



Water Temperature Control - Emergency Fixtures

Thermostatic

Z358-40

Z358-40 has been designed specifically to provide temperature controlled water to emergency fixtures as detailed in ANSI Z358.1-2014.

Z358-40 is a Thermostatic Mixing Valve designed specifically to deliver tepid water to emergency fixtures. Compact design and top or bottom blended water outlet makes Z358-40 ideal for OEM, new construction and upgrade/retrofit installations.

For Emergency Drench Showers. Z358-40 will pass ANSI specified minimum of 20 gpm (75.7 lpm)—actual 46 gpm (147 lpm)—and will flow a minimum of 15 gpm (57 lpm) from direct cold water supply in hot failure mode at 45 psi (3 bar) pressure drop.

For Emergency Eye Wash Stations or Emergency Eye/Face Wash Stations. For single or multiple fixture installation, Z358-40 will control accurately at flow rates from 40 gpm (151 lpm) to below 2 gpm (7 lpm)—actual 46 gpm @ 45 psi pressure drop.

In 40 gpm (151 lpm) flow applications, Z358-40 will pass approximately 40% of original flow setting in hot failure mode.

In 30 gpm (114 lpm) flow applications, Z358-40 will pass approximately 50% of original flow setting in hot failure mode.

In 15 gpm (57 lpm) flow applications, Z358-40 will pass approximately 75% of original flow setting in hot failure mode.

Operational Specifications

1. Site Adjustable—Mechanical maximum temperature limit stop and single temperature locking features as functions of the temperature control handle design.
2. Thermal shutdown feature is designed to protect user from unsafe water temperatures or hot water/chemical reaction should cold supply be interrupted during use.
3. Unique constant cold water flow design ensures that in the event of a hot supply failure the Z358-40 will allow cold water to flow to fixture.
4. Unique constant cold water flow feature allows the inlet hot water supply to be set within a prescribed range, thus limiting the potential outlet temperature to a safe maximum in the event of misadjustment, unauthorized tampering or thermostat failure. This feature presumes that the correct initial commissioning was performed and that the cold water supply has not been interrupted.

Technical Specifications

- 1-1/4" (32 mm) NPT inlets and 1-1/4" (32 mm) NPT outlet(s)
- Chrome-plated brass/polymer construction with bright "Safety Yellow" control handle.
- Lead Free compliant
- Operating pressures must be nominally equal
Maximum: 100 psig (6.9 barg)*
Minimum: 40 psig (2.7 barg) drench showers
20 psig (1.4 barg) eye wash
- Maximum recommended pressure drop 75 psig (5 barg)
- Maximum recommended outlet flow 53 gpm (200 lpm)
- Integral thermometer
- Integral replaceable cartridge-type inlet check valves
- Integral replaceable inlet strainers
- Dual thermostatic elements
- 15 gpm (57 lpm) constant cold water flow in hot failure mode to open outlet at 45 psig (3 barg) pressure drop
- Shipping weight 18 lb (8 kg)

*High water pressures may deliver a volume and spray force that are injurious to the user. Check with fixture manufacturer or regulate water pressures within acceptable range.

Table 1.

Safe Maximum Inlet Hot Water Supply Temperature
Refer to Table 1 below to correlate inlet hot water supply temperature with anticipated seasonal ground water temperatures (use best case/warmest scenario). For details, reference Safety benefit Bullet #4 at left.

Inlet Hot Water Temp. °F (C°)	Cold Water Temperature °F (C°)				
	33 (1)	40 (4)	50 (10)	60 (16)	70 (21)
120 (49)	80 (27)	84 (29)	88 (31)	93 (34)	97 (36)
130 (54)	86 (30)	89 (32)	94 (34)	98 (37)	103 (39)
140 (60)	91 (33)	95 (35)	99 (37)	104 (40)	108 (42)
150 (66)	96 (36)	100 (38)	105 (41)	109 (43)	114 (46)
160 (71)	102 (39)	106 (41)	110 (43)	115 (46)	119 (48)
175 (79)	110 (43)	114 (46)	118 (48)	123 (51)	127 (53)
185 (85)	116 (47)	119 (48)	124 (51)	128 (53)	133 (56)

