 (2.4)			1.0 (2.3)	7.4
		109 (4.3)	198 (7.8)	104 (4.1)	277 (10.9)	84 (3.3)			1.6 (3.6)	3.9 13 19 27
MFUR3.D.x	32 (1 1/4)	76 (3.0)	173 (6.8)	99 (3.9)	251 (9.9)	61 (2.4)	76 (3.0)	51 (2.0)	1.5 (3.3)	3.5 7.5 17
		91 (3.6)	185 (7.3)	104 (4.1)	264 (10.4)	71 (2.8)			1.6 (3.5)	11 23 29
MFUR3.E.x	40 (1 1/2)	86 (3.4)	198 (7.8)	104 (4.1)	277 (10.9)	69 (2.7)	76 (3.0)	51 (2.0)	1.6 (3.6)	3.5 7.2 12 28
		102 (4.0)	185 (7.3)	117 (4.6)	282 (11.1)	81 (3.2)			2.4 (5.2)	20 53
MFUR3.F.x	50 (2)	102 (4.0)	185 (7.3)	117 (4.6)	282 (11.1)	81 (3.2)	76 (3.0)	51 (2.0)	2.4 (5.2)	21 33 49
		127 (5.0)	198 (7.8)	150 (5.9)	315 (12.4)	97 (3.8)			3.9 (8.5)	71 94
MFUR3.G.x	65 (2 1/2)	135 (5.3)	198 (7.8)	150 (5.9)	315 (12.4)	104 (4.1)	76 (3.0)	51 (2.0)	4.1 (9.1)	33 64 86
MFUR3.H.x	80 (3)	239 (9.4)	257 (10.1)	N/A ⁶ (114)	312 (12.3)	N/A ⁶ (2.8)	180 (7.1)	51 (2.0)	10.4 (23.0)	65 87 108 130 151 173

Note 3: Weight does not include actuator.

Note 4: Kv is for straight through Kv (A to AB). Bypass Kv (B to AB) would be 70-80% of straight through Kv.

Note 5: Illustration valid for valve size DN15-65. DN80 has bypass port in Z plane.

Note 6: DN80 (3") only available in NPT.





Actuated Control Valves

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MFUR3

Valve size:

A = DN15 / 1/2"

B = DN20 / 3/4"

C = DN25 / 1"

D = DN32 / 1 1/4"

E = DN40 / 1 1/2"

F = DN50 / 2"

G = DN65 / 2 1/2"

H = DN80 / 3

Kv ID-number:

A, B, C, D, E, F, G, H, J, K or M

(see flow rate table page 6)

Connection standard:

ISO

$$N = NPT$$

Ball and stem material:

B = brass

Actuator:

1 = Maplef (standard)

Control mode:

0 = no actuator

10 = 24V, digital

20 = 230V, digital

30 = 24V modulating

40 = 24V, digital incl. aux.switches

50 = 230V, digital incl. aux.switches

60 = 24V modulating incl. aux.switches

ID tag

Leave blank = no ID tag

T = ID hanging tag

Example:

MF3P3.A.C.I.B.M.1.10 = Maplef 3-way, ISO DN15 (1/2") with Kv=0.87 m³/hr, Maplef 24V digital actuator, without hanging ID tag.



