



**Applications/
Features:**

The Series 30 MR valves are compact thermostatic mixing valves that have been designed for hot water heating systems and domestic hot water distribution systems for multiple fixtures.

The Series 30 MR offers a choice of four temperature ranges and a wide selection of connection types.

Series 30 MR valves provide an anti-scald function that will reduce the hot water flow to

0.5 US gpm whenever the mixed water temperature exceeds the setting by 18°F (10°C) due to cold-water supply failure. If the outlet temperature exceeds the setting by 36°F (20°C) the hot water supply port will close.

The angle flow pattern of the Series 30 MR makes installation simple, requiring a minimum number of fittings for connecting the three ports.

Specifications:

- ASSE-1017 listed*
- Anti-scald function (see above).
- Designed for mixing purposes.
- Long life and easy maintenance.
- Quiet operation.
- Compact design and lightweight.
- Snap-on cover for dirt protection and to prevent unauthorized adjustment or tampering.
- Cover label for recording setting information including recorded outlet temperature and date installed.
- Available temperature ranges:
70°F – 110°F (20°C – 45°C)
85°F – 120°F (29°C – 49°C)*
95°F – 140°F (35°C – 60°C)*
85°F – 160°F (30°C – 70°C) (3/4" only)

*Only ranges 85°-120°F and 95°-140°F are listed to ASSE-1017 standard.

- Available connections:
Threaded body (FPT)
Solder (Union connection)
Solder c/w 2 check valves (Union connection)
CPVC (Union connection)
Compression (3/4" only)
- Maximum working pressure:
150 psi (10 bar)**.

**Max. working pressure for CPVC: 80 psi (5.5 bar)

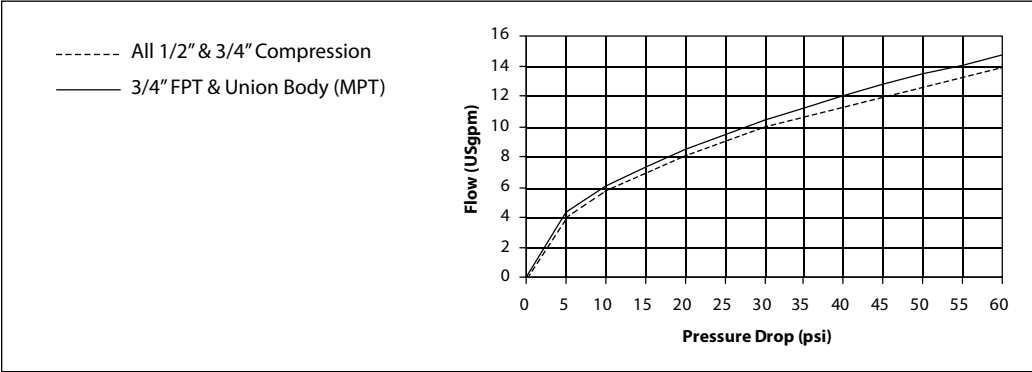
- Maximum system differential pressure between hot and cold: 44 psi (3 bar).
- Maximum system differential pressure: 72 psi (5 bar).
- Maximum hot water inlet temperature: 194°F (90°C).
- Minimum required flow***: 0.5 USgpm

***For correct temperature control



Flow Capacity:

The flow rate through the Series 30 MR valve at any given pressure drop can be determined from the capacity diagram.



Domestic Hot Water Sizing:

Note: certain fixtures such as hot tubs, roman tubs or spa showers may require a high volume of hot water. The Series 30 MR may not be capable of providing sufficient hot water to these fixtures.

For domestic hot water systems the Series 30 MR can be sized based on the number of fixture units the valve will supply.

$(1 \times 1) + (1 \times 2) = 12$ fixture units.
A 3/4" Series 30 MR has sufficient capacity.

Process in selecting the appropriate valve:

1. Determine the type and number of fixtures to be supplied by the mixing valve.
2. Assign fixture units from Table 1 for each fixture type.
3. Add the total number of fixture units.
4. Confirm the mixing valve has sufficient capacity.