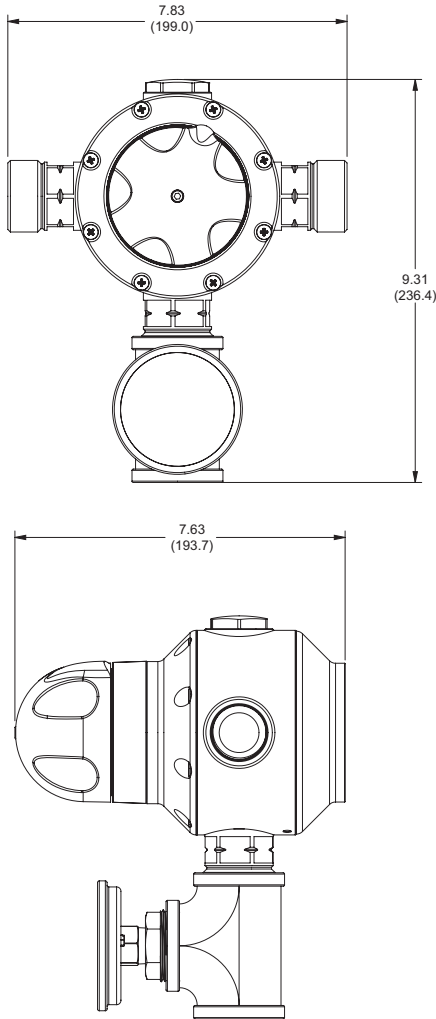
Table 2.

Minimum Inlet Hot Water Supply Temperature
Z358-40 will require a minimum inlet hot water supply temperature, which must be correlated with the anticipated seasonal inlet cold water supply temperature (use worst case/coldest scenario) as per Table 2 below.

Blend Temp °F (C°)	Cold Water Temperature °F				
	33 (1)	40 (4)	50 (10)	60 (16)	70 (21)
80 (27)	120 (49)	113 (45)	105 (41)	97 (36)	88 (31)
85 (29)	129 (54)	122 (50)	114 (46)	106 (41)	97 (36)
90 (32)	138 (59)	132 (56)	123 (51)	115 (46)	107 (42)
95 (35)	147 (64)	141 (61)	132 (56)	124 (51)	116 (47)

For expanded versions of Tables 1 and 2, consult factory or product installation and maintenance manual.

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For a submittal drawing, refer to D77388.

Thermostatic Mixing Valves (GPM and PSIG)											
Model (GPM)	Pressure Drop (PSIG)										Min. Flow
	5	10	15	20	25	30	35	40	45	50	
Z358-40	15	22	27	31	35	38	41	44	46	49	2.0

Thermostatic Mixing Valves (LPM and BARG)											
Model (LPM)	Pressure Drop (BARG)										Min. Flow
	0.3	0.7	1.0	1.4	1.7	2.1	2.4	2.8	3.1	3.4	
Z358-40	56.8	83.3	102.2	117.3	132.5	143.8	155.2	166.6	174.1	185.5	7.6

Operating Specifications	
Maximum Recommended Hot Water Supply Temperature	130°F (54°C)
Minimum Cold Water Supply Temperature	33°F (1°C)
Optimum Inlet to Outlet Temperature Differential	Refer to Table 2
Minimum Flow Rate	1 gpm (3.8 lpm)
Maximum Inlet Supply Pressure (supplies must be nominally equal)	100 psi (6.9 bar)
Minimum Inlet Supply Pressure	40 psi (2.7 bar) Drench Shower 20 psi (1.4 bar) Eye Wash

*High water pressure may deliver a volume and spray force that are injurious to the user. Check with fixture manufacturer or regulate water pressures within acceptable range.

Designs, materials, weights and performance ratings are approximate and subject to change without notice. Visit armstronginternational.com for up-to-date information.