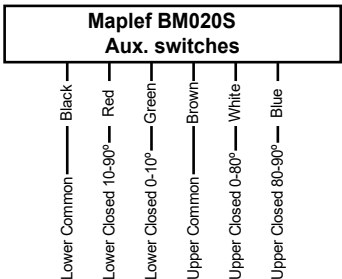
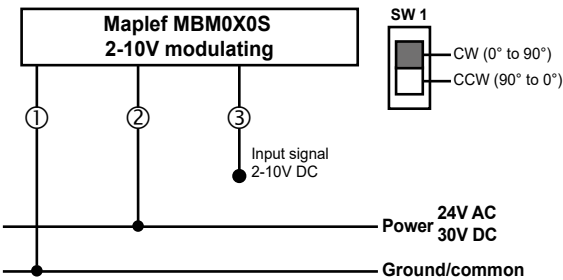
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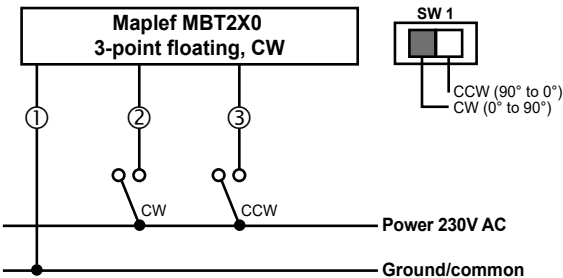
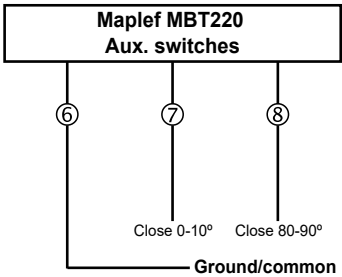
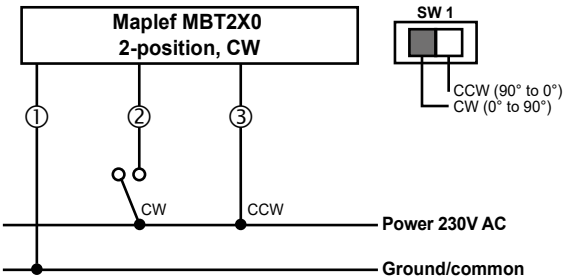
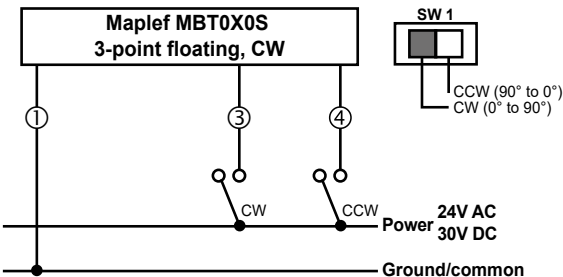
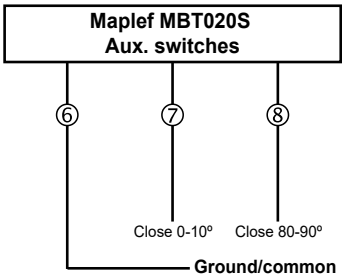
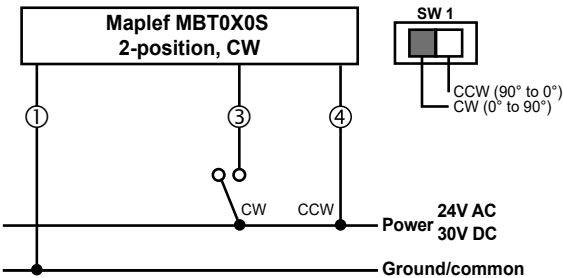
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WIRING INSTRUCTION

Maple MB Actuator (Analog)



Maple MB Actuator (Digital)



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Kv SELECTION AND FLOW RATE TABLE