Example:

A residential home with 2-1/2 baths (3 bathroom sinks & 2 baths), kitchen (1 kitchen sink and a dish washer), and a clothes washer. Hot water supply from the water heater is 3/4".
The total fixture units is $(3 \times 1) + (2 \times 2) + (1 \times 2) +$

Table 1. Fixture Units

Bathroom sink	1
Kitchen Sink	2
Bath	2
Shower	2
Clothes Washer	2
Dish Washer	1

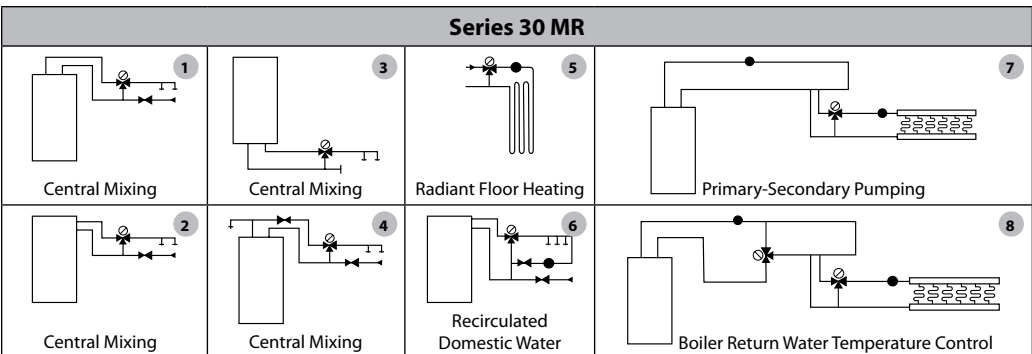
Series 30 MR Capacity

Size	Fixture Units
1/2"	15
3/4"	16

Typical Piping:

Series 30 MR thermostatic mixing valves can be used to safely supply domestic hot water in residential, commercial, institutional, and industrial installations.

The series 30 MR are also well suited for use in hydronic heating systems requiring a reduced hot water temperature such as in radiant heating systems, heat pumps, and solar heating systems.



**Ordering
Information:**
Note:

Valve bodies and tailpiece kits for ESBE Series 30 MR valves with solder and CPVC connections are ordered separately.

Valve bodies for use with tailpiece kits have MPT connections.

Example:

Requirement: 3/4" Solder valve with Two Check Valves. 85° - 120°F Temperature Range.

Order one (1) 065B8877 valve body and one (1) 065B8895 Solder tailpiece kit complete with two check valves.

MR Series Thermostatic Mixing Valves ASSE 1017 Certified (Point of Source)
Temperature range: 85°F to 120°F

Valve Body Code No.	+	Required Tailpiece Code No.	Connection		Cv
			Size**	Type	
065B8866		-	1/2"	Threaded (FPT)	1.8
065B8869		-	3/4"	Threaded (FPT)	1.9
065B8863		-	3/4"	Compression	1.8
065B8875	+	065B8891	1/2"	Solder	1.8
065B8877	+	065B8892	3/4"	Solder	1.9
065B8875	+	065B8894	1/2"	Solder with Two Check Valves	1.8
065B8877	+	065B8895	3/4"	Solder with Two Check Valves	1.9
065B8875	+	065B8897	1/2"	CPVC*	1.8
065B8877	+	065B8898	3/4"	CPVC*	1.9

MR Series Thermostatic Mixing Valves ASSE 1017 Certified (Point of Source)
Temperature range: 95°F to 140°F

Valve Body Code No.	+	Required Tailpiece Code No.	Connection		Cv
			Size**	Type	
065B8867		-	1/2"	Threaded (FPT)	1.8
065B8870		-	3/4"	Threaded (FPT)	1.9
065B8864		-	3/4"	Compression	1.8
065B8876	+	065B8891	1/2"	Solder	1.8
065B8878	+	065B8892	3/4"	Solder	1.9
065B8876	+	065B8894	1/2"	Solder with Two Check Valves	1.8
065B8878	+	065B8895	3/4"	Solder with Two Check Valves	1.9
065B8876	+	065B8897	1/2"	CPVC*	1.8
065B8878	+	065B8898	3/4"	CPVC*	1.9

* Note: When installing the Series 30 MR on plumbing systems using CPVC piping, always follow the pipe manufacturer's instructions.

** For sizes larger than 3/4" refer to ESBE Series 20 1" thermostatic mixing valve.



Ordering
Information
(Cont.):

MR Series Thermostatic Mixing Valves - Radiant Heating Applications (Closed Loop)
Temperature range: 70°F to 110°F

Valve Body Code No.			Connection		Cv
			Size**	Type	
065B8865			1/2"	Threaded	1.8
065B8868			3/4"	Threaded	1.9
065B8862			3/4"	Compression	1.8
MR Series Thermostatic Mixing Valves - Radiant Heating Applications (Closed Loop) Temperature range: 85°F to 160°F					
Valve Body Code No.	+	Required Tailpiece Code No.	Connection		Cv
			Size**	Type	
065B8871		-	3/4"	Threaded (FPT)	1.9
065B8872	+	065B8892	3/4"	Solder	1.9
065B8872	+	065B8895	3/4"	Solder with Two Check Valves	1.9
065B8872	+	065B8898	3/4"	CPVC*	1.9

* Note: When installing the Series 30 MR on plumbing systems using CPVC piping, always follow the pipe manufacturer's instructions.