Valve size mm (in)	Model no	Full ⁴ port	Close- off pres- sure ⁵ bar	Flow rate (l/hr) at stated pressure drop (kPaD) across valve												Kv ⁹ m ³ /hr	Kv ID-no
				5	10	15	20	25	30	40	50	60	70	80	90		
15 (1/2)	MFUR3.A.A		3.5	65.0	92.0	112	130	145	159	183	205	225	243	259	275	0.29	A
	MFUR3.A.B			114	161	198	228	255	279	323	361	395	427	456	484	0.51	B
	MFUR3.A.C			195	275	337	389	435	477	550	615	674	728	778	825	0.87	C
	MFUR3.A.D			470	664	813	939	1050	1150	1330	1480	1630	1760	1880	1990	2.1	D
	MFUR3.A.E			827	1170	1430	1650	1850	2030	2340	2620	2870	3100	3310	3510	3.7	E
	MFUR3.A.F			1540	2180	2670	3090	3450	3780	4360	4880	5340	5770	6170	6550	6.9	F
20 (3/4)	MFUR3.B.A		3.5	78.0	111	136	157	175	192	221	247	271	293	313	332	0.35	A
	MFUR3.B.B			127	180	221	255	285	312	360	403	442	477	510	541	0.57	B
	MFUR3.B.C			246	348	426	492	550	602	696	778	852	920	984	1040	1.1	C
	MFUR3.B.D			470	664	813	939	1050	1150	1330	1480	1630	1760	1880	1990	2.1	D
	MFUR3.B.E			738	1040	1280	1480	1650	1810	2090	2330	2560	2760	2950	3130	3.3	E
	MFUR3.B.G			1360	1930	2360	2730	3050	3340	3860	4310	4730	5100	5460	5790	6.1	G
	MFUR3.B.F	•		2120	3000	3680	4250	4750	5200	6010	6720	7360	7950	8500	9010	9.5	F
25 (1)	MFUR3.C.A		3.5	78.0	111	136	157	175	192	221	247	271	293	313	332	0.35	A
	MFUR3.C.B			125	177	217	250	280	307	354	396	434	469	501	531	0.56	B
	MFUR3.C.C			246	348	426	492	550	602	696	778	852	920	984	1040	1.1	C
	MFUR3.C.D			447	632	775	894	1000	1100	1270	1410	1550	1670	1790	1900	2.0	D
	MFUR3.C.E			671	949	1160	1340	1500	1640	1900	2120	2320	2510	2680	2850	3.0	E
	MFUR3.C.F			1950	2750	3370	3890	4350	4770	5500	6150	6740	7280	7780	8250	8.7	F
	MFUR3.C.G			1650	2340	2870	3310	3700	4050	4680	5230	5730	6190	6620	7020	7.4	G
	MFUR3.C.K			872	1230	1510	1740	1950	2140	2470	2760	3020	3260	3490	3700	3.9	K
	MFUR3.C.J			2910	4110	5030	5810	6500	7120	8220	9190	10100	10900	11600	12300	13	J
	MFUR3.C.H			4250	6010	7360	8500	9500	10400	12000	13400	14700	15900	17000	18000	19	H
	MFUR3.C.M			6040	8540	10500	12100	13500	14800	17100	19100	20900	22600	24100	25600	27	M
32 (1 1/4)	MFUR3.D.D		3	783	1110	1360	1570	1750	1920	2210	2470	2710	2930	3130	3320	3.5	D
	MFUR3.D.E			1680	2370	2900	3350	3750	4110	4740	5300	5810	6270	6710	7120	7.5	E
	MFUR3.D.B	•		3800	5380	6580	7600	8500	9310	10800	12000	13200	14200	15200	16100	17	F
	MFUR3.D.C			2460	3480	4260	4920	5500	6020	6960	7780	8520	9200	9840	10400	11	C
	MFUR3.D.G			5140	7270	8910	10300	11500	12600	14500	16300	17800	19200	20600	21800	23	G
	MFUR3.D.F	•		6480	9170	11200	13000	14500	15900	18300	20500	22500	24300	25900	27500	29	F
40 (1 1/2)	MFUR3.E.B		3	783	1110	1360	1570	1750	1920	2210	2470	2710	2930	3130	3320	3.5	B
	MFUR3.E.C			1610	2280	2790	3220	3600	3940	4550	5090	5580	6020	6440	6830	7.2	C
	MFUR3.E.A			2680	3790	4650	5370	6000	6570	7590	8490	9300	11000	10700	11400	12	A
	MFUR3.E.D	•		6260	8850	10800	12500	14000	15300	17700	19800	21700	23400	25000	26600	28	D
	MFUR3.E.E			4470	6320	7750	8940	10000	11000	12600	14100	15500	16700	17900	19000	20	E
	MFUR3.E.F			11900	16800	20500	23700	26500	29000	33500	37500	41100	44300	47400	50300	53	F
50 (2)	MFUR3.F.A		3	4700	6640	8130	9390	10500	11500	13300	14800	16300	17600	18800	19900	21	A
	MFUR3.F.C	•		7380	10400	12800	14800	16500	18100	20900	23300	25600	27600	29500	31300	33	C
	MFUR3.F.B			11000	15500	19000	21900	24500	26800	31000	34600	38000	41000	43800	46500	49	B
	MFUR3.F.E			15900	22500	27500	31800	35500	38900	44900	50200	55000	59400	63500	67400	71	E
	MFUR3.F.D			21000	29700	36400	42000	47000	51500	59500	66500	72800	78600	84100	89200	94	D
		MFUR3.G.A			3	7380	10400	12800	14800	16500	18100	20900	23300	25600	27600	29500	31300
65 (2 1/2)	MFUR3.G.C		14300	20200		24800	28600	32000	35100	40500	45300	49600	53500	57200	60700	64	C
	MFUR3.G.B	•	19200	27200		33300	38500	43000	47100	54400	60800	66600	72000	76900	81600	86	B
80 (3)	MFUR3.H.A		5	14500	20600	25200	29100	32500	35600	41100	46000	50300	54400	58100	61700	65	A
	MFUR3.H.B			19500	27500	33700	38900	43500	47700	55000	61500	67400	72800	77800	82500	87	B
	MFUR3.H.C			24100	34200	41800	48300	54000	59200	68300	76400	83700	90400	96600	102000	108	C
	MFUR3.H.D			29100	41100	50300	58100	65000	71200	82200	91900	100700	109000	116000	123000	130	D
	MFUR3.H.E			33800	47800	58500	67500	75500	82700	95500	107000	117000	126000	135000	143000	151	E
	MFUR3.H.F	•		38700	54700	67000	77400	86500	94800	109000	122000	134000	145000	155000	164000	173	F

Note 7: Full port without Optimizer® insert.