** For sizes larger than 3/4" refer to ESBE Series 20 1" thermostatic mixing valve.

For spare parts ordering information see page 6

Temperature
Setting:

Series 30 MR thermostatic mixing valves will provide a mixed water temperature according to the following table. The outlet temperatures stated are approximate, based on the given hot water supply temperature and a cold water supply of 50°F (10°C).

For other cold water temperatures correct the outlet temperature by 1°F for every 10°F (or 1°C for every 10°C) deviation from 50°F (10°C), up or down.

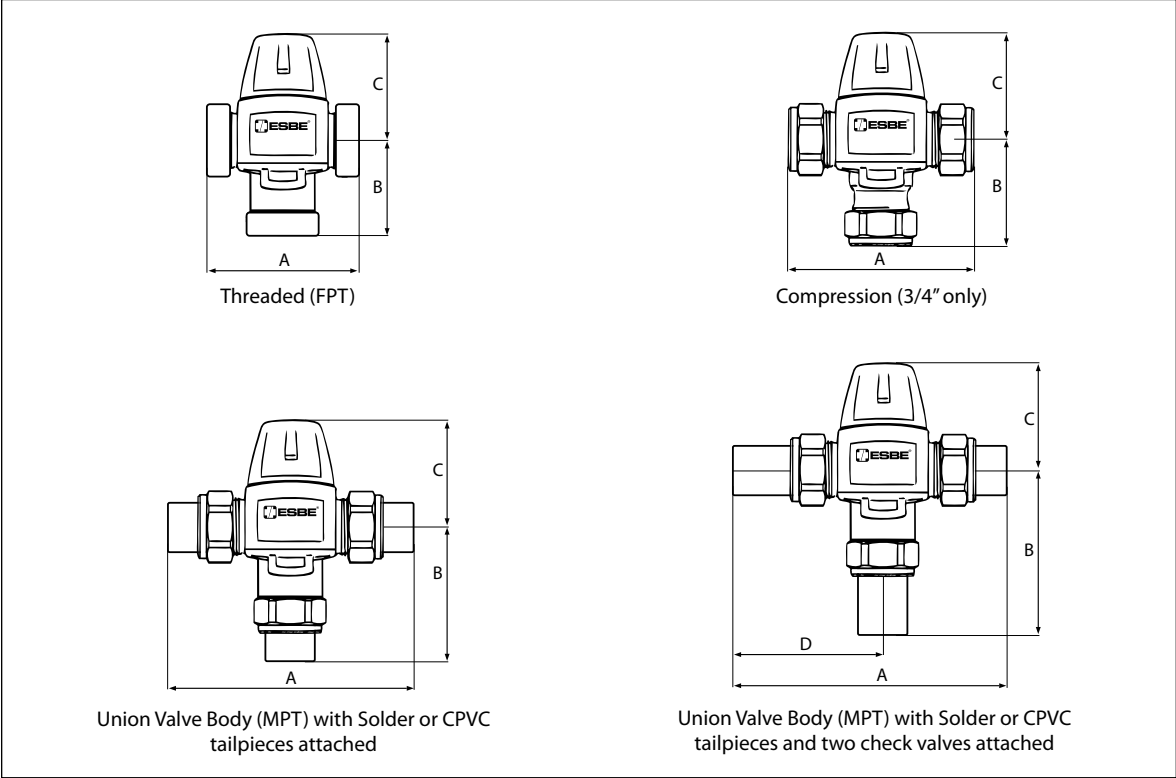
Hot Water Temp.	70°F - 110°F						85°F - 120°F						95°F - 140°F					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
120°F	67	74	81	87	94	109	80	90	97	102	107	115	95	106	115	124	131	136
140°F	68	75	82	90	97	113	81	91	99	104	109	117	97	108	117	126	133	140
160°F	69	76	84	92	100	118	82	93	100	106	112	118	99	109	118	127	135	145
180°F	70	77	86	95	102	122	82	95	102	108	114	120	100	111	120	129	136	149

Hot Water Temp.	21°C - 43°C						29°C - 49°C						35°C - 60°C					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
49°C	19	23	27	31	34	43	27	32	36	39	42	46	35	41	46	51	55	58
60°C	20	24	28	32	36	45	27	33	37	40	43	47	36	42	47	52	56	60
71°C	21	24	29	33	38	48	28	34	38	41	44	48	37	43	48	53	57	63
82°C	21	25	30	35	39	50	28	35	39	42	46	49	38	44	49	54	58	65