Note 8: Close-off pressure measured with 4 Nm actuator. The close-off pressure is the maximum allowable pressure drop across the valve housing when the valve is fully closed. Do not use actuators with torque higher than 10 Nm.

Note 9: Kv (here straight through Kv, A to AB) is defined as the quantity of water in m³/hr at 15°C that will flow through a given valve with a pressure drop of 1 bar. Hence, the Kv value above is equivalent to 1 bar ΔP.



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ACCESSORIES

Watertight bushing: 1C50007

GENERAL SPECIFICATIONS

1. ACTUATED CONTROL VALVE - MAPLEF 3-WAY VALVE

- 1.1. Contractor shall install control valves where indicated in drawings.
- 1.2. Control valve shall include a universal mounting plate.
- 1.3. Control valve shall include blow-out proof stem and valve stem shall be serviceable without removing valve from line.
- 1.4. Valve housing shall be permanently marked to show A, B and AB for mixing or diverting configuration.

2. VALVE ACTUATOR - MAPLEF MB

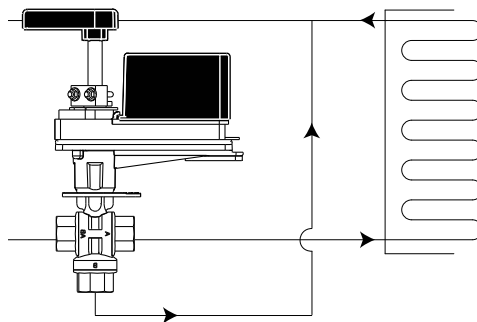
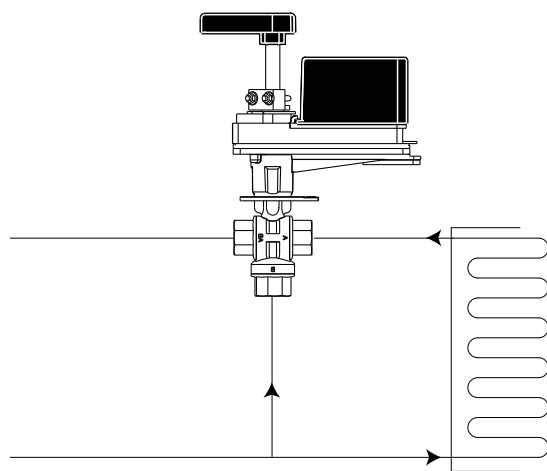
- 2.1. Actuator shall be rated to minimum IP22.
- 2.2. Actuator shall be driven by 24V AC/30V DC or 230V AC, and shall depending on actuator choice accept 2-10V, 4-20mA, 3-point floating or 2-position control signal.
- 2.3. Actuator shall have visible indication of stroke position.
- 2.4. Actuator shall provide minimum torque for full shut-off position of A.
- 2.5. Optional auxiliary switch versions shall be available on all control types.
- 2.6. Manual override shall be possible.

3. VALVE HOUSING

- 3.1. Valve housing shall consist of forged brass C37700 rated at no less than 2500 kPa (360 psi) at 120°C (+248°C).
- 3.2. Valve shall include a glass-filled polymer ball-insert to make flow control equal percentage; a minimum 25 unique Kv valves shall be available.
- 3.3. Valve shall withstand a close-off pressure of at least 300 kPa (40 psi).
- 3.4. Valve ball shall consist of chemically nickel-plated brass and ball stem shall consist of brass.
- 3.5. Identification tag shall be available; tag shall be indelibly marked with Kv, model number and location; tag shall be aluminum.

APPLICATION EXAMPLE

The 3-way ball allows the same 3-way valve to be installed in either a mixing or diverting configuration without sacrificing any performance or Kv.



Maplef can accept no responsibility for possible errors in any printed material.