Data sheet ESBE Series 30 MR
Thermostatic Mixing Valves

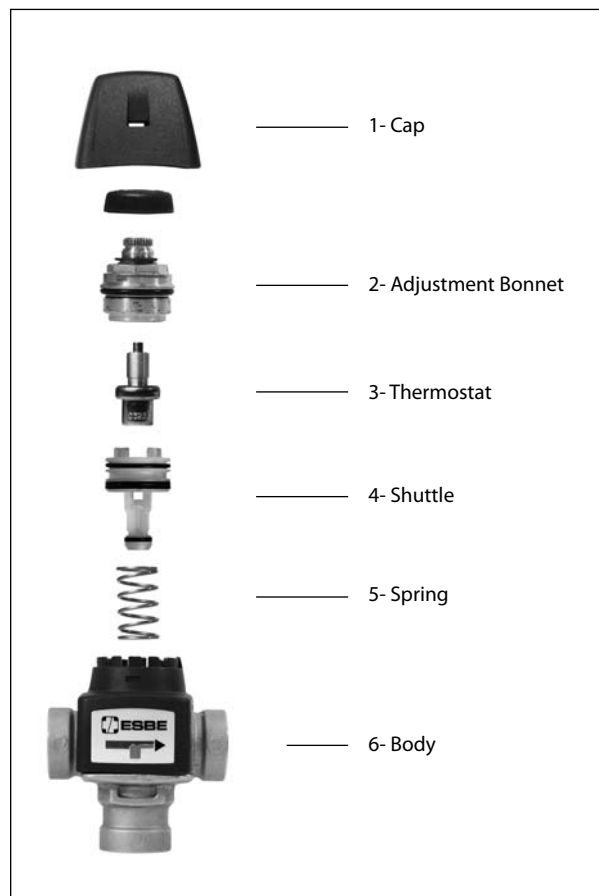


Dimensions & Weights



Description	Dimensions, in (mm)				Weight lbs (kg)
	A	B	C	D	
1/2" threaded (FPT)	2.8" (71)	1.7" (43)	2.1" (53)	-	1.0 (0.5)
1/2" union valve (MPT) with solder tailpieces attached	4.6" (117)	2.6" (66)	2.1" (53)	-	1.4 (0.6)
1/2" union valve (MPT) with solder tailpieces and two check valves attached	5.1" (130)	3.1" (79)	2.1" (53)	2.8" (71)	1.4 (0.6)
1/2" union valve (MPT) with CPVC tailpieces attached	4.2" (107)	2.4" (61)	2.1" (53)	-	1.2 (0.5)
3/4" threaded (FTP)	2.8" (71)	1.7" (43)	2.1" (53)	-	1.1 (0.5)
3/4" union valve (MPT) with solder tailpieces attached	4.8" (122)	2.7" (69)	2.1" (53)	-	1.7 (0.8)
3/4" union valve (MPT) with solder tailpieces and two check valves attached	5.8" (147)	3.7" (94)	2.1" (53)	3.4" (86)	1.9 (0.9)
3/4" union valve (MPT) with CPVC tailpieces attached	4.7" (119)	2.6" (66)	2.1" (53)	-	1.5 (0.7)
3/4" compression	3.6" (91)	2.1" (53)	2.1" (53)	-	1.2 (0.5)

Spare Parts:



Item No.	Description	Temperature Range	Code Number
1-5	Repair Kit 1/2" and 3/4" Valves	70° - 110°F	065B8842
		85° - 120°F	065B8843
		95° - 140°F	065B8844

Item No.	Description	Code Number
1	Cap	065B8846

Typical specification:

A Thermostatic Mixing Valve shall be installed on the outlet of the domestic hot water heater for the distribution of tempered water to the domestic fixtures. Valve shall be ASSE 1017 listed. The thermostatic mixing valve shall have an internal self regulating element housed within dezincified brass. The valve shall have a protective plastic body and snap-on cap to prevent unauthorized tampering. The valve shall be an ESBE 30 MR thermostatic mixing valve.

A Thermostatic Mixing Valve for hydronic heating application shall be installed prior to the circulator for the system or zone. The thermostatic mixing valve shall have an internal self regulating element housed within dezincified brass. The valve shall have a protective plastic body and snap-on cap to prevent unauthorized tampering. The valve shall be an ESBE 30 MR thermostatic mixing valve.

Danfoss can accept no responsibility for possible errors in printed materials and reserves the right to alter its products without notice. All trademarks in this material are property of the respective companies. Danfoss and Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.



Danfoss Inc.
 6711 Mississauga Road, Suite 410
 Mississauga, ON, L5N 2W3
 Tel.: 905-285-2050, Fax: 905-285-2055
www.na.heating.danfoss.com

Danfoss Inc.
 7941 Corporate Drive
 Baltimore, MD 21236 USA
 Tel.: 443-512-0266, Fax: 443-512-0270
www.na.heating.danfoss